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Data for January 1988

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NUMBER 527

(Issued in Two Parts)

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Jan 88

CARTE SYNOPTIQUE
ACTIVE REGIONS
CARRINGTON ROTATION 1797

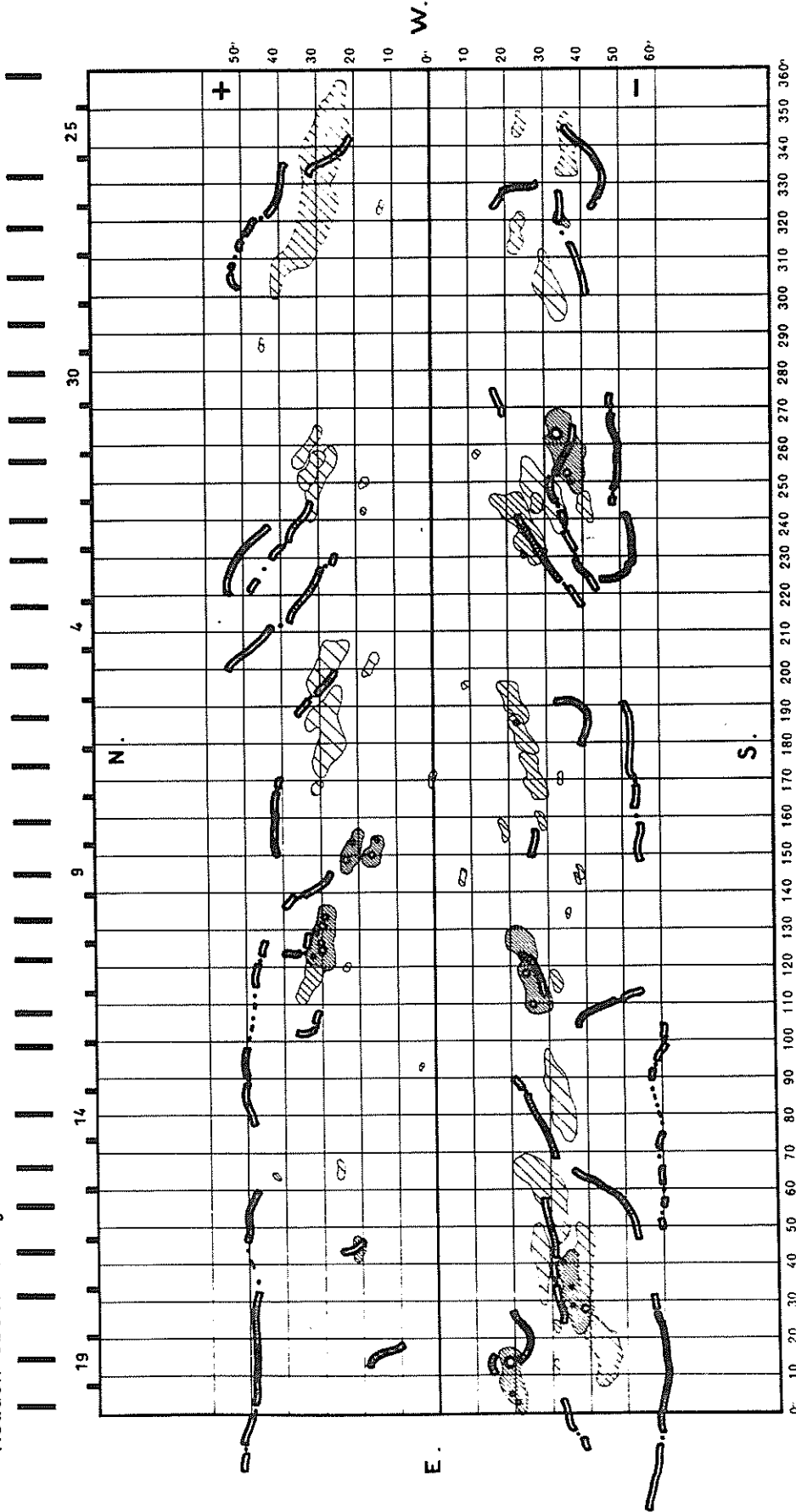
(24 December 1987 to 20 January 1988)

Region No.	Coordinates Lat. Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1796	Activity at West Limb
1	24 S 346	1	+5	x		decreasing
2	36 S 341	1	>6	x		decreasing
3	30 N 329	1	>6	x	2+4	decreasing
4	35 S 320	1	-2	x		stable
5	23 S 317	1	>6	x	7	dispersed
6	35 S 258	4	>6			decreasing
7	32 N 253	1	>6	x	10	dispersed
8	18 N 250	1	-4	x		decreasing
9	28 S 244	1	>6	x	12	dispersed
10	40 S 244	1	>6	x		dispersed
11	24 S 239	1	>6	x	14	decreasing
12	21 S 191	1	>6	x		dispersed
13	23 S 182	2	0			decreasing
14	26 S 171	1	>6	x		dispersed
15	29 S 159	1	-3	x		dispersed
16	18 S 156	1	+2	x		dispersed
17	16 N 151	3	-1			increasing
18	22 N 151	3	+1			stable
19	7 S 144	1	+1	x		disappeared
20	30 N 128	4	>6			decreasing
21	23 S 125	1	>6	x		decreasing
22	32 S 116	1	-3	x		stable
23	25 S 114	3	>6			decreasing
24	34 N 116	1	>6	x		dispersed
25	29 S 58	1	>6	x	24	dispersed
26	21 N 43	1	-4	x		(?)
27	38 S 40	1	>6	x	26	decreasing
28	35 S 33	3	>6		27	decreasing
29	43 S 17	1	>6	x		decreasing
30	19 S 9	4	>6			decreasing

CARTE SYNOPTIQUE
CARRINGTON ROTATION NUMBER 1797
(24 December 1987 to 20 January 1988)

December 1987

Meudon Observatory



Heliographic Longitude

H - ALPHA SOLAR FLARES

JANUARY 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/			Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement		Remarks		
						Lat	CMD	Region						Time (UT)	Apparent (10-6 Disk)		Corr (Sq Deg)	
0001	LEAR	01	0456	0458	0505	S36	E07	4912	01	1.8	9	SF	3	C	17	F		
0002	LEAR	01	0558	0604	0616	S35	E06	4912	01	1.7	18	SF	3	C	20	F		
0003	KHAR	01	0910E		0935D	S37	E07	4912	01	1.9	25D	SF		V	0910	L		
			01 1402		1454	No Flare Patrol												
			01 1456		2214	No Flare Patrol												
			02 1211		1215	No Flare Patrol												
			02 1446		1652	No Flare Patrol												
			02 1704		1732	No Flare Patrol												
			02 1745		1750	No Flare Patrol												
			02 1755		1759	No Flare Patrol												
			02 1913		1932	No Flare Patrol												
0004			02 2111*	2135	2432	S35	W18	4912	01	1.4	201	3N X 1.4			692	UZ		
	HOLL	02	2111	2135	2352D	S34	W18	4912	01	1.4	161D	3B X 1.4	3	C	785	ZU		
	PALE	02	2131E	2143U	2409	S35	W18	4912	01	1.4	158D	3B X 1.4	2	C	995	ZU		
	LEAR	02	2257	2301U	2455	S37	W17	4912	01	1.6	118	2F	3	C	295	ZU		
0005	YUNN	03	0320E	0339U	0452D	S36	W24	4912	01	1.2	92D	SF		P	0339	80	1.1	
			03 1130		1143	No Flare Patrol												
			03 1231		1243	No Flare Patrol												
			03 1318		1444	No Flare Patrol												
			04 1056		1139	No Flare Patrol												
			04 1221		1459	No Flare Patrol												
			04 1717		1743	No Flare Patrol												
			04 2020		2027	No Flare Patrol												
			04 2111		2118	No Flare Patrol												
0006	HOLL	04	2148	2150	2157	N32	E78	4919	01	11.1	9	SF	3	C	32			
			04 2314		2329	No Flare Patrol												
0007	CATA	05	0810	0815	0815D	S31	W60	4912	12	31.6	5D	SF	2	P	0815	56	1.3	
			05 1237		1727	No Flare Patrol												
			05 1955		2024	No Flare Patrol												
			05 2049		2120	No Flare Patrol												
			05 2128		2151	No Flare Patrol												
			05 2217		2240	No Flare Patrol												
0008	PALE	06	0023	0023	0034	N29	E65	4919	01	11.1	11	SF	3	C	35			
0009			06 09098	0918*	0939	N31	E59	4919	01	11.0	30	SF C 1.7			47	1.1	3DF	
	SVTO	06	0909	0920	0941	N32	E61	4919	01	11.2	32	SF C 1.7		C	46		3F	
	LEAR	06	0915	0921	0939	N30	E53	4919	01	10.5	24	SF C 1.7	3	C	43			
	BUCA	06	0917	0918	0938	N32	E60	4919	01	11.1	21	SF		C	0918	43	1.1	D
	CATA	06	0930E	0930	0930D	N31	E62	4919	01	11.3	21D	SN	2	P	0930	56		
			06 1234		1238	No Flare Patrol												
			06 1246		1351	No Flare Patrol												
			06 1358		1418	No Flare Patrol												
			06 1440		1452	No Flare Patrol												
			06 1533		1907	No Flare Patrol												
0010	HOLL	06	1732	1740	1744D	N29	E42	4919	01	10.0	12D	SF	2	C	31			
0011			06 2009	2012	2053	N29	E48	4919	01	10.6	44	SF			46			
	PALE	06	2009	2012	2035	N29	E48	4919	01	10.6	26	SF	3	C	39			
	HOLL	06	2009E	2012U	2111	N29	E47	4919	01	10.5	62D	SF	3	C	52			
0012	HOLL	06	2146	2146	2150	S23	W01	4920	01	6.8	4	SF	3	C	12			
0013	PALE	07	0127	0131	0153	N34	E53	4919	01	11.3	26	SF	3	C	27	F		
0014	LEAR	07	0430	0430	0437	N32	E56	4919	01	11.6	7	SF	3	C	15			
			07 0842		0848	No Flare Patrol												

H - ALPHA SOLAR FLARES

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Jan 88

JANUARY 1988

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)		
0015	HTPR	07	0926	0928	0934	S24	E60	4921	01	12.0	8	SF			C	0928	10	0.2		
0016	RAMY	07	1255	1304	1313	S26	E59	4921	01	12.1	18	SF		3	C		12			
0017		07	1717*	17382	1746	N30	E42	4919	01	11.0	29	SF	C 2.9				31		HZ	
	RAMY	07	1717	1738	1750	N33	E42	4919	01	11.0	33	SF	C 2.9	3	C		41		H	
	HOLL	07	1732	1740	1744D	N29	E42	4919	01	11.0	12D	SF	C 2.9	2	C		31			
	PALE	07	1734	1740U	1742	N28	E41	4919	01	10.9	8	SF	C 2.9	1	C		21		HZ	
0018	RAMY	07	1747	1749	1755	S24	E53	4921	01	11.8	8	SF	C 1.1	3	C		21			
0019	RAMY	07	2050	2107	2133D	S23	E58	4921	01	12.3	43D	SF		3	C		35			
0020	PALE	07	2204	2206	2209	S24	E50	4921	01	11.8	5	SF		3	C		13			
0021	PALE	07	2233	2240	2258	N29	E39	4919	01	11.0	25	SF	C 1.7	3	C		23		F	
0022	PALE	07	2304	2308	2313	S25	E50	4921	01	11.8	9	SN		3	C		18			
0023	PALE	07	2320	2321	2324	N31	E38	4919	01	11.0	4	SF		3	C		12			
0024	PALE	08	0020E	0023	0035	S23	E48	4921	01	11.7	15D	SF	C 1.9	3	C		25			
0025	LEAR	08	0150	0150	0158	N33	E36	4919	01	10.9	8	SF		3	C		14		F	
0026		08	01592	0204	0219	S25	E49	4921	01	11.9	20	SF	C 2.3				61	1.9		
	PALE	08	0159	0204	0215	S24	E49	4921	01	11.9	16	SN	C 2.3	3	C		38			
	LEAR	08	0159	0204	0223	S24	E48	4921	01	11.8	24	SF	C 2.3	3	C		54			
	VORO	08	0201	0204	0210D	S26	E50	4921	01	12.0	9D	SF			C	0204	90	1.9		
0027	YUNN	08	0323	0327	0345	S24	E47	4921	01	11.8	22	SF			C		16	0.3		
0028	MITK	08	0422	0427	0440	N34	E37	4919	01	11.1	18	SN			C	0427			E	
0029		08	0618	0620	0644	S25	E47	4921	01	11.9	26	SN	C 2.6				109	2.0	EU	
	MITK	08	0618	0620	0634	S25	E48	4921	01	12.0	16	1F	C 2.6		C	0620	170	2.6		
	LEAR	08	0618	0620	0655	S25	E46	4921	01	11.8	37	SF	C 2.6	3	C		60		UE	
	YUNN	08	0619E	0626U	0646D	S24	E47	4921	01	11.9	27D	SB	C 2.6		P	0626	96	1.5		
		08	0716		0725	No Flare Patrol														
0030	KAND	08	0959	1000	1002	S24	E43	4921	01	11.7	3	SF			P	1000	62	0.9	DH	
0031		08	1200	12001	1206	S24	E46	4921	01	12.0	6	SN					31	0.5	E	
	KAND	08	1200	1200	1205	S25	E45	4921	01	12.0	5	SN			P	1200	42	0.7	E	
	HTPR	08	1200	1201	1206	S23	E46	4921	01	12.0	6	SF			C	1201	20	0.3	E	
0032	HTPR	08	1251	1253	1303	N32	E37	4919	01	11.5	12	SF			C	1253	20	0.2	E	
0033	RAMY	08	1406	1409	1421	S25	E42	4921	01	11.8	15	SF	C 1.4	3	C		32		F	
0034		08	1730	1735	1748	S25	E41	4921	01	11.9	18	SF	C 1.7				35		F	
	PALE	08	1725E	1730U	1747	S25	E40	4921	01	11.8	22D	SN	C 1.7	2	C		19		F	
	RAMY	08	1728E	1733U	1750	S25	E41	4921	01	11.9	22D	SF	C 1.7	3	C		36		F	
	HOLL	08	1730	1735	1749D	S24	E41	4921	01	11.9	19D	SF	C 1.7	4	C		49		F	
		08	2133		2213	No Flare Patrol														
		08	2220		2244	No Flare Patrol														
0035		09	02211	02266	0245	S24	E33	4921	01	11.6	24	1N	C 6.5				195	3.1	UZ	
	LEAR	09	0221	0226	0244	S24	E33	4921	01	11.6	23	1N	C 6.5	3	C		108		UZ	
	YUNN	09	0221	0232	0247	S24	E32	4921	01	11.6	26	1B	C 6.5		C		177	2.3		
	MITK	09	0222	0227	0243	S24	E33	4921	01	11.6	21	1N			C	0227	300	3.9		
0036		09	0625	06272	0639	N32	E24	4919	01	11.2	14	SF					85	2.0	EU	
	LEAR	09	0625	0627	0633	N34	E25	4919	01	11.2	8	SF			C		23		U	
	PEKG	09	0628E	0629	0645	N30	E23	4919	01	11.1	17D	SF			P	0629	147	2.0	E	
0037	LEAR	09	0844	0844	0852	N34	E24	4919	01	11.3	8	SF			C		16			

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Grp #	Sta	Start Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Imp (Min)	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement		Remarks
																	Apparent (10-6 Disk)	Corr (Sq Deg)	
0038		09	0933	09361	0940	S25	E32	4921	01	11.9	7	SF	C	1.6			20		
	LEAR	09	0933	0936	0940	S25	E32	4921	01	11.9	7	SF	C	1.6	3	C	20		
	KANZ	09	0933	0937	0941	S25	E32	4921	01	11.9	8	SF			2				
0039		09	1144	11441	1158	S22	W42	4920	01	6.3	14	SF					16		FH
	KANZ	09	1144	1144	1156	S22	W42	4920	01	6.3	12	SF			2				FH
	RAMY	09	1144	1145	1200	S22	W42	4920	01	6.3	16	SF			3	C	16		FH
0040		09	13184	13222	1339	N32	E21	4919	01	11.2	21	SF					26	0.4	E
	HTPR	09	1318	1324	1333	N30	E19	4919	01	11.0	15	SF			C	1324	30	0.4	E
	RAMY	09	1319	1323	1343	N35	E22	4919	01	11.3	24	SF			3	C	23		
	KANZ	09	1322	1322	1341	N32	E22	4919	01	11.3	19	SF			2				
0041	HTPR	09	1401	1402	1409	N29	E10		01	10.4	8	SF			C	1402	20	0.2	
0042		09	14312	14341	1448	S25	E34	4921	01	12.2	17	SF					22	0.2	H
	RAMY	09	1431	1435	1453	S26	E34	4921	01	12.2	22	SF			3	C	23		H
	HTPR	09	1433	1434	1443	S24	E33	4921	01	12.1	10	SF			C	1434	20	0.2	
0043	RAMY	09	1503	1505	1514	S22	W04		01	9.3	11	SN			2	C	36		H
0044		09	1505*	1533	1553	S24	E27	4921	01	11.7	48	1N	C	6.7			160	2.2	EFHI
	HTPR	09	1505	1533	1545	S24	E31	4921	01	12.0	40	1B			C	1533	200	2.2	EI
	RAMY	09	1524E	1533	1602	S23	E26	4921	01	11.6	38D	1N	C	6.7	3	C	187		EH
	HOLL	09	1525	1533	1552	S24	E25	4921	01	11.6	27	SN	C	6.7	3	C	94		FE
0045	RAMY	09	1655	1659	1711	N32	E19	4919	01	11.2	16	SF			3	C	18		H
0046	RAMY	09	1941	1944	1951	N32	E18	4919	01	11.2	10	SF			3	C	11		
0047		09	1952*	20112	2057	N32	E17	4919	01	11.2	65	SF	C	1.4			49		F
	HOLL	09	1952	2013	2056	N32	E16	4919	01	11.1	64	SF	C	1.4	3	C	60		
	RAMY	09	2002	2011	2049	N32	E17	4919	01	11.2	47	SF	C	1.4	3	C	39		F
	PALE	09	2002	2012	2107	N32	E17	4919	01	11.2	65	SF	C	1.4	3	C	47		
0048	HOLL	09	2032	2033	2038	S23	E22	4921	01	11.5	6	SF			3	C	11		
0049		09	21006	21017	2112	S24	E22	4921	01	11.6	12	SF					20		
	RAMY	09	2100	2101	2109	S23	E21	4921	01	11.5	9	SF			3	C	25		
	PALE	09	2106	2108	2114	S25	E23	4921	01	11.7	8	SF			3	C	14		
0050		09	21298	21383	2154	S24	E22	4921	01	11.6	25	SF					38		F
	PALE	09	2129	2141	2157	S25	E23	4921	01	11.7	28	SF			3	C	59		F
	HOLL	09	2137	2138	2150	S24	E21	4921	01	11.5	13	SF			3	C	18		
0051		09	23178	2332*	2458	N32	E14	4919	01	11.1	101	1N	C	3.7			119		EFU
	PALE	09	2317	2355	2505	N33	E15	4919	01	11.2	108	1N	C	3.7	3	C	158		UF
	HOLL	09	2325	2332	2332D	N31	E14	4919	01	11.1	7D	SF			3	C	69		F
	LEAR	09	2325	2402	2503	N32	E16	4919	01	11.2	98	1F	C	3.7	3	C	130		UF
	MITK	09	2351E		2445	N32	E12	4919	01	10.9	54D	SN			C	2351			E
0052		10	1042	10423	1048	S25	E13	4921	01	11.4	6	SN					56	0.6	
	KANZ	10	1042	1042	1046	S25	E13	4921	01	11.4	4	SF			2				
	CATA	10	1044E	1045	1050	S25	E13	4921	01	11.4	6D	SN			2	P	1045	56	0.6
0053	KANZ	10	1143	1143	1147	S24	E12	4921	01	11.4	4	SF			2				
0054	VORO	10	2346E	2404	2511	N32	E13		01	12.0	85D	1F			C	2511	367	4.3	E
0055	KHAR	11	0915E	0917U	0922D	S35	E90	4925	01	18.6	7D	SF			V	0917			DH
0056		11	1056	1056	1121	S34	E90	4925	01	18.6	25	1N					84		AE
	KHAR	11	1033E	1057U	1108D	S34	E90	4925	01	18.6	35D	1N			V	1057			E
	CATA	11	1056	1056	1121	S34	E90	4925	01	18.6	25	1N			2	C	1056	84	A
		11	1349		1441	No Flare Patrol													
		11	1540		1916	No Flare Patrol													
0057	PALE	11	1940E	1946U	2028	N25	W37	4923	01	8.9	48D	SF	C	1.5	3	C	53		FH

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						Lat	CMD	Region								Apparent (10-6 Disk)	Corr (Sq Deg)		
			11 2113		2225	No Flare Patrol													
0058	LEAR	11	2227	2308	2319	N31	W13	4919	01	10.9	52	SF C	4.0	3	C	49		EU	
0059	YUNN	12	0244	0250	0340D	S34	E75	4925	01	18.1	56D	1N			P	16			
0060	LEAR	12	0459	0501	0504	N22	W41	4923	01	9.0	5	SF		3	C	12			
0061	KANZ	12	1043	1043	1046	S36	E74	4925	01	18.4	3	SF		2					
0062	RAMY	12	1311	1314	1322	N29	W24	4919	01	10.7	11	SF		3	C	15			
0063		12	13243	1327	1334	N26	W44	4923	01	9.1	10	SN C	1.0			51		E	
	RAMY	12	1324	1327	1333	N26	W44	4923	01	9.1	9	SF C	1.0	4	C	51		E	
	KANZ	12	1327	1327	1334	N27	W43	4923	01	9.2	7	SN		2					
0064		12	1621	1626	1705D	N24	W46	4923	01	9.1	44D	SF				32			
	RAMY	12	1621	1626	1701D	N22	W48	4923	01	9.0	40D	SF		3	C	35			
	HOLL	12	1652E	1653U	1705D	N27	W45	4923	01	9.2	13D	SF		3	C	29			
0065	RAMY	12	1703	1705	1716	S34	E70	4925	01	18.3	13	SF		3	C	18			
0066	RAMY	12	1703	1706	1716	N29	W27	4919	01	10.6	13	SF		3	C	16			
0067	LEAR	13	0639	0645	0652	N21	W58	4923	01	8.8	13	SF C	2.7	3	C	30			
0068	LEAR	13	0719	0725	0742	N31	W31	4919	01	10.8	23	SF C	2.9	3	C	76		F	
0069		13	1149	1153	1210	S19	E84	4927	01	19.9	21	2B C	8.3						
	KANZ	13	1149	1153	1208	S19	E88	4927	01	20.2	19	1N		2					
	RAMY	13	1151E	1154U	1211	S19	E80	4927	01	19.6	20D	2B C	8.3	3	C				
0070	RAMY	13	1253	1314	1333	S18	E81	4927	01	19.7	40	SF		3	C				
0071	RAMY	13	1340	1344	1354	S18	E78	4927	01	19.5	14	SF		3	C				
0072		13	13442	13466	1356	N17	W57	4928	01	9.2	12	SF				15			
	RAMY	13	1344	1352	1357	N16	W56	4928	01	9.3	13	SF		3	C	15			
	KANZ	13	1346	1346	1354	N18	W58	4928	01	9.1	8	SF		2					
0073		13	1559	1607	1634	N31	W34	4919	01	11.0	35	SF C	4.5			42		FHU	
	HOLL	13	1559	1607	1639	N32	W32	4919	01	11.1	40	SF C	4.5	4	C	65		UF	
	RAMY	13	1616E	1618U	1630	N30	W36	4919	01	10.8	14D	SF C	4.5	2	C	20		H	
0074	HOLL	13	1752	1752	1757	S27	W19	4921	01	12.3	5	SF C	1.2	3	C	23			
0075	HOLL	13	1809	1816	1824	S17	E87	4927	01	20.4	15	SF		3	C	14			
0076	LEAR	14	0051	0051	0055	N31	W37	4919	01	11.1	4	SF		3	C	15			
0077	LEAR	14	0138	0146	0154	S19	E69	4927	01	19.3	16	SF		3	C	22			
0078		14	01491	0154	0210	N16	W63	4928	01	9.3	21	SF				16			
	LEAR	14	0149	0154	0209	N16	W64	4928	01	9.2	20	SF		3	C	14			
	PALE	14	0150	0154	0212	N16	W62	4928	01	9.4	22	SF		3	C	19			
0079	LEAR	14	0427	0427	0433	N17	W66	4928	01	9.2	6	SF C	1.1	3	C	18			
0080		14	06292	06341	0656	N32	W41	4919	01	11.0	27	1F C	2.0			153	4.4	EF	
	MITK	14	0629	0635	0702	N33	W41	4919	01	11.0	33	1F C	2.0		C	0635	250	4.4	E
	LEAR	14	0631	0634	0649	N32	W41	4919	01	11.0	18	SF C	2.0	3	C	56		F	
0081	LEAR	14	0741	0742	0750	N17	W66	4928	01	9.3	9	SF C	5.6	3	C	29			
0082		14	07413	07431	0748	N21	W70	4923	01	8.9	7	SN C	5.6			20			
	LEAR	14	0741	0743	0750	N20	W72	4923	01	8.8	9	SF C	5.6	3	C	20			
	KANZ	14	0744	0744	0747	N22	W69	4923	01	9.0	3	SN		2					
0083	LEAR	14	0847	0849	0859	S38	E52	4925	01	18.6	12	SN C	2.9	3	C	59		F	

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF Region	CMP Mo	Dur Day	Imp (Min)	Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks	
																Apparent (10-6 Disk)	Corr (Sq Deg)		
0084	14	0905*	0919*	0944	S38 E50	4925	01	18.4	39	1N	M	1.3				118	2.0	FU	
	LEAR	14 0905	0919	0945	S38 E51	4925	01	18.5	40	1N	M	1.3	3	C		125		UF	
	KANZ	14 0916	0920	0942	S39 E50	4925	01	18.4	26	1N			2						
	CATA	14 0933E	0933	1022D	S38 E48	4925	01	18.3	49D	1N			2	P	0933	112	2.0		
0085	CATA	14 0933E	0933	1022D	S45 E56		01	19.0	49D	1N			2	P	0933	197	4.5		
0086	CATA	14 1141	1141	1150	S40 E52	4925	01	18.7	9	1N			2	C	1141	169	3.3		
		14 1244		1344	No Flare Patrol														
		14 1354		1424	No Flare Patrol														
0087	14	1458	1502	1534	S38 E53	4925	01	18.9	36	1B	M	2.3				186		FH	
	HOLL	14 1458	1502	1534	S37 E48	4925	01	18.5	36	1B	M	2.3	3	C		249		F	
	RAMY	14 1508E	1508U	1517D	S39 E58	4925	01	19.3	9D	1B	M	2.3	1	C		123		FH	
		14 1458		1514	No Flare Patrol														
		14 1526		1601	No Flare Patrol														
0088	HOLL	14 1644	1648	1653	S19 E66	4927	01	19.7	9	SF			3	C		19			
0089	HOLL	14 1701	1701	1706	S38 E50	4925	01	18.7	5	SF			3	C		13			
0090	14	18353	1838	1850	S20 E66	4927	01	19.8	15	SF						28			
	HOLL	14 1835	1838	1855	S19 E65	4927	01	19.7	20	SF			3	C		34			
	PALE	14 1838	1838	1844	S20 E67	4927	01	19.9	6	SF			3	C		21			
0091	HOLL	14 1849	1850	1857	S26 W32	4921	01	12.3	8	SF			3	C		16			
0092	14	19325	1939	1946	S18 E63	4927	01	19.6	14	SF						30			
	HOLL	14 1932	1939	1952	S18 E66	4927	01	19.8	20	SF			3	C		40			
	PALE	14 1937	1939	1941	S19 E60	4927	01	19.4	4	SF			3	C		20			
0093	PALE	14 2143	2144	2200	S19 E63	4927	01	19.7	17	SF			3	C		55			
0094	HOLL	14 2148	2157	2209	N33 W48	4919	01	11.1	21	SF			3	C		17			
0095	PALE	14 2214	2215	2222	S17 E65	4927	01	19.9	8	SF			3	C		11			
0096	PALE	14 2331	2332	2346	S40 E47	4925	01	18.8	15	SF			3	C		20			
0097	14	23374	23413	2352	N31 W50	4919	01	11.0	15	SF						44		F	
	HOLL	14 2337	2341	2352	N31 W49	4919	01	11.1	15	SF			3	C		52			
	LEAR	14 2341	2344	2353	N31 W52	4919	01	10.9	12	SF			3	C		35		F	
0098	15	00051	00101	0040	S39 E43	4925	01	18.5	35	SF	C	3.3				68		EF	
	LEAR	15 0005	0010	0031	S39 E44	4925	01	18.6	26	SF	C	3.3	3	C		48		F	
	MITK	15 0005	0010	0049	S38 E43	4925	01	18.5	44	SF	C	3.3	3	C	0010			E	
	PALE	15 0006	0011	0042D	S39 E43	4925	01	18.5	36D	SF	C	3.3	3	C		89		F	
0099	LEAR	15 0659	0700	0725	S37 E38	4925	01	18.3	26	SF	C	1.1	3	C		45			
0100	LEAR	15 0800	0807	0812	S37 E37	4925	01	18.3	12	SF			3	C		18			
0101	RAMY	15 1151	1206	1234	S38 E38	4925	01	18.6	43	SF	C	1.1	3	C		47		H	
0102	RAMY	15 1402	1407	1427	S18 E55	4927	01	19.8	25	SF	C	1.1	3	C		52		H	
0103	15	1444*	15091	1518	S37 E36	4925	01	18.5	34	SF						42		FH	
	HOLL	15 1444	1509	1521	S37 E37	4925	01	18.6	37	SF			3	C		69		FH	
	RAMY	15 1508	1510	1514	S37 E35	4925	01	18.4	6	SF			3	C		16			
0104	RAMY	15 1501	1506	1517	S18 E55	4927	01	19.8	16	SF			3	C		38			
0105	15	16201	1622	1628	S34 E30	4925	01	18.1	8	SF	C	1.2				24		F	
	HOLL	15 1620	1622	1629	S34 E31	4925	01	18.1	9	SF	C	1.2	3	C		22		F	
	RAMY	15 1621	1622	1628	S34 E29	4925	01	18.0	7	SF	C	1.2	3	C		27			

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Grp #	Sta	Start (UT)	Max (UT)	End (UT)	NOAA/USAF Region			CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
					Lat	CMD	Region							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
0106		15 17021	17211	1742	S38	E35	4925	01 18.5	40	SF C 2.1					38		F
	HOLL	15 1702	1721	1738	S38	E36	4925	01 18.6	36	SF C 2.1	3	C			42		
	RAMY	15 1703	1722	1745	S38	E34	4925	01 18.4	42	SF C 2.1	3	C			34		F
0107		15 17121	17135	1723	S18	E54	4927	01 19.8	11	SF C 2.2					12		F
	HOLL	15 1712	1718	1722	S17	E54	4927	01 19.8	10	SF C 2.2	3	C			11		F
	RAMY	15 1713	1713	1724	S18	E54	4927	01 19.8	11	SF C 2.2	3	C			13		
0108		15 17544	17591	1811	S19	E52	4927	01 19.7	17	SF					36		F
	RAMY	15 1754	1759	1817	S18	E53	4927	01 19.8	23	SF		3	C		42		
	HOLL	15 1755	1800	1812	S19	E53	4927	01 19.8	17	SF		3	C		46		F
	PALE	15 1758	1800U	1804	S19	E49	4927	01 19.5	6	SF		3	C		20		
0109	HOLL	15 1829	1832	1849	S18	E57	4927	01 20.1	20	SF		3	C		14		
0110		15 1848	1850	1856	S32	E30	4925	01 18.1	8	SN C 1.8					36		
	RAMY	15 1848E	1849U	1858	S30	E32	4925	01 18.3	10D	SN C 1.8		3	C		43		
	HOLL	15 1848	1850	1854	S34	E29	4925	01 18.1	6	SF C 1.8	3	C			29		
0111		15 1937	1939	1941	S37	E33	4925	01 18.5	4	SF					16		
	HOLL	15 1937	1939	1941	S36	E33	4925	01 18.5	4	SF		3	C		17		
	PALE	15 1937	1939	1941	S38	E33	4925	01 18.5	4	SF		3	C		16		
0112		15 19561	1957	2000	S37	E33	4925	01 18.5	4	SF					12		
	PALE	15 1956	1957	2000	S38	E33	4925	01 18.5	4	SF		3	C		11		
	HOLL	15 1957	1957	2000	S36	E33	4925	01 18.5	3	SF		3	C		13		
0113		15 2049*	2054*	2126	S38	E32	4925	01 18.4	37	SF					30		F
	PALE	15 2049	2054	2122	S38	E32	4925	01 18.4	33	SF		3	C		41		F
	HOLL	15 2124	2126	2129	S38	E32	4925	01 18.5	5	SF		3	C		19		
0114	HOLL	15 2053	2054	2115	S40	E46		01 19.6	22	SF		3	C		30		F
0115	HOLL	15 2149	2151	2154	S38	E34	4925	01 18.6	5	SF		3	C		12		
0116	PALE	15 2349	2350	2406	S37	E32	4925	01 18.6	17	SF		3	C		13		
0117		16 08046	08105	0830	S18	E46	4927	01 19.8	26	SN					59	1.3	T
	LEAR	16 0804	0810	0832	S18	E44	4927	01 19.7	28	SF		3	C		34		
	KANZ	16 0807	0810	0829	S18	E47	4927	01 19.9	22	SF		2					
	CATA	16 0810	0815	0815D	S18	E47	4927	01 19.9	5D	SB		2	P	0815	84	1.3	T
0118		16 09301	09341	0942	S18	E44	4927	01 19.7	12	SF					22		
	LEAR	16 0930	0934	0942	S18	E43	4927	01 19.7	12	SF		3	C		22		
	KANZ	16 0931	0935	0943	S18	E45	4927	01 19.8	12	SF		2					
0119	CATA	16 1036	1046	1110	S44	E28		01 18.7	34	SN		2	C	1046	56	0.8	
		16 1127		1129	No Flare Patrol												
0120		16 12352	12433	1258	S18	E44	4927	01 19.9	23	SF					22		3
	RAMY	16 1235	1246	1303	S17	E45	4927	01 19.9	28	SF		3	C		26		
	SVTO	16 1237	1243	1253	S18	E43	4927	01 19.8	16	SF			C		18		3
0121	RAMY	16 1324	1330	1406	S19	E43	4927	01 19.8	42	SF		3	C		19		
0122	RAMY	16 1342	1343	1402	N33	W64	4919	01 11.5	20	SF		3	C		18		H
0123	RAMY	16 1616	1618	1620	N32	W73	4919	01 10.9	4	SF		3	C		18		
0124	RAMY	16 1631	1632	1650	S18	E42	4927	01 19.9	19	SF		3	C		12		
0125	RAMY	16 1710	1713	1723	S37	E24	4925	01 18.6	13	SF		3	C		11		
0126	RAMY	16 1734	1734	1750	S31	W63	4926A	01 11.8	16	SF		3	C		10		H
0127	RAMY	16 1746	1748	1813	S18	E40	4927	01 19.8	27	SF C 1.7		3	C		27		F
0128	RAMY	16 1831	1831	1841	S18	E39	4927	01 19.7	10	SF		3	C		16		

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Imp (Min)	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement		Remarks	
																	Apparent (10-6 Disk)	Corr (Sq Deg)		
0129	RAMY	16	2105	2109	2115	S41	E28	4925	01	19.2	10	SF	C	1.0	3	C		23		F
0130	RAMY	16	2145	2146	2152	S38	E17	4925	01	18.3	7	SF			3	C		11		
		16	2203		2219	No Flare Patrol														
0131	SVTO	17	0904	0906	0910	S19	E33	4927	01	19.9	6	SF				C		15		3F
		17	1037		1158	No Flare Patrol														
		17	1331		1428	No Flare Patrol														
		17	1529		1830	No Flare Patrol														
		17	1847		1848	No Flare Patrol														
0132	RAMY	17	1855E	1859U	1902D	S37	E86		01	24.7	7D	SF			2	C				
		17	1903		1925	No Flare Patrol														
		17	1935		1958	No Flare Patrol														
		17	2006		2059	No Flare Patrol														
		17	2113		2232	No Flare Patrol														
0133		18	00293	00311	0043	S18	E23	4927	01	19.8	14	SN	C	1.4				30		E
	MITK	18	0029	0031	0046	S18	E25	4927	01	19.9	17	SN	C	1.4		C	0031			E
	LEAR	18	0032	0032	0040	S19	E21	4927	01	19.6	8	SF	C	1.4	3	C		30		E
0134	LEAR	18	0823	0823	0829	S31	E48	4931	01	22.1	6	SF			3	C		21		
0135		18	1137*	11416	1153	S32	E46	4931	01	22.1	16	SN						42	0.7	D
	KANZ	18	1137	1141	1155	S33	E44	4931	01	22.0	18	SN			2					
	KAND	18	1147	1147	1151	S30	E49	4931	01	22.3	4	SF			P	1147		42	0.7	D
0136	KANZ	18	1218	1218	1228	S16	E18	4927	01	19.9	10	SF			2					
0137	KANZ	18	1324	1324	1334	S18	E19	4927	01	20.0	10	SF			2					
		18	1708		1730	No Flare Patrol														
		18	1755		1816	No Flare Patrol														
0138	RAMY	18	1859	1920	1938	S32	E38	4931	01	21.8	39	SF			3	C		19		
		18	1941		2132	No Flare Patrol														
		18	2139		2238	No Flare Patrol														
0139	KANZ	19	0951	0953	1004	S32	E32	4931	01	21.9	13	SN			2					
0140		19	10551	1100	1110	S32	E31	4931	01	21.9	15	SF						21	0.3	D
	KAND	19	1055	1100	1101D	S32	E33	4931	01	22.1	6D	SF			P	1100		21	0.3	D
	KANZ	19	1056	1100	1110	S31	E29	4931	01	21.7	14	SF			2					
0141	KANZ	19	1337	1343	1401	S18	E01	4927	01	19.6	24	SF			2					
		19	1416		1632	No Flare Patrol														
0142	RAMY	19	1643	1645	1656	S20	W02	4927	01	19.5	13	SF			3	C		26		
0143	RAMY	19	1819	1822	1829	S21	E08	4927A	01	20.4	10	SF			3	C		13		F
0144		19	19562	19581	2004	S22	E06	4927A	01	20.3	8	SF						14		
	RAMY	19	1956	1959	2004	S22	E07	4927A	01	20.4	8	SF			3	C		18		
	PALE	19	1958	1958	2004	S21	E06	4927A	01	20.3	6	SF			3	C		10		
0145		19	20321	20391	2107	S19	E00	4927	01	19.8	35	1F	C	1.1				101		
	RAMY	19	2032	2040	2107	S19	E00	4927	01	19.8	35	1F	C	1.1	3	C		104		
	PALE	19	2033	2039	2051D	S19	E00	4927	01	19.8	18D	SF	C	1.1	3	C		98		
		19	2042		2055	No Flare Patrol														
		19	2121		2125	No Flare Patrol														
		19	2149		2229	No Flare Patrol														
0146	LEAR	20	0102	0102	0105	S19	W01	4927	01	20.0	3	SF			3	C		11		

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Grp #	Sta	Start Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks	
																Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
0190	PALE	27	1907	1918	1930	N20	W59	4934	01	23.3	23	SN		2	C		34			
0191		27	2014	2023	2104	N20	W60	4934	01	23.2	50	1B C	3.6				118		EF	
	HOLL	27	2014	2027	2113	N18	W59	4934	01	23.3	59	1N C	3.6	3	C		137		FE	
	PALE	27	2015	2023	2055	N21	W60	4934	01	23.2	40	SB C	3.6	3	C		99		FE	
0192	HOLL	27	2115	2232	2242	N20	W60	4934	01	23.3	87	SF		3	C		37		F	
0193		27	2245*	2305	2316	N20	W62	4934	01	23.2	31	1N C	4.3				70		EF	
	HOLL	27	2245	2305	2328D	N19	W62	4934	01	23.2	43D	1N C	4.3	3	C		102		F	
	PALE	27	2304	2305	2316	N20	W61	4934	01	23.3	12	SN C	4.3	3	C		38		FE	
0194	LEAR	27	2356	2358	2413	N19	W61	4934	01	23.3	17	SF C	1.9	3	C		22			
0195		28	0232E	0237I	0251	N20	W62	4934	01	23.4	19	SF C	1.7				16			
	LEAR	28	0232	0238	0249	N19	W62	4934	01	23.4	17	SF C	1.7	3	C		20			
	PALE	28	0237	0237	0253	N20	W63	4934	01	23.3	16	SF C	1.7	3	C		12			
0196		28	0547*	0606I	0618	N19	W65	4934	01	23.3	31	1N C	6.6				83			
	MITK	28	0547	0607	0617	N19	W66	4934	01	23.2	30	1N C	6.6		C	0607	100			
	LEAR	28	0606	0606	0620	N19	W64	4934	01	23.4	14	SN C	6.6	3	C		66			
0197		28	0845E	0847E	0909	N19	W65	4934	01	23.4	24	1N C	9.6				143		3	
	CATA	28	0845	0852	0913	N19	W66	4934	01	23.3	28	2B		2	C	0852	225			
	LEAR	28	0847	0847	0905	N18	W65	4934	01	23.4	18	1N C	9.6	3	C		133			
	SVTO	28	0848E	0848U	0900D	N19	W65	4934	01	23.4	12D	SF C	9.6		C		70		3	
			28	1131		1154														No Flare Patrol
		28	1156		1219														No Flare Patrol	
		28	1223		1323														No Flare Patrol	
		28	1325		1740														No Flare Patrol	
		28	1751		1757														No Flare Patrol	
		28	1807		1837														No Flare Patrol	
0198	RAMY	28	1814	1823	1924	N19	W74	4934	01	23.1	70	SF		2	C		44		F	
		28	1907		1917														No Flare Patrol	
		28	1941		1955														No Flare Patrol	
		28	2234		2253														No Flare Patrol	
0199		29	0256*	0304*	0322	N19	W75	4934	01	23.4	26	SF					38			
	LEAR	29	0256	0304	0313	N19	W75	4934	01	23.4	17	SF		3	C		23			
	LEAR	29	0314	0316	0332	N19	W75	4934	01	23.4	18	SF		3	C		53			
0200		29	0337	0344	0347	N20	W76	4934	01	23.3	10	SN					19			
	LEAR	29	0337	0344	0347	N19	W75	4934	01	23.4	10	SF		3	C		22			
	YUNN	29	0341E	0342U	0345D	N21	W78	4934	01	23.2	4D	SN			P	0342	16			
0201	TACH	29	0557	0605U	0609	N24	W80	4934	01	23.1	12	SF			C	0605	15		DJ	
0202	KHAR	29	0926E	0927	0932	N18	E28	4937	01	31.5	6D	SF			V	0927			EH	
0203	KHAR	29	0940	0943U	0947	N20	W87	4934	01	22.7	7	SF			V	0943			D	
0204	KHAR	29	1055E	1055U	1110D	N21	W87	4934	01	22.8	15D	SF			V	1057			D	
0205	KHAR	29	1111E		1115D	N20	E85	4939	02	5.0	4D	SF			V	1111			D	
			29	1116		1125														No Flare Patrol
			29	1241		1250														No Flare Patrol
			29	1314		1502														No Flare Patrol
			29	1528		1731														No Flare Patrol
			29	1741		1746														No Flare Patrol
			29	2006		2015														No Flare Patrol
			29	2021		2040														No Flare Patrol
			29	2045		2059														No Flare Patrol
			29	2115		2124														No Flare Patrol
	0206	PEKG	30	0045E	0058	0114	N19	W90	4934	01	23.2	29D	SF			C	0058	63		A

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JANUARY 1988

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)	
0207	LEAR	30	0411	0418	0436	N17	E18	4937	01	31.5	25	SF		3	C		24	
			30 1131		1134			No Flare Patrol										
			30 1300		1314			No Flare Patrol										
			30 1334		1354			No Flare Patrol										
0208	RAMY	30	1456	1457	1506	S31	W34	4933	01	27.9	10	SF		3	C		11	
			30 1645		1759			No Flare Patrol										
			30 1937		2106			No Flare Patrol										
			30 2122		2127			No Flare Patrol										
			30 2139		2221			No Flare Patrol										
			30 2226		2251			No Flare Patrol										
0209	LEAR	31	1001	1002	1004	N19	E60	4939	02	5.0	3	SF C	1.2	3	C		13	F
			31 1201		1227			No Flare Patrol										
			31 1247		1254			No Flare Patrol										
			31 1457		1459			No Flare Patrol										
			31 1613		1721			No Flare Patrol										

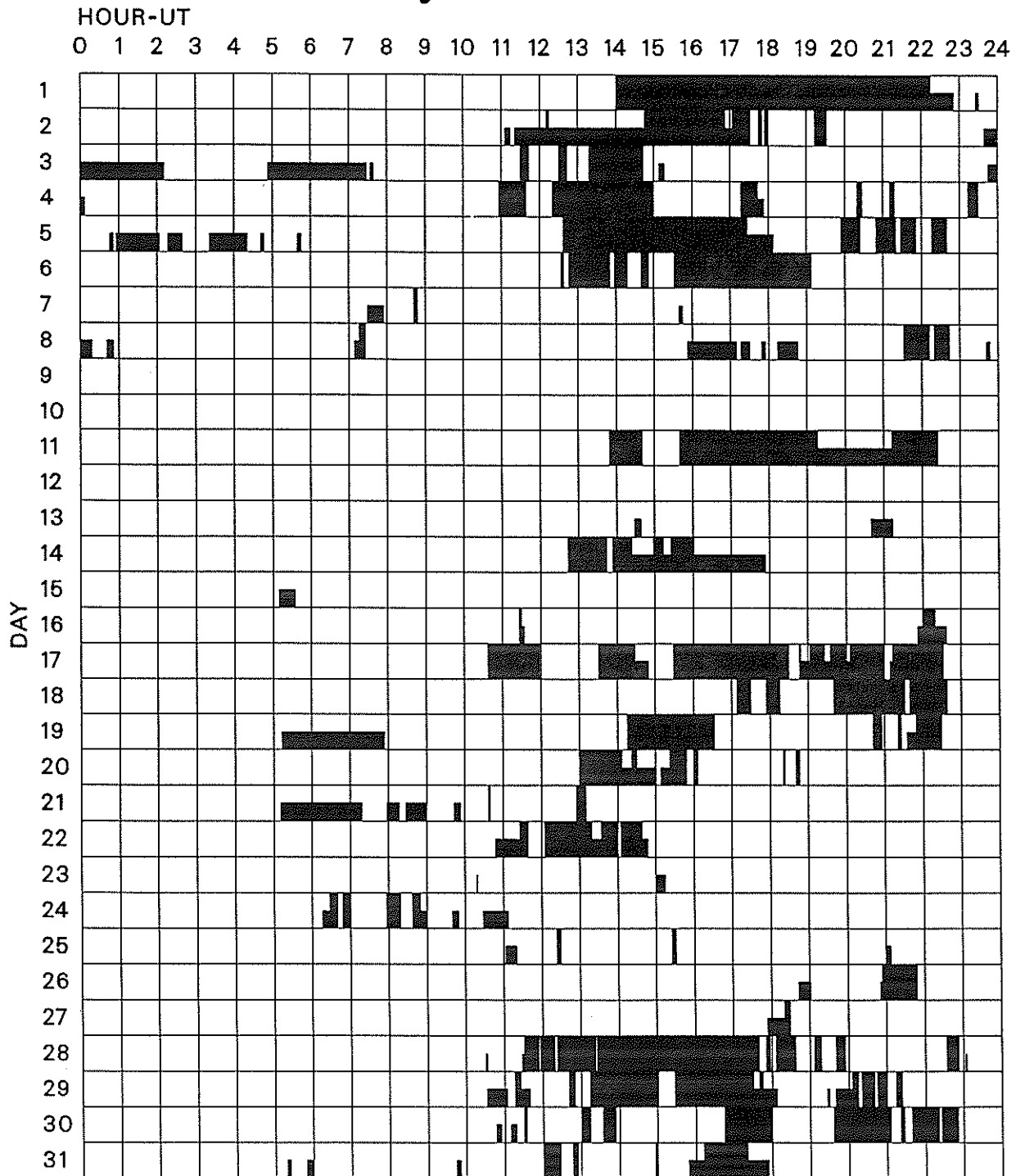
"Remarks"

- | | |
|---|---|
| <p>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.</p> | <p>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.</p> |
|---|---|

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

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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
Catania
Haute Provence

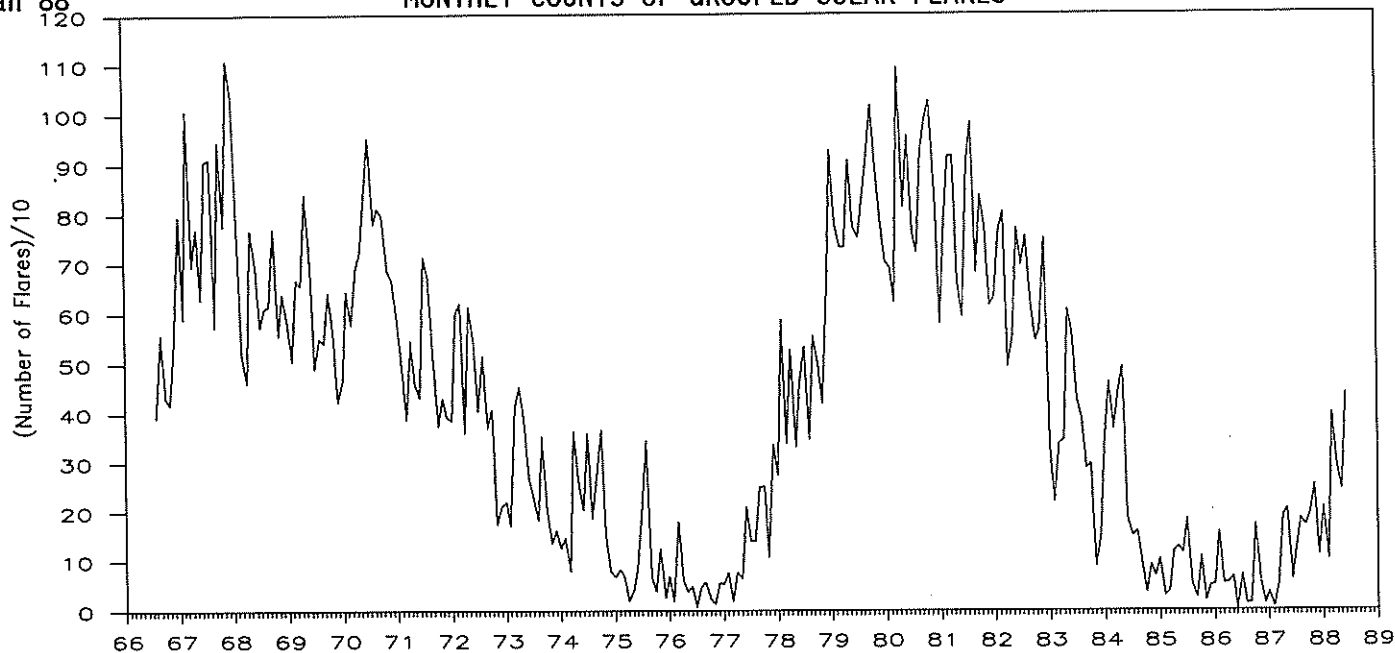
Holloman
Istanbul
Kandilli
Kanzelhoehe

Kharkov
Learmonth
Lvov
Manila

Mitaka
Palehua
Peking
Ramey

San Vito
Tashkent
Voroshilov
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	198	254	111	1604
1988	209	102	399	290	244	438							1682

*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

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Jan 88

JANUARY 1988

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak ²² (10 ⁻²² W/m ² Hz)	Mean		
01	245 SVTO	43 NS	0636.0	0936.0	511.0D	33.0			QL=1 ST=2 TYP=1
	127 TORN	44 NS	0700.0E		450.0D		83.0U		V=1
	9400 HUAN	20 GRF	2033.6	2045.4	24.5	4.0	1.8		
02	200 GORK	44 NS	0631.0E		258.00D	5.0			
	100 GORK	44 NS	0633.0E		256.0D		5.0		
	127 TORN	43 NS	0742.0	1037.0	430.0	15.0	3.0		V=0
	2700 PENT	47 GB	2100.0	2134.0		2600.0			
	500 HIRA	46 C	2149.5E	2239.5U	97.0D	160.0		35.0U	WL, SUNRISE
	100 HIRA	46 C	2150.0E	2227.0	64.0D	640.0		210.0U	SUNRISE
	200 HIRA	46 C	2150.0E	2158.0U	90.0D	120.0U		35.0U	ML
	200 HIRA	46 C	2150.0E	2228.4		110.0			WL
	245 LEAR	48 C	2210.0	2226.0	60.0	120.0			QL=5 ST=2 TYP=8
	410 LEAR	48 C	2217.0	2243.0	40.0	130.0			QL=3 ST=2 TYP=8
	2695 LEAR	20 GRF	2223.0	2237.0	97.0	110.0			QL=5 ST=1 TYP=2
	15400 LEAR	48 C	2235.0	2237.0	27.0	66.0			QL=5 ST=2 TYP=8
03	100 GORK	44 NS	0627.0E		306.0D		5.0		
	127 TORN	43 NS	0828.0	1219.0	363.0	45.0	5.0		V=0
	9100 GORK	20 GRF	0825.6	0833.7	44.8	5.2			
	650 GORK	20 GRF	0843.2	0849.2	7.9	2.0			
	100 GORK	41 F	0905.0	0906.8	6.9	7.0			
	100 GORK	41 F	0905.0	0909.8		30.0			
	200 GORK	41 F	0906.0	0907.0	5.0	2.0			
	200 GORK	41 F	0906.0	0909.0		10.0			
	100 GORK	4 S/F	0946.9	0947.5	2.6	100.0			
	200 GORK	2 S/F	0947.3	0947.6	3.3	14.0			
	260 ONDR	41 F	0947.4	0947.4	2.7	2.0		2.0	
	260 ONDR	41 F	1204.3	1205.5	5.5				
	127 TORN	7 C	1213.7	1215.2	2.5	60.0D		30.0	
	430 KRAK	2 S/F	1214.5	1215.0	1.7	14.0		8.0	
	1470 POTS	1 S	1214.5	1215.5	3.0	4.0			
	3000 POTS	1 S	1214.5	1215.5	2.5	5.0			
	200 HIRA	46 C	2314.2	2315.8	2.6	54.0		23.0	0
245 LEAR	8 S	2315.0	2316.0	1.0	56.0			QL=5 ST=2 TYP=5	
100 HIRA	46 C	2315.2	2315.7	2.1	215.0		90.0		
500 HIRA	6 S	2315.5	2316.0	1.5	4.0			0	
04	200 HIRA	42 SER	0421.0	0535.0	74.0	120.0			0
	245 LEAR	8 S	0436.0	0436.0	1.0	40.0			QL=5 ST=2 TYP=3
	100 GORK	4 S/F	0719.9	0721.0	1.6	35.0			
	200 GORK	4 S/F	0720.0	0720.6	1.4	25.0			
	204 IZMI	5 S	0720.5	0720.7	2.0	33.0		25.0	
	260 ONDR	4 S/F	1013.7	1013.9	0.7	2.0			
	237 TRST	45 C	1116.4	1116.5	0.3	32.0			
	9400 HUAN	1 S	1152.4	1155.7	6.5	2.9		1.2	
	260 ONDR	4 S/F	1237.6	1238.0	2.1	10.0			
	234 POTS	4 S/F	1237.6	1237.7	1.0	300.0		100.0	
237 TRST	46 C	1237.6	1237.9	0.5	426.0				
05	9100 GORK	2 S/F	0710.6	0711.9	6.2	4.4			
	245 LEAR	8 S	0729.0	0729.0	1.0	76.0			QL=5 ST=2 TYP=5
	610 LEAR	8 S	0729.0	0729.0	1.0	3.0			QL=5 ST=2 TYP=3
	410 LEAR	4 S/F	0729.0	0729.0	101.0	32.0			QL=5 ST=2 TYP=3
	9100 GORK	20 GRF	0828.7	0832.4	11.3	5.2			
06	2950 GORK	20 GRF	0906.0	0918.0	43.0	2.2	1.0		
	9100 GORK	20 GRF	0909.0	0920.2	39.4	6.0			
	260 ONDR	8 S	0933.7	0933.7	0.3	8.0			
	260 ONDR	8 S	1049.3	1049.4	0.2	3.0			
	260 ONDR	8 S	1104.2	1104.3	0.2	5.0			
	260 ONDR	42 SER	1126.0	1127.0U	9.8	10.0			
	204 IZMI	41 F	1130.0	1130.2	1.5	20.0			
07	3100 CRIM	20 GRF	0736.0	0827.0	144.0	3.0	1.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

JANUARY 1988

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak ²² (10 ⁻²² W/m ² Hz)	Mean		
07	2950	GORK	20 GRF	0742.1	0942.0	270.0	5.0	2.0		
	9100	GORK	20 GRF	0853.0	0918.6	38.9	5.0			
	536	ONDR	8 S	1045.4	1045.4	0.4	35.0			
	536	ONDR	8 S	1058.1	1058.1	0.9	48.0			
	536	ONDR	41 F	1113.6	1117.1	3.6	27.0			
	536	ONDR	8 S	1214.7	1214.7	0.7	44.0			
	9400	HUAN	1 S	1336.7	1338.8	3.9	4.6	0.9		
	245	PALE	48 C	1724.0	1732.0	22.0	160.0			QL=5 ST=2 TYP=8
	410	PALE	8 S	1732.0	1734.0	2.0	120.0			QL=5 ST=2 TYP=5
	410	SGMR	48 C	1732.0	1734.0	7.0	180.0			QL=5 ST=3 TYP=8
	245	PALE	48 C	1732.0	1732.0	14.0	150.0			QL=5 ST=3 TYP=8
	245	SGMR	48 C	1733.0	1733.0	6.0	180.0			QL=5 ST=3 TYP=8
	2695	SGMR	48 C	1733.0	1734.0	3.0	95.0			QL=5 ST=3 TYP=8
	2695	PALE	8 S	1734.0	1735.0	1.0	85.0			QL=5 ST=2 TYP=5
	1415	SGMR	4 S/F	1734.0	1734.0	3.0	70.0			QL=5 ST=3 TYP=5
	1415	PALE	4 S/F	1735.0	1735.0		62.0			QL=5 ST=3 TYP=5
	2700	PENT	3 S	1735.0	1736.0	3.0	184.0			
2700	PENT	3 S	1811.0	1812.5	4.0	26.0				
245	PALE	8 S	2020.0	2020.0	1.0	32.0			QL=5 ST=2 TYP=3	
245	PALE	8 S	2201.0	2201.0	1.0	67.0			QL=5 ST=2 TYP=5	
08	260	ONDR	44 NS	0903.0E	1224.0U	272.0D				
	245	SGMR	44 NS	1238.0E	1437.0	224.0D	130.0			QL=5 ST=2 TYP=1
	9300	KISV	2 S/F	0618.9	0620.4	4.0	8.0			
	500	HIRA	46 C	0619.9	0620.8	8.0	12.0	4.0		0
	610	LEAR	8 S	0620.0	0620.0	1.0	19.0			QL=5 ST=2 TYP=3
	33	UPIC	4 S/F	1043.3	1043.4	0.5				
	29	UPIC	4 S/F	1043.5	1043.7	0.7				
	536	ONDR	8 S	1127.9	1127.9	0.7	213.0U			
237	TRST	46 C	1508.6	1508.8	1.2	72.0				
09	245	LEAR	44 NS	2330.0E	2333.0	30.0D	17.0			QL=5 ST=1 TYP=1
	9100	GORK	20 GRF	0909.0	1018.8	70.0	5.0			
	2950	GORK	20 GRF	0922.5	0948.0	186.0	4.0	2.0		
	260	ONDR	42 SER	1122.0	1136.6	44.3	5.0			
	204	IZMI	41 F	1136.5	1136.7	2.0	30.0			
	237	TRST	46 C	1136.5	1136.8	0.4	61.0			
	810	KRAK	40 F	1319.0	1319.7	1.0	8.0	1.0		
	2800	OTTA	22 GRF	1410.0	1600.0	300.0	8.7			
	9400	HUAN	20 GRF	1522.0	1534.2	26.2	6.3	4.3		
	9400	HUAN	20 GRF	1939.6	1947.6	13.9	4.4	2.0		
	200	HIRA	24 R	2322.0	0243.0	390.0D	15.0	7.0		MR
100	HIRA	24 R	2325.0	0524.0	440.0D	120.0	53.0			
500	HIRA	45 C	2340.3	2342.1	3.5	3.0	1.0		0	
10	100	GORK	44 NS	0618.0E		345.0D		25.0		
	200	GORK	44 NS	0618.0E		345.0D		5.0		
	260	ONDR	44 NS	0840.0E	0907.0U	320.0D	2.0			
	245	LEAR	8 S	0712.0	0713.0	1.0	58.0			QL=5 ST=2 TYP=5
	610	LEAR	8 S	0712.0	0713.0	1.0	16.0			QL=5 ST=2 TYP=3
430	KRAK	42 SER	0852.0	1024.8	132.0	9.0				
11	260	ONDR	44 NS	0854.0E	1233.5	292.0D	4.0			
	245	LEAR	43 NS	2208.0	0045.0	767.0D	33.0			QL=5 ST=2 TYP=1
	536	ONDR	41 F	1046.2	1201.0	75.0U	4.0			
	2800	OTTA	22 GRF	1400.0	1428.0	280.0	8.5			
	2800	OTTA	22 GRF	1905.0	1937.0	120.0D	7.3			
	500	HIRA	45 C	2201.0U	2201.5	1.5U	29.0	9.0		0 SUNRISE
	410	LEAR	8 S	2216.0	2218.0	2.0	16.0			QL=3 ST=2 TYP=3
	500	HIRA	46 C	2216.5	2218.5	3.9	8.0	4.0		0
	2695	LEAR	4 S/F	2218.0	2218.0		12.0			QL=1 ST=2 TYP=3
500	HIRA	27 RF	2224.7	2244.7	48.0	6.0	2.0		0	
12	245	SVTO	43 NS	0635.0	1336.0	488.0D	34.0			QL=1 ST=2 TYP=1
	127	TORN	43 NS	0751.0		369.0		4.0		V=2
	260	ONDR	44 NS	0850.0E	1047.6	298.8D	3.0			

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak ²² (10 ⁻²² W/m ² Hz)	Mean		
12	610	LEAR	8 S	0653.0	0654.0	1.0	12.0			QL=5 ST=2 TYP=3
	410	LEAR	8 S	0653.0	0654.0	1.0	5.0			QL=5 ST=2 TYP=3
	245	LEAR	4 S/F	0654.0	0654.0		45.0			QL=5 ST=2 TYP=3
	2950	GORK	20 GRF	0706.0	1007.5	300.0D	6.4			
	536	ONDR	42 SER	0944.4	0944.6	153.2	17.0			
	430	KRAK	41 F	1208.7	1208.8	1.0	6.0	1.0		
	430	KRAK	41 F	1215.5	1216.5	1.3	7.0	1.0		
	237	TRST	42 SER	1230.6	1230.9	0.3	89.0			
	9400	HUAN	1 S	1400.2	1402.4	3.8	5.2	2.4		
	2800	OTTA	20 GRF	1505.0	1830.0	360.0	2.3			
9400	HUAN	1 S	1632.1	1633.9	4.6	2.6	1.0			
13	245	SVTO	43 NS	0635.0	0639.0	170.0D	35.0			QL=1 ST=2 TYP=1
	127	TORN	43 NS	0746.0		374.0		2.0		V=2
	260	ONDR	44 NS	0843.0E	0955.7U	308.0D	3.0			
	200	HIRA	42 SER	0417.0	0518.0	102.0	100.0			0
	650	GORK	23 GRF	0636.0		16.7	3.7			
	245	LEAR	8 S	0638.0E	0639.0	2.0D	46.0			QL=5 ST=2 TYP=3
	200	HIRA	46 C	0638.3	0638.7	2.6	130.0	47.0		0
	100	HIRA	42 SER	0638.3	0638.7U	8.8	1000.0D			
	650	GORK	2 S/F	0639.8	0640.7	1.3	7.0	1.7		
	2950	GORK	23 GRF	0644.2	0737.2	300.0D	15.8			
	3100	CRIM	25 R	0717.0	0732.0	300.0	4.0			
	536	ONDR	42 SER	0915.0	1233.7	276.0	12.0			
	9100	GORK	20 GRF	0922.8	0931.2	10.2	4.0			
	9100	GORK	21 GRF	1147.3	1155.8	15.0D	8.3			
	2950	GORK	2 S/F	1148.3	1149.8	6.3		8.2		
	3100	CRIM	1 S	1149.0	1150.0	3.0	5.0	2.0		
	3000	POTS	29 PBI	1149.0	1150.0	101.0	7.0			
	9300	KISV	2 S/F	1149.0	1149.8	1.5	19.0			
	9500	POTS	29 PBI	1149.0	1149.9	121.0	18.0			
	9100	GORK	2 S/F	1149.5	1149.9	1.4	15.0	7.0		
	3100	CRIM	29 PBI	1152.0	1215.0	42.0	5.0	2.0		
	33	UPIC	4 S/F	1242.8	1243.0	0.5				
	29	UPIC	4 S/F	1242.9	1243.1	0.5				
2800	OTTA	28 PRE	1505.0	1515.0	55.0	2.3				
2800	OTTA	22 GRF	1600.0	1610.0	280.0	10.5				
14	127	TORN	44 NS	0700.0E		420.0D		2.0		V=1
	260	ONDR	44 NS	0900.0E	1034.4	299.0D	2.0			
	200	HIRA	44 NS	2147.0E	0300.0	580.0D	3.0	1.0		0
	200	GORK	41 F	0741.0	0744.0	5.5	1240.0			
	3013	IZMI	5 S	0741.0	0743.0	3.0	9.0	7.0		
	2695	SVTO	8 S	0741.0	0742.0	2.0	10.0			QL=5 ST=2 TYP=3
	200	GORK	41 F	0741.0	0745.2		110.0			
	29	UPIC	45 C	0741.0	0743.3	4.1				
	950	GORK	21 GRF	0741.1	0743.4	7.9	3.0			
	650	GORK	3 S	0741.1	0742.9	2.2	4.7			
	9100	GORK	21 GRF	0741.2	0745.0	18.7	5.0			
	9300	KISV	1 S	0741.3	0742.7	2.5	24.0			
	100	GORK	41 F	0741.5	0745.3		180.0			
	100	GORK	41 F	0741.5	0742.8	4.9	170.0			
	3100	CRIM	1 S	0741.8	0743.2	3.0	7.0	2.0		
	15000	KISV	1 S	0741.8	0742.7	3.5	17.0			
	204	IZMI	45 C	0742.0	0745.0	7.0	340.0	200.0		
	8800	LEAR	8 S	0742.0	0742.0	1.0	19.0			QL=5 ST=2 TYP=3
	15400	LEAR	8 S	0742.0	0742.0	1.0	16.0			QL=5 ST=2 TYP=3
	1415	SVTO	8 S	0742.0	0742.0	1.0	10.0			QL=5 ST=2 TYP=3
	4995	SVTO	8 S	0742.0	0742.0	1.0	24.0			QL=5 ST=2 TYP=3
	8800	SVTO	8 S	0742.0	0742.0	1.0	26.0			QL=5 ST=2 TYP=3
	15400	SVTO	8 S	0742.0	0742.0	1.0	19.0			QL=5 ST=2 TYP=3
33	UPIC	45 C	0742.0	0743.5	3.0					
950	GORK	5 S	0742.0	0742.7	1.4	3.7				
9100	GORK	2 S/F	0742.0	0742.7	1.8	17.0	8.0			
410	LEAR	8 S	0743.0	0744.0	1.0	190.0			QL=3 ST=2 TYP=5	
410	SVTO	8 S	0743.0	0743.0	1.0	260.0			QL=5 ST=2 TYP=5	

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

JANUARY 1988

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak ²² (10 ⁻²² W/m ² Hz)	Flux Density Mean (W/m ² Hz)	Int	Remarks
14	650	GORK	29 PBI	0743.3	0743.3	7.4	2.5			
	9300	KISV	29 PBI	0743.6	0743.6	8.0	5.0			
	245	LEAR	49 GB	0744.0	0744.0	1.0	610.0			QL=5 ST=2 TYP=6
	245	SVTO	49 GB	0744.0E	0744.0	1.00	770.0			QL=5 ST=2 TYP=6
	3100	CRIM	3 S	0838.0	0838.8	3.0	19.0	6.0		
	2950	GORK	23 GRF	0845.7	0941.5	140.0	7.7			
	9100	GORK	21 GRF	0846.9	0927.0	92.0	11.0			
	3013	IZMI	5 S	0848.0	0849.0	2.5	28.0	20.0		
	8800	LEAR	8 S	0848.0	0848.0	1.0	89.0			QL=5 ST=2 TYP=5
	2695	LEAR	8 S	0848.0	0848.0	1.0	28.0			QL=1 ST=2 TYP=3
	4995	LEAR	8 S	0848.0	0848.0	1.0	68.0			QL=1 ST=2 TYP=5
	15400	LEAR	8 S	0848.0	0848.0	1.0	100.0			QL=5 ST=2 TYP=5
	3000	POTS	2 S/F	0848.0	0848.0	2.0	21.0			
	8800	SVTO	8 S	0848.0	0848.0	1.0	68.0			QL=5 ST=2 TYP=5
	15400	SVTO	8 S	0848.0	0848.0	1.0	86.0			QL=5 ST=2 TYP=5
	2695	SVTO	8 S	0848.0	0848.0	2.0	30.0			QL=5 ST=2 TYP=3
	9100	GORK	4 S/F	0848.0	0848.4	1.4	99.0	50.0		
	2950	GORK	3 S	0848.0	0848.4	2.1	25.3			
	15000	KISV	3 S	0848.0	0848.4	1.5	103.0			
	9500	POTS	2 S/F	0848.0	0848.5	2.0	90.0			
	1470	POTS	8 S	0849.3	0849.4	0.4	6.0			
	3100	CRIM	45 C	0915.0	0918.4		5.0	2.0		
	3100	CRIM	45 C	0915.0	0916.7	5.0	4.0	1.0		
	9300	KISV	2 S/F	0915.3	0918.1	4.0	20.0			
	9500	POTS	3 S	0916.0	0918.0	9.0	13.0			
	3000	POTS	3 S	0916.0	0918.1	6.0	7.0			
	1470	POTS	2 S/F	0916.0U	0918.2	40.0U	4.0			
	3013	IZMI	5 S	0916.0	0918.5	5.0	7.0	5.0		
	9100	GORK	1 S	0916.3	0918.2	3.5	11.0	5.0		
	2950	GORK	4 S/F	0916.3	0918.3	3.5	5.5			
	15400	LEAR	8 S	0917.0	0917.0	1.0	12.0			QL=5 ST=2 TYP=3
	4995	LEAR	4 S/F	0918.0	0918.0		12.0			QL=1 ST=2 TYP=3
	9300	KISV	29 PBI	0919.1	0919.1	34.5	9.0			
	3100	CRIM	29 PBI	0920.0	0920.0	25.0	2.0	0.5		
	204	IZMI	41 F	0938.0	0938.3	1.5	40.0			
	536	ONDR	42 SER	0939.0	1218.9	261.0	12.0			
	3000	POTS	4 S/F	1335.0	1337.0	5.0	8.0			
	9500	POTS	4 S/F	1335.0	1336.5	5.0	24.0			
	9400	HUAN	2 S/F	1335.1	1336.3	4.6	16.1	4.6		
	4995	SVTO	8 S	1336.0	1336.0	1.0	16.0			QL=5 ST=2 TYP=3
8800	SVTO	8 S	1336.0	1336.0	1.0	30.0			QL=5 ST=2 TYP=3	
15400	SVTO	8 S	1336.0	1336.0	1.0	27.0			QL=5 ST=2 TYP=3	
1470	POTS	4 S/F	1336.0U	1338.0U	4.0U	7.0				
9400	HUAN	4 S/F	1458.2	1500.1	5.0	88.6	28.0			
9400	HUAN	4 S/F	1458.2	1500.6		87.2				
2695	SVTO	8 S	1459.0	1500.0	2.0	57.0			QL=5 ST=2 TYP=5	
4995	SVTO	8 S	1459.0	1500.0	2.0	57.0			QL=5 ST=2 TYP=5	
2695	SGMR	8 S	1500.0	1500.0	1.0	78.0			QL=5 ST=2 TYP=5	
8800	SGMR	8 S	1500.0	1500.0	1.0	130.0			QL=5 ST=2 TYP=5	
4995	SGMR	8 S	1500.0	1500.0	1.0	74.0			QL=5 ST=2 TYP=5	
1415	SVTO	8 S	1500.0	1500.0	1.0	34.0			QL=5 ST=2 TYP=3	
9400	HUAN	29 PBI	1503.2	1503.2	36.4	7.4	3.0			
9400	HUAN	2 S/F	1603.9	1605.1	3.7	8.0	2.7			
9400	HUAN	1 S	1609.6	1611.6	4.0	5.4	0.9			
2700	PENT	32 ABS	1847.0	1904.0	50.0	-3.7				
1415	PALE	48 C	1937.0	1937.0	2.0	78.0			QL=5 ST=2 TYP=8	
9400	HUAN	1 S	2152.9	2156.4	8.6	4.3	1.2			
15	200	GORK	44 NS	0612.0E		351.0D		5.0		
	260	ONDR	44 NS	0847.0E	1250.7	303.0D				
	245	SVTO	43 NS	1100.0	1132.0	261.0D	35.0			QL=1 ST=2 TYP=1
	127	TORN	44 NS	1130.0E		150.0D		2.0		V=1 DISTURBED
	245	SGMR	43 NS	1235.0	1544.0	515.0D	110.0			QL=5 ST=2 TYP=1
	200	HIRA	44 NS	2147.0E	0620.0	580.0D	4.0	1.0		WL
	15400	LEAR	8 S	0009.0	0011.0	2.0	50.0			QL=5 ST=2 TYP=5
	8800	LEAR	8 S	0009.0	0010.0	2.0	44.0			QL=5 ST=2 TYP=3

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak ₂₂ (10 ⁻²² W/m ² Hz)	Mean (W/m ² Hz)	Int	Remarks
15	8800	PALE	8 S	0009.0	0010.0	2.0	36.0			QL=1 ST=3 TYP=3
	4995	PALE	4 S/F	0010.0	0010.0		18.0			QL=5 ST=3 TYP=3
	15400	PALE	8 S	0010.0	0010.0	2.0	29.0			QL=5 ST=3 TYP=3
	245	LEAR	8 S	0051.0	0051.0	1.0	88.0			QL=5 ST=2 TYP=5
	1415	SVTO	8 S	0704.0	0704.0	1.0	23.0			QL=5 ST=2 TYP=3
	204	IZMI	5 S	0708.0	0708.5	1.0	10.0	6.0		
	410	LEAR	4 S/F	0711.0	0711.0		11.0			QL=5 ST=2 TYP=3
	610	LEAR	8 S	0711.0	0711.0	1.0	6.0			QL=5 ST=2 TYP=3
	245	LEAR	4 S/F	0711.0	0711.0		87.0			QL=5 ST=2 TYP=5
	3100	CRIM	20 GRF	0752.0	0830.0	58.0	2.0	1.0		
	204	IZMI	5 S	0828.0	0828.2	0.8	30.0	15.0		
	810	KRAK	8 S	0829.5	0829.5	0.1	8.0			
	810	KRAK	42 SER	1251.7	1254.5		250.0D			
	810	KRAK	42 SER	1251.7	1253.8	3.0	250.0D			
	536	ONDR	41 F	1351.0	1354.0	10.3	14.0			
	2800	OTTA	22 GRF	1400.0	1730.0	420.0	7.0			
	9400	HUAN	1 S	1635.3	1637.6	3.9	3.4	1.8		
	9400	HUAN	2 S/F	1642.3	1644.4	3.6	4.0	2.5		
	2800	OTTA	1 S	1644.2	1644.7	2.0	10.0	4.0		
	2700	PENT	1 S	1708.5	1709.0	1.5	17.5	7.0		
	2800	OTTA	1 S	1841.3	1841.7	0.9	7.0	3.5		
	2800	OTTA	1 S	1842.2	1842.3	1.2	25.0	7.5		
9400	HUAN	1 S	1846.4	1848.2	3.4	3.4	1.3			
2800	OTTA	1 S	1848.0	1848.3	2.0	6.2	3.0			
16	245	LEAR	44 NS	0142.0E	0259.0	1338.0D	26.0			QL=5 ST=2 TYP=1
	245	LEAR	44 NS	0505.0E	0610.0	1135.0D	57.0			QL=5 ST=2 TYP=1
	200	GORK	44 NS	0625.0E		336.0D		5.0		
	245	SVTO	43 NS	0634.0	0807.0	529.0D	220.0			QL=5 ST=2 TYP=1
	204	IZMI	43 NS	0700.0		300.0	15.0			
	260	ONDR	44 NS	0850.0E	1300.0	250.0D				
	245	SGMR	43 NS	1235.0	1443.0	685.0	53.0			QL=5 ST=3 TYP=1
	245	SGMR	44 NS	1235.0E	1443.0	685.0D	53.0			QL=5 ST=2 TYP=1
	245	PALE	44 NS	1820.0E	0119.0	573.0D	52.0			QL=1 ST=2 TYP=1
	200	HIRA	44 NS	2147.0E	0012.0	190.0D	190.0D	1.0		WL
	650	GORK	20 GRF	0711.2	0713.9	7.4	1.6			
	2950	GORK	20 GRF	0722.3	0813.0	220.0D	11.0			
	650	GORK	20 GRF	0722.5	0735.4	19.5	2.8			
	9100	GORK	22 GRF	0730.0	0813.2	164.0	12.0			
	15400	LEAR	8 S	0954.0	0955.0	1.0	29.0			QL=5 ST=2 TYP=3
	33	UPIC	2 S/F	1004.2	1004.8	1.2				
	29	UPIC	2 S/F	1004.5	1005.1	1.7				
	430	KRAK	2 S/F	1038.3	1038.5	0.7	10.0	2.0		
	204	IZMI	5 S	1149.0	1149.2	0.2	105.0	90.0		
	2800	OTTA	22 GRF	1612.0	1627.0	180.0	2.8			
	245	PALE	8 S	1811.0	1811.0	1.0	40.0			QL=5 ST=2 TYP=3
	245	LEAR	49 GB	2315.0	2317.0	3.0	660.0			QL=5 ST=2 TYP=6
200	HIRA	46 C	2315.2	2316.6	2.2	590.0	135.0		0	
100	HIRA	46 C	2315.4	2316.5	2.6	920.0	350.0			
245	PALE	49 GB	2316.0E	2317.0	1.0D	500.0			QL=1 ST=3 TYP=6	
245	PALE	8 S	2316.0	2317.0	1.0	500.0			QL=1 ST=2 TYP=5	
500	HIRA	46 C	2316.5	2317.3	2.0	120.0	27.0		0	
410	PALE	4 S/F	2317.0	2317.0	388.0	100.0			QL=5 ST=3 TYP=5	
410	PALE	4 S/F	2317.0	2317.0	388.0	100.0			QL=5 ST=2 TYP=5	
410	LEAR	4 S/F	2317.0	2317.0	977.0	120.0			QL=3 ST=2 TYP=5	
17	245	LEAR	43 NS	0016.0	0119.0	640.0D	96.0			QL=5 ST=2 TYP=1
	260	ONDR	44 NS	0850.0E	0952.2U	270.0D				
	245	SVTO	44 NS	0855.0E	0940.0	92.0D	28.0			QL=5 ST=2 TYP=1
	245	LEAR	49 GB	0055.0E	0056.0	1.0D	2100.0			QL=5 ST=2 TYP=6
	410	LEAR	8 S	0055.0	0056.0	1.0	78.0			QL=3 ST=2 TYP=5
	8800	LEAR	8 S	0055.0	0056.0	1.0	19.0			QL=5 ST=2 TYP=3
	610	LEAR	8 S	0055.0	0056.0	1.0	21.0			QL=5 ST=2 TYP=3
	4995	LEAR	8 S	0055.0	0056.0	1.0	10.0			QL=1 ST=2 TYP=3
	245	PALE	49 GB	0055.0E	0056.0	1.0D	1600.0			QL=3 ST=2 TYP=6
	410	PALE	8 S	0055.0E	0056.0	1.0D	90.0			QL=5 ST=2 TYP=5

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

JANUARY 1988

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	100	HIRA	8 S	0055.4	0055.4U	0.7	1000.0			
	200	HIRA	8 S	0055.4	0055.6	0.3	9500.0			0
	500	HIRA	8 S	0055.6	0055.8	0.5	34.0			0
	15400	LEAR	8 S	0056.0	0056.0	2.0	18.0			QL=5 ST=2 TYP=3
	200	HIRA	42 SER	0158.7	0202.5	4.0	1600.0			0
	245	LEAR	49 GB	0201.0E	0202.0	2.0D	1500.0			QL=5 ST=2 TYP=6
	245	PALE	49 GB	0201.0E	0202.0	2.0D	580.0			QL=3 ST=2 TYP=6
	100	HIRA	46 C	0201.2	0202.3	2.1	980.0	240.0		
	245	LEAR	8 S	0622.0	0623.0	1.0	200.0			QL=5 ST=2 TYP=5
	200	HIRA	42 SER	0622.1	0622.1	13.9	490.0			0
	100	HIRA	8 S	0622.4	0622.4	0.7	1100.0			
	9300	KISV	1 S	0805.6	0806.8	2.5	3.0			
	204	IZMI	41 F	0806.0	0806.5	2.0	40.0			
	2950	GORK	20 GRF	0827.2	0854.2	58.0	4.4			
	9100	GORK	20 GRF	0833.7	0839.6	27.0	5.0			
	204	IZMI	5 S	0855.3	0855.4	0.2	80.0	70.0		
	536	ONDR	8 S	0927.1	0927.2	1.1	18.0			
430	KRAK	8 S	1050.2	1050.2	0.1	4.0				
536	ONDR	8 S	1251.3	1251.5	0.7	19.0				
15400	LEAR	8 S	2234.0	2235.0	1.0	200.0			QL=5 ST=2 TYP=5	
18	127	TORN	43 NS	0852.0	1111.5	278.0	15.0	1.0		V=0
	245	LEAR	8 S	0638.0	0638.0	1.0	67.0			QL=5 ST=3 TYP=5
	950	GORK	21 GRF	0807.0	0821.0	31.4	2.5			
	200	GORK	4 S/F	0820.1	0822.9	5.0	20.0D			
	100	GORK	41 F	0820.2	0821.1	5.0	460.0			
	100	GORK	41 F	0820.2	0822.6		620.0			
	29	UPIC	45 C	0820.5	0821.3	4.0				
	3100	CRIM	20 GRF	0821.0	0836.0	31.0	2.0	1.0		
	33	UPIC	45 C	0821.2	0823.5	3.4				
	650	GORK	1 S	0821.9	0823.1	2.4	14.7			
	950	GORK	2 S/F	0822.4	0823.1	1.7	2.5			
	204	IZMI	41 F	0822.5	0823.0	2.0	17.0			
	810	KRAK	8 S	0823.0	0823.0	0.1	4.0			
	260	ONDR	40 F	0850.0E	0952.6	351.0D	11.0			
	260	ONDR	41 F	1207.6	1207.7	10.8	43.0			
237	TRST	47 GB	1508.6	1508.7	1.0	2551.0				
19	200	HIRA	43 NS	0030.0	0649.0	420.0D	16.0	4.0		WR
	100	GORK	44 NS	0610.0E		353.0D		5.0		
	200	GORK	44 NS	0612.0E		35.1D		5.0		
	127	TORN	43 NS	0700.0		230.0		26.0U		V=1 DISTURBED
	204	IZMI	44 NS	0700.0E		300.0D		20.0		
	234	POTS	43 NS	0740.0	0816.0	55.0	275.0			
	245	LEAR	43 NS	0800.0	0930.0	175.0D	90.0			QL=5 ST=2 TYP=1
	260	ONDR	44 NS	0800.0E	0920.0U	370.0D				
	410	LEAR	43 NS	0824.0	0920.0	151.0D	20.0			QL=3 ST=2 TYP=1
	430	KRAK	43 NS	0839.8	1320.8	322.0D	37.0	5.0		
	245	PALE	43 NS	1956.0	2103.0	480.0D	22.0			QL=1 ST=2 TYP=1
	200	HIRA	44 NS	2147.0E	2230.0	150.0D	8.0U	2.0U		WL SUNRISE
	245	LEAR	43 NS	2214.0	2308.0	761.0D	32.0			QL=5 ST=2 TYP=1
	410	LEAR	43 NS	2214.0	0000.0	761.0D	20.0			QL=3 ST=2 TYP=1
	950	GORK	22 GRF	0802.2	0817.7	24.6	4.3			
	650	GORK	22 GRF	0805.6E	0923.1	222.4D	15.0			
	245	LEAR	48 C	0855.0	0859.0	10.0	140.0			QL=5 ST=2 TYP=8
	410	LEAR	4 S/F	0857.0	0900.0	6.0	11.0			QL=3 ST=2 TYP=3
	950	GORK	23 GRF	0858.6	0923.1	52.4	4.3			
	1470	POTS	40 F	0905.0	0905.6	36.0	11.0			
536	ONDR	41 F	0910.0E	1310.7	300.0D	55.0				
950	GORK	2 S/F	0914.3	0915.1	1.3	3.9				
9100	GORK	20 GRF	1100.0	1155.7	60.0D	4.0				
810	KRAK	8 S	1311.0	1311.0	0.1	7.0				
410	PALE	4 S/F	1819.0	1819.0		36.0			QL=1 ST=2 TYP=3	
245	PALE	4 S/F	1819.0	1819.0		130.0			QL=1 ST=2 TYP=5	
2800	OTTA	28 PRE	2020.0	2030.0	14.0	-1.0				
2800	OTTA	3 S	2037.0	2040.0	7.0	20.0	14.0			

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10^{-22} W/m ² Hz)	Mean		
19	2800	OTTA	30 PBI	2044.0	2044.0	48.0	4.4			
	245	LEAR	8 S	2250.0	2251.0	1.0	340.0			QL=5 ST=2 TYP=5
		PALE	4 S/F	2251.0	2251.0		150.0			QL=1 ST=2 TYP=5
20	200	GORK	44 NS	0625.0E		335.0D		5.0		
	260	ONDR	44 NS	0756.0E	0920.0	394.0D	4.0			
	127	TORN	44 NS	0820.0E		240.0D		3.0		V=1 DISTURBED
	245	LEAR	43 NS	2214.0	0311.0	761.0D	53.0			QL=5 ST=2 TYP=1
	410	LEAR	44 NS	2214.0E	0000.0	761.0D	20.0			QL=3 ST=1 TYP=1
	245	LEAR	4 S/F	0510.0	0510.0		430.0			QL=5 ST=1 TYP=5
	100	HIRA	42 SER	0510.2	0546.0	36.0	1000.0D			0
	200	HIRA	42 SER	0511.0	0546.0	38.0	1040.0			0
	245	LEAR	49 GB	0546.0E	0546.0	1.0D	940.0			QL=5 ST=2 TYP=6
	245	LEAR	8 S	0655.0	0655.0	1.0	87.0			QL=5 ST=2 TYP=5
	245	LEAR	8 S	0712.0	0714.0	2.0	57.0			QL=5 ST=2 TYP=5
	245	LEAR	8 S	0831.0	0832.0	2.0	320.0			QL=5 ST=2 TYP=5
	536	ONDR	41 F	0930.0E		300.0D				
	9100	GORK	1 S	1007.1	1007.8	1.3	5.0			
	430	KRAK	42 SER	1209.0	1224.8	16.0	8.0			
	127	TORN	7 C	1240.8	1241.0	1.5	1900.0	1100.0		
	430	KRAK	2 S/F	1311.0	1312.0	1.3	8.0		1.0	
9400	HUAN	20 GRF	1757.2	1810.5	30.9	3.5		1.1		
9400	HUAN	20 GRF	1914.8	1923.8	14.4	5.9		1.5		
21	200	HIRA	43 NS	0515.0	0642.0	150.0D	9.0	2.0		0
	200	GORK	44 NS	0627.0E		304.0D		5.0		
	245	SVTO	43 NS	0631.0	1017.0	538.0D	54.0			QL=1 ST=2 TYP=1
	204	IZMI	44 NS	0700.0E		300.0D	20.0			
	410	SVTO	43 NS	0710.0	0711.0	499.0D	25.0			QL=1 ST=2 TYP=1
	260	ONDR	44 NS	0800.0E	0919.0U	358.0D	10.0			
	127	TORN	44 NS	1100.0E		180.0D		2.0		V=1
	200	HIRA	8 S	0238.7	0238.9	0.4	490.0			0
	100	HIRA	8 S	0238.9	0239.0	0.5	680.0			
	245	LEAR	8 S	0239.0	0239.0	1.0	230.0			QL=5 ST=2 TYP=5
	245	PALE	8 S	0239.0	0239.0	1.0	170.0			QL=1 ST=2 TYP=5
	245	PALE	8 S	0311.0	0311.0	1.0	50.0			QL=1 ST=2 TYP=3
	245	LEAR	8 S	0449.0	0450.0	2.0	36.0			QL=5 ST=2 TYP=3
	430	KRAK	8 S	0813.7	0814.1	0.5	13.0			
	9100	GORK	20 GRF	0830.0	1019.4	183.0	5.8			
	536	ONDR	8 S	1306.2	1306.2	0.9	69.0			
	2800	OTTA	20 GRF	1525.0	1610.0	180.0	4.2			
22	410	LEAR	44 NS	0045.0E	0339.0	415.0D	26.0			QL=3 ST=2 TYP=1
	245	LEAR	44 NS	0045.0E	0727.0	610.0D	84.0			QL=5 ST=2 TYP=1
	200	GORK	44 NS	0626.0E		337.0D		5.0		
	245	SVTO	43 NS	0630.0	0727.0	295.0D	80.0			QL=1 ST=2 TYP=1
	245	SVTO	43 NS	0630.0	0727.0	1050.0D	80.0			QL=1 ST=3 TYP=1
	260	ONDR	44 NS	0800.0E	0955.0	360.0D	8.0			
	410	SVTO	43 NS	0927.0	0957.0	123.0D	40.0			QL=1 ST=3 TYP=1
	245	LEAR	43 NS	2216.0	0921.0	759.0D	50.0			QL=5 ST=2 TYP=1
	245	LEAR	4 S/F	0621.0	0621.0		83.0			QL=5 ST=2 TYP=5
	245	LEAR	8 S	0818.0	0818.0	1.0	180.0			QL=5 ST=2 TYP=5
	204	IZMI	5 S	0828.5	0828.7	0.8	250.0	200.0		
	2950	GORK	20 GRF	0843.1	0850.0	7.9	1.6	0.6		
	430	KRAK	42 SER	0930.3	0959.2	28.9U	11.0			
	9100	GORK	22 GRF	1116.7	1128.0	26.2	7.0			
	200	GORK	8 S	1130.0E	1131.0D	1.4U	130.0			
	3100	CRIM	1 S	1130.0	1131.5	2.0	6.0	2.0		
	3013	IZMI	5 S	1130.0	1131.5	4.0	7.0	4.0		
	9500	POTS	1 S	1130.0	1131.5	3.0	3.0			
	3000	POTS	4 S/F	1130.0	1131.5	3.0	11.0			
1470	POTS	2 S/F	1130.0	1131.5	2.6	4.0				
2950	GORK	4 S/F	1130.1	1131.2	2.2	7.1				
950	GORK	2 S/F	1130.8	1131.5	2.0	5.0				
100	GORK	8 S	1131.0	1131.0	0.3	30.0				
810	KRAK	45 C	1138.8		5.0	200.0D				

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

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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
22	650 GORK	46 C	1230.9	1231.2		27.0			
	650 GORK	46 C	1230.9	1230.9	1.4	6.0			
	430 KRAK	42 SER	1317.5	1319.4	6.5	13.0			
23	221 ABST	43 NS	0500.0	0714.0	360.0	7.0			QL= ST= TYP=1
	245 SVTO	43 NS	0629.0	0921.0	542.00	52.0			QL=1 ST=2 TYP=1
	260 ONDR	44 NS	0900.0E	1330.0U	300.00				
	200 HIRA	44 NS	2145.0E	2325.0	125.00	8.0	2.0		WL
	245 LEAR	44 NS	2216.0E	0851.0	104.00	24.0			QL=5 ST=2 TYP=1
	234 POTS	4 S/F	0733.0	0733.4	1.3	275.0	30.0		
	204 IZMI	41 F	0833.5	0834.0	1.0	300.0			
	204 IZMI	41 F	0848.0	0849.0	2.0	80.0			
	237 TRST	46 C	0848.0	0848.2	0.5	67.0			
	204 IZMI	41 F	0855.0	0855.3	3.0	60.0			
	650 GORK	45 C	0913.1	0914.0	2.1	11.0			
	650 GORK	45 C	0913.1	0914.9		12.0			
	950 GORK	2 S/F	0913.3	0914.0	1.2	2.5			
	810 KRAK	1 S	0913.5	0913.9	0.5	2.0	1.0		
	810 KRAK	8 S	0914.5	0914.5	0.1	4.0			
650 GORK	20 GRF	0939.0	0942.5	14.2	2.6				
237 TRST	42 SER	1005.1	1005.8	1.2	58.0				
127 TORN	42 SER	1319.2	1320.7	3.7	70.0	10.0			
245 PALE	8 S	2055.0	2055.0	1.0	48.0			QL=1 ST=3 TYP=3	
24	245 PALE	8 S	0047.0	0047.0	1.0	43.0			QL=1 ST=2 TYP=3
	3100 CRIM	42 SER	0758.0	0845.0		4.0			
	3100 CRIM	42 SER	0758.0	0827.0		3.5			
	3100 CRIM	42 SER	0758.0	0802.5	72.0	2.0	2.0		
	260 ONDR	41 F	0800.0E	1129.0U	360.00	6.0			
	810 KRAK	4 S/F	1106.5	1107.2	1.5	230.00	8.0		
	536 ONDR	8 S	1128.4	1128.4	0.7	26.0			
	536 ONDR	8 S	1214.6	1214.7	0.7	149.00			
	430 KRAK	42 SER	1332.5	1333.7	1.5	4.0			
	245 PALE	49 GB	1933.0E	1934.0	2.00	500.0			QL=1 ST=2 TYP=6
410 PALE	4 S/F	1934.0	1934.0		14.0			QL=1 ST=2 TYP=3	
25	260 ONDR	44 NS	0904.0E	1214.1	311.00	7.0			
	245 PALE	4 S/F	0103.0	0103.0		41.0			QL=1 ST=2 TYP=3
	430 KRAK	8 S	1021.0	1021.3	0.5	5.0			
26	260 ONDR	44 NS	0800.0E	1004.1	304.00	11.0			
	245 SVTO	4 S/F	0813.0	0813.0		93.0			QL=1 ST=2 TYP=5
	536 ONDR	4 S/F	1052.3	1052.5		88.0			
	650 GORK	20 GRF	1055.2	1059.3U	8.4	1.4			
	536 ONDR	45 C	1056.7	1056.8	0.8	43.0			
	3100 CRIM	21 GRF	1057.0	1123.0	63.0	3.0	1.0		
	3100 CRIM	1 S	1057.0	1058.5	7.0	2.0	0.5		
	2950 GORK	20 GRF	1057.5	1122.0	63.0	6.1			
	9100 GORK	20 GRF	1058.0	1137.2	74.0	7.0			
	1470 POTS	4 S/F	1206.5	1206.8	2.5	8.0			
27	260 ONDR	44 NS	0953.0E	1159.2	240.00	9.0			
	200 HIRA	44 NS	2145.0E	0107.0	580.00	22.0	10.0		WR
	245 LEAR	43 NS	2219.0	0953.0	755.00	63.0			QL=5 ST=2 TYP=1
	9400 HUAN	21 GRF	1230.9	1248.0	30.4	3.7	1.6		
	9400 HUAN	1 S	1243.0	1244.3	2.5	2.5	1.0		
	9400 HUAN	1 S	1252.6	1253.8	2.5	9.9	3.3		
	810 KRAK	8 S	1253.8	1253.9	0.7	15.0			
	536 ONDR	42 SER	1254.3	1254.4	3.9	26.0			
	9500 POTS	3 S	1255.5	1255.8	1.5	14.0			
	3000 POTS	3 S	1255.8	1256.0	1.7	8.0			
	1470 POTS	1 S	1255.8	1256.0	1.7	5.0			
	9400 HUAN	22 GRF	1338.2	1350.5	46.2	5.0	1.6		
	245 PALE	4 S/F	1844.0	1844.0		39.0			QL=5 ST=3 TYP=3
245 PALE	4 S/F	2022.0	2022.0		23.0			QL=5 ST=2 TYP=3	
28	200 GORK	44 NS	0607.0E		353.00		15.0		

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

27
Jan 88

JANUARY 1988

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak ²² (10 ⁻²² W/m ² Hz)	Mean (10 ⁻²² W/m ² Hz)		
28	100	GORK	44 NS	0609.0E		351.0D		5.0		
	410	SVTO	43 NS	0625.0	0957.0	552.0D	50.0			QL=5 ST=2 TYP=1
	245	SVTO	43 NS	0625.0	0810.0	552.0D	100.0			QL=1 ST=2 TYP=1
	204	IZMI	44 NS	0700.0E		300.0D	30.0			
	127	TORN	44 NS	0700.0E		450.0D		9.0		V=2
	234	POTS	44 NS	0700.0E	0725.0	455.0D	46.0			
	260	ONDR	44 NS	0900.0E	1042.0U	310.0D	23.0			
	245	SGMR	43 NS	1225.0	2027.0	542.0D	170.0			QL=5 ST=2 TYP=1
	245	PALE	44 NS	1906.0E	1908.0	294.0D	45.0			QL=5 ST=1 TYP=1
	200	HIRA	44 NS	2145.0E	0240.0	580.0D	28.0	16.0		0
	245	LEAR	43 NS	2220.0	1051.0	754.0D	150.0			QL=5 ST=2 TYP=1
	245	LEAR	8 S	0153.0	0153.0	1.0	96.0			QL=5 ST=3 TYP=5
	9300	KISV	2 S/F	0605.8	0607.0	4.5	9.0			
	9100	GORK	1 S	0606.0	0607.1	3.9	8.3			
	15000	KISV	2 S/F	0606.1	0607.0	4.0	3.0			
	2950	GORK	1 S	0606.5	0607.0	1.7	4.4	0.6		
	950	GORK	1 S	0617.4	0617.8	1.8	1.5			
	650	GORK	1 S	0617.6	0617.8	2.5	1.9			
	245	LEAR	8 S	0644.0	0644.0	1.0	68.0			QL=5 ST=2 TYP=5
	245	LEAR	8 S	0808.0	0808.0	1.0	62.0			QL=5 ST=2 TYP=5
	245	LEAR	8 S	0810.0	0810.0	1.0	65.0			QL=5 ST=2 TYP=5
	9100	GORK	22 GRF	0844.2	0848.9	19.7	7.5			
	2950	GORK	2 S/F	0845.6	0846.0	5.8	1.6	0.5		
	245	SVTO	8 S	0907.0	0907.0	1.0	270.0			QL=1 ST=3 TYP=5
	536	ONDR	8 S	1003.4	1003.6	0.3	13.0			
	3100	CRIM	20 GRF	1005.0	1034.0	72.0	4.0	1.0		
	536	ONDR	46 C	1118.2	1118.7	0.9	34.0			
	536	ONDR	8 S	1223.8	1223.9	0.4	57.0			
	536	ONDR	8 S	1333.2	1333.2	0.6	100.0			
	245	PALE	48 C	2023.0	2027.0	13.0	200.0			QL=5 ST=2 TYP=8
410	PALE	4 S/F	2025.0	2025.0		14.0			QL=1 ST=2 TYP=3	
29	221	ABST	43 NS	0500.0		360.0	15.0			QL= ST= TYP=1
	200	GORK	44 NS	0610.0E		352.0D		1.0		
	204	IZMI	44 NS	0700.0E		300.0D	25.0			
	127	TORN	44 NS	0700.0E		450.0D		4.0		V=2
	260	ONDR	44 NS	0830.0E	1120.0U	348.0D	22.0			
	245	SGMR	43 NS	1224.0	2110.0	544.0D	230.0			QL=5 ST=2 TYP=1
	245	PALE	43 NS	2056.0	2124.0	308.0D	24.0			QL=5 ST=2 TYP=1
	200	HIRA	44 NS	2145.0E	0426.0	580.0D	17.0	9.0		WR
	245	LEAR	43 NS	2220.0	0431.0	754.0D	23.0			QL=5 ST=2 TYP=1
	245	LEAR	8 S	0938.0	0939.0	1.0	120.0			QL=5 ST=2 TYP=5
	536	ONDR	42 SER	1110.7	1131.9	67.4	25.0			
	430	KRAK	7 C	1144.0	1150.2U	7.0	13.0U	2.0U		
	650	GORK	22 GRF	1144.6	1145.5	7.6	4.6			
245	PALE	8 S	2023.0	2023.0	1.0	47.0			QL=5 ST=2 TYP=3	
245	PALE	8 S	2042.0	2043.0	2.0	61.0			QL=5 ST=2 TYP=5	
30	410	LEAR	43 NS	0410.0	0426.0	404.0D	3.0			QL=5 ST=2 TYP=1
	100	GORK	44 NS	0619.0E		339.0D		5.0		
	200	GORK	44 NS	0619.0E		339.0D		5.0		
	245	SVTO	43 NS	0624.0	1213.0	556.0D	66.0			QL=1 ST=2 TYP=1
	410	SVTO	43 NS	0624.0	0716.0	556.0D	17.0			QL=3 ST=2 TYP=1
	204	IZMI	44 NS	0700.0E		300.0D	20.0			
	127	TORN	44 NS	0700.0E		420.0D		6.0		V=2
	260	ONDR	44 NS	0900.0E	1005.6	314.0D	72.0			
	200	HIRA	44 NS	2145.0E	0146.0	580.0D	45.0	10.0		MR
	245	LEAR	43 NS	2221.0	0224.0	752.0D	41.0			QL=5 ST=2 TYP=1
	100	HIRA	43 NS	2253.0	0100.0U	210.0	50.0U	20.0U		
	500	HIRA	42 SER	0410.0	0424.8	28.0	27.0			MR
	245	LEAR	8 S	0604.0	0604.0	1.0	130.0			QL=5 ST=2 TYP=5
	234	POTS	42 SER	1014.6	1015.6	4.2	550.0	5.0		
	237	TRST	47 GB	1014.8	1015.8	1.2	879.0			
200	GORK	4 S/F	1014.9	1015.8	1.5	290.0				
100	GORK	4 S/F	1014.9	1015.8	1.4	9750.0				
204	IZMI	41 F	1015.0	1016.0	3.5	270.0				

SOLAR RADIO EMISSION--OUTSTANDING OCCURRENCES

JANUARY 1988

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	245	SVTO	8 S	1015.0	1015.0	1.0	480.0			QL=1 ST=2 TYP=5
	245	LEAR	4 S/F	1015.0	1015.0	825.0	380.0			QL=5 ST=3 TYP=5
	30	POTS	41 F	1015.0	1015.6	3.0	2200.0	2000.0		
	29	UPIC	42 SER	1015.5	1016.1	121.4				
	237	TRST	41 F	1015.5	1015.7	0.5	152.0			
	33	UPIC	42 SER	1015.5	1015.8	122.8				
	408	TRST	41 F	1015.6	1015.7	0.3	51.0			
	237	TRST	46 C	1017.3	1017.4	0.7	58.0			
	237	TRST	46 C	1017.3	1017.6	0.9	206.0			
	408	TRST	45 C	1017.4	1017.6	0.3	57.0			
	237	TRST	46 C	1213.8	1213.9	0.2	103.0			
	237	TRST	46 C	1213.8	1213.9	0.2	192.0			
	408	TRST	45 C	1213.8	1213.9	0.2	48.0			
536	ONDR	2 S/F	1329.3	1329.4	0.4	77.0				
430	KRAK	8 S	1351.5	1351.5	0.2	4.0				
31	245	PALE	43 NS	0006.0	0019.0	237.00	30.0			QL=5 ST=2 TYP=1
	200	GORK	44 NS	0606.0E		349.00		5.0		
	410	SVTO	43 NS	0623.0	0832.0	558.00	10.0			QL=3 ST=2 TYP=1
	245	SVTO	44 NS	0624.0E	1123.0	555.00	79.0			QL=1 ST=2 TYP=1
	204	IZMI	44 NS	0700.0E		300.00	40.0			
	260	ONDR	44 NS	0830.0E	0832.4	352.00	17.00			
	127	TORN	44 NS	1050.0E		230.00		1.0		V=1
	200	HIRA	44 NS	2145.0E	2250.0	580.00	9.0	4.0		WR
	245	LEAR	43 NS	2221.0	0256.0	752.00	120.0			QL=5 ST=2 TYP=1
	234	POTS	4 S/F	0730.5	0732.7	2.9	110.0	30.0		
	200	GORK	4 S/F	0830.8	0832.4	2.8	4600.0			
	204	IZMI	5 S	0831.0	0832.0	3.0	270.0	180.0		
	2950	GORK	20 GRF	0950.5	1000.9	22.1	3.5			
	2950	GORK	2 S/F	1039.9	1042.6	5.7	1.8	0.7		
	810	KRAK	41 F	1041.0	1042.0	1.5	2.0	1.0		
	430	KRAK	7 C	1041.8	1045.0		12.0			
	430	KRAK	7 C	1041.8	1042.5	4.8	18.0	4.0		
	536	ONDR	41 F	1041.8	1042.7	5.3	45.0			
	245	LEAR	4 S/F	2335.0	2335.0		120.0			QL=5 ST=2 TYP=5
245	PALE	4 S/F	2335.0	2335.0		140.0			QL=5 ST=2 TYP=5	
245	LEAR	4 S/F	2346.0	2346.0		160.0			QL=5 ST=3 TYP=5	
245	LEAR	4 S/F	2346.0	2346.0		160.0			QL=5 ST=3 TYP=5	

Reports are received routinely from the following observatories:

LEAR = Learmonth

OTTA = Ottawa

PALE = Palehua

SGMR = Sagamore Hill

SVTO = San Vito

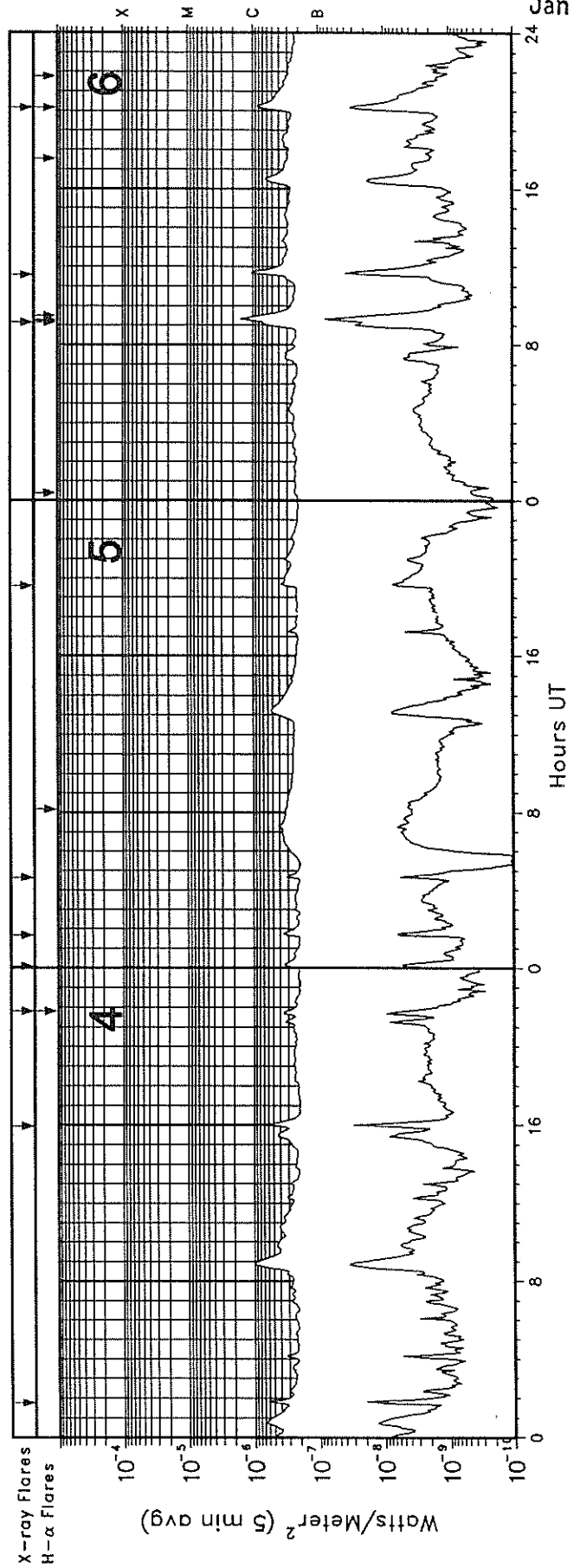
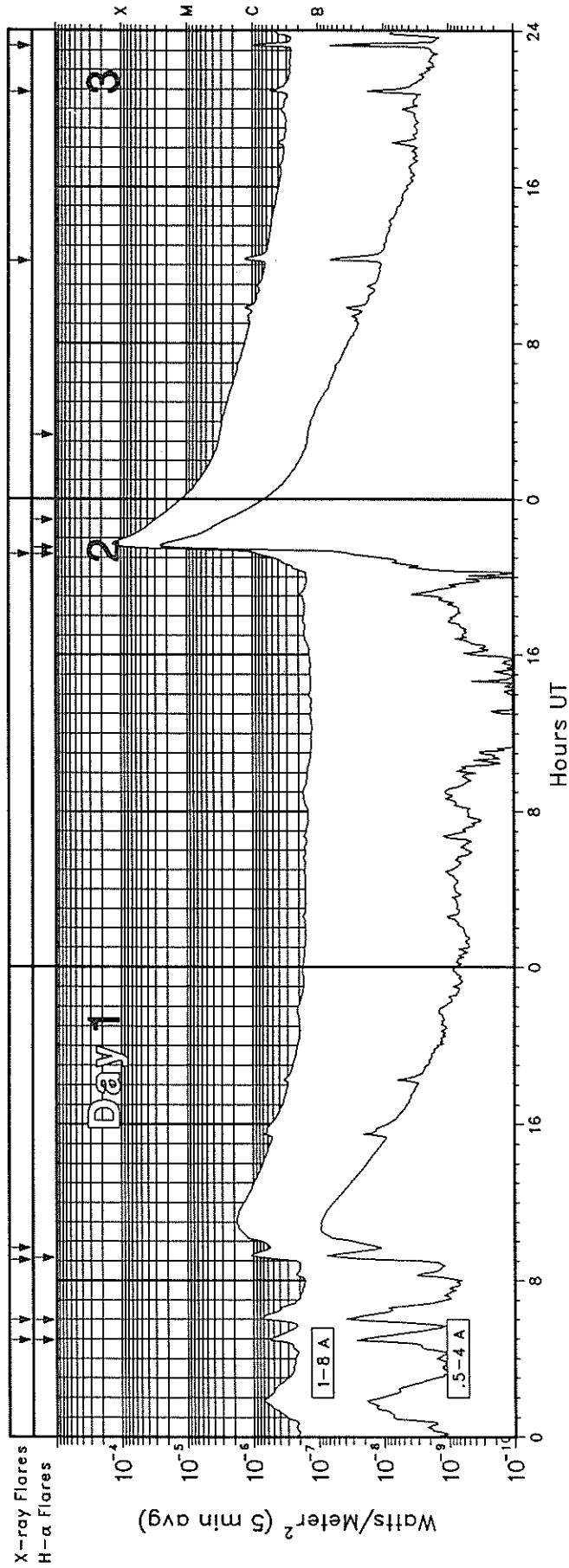
Explanation of Type Code:

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 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	

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.

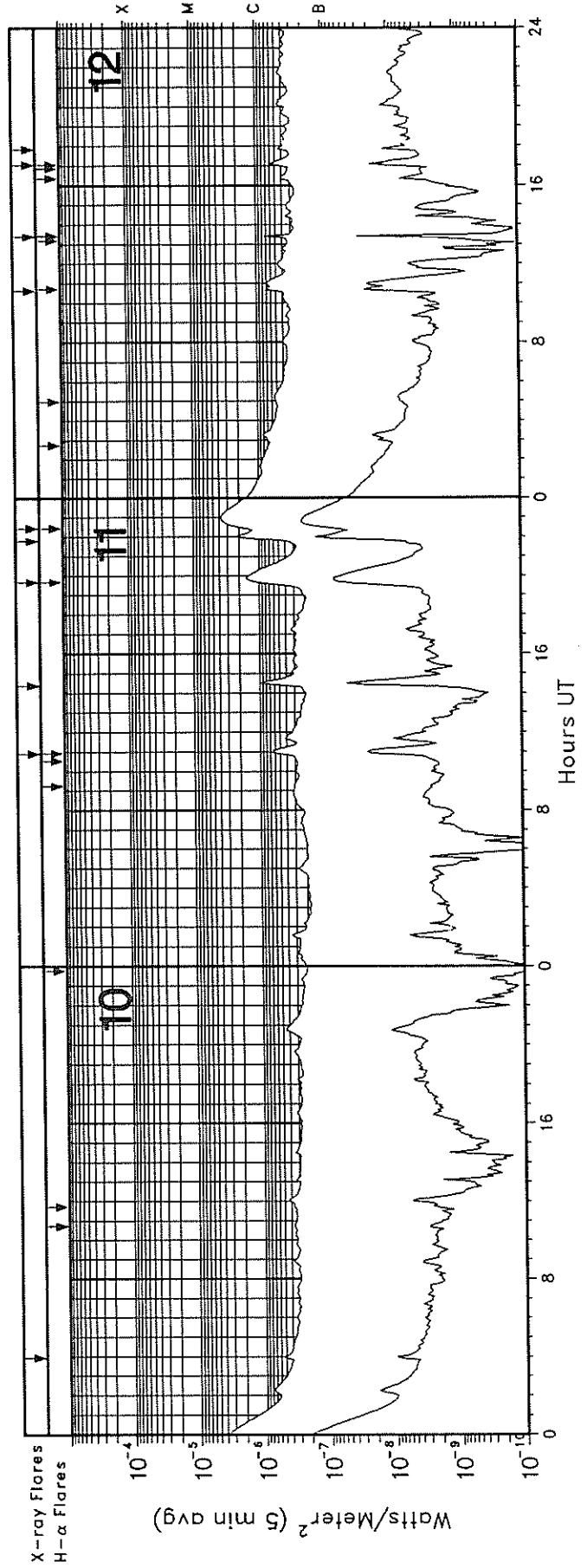
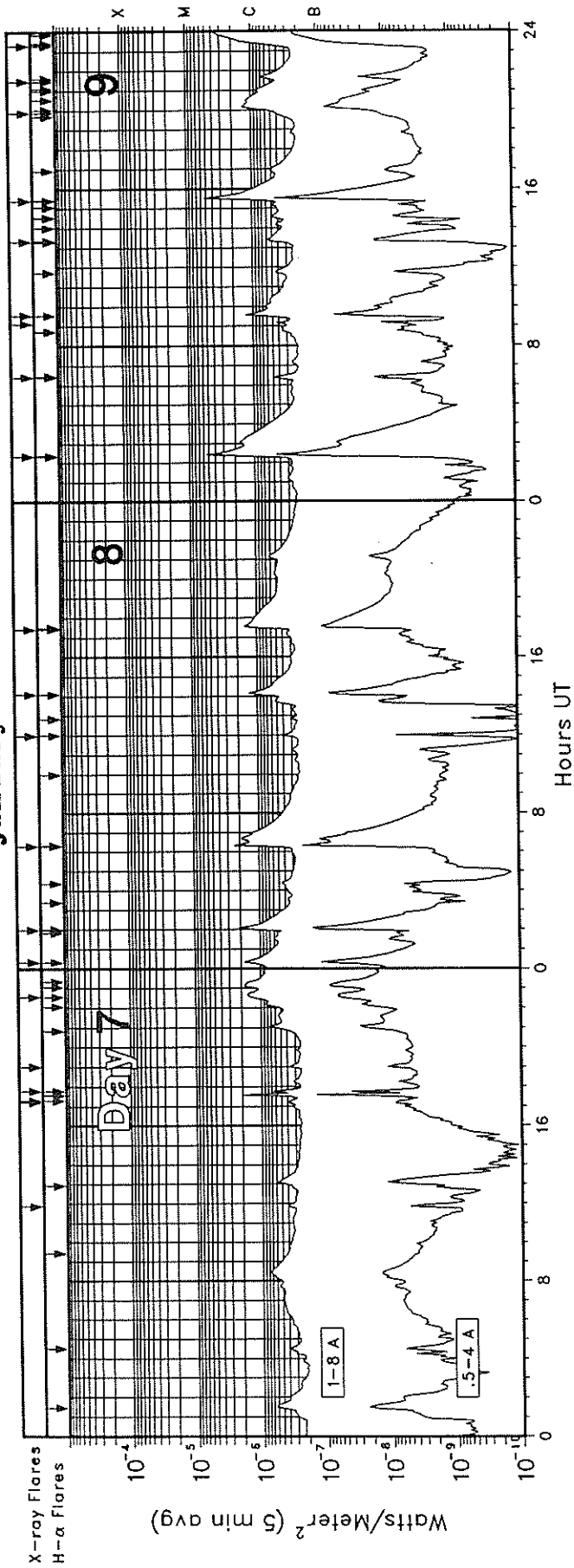
GOES-7 X-RAY DETECTOR

January 1988



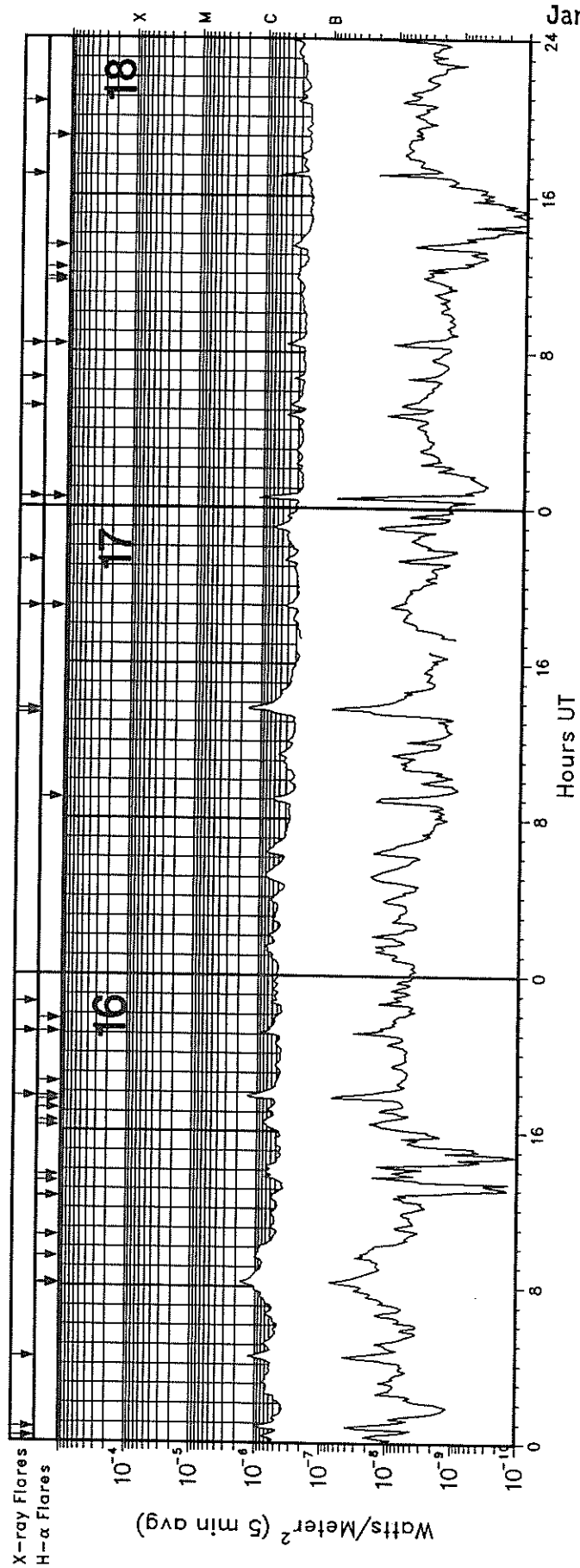
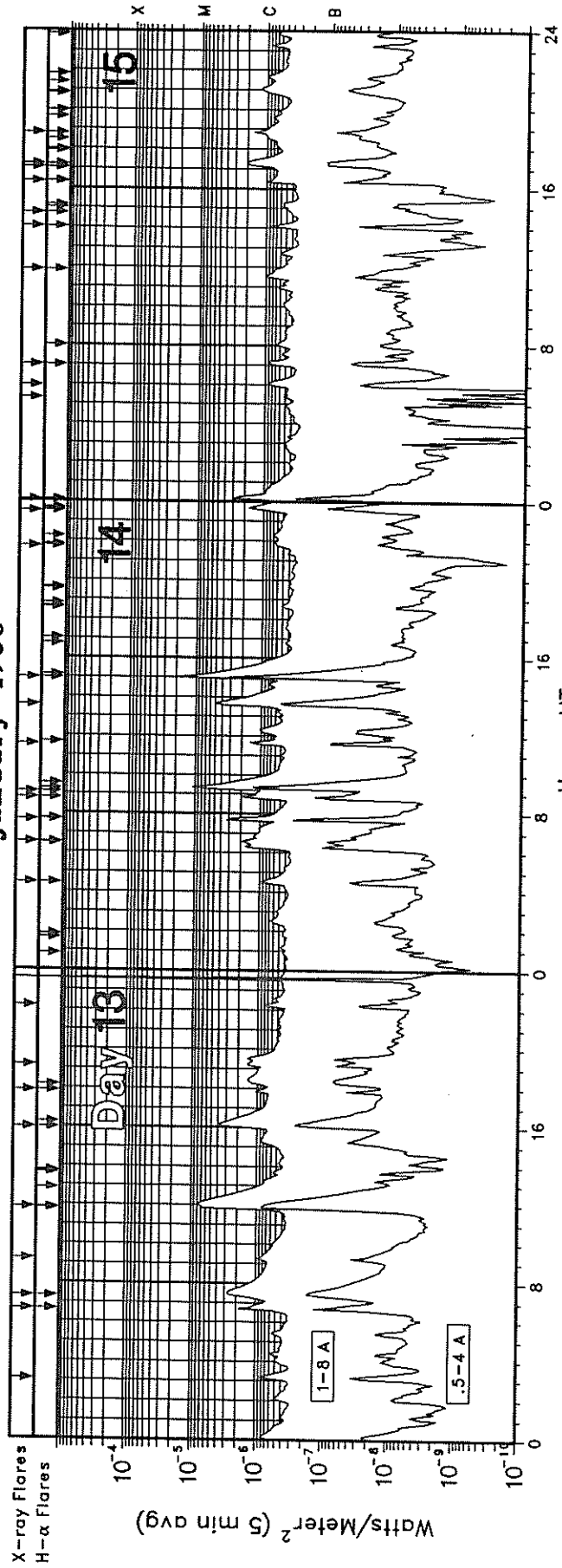
GOES-7 X-RAY DETECTOR

January 1988



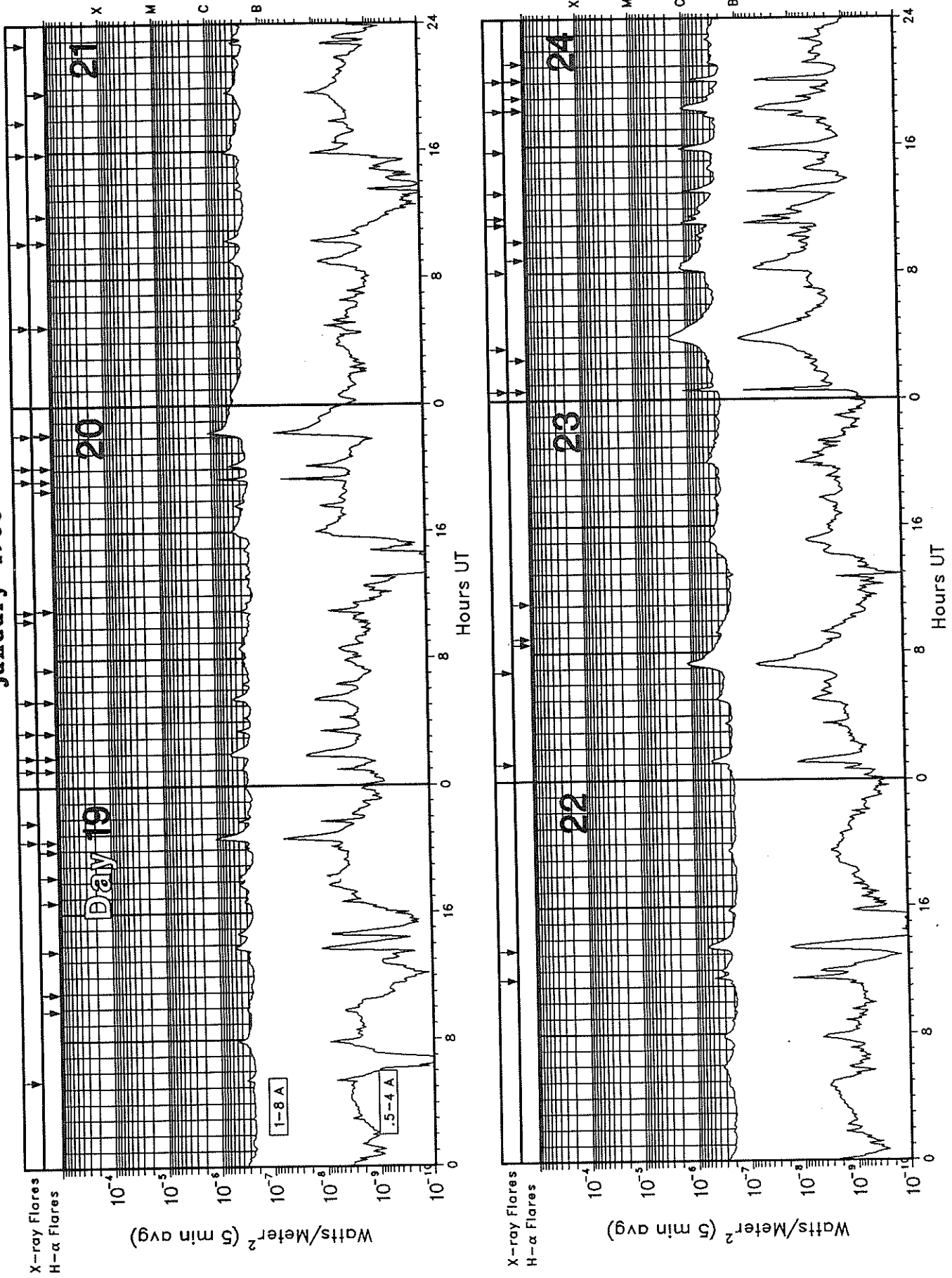
GOES-7 X-RAY DETECTOR

January 1988



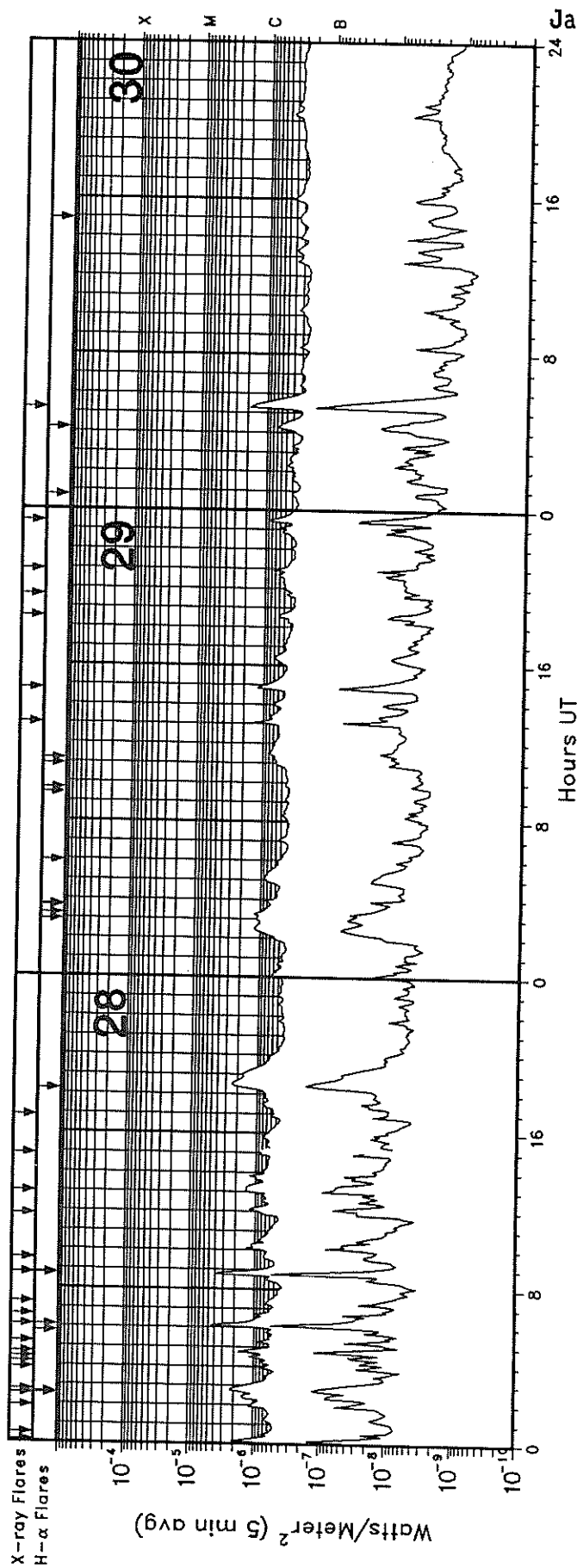
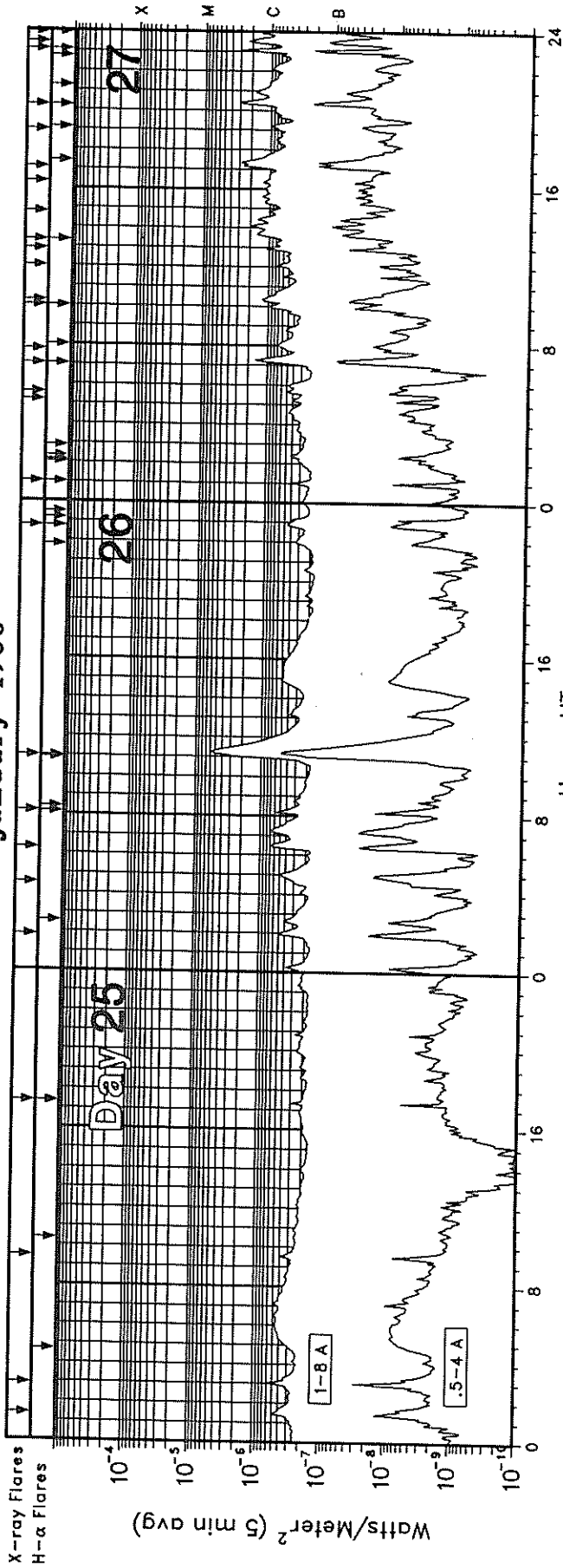
GOES-7 X-RAY DETECTOR

January 1988



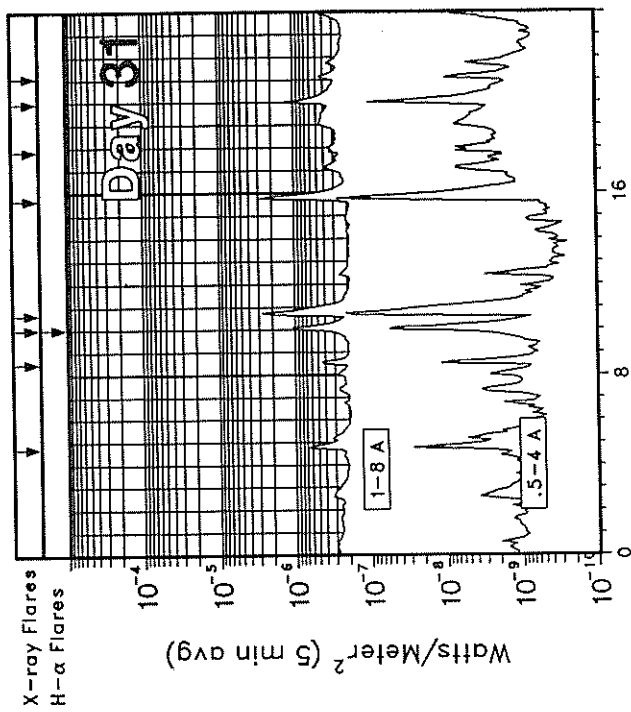
GOES-7 X-RAY DETECTOR

January 1988



GOES-7 X-RAY DETECTOR

January 1988



GOES SOLAR X-RAY FLARES
Preliminary Listing

January 1988

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/USAF Region
01	0456	0458	0505	S36	E07	SF	B6.5	4912
01	0558	0604	0616	S35	E06	SF	B8.4	4912
01	0903	0919	0936				C1.1	4912
01	0940	1055	1300D				C2.0	4912
02	2111	2135	0009	S34	W18	3B	X1.4	4912
03	1213	1220	1227				C1.4	
03	2052	2057	2103				B6.1	
03	2313	2320	2323				C1.6	
04	0146	0152	0154				B8.6	
04	1557	1602	1607				B8.2	
04	2148	2150	2157	N32	E78	SF	B3.9	4919
05	0005	0011	0024				B3.8	
05	0140	0145	0155				B4.1	
05	0439	0444	0450				B3.6	
05	1936	1940	2015				B4.2	
06	0909	0920	0941	N32	E61	SF	C1.7	4919
06	1135	1144	1152				C1.2	4919
06	2009	2012	2035	N29	E48	SF	B9.5	4919
07	1151	1155	1159				B5.0	
07	1712	1715	1717				B4.5	4919
07	1717	1738	1750	N33	E42	SF	C2.9	4919
07	1747	1749	1755	S24	E53	SF	C1.1	4921
07	1900	1903	1905				B4.8	
07	2233	2240	2258	N29	E39	SF	C1.7	4919
08	0020E	0023	0035	S23	E48	SF	C1.9	4921
08	0159	0204	0223	S24	E48	SF	C2.3	4921
08	0618	0620	0655	S25	E46	SF	C2.6	4921
08	1159	1203	1207				B4.9	
08	1406	1409	1421	S25	E42	SF	C1.4	4921
08	1725E	1733	1750	S25	E41	SF	C1.7	4921
09	0221	0226	0244	S24	E33	1N	C6.5	4921
09	0625	0627	0633	N34	E25	SF	B5.4	4919
09	0908	0911	0914				B5.8	
09	0933	0936	0940	S25	E32	SF	C1.6	4921
09	1319	1323	1343	N35	E22	SF	B7.0	4919
09	1524E	1533	1602	S23	E26	1N	C6.7	4921
09	1952	2012	2107	N32	E16	SF	C1.4	4919
09	2129	2141	2157	S25	E23	SF	B8.2	4921
09	2317	2358	0105	N33	E15	1N	C3.7	4919
10	0356	0401	0404				B6.7	
11	1055	1101	1113				B7.2	
11	1424	1434	1443				C1.0	
11	1940E	1946	2028	N25	W37	SF	C1.5	4923
11	2148	2205	2320	N31	W16	SN	C2.4	4919
11	2227	2308	2319	N31	W13	SF	C4.0	4919
12	1038	1102	1117				B7.9	
12	1324	1327	1333	N26	W44	SF	C1.0	4923
12	1703	1706	1716	N29	W27	SF	B6.8	4919
12	1750	1754	1802				B4.6	
13	0304	0312	0322				B9.3	
13	0639	0645	0652	N21	W58	SF	C2.7	4923
13	0719	0725	0742	N31	W31	SF	C2.9	4919
13	0913	0916	0922				C1.1	
13	1151E	1154	1211	S19	E80	2B	C8.3	4927
13	1559	1607	1639	N32	W32	SF	C4.5	4919
13	1752	1752	1757	S27	W19	SF	C1.2	4921
13	1910	1915	1922				C1.6	
13	2212	2214	2220	S26	W22	SF	C1.0	4921
14	0427	0427	0433	N17	W66	SF	C1.1	4928
14	0631	0634	0649	N32	W41	SF	C2.0	4919
14	0739	0743	0750	N21	W74	SF	C5.6	4923
14	0847	0849	0859	S38	E52	SN	C2.9	4925
14	0905	0919	0945	S38	E51	1N	M1.3	4925
14	1134	1141	1145				C1.8	
14	1334	1342	1353				C5.6	
14	1458	1502	1534	S37	E48	1B	M2.3	4925
14	2142	2144	2200	S18	E66	SF	B8.0	4927
14	2330	2343	2353				C1.9	
15	0005	0010	0031	S39	E44	SF	C3.3	4925
15	0517	0521	0525				B5.6	
15	0556	0600	0620	S43	E45	SF	B9.0	4925
15	0659	0700	0725	S37	E38	SF	C1.1	4925
15	1151	1206	1234	S38	E38	SF	C1.1	4925
15	1402	1407	1427	S18	E55	SF	C1.1	4927
15	1444	1509	1521	S37	E37	SF	B6.7	4925
15	1620	1622	1629	S34	E31	SF	C1.2	4925
15	1703	1722	1745	S38	E34	SF	C2.1	4927
15	1713	1713	1724	S18	E54	SF	C2.2	4927
15	1848	1850	1854	S34	E29	SF	C1.8	4925
16	0017	0021	0031				B8.7	
16	0045	0053	0059				C1.1	
16	0421	0426	0432				C1.4	
16	1746	1748	1813	S18	E40	SF	C1.7	4927
16	2105	2109	2115	S41	E28	SF	C1.0	4925
16	2236	2240	2243				B8.0	
17	1325	1345	1354				C1.5	
17	1337	1345	1353				C1.7	
17	1855E	1859U	1902D	S37	E86	SF	B5.0	
17	2117	2124	2131				B5.0	
18	0032	0032	0040	S19	E21	SF	C1.4	4927
18	0510	0512	0530	S22	W77	SN	B4.2	4921
18	0639	0643	0647				B3.6	
18	0823	0823	0829	S31	E48	SF	B5.2	4931
18	1702	1707	1712				B6.8	
18	2045	2053	2058				B3.6	
19	0525	0528	0536				B3.7	
19	2033	2042	2110	S19	W00	1F	C1.1	4927
19	2145	2148	2152				B5.0	
20	0102	0102	0105	S19	W01	SF	B4.6	4927
20	0149	0150	0201	S31	E23	SF	B5.9	4931
20	0323	0327	0331				B4.8	
20	0521	0522	0530	S19	W04	SF	B5.0	4927

GOES SOLAR X-RAY FLARES
Preliminary Listing

January 1988

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/USAF Region
20	1028	1031	1033				B3.0	
20	1101	1104	1106				B4.3	
20	1917	1921	1936	S19	W12	SN	C1.2	4927
20	2008	2011	2032	S36	W32	SF	B5.0	4925
20	2210	2215	2241	S20	W19	SF	C1.2	4927
21	0459	0500	0507	S34	W33	SF	B3.8	4925
21	1016	1022	1030				B4.7	
21	1550	1551	1556	N21	W57	SF	B5.7	4930
21	1752	1755	1757				B4.0	
21	2244	2251	2255				B4.1	
22	1128	1133	1137				B5.7	
22	1318	1329	1346				B6.6	
23	0104	0108	0120				B5.1	
23	0650E	0715U	0730D				C1.2	
24	0035	0036	0045	S34	W71	1N	C1.7	4925
24	0317E	0355U	0500D				C2.2	
24	0804	0809	0826	S36	W76	1F	C1.3	4925
24	1103	1109	1117				C1.5	
24	1128	1132	1136				B9.8	
24	1303	1309	1314				C1.3	
24	1539	1547	1556				C1.2	
24	1813	1820	1836	S36	W88	1N	C1.2	4925
24	2006	2008	2015	S36	W90	SN	C1.0	4925
25	0123	0129	0138				B5.6	
25	0256	0302	0305				B8.2	
25	0928	0932	0937				B4.0	
25	1721	1724	1741	S21	W74	SF	B3.7	4927
26	0151	0201	0209				B5.1	
26	0431	0502	0512				B5.0	
26	0618	0631	0644				B7.0	
26	0810	0814	0817				B7.6	
26	1100	1103	1113	S21	W90	1F	C5.9	4927
26	2246	2312	2317	N18	W49	SF	B4.4	4934
27	0101	0103	0108	N19	W48	SF	B4.8	4934
27	0511	0515	0520				B4.4	
27	0534	0540	0547				B5.1	
27	0702	0706	0736	N19	W52	SF	C1.5	4934
27	0745	0802	0817				B7.4	
27	0959	0959	1009	N19	W53	SF	C1.2	4934
27	1014	1019	1033				C1.3	
27	1201	1206	1212				B7.7	

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/USAF Region
27	1252	1258	1302				C1.2	
27	1320	1359	1417D	N19	W59	SF	C2.4	4934
27	1447	1451	1453				C1.2	
27	1620	1623	1625				C1.5	
27	1704	1725	1728				C3.2	
27	1859	1903	1905				B9.2	
27	2015	2023	2055	N21	W60	SB	C3.6	4934
27	2304	2305	2316	N20	W61	SN	C4.3	4934
27	2326	2329	2341				C2.6	
27	2356	2358	0013	N19	W61	SF	C1.9	4934
28	0007	0012	0016				C2.3	
28	0030	0033	0035				B8.7	
28	0154	0159	0204				C1.3	
28	0232	0238	0249	N19	W62	SF	C1.7	4934
28	0243	0252	0256				C2.4	
28	0352	0356	0404				B8.7	
28	0412	0415	0418				B8.9	
28	0426	0431	0436				C1.2	
28	0442	0449	0453				C2.0	
28	0514	0519	0522				B9.8	
28	0606	0606	0620	N19	W64	SN	C6.6	4934
28	0638	0642	0644				C1.1	
28	0716	0719	0722				B8.3	
28	0847	0847	0905	N18	W65	1N	C9.6	4934
28	0932	1006	1013				C1.5	
28	1149	1209	1215				C1.4	
28	1259	1304	1307				C2.4	
28	1454	1459	1505				B9.5	
28	1651	1655	1657				B7.8	
29	1301	1306	1310				C1.5	
29	1446	1454	1504				C1.2	
29	1830	1834	1845				B6.2	
29	1937	1940	1943				B5.2	
29	2054	2057	2101				B7.6	
29	2324	2330	2334				C1.1	
30	0512	0516	0533				C1.9	
31	0443	0449	0456				B7.4	
31	0830	0834	0838				B6.4	
31	1001	1002	1004	N19	E60	SF	C1.2	4939
31	1040	1046	1051				C3.1	
31	1541	1549	1554				C3.1	
31	1749	1753	1756				B3.6	
31	1957	2002	2006				C1.7	
31	2105	2109	2117				B4.7	

Preliminary GOES Satellite Data
Daily Average X-ray Background

February 1987 - January 1988

Day	1987 Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1988 Jan
1	<A1.0	<A1.0	A1.1	A4.9	A4.8	---	B1.2	B1.1	A6.8	B2.2	A7.6	B2.0
2	<A1.0	<A1.0	<A1.0	A5.0	A3.2	A1.7	B1.2	B1.3	A6.8	B3.8	A8.3	B1.4
3	<A1.0	<A1.0	<A1.0	A8.8	A2.7	A1.4	B1.0	B1.3	A7.7	B3.4	A5.2	B4.6
4	<A1.0	<A1.0	A2.2	A8.6	A2.7	A1.3	A6.7	B1.3	B1.2	B3.4	A4.8	B2.4
5	<A1.0	<A1.0	A2.3	A8.1	A2.3	A1.2	A6.5	B1.4	B1.1	B2.1	A5.3	B2.3
6	<A1.0	A2.6	B2.7	A8.0	A2.0	A1.3	A6.9	B1.4	B1.0	B2.1	A7.8	B2.5
7	<A1.0	A4.1	---	A6.5	A1.9	A1.5	B1.7	B2.7	B1.1	B1.7	A8.5	B2.5
8	<A1.0	A5.2	---	A5.9	A1.9	A5.0	B2.8	B2.2	B1.7	B1.2	A9.1	B2.7
9	<A1.0	A3.1	---	A5.3	A2.8	A3.5	B2.1	B1.6	B2.1	A8.8	B1.4	B2.3
10	<A1.0	A1.9	B2.2	A5.7	A6.3	A3.2	B2.3	B1.7	B2.0	A8.8	A9.4	B3.0
11	<A1.0	A2.2	B1.9	A4.8	A8.5	A2.7	B2.9	B1.6	B1.8	B1.9	B2.3	B2.1
12	<A1.0	A3.0	B1.6	A4.9	A8.7	A1.9	B2.9	B1.3	B1.7	B1.4	B3.2	B3.1
13	<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	A5.3	B1.4	B1.8	A7.9	A3.3	B1.9	A9.5	B2.1	A8.2	B1.3	B4.0
15	<A1.0	A1.9	B1.2	B2.0	A7.3	A4.3	B1.2	A7.1	B2.2	A9.7	B1.4	B3.9
16	<A1.0	<A1.0	B2.2	B2.8	A7.1	A5.3	B1.4	A4.6	B2.6	B1.1	B1.2	B5.1
17	<A1.0	<A1.0	B2.6	B1.9	A8.9	A4.0	B1.1	A5.2	B2.1	B1.1	A9.5	B3.6
18	<A1.0	<A1.0	B2.9	B1.9	A8.6	A5.2	B1.1	A3.8	B2.6	B1.6	A8.9	B2.2
19	<A1.0	A1.0	B2.2	B2.0	A7.4	B1.1	B1.2	A4.7	B2.4	B2.7	A7.3	B2.5
20	<A1.0	A1.3	B1.5	B1.8	A6.4	B1.8	B1.3	A7.6	B1.7	B5.2	A7.1	B2.3
21	<A1.0	A1.5	A7.2	B2.1	A7.7	B2.0	B1.6	A5.9	B1.5	B3.5	A9.8	B2.4
22	<A1.0	A1.4	A3.5	B2.4	B1.2	---	B1.6	A5.0	B1.6	B3.6	B1.5	B2.0
23	<A1.0	A1.7	A2.1	B1.6	A9.7	B3.9	B1.5	A3.4	B1.4	B3.0	B1.0	B2.0
24	A1.7	A5.3	A2.2	B3.1	B1.1	B3.5	B1.5	A3.7	B1.4	B2.9	B2.3	B3.1
25	A2.3	A4.2	A1.8	B4.9	A9.5	B3.4	B1.4	A3.0	B1.8	B2.9	B4.9	B1.9
26	A2.3	A3.8	A1.4	B3.6	A8.3	B3.6	B1.1	A2.7	B1.9	B2.9	B4.7	B2.2
27	A1.5	A3.2	A1.7	B2.3	A5.5	B3.7	B1.1	A7.6	B2.5	B2.0	B3.4	B4.6
28	<A1.0	A2.2	A1.7	B2.3	A4.6	B3.2	A8.6	B1.0	B2.7	B1.7	B2.3	B5.1
29		A1.2	A1.7	B1.4	A4.0	B2.2	A6.6	A9.8	B1.9	B1.7	B1.8	B4.4
30		A1.2	A2.6	B1.4	A3.9	B1.6	A7.6	A7.0	B2.7	B1.1	B2.5	B2.7
31		<A1.0		A6.7		B1.4	B1.3		B2.7		---	B2.1

MASS EJECTIONS FROM THE SUN

JANUARY 1988

Sta	Day	Observed UT			Location		Freq or Wavelength	Kind of Event
		Start	Max	End	RA ^o	R/R _o		
KHAR	Jan 01	1017		1025	197	0.53-0.56	H-alpha	S
PALE	Jan 02	- 2128.0		2242.0			Meter	IV
PALE	Jan 02	- 2132.0		2150.0			Meter	II
CULG	Jan 02	- 2138.0		2147.0			Meter; dekameter	II
CULG	Jan 02	- 2147.5		2154.0			Dekameter	II
CULG	Jan 02	2155.0		2205.0			Meter; dekameter	II
CULG	Jan 02	2212.0		2215.0			Meter	II
LEAR	Jan 02	- 2216.0	03/0920.0				Meter	IV
CULG	Jan 02	- 2220.0		2247.0			Meter	IV
CULG	Jan 02	2220.5		2222.0			Meter	II
CULG	Jan 02	2224.5		2226.0			Meter	II
CULG	Jan 02	2237.0		2243.0			Meter	II
KHAR	Jan 11	0915		1010	125	1.00-1.02	H-alpha	S
CULG	Jan 13	0645.0		0649.0			Meter	II
KHAR	Jan 22	1050	1100	1125	D 208	0.52-0.57	H-alpha	S
KHAR	Jan 24	0929	E	0935	244-247	0.92	H-alpha	S
KHAR	Jan 24	1022	1030	U 1041	235	1.00-1.03	H-alpha	S
KHAR	Jan 24	1104		1121	235	1.00-1.03	H-alpha	S
KHAR	Jan 25	1022	E 1024	U 1132	235	1.00	H-alpha	S
KHAR	Jan 26	0945	E	1120	D 296	0.86	H-alpha	S
KHAR	Jan 29	0918	E	0942	D 290	1.00-1.03	H-alpha	S
KHAR	Jan 29	0915	E	0932	049	0.56	H-alpha	S
KHAR	Jan 29	1017		1025	290	1.00-1.03	H-alpha	S
KHAR	Jan 29	1029		1055	D 290	1.00-1.02	H-alpha	S
KHAR	Jan 29	1038	E	1050	067	1.00	H-alpha	S
KHAR	Jan 30	0850	E	0908	D 289	1.00	H-alpha	S
KHAR	Jan 30	0930		1010	D 289	1.00	H-alpha	S
WEIS	Jan 31	1050.9		1053.4			42-30 MHz	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
 KHAR = Kharkov
 LEAR = Learmonth
 WEIS = Weissenau

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

ACTIVE PROMINENCES AND FILAMENTS

39
Jan 88

JANUARY 1988

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	ADF	0910	0918D	S31	E17	01	2.7	1				V	KHAR		
01	ADF	0910	0918D	S36	E05	01	1.8	1				V	KHAR		
01	ADF	0957E	1035	S32	E18	01	2.8	1				V	KHAR		
01	ADF	0957E	1035	S37	E06	01	1.9	1				V	KHAR		
01	DSD	1017	1025	S36	E04	01	1.7	1				V	KHAR		
01	DSD	1017	1025	S36	W11	12	31.5	1				V	KHAR		
02	DSD	0650E	0934D	S36	W06	01	1.8		02	9	9	E	LEAR	4912	
02	ADF	0805E	1445D	S35	W12	01	1.4	2	12	9	9	E	SVTO	4912	
02	BSL	0814E	0938D	S40	E90	01	9.7	1				C	ABST		
02	ADF	0815E	1038D	S35	W13	01	1.3	2	11	9	9	E	LEAR	4912	
02	SDF	1300E	1520D	S53	E75	01	9.0		47	0	0	E	RAMY		
02	ADF	2037E	2352D	S37	W29	12	31.5	2	11	9	9	E	HOLL	4912	
03	LPS	0024E	0310D	S38	W22	01	1.2			9	9	E	LEAR	4912	Flare Associated
03	LPS	0035E	0150D	S38	W22	01	1.2			9	9	E	PALE	4912	
03	MDP	0741E	0815D	.10	45			0				P	MANI		
03	AFS	0741E	0815D	N39	E20	01	4.9	0				P	MANI		
03	AFS	0741E	0815D	N53	E04	01	3.7	0				P	MANI		
03	AFS	0741E	0815D	S49	E44	01	7.0	0				P	MANI		
03	BSL	0805	0830D	S22	E90	01	10.2	1-				C	CATA		
03	BSL	0843E	0855	S22	E90	01	10.3	1-				C	CATA		
03	BSL	0911	0920D	N30	E90	01	10.5	2				C	CATA		
03	BSL	1019E	1030	S21	E90	01	10.3	1-				C	CATA		
03	BSL	1035	1041	S21	E90	01	10.3	1-				C	CATA		
03	BSL	1056	1120	S27	E90	01	10.5	1-				C	CATA		
03	BSL	1110	1125	S36	E90	01	10.7	1				C	CATA		
03	ADF	1110E	1317D	S38	W32	12	31.9	2	11	9	9	E	SVTO	4912	
03	SDF	1131E	0746D	S30	E05	01	3.9	1				C	CATA		
03	SDF	1131E	0746D	S46	E30	01	6.0	1				C	CATA		
03	ADF	1210E	2148D	S35	W35	12	31.7	2	17	9	9	E	RAMY	4912	
03	SDF	1510E	1510D	S48	E16	01	5.0		43	0	0	E	HOLL		
03	ADF	1523E	2359D	S36	W30	01	1.2	1	04	8	9	E	HOLL	4912	
03	SDF	1600E	1700D	S35	W03	01	3.4		08	0	0	E	RAMY		
03	ASR	1659E	2143D	N30	E90	01	10.8			9	9	E	RAMY		
03	ADF	2128E	0222D	S35	W31	01	1.4		06	7	9	E	PALE	4912	
03	ADF	2316E	1018D	S34	W31	01	1.5	2	10	9	9	E	LEAR	4912	
04	ASR	0031E	0222D	N29	E88	01	10.9			9	9	E	PALE		
04	ASR	0050E	1018D	N21	E86	01	10.6			9	9	E	LEAR		
04	ASR	0239E	1018D	S21	E88	01	10.8			9	9	E	LEAR		
04	AFS	0530E	1018D	N18	W59	12	30.8		02	6	6	E	LEAR		
04	BSL	0758E	1010D	N20	W90	12	28.5	1				C	ABST		
04	BSL	0758E	1010D	N48	E90	01	11.9	1				C	ABST		
04	SDF	0839E	0028D	N10	W68	12	30.3		18	0	0	E	LEAR		
04	SDF	0839E	0028D	N17	E70	01	9.7		18	0	0	E	LEAR		
04	SDF	0919E	1002D	S70	E52	01	9.1		40	0	0	E	LEAR		
04	APR	0925	1010D	N30	E90	01	11.5	1				C	ABST		
04	DSD	1143E	1244D	S26	E42	01	7.7		03	9	9	E	RAMY		
04	DSD	1151E	1244D	S19	E19	01	5.9		02	9	9	E	RAMY	4917	
04	SDF	1500E	1500D	N60	E12	01	5.7		15	0	0	E	HOLL		
04	SDF	1500E	1500D	N63	W13	01	3.5		22	0	0	E	HOLL		
04	ASR	1543E	1640D	N32	E88	01	11.6			9	9	E	HOLL		
04	ADF	1551E	2242D	S35	W39	01	1.5	1	06	9	9	E	HOLL	4912	
04	ADF	1750E	1803D	S35	W46	01	1.1	1	06	9	9	E	PALE	4912	
04	ADF	1835E	0221D	N37	E00	01	4.8	1	25	9	9	E	PALE		
04	ASR	1835E	1836D	N33	E87	01	11.7			9	9	E	PALE		
04	DSD	1835E	1839D	S37	W29	01	2.4		02	9	9	E	PALE	4912	
05	ADF	0005E	1018D	S34	W45	01	1.4	2	10	9	9	E	LEAR	4912	
05	SDF	0221E	1728D	N41	E01	01	5.2		17	0	0	E	PALE		
05	ASR	0239E	1018D	S21	E88	01	11.8			9	9	E	LEAR		
05	ADF	0743E	0744D	S37	W47	01	1.5	1	11	9	9	E	SVTO	4902	
05	ADF	0743E	1455D	S37	W47	01	1.5	1	11	9	9	E	SVTO	4912	
05	BSL	0750E	1005D	N45	E90	01	12.8	1				C	ABST		
05	BSL	0808	1005D	N20	W90	12	29.5	1				C	ABST		
05	BSL	0822	1005D	S40	E90	01	12.7	1				C	ABST		
05	DSD	0831E	0835D	S31	W65	12	31.2	1				C	CATA		

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 1988

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
05	SDF	0839E	0028D	N10	W68	12	31.2		18	0	0	E	LEAR	
05	SDF	0839E	0028D	N17	E70	01	10.7		18	0	0	E	LEAR	
05	ADF	1313E	1444D	S18	E05	01	5.9		04	9	9	E	SVTO 4917	
05	ADF	1728E	0319D	S34	W47	01	2.0	1	18	9	9	E	PALE 4912	
05	AFS	1809E	0319D	N30	E69	01	11.2		01	9	9	E	PALE 4919	
05	AFS	1854E	0319D	S23	E14	01	6.9		02	9	9	E	PALE	
05	ASR	1934	0319D	N32	E73	01	11.6			9	9	E	PALE 4919	
05	AFS	2300E	1036D	S24	E11	01	6.8		02	9	5	E	LEAR	
05	ADF	2300E	1036D	S34	W57	01	1.4	1	07	9	7	E	LEAR 4912	
06	ADF	0925E	1439D	N37	E72	01	12.2	1	11	9	9	E	SVTO 4919	
06	ADF	0927E	1439D	S40	W75	12	31.3	1	16	9	9	E	SVTO 4912	
06	AFS	0929E	1439D	S24	E05	01	6.8		02	9	9	E	SVTO	
06	DSD	0951E	1439D	S25	E72	01	12.0		01	9	9	E	SVTO	
06	ADF	1353E	1532D	S32	W54	01	2.3	2	26	9	9	E	RAMY 4912	
06	DSD	1356E	1532D	S23	E06	01	7.0		03	9	9	E	RAMY	
06	ADF	1428E	1532D	S24	E61	01	11.3	2	13	9	9	E	RAMY	
06	DSD	1435E	1532D	N30	E55	01	10.9		03	9	9	E	RAMY 4919	
06	AFS	1435E	1532D	N32	E58	01	11.2		01	9	9	E	RAMY 4919	
06	AFS	2015E	0256D	N28	E51	01	10.8		03	9	9	E	PALE 4919	
06	AFS	2035E	0256D	S23	E00	01	6.8		02	9	9	E	PALE	
06	AFS	2039E	0004D	S22	W01	01	6.8		02	6	9	E	HOLL 4920	
06	ADF	2155E	0004D	S35	W64	01	1.8		15	7	9	E	HOLL 4919	
06	ADF	2158E	0004D	N33	E54	01	11.2		04	9	9	E	HOLL 4919	
06	AFS	2250E	1009D	N29	E51	01	10.9		04	9	9	E	LEAR 4919	
06	AFS	2255E	1009D	S22	W01	01	6.9		03	6	5	E	LEAR 4920	
06	ADF	2255E	1009D	S35	W71	01	1.3	1	08	7	7	E	LEAR 4912	
07	ADF	0525E	1009D	S25	E56	01	11.6	1	08	9	9	E	LEAR	
07	MDP	0741E	0815D	.10	310			0				P	MANI	
07	AFS	0800E	0815D	N46	E26	01	9.5	0				P	MANI	
07	AFS	1404E	2133D	S22	W14	01	6.5		02	9	9	E	RAMY 4920	
07	AFS	1604E	2133D	S25	E54	01	11.8		02	9	9	E	RAMY	
07	ADF	1653E	2133D	N31	E46	01	11.3	2	02	9	9	E	RAMY 4919	
07	AFS	1656E	0002D	S21	W12	01	6.8		02	9	9	E	HOLL 4920	
07	ADF	1656E	0002D	S37	W77	01	1.5	1	08	9	9	E	HOLL 4912	
07	DSD	1742	2339D	N28	E41	01	10.9		03	9	9	E	PALE 4919	Flare Associated
07	DSD	1743E	1859D	N33	E42	01	11.1		03	9	9	E	RAMY 4919	Flare Associated
07	AFS	1810E	1826D	S22	W14	01	6.7		02	9	9	E	PALE 4920	
07	AFS	1810E	1826D	S25	E55	01	12.0		02	9	9	E	PALE 4921	
07	ADF	1830E	0316D	S34	W75	01	1.8	1	10	9	9	E	PALE 4912	
07	ASR	1852E	1956D	S34	W90	12	31.6			9	9	E	RAMY 4912	
07	ASR	1916E	1956D	N23	W90	12	31.9			9	9	E	HOLL 4918	
07	EPL	1917E	2010D	N24	W90	12	31.8			9	9	E	PALE	
07	EPL	1927E	1956D	N24	W90	12	31.8	2		9	9	E	RAMY	
07	ASR	2007E	0347D	S33	W90	12	31.7			8	7	E	PALE 4912	
07	DSD	2121E	2133D	S31	E51	01	11.9		03	9	9	E	RAMY 4921	
08	DSD	0035E	0347D	N34	E39	01	11.1		05	9	9	E	PALE 4919	
08	AFS	0145E	1029D	S23	W18	01	6.7		03	9	9	E	LEAR 4920	
08	AFS	0145E	1029D	S25	E50	01	11.9		02	9	9	E	LEAR 4921	
08	ASR	0225E	1029D	S34	W90	12	31.9			9	8	E	LEAR 4912	
08	MDP	0818E	0832D	.02	130			0				P	MANI	
08	MDP	0818E	0832D	.02	220			0				P	MANI	
08	AFS	0818E	0832D	S33	W58	01	3.7	0				P	MANI	
08	AFS	0818E	0832D	S46	E61	01	13.4	0				P	MANI	
08	ADF	1000E	1029D	S26	E41	01	11.6		04	9	9	E	LEAR 4921	Bright Emission 1/3
08	ADF	1312E	2132D	N30	E31	01	11.0	2	02	9	9	E	RAMY 4919	
08	AFS	1312E	2132D	S22	W24	01	6.7		02	9	9	E	RAMY 4920	
08	AFS	1312E	2132D	S26	E42	01	11.8		02	9	9	E	RAMY 4921	
08	ADF	1312E	2132D	S29	E44	01	12.0	2	04	9	9	E	RAMY 4921	
08	ASR	1359E	1730D	S34	W90	01	1.4			9	9	E	RAMY 4912	
08	AFS	1525E	2354D	S23	W27	01	6.6		03	9	9	E	HOLL 4920	
08	AFS	1528E	2354D	N20	E20	01	10.2		01	9	9	E	HOLL 4919	
08	DSD	1556E	1958D	N34	E28	01	10.9		03	9	9	E	RAMY 4919	
08	AFS	1858E	2132D	S09	E12	01	9.7		02	9	9	E	RAMY	
08	AFS	1900	0345D	S07	E11	01	9.6		02	9	9	E	PALE	
08	AFS	2000E	2354D	S08	E10	01	9.6		03	9	9	E	HOLL	

ACTIVE PROMINENCES AND FILAMENTS

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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
09	ADF	0110E	1034D	N34	E29	01	11.4	1	08	9	9	E	LEAR	4919	
09	AFS	0135E	1034D	S08	E08	01	9.7		01	9	7	E	LEAR		
09	APR	0806	0902	S34	W90	01	2.2	1				C	ABST		
09	DSD	0950	1034D	S24	E32	01	11.9		04	9	9	E	LEAR	4921	
09	DSD	1154E	1712D	S20	W41	01	6.3		03	9	9	E	RAMY	4920	Flare Associated
09	ADF	1154E	2120D	N34	E22	01	11.2	1	03	9	9	E	RAMY	4919	
09	ADF	1154E	2120D	S27	E34	01	12.1	1	05	9	9	E	RAMY	4921	
09	AFS	1245E	2120D	N23	W05	01	9.1		02	9	9	E	RAMY		
09	DSD	1435E	2120D	S27	E33	01	12.2		03	9	9	E	RAMY	4921	Flare Associated
09	DSD	1656	1712D	N33	E19	01	11.2		11	9	9	E	RAMY	4919	Flare Associated
09	AFS	1815E	0348D	N21	W07	01	9.2		02	9	9	E	PALE		
09	AFS	2015E	0348D	S23	W42	01	6.6		02	9	9	E	PALE	4920	
09	AFS	2234E	0000D	S22	W43	01	6.6		03	9	9	E	HOLL	4920	
09	ADF	2236E	0000D	N35	E16	01	11.2	2	05	9	9	E	HOLL	4919	
10	DSD	0010E	0215D	S20	E10	01	10.8		02	9	9	E	PALE	4921	
10	AFS	0138E	0430D	N30	E09	01	10.8		04	9	9	E	LEAR	4919	
10	ADF	0145E	1037D	S24	E19	01	11.5	1	08	9	9	E	LEAR	4921	
10	AFS	0155E	1037D	N22	W13	01	9.1		02	8	6	E	LEAR	4923	
10	ADF	0435E	1037D	N37	E15	01	11.4	1	11	9	9	E	LEAR	4919	
10	ADF	0920E	1435D	N44	E14	01	11.5		05	9	9	E	SVTO	4919	
10	DSD	1050	1110	S27	E14	01	11.5	1				C	CATA		
10	ADF	1159E	2149D	N34	E09	01	11.2	1	05	9	9	E	RAMY	4919	
10	ADF	1159E	2149D	S24	E17	01	11.8	1	04	9	9	E	RAMY	4921	
10	ADF	1159E	2149D	S29	E17	01	11.8	1	04	9	9	E	RAMY	4921	
10	ASR	1231E	2149D	S35	E50	01	14.5			9	9	E	RAMY		
10	DSD	1235E	1436D	N24	W18	01	9.1		03	9	9	E	SVTO	4923	
10	DSD	1236E	2149D	N25	W17	01	9.2		02	9	9	E	RAMY	4923	
10	ASR	1240E	1515D	S33	E90	01	17.7			9	9	E	SVTO		
10	AFS	1353E	2149D	N24	W19	01	9.1		02	9	9	E	RAMY	4923	
10	DSD	1433E	1515D	S25	E17	01	11.9		05	9	9	E	SVTO	4921	
10	AFS	1758E	2101D	S18	W26	01	8.8		01	9	9	E	HOLL		
10	ASR	1837E	2359D	S35	E90	01	18.0			9	9	E	HOLL		
10	AFS	1859E	0253D	N29	E02	01	10.9		03	9	9	E	PALE	4919	
10	AFS	1925E	0253D	N22	W22	01	9.1		04	9	9	E	PALE	4923	
10	ASR	1950E	0253D	S35	E90	01	18.0			9	9	E	PALE		
10	ADF	2107	2359D	N30	W01	01	10.8	2	05	9	9	E	HOLL	4919	
10	ASR	2300E	0432D	S35	E89	01	18.1			9	9	E	LEAR		
11	AFS	0230E	1037D	N20	W26	01	9.1		02	9	9	E	LEAR	4923	
11	ADF	0433E	0615D	S24	E06	01	11.6	2	07	9	9	E	LEAR	4921	
11	BSL	0758	0820	S34	E90	01	18.5	1				C	ABST		
11	AFS	0800E	1037D	N17	W28	01	9.2		01	7	8	E	LEAR		
11	ADF	0810E	1348D	N22	W30	01	9.0	1	05	8	8	E	SVTO	4923	
11	AFS	0811E	1348D	N17	W28	01	9.2		03	6	6	E	SVTO	4923	
11	AFS	0811E	1348D	N17	W28	01	9.2		03	6	6	E	SVTO	4923	
11	ADF	0855	0920	N33	W10	01	10.6	1				V	KHAR		
11	ADF	0855E	0920	N33	W10	01	10.6	1				V	KHAR		
11	BSL	0915	1010	S35	E90	01	18.6	1				V	KHAR		
11	BSL	0915	1010	S35	E90	01	18.6	1				V	KHAR		
11	BSL	0920E	0927D	S37	E90	01	18.6	1-				C	CATA		
11	BSL	1051	1102	N79	E90	01	19.8	1-				C	CATA		
11	APR	1109E	1239D	S33	E90	01	18.6			9	9	E	SVTO		
11	EPL	1130	1201	S38	E90	01	18.7	1-				C	CATA		
11	DSD	1449E	1539D	N20	W35	01	8.9		03	9	9	E	RAMY	4923	
11	AFS	1449E	1539D	N22	W31	01	9.2		02	8	7	E	RAMY	4923	
11	ADF	1449E	1539D	N28	W34	01	9.0	2	07	9	9	E	RAMY	4923	
11	ADF	1449E	1539D	N29	W12	01	10.7	1	07	9	7	E	RAMY	4919	
11	DSD	1449E	1539D	S08	W26	01	9.7		03	9	9	E	RAMY	4922	
11	ADF	1449E	1539D	S27	W01	01	11.5	2	07	9	9	E	RAMY	4921	
11	ADF	1449E	1539D	S32	E74	01	17.5	2	09	8	8	E	RAMY		
11	DSD	1504	1528D	S22	W04	01	11.3		04	9	9	E	RAMY	4921	Flare Associated
11	DSD	1944E	2112D	N25	W37	01	8.9		01	9	9	E	PALE	4923	
11	ADF	1948E	2112D	N25	W32	01	9.3	1	03	9	9	E	PALE	4923	
11	AFS	1948E	2112D	N30	W33	01	9.2		02	9	9	E	PALE	4923	
11	AFS	2250E	1034D	N22	W36	01	9.2		02	9	9	E	LEAR	4923	
12	ADF	0017E	0320D	N37	W23	01	10.1		05	9	9	E	PALE	4919	

ACTIVE PROMINENCES AND FILAMENTS

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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
12	AFS	0130E	0815D	N28	W16	01 10.8		03	9	9	E	LEAR	4919	
12	MDP	0740E	0759D	.10	113		0				P	MANI		
12	LPS	0740E	0759D	.10	146		1				P	MANI		
12	EPL	0740E	0759D	.10	320		1				P	MANI		
12	EPL	0740E	0759D	.12	46		1				P	MANI		
12	AFS	0740E	0759D	S29	E04	01 12.6	0				P	MANI		
12	AFS	0740E	0759D	S40	E50	01 16.4	0				P	MANI		
12	AFS	0740E	0759E	S32	E68	01 17.7	0				P	MANI		
12	SDF	0755E	0759D	S42	E04	01 12.6	3				P	MANI		
12	DSD	1138E	1235D	N25	W44	01 9.1		06	9	9	E	SVTO	4923	
12	ADF	1215E	1409D	S28	E54	01 16.7	2	09	9	9	E	SVTO		
12	ADF	1215E	1409D	S31	E67	01 17.8	2	09	9	9	E	SVTO		
12	ADF	1225E	1435D	S28	W04	01 12.2	1	03	9	9	E	RAMY	4921	
12	ADF	1225E	2107D	S30	W07	01 12.0	2	09	9	7	E	RAMY	4921	
12	ADF	1235E	2107D	S32	E65	01 17.7	2	12	9	9	E	RAMY	4925	
12	ADF	1235E	2107D	S32	E78	01 18.7	2	10	9	9	E	RAMY	4925	
12	DSD	1240E	1600D	N29	W25	01 10.6		03	9	9	E	RAMY	4919	
12	ADF	1240E	2107D	N30	W25	01 10.6	2	15	8	7	E	RAMY	4919	
12	AFS	1245E	2107D	N22	W45	01 9.1		03	9	9	E	RAMY	4923	
12	DSD	1505E	1537D	N21	W48	01 8.9		03	8	9	E	HOLL	4923	
12	ASR	1550E	1715D	S42	E82	01 19.4			6	5	E	RAMY		
12	AFS	1803E	0320D	N22	W47	01 9.1		02	9	9	E	PALE	4923	
12	DSD	1805E	0320D	N22	W51	01 8.8		01	9	9	E	PALE	4923	
12	AFS	1845E	0320D	N30	W27	01 10.6		02	9	9	E	PALE	4919	
12	AFS	2150E	0320D	N18	W51	01 9.0		02	9	9	E	PALE		
12	AFS	2315E	0007D	N29	W28	01 10.8		02	8	9	E	HOLL	4919	
12	ADF	2326E	0007D	N23	W48	01 9.3		04	9	9	E	HOLL	4923	
13	ASR	0230E	1040D	S18	E90	01 19.9			8	9	E	LEAR		
13	APR	0800E	1040D	S24	E90	01 20.3			8	7	E	LEAR		
13	ADF	1215E	1409D	S28	E54	01 17.7	2	09	9	9	E	SVTO		
13	ADF	1540E	1733D	N31	W35	01 10.9	2	09	9	9	E	HOLL	4919	
13	DSD	1616E	1648D	N30	W36	01 10.8		04	9	9	E	RAMY	4919	Flare Associated
13	AFS	1740E	0351D	N16	W58	01 9.3		02	9	9	E	PALE		
13	ASR	1745E	0351D	S18	E80	01 19.8			9	9	E	PALE		
13	DSD	1750E	0230D	S27	W19	01 12.3		07	9	9	E	PALE	4921	
13	AFS	1815E	0351D	N30	W37	01 10.8		04	9	9	E	PALE	4919	
14	APR	0030E	1046D	N17	W63	01 9.2			9	9	E	LEAR	4928	
14	BSL	1116	1121	N63	E90	01 22.5	1-				C	CATA		
14	DSD	1508E	1524D	S36	E57	01 19.2		05	9	9	E	RAMY	4925	Flare Associated
14	ADF	1730E	1955D	S33	E45	01 18.3	1	10	5	7	E	RAMY	4925	
14	ASR	1749E	0008D	S17	E83	01 21.0			9	9	E	HOLL	4927	
14	AFS	1806E	0008D	N16	W60	01 10.2		03	8	8	E	HOLL	4928	
14	AFS	1819E	0352D	S30	W39	01 11.7		01	9	9	E	PALE	4921	
14	ADF	1829E	0008D	S30	E41	01 18.0		06	9	9	E	HOLL	4925	
14	AFS	1845E	1955D	S30	W39	01 11.7		02	9	9	E	RAMY	4921	
14	AFS	1900E	0352D	N30	W51	01 10.8		02	9	9	E	PALE	4919	
14	AFS	1946E	0008D	N29	W40	01 11.7		05	9	9	E	HOLL	4919	
14	ASR	2235E	0352D	N23	W88	01 8.2			9	8	E	PALE	4923	
14	ASR	2245E	0320D	N22	W90	01 8.0			9	9	E	LEAR	4923	
14	AFS	2300E	0352D	N20	E30	01 17.2		01	8	8	E	PALE		
15	DSD	0100E	0205D	S26	W38	01 12.1		04	9	9	E	PALE	4921	
15	AFS	0207E	0352D	S37	E39	01 18.2		03	9	9	E	PALE	4925	
15	MDP	0350E	0355D	.15	312		0				P	MANI		
15	AFS	0350E	0355D	S30	W04	01 14.8	0				P	MANI		
15	ASR	0450E	1042D	S90	E32	01 18.2			9	9	E	LEAR		
15	ASR	0900E	1042D	N18	W85	01 8.9			9	9	E	LEAR	4928	
15	DSD	1224E	1946D	S38	E38	01 18.6		02	9	9	E	RAMY	4925	Flare Associated
15	AFS	1240E	1946D	N20	E23	01 17.3		02	9	9	E	RAMY		
15	AFS	1331E	1946D	S35	E33	01 18.2		02	9	9	E	RAMY	4925	
15	DSD	1405E	1946D	S18	E56	01 19.8		03	9	9	E	RAMY	4927	Flare Associated
15	DSD	1441	1527D	S37	E36	01 18.5		03	9	9	E	HOLL	4925	
15	ASR	1445E	1946D	S90	E17	01 17.2			9	9	E	RAMY	4928	
15	AFS	1527E	1946D	N29	W60	01 10.9		01	9	9	E	RAMY	4919	
15	ASR	1541E	2335D	N16	W79	01 9.7			9	9	E	HOLL	4928	
15	AFS	1551E	1630D	S34	E30	01 18.0		02	8	9	E	HOLL	4925	

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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
15	DSD	1842E	2119	S28	E36	01	18.6		09	9	9	E	HOLL 4925	
15	AFS	1910E	0327D	N20	E20	01	17.3		01	9	9	E	PALE	
15	DSD	2114E	2335D	S26	W48	01	12.1		04	9	9	E	HOLL 4921	
15	AFS	2126E	2335D	S34	E27	01	18.0		03	9	9	E	HOLL 4925	
15	ASR	2155E	2335D	N23	W90	01	9.0			8	9	E	HOLL 4923	
15	DSD	2220E	2335D	S38	E36	01	18.8		04	9	9	E	HOLL 4925	
15	ADF	2221	2335D	S44	E37	01	19.0	2	07	9	9	E	HOLL 4925	
15	AFS	2245E	1042D	S20	E64	01	20.8		04	9	9	E	LEAR 4927	
15	AFS	2245E	1042D	S30	W42	01	12.6		02	9	9	E	LEAR 4921	
15	ADF	2245E	1042D	S31	E43	01	19.3	1	11	9	6	E	LEAR 4925	
15	AFS	2305E	1042D	N20	E31	01	18.3		02	8	6	E	LEAR	
16	AFS	0330E	1043D	N20	E15	01	17.3		01	8	8	E	LEAR 4930	
16	ADF	0330E	1043D	S16	E51	01	20.0	1	20	9	9	E	LEAR 4927	
16	ADF	0330E	1043D	S37	E28	01	18.4	1	11	9	9	E	LEAR 4925	
16	AFS	0445E	1043D	S25	W53	01	12.1		02	9	9	E	LEAR 4921	
16	BSL	0810	0815D	N15	W90	01	9.5	1-				C	CATA	
16	AFS	0934E	1408D	S37	E27	01	18.6		04	9	9	E	SVTO 4925	
16	EPL	0935	0940D	N34	W90	01	9.2	1				C	CATA	
16	BSL	0935E	0940D	N25	W90	01	9.4	1-				C	CATA	
16	BSL	0935E	0940D	N80	W90	01	8.0	1-				C	CATA	
16	AFS	0942E	1043D	S18	E45	01	19.8		02	9	9	E	LEAR 4927	
16	EPL	1007E	1124D	N34	W90	01	9.2	1				C	CATA	
16	BSL	1026	1045	S62	W90	01	8.4	1-				C	CATA	
16	BSL	1105	1110	S80	E90	01	24.8	1-				C	CATA	
16	BSL	1145E	1154	N62	E90	01	24.5	1-				C	CATA	
16	BSL	1145E	1205	N68	W90	01	8.3	1-				C	CATA	
16	EPL	1145E	1242D	N34	W90	01	9.3	1				C	CATA	
16	BSL	1221	1225	S20	E90	01	23.4	1-				C	CATA	
16	BSL	1225	1235	S18	E90	01	23.4	1-				C	CATA	
16	DSD	1230E	1933D	S18	E41	01	19.6		06	8	9	E	RAMY 4927	
16	APR	1250E	2202D	N34	W90	01	9.4	2		9	9	E	RAMY	
16	APR	1250E	2202D	N39	W90	01	9.2	1		9	9	E	RAMY	
16	AFS	1250E	2202D	S17	E44	01	19.9		02	9	9	E	RAMY 4927	
16	ADF	1250E	2202D	S25	E38	01	19.5	2	09	9	9	E	RAMY 4927	
16	ADF	1250E	2202D	S37	E23	01	18.4	1	03	9	9	E	RAMY 4925	
16	AFS	1250E	2202D	S38	E27	01	18.7		02	9	9	E	RAMY 4925	
16	DSD	1358E	1402D	N33	W64	01	11.5		02	9	9	E	RAMY 4919	Flare Associated
16	BSD	1618	1632	N32	W73	01	10.9		03	9	9	E	RAMY 4919	Flare Associated
16	DSD	1739	1839D	S33	W64	01	11.6		03	9	9	E	RAMY 4921	Flare Associated
16	APR	2315E	0940D	N36	W87	01	10.0	1		9	9	E	LEAR 4919	
17	AFS	0100E	1036D	N21	E03	01	17.3		02	8	5	E	LEAR 4930	
17	ADF	0240E	1036D	S22	E32	01	19.6	1	11	9	9	E	LEAR 4927	
17	AFS	0240E	1036D	S37	E17	01	18.5		02	9	7	E	LEAR 4925	
17	ADF	0240E	1036D	S39	E17	01	18.5	1	06	9	9	E	LEAR 4925	
17	AFS	0753E	1259D	S37	W72	01	11.5		04	9	9	E	SVTO 4921	
17	AFS	0758E	1259D	S38	E18	01	18.8		05	9	9	E	SVTO 4925	
17	ADF	0759E	1259D	S39	E13	01	18.4	1	08	9	9	E	SVTO 4925	
17	AFS	0810E	1259D	S18	E33	01	19.8		05	9	9	E	SVTO 4927	
17	ASR	1518E	2108D	S32	W77	01	11.5			9	9	E	HOLL 4921	
17	ASR	1859E	1926D	S37	E86	01	24.7			9	9	E	RAMY	Flare Associated
17	ASR	2240E	1030D	N34	W79	01	11.6			8	8	E	LEAR 4919	
17	ASR	2240E	1030D	S30	E89	01	24.9			6	6	E	LEAR	
17	AFS	2245E	1030D	N20	W09	01	17.2		02	9	9	E	LEAR 4930	
17	ADF	2249E	1030D	S36	E17	01	19.3	2	13	9	9	E	LEAR 4925	
17	ADF	2253E	1030D	S16	E27	01	20.0	2	08	9	9	E	LEAR 4927	
17	AFS	2253E	1030D	S18	E24	01	19.8		02	9	9	E	LEAR 4927	
18	AFS	1149E	1313D	S20	E23	01	20.2		04	9	9	E	SVTO 4927	
18	ADF	1225E	2138D	S21	E12	01	19.4	2	21	7	8	E	RAMY 4927	
18	ADF	1225E	2138D	S37	W03	01	18.3	2	10	9	9	E	RAMY 4925	
18	DSD	1406E	2138D	S18	E14	01	19.6		06	6	9	E	RAMY 4927	
18	AFS	1406E	2138D	S18	E21	01	20.2		03	9	6	E	RAMY 4927	
18	DSD	1415E	1817D	S30	E41	01	21.8		03	9	9	E	RAMY	
18	DSD	1415E	1817D	S32	E41	01	21.8		03	9	9	E	RAMY	
18	AFS	1426E	2138D	N27	E49	01	22.4		03	6	6	E	RAMY	
18	SDF	1547E	1547D	N29	E07	01	19.2		12	0	0	E	HOLL	

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 1988

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	AFS	2239E	0045D	S31	E37	01	21.9		03	9	6	E	LEAR 4931	
18	ADF	2239E	0245D	S21	E07	01	19.5	1	09	5	5	E	LEAR 4927	
18	AFS	2337E	0335D	S31	E36	01	21.8		03	9	9	E	PALE 4931	
18	AFS	2341E	0335D	S21	E16	01	20.2		02	9	9	E	PALE 4927	
19	AFS	0835E	1049D	S19	E04	01	19.7		05	9	9	E	LEAR 4927	
19	EPR	0835E	1020D	.15	40			1				P	MANI	
19	EPR	0835E	1020D	.15	135			1				P	MANI	
19	AFS	0835E	1020D	S25	E02	01	19.5	0				P	MANI	
19	AFS	0835E	1020D	S29	W56	01	15.0	0				P	MANI	
19	AFS	0835E	1020D	S62	E07	01	20.0	0				P	MANI	
19	AFS	0837E	1049D	S33	E31	01	21.8		03	9	9	E	LEAR 4931	
19	BSL	1153E	1225D	N37	W90	01	12.2	1				C	ABST	
19	ADF	1739E	0341D	S35	W17	01	18.4	1	03	9	9	E	PALE 4925	
19	AFS	1741E	0341D	S31	E29	01	22.0		02	9	9	E	PALE 4931	
19	AFS	1858E	2148D	S29	E25	01	21.7		01	9	9	E	RAMY 4931	
19	ADF	2250E	0744D	S31	E25	01	21.9	2	05	9	9	E	LEAR 4931	
19	AFS	2250E	1049D	S28	E24	01	21.8		02	9	9	E	LEAR 4931	
19	ADF	2255E	1049D	S15	W06	01	19.5	2	10	9	9	E	LEAR 4927	
19	AFS	2255E	1049D	S25	W12	01	19.0		02	9	9	E	LEAR 4927	
20	ADF	0029E	0341D	S20	W02	01	19.9	1	06	8	9	E	PALE 4927	
20	ADF	0031E	0341D	S33	E23	01	21.8	1	04	7	9	E	PALE 4931	
20	AFS	0034E	0341D	S21	E02	01	20.2		02	9	9	E	PALE 4927	
20	DSD	0143	0658D	S21	W02	01	19.9		02	9	9	E	LEAR 4927	
20	DSD	0740E	0822D	S31	E22	01	22.0		03	9	9	E	LEAR 4931	
20	BSL	1040E	1051	N62	W90	01	12.5	1-				C	CATA	
20	BSL	1040E	1100	N50	W90	01	12.8	1				C	CATA	
20	LPS	1115E	1125D	.08	317			1				P	MANI	
20	AFS	1115E	1125D	S61	W09	01	19.7	0				P	MANI	
20	BSL	1205	1216	N80	E90	01	28.8	1-				C	CATA	
20	ADF	1620E	2341D	S17	W11	01	19.8		03	9	8	E	HOLL 4927	
20	AFS	1805E	0343D	S36	W31	01	18.3		02	8	8	E	PALE 4925	
20	AFS	1810E	0343D	S34	E10	01	21.5		01	7	7	E	PALE 4932	
20	AFS	2234E	1029D	S21	W14	01	19.9		03	9	9	E	LEAR 4927	
21	AFS	0055E	0343D	S30	W20	01	19.5		01	9	9	E	PALE	
21	AFS	0346E	1029D	S31	E10	01	21.9		03	9	9	E	LEAR 4931	
21	MDP	0950E	0954D	.06	241			0				P	MANI	
21	MDP	0950E	0954D	.06	315			0				P	MANI	
21	MDP	0950E	0954D	.08	32			0				P	MANI	
21	SPY	0950E	0954D	.10	50			1				P	MANI	
21	SPY	0950E	0954D	.10	138			1				P	MANI	
21	AFS	0950E	0954D	N38	E47	01	25.2	0				P	MANI	
21	AFS	0950E	0954D	N47	W33	01	18.6	0				P	MANI	
21	AFS	0950E	0954D	S40	E33	01	24.1	0				P	MANI	
21	AFS	0950E	0954D	S45	E70	01	27.2	0				P	MANI	
21	AFS	0950E	0954D	S63	W19	01	19.7	0				P	MANI	
21	ADF	1242E	1633D	S32	W40	01	18.4	1	04	9	9	E	RAMY 4925	
21	AFS	1359E	1633D	S31	E04	01	21.9		02	9	9	E	RAMY 4931	
21	DSD	1558E	1633D	S29	W04	01	21.3		02	9	9	E	RAMY 4931	
21	DSD	1615E	1831D	S16	W18	01	20.3		02	9	9	E	HOLL 4927	
21	ADF	1617E	1831D	S26	W15	01	20.5		08	9	9	E	HOLL 4927	
21	DSD	1630E	2109D	S29	W03	01	21.4		04	9	9	E	HOLL 4931	
21	ADF	1630E	2109D	S29	W04	01	21.4		01	9	9	E	HOLL 4931	
21	ADF	1655E	2109D	S35	W39	01	18.6		06	8	9	E	HOLL 4925	
21	DSD	1814E	2258D	S29	W06	01	21.3		03	9	9	E	PALE 4931	
21	DSD	1901E	0319D	S19	W26	01	19.8		01	7	9	E	PALE 4927	
21	ADF	2135E	0357D	S33	W09	01	21.2		05	9	9	E	PALE 4931	
21	ADF	2240E	1050D	S15	W26	01	20.0	2	05	9	9	E	LEAR 4927	
21	AFS	2240E	1050D	S19	W27	01	19.9		02	9	9	E	LEAR 4927	
21	AFS	2245E	1050D	S27	W07	01	21.4		02	9	9	E	LEAR 4931	
21	ADF	2249E	1050D	S34	W42	01	18.6	2	06	9	9	E	LEAR 4925	
22	AFS	0150E	0357D	S20	W24	01	20.2		01	9	9	E	PALE 4927	
22	DSD	0258	0432D	S22	W21	01	20.5		03	9	9	E	LEAR 4927	
22	SDF	0357E	0030D	S40	W18	01	20.7		21	0	0	E	PALE	
22	SPY	0920E	0931D	.08	140			1				P	MANI	

ACTIVE PROMINENCES AND FILAMENTS

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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
22	MDP	0920E	0931D	.08	208			0				P	MANI		
22	SPY	0920E	0931D	.08	321			1				P	MANI		
22	LPS	0920E	0931D	.10	241			1				P	MANI		
22	AFS	0920E	0931D	N47	E36	01	25.4	0				P	MANI		
22	AFS	0920E	0931D	N48	W47	01	18.4	0				P	MANI		
22	AFS	0920E	0931D	S20	W32	01	19.9	0				P	MANI		
22	AFS	0920E	0931D	S31	W43	01	19.0	0				P	MANI		
22	AFS	0920E	0931D	S35	E41	01	25.7	0				P	MANI		
22	AFS	0920E	0931D	S63	W35	01	19.3	0				P	MANI		
22	DSD	1050	1125D	S33	W16	01	21.2	1				V	KHAR		
22	AFS	1950E	0359D	S30	W13	01	21.8		03	9	9	E	PALE	4931	
22	ADF	2250E	1035D	S16	W39	01	20.0	2	10	9	9	E	LEAR	4927	
22	AFS	2250E	1035D	S16	W44	01	19.6		02	9	9	E	LEAR	4927	
22	ADF	2345E	1035D	S35	W53	01	18.7	2	07	9	9	E	LEAR	4925	
23	SDF	0030	0030	S40	W30	01	20.6		21	0	0	E	PALE		
23	AFS	0233E	1035D	S30	W16	01	21.8		02	9	9	E	LEAR	4931	
23	BSL	0736	0750D	N84	W90	01	14.9	1-				C	CATA		
23	APR	0752E	0920D	S27	E90	01	30.3	1				V	KHAR		
23	ADF	0755E	0925D	S20	W37	01	20.5	1				V	KHAR		
23	BSL	0800E	0812	N89	W90	01	14.9	1-				C	CATA		
23	BSL	0806	0812	N68	E90	01	31.5	1-				C	CATA		
23	ADF	0813	0823	S15	W49	01	19.6	1				V	KHAR		
23	MDP	0854E	0858D	.02	208			0				P	MANI		
23	MDP	0854E	0858D	.05	115			0				P	MANI		
23	LPS	0854E	0858D	.10	325			1				P	MANI		
23	AFS	0854E	0858D	N48	E31	01	26.0	0				P	MANI		
23	AFS	0854E	0858D	N51	W53	01	18.9	0				P	MANI		
23	AFS	0854E	0858D	S19	W41	01	20.2	0				P	MANI		
23	AFS	0854E	0858D	S32	W55	01	19.0	0				P	MANI		
23	AFS	0854E	0858D	S37	E32	01	25.9	0				P	MANI		
23	AFS	0854E	0858D	S53	W01	01	23.3	0				P	MANI		
23	AFS	0854E	0858D	S65	W76	01	16.6	0				P	MANI		
23	ADF	0905	0922D	S15	W49	01	19.7	1				V	KHAR		
23	BSL	0907	0907D	N74	W90	01	15.1	1-				C	CATA		
23	BSD	0930E	1035D	S36	W73	01	17.5		02	9	9	E	LEAR	4925	
23	BSL	0944	0950	N79	E90	01	31.7	1-				C	CATA		
23	ADF	1023E	1050D	S15	W49	01	19.7	1				V	KHAR		
23	APR	1038E	1050D	S27	E90	01	30.4	1				V	KHAR		
23	AFS	1146E	2039D	S20	W41	01	20.3		03	9	9	E	RAMY	4927	
23	SDF	1243E	1200D	S32	W01	01	23.4		13	0	0	E	RAMY		
23	SDF	1243E	1200D	S43	W22	01	21.7		23	0	0	E	RAMY		
23	AFS	1549E	0017D	S21	W46	01	20.1		01	9	9	E	HOLL	4927	
23	DSD	1652E	1835D	S32	W38	01	20.7		02	9	9	E	HOLL		
23	SDF	1730E	1730D	S17	E03	01	23.9		14	0	0	E	HOLL		
23	AFS	1815E	0358D	S31	W39	01	20.7		01	8	8	E	PALE		
23	ADF	1817E	0358D	S24	W29	01	21.5	1	04	9	9	E	PALE	4932	
23	ADF	1819E	0358D	S34	W64	01	18.7	1	08	9	9	E	PALE	4925	
23	DSD	1820E	0358D	S21	W43	01	20.5		03	9	9	E	PALE	4927	
23	ADF	1825E	0358D	S17	W52	01	19.8	1	03	9	9	E	PALE	4927	
23	ADF	1825E	0358D	S22	W39	01	20.8	1	06	8	8	E	PALE	4927	
23	AFS	1945E	0358D	S30	W26	01	21.8		02	8	8	E	PALE	4931	
23	BSD	2015E	2147D	S33	W76	01	17.8		06	9	9	E	PALE	4925	
23	AFS	2250E	0017D	S23	W56	01	19.6		01	9	9	E	HOLL	4927	
23	DSD	2307E	0017D	S20	W55	01	19.7		02	9	9	E	HOLL	4927	
24	AFS	0045E	0358D	N22	W06	01	23.6		01	8	8	E	PALE		
24	SDF	0309E	1811D	S44	W05	01	23.7		19	0	0	E	PALE		
24	SDF	0314E	0814D	S47	W12	01	23.1	3	13	0	0	E	LEAR		
24	BSL	0755	0755D	S36	W90	01	17.1	1-				C	CATA		
24	BSL	0825E	0836D	N40	E90	01	31.7	1-				C	CATA		
24	DSD	0929E	0935	S23	W65	01	19.4	1				V	KHAR		
24	MDP	1000E	1015D	.04	215			0				P	MANI		
24	LPS	1000E	1015D	.18	320			1				P	MANI		
24	AFS	1000E	1015D	N44	E16	01	25.7	0				P	MANI		
24	AFS	1000E	1015D	S20	W56	01	20.1	0				P	MANI		
24	AFS	1000E	1015D	S32	W69	01	18.9	0				P	MANI		
24	AFS	1000E	1015D	S47	E24	01	26.4	0				P	MANI		

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 1988

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP		Imp	Extent	Blue Shift	Red Shift	Obs Type	Sta	NOAA/ USAF	Remarks
						(.1 A)	(.1 A)			Reg#					
24	AFS	1000E	1015D	S53	W12	01	23.4	0				P	MANI		
24	BSL	1022	1041	S34	W90	01	17.2	1				V	KHAR		
24	BSL	1104	1121	S34	W90	01	17.3	1				V	KHAR		
24	ASR	1116E	1453D	S37	W90	01	17.2		8	9		E	SVTO	4925	
24	SDF	1125E	0732D	S22	W35	01	21.8	1				C	CATA		
24	SDF	1125E	0732D	S50	W06	01	24.0	1				C	CATA		
24	SDF	1135E	0732D	S39	W22	01	22.7	1				C	CATA		
24	AFS	1145E	1453D	S21	E30	01	26.8		01	7	6	E	SVTO		
24	AFS	1220E	2016D	S21	W55	01	20.3		03	9	7	E	RAMY	4927	
24	ADF	1220E	2016D	S24	W67	01	19.3	2	16	9	9	E	RAMY		
24	ASR	1305E	2016D	S36	W90	01	17.3			9	9	E	RAMY	4925	
24	SDF	1450E	1450D	S42	W20	01	23.0		19	0	0	E	HOLL		
24	ASR	1804E	0327D	S35	W90	01	17.5			9	9	E	PALE	4925	
24	DSD	1932E	2226D	S24	W66	01	19.7		07	8	8	E	HOLL	4927	
25	APR	0000E	0200D	N64	W90	01	17.0	2		9	7	E	LEAR		
25	APR	0002E	0327D	S47	W90	01	17.5	2		7	8	E	PALE		
25	AFS	0019E	0327D	S30	E39	01	28.1		01	9	9	E	PALE		
25	ASR	0526E	1049D	S35	W90	01	18.0			9	9	E	LEAR	4925	
25	ASR	0737E	1343D	S36	W90	01	18.1			9	9	E	SVTO	4925	
25	ADF	0745E	1343D	S24	W74	01	19.6	1	05	8	8	E	SVTO	4927	
25	ADF	0801E	1343D	S32	E76	01	31.3	1	14	9	9	E	SVTO		
25	EPL	0811E	0828D	.10	45			1				P	MANI		
25	EPL	0811E	0828D	.20	318			1				P	MANI		
25	EPL	0811E	0828D	.30	210			1				P	MANI		
25	AFS	0811E	0828D	N32	W10	01	24.5	0				P	MANI		
25	AFS	0811E	0828D	S45	E13	01	26.4	0				P	MANI		
25	APR	0918E	1015D	S55	W90	01	17.6	1				V	KHAR		
25	BSL	1022E	1132	S35	W90	01	18.2	1				V	KHAR		
25	SDF	1440E	1440D	N46	W12	01	24.6		28	0	0	E	HOLL		
25	AFS	1727E	2121D	S30	E29	01	28.0		02	9	9	E	RAMY	4933	
25	ADF	1742E	2032D	S33	E72	01	31.4		10	9	2	E	HOLL		
25	ADF	1756E	2147D	S28	W47	01	22.1		05	5	9	E	HOLL	4931	
25	AFS	1810E	0019D	S29	E30	01	28.1		02	5	7	E	HOLL	4933	
25	APR	1819E	0019D	S28	W75	01	19.9			8	9	E	HOLL	4927	
25	ASR	1820E	0019D	S24	W86	01	19.1			7	9	E	HOLL	4927	
25	ASR	1940	0019D	S39	W90	01	18.5			9	9	E	HOLL	4925	
25	ASR	2030E	2121D	S36	W90	01	18.6			9	9	E	RAMY	4925	
25	AFS	2229E	1050D	S30	W54	01	21.7		05	9	9	E	LEAR	4931	
25	APR	2350	0018D	S50	W81	01	19.1			9	9	E	HOLL		
26	AFS	0220E	0226D	S30	E25	01	28.1		02	8	9	E	LEAR	4933	
26	AFS	0427E	1050D	S37	E53	01	30.4		04	9	9	E	LEAR		
26	APR	0930E	1120D	S32	W90	01	19.3	1				V	KHAR		
26	DSD	0945E	1120D	N20	W43	01	23.1	1				V	KHAR		
26	AFS	1026E	1515D	S32	E21	01	28.1		03	9	9	E	SVTO	4933	
26	ASR	1038E	0140D	S36	W89	01	19.3			9	9	E	LEAR	4925	
26	ASR	1038E	1050D	S36	W89	01	19.3			9	9	E	LEAR	4925	
26	AFS	1039E	1515D	N18	W43	01	23.2		05	9	9	E	SVTO		
26	SDF	1049E	0120D	N48	E03	01	26.7	3	20	0	0	E	LEAR		
26	ASR	1251E	2053D	S21	W84	01	20.1			9	9	E	RAMY	4927	
26	APR	1251E	2053D	S26	W90	01	19.5	2		9	9	E	RAMY	4927	
26	AFS	1308E	2053D	S31	W20	01	25.0		02	9	9	E	RAMY	4933	
26	AFS	1314E	2053D	N19	W42	01	23.3		02	9	9	E	RAMY	4934	
26	AFS	1923E	0019D	N19	W47	01	23.2		02	9	9	E	HOLL	4934	
26	APR	1923E	0019D	S27	W82	01	20.4	2		4	8	E	HOLL	4927	
26	AFS	1924E	0019D	S30	E16	01	28.1		03	7	9	E	HOLL	4933	
26	AFS	2237E	0019D	S29	E18	01	28.3		02	7	5	E	HOLL	4934	
26	AFS	2315E	1039D	S29	E14	01	28.1		02	9	9	E	LEAR	4933	
26	DSD	2321E	2354D	S20	W48	01	23.3		02	9	9	E	HOLL	4934	
26	ADF	2345E	1039D	S33	E54	01	31.3	2	16	9	9	E	LEAR	4935	
27	APR	0000	0120D	S25	W90	01	20.0	1				C	VORO		
27	APR	0008	0120D	S58	W90	01	19.1	1				C	VORO		
27	APR	0030	0120D	N45	W90	01	19.5	1				C	VORO		
27	ASR	0200E	0525	S27	W89	01	20.1			9	9	E	LEAR	4927	
27	ADF	0241E	0359D	N20	W51	01	23.2	1	04	9	9	E	PALE	4934	
27	AFS	0243E	0359D	S29	E11	01	28.0		02	9	9	E	PALE	4933	

ACTIVE PROMINENCES AND FILAMENTS

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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
27	APR	0525	1039D	S27	W90	01	20.2	2		9	9	E	LEAR		
27	BSL	0821	0825D	N23	E90	02	3.3	1-				C	CATA		
27	MDP	0920E	0935D	.10	242			0				P	MANI		
27	EPL	0920E	0935D	.20	210			1				P	MANI		
27	BSL	0952	0956D	S85	W90	01	19.0	1-				C	CATA		
27	ASF	0956E	1110	N23	W56	01	23.1	1				V	KHAR		
27	BSL	1107E	1116	N84	E90	02	4.8	1-				C	CATA		
27	AFS	1125E	1417D	N20	W56	01	23.2		06	9	9	E	SVTO	4934	
27	AFS	1126E	1417D	S30	E07	01	28.0		04	9	9	E	SVTO	4933	
27	BSL	1130	1135	N74	E90	02	4.7	1-				C	CATA		
27	SDF	1206E	0738D	S05	E11	01	28.3	1				C	CATA		
27	AFS	1324E	1753D	N19	W57	01	23.2		02	9	9	E	RAMY	4934	
27	DSD	1330E	1753D	N21	W56	01	23.3		03	9	9	E	RAMY	4934	Flare Associated
27	AFS	1339E	1753D	S30	E05	01	28.0		02	9	9	E	RAMY	4933	
27	ADF	1525E	2328D	N20	W58	01	23.2	2	04	9	9	E	HOLL	4934	
27	APR	1530E	2328D	S62	W90	01	19.7			9	9	E	HOLL		
27	ADF	1545E	2328D	N18	W58	01	23.2	2	03	9	9	E	HOLL	4934	
27	APR	1648E	1753D	S58	W90	01	19.8			9	9	E	RAMY		
27	EPL	1740E	1745D	N40	W90	01	20.4			0	0	E	PALE		
27	AFS	1845E	0401D	N19	W59	01	23.3		03	9	9	E	PALE	4934	
27	AFS	2201E	2328D	N20	W56	01	23.6		03	9	8	E	HOLL	4934	
27	BSD	2203E	2328D	N21	W59	01	23.4		03	9	9	E	HOLL	4934	
27	ADF	2351E	0829D	S33	E42	01	31.3	2	16	9	9	E	LEAR	4935	
27	AFS	2351E	1040D	N20	W61	01	23.3		03	9	9	E	LEAR	4934	
27	AFS	2351E	1040D	S30	E00	01	28.0		02	9	9	E	LEAR	4933	
27	BSD	2355E	0146D	N18	W64	01	23.1		03	9	9	E	LEAR	4934	
28	APR	0016	0300D	S61	W90	01	20.1	1				C	VORO		
28	ADF	0110	0300D	S45	W34	01	25.2	1				C	VORO		
28	BSD	0238	0315D	N21	W65	01	23.1		04	9	9	E	PALE	4934	
28	AFS	0325E	0401D	S14	W39	01	25.2		01	9	9	E	PALE		
28	BSD	0430E	0725D	N19	W68	01	23.0		06	9	9	E	LEAR	4934	
28	DSD	0736E	0931D	N20	W62	01	23.6		09	9	9	E	LEAR	4934	
28	AFS	0748E	0900D	S15	W42	01	25.1		01	9	9	E	SVTO		
28	BSL	0751E	0751D	N18	E90	02	4.2	1-				C	CATA		
28	DSD	0752E	0900D	N20	W64	01	23.4		04	9	9	E	SVTO	4934	
28	AFS	0808E	0900D	N19	W66	01	23.3		02	9	9	E	SVTO	4934	
28	AFS	0810E	0900D	S30	W05	01	27.9		03	9	9	E	SVTO	4933	
28	BSL	0852E	0852D	N85	E90	02	5.8	1-				C	CATA		
28	BSL	0951E	1020	S64	W90	01	20.4	2				C	CATA		
28	AFS	1410E	1929D	N17	E39	01	31.5		02	9	9	E	RAMY		
28	AFS	1410E	1929D	N20	W69	01	23.3		02	9	9	E	RAMY	4934	
28	AFS	1410E	1929D	N21	W66	01	23.5		02	9	9	E	RAMY	4934	
28	AFS	1410E	1929D	S14	W45	01	25.2		03	9	9	E	RAMY		
28	ADF	1410E	1929D	S36	E34	01	31.3	1	14	9	9	E	RAMY	4935	
28	ASR	1934E	2303D	N19	E87	02	4.4			9	9	E	HOLL	4938	
28	APR	2021E	2303D	N23	W90	01	21.9	2		9	9	E	HOLL	4934	
28	BSD	2034E	2055D	N20	W78	01	22.9		03	4	6	E	HOLL	4934	
28	ASR	2050E	2214D	S25	E90	02	4.8			8	9	E	HOLL		
28	DSD	2056E	2209D	N35	W70	01	23.3		03	9	4	E	HOLL	4934	
28	AFS	2147E	2303D	S14	W49	01	25.2	1	02	9	9	E	HOLL	4936	
28	BSD	2206E	2216D	N19	W75	01	23.2		03	7	9	E	HOLL	4934	
28	BSD	2221E	2303D	N19	W76	01	23.1		05	9	9	E	HOLL	4934	
28	ADF	2315E	0530D	N17	W71	01	23.6	2	05	9	9	E	LEAR	4934	
28	AFS	2351E	0007D	N20	W61	01	24.3		03	9	9	E	LEAR	4934	
28	BSD	2355E	0146D	N18	W64	01	24.1		03	9	9	E	LEAR	4934	
29	APR	0143	0300D	N22	E90	02	5.0	1				C	VORO		
29	APR	0148	0300D	S63	W90	01	21.1	1				C	VORO		
29	ASR	0231E	0307D	N19	E88	02	4.8			9	9	E	PALE	4938	
29	ASR	0231E	0307D	N22	W88	01	22.3			9	9	E	PALE	4934	
29	BSL	0232	0259	N16	W90	01	22.3	1				C	VORO		
29	AFS	0240E	0307D	N21	W75	01	23.4		04	9	8	E	PALE	4934	
29	ADF	0255E	0307D	N18	E29	01	31.3	1	02	9	9	E	PALE	4937	
29	LPS	0459E	0750D	N20	W82	01	22.9			9	9	E	LEAR	4934	
29	BSL	0756E	0815D	N42	E90	02	5.7	1-				C	CATA		
29	BSL	0803	0815D	N26	E90	02	5.3	1-				C	CATA		
29	BSL	0853E	1008D	N37	E90	02	5.6	1				C	ABST		

ACTIVE PROMINENCES AND FILAMENTS

JANUARY 1988

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
29	SPY	0853E	0858D	.05	70			1				P	MANI		
29	MDP	0853E	0858D	.10	45			0				P	MANI		
29	MDP	0853E	0858D	.10	315			0				P	MANI		
29	EPL	0853E	0858D	.25	270			1				P	MANI		
29	AFS	0853E	0858D	S17	E40	02	1.4	0				P	MANI		
29	AFS	0853E	0858D	S33	E21	01	31.0	0				P	MANI		
29	DSD	0918E	0932	N17	E26	01	31.4	1				V	KHAR		
29	BSL	0918E	0942D	N20	W90	01	22.5	1				V	KHAR		
29	BSL	0949	1001	S25	W90	01	22.4	1				C	CATA		
29	BSL	1018	1025	N20	W90	01	22.5	1				V	KHAR		
29	BSL	1029	1055D	N20	W90	01	22.5	1				V	KHAR		
29	BSL	1038E	1050	N22	E90	02	5.4	1				V	KHAR		
29	AFS	1140E	2005D	N17	E27	01	31.5		03	9	9	E	RAMY	4937	
29	DSD	1140E	2005D	N18	E29	01	31.7		10	9	9	E	RAMY	4937	
29	ASR	1140E	2005D	N18	E90	02	5.3			9	9	E	RAMY	4938	
29	ASR	1140E	2005D	N19	W90	01	22.6			9	9	E	RAMY	4934	
29	ADF	1140E	2005D	S36	E24	01	31.4	2	16	8	7	E	RAMY	4935	
29	APR	1835E	0240D	N17	E88	02	5.5	1		9	9	E	PALE	4938	
29	ASR	1835E	0333D	N20	W88	01	23.0			9	9	E	PALE	4934	
29	AFS	2127E	0333D	S25	W19	01	28.4		01	9	9	E	PALE	4933	
29	AFS	2135E	0333D	N18	E20	01	31.4		01	9	9	E	PALE	4937	
29	AFS	2145E	1050D	N31	E17	01	31.2		02	9	9	E	LEAR	4937	
29	ASR	2233E	1050D	N22	W90	01	23.0			9	9	E	LEAR	4934	
29	BSL	2315E	1050D	N18	W77	01	24.1			9	9	E	LEAR	4934	
29	ASR	2315E	1050D	N20	E81	02	5.2			9	9	E	LEAR	4938	
29	AFS	2315E	1050D	S30	W13	01	28.9		02	9	9	E	LEAR	4933	
29	ADF	2315E	1050D	S33	W17	01	28.6	2	05	9	9	E	LEAR	4933	
29	DSD	2330E	0619D	N17	E17	01	31.3		02	9	9	E	LEAR	4937	
30	BSL	0046	0118	N17	W90	01	23.2	1				C	VORO		
30	BSL	0214	0230	N16	W90	01	23.3	1				C	VORO		
30	LPS	0814E	0830D	.10	320			1				P	MANI		
30	EPL	0814E	0830D	.12	198			1				P	MANI		
30	AFS	0814E	0830D	S19	E38	02	2.2	0				P	MANI		
30	AFS	0814E	0830D	S34	E09	01	31.1	0				P	MANI		
30	AFS	0814E	0830D	S46	W59	01	25.4	0				P	MANI		
30	BSL	0850E	0908D	N19	W90	01	23.5	1				V	KHAR		
30	DSD	0910E	0918D	N21	E12	01	31.3	1				V	KHAR		
30	BSL	0930E	1010D	N19	W90	01	23.5	1				V	KHAR		
30	BSL	1057E	1105D	S32	E90	02	6.6	1-				C	CATA		
30	AFS	1220E	2138D	N17	E12	01	31.4		02	9	8	E	RAMY	4937	
30	ADF	1220E	2138D	N20	E71	02	4.9	2	20	9	6	E	RAMY	4939	
30	ADF	1220E	2138D	S29	E06	01	31.0	2	11	9	9	E	RAMY		
30	ADF	1220E	2138D	S37	E15	01	31.7	2	23	9	9	E	RAMY	4935	
30	ASR	1503E	0015D	N16	W81	01	24.5			9	9	E	HOLL	4934	
30	AFS	1503E	0015D	N17	E24	02	1.4		03	9	9	E	HOLL	4937	
30	AFS	1830E	0347D	N18	E08	01	31.4		03	9	9	E	PALE	4937	
30	ASR	1914E	0015D	N20	E86	02	6.4			8	9	E	HOLL	4939	
30	AFS	2213E	0015D	S25	W19	01	29.4		02	9	9	E	HOLL	4933	
30	AFS	2252E	0530D	S30	W37	01	28.0		03	9	9	E	LEAR	4933	
30	AFS	2252E	1029D	N17	E07	01	31.5		03	9	9	E	LEAR	4937	
31	APR	0053	0300D	S29	W90	01	24.0	1				C	VORO		
31	APR	0117	0300D	N50	W90	01	23.4	1				C	VORO		
31	DSD	0137E	0347D	N17	E04	01	31.4		04	9	9	E	PALE	4937	
31	APR	0206	0300D	S47	W90	01	23.5	1				C	VORO		
31	AFS	0846E	1447D	N17	E00	01	31.4		02	9	9	E	SVTO	4937	
31	ASR	0847E	1447D	S15	W90	01	24.5			9	9	E	SVTO	4936	
31	MDP	0920E	0930D	.10	195			0				P	MANI		
31	SPY	0920E	0930D	.15	317			1				P	MANI		
31	AFS	0920E	0930D	S34	W02	01	31.2	0				P	MANI		
31	AFS	0920E	0930D	S36	W50	01	27.4	0				P	MANI		
31	AFS	1308E	1548D	N16	E01	01	31.6		02	9	9	E	RAMY	4937	
31	ASR	1446E	1548D	S14	W90	01	24.8			9	9	E	RAMY	4936	
31	AFS	1740E	0404D	N18	W05	01	31.3		02	9	9	E	PALE	4937	
31	ASR	1740E	0404D	S15	W90	01	24.9			9	9	E	PALE	4933	
31	AFS	1759E	0404D	N22	E62	02	5.5		02	9	9	E	PALE	4939	
31	APR	1759E	1925D	N28	E90	02	7.8	1		8	8	E	PALE		

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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
31	ASR	2002E	2337D	S11	W90	01	25.1			9	9	E	HOLL	4936	
31	AFS	2208E	2337D	N18	W08	01	31.3		03	6	8	E	HOLL	4937	
31	ASR	2226E	0556D	S14	W90	01	25.1	2		9	9	E	LEAR	4936	
31	AFS	2252E	1029D	N17	E07	02	1.5		03	9	9	E	LEAR	4937	
31	DSD	2345E	0016D	N18	W12	01	31.1		04	9	9	E	PALE	4937	
31	DSD	2350E	0016D	N18	W09	01	31.3		05	9	9	E	LEAR	4937	

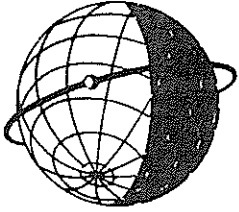
ADF = Active Dark Filament BSL = Bright Surge on Limb LPS = Loops
 AFS = Arch Filament System CAP = CAP Prominence (Tandberg-Hanssen) MDP = Mound Prominence
 APR = Active Prominence CRN = Coronal Rain SDF = Sudden Disappearing Filament
 ASR = Active Surge Region DSD = Dark Surge on Disk SPY = Spray
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

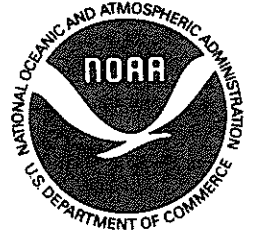
The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

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."