

## **U.S. DEPARTMENT OF COMMERCE**

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### **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

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### **NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE**

Robert S. Winokur, Assistant Administrator

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# **Solar-Geophysical Data comprehensive reports**

Data for May 1998

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## **NATIONAL GEOPHYSICAL DATA CENTER**

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Boulder, Colorado

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# SOLAR-GEOPHYSICAL DATA

Number 651

(Issued in Two Parts)

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### INTERNATIONAL GEOPHYSICAL CALENDAR 1999

Explanations and Recommended Scientific Programs

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H $\alpha$  SOLAR FLARES

MAY 1998

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks	
								USAF Region								Mo	Day		Apparent (10 <sup>-6</sup> Disk)
0001	URUM	01	0238	0242	0253	N29	E48 8214	05	4.9	15	SN			C		64	1.2	E	
0002	LEAR	01	0522	0525	0527	N22	E41 8214	05	4.4	5	SF		3	E		11			
0003	LEAR	01	0606	0607	0616	N23	E42 8214	05	4.5	10	SF		3	E		35			
0004	LEAR	01	0851	0903	0916	N24	E42 8214	05	4.6	25	SF		3	E		21		F	
0005	LEAR	01	0858	0901	0906	S18	E01 8210	05	1.4	8	SF		3	E		27		F	
		01	0950		1019		No Flare Patrol												
0006	RAMY	01	1129	1131	1141	N25	E41 8214	05	4.6	12	SF		3	E		30			
0007	RAMY	01	1201	1202	1245	N25	E40 8214	05	4.6	44	SF		4	E		19		F	
0008	RAMY	01	1203	1206	1216	S17	W05 8210	05	1.1	13	SF		4	E		51			
0009	RAMY	01	1246	1258	1345	N25	E40 8214	05	4.6	59	1N		4	E		157		F	
0010	HOLL	01	1257E	1324U	1326	N25	E40 8214	05	4.6	29D	1F		3	E		101		F	
0011	HOLL	01	1332	1334	1342	N25	E40 8214	05	4.7	10	SF		3	E		16		F	
0012	RAMY	01	1315	1317	1320	S19	E00 8210	05	1.5	5	SF		4	E		14		F	
0013	HOLL	01	1417	1419	1422	N25	E39 8214	05	4.6	5	SF		3	E		13			
0014		01	1427*	1453	1518	S20	W02 8210	05	1.4	51	SF					62		F	
	HOLL	01	1427	1453	1524	S21	W03 8210	05	1.4	57	SF		4	E		76			
	RAMY	01	1443	1453	1512	S19	W01 8210	05	1.5	29	SF		4	E		49		F	
0015		01	1445*	14561	1504	N24	E38 8214	05	4.5	19	SF					20			
	HOLL	01	1445	1456	1508	N24	E40 8214	05	4.7	23	SF		4	E		25			
	RAMY	01	1457	1457	1500	N25	E36 8214	05	4.4	3	SF		4	E		15			
0016	HOLL	01	1657	1703	1729	S17	W11 8210	04	30.9	32	SF		3	E		24			
0017		01	1734	17362	1802	N25	E38 8214	05	4.7	28	SF					26			
	RAMY	01	1734	1736	1808	N26	E38 8214	05	4.7	34	SF		4	E		19			
	HOLL	01	1734	1738	1756	N24	E39 8214	05	4.7	22	SF		3	E		33			
0018	HOLL	01	1757	1757	1804	N25	E38 8214	05	4.7	7	SF		3	E		19			
		01	1920		1925		No Flare Patrol												
		01	1957		2003		No Flare Patrol												
0019	HOLL	01	2005	2011	2033	N26	E37 8214	05	4.7	28	SF		3	E		26			
0020	RAMY	01	2011	2027	2042D	S19	W04 8210	05	1.5	31D	SF		3	E		63		F	
0021	HOLL	01	2012	2012	2017	S17	W12 8210	04	30.9	5	SF		3	E		15			
0022	HOLL	01	2022	2030	2048	S17	W12 8210	04	30.9	26	SF		3	E		67			
0023	HOLL	01	2049	2051	2056	S20	W07 8210	05	1.3	7	SF		3	E		18			
0024	HOLL	01	2143	2151	2201	S18	W05 8210	05	1.5	18	SF		3	E		47			
0025	HOLL	01	2232	2251	2318	S18	W06 8210	05	1.5	46	1F		3	E		127		EF	
0026	HOLL	01	2250	2254	2309	N25	E35 8214	05	4.7	19	SF		3	E		19			
0027	LEAR	02	0030	0044	0047	N23	E33 8214	05	4.6	17	1F		3	E		185		F	
0028	LEAR	02	0033	0040	0047	S19	W07 8210	05	1.5	14	SF		3	E		57		F	
0029		02	0155	01538	0228	N25	E34 8214	05	4.7	33	SN					89	1.9	EF	
	URUM	02	0149E	0153	0201D	N26	E33 8214	05	4.6	12D	SN			P		129	1.9	E	
	LEAR	02	0155	0201	0228	N24	E34 8214	05	4.7	33	SF		3	E		49		F	

H $\alpha$  SOLAR FLARES

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May 98

MAY 1998

Grp #	Sta	Start Day	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Imp Opt	Xray	Obs See	Type	Area Measurement		Remarks
														Time (UT)	Apparent (10-6 Disk)	
0030	URUM	02	0358	0406	0422	S20 W13	8210	05	1.2	24	SN		C	64	0.7	D
0031	URUM	02	0422	0433	0441	N25 E26	8214	05	4.2	19	SN		C	48	0.6	E
0032		02	04409	04569	0544	S20 W10	8210	05	1.4	64	1N			242	4.4	E
	LEAR	02	0440	0456	0548	S20 W07	8210	05	1.6	68	SF	3	E	81		
	URUM	02	0449	0505	0540	S21 W12	8210	05	1.3	51	1B		C	402	4.4	E
0033	URUM	02	0828	0838	0843	S21 E03	8213	05	2.6	15	SB		C	161	1.7	E
0034	SVTO	02	0834	0835	0838	S15 W14	8210	05	1.3	4	SF	3	E	12		F
0035	SVTO	02	0924	0932	0955	N25 E30	8214	05	4.7	31	SF	3	E	12		F
		02	1018		1023	No Flare Patrol										
0036	RAMY	02	1044	1049	1056	S20 W17	8210	05	1.1	12	SF	3	E	44		
0037		02	1247	1253	1302	S17 W17	8210	05	1.2	15	SF			19		F
	RAMY	02	1247	1253	1302	S16 W17	8210	05	1.2	15	SF	4	E	19		F
	KANZ	02	1256E	1256U	1300D	S18 W17	8210	05	1.2	4D	SF	2	C			
0038		02	1318	1323	1338	N26 E26	8214	05	4.6	20	SF			13		
	HOLL	02	1318	1323	1336	N25 E26	8214	05	4.6	18	SF	3	E	13		
	KANZ	02	1322E	1322U	1339	N26 E26	8214	05	4.6	17D	SF	2	C			
0039		02	1334	13425	1540	S15 W15	8210	05	1.4	126	3B			541		FZ
	HOLL	02	1334	1342	1532	S15 W16	8210	05	1.3	118	2B	3	E	455		ZF
	RAMY	02	1334	1342	1547	S15 W15	8210	05	1.4	133	3B	4	E	627		ZF
	KANZ	02	1335E	1347	1445D	S15 W14	8210	05	1.5	70D	3B	2	C			
0040	HOLL	02	1545	1545	1548	S12 W24	8210	04	30.8	3	SF	3	E	12		
0041		02	1749	1750	1754	N25 E20	8214	05	4.3	5	SF			21		
	RAMY	02	1749	1750	1754	N25 E20	8214	05	4.3	5	SF	4	E	24		
	HOLL	02	1749	1750	1754	N25 E20	8214	05	4.3	5	SF	3	E	18		
0042		02	18595	19041	1920	S14 W24	8210	05	1.0	21	SF			28		
	RAMY	02	1859	1905	1929	S15 W24	8210	05	1.0	30	SF	4	E	40		
	HOLL	02	1904	1904	1911	S14 W24	8210	05	1.0	7	SF	3	E	15		
0043	HOLL	02	1914	1914	1920	S17 W25	8210	04	30.9	6	SF	3	E	45		
0044	HOLL	02	1925	1926	1927	S18 W23	8210	05	1.0	2	SF	3	E	24		
0045		02	20323	2051*	2132	S20 W20	8210	05	1.3	60	SF			85		F
	RAMY	02	2032	2051	2138	S20 W19	8210	05	1.4	66	SF	3	E	71		F
	HOLL	02	2035	2105	2126	S19 W20	8210	05	1.3	51	SF	3	E	99		
0046	RAMY	02	2125	2125	2135	N27 E21	8214	05	4.5	10	SF	3	E	20		
		02	2208		2214	No Flare Patrol										
		02	2233		2258	No Flare Patrol										
		03	0946		0947	No Flare Patrol										
		03	0949		0955	No Flare Patrol										
0047		03	0956E	1008	1048	S20 W26	8210	05	1.4	52D	SN			43		F
	KANZ	03	0956E	1008	1051	S21 W27	8210	05	1.3	55D	SN	2	C			
	RAMY	03	1014E	1015U	1045	S20 W26	8210	05	1.4	31D	SN	1	E	43		F
		03	1001		1007	No Flare Patrol										
0048		03	11572	1159	1203	N27 E13	8214	05	4.5	6	SF			16		
	RAMY	03	1157	1159	1203	N27 E13	8214	05	4.5	6	SF	4	E	16		
	KANZ	03	1159	1159	1203	N27 E13	8214	05	4.5	4	SF	2	C			
0049		03	12311	12351	1242	N27 E12	8214	05	4.4	11	SF			18		
	KANZ	03	1231	1235	1243	N27 E13	8214	05	4.5	12	SF	2	C			
	RAMY	03	1232	1236	1242	N27 E12	8214	05	4.4	10	SF	4	E	18		



SO L A R F L A R E S

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May 98

MAY 1998

Grp #	Sta	Start Day (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF Region	CMP Mo	Dur (Min)	Imp Xray	Obs See	Area Measurement Time Apparent (UT) (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	Remarks	
														Cmd
0074		05 1240E	1308	1318	N25 W18	8214	05 4.1	38D	SF		36		F	
	HOLL	05 1240E	1308	1318	N25 W18	8214	05 4.1	38D	SF	3 E	51		F	
	RANY	05 1305E	1309U	1313D	N25 W19	8214	05 4.1	8D	SF	3 E	22			
0075	HOLL	05 1319	1329	1339	N26 W19	8214	05 4.1	20	SF	3 E	41		F	
0076	HOLL	05 1343	1343	1348	N26 W18	8214	05 4.2	5	SF	3 E	13		F	
0077	HOLL	05 1349	1351	1355	N25 W18	8214	05 4.2	6	SF	3 E	10		F	
0078	HOLL	05 1612	1628	1645	N26 W18	8214	05 4.3	33	SF	3 E	51		F	
0079	HOLL	05 1635	1647	1655	S14 W60	8210	05 1.1	20	SF	3 E	11		F	
0080	HOLL	05 1802	1802	1823	N27 W20	8214	05 4.2	21	SF	3 E	47		F	
0081	HOLL	05 1823	1855	2030	N26 W22	8214	05 4.0	127	1F	3 E	134		F	
0082	HOLL	05 2049	2053	2115	N26 W22	8214	05 4.1	26	SF	3 E	26			
0083	HOLL	05 2214	2218	2224	N26 W23	8214	05 4.1	10	SF	3 E	28			
0084	HOLL	05 2246	2252	2256	N25 W25	8214	05 4.0	10	SF	3 E	34		F	
0085		05 2304*	23411	2458	S16 W60	8210	05 1.4	114	2N		385		FHY	
	HOLL	05 2304	2342	2512	S15 W60	8210	05 1.4	128	2N	3 E	514		YH	
	LEAR	05 2329	2341	2445	S16 W60	8210	05 1.4	76	2N	3 E	256		F	
0086	VORO	06 0012E		0053	S20 W62	8210	05 1.3	41D	1N	2 C	0014	108	3.1	
0087	VORO	06 0022	0026	0033	N29 W32	8214	05 3.5	11	SN	2 C	0026	90	1.8	
0088		06 0024	00251	0032	N26 W24	8214	05 4.1	8	1F		86		2.1	
	HOLL	06 0024	0025	0031	N27 W24	8214	05 4.1	7	SF	3 E	47			
	VORO	06 0024	0026	0032	N26 W24	8214	05 4.1	8	1F	1 C	0026	125	2.1	
0089		06 00259	0035	0047	N26 W22	8214	05 4.3	22	SN		90		1.6	
	LEAR	06 0025	0035	0041	N26 W20	8214	05 4.5	16	SF	3 E	55			
	VORO	06 0034	0035	0053	N27 W25	8214	05 4.1	19	SN	1 C	0035	125	1.6	
0090		06 0044	0044	0048	N26 W20	8214	05 4.5	4	SF		22			
	HOLL	06 0044	0044	0048	N26 W20	8214	05 4.5	4	SF	3 E	26			
	LEAR	06 0044	0044	0049	N26 W20	8214	05 4.5	5	SF	3 E	17			
0091	LEAR	06 0225	0227	0230	N26 W21	8214	05 4.5	5	SF	3 E	32			
0092	URUM	06 0355	0403	0407	S18 W73	8210	04 30.6	12	1N		C	80		E
0093	URUM	06 0407	0411	0418	N24 W35	8214	05 3.5	11	SN		C	48	0.7	E
0094	LEAR	06 0714	0804	0905	S11 W65	8210	05 1.4	111	1N	3 E	175		FH	
0095	LEAR	06 0441	0442	0447	S12 W63	8210	05 1.4	6	SF	3 E	37			
0096	LEAR	06 0533	0534	0537	S12 W65	8210	05 1.3	4	SF	3 E	31			
0097		06 06091	06091	0626	S14 W65	8210	05 1.3	17	SF		28			
	KANZ	06 0609	0609	0637	S16 W65	8210	05 1.3	28	SF	2 C				
	LEAR	06 0610	0610	0616	S12 W65	8210	05 1.3	6	SF	3 E	28			
0098	LEAR	06 0627	0629	0635	S14 W66	8210	05 1.3	8	SF	3 E	15			
0099	LEAR	06 0702	0704	0707	S13 W66	8210	05 1.3	5	SF	3 E	31			
0100	KANZ	06 0717E	0721	0753	S16 W65	8210	05 1.4	36D	1N	2 C				
0101	KANZ	06 0801	0805	0918D	S15 W64	8210	05 1.5	77D	1N	2 C				
0102	URUM	06 0840	0844	0844D	S13 W68	8210	05 1.2	4D	1B		P	113		D



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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	Obs See	Type	Time (UT)	Area Measurement		Remarks
																	Apparent (10-6 Disk)	Corr (Sq Deg)	
0103	URUM	06	0858	0902	0910	S12	W68	8210	05	1.2	12	SB			C		80		D
0104	06	08472	08481	0851	N26	W30	8214	05	4.0	4	SF						16		
	LEAR	06	0847	0848	0853	N27	W29	8214	05	4.1	6	SF		3	E		16		
	KANZ	06	0849	0849	0849	N25	W31	8214	05	4.0	6	SF		2	C				
0105	KANZ	06	0853	0857	0918D	N22	W31	8214	05	4.0	25D	SF		2	C				
0106	KANZ	06	0918E	0918U	0918D	N29	W35	8214	05	3.6	25D	SF		2	C				
0107	KHAR	06	0941		0948	N28	W30	8214	05	4.0	7	SF		2	V				D
0108	KHAR	06	0948		0954	N29	W38	8214	05	3.4	6	SN		2	V				H
0109	KHAR	06	1016		1025	S13	W68	8210	05	1.3	9	SF		2	V				D
0110	KHAR	06	1019		1022	N28	W30	8214	05	4.1	3	SF		2	V				D
0111	K HAR	06	1055		1104	S13	W68	8210	05	1.3	9	SF		2	V				D
			06	1107		1120	No Flare Patrol												
			06	1202		1301	No Flare Patrol												
0112	HOLL	06	1335	1337	1345	S16	W68	8210	05	1.4	10	SN		3	E		84		
0113	HOLL	06	1435	1437	1440	N27	W29	8214	05	4.3	5	SF		3	E		16		
0114	HOLL	06	1512	1513	1515	N28	W36	8214	05	3.8	3	SF		3	E		29		H
0115	HOLL	06	1545	1546	1549	S15	W73	8210	05	1.1	4	SF		3	E		16		
0116	HOLL	06	1640	1642	1650	S14	W72	8210	05	1.2	10	SF		3	E		24		
0117	HOLL	06	1711	1712	1715	N28	W37	8214	05	3.8	4	SF		3	E		15		
0118	HOLL	06	1711	1712	1721	S14	W74	8210	05	1.1	10	SF		3	E		54		
0119	HOLL	06	1818	1822	1823	S23	E82	8218	05	13.1	5	SF		3	E		11		
0120	HOLL	06	1825	1830	1840	S13	W76	8210	05	1.0	15	SF		3	E		65		
0121	HOLL	06	1838	1839	1902	N28	W32	8214	05	4.3	24	SF		3	E		19		
0122	HOLL	06	2118	2122	2132	N26	W31	8214	05	4.5	14	SF		3	E		26		
0123	HOLL	06	2207	2208	2213	S14	W72	8210	05	1.5	6	SF		3	E		70		
			06	2224		2232	No Flare Patrol												
0124	HOLL	06	2238	2239	2247	S22	E77	8218	05	12.9	9	SF		3	E		20		
0125	HOLL	06	2257	2302	2309	N28	W36	8214	05	4.1	12	SF		3	E		31		
0126	HOLL	06	2257	2302	2310	S22	E77	8218	05	12.9	13	SF		3	E		23		
0127	06	2343	23462	2406	N28	W34	8214	05	4.3	23	SF						32		E
	HOLL	06	2343	2346	2352	N28	W36	8214	05	4.2	9	SF		3	E		34		
	LEAR	06	2343	2348	2421	N28	W32	8214	05	4.5	38	SF		3	E		30		E
0128	LEAR	07	0109	0109	0114	N29	W40	8214	05	3.9	5	SF		4	E		16		E
0129	LEAR	07	0403	0407	0414	S24	E72	8218	05	12.7	11	SF		4	E		37		
0130	LEAR	07	0606	0606	0616	S24	E71	8218	05	12.7	10	SF		4	E		15		
0131	07	0632	0635	0652	S22	E71	8218	05	12.7	20	SF						20		
	LEAR	07	0632	0635	0652	S23	E70	8218	05	12.7	20	SF		3	E		19		
	SVTO	07	0638E	0638U	0657D	S22	E72	8218	05	12.8	19D	SF		1	E		20		

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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)		
0132	KANZ	07	0647E	0647U	0655D	S20	E69	8218	05	12.6	8D	SF		2	C					
0133	LEAR	07	0653	0655	0706	S23	E71	8218	05	12.7	13	SF		4	E		28			
0134	SVTO	07	0729E	0729U	0737D	S22	E73	8218	05	12.9	8D	SF		1	E		12			
			07 0848		0958	No Flare Patrol														
0135	SVTO	07	1107	1114	1156	N29	W47	8214	05	3.8	49	1B		3	E		182		F	
0136	HOLL	07	1328	1330	1333	S23	E68	8218	05	12.8	5	SF		3	E		28			
0137	HOLL	07	1338	1339	1401	S23	E68	8218	05	12.8	23	SF		3	E		21			
0138	HOLL	07	1340	1342	1345	N28	W47	8214	05	3.9	5	SF		3	E		21			
0139	HOLL	07	1438	1459	1509	S23	E68	8218	05	12.8	31	SF		3	E		30			
0140	HOLL	07	1441	1449	1520	N27	W41	8214	05	4.4	39	1F		3	E		114			
0141	HOLL	07	1533	1548	1600	S23	E67	8218	05	12.8	27	SF		3	E		15			
0142	HOLL	07	1605	1607	1613	N26	W41	8214	05	4.5	8	SF		3	E		17			
0143	HOLL	07	1614	1621	1643	N26	W41	8214	05	4.5	29	SF		3	E		56			
0144	HOLL	07	1907	1909	1918	N31	W53	8214	05	3.6	11	SF		3	E		15			
0145	HOLL	07	1912	1914	1916	S21	E59	8218	05	12.3	4	SF		3	E		16			
0146	HOLL	07	1927	1928	1934	S23	E64	8218	05	12.7	7	SF		3	E		23		F	
			07 2117		2145	No Flare Patrol														
0147	HOLL	07	2151	2152	2155	S23	E63	8218	05	12.8	4	SF		3	E		19			
			07 2227		2254	No Flare Patrol														
0148	HOLL	07	2313	2316	2320	S23	E61	8218	05	12.7	7	SF		3	E		27		F	
			08 0120		0129	No Flare Patrol														
			08 0145		0150	No Flare Patrol														
			08 0241		0304	No Flare Patrol														
0149	KANZ	08	0619	0624	0636	N23	W57	8214	05	3.9	17	SF		2	C					
0150	KANZ	08	0619	0628	0700	S18	W82	8210	05	2.0	41	SF		2	C					
0151	KANZ	08	1128	1128	1132	S23	E53	8218	05	12.6	4	SF		2	C					
0152	SVTO	08	1251E	1304U	1340D	N25	W51	8214	05	4.6	49D	1N		3	E		150		F	
0153	KANZ	08	1304	1308	1336	N27	W70		05	3.1	32	2F		2	C					
0154		08	16151	16151	1619	N28	W54	8214	05	4.4	4	SF					18			
	HOLL	08	1615	1615	1618	N28	W53	8214	05	4.5	3	SF		3	E		18			
	KANZ	08	1616	1616	1620	N27	W55	8214	05	4.4	4	SF		2	C					
0155	HOLL	08	2256	2256	2304	N32	W65	8214	05	3.8	8	SF		2	E		24		F	
			08 2358		2400	No Flare Patrol														
			09 0000		0029	No Flare Patrol														
			09 0356		0420	No Flare Patrol														
0156		09	10283	10373	1051	N28	W70	8214	05	4.0	23	2N					257		EF	
	URUM	09	1028	1040	1052	N28	W70	8214	05	4.0	24	2B			C		434		E	
	KANZ	09	1030	1038	1050	N29	W70	8214	05	3.9	20	2F		2	C					
	SVTO	09	1031	1037	1048	N29	W72	8214	05	3.8	17	2F		3	E		266		F	
	RAMY	09	1040E	1042U	1053	N28	W66	8214	05	4.3	13D	SF		2	E		72			

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
0157		09	1102	11042	1112	N29	W70	8214	05	4.0	10	SF					52		
	SVTO	09	1102	1104	1113	N29	W71	8214	05	3.9	11	SF	3	E			51		
	KANZ	09	1102	1106	1110	N28	W69	8214	05	4.1	8	SF	2	C					
	RAMY	09	1104E	1105U	1112	N29	W69	8214	05	4.0	8D	SF	3	E			53		
0158	URUM	09	1103E	1103	1119	N29	W83		05	2.9	16D	1N			P		80	D	
		10	0428		0501	No Flare Patrol													
		10	0609		0631	No Flare Patrol													
		10	0637		0643	No Flare Patrol													
0159	KANZ	10	0820	0824	0840	S27	E87	8220	05	17.1	20	SF	2	C					
0160		10	11441	11481	1202	S28	E87	8220	05	17.3	18	SF					36		
	KANZ	10	1144	1148	1208	S27	E87	8220	05	17.3	24	SF	2	C					
	RAMY	10	1145	1149	1156	S28	E87	8220	05	17.3	11	SF	4	E			36		
0161		10	13201	13202	1334	S28	E88	8220	05	17.4	14	SF					28		
	KANZ	10	1320	1320	1344	S28	E89	8220	05	17.5	24	SF	2	C					
	HOLL	10	1321	1322	1324	S29	E88	8220	05	17.4	3	SF	3	E			28		
0162	KANZ	11	0640	0640	0644	N20	E73	8222	05	16.9	4	SF	2	C					
0163	KHAR	11	1007		1035U	S19	E66		05	16.4	28U	SF	2	V				D	
0164	SVTO	11	1037	1047	1110	S22	E05	8218	05	11.8	33	1F	3	E			106	FH	
0165		11	10395	10461	1104	S19	E15	8218	05	12.6	25	1F					49	EH	
	KANZ	11	1039	1047	1103	S19	E15	8218	05	12.6	24	1F	2	C					
	KHAR	11	1044	1046	1105	S19	E16	8218	05	12.7	21	1N	2	V				HE	
	RAMY	11	1049E	1049U	1101D	S19	E14	8218	05	12.5	12D	SF	2	E			49		
0166		11	1858	19011	1913	S22	E02	8218	05	11.9	15	SF					22		
	HOLL	11	1858	1901	1912	S21	E03	8218	05	12.0	14	SF	3	E			25		
	RAMY	11	1858	1902	1914	S22	E02	8218	05	11.9	16	SF	3	E			19		
0167	HOLL	11	2234	2235	2241	S20	E01	8218	05	12.0	7	SF	3	E			33		
0168	HOLL	11	2342	2343	2351	S21	E01	8218	05	12.1	9	SF	3	E			44		
0169	SVTO	12	0507	0546	0637	S20	E02	8218	05	12.4	90	SF	3	E			67	FH	
0170	KANZ	12	0619E	0619U	0635	S20	E02	8218	05	12.4	16D	SF	2	C					
0171	SVTO	12	0815	0818	0833	S24	W02	8218	05	12.2	18	SF	3	E			28	F	
0172	KANZ	12	0817	0817	0833	S19	E19	8218	05	13.8	16	SF	2	C					
0173	HOLL	12	2157	2200	2204	S22	W06	8218	05	12.4	7	SF	3	E			15	F	
0174	HOLL	12	2312	2312	2317	S21	W06	8218	05	12.5	5	SF	3	E			28	F	
0175	SVTO	13	0624	0627	0635	S22	W18	8218	05	11.9	11	SF	3	E			15		
0176	KHAR	13	0940	0941	0952	S22	W17	8218	05	12.1	12	SF	2	V				DL	
0177	KHAR	13	1046	1047	1054	S21	W12	8218	05	12.5	8	SF	2	V				DH	
0178	KHAR	13	1204	1204	1211	S22	W12	8218	05	12.6	7	SF	2	V				DH	
0179	KANZ	13	1221	1221	1225	S08	W58	8221	05	9.2	4	SF	2	C					
0180	HOLL	13	1400	1402	1406	S26	W17	8218	05	12.3	6	SF	3	E			12		
0181	HOLL	13	1451	1452	1501	S22	W16	8218	05	12.4	10	SF	3	E			29		
0182	SVTO	13	1452	1452	1502	S22	W23	8218	05	11.8	10	SF	3	E			16		
0183	HOLL	13	1845	1846	1852	S21	W18	8218	05	12.4	7	SF	3	E			25	F	

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CHD	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)	
0184	HOLL	13	2044	2045	2051	S18	W25	8218	05	12.0	7	SF		3	E		17		
0185	HOLL	13	2126	2130	2133	S20	W16	8218	05	12.7	7	SF		3	E		10		F
0186	HOLL	13	2224	2225	2230	S20	W18	8218	05	12.5	6	SF		3	E		25		F
0187	HOLL	14	0017	0017	0046	S20	W19	8218	05	12.5	29	SF		3	E		34		F
		14	0149		0434	No Flare Patrol													
0188	SVTO	14	0618	0619	0625	N23	E46	8222	05	17.8	7	SF		3	E		17		
0189	SVTO	14	0642	0732	0744	S20	W24	8218	05	12.4	62	SF		3	E		57		
0190	SVTO	14	0754	0755	0803	N23	E45	8222	05	17.8	9	SF		3	E		26		
0191	SVTO	14	0829	0832	0837	S20	W21	8218	05	12.7	8	SF		3	E		15		
0192	SVTO	14	1030	1036	1043	S22	W26	8218	05	12.4	13	SF		3	E		73		F
0193	SVTO	14	1252	1252	1259	S21	W25	8218	05	12.6	7	SF		3	E		12		
0194	SVTO	14	1347	1348	1411	S26	E38	8220	05	17.5	24	SF		3	E		47		F
	SVTO	14	1347	1348	1411	S26	E38	8220	05	17.5	24	SF		3	E		47		F
	KANZ	14	1348	1348	1416	S27	E40	8220	05	17.7	28	SF		2	C				
		14	1753		1843	No Flare Patrol													
0195	RAMY	14	2026E	2029	2032	S21	W31	8218	05	12.5	60	SF		2	E		22		F
		14	2205		2400	No Flare Patrol													
		15	0000		0043	No Flare Patrol													
0196	URUM	15	0124	0128	0136	N27	W44		05	11.6	12	SN			C		32	0.5	D
0197	URUM	15	0143	0147	0158	N28	W42		05	11.8	15	SN			C		32	0.5	D
0198	LEAR	15	0220	0222	0223D	S19	W41	8218	05	12.0	30	SF		3	E		36		
		15	0224		0235	No Flare Patrol													
		15	0403		0522	No Flare Patrol													
0199	HOLL	15	1536	1536	1548	S19	W41	8218	05	12.5	12	SF		3	E		19		
0200	LEAR	16	0155	0157	0204	S21	W44	8218	05	12.7	9	SF		3	E		21		
0201	LEAR	16	0428	0432	0448	S21	W45	8218	05	12.7	20	SF		3	E		41		
0202	LEAR	16	0444	0445	0449	N21	E20	8222	05	17.7	5	SF		3	E		16		
0203	URUM	16	0928	0934	0934D	S19	W49	8218	05	12.6	60	SN			P		32	0.5	D
0204	KANZ	16	1030	1034	1044	N21	E16	8222	05	17.7	14	SF		2	C				
		16	1116		1119	No Flare Patrol													
		16	1121		1134	No Flare Patrol													
		16	1136		1220	No Flare Patrol													
		16	1654		1745	No Flare Patrol													
		16	1902		1910	No Flare Patrol													
		16	1949		1953	No Flare Patrol													
0205	HOLL	16	2028	2035	2041	S17	W58	8218	05	12.4	13	SF		3	E		29		
		16	2249		2305	No Flare Patrol													
		17	1422		1606	No Flare Patrol													
		17	1642		1643	No Flare Patrol													
		17	1649		1809	No Flare Patrol													
		17	1822		1849	No Flare Patrol													
		17	1905		1934	No Flare Patrol													
		17	1947		2340	No Flare Patrol													



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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
																Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
0213	HOLL	26	1911	1912	1916	S21	W70	8224	05	21.4	5	SF		3	E		30			
0214	HOLL	26	2032	2034	2044	N21	W50	8226	05	23.0	12	1F		3	E		102			
0215	HOLL	26	2113	2113	2117	N21	W52	8226	05	22.9	4	SF		3	E		15			
			27	0157		0457	No Flare Patrol													
0216	SVTO	27	0531	0534	0543	N23	E65	8227	06	1.2	12	SF		3	E		29			F
0217	SVTO	27	0609	0609	0613	N19	W55	8226	05	23.0	4	SF		3	E		13			
0218	KANZ	27	0903E	0919U	0919D	S23	W76	8224	05	21.5	16D	SF		2	C					
0219	SVTO	27	0931	0934	0941	S23	W85	8224	05	20.8	10	SF		3	E		68			
0220	SVTO	27	0952	0957	1008	N17	W64	8226	05	22.5	16	SF		3	E		34			F
0221		27	10523	10523	1104	S23	W79	8224	05	21.4	12	SF					14			
	SVTO	27	1052	1052	1056	S23	W82	8224	05	21.1	4	SF		3	E		10			
	RAMY	27	1052E	1053	1117	S23	W78	8224	05	21.4	25D	SF		3	E		19			
	KANZ	27	1055	1055	1059	S24	W76	8224	05	21.6	4	SF		2	C					
0222		27	1103	11101	1116	S24	W83	8224	05	21.0	13	SF					51			
	SVTO	27	1103	1110	1116	S23	W86	8224	05	20.8	13	SF		3	E		51			
	KANZ	27	1103	1111	1115D	S24	W80	8224	05	21.3	12D	SF		2	C					
0223		27	1112	1118	1131	N18	W66	8226	05	22.4	19	SF					36			F
	SVTO	27	1112	1118	1132	N17	W66	8226	05	22.4	20	SF		3	E		42			F
	RAMY	27	1121E	1121U	1130	N18	W67	8226	05	22.4	9D	SF		3	E		30			
0224	KANZ	27	1226	1230	1238	S24	W76	8224	05	21.6	12	SF		2	C					
0225	SVTO	27	1229	1232	1235	S23	W86	8224	05	20.9	6	SF		3	E		36			F
0226	SVTO	27	1248	1249	1253	S23	W90	8224	05	20.6	5	SF		3	E		42			
0227	SVTO	27	1323	1323	1326	S23	W83	8224	05	21.2	3	SF		3	E		10			
0228		27	1252	13331	1346	S22	W82	8224	05	21.2	54	SF					83			H
	HOLL	27	1252	1334	1348	S21	W83	8224	05	21.2	56	1N		3	E		163			H
	RAMY	27	1331E	1333	1343	S22	W80	8224	05	21.4	12D	SF		3	E		47			
	SVTO	27	1333E	1335U	1340D	S23	W83	8224	05	21.2	7D	SF		3	E		39			
0229	HOLL	27	1255	1300	1319	N19	W66	8226	05	22.5	24	SF		3	E		13			F
0230		27	13232	1328*	1433	N18	W60	8226	05	23.0	70	SF					46			FH
	SVTO	27	1323	1328	1347	N19	W62	8226	05	22.8	24	SF		3	E		27			F
	HOLL	27	1325	1338	1519	N18	W58	8226	05	23.1	114	SF		3	E		64			FH
0231	RAMY	27	1332E	1333	1343	S12	W80	8224	05	21.5	11D	SF		3	E		47			
0232		27	13342	13351	1342	N22	E51	8227	05	31.5	8	SF					61			F
	SVTO	27	1334	1335	1341	N22	E52	8227	05	31.6	7	SF		3	E		61			F
	KANZ	27	1336	1336	1344	N22	E50	8227	05	31.4	8	SF		2	C					
0233		27	14183	14222	1436	S22	W83	8224	05	21.2	18	SF					43			
	HOLL	27	1418	1424	1446	S22	W84	8224	05	21.1	28	SF		3	E		77			
	SVTO	27	1420	1424	1431	S23	W84	8224	05	21.1	11	SF		3	E		32			
	RAMY	27	1421	1422	1430	S22	W80	8224	05	21.4	9	SF		3	E		21			
0234	SVTO	27	1424	1437	1450	N18	W59	8226	05	23.1	26	SF		3	E		14			F
0235		27	1543	1605	1611	S22	W82	8224	05	21.3	28	SF					71			
	HOLL	27	1543	1605	1611	S21	W83	8224	05	21.3	28	SF		3	E		79			
	RAMY	27	1551E	1609U	1632D	S22	W82	8224	05	21.3	41D	SF		3	E		63			
0236	HOLL	27	1614	1619	1628	S21	W82	8224	05	21.4	14	1F		3	E		131			

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks					
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)						
0237		27	1816	1819	1825	S21	W83	8224	05	21.4	9	SF				50		H					
	RAMY	27	1814E	1814U	1834D	S22	W82	8224	05	21.4	20D	SF	3	E		12							
	HOLL	27	1816	1819	1825	S20	W84	8224	05	21.3	9	SF	3	E		88		H					
0238	HOLL	27	1836	1837	1839	S20	W83	8224	05	21.4	3	SF	3	E		20							
0239	HOLL	27	2020	2020	2024	S22	W85	8224	05	21.3	4	SF	3	E		23							
0240	HOLL	27	2043	2043	2048	N19	W68	8226	05	22.7	5	SF	3	E		10		F					
0241	HOLL	27	2249	2249	2252	S21	W85	8224	05	21.4	3	SF	3	E		29							
																			27	2256		2400	No Flare Patrol
0242	HOLL	27	2305	2307	2321	N25	E47	8227	05	31.6	16	SF	3	E		37		F					
0243	HOLL	27	2343	2344	2348	S21	W85	8224	05	21.5	5	SF	3	E		39							
0244	HOLL	28	0104	0104	0109	S22	W86	8224	05	21.4	5	SF	3	E		11							
																			28	0158		0351	No Flare Patrol
0245	SVTO	28	0436	0438	0446	N20	W75	8226	05	22.4	10	SF	3	E		31							
0246		28	0621	0622	0626	N19	W76	8226	05	22.5	5	SF				56		H					
	SVTO	28	0621	0622	0625	N20	W78	8226	05	22.3	4	SF	3	E		56		H					
	KANZ	28	0622	0622	0626	N18	W75	8226	05	22.5	4	SF	2	C									
0247	SVTO	28	1126	1126	1131	N28	E39	8227	05	31.5	5	SF	3	E		27		H					
0248	HOLL	28	1257	1257	1300	N22	W80	8226	05	22.4	3	SF	3	E		15							
0249	SVTO	28	1257	1257	1301	N20	W90	8226	05	21.6	4	SF	3	E		22							
0250	SVTO	28	1346	1349	1356	N18	W87	8226	05	21.9	10	SF	3	E		47							
0251	HOLL	28	1347	1413	1426	N20	W85	8226	05	22.1	39	SF	3	E		30		F					
0252	HOLL	28	2027	2029	2033	N20	W80	8226	05	22.7	6	SF	3	E		95							
0253	HOLL	28	2227	2229	2231	N20	W82	8226	05	22.7	4	SF	3	E		20							
0254	HOLL	28	2243	2252	2301	N20	W83	8226	05	22.6	18	SF	3	E		34							
0255	HOLL	29	0020	0022	0030	N20	W81	8226	05	22.8	10	SF	3	E		27							
																			29	0106		0413	No Flare Patrol
																			29	0432		0609	No Flare Patrol
																			29	0654		0739	No Flare Patrol
																			29	1012		1042	No Flare Patrol
																			29	1057		1122	No Flare Patrol
0256	KHAR	29	1129E		1150U	N15	W90	8226	05	22.7	21U	SN	2	V									
0257	KHAR	29	1201		1207	N18	W90	8226	05	22.6	6	SF	2	V				H					
0258	KHAR	29	1209	1209	1219	N15	W90	8226	05	22.7	10	SN	2	V				H					
0259	KHAR	29	1222		1230	N15	W90	8226	05	22.7	8	SF	2	V									
0260	KHAR	29	1220		1225U	S08	E80		06	4.5	5U	SF	2	V				D					
0261	HOLL	29	2342	2344	2354	S21	E76		06	4.8	12	SF	3	E		91							
																			30	1852		1856	No Flare Patrol
																			30	2146		2155	No Flare Patrol
																			30	2210		2219	No Flare Patrol
0262	URUM	31	0353	0357	0401D	N28	E09	8227	05	31.9	8D	SN		P		113	1.3	E					

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MAY 1998

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks	
								Region	Class								Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
0263	KANZ	31	1416	1420	1424	S28	E68			06	5.9	8	SF		2	C					
0264	HOLL	31	1802	1803	1807	S22	E56	8230		06	5.0	5	SF		3	E			38		

"Remarks"

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

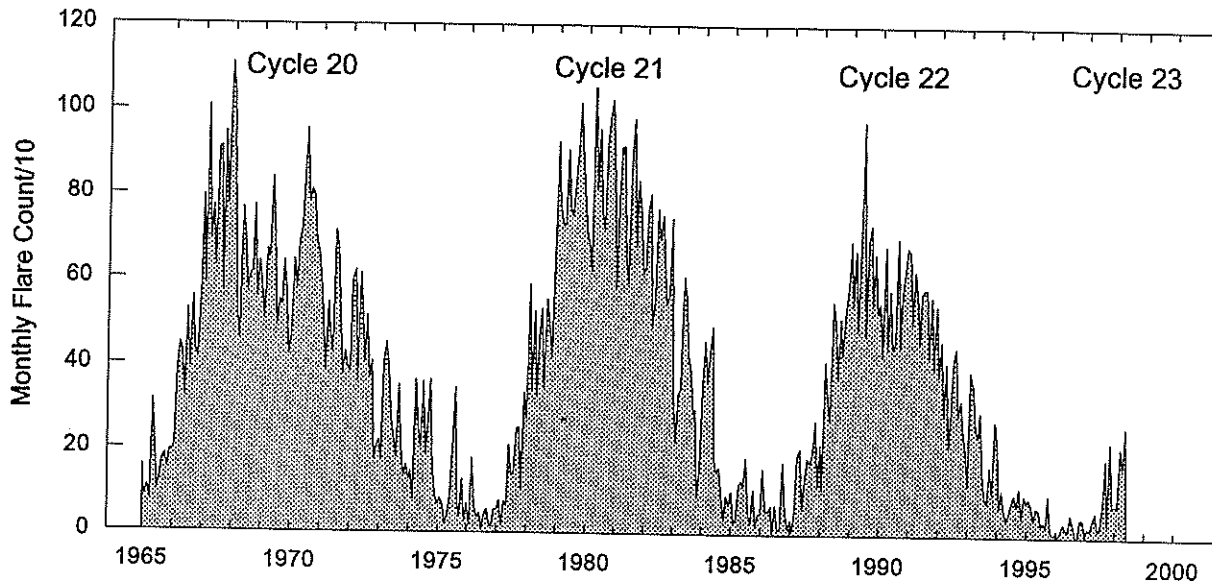
Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual





# Monthly Counts of Grouped Solar Flares Jan 1965 - May 1998

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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1965	158	85	110	74	315	231	99	127	173	184	150	193	1899
1966	194	205	390	449	429	323	528	391	558	432	417	543	4859
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	56	68	3	71	12	14	174	56	13	730
1987	36	7	52	192	205	61	132	185	172	198	273	114	1627
1988	217	109	413	328	274	551	502	375	513	429	518	587	4816
1989	695	544	672	488	691	977	474	699	733	547	665	526	7711
1990	550	424	684	442	580	445	454	703	449	574	623	682	6610
1991	672	503	625	570	458	574	582	581	425	565	396	544	6495
1992	380	462	287	412	214	271	413	447	287	325	248	206	3952
1993	123	392	357	262	237	296	154	92	82	167	104	275	2541
1994	217	67	111	60	40	56	81	101	72	117	45	99	1066
1995	82	95	77	42	69	66	29	37	23	99	14	6	639
1996	14	3	15	34	21	16	54	31	3	0	44	45	280
1997	8	22	18	43	59	18	26	75	188	31	228	74	790
1998	78	76	216	161	264								795

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

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

MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean	Int	Remarks
01	204	IZMI	44 NS	0600.0E		360.0D		70.0		
	33	UPIC	43 NS	0616.0		676.0				
	127	TORN	44 NS	0620.0E		430.0D		90.0		V=1
	245	SVTO	43 NS	0815.0	0815.0	1.0	71.0			QL=4 ST=2 TYP=1
	245	SVTO	43 NS	0903.0	1237.0	499.0	220.0			QL=4 ST=2 TYP=1
	245	SGMR	43 NS	0959.0	1237.0U	555.0	240.0			QL=4 ST=2 TYP=1
	235	CUBA	44 NS	1300.0E		530.0D		36.0		
	280	CUBA	44 NS	1300.0E		530.0D		40.0		
	245	PALE	43 NS	1653.0	1718.0	141.0	190.0			QL=2 ST=2 TYP=1
	245	SGMR	43 NS	2026.0	2132.0	174.0	240.0			QL=4 ST=2 TYP=1
	245	PALE	43 NS	2036.0	0407.0	484.0	220.0			QL=2 ST=2 TYP=1
	245	LEAR	43 NS	2259.0	0427.0	483.0	280.0			QL=4 ST=2 TYP=1
	2840	PEKG	1 S	0107.0	0113.0	14.0	7.3			
	5730	IRKU	4 S/F	0110.5	0114.5	10.0	7.0		U	
	2800	HIRA	1 S	0114.2	0114.5	0.7	4.0		1.0	0
	245	LEAR	8 S	0130.0	0130.0	1.0	140.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	0130.0	0130.0	1.0	170.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0134.0	0134.0	1.0	56.0			QL=4 ST=2 TYP=3
	245	LEAR	48 C	0325.0	0330.0	5.0	1700.0			QL=4 ST=2 TYP=8
	245	PALE	48 C	0325.0	0330.0	5.0	1800.0			QL=4 ST=3 TYP=8
	200	HIRA	42 SER	0325.0	0325.6	22.0	660.0			0
	500	HIRA	42 SER	0326.0	0333.2	24.0	7.0			0
	245	LEAR	8 S	0332.0	0333.0	1.0	310.0			QL=4 ST=2 TYP=3
	245	PALE	49 GB	0332.0	0333.0	1.0	500.0			QL=4 ST=2 TYP=6
	5730	IRKU	1 S	0332.0	0333.1	3.4	2.0		U	
	410	LEAR	8 S	0333.0	0333.0		24.0		U	QL=4 ST=2 TYP=3
	245	LEAR	4 S/F	0340.0	0340.0	5.0	100.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	0340.0	0340.0		130.0		U	QL=4 ST=2 TYP=3
	5730	IRKU	42 SER	0558.3	0558.4	0.2	2.0		U	
	5730	IRKU	42 SER	0604.5	0607.4	9.5	1.0		U	
	500	HIRA	42 SER	0608.0	0608.2	0.5	10.0			0
	5730	IRKU	42 SER	0614.6	0620.7	11.4	5.0		U	
	2840	PEKG	1 S	0615.0	0622.0	10.0	3.7			
	2950	GORK	20 GRF	0616.0	0620.0	19.7	7.2			
	9100	GORK	5 S	0616.1	0620.6	6.8	6.9			
	3000	IZMI	22 GRF	0616.2	0620.5	80.0	5.0			
	600	GORK	41 F	0616.5	0620.4	27.9	27.4			
	245	LEAR	4 S/F	0618.0	0620.0	3.0	120.0			QL=4 ST=2 TYP=3
	204	IZMI	42 SER	0618.0	0619.0U	40.0	200.0U			
	200	HIRA	46 C	0618.0	0619.5	3.0	60.0		10.0	WL
	500	HIRA	46 C	0618.5	0620.0	3.0	150.0		25.0	WR
	2800	HIRA	3 S	0618.5	0620.5	3.0	4.0		1.0	0
	610	LEAR	8 S	0619.0	0620.0	2.0	430.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0619.0	0620.0	2.0	38.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0619.0	0620.0	2.0	150.0			QL=4 ST=3 TYP=3
	610	SVTO	8 S	0619.0	0620.0	1.0	350.0			QL=2 ST=3 TYP=3
	410	LEAR	8 S	0630.0	0631.0	1.0	71.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0630.0	0631.0	1.0	95.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0630.0	0631.0	1.0	130.0			QL=4 ST=2 TYP=3
	410	SVTO	8 S	0631.0	0631.0		110.0		U	QL=4 ST=2 TYP=3
5730	IRKU	1 S	0706.5	0707.6	5.5	3.0		U		
245	LEAR	8 S	0723.0	0723.0		56.0			QL=4 ST=2 TYP=3	
245	SVTO	8 S	0723.0	0723.0		79.0			QL=4 ST=3 TYP=3	
600	GORK	24 R	0850.0	0852.7	18.8D	3.1				
9100	GORK	24 R	0857.1	0858.6	9.2	6.8				
5730	IRKU	45 C	0857.8	0858.7	8.2	3.0		U		
245	LEAR	48 C	0917.0	0937.0	20.0	74.0			QL=4 ST=2 TYP=8	
33	UPIC	48 C	1218.0	1222.5U	26.5					
245	SVTO	8 S	1220.0	1222.0	2.0	410.0			QL=2 ST=2 TYP=3	
410	SGMR	8 S	1222.0	1222.0		160.0		U	QL=4 ST=2 TYP=3	
245	SGMR	8 S	1222.0	1222.0		310.0		U	QL=4 ST=2 TYP=3	
410	SVTO	8 S	1222.0	1222.0		250.0		U	QL=4 ST=2 TYP=3	
410	SVTO	4 S/F	1222.0	0000.0	698.0	250.0			QL=4 ST=2 TYP=3	
245	SGMR	49 GB	1239.0	1242.0	5.0	980.0			QL=4 ST=2 TYP=6	
610	SGMR	4 S/F	1239.0	1239.0	3.0	39.0			QL=4 ST=2 TYP=3	
410	SGMR	4 S/F	1240.0	1242.0	4.0	380.0			QL=4 ST=2 TYP=3	
410	SVTO	49 GB	1240.0	1242.0	4.0	560.0			QL=4 ST=2 TYP=6	
245	SVTO	49 GB	1241.0	1242.0	3.0	820.0			QL=2 ST=2 TYP=6	
6700	CUBA	20 GRF	1441.0	1453.0	37.0	8.0		4.0	13R	

S O L A R R A D I O E M I S S I O N  
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 <sup>2</sup> Hz)	Mean		
01	245 SVTO	8 S	1451.0	1451.0	2.0	230.0			QL=2 ST=2 TYP=3
	6700 CUBA	21 GRF	1554.0	1556.0	15.0	7.0	4.0		21R
	410 SGMR	8 S	1622.0	1622.0	2.0	73.0			QL=4 ST=2 TYP=3
	6700 CUBA	1 S	1716.9	1719.5	3.7	3.0	1.0		71R
	410 SGMR	8 S	1719.0	1719.0	1.0	85.0			QL=4 ST=2 TYP=3
	410 SGMR	8 S	1730.0	1730.0	U	74.0			QL=4 ST=2 TYP=3
	245 SGMR	8 S	1730.0	1730.0	U	200.0			QL=2 ST=2 TYP=3
	2800 PENT	40 F	1740.0	1756.0	50.0	6.0			
	410 PALE	8 S	1745.0	1746.0	1.0	56.0			QL=4 ST=2 TYP=3
	245 SGMR	4 S/F	1745.0	1747.0	5.0	470.0			QL=2 ST=3 TYP=3
	410 SGMR	8 S	1745.0	1746.0	1.0	65.0			QL=4 ST=2 TYP=3
	1415 SGMR	8 S	1745.0	1747.0	2.0	51.0			QL=4 ST=2 TYP=3
	1415 PALE	8 S	1746.0	1746.0	1.0	55.0			QL=4 ST=2 TYP=3
	245 PALE	8 S	1746.0	1747.0	1.0	410.0			QL=2 ST=2 TYP=3
	610 SGMR	8 S	1746.0	1746.0	U	38.0			QL=4 ST=2 TYP=3
	410 PALE	8 S	1749.0	1750.0	1.0	130.0			QL=4 ST=2 TYP=3
	245 PALE	4 S/F	1749.0	1751.0	3.0	210.0			QL=2 ST=2 TYP=3
	1415 PALE	4 S/F	1749.0	1750.0	6.0	41.0			QL=4 ST=2 TYP=3
	610 PALE	8 S	1749.0	1750.0	1.0	28.0			QL=4 ST=2 TYP=3
	1415 SGMR	8 S	1750.0	1750.0	1.0	46.0			QL=4 ST=2 TYP=3
	245 SGMR	4 S/F	1750.0	1751.0	5.0	330.0			QL=2 ST=2 TYP=3
	610 SGMR	8 S	1750.0	1750.0	U	48.0			QL=4 ST=2 TYP=3
	410 SGMR	4 S/F	1750.0	1750.0	3.0	130.0			QL=4 ST=2 TYP=3
	610 SGMR	8 S	1806.0	1807.0	2.0	67.0			QL=4 ST=2 TYP=3
	1415 SGMR	8 S	1806.0	1806.0	2.0	42.0			QL=4 ST=2 TYP=3
	1415 SGMR	8 S	1813.0	1814.0	1.0	76.0			QL=4 ST=2 TYP=3
	1415 PALE	8 S	1814.0	1814.0	1.0	52.0			QL=4 ST=2 TYP=3
	6700 CUBA	1 S	2011.0	2012.1	2.3	7.0	3.0		3R
	6700 CUBA	2 S/F	2024.5	2028.1	6.6	11.0	5.0		21R
	245 PALE	8 S	2026.0	2026.0	1.0	83.0			QL=2 ST=2 TYP=3
	245 PALE	8 S	2029.0	2029.0	1.0	100.0			QL=2 ST=2 TYP=3
	6700 CUBA	21 GRF	2040.0	2127.0	1380.0D	20.0	10.0		12L SUNSET
	245 SGMR	4 S/F	2051.0	2054.0	7.0	270.0			QL=2 ST=3 TYP=3
	245 PALE	8 S	2054.0	2055.0	1.0	140.0			QL=2 ST=2 TYP=3
	245 PALE	8 S	2054.0	2055.0	1.0	1.0			QL=2 ST=2 TYP=3
	245 SGMR	4 S/F	2100.0	2102.0	4.0	170.0			QL=2 ST=2 TYP=3
	200 HIRA	6 S	2101.4	2102.5	1.5	240.0	50.0		ML
	1415 SGMR	8 S	2112.0	2114.0	2.0	66.0			QL=4 ST=2 TYP=3
	1415 PALE	8 S	2114.0	2114.0	U	70.0			QL=4 ST=2 TYP=3
	200 HIRA	46 C	2132.4	2132.5	4.5	170.0	35.0		O
	500 HIRA	8 S	2139.1	2139.2	0.2	24.0			O
	6700 CUBA	1 S	2149.4	2150.4	3.1	10.0	5.0		10L
	6700 CUBA	46 C	2225.5	2245.5	33.0D	307.0			24R SUNSET
	500 HIRA	46 C	2225.5	2244.7	29.0	160.0	30.0		MR
	2800 HIRA	46 C	2226.0	2245.2	33.0	140.0	50.0		WL
	610 PALE	8 S	2230.0	2230.0	U	350.0			QL=4 ST=2 TYP=3
	610 SGMR	8 S	2230.0	2230.0	U	290.0			QL=4 ST=2 TYP=3
	610 SGMR	48 C	2232.0	2244.0	24.0	230.0			QL=4 ST=2 TYP=8
	200 HIRA	46 C	2233.7	2244.0	19.0	350.0	100.0		ML
	245 PALE	48 C	2234.0	2244.0	18.0	830.0			QL=2 ST=3 TYP=8
2695 SGMR	48 C	2234.0	2244.0	17.0	110.0			QL=4 ST=2 TYP=8	
245 SGMR	48 C	2234.0	2244.0	18.0	760.0			QL=2 ST=2 TYP=8	
410 PALE	4 S/F	2234.0	2234.0	20.0	43.0			QL=4 ST=3 TYP=3	
610 PALE	4 S/F	2234.0	2234.0	20.0	54.0			QL=4 ST=3 TYP=3	
410 SGMR	48 C	2234.0	2244.0	22.0	190.0			QL=4 ST=2 TYP=8	
4995 SGMR	48 C	2235.0	2244.0	11.0	110.0			QL=4 ST=2 TYP=8	
4995 PALE	4 S/F	2238.0	2239.0	16.0	47.0			QL=4 ST=3 TYP=3	
1415 PALE	4 S/F	2238.0	2239.0	16.0	61.0			QL=4 ST=3 TYP=3	
2695 PALE	4 S/F	2238.0	2238.0	16.0	56.0			QL=4 ST=3 TYP=3	
8800 PALE	4 S/F	2242.0	2244.0	9.0	150.0			QL=4 ST=3 TYP=3	
1415 SGMR	4 S/F	2242.0	2244.0	6.0	110.0			QL=4 ST=2 TYP=3	
8800 SGMR	4 S/F	2243.0	2244.0	3.0	88.0			QL=2 ST=2 TYP=3	
8800 PALE	8 S	2254.0	2254.0	1.0	58.0			QL=4 ST=2 TYP=3	
610 PALE	8 S	2254.0	2255.0	2.0	120.0			QL=4 ST=2 TYP=3	
4995 PALE	4 S/F	2254.0	2254.0	3.0	89.0			QL=4 ST=2 TYP=3	
1415 PALE	4 S/F	2254.0	2254.0	3.0	95.0			QL=4 ST=2 TYP=3	
245 PALE	48 C	2254.0	2258.0	4.0	1500.0			QL=2 ST=2 TYP=8	
2695 PALE	8 S	2254.0	2254.0	2.0	72.0			QL=4 ST=2 TYP=3	
200 HIRA	42 SER	2254.2	2258.0	14.0	1200.0			O	

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak	Mean			
							(10 <sup>-22</sup> W/m <sup>2</sup> Hz)				
01	410	PALE	8 S	2256.0	2256.0	U	60.0			QL=4 ST=2 TYP=3	
	245	SGMR	49 GB	2256.0	2258.0	2.0	830.0			QL=2 ST=3 TYP=6	
	500	HIRA	8 S	2300.7	2300.8	0.2	28.0			0	
	245	PALE	8 S	2301.0	2301.0	1.0	400.0			QL=2 ST=2 TYP=3	
	245	LEAR	48 C	2302.0	2305.0	24.0	700.0			QL=4 ST=2 TYP=8	
	410	LEAR	8 S	2305.0	2305.0	U	29.0			QL=4 ST=2 TYP=3	
	245	PALE	49 GB	2305.0	2306.0	2.0	980.0			QL=2 ST=3 TYP=6	
	410	PALE	8 S	2305.0	2305.0	U	50.0			QL=4 ST=3 TYP=3	
	245	SGMR	4 S/F	2305.0	2306.0	3.0	410.0			QL=2 ST=2 TYP=3	
	1415	LEAR	8 S	2327.0	2327.0	U	65.0			QL=4 ST=2 TYP=3	
410	LEAR	8 S	2329.0	2329.0	1.0	170.0			QL=4 ST=2 TYP=3		
02	245	SVTO	43 NS	0407.0	0536.0U	741.0	420.0			QL=4 ST=3 TYP=1	
	204	IZMI	44 NS	0600.0E		360.0D		55.0			
	127	TORN	44 NS	0630.0E		510.0D		90.0		V=1	
	33	UPIC	43 NS	0702.5		570.0					
	245	LEAR	43 NS	0843.0	0845.0	59.0	81.0			QL=4 ST=2 TYP=1	
	245	SGMR	43 NS	0958.0	1157.0	384.0	180.0			QL=4 ST=2 TYP=1	
	245	SGMR	43 NS	0958.0	2103.0	803.0	190.0			QL=4 ST=2 TYP=1	
	235	CUBA	44 NS	1300.0E		530.0D		68.0			
	280	CUBA	44 NS	1300.0E		530.0D		52.0			
	410	SGMR	43 NS	1514.0	1519.0	6.0	79.0			QL=4 ST=2 TYP=1	
	245	PALE	43 NS	1903.0	2103.0	307.0	230.0			QL=2 ST=3 TYP=1	
	245	SGMR	43 NS	1946.0	2103.0	215.0	190.0			QL=4 ST=3 TYP=1	
	610	SGMR	43 NS	2152.0	2052.0	3.0	53.0			QL=4 ST=2 TYP=1	
	410	SGMR	43 NS	2153.0	2053.0	2.0	54.0			QL=4 ST=2 TYP=1	
	500	HIRA	43 NS	2300.0	0055.0	195.0	12.0			WR	
	410	LEAR	4 S/F	0109.0	0111.0	3.0	38.0			QL=4 ST=2 TYP=3	
	245	LEAR	4 S/F	0109.0	0111.0	3.0	120.0			QL=4 ST=2 TYP=3	
	5730	IRKU	22 GRF	0110.8	0111.8	8.2	3.0		U		
	5730	IRKU	22 GRF	0235.5	0241.2	23.5	3.0		U		
	5730	IRKU	21 GRF	0310.9	0313.9	18.1	6.0		U		
	200	HIRA	42 SER	0351.2	0402.7	15.0	320.0			ML	
	5730	IRKU	45 C	0352.3	0457.4	162.7	595.0		U		
	245	LEAR	8 S	0354.0	0354.0	U	140.0			QL=4 ST=2 TYP=3	
	2840	PEKG	2 S/F	0402.0	0408.0	9.0	3.7				
	245	LEAR	8 S	0405.0	0405.0	1.0	85.0			QL=4 ST=2 TYP=3	
	410	LEAR	8 S	0405.0	0405.0	1.0	15.0			QL=4 ST=2 TYP=3	
	245	LEAR	8 S	0412.0	0412.0	U	58.0			QL=4 ST=2 TYP=3	
	2840	PEKG	47 GB	0427.0	0457.0	164.0	548.0				
	500	HIRA	46 C	0434.2	0454.2	41.0	430.0			MR	
	200	HIRA	46 C	0438.2	0438.4	6.0	210.0		35.0		0
	4995	LEAR	49 GB	0451.0	0457.0	22.0	840.0			QL=4 ST=2 TYP=6	
	2800	HIRA	46 C	0451.5	0457.7	29.0	430.0			WL	
	200	HIRA	48 C	0451.7	0457.5	7.0	950.0			ML	
	410	LEAR	49 GB	0452.0	0454.0	18.0	2200.0			QL=4 ST=2 TYP=6	
	2695	LEAR	49 GB	0452.0	0457.0	17.0	530.0			QL=4 ST=2 TYP=6	
	1415	LEAR	48 C	0452.0	0510.0	18.0	520.0			QL=4 ST=2 TYP=8	
	1415	SVTO	48 C	0452.0	0510.0	18.0	510.0			QL=4 ST=2 TYP=8	
	2695	SVTO	49 GB	0452.0	0457.0	16.0	560.0			QL=4 ST=2 TYP=6	
	4995	SVTO	49 GB	0452.0	0457.0	20.0	880.0			QL=4 ST=2 TYP=6	
	8800	SVTO	48 C	0452.0	0457.0	21.0	800.0			QL=2 ST=2 TYP=8	
	245	LEAR	49 GB	0453.0	0456.0	8.0	2600.0			QL=4 ST=2 TYP=6	
	610	LEAR	4 S/F	0453.0	0456.0	14.0	290.0			QL=4 ST=2 TYP=3	
8800	LEAR	49 GB	0453.0	0457.0	18.0	600.0			QL=4 ST=2 TYP=6		
410	SVTO	49 GB	0453.0	0454.0	17.0	2900.0			QL=4 ST=2 TYP=6		
15400	SVTO	4 S/F	0453.0	0457.0	22.0	270.0			QL=4 ST=2 TYP=3		
610	SVTO	4 S/F	0453.0	0456.0	1147.0	260.0			QL=2 ST=1 TYP=3		
15400	LEAR	4 S/F	0454.0	0457.0	12.0	240.0			QL=4 ST=2 TYP=3		
245	SVTO	48 C	0454.0	0456.0	18.0	2700.0			QL=2 ST=2 TYP=8		
610	SVTO	4 S/F	0454.0	0456.0	14.0	260.0			QL=2 ST=2 TYP=3		
2950	GORK	45 C	0505.1E	0505.3	3.9D	56.0					
9100	GORK	29 PBI	0507.0E	0507.7U	8.8D	67.0U					
600	GORK	40 F	0507.9E	0512.9	52.1D	17.1					
2950	GORK	30 PBI	0509.0	0509.0	76.6	27.0					
500	HIRA	42 SER	0517.2	0521.1	8.0	120.0			WL		
200	HIRA	42 SER	0518.5	0525.7	8.0	510.0			WL		
2950	GORK	2 S/F	0520.3	0520.7	1.2	4.4					
410	SVTO	8 S	0524.0	0525.0	1.0	66.0			QL=4 ST=2 TYP=3		

SOLAR RADIO EMISSION  
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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Int	Remarks		
02	245	SVTO	49 GB	0525.0	0525.0	U	720.0			QL=2 ST=2 TYP=6		
	1415	SVTO	8 S	0525.0	0525.0	U	28.0			QL=4 ST=2 TYP=3		
	5730	IRKU	1 S	0724.0	0725.2	3.0	4.0		U			
	245	LEAR	4 S/F	0759.0	0800.0	4.0	300.0			QL=4 ST=2 TYP=3		
	245	SVTO	8 S	0800.0	0800.0	2.0	370.0			QL=2 ST=2 TYP=3		
	204	IZMI	42 SER	0800.4	0800.8	21.0	380.0					
	5730	IRKU	1 S	0802.3	0803.2	2.4	3.0		U			
	204	IZMI	25 R	0806.0		236.00		160.0				
	33	UPIC	49 GB	1332.5		22.5						
	245	SGMR	48 C	1333.0	1338.0	98.0	14000.0				QL=2 ST=2 TYP=8	
	245	SVTO	48 C	1333.0	1338.0	92.0	14000.0				QL=2 ST=2 TYP=8	
	610	SGMR	48 C	1334.0	1344.0	99.0	22000.0				QL=4 ST=2 TYP=8	
	410	SGMR	48 C	1334.0	1345.0	99.0	18000.0				QL=4 ST=2 TYP=8	
	410	SVTO	48 C	1334.0	1345.0	91.0	20000.0				QL=4 ST=2 TYP=8	
	280	CUBA	27 RF	1334.0	1442.0	115.0	4677.0					
	235	CUBA	27 RF	1334.0	1442.0	115.0	17117.0					
	2800	PENT	20 GRF	1335.0	1337.0	85.0	1213.0					
	4995	SGMR	49 GB	1335.0	1338.0	98.0	1800.0				QL=4 ST=2 TYP=6	
	1415	SGMR	48 C	1336.0	1426.0	97.0	4500.0				QL=4 ST=2 TYP=8	
	8800	SGMR	49 GB	1337.0	1341.0	96.0	1700.0				QL=2 ST=2 TYP=6	
	15400	SGMR	48 C	1337.0	1341.0	96.0	1300.0				QL=2 ST=2 TYP=8	
	2695	SGMR	49 GB	1337.0	1338.0	96.0	1300.0				QL=4 ST=2 TYP=6	
	610	SVTO	48 C	1337.0	1347.0	430.0	19000.0				QL=2 ST=2 TYP=8	
	2800	PENT	40 F	2027.0	2048.0	113.0	23.0					
	245	PALE	8 S	2038.0	2039.0	1.0	41.0				QL=2 ST=2 TYP=3	
	500	HIRA	46 C	2038.5	2048.5	26.0	180.0		20.0		MR	
	410	PALE	8 S	2039.0	2039.0	U	76.0				QL=4 ST=2 TYP=3	
	610	PALE	8 S	2039.0	2039.0	U	67.0				QL=4 ST=2 TYP=3	
	610	SGMR	8 S	2039.0	2039.0	2.0	66.0				QL=4 ST=2 TYP=3	
	410	SGMR	8 S	2039.0	2039.0	1.0	85.0				QL=4 ST=2 TYP=3	
	410	SGMR	48 C	2043.0	2048.0	6.0	190.0				QL=4 ST=2 TYP=8	
	610	PALE	4 S/F	2044.0	2046.0	5.0	200.0				QL=4 ST=2 TYP=3	
	410	PALE	8 S	2044.0	2044.0	U	61.0				QL=4 ST=2 TYP=3	
	1415	SGMR	4 S/F	2044.0	2046.0	5.0	47.0				QL=4 ST=2 TYP=3	
	610	SGMR	48 C	2044.0	2046.0	5.0	190.0				QL=4 ST=2 TYP=8	
	1415	PALE	8 S	2046.0	2046.0	U	52.0				QL=4 ST=2 TYP=3	
	610	PALE	8 S	2052.0	2052.0	1.0	55.0				QL=4 ST=2 TYP=3	
	410	PALE	8 S	2053.0	2053.0	1.0	64.0				QL=4 ST=2 TYP=3	
	03	245	PALE	43 NS	0103.0	0235.0	205.0	300.0			QL=2 ST=2 TYP=1	
		245	LEAR	43 NS	0120.0	0704.0	501.0	280.0			QL=4 ST=2 TYP=1	
		245	SVTO	43 NS	0406.0	0500.0	798.0	430.0			QL=4 ST=2 TYP=1	
		204	IZMI	44 NS	0600.0E		360.00		130.0			
		127	TORN	44 NS	0900.0E		300.00		150.0		V=1	
		33	UPIC	43 NS	0940.0	1010.00	386.0					
		245	SGMR	43 NS	0957.0	1024.0	772.0	320.0				QL=4 ST=2 TYP=1
		410	SGMR	43 NS	0957.0	1035.00	42.0	85.0				QL=4 ST=3 TYP=1
		610	SGMR	43 NS	1033.0	1041.0	15.0	300.0				QL=4 ST=2 TYP=1
		1415	SGMR	43 NS	1042.0	1045.0	10.0	140.0				QL=4 ST=2 TYP=1
		410	SGMR	43 NS	1057.0	1035.00	1422.0	85.0				QL=4 ST=3 TYP=1
		280	CUBA	44 NS	1300.0E		530.00		41.0			
		235	CUBA	44 NS	1300.0E		530.00		57.0			
		245	PALE	43 NS	1720.0	1819.0	667.0	180.0				QL=2 ST=2 TYP=1
		5730	IRKU	2 S/F	0021.2	0021.4	0.6	1.0			U	
		5730	IRKU	1 S	0146.8	0147.5	3.3	2.0			U	
		5730	IRKU	1 S	0442.5	0443.9	6.0	2.0			U	
		5730	IRKU	1 S	0647.2	0648.6	2.3	2.0			U	
		245	LEAR	8 S	0656.0	0657.0	1.0	330.0				QL=4 ST=2 TYP=3
610		LEAR	8 S	0656.0	0657.0	1.0	11.0				QL=4 ST=2 TYP=3	
410		LEAR	8 S	0656.0	0657.0	1.0	24.0				QL=4 ST=2 TYP=3	
410		SVTO	8 S	0656.0	0657.0	1.0	30.0				QL=4 ST=3 TYP=3	
610		SVTO	8 S	0656.0	0657.0	1.0	8.0				QL=2 ST=3 TYP=3	
245		SVTO	8 S	0656.0	0657.0	1.0	450.0				QL=2 ST=3 TYP=3	
600		GORK	1 S	0703.2	0704.2	2.9	2.8					
204		IZMI	45 C	0921.0	1008.5	53.1	900.0					
5730		IRKU	45 C	0950.0	1001.0	11.0	19.0			U		
5730	IRKU	45 C	0950.0	1005.0	70.00	29.0			U			
245	SVTO	4 S/F	0953.0	1007.0	29.0	1900.0				QL=2 ST=2 TYP=3		
1415	SVTO	49 GB	0953.0	0957.0	22.0	3400.0				QL=4 ST=2 TYP=6		

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MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak (10 -22 W/m <sup>2</sup> Hz)	Mean			
03	410	SVTO	4 S/F	0954.0	1008.0	28.0	180.0			QL=2 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1010.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1010.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1010.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1011.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1011.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1011.0	20.0	30.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1010.0	20.0	30.0			QL=4 ST=2 TYP=3	
	2695	SVTO	4 S/F	0954.0	1011.0	20.0	75.0			QL=4 ST=2 TYP=3	
	2695	SVTO	4 S/F	0954.0	1012.0	20.0	75.0			QL=4 ST=2 TYP=3	
	4995	SVTO	4 S/F	0954.0	1010.0	1289.0	30.0			QL=4 ST=2 TYP=3	
	3000	IZMI	7 C	0954.2	1010.7	98.7	45.0				
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	2.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	25.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	25.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	2.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	2.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	25.0				QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	0955.0	1010.0	19.0	25.0				QL=2 ST=2 TYP=3
	610	SVTO	4 S/F	0957.0	0957.0	25.0	14.0				QL=2 ST=2 TYP=3
	245	SGMR	49 GB	0957.0	1008.0U	15.0	880.0				QL=2 ST=2 TYP=6
	1415	SGMR	48 C	0957.0	1011.0U	21.0	1700.0				QL=2 ST=2 TYP=8
	2695	SGMR	4 S/F	1003.0	1004.0	837.0	58.0				QL=4 ST=1 TYP=3
	2695	SGMR	20 GRF	1003.0	1012.0	837.0	75.0				QL=4 ST=1 TYP=2
	410	SVTO	4 S/F	1031.0	1035.0	18.0	96.0				QL=2 ST=2 TYP=3
	610	SVTO	4 S/F	1031.0	1040.0	18.0	210.0				QL=2 ST=2 TYP=3
	1415	SVTO	4 S/F	1031.0	1045.0	18.0	150.0				QL=4 ST=2 TYP=3
	410	SGMR	8 S	1645.0	1645.0	1.0	60.0				QL=4 ST=2 TYP=3
	245	SGMR	8 S	1645.0	1646.0	1.0	420.0				QL=2 ST=2 TYP=3
	410	SVTO	8 S	1645.0	1645.0	1.0	72.0				QL=2 ST=2 TYP=3
	245	SVTO	8 S	1645.0	1646.0	1.0	430.0				QL=2 ST=2 TYP=3
	6700	CUBA	1 S	1745.0	1746.2	4.8	3.0	1.0			48R
	2800	PENT	3 S	1823.0	1828.0	67.0	29.0				
	6700	CUBA	4 S/F	1827.0	1829.6	9.0	17.0	8.0			15R
	6700	CUBA	29 PBI	1836.0		35.0	10.0	5.0			14R
	610	PALE	8 S	1942.0	1943.0	2.0	27.0				QL=4 ST=3 TYP=3
	1415	PALE	8 S	1942.0	1942.0	2.0	13.0				QL=4 ST=3 TYP=3
	245	PALE	49 GB	1942.0	1943.0	2.0	2300.0				QL=2 ST=3 TYP=6
	410	PALE	8 S	1942.0	1943.0	2.0	130.0				QL=4 ST=3 TYP=3
	245	SGMR	49 GB	1942.0	1943.0	1.0	2200.0				QL=2 ST=3 TYP=6
	610	SGMR	8 S	1942.0	1943.0	1.0	23.0				QL=4 ST=3 TYP=3
	410	SGMR	8 S	1942.0	1943.0	1.0	110.0				QL=4 ST=3 TYP=3
	2800	PENT	40 F	2113.0	2122.0	79.0	521.0				
	245	PALE	49 GB	2116.0	2120.0	8.0	840.0				QL=2 ST=2 TYP=6
	410	PALE	49 GB	2116.0	2117.0	8.0	700.0				QL=4 ST=2 TYP=6
	610	PALE	49 GB	2116.0	2120.0	8.0	600.0				QL=4 ST=2 TYP=6
	2695	PALE	49 GB	2116.0	2123.0	8.0	810.0				QL=4 ST=2 TYP=6
	15400	PALE	4 S/F	2116.0	2118.0	8.0	160.0				QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	2116.0	2118.0	8.0	360.0				QL=4 ST=2 TYP=3
	1415	PALE	4 S/F	2116.0	2123.0	8.0	280.0				QL=4 ST=2 TYP=3
4995	PALE	4 S/F	2116.0	2124.0	8.0	340.0				QL=4 ST=2 TYP=3	
1415	SGMR	48 C	2116.0	2128.0	21.0	420.0				QL=4 ST=2 TYP=8	
8800	SGMR	20 GRF	2117.0	2118.0	15.0	350.0				QL=2 ST=2 TYP=2	
15400	SGMR	20 GRF	2117.0	2118.0	14.0	170.0				QL=4 ST=2 TYP=2	
410	SGMR	49 GB	2117.0	2117.0	15.0	550.0				QL=4 ST=2 TYP=6	
245	SGMR	49 GB	2117.0	2120.0	14.0	780.0				QL=2 ST=2 TYP=6	
610	SGMR	48 C	2117.0	2120.0	15.0	370.0				QL=4 ST=2 TYP=8	
2695	SGMR	49 GB	2117.0	2123.0	21.0	750.0				QL=4 ST=2 TYP=6	
4995	SGMR	20 GRF	2117.0	2124.0	20.0	370.0				QL=4 ST=2 TYP=2	
610	PALE	8 S	2218.0	2218.0	1.0	77.0				QL=4 ST=2 TYP=3	
610	SGMR	8 S	2218.0	2218.0	1.0	53.0				QL=4 ST=2 TYP=3	
410	PALE	8 S	2319.0	2320.0	1.0	120.0				QL=4 ST=2 TYP=3	
04	245	SVTO	43 NS	0457.0	0642.0	748.0	420.0			QL=2 ST=2 TYP=1	
	204	IZMI	44 NS	0600.0E		360.0D		85.0			
	127	TORN	44 NS	0640.0E		290.0D		100.0		V=0	
	410	SVTO	43 NS	0841.0	0923.0	433.0	66.0			QL=4 ST=2 TYP=1	
	245	SGMR	43 NS	1017.0	1327.0	771.0	360.0			QL=4 ST=2 TYP=1	
410	SGMR	43 NS	1111.0	1111.0	769.0	62.0			QL=4 ST=1 TYP=1		

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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 <sup>2</sup> Hz)	Mean		
04	280	CUBA	44 NS	1310.0E		520.0D		69.0		
	235	CUBA	44 NS	1310.0E		520.0D		84.0		
	410	SGMR	43 NS	1342.0	1342.0	U	52.0			
	410	SGMR	43 NS	1446.0	1506.0	39.0	55.0			QL=4 ST=2 TYP=1
	245	PALE	43 NS	1637.0	1652.0	711.0	200.0			QL=4 ST=2 TYP=1
	245	LEAR	43 NS	2300.0	0933.0	640.0	270.0			QL=2 ST=2 TYP=1
	410	PALE	43 NS	2329.0	2331.0	299.0	65.0			QL=4 ST=2 TYP=1
	2840	PEKG	40 F	0000.0	0034.5	67.0	24.5			QL=4 ST=2 TYP=1
	410	LEAR	8 S	0004.0	0004.0	1.0	56.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0004.0	0004.0	1.0	89.0			QL=4 ST=2 TYP=3
	2800	PENT	40 F	0010.0	0034.0	50.0	18.0			
	245	LEAR	8 S	0442.0	0442.0	U	57.0			QL=4 ST=2 TYP=3
	600	GORK	45 C	0709.9	0710.2	1.1	6.5			
	5730	IRKU	1 S	0808.2	0809.4	1.6	1.0		U	
	600	GORK	1 S	0809.8	0810.1	0.9	3.3			
	5730	IRKU	1 S	0904.4	0906.2	12.1	2.0		U	
	245	LEAR	8 S	0909.0	0910.0	2.0	270.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0909.0	0909.0	1.0	84.0			QL=4 ST=2 TYP=3
	204	IZMI	41 F	1129.1	1129.3	0.9	170.0			
	6700	CUBA	2 S/F	1544.5	1546.4	3.3	7.0	3.0		4L
	6700	CUBA	22 GRF	1559.0	1724.0	367.0	15.0	7.0		00L
	2800	PENT	1 S	1826.0	1828.0	4.0	10.0			
	6700	CUBA	2 S/F	1826.6	1829.2	5.4	30.0	13.0		39R
	6700	CUBA	2 S/F	1908.5	1909.0	2.5	7.0	3.0		13R
	6700	CUBA	1 S	2016.9	2017.0	1.1	13.0	6.0		00L
	6700	CUBA	1 S	2037.0	2039.7	4.2	5.0	2.0		00L
	2800	PENT	40 F	2113.0	2114.0	47.0	13.0			
	6700	CUBA	1 S	2114.0	2114.1	3.5	11.0	5.0		17R
	2800	HIRA	3 S	2114.0	2114.7	2.0	8.0	3.0		0
	245	SGMR	49 GB	2131.0	2131.0	3.0	2700.0			QL=2 ST=2 TYP=6
	500	HIRA	42 SER	2131.0	2142.7	18.0	19.0			WL
	410	SGMR	8 S	2141.0	2141.0	1.0	35.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	2141.0	2141.0	2.0	310.0			QL=2 ST=2 TYP=3
	410	PALE	4 S/F	2147.0	2148.0	3.0	55.0			QL=4 ST=2 TYP=3
245	SGMR	8 S	2148.0	2148.0	1.0	140.0			QL=2 ST=2 TYP=3	
410	SGMR	8 S	2148.0	2148.0	U	52.0			QL=2 ST=2 TYP=3	
2840	PEKG	45 C	2351.0	0004.6	36.0	20.7				
2800	PENT	4 S/F	2356.0	0002.0	44.0	20.0				
05	410	LEAR	43 NS	0005.0	0016.0	369.0	170.0			QL=4 ST=2 TYP=1
	410	SVTO	43 NS	0404.0	0409.0	194.0	90.0			QL=4 ST=2 TYP=1
	245	SVTO	43 NS	0404.0	0955.0U	802.0	330.0			QL=4 ST=2 TYP=1
	204	IZMI	44 NS	0600.0E		360.0D		115.0		
	127	TORN	44 NS	0620.0E		370.0D		40.0		V=1
	410	SVTO	43 NS	0854.0	0954.0	68.0	110.0			QL=4 ST=2 TYP=1
	245	SGMR	43 NS	0954.0	2244.0	792.0	550.0			QL=4 ST=2 TYP=1
	410	SGMR	43 NS	1058.0	1101.0	22.0	63.0			QL=4 ST=2 TYP=1
	410	SVTO	43 NS	1245.0	1246.0	32.0	68.0			QL=4 ST=2 TYP=1
	280	CUBA	44 NS	1300.0E		277.0D		75.0		
	235	CUBA	44 NS	1300.0E		277.0D		79.0		
	410	SVTO	43 NS	1423.0	1449.0	26.0	59.0			QL=4 ST=2 TYP=1
	245	PALE	43 NS	1635.0	0054.0	717.0	710.0			QL=2 ST=2 TYP=1
	410	PALE	43 NS	1803.0	1812.0	118.0	70.0			QL=4 ST=2 TYP=1
	410	SGMR	43 NS	1823.0	1931.0	283.0	79.0			QL=4 ST=2 TYP=1
	410	PALE	43 NS	2326.0	2326.0	2.0	52.0			QL=4 ST=2 TYP=1
	410	PALE	43 NS	2350.0	0100.0U	223.0	960.0			QL=2 ST=2 TYP=1
	5730	IRKU	4 S/F	0001.5U	0002.4	27.5U	27.0		U	
	2800	HIRA	3 S	0002.0	0003.2	4.5	18.0			0
	245	PALE	4 S/F	0005.0	0009.0	4.0	390.0			QL=2 ST=2 TYP=3
	1415	LEAR	8 S	0009.0	0010.0	1.0	65.0			QL=4 ST=2 TYP=3
	5730	IRKU	1 S	0356.3	0357.7	4.8	4.0		U	
	9100	GORK	3 S	0528.3	0529.5	1.7	38.0			
	5730	IRKU	1 S	0528.4	0529.5	7.1	12.0		U	
	9100	GORK	29 PBI	0530.0	0530.0	4.7	14.0			
	9100	GORK	5 S	0632.5	0633.4	4.6	7.0			
600	GORK	4 S/F	0649.3	0651.1	2.8	4.1				
204	IZMI	25 R	0838.8		134.0		170.0			
410	LEAR	8 S	0935.0	0936.0	2.0	110.0			QL=4 ST=2 TYP=3	
610	LEAR	8 S	0935.0	0936.0	2.0	43.0			QL=4 ST=2 TYP=3	



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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			
05	410	SVTO	8 S	0935.0	0936.0	1.0	150.0			QL=2 ST=2 TYP=3	
	610	SVTO	8 S	0935.0	0935.0	1.0	48.0			QL=2 ST=2 TYP=3	
	245	SVTO	49 GB	0935.0	0936.0	1.0	580.0			QL=2 ST=2 TYP=6	
	1415	SVTO	8 S	0935.0	0936.0	2.0	51.0			QL=4 ST=2 TYP=3	
	3000	IZMI	7 C	0935.7	0936.2	10.2	11.0				
	1415	LEAR	8 S	0936.0	0936.0		37.0			QL=4 ST=2 TYP=3	
	245	LEAR	8 S	0936.0	0936.0		310.0			QL=4 ST=2 TYP=3	
	5730	IRKU	1 S	1000.5	1002.3	4.0	4.0		U		
	245	PALE	8 S	2244.0	2244.0		360.0			QL=2 ST=2 TYP=3	
	410	LEAR	8 S	2303.0	2304.0	1.0	47.0			QL=4 ST=2 TYP=3	
	2695	LEAR	8 S	2303.0	2304.0	2.0	33.0			QL=4 ST=2 TYP=3	
	610	LEAR	8 S	2303.0	2304.0	2.0	16.0			QL=4 ST=2 TYP=3	
	245	LEAR	8 S	2303.0	2304.0	1.0	420.0			QL=4 ST=2 TYP=3	
	15400	LEAR	8 S	2303.0	2304.0	2.0	48.0			QL=2 ST=2 TYP=3	
	4995	LEAR	8 S	2303.0	2304.0	2.0	28.0			QL=4 ST=2 TYP=3	
	8800	LEAR	8 S	2303.0	2304.0	2.0	38.0			QL=4 ST=2 TYP=3	
	1415	LEAR	8 S	2303.0	2304.0	2.0	33.0			QL=4 ST=2 TYP=3	
	5730	IRKU	1 S	2303.0	2304.1	6.0	14.0		U		
	5730	IRKU	45 C	2323.0	2338.4	57.0U	64.0		U		
	15400	LEAR	20 GRF	2327.0	2341.0	18.0	48.0			QL=2 ST=2 TYP=2	
	8800	LEAR	20 GRF	2327.0	2338.0	25.0	91.0			QL=4 ST=2 TYP=2	
	410	LEAR	4 S/F	2328.0	2333.0	27.0	380.0			QL=4 ST=2 TYP=3	
	1415	LEAR	48 C	2329.0	2334.0	16.0	120.0			QL=4 ST=2 TYP=8	
	610	LEAR	48 C	2329.0	2331.0	11.0	320.0			QL=4 ST=2 TYP=8	
	610	PALE	48 C	2329.0	2331.0	11.0	310.0			QL=4 ST=2 TYP=8	
	1415	PALE	48 C	2329.0	2334.0	15.0	120.0			QL=4 ST=2 TYP=8	
	410	PALE	4 S/F	2329.0	2333.0	12.0	430.0			QL=4 ST=2 TYP=3	
	4995	LEAR	20 GRF	2329.0	2338.0	23.0	100.0			QL=4 ST=2 TYP=2	
	2695	PALE	48 C	2329.0	2337.0	33.0	150.0			QL=4 ST=2 TYP=8	
	2695	LEAR	20 GRF	2330.0	2338.0	22.0	110.0			QL=4 ST=2 TYP=2	
	4995	PALE	20 GRF	2330.0	2338.0	36.0	120.0			QL=4 ST=2 TYP=2	
	8800	PALE	20 GRF	2331.0	2338.0	33.0	91.0			QL=4 ST=2 TYP=2	
	245	LEAR	20 GRF	2337.0	2355.0	18.0	250.0			QL=4 ST=2 TYP=2	
	15400	PALE	8 S	2338.0	2338.0		32.0		U	QL=4 ST=2 TYP=3	
	06	410	LEAR	43 NS	0005.0	0016.0	369.0	170.0			QL=4 ST=2 TYP=1
		410	SVTO	43 NS	0403.0	0830.0	588.0	240.0			QL=4 ST=2 TYP=1
		245	SVTO	43 NS	0403.0	0504.0U	804.0	600.0			QL=4 ST=2 TYP=1
		204	IZMI	44 NS	0600.0E		120.0D		150.0		
		127	TORN	44 NS	0710.0E		470.0D		180.0		V=2
		204	IZMI	44 NS	0800.0E		240.0D		240.0		
		245	SGMR	43 NS	1006.0	1502.0	800.0	660.0			QL=4 ST=2 TYP=1
		410	SGMR	43 NS	1038.0	1406.0	433.0	120.0			QL=4 ST=2 TYP=1
		280	CUBA	44 NS	1300.0E		530.0D		68.0		
		235	CUBA	44 NS	1300.0E		530.0D		65.0		
		245	PALE	43 NS	1615.0	2207.0	727.0	250.0			QL=2 ST=2 TYP=1
410		SGMR	43 NS	1936.0	2159.0	230.0	84.0			QL=4 ST=2 TYP=1	
410		PALE	43 NS	1949.0	2328.0	255.0	230.0			QL=2 ST=2 TYP=1	
610		PALE	43 NS	2259.0	2328.0	95.0	220.0			QL=2 ST=2 TYP=1	
410		LEAR	43 NS	2301.0	2344.0	63.0	70.0			QL=4 ST=2 TYP=1	
245		LEAR	43 NS	2301.0	0456.0	637.0	210.0			QL=4 ST=2 TYP=1	
2695		SVTO	49 GB	0000.0	0000.0		490.0			QL=4 ST=1 TYP=6	
410		SVTO	48 C	0000.0	1617.0U	917.0	1700.0			QL=4 ST=1 TYP=8	
500		HIRA	46 C	0000.0	0047.7	90.0	410.0			MR	
245		LEAR	49 GB	0023.0	0024.0	1.0	550.0			QL=4 ST=2 TYP=6	
610		LEAR	8 S	0033.0	0033.0	1.0	53.0			QL=4 ST=2 TYP=3	
410		LEAR	8 S	0033.0	0033.0	1.0	330.0			QL=4 ST=2 TYP=3	
5730		IRKU	1 S	0246.6	0246.9	1.2	2.0		U		
5730		IRKU	1 S	0327.4	0327.5	0.8	2.0		U		
5730		IRKU	8 S	0331.0	0333.3	5.0	6.0		U		
5730		IRKU	3 S	0400.0	0400.6	7.8	3.0		U		
2840		PEKG	45 C	0413.0	0455.2	94.0	67.2				
5730		IRKU	1 S	0413.0	0416.3	12.5	6.0		U		
410		PALE	8 S	0415.0	0415.0	1.0	92.0			QL=2 ST=2 TYP=3	
410		PALE	8 S	0420.0	0420.0		70.0			QL=2 ST=2 TYP=3	
5730	IRKU	4 S/F	0438.0	0441.1	12.0	22.0		U			
8800	LEAR	8 S	0440.0	0441.0	2.0	42.0			QL=4 ST=2 TYP=3		
4995	LEAR	8 S	0440.0	0441.0	1.0	31.0			QL=4 ST=2 TYP=3		
15400	LEAR	8 S	0440.0	0441.0	1.0	48.0			QL=4 ST=2 TYP=3		

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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		
06	4995	LEAR	4 S/F	0454.0	0455.0	4.0	130.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0454.0	0455.0	7.0	120.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0454.0	0455.0	3.0	61.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0454.0	0455.0	3.0	59.0			QL=4 ST=3 TYP=3
	15400	SVTO	8 S	0454.0	0455.0	1.0	49.0			QL=4 ST=3 TYP=3
	245	SVTO	4 S/F	0454.0	0456.0	3.0	440.0			QL=2 ST=3 TYP=3
	5730	IRKU	4 S/F	0454.0	0456.5	56.0	32.0		U	
	2800	HIRA	45 C	0454.5	0455.7	6.0	45.0	15.0		0
	15400	LEAR	8 S	0455.0	0455.0		59.0		U	
	4995	SVTO	8 S	0455.0	0455.0	2.0	98.0			QL=2 ST=2 TYP=3
	8800	SVTO	8 S	0455.0	0455.0	2.0	110.0			QL=4 ST=3 TYP=3
	2950	GORK	2 S/F	0511.9	0512.8	2.4	9.7			QL=2 ST=3 TYP=3
	5730	IRKU	1 S	0553.5	0558.4	13.0	4.0		U	
	9100	GORK	5 S	0554.7	0558.3	6.8	12.0			
	9100	GORK	5 S	0607.9	0609.2	4.1	26.0			
	5730	IRKU	45 C	0608.0	0624.8	38.1	13.0		U	
	245	SVTO	49 GB	0611.0	0611.0		550.0			
	9100	GORK	22 GRF	0618.0	0622.8	13.8	26.0			QL=2 ST=3 TYP=6
	600	GORK	28 PRE	0640.8	0724.2	79.0	14.6			
	5730	IRKU	48 C	0646.1	0809.2	224.0D	1144.0		U	
	9100	GORK	28 PRE	0655.1	0718.3	65.5	37.0			
	2840	PEKG	45 C	0711.0	0804.0	166.0	475.0			
	3000	IZMI	7 C	0713.3	0716.4	46.0	25.0			
	2800	HIRA	3 S	0713.7	0716.0	17.0	21.0		6.0	0
	33	UPIC	32 ABS	0718.0	0725.0	43.8				
	2950	GORK	28 PRE	0723.1	0816.5	97.4	30.8			
	245	SVTO	49 GB	0734.0	0735.0	1.0	830.0			QL=2 ST=2 TYP=6
	3000	IZMI	45 C	0759.0	0808.3	346.0	383.0			
	600	GORK	GB	0759.8	0813.2	84.0	3780.0			
	245	LEAR	49 GB	0800.0	0806.0	6.0	65000.0			QL=4 ST=2 TYP=6
	500	HIRA	46 C	0800.0	0815.0	65.0	830.0			MR
	9100	GORK	47 GB	0800.6	0803.6	17.4	860.0			
	2950	GORK	47 GB	0800.6	0803.8	20.1	462.0			
	610	SVTO	48 C	0801.0	0813.0	27.0	2700.0			QL=4 ST=2 TYP=8
	245	SVTO	49 GB	0801.0	0806.0	27.0				QL=2 ST=2 TYP=6
	1415	SVTO	49 GB	0801.0	0804.0	27.0	510.0			QL=4 ST=2 TYP=6
	8800	SVTO	48 C	0801.0	0807.0	21.0	2000.0			QL=2 ST=2 TYP=8
	410	SVTO	48 C	0801.0	0811.0	27.0	1200.0			QL=2 ST=2 TYP=8
	15400	SVTO	48 C	0801.0	0807.0	23.0	1500.0			QL=4 ST=2 TYP=8
	2800	HIRA	46 C	0801.2	0804.2	21.0	380.0	60.0		0
	33	UPIC	49 GB	0801.8	0814.5U	19.7				
	127	TORN	49 GB	0802.0		11.7	1500.0D	1200.0		SATURATED
	200	HIRA	46 C	0803.0	0806.0	8.0	940.0			0
	245	LEAR	49 GB	0805.0	0806.0	4.0	65000.0			QL=4 ST=2 TYP=6
	9100	GORK	30 PBI	0818.0	0819.8	10.2D	71.0			
2950	GORK	30 PBI	0820.7	0820.7	102.0D	16.0U				
33	UPIC	29 PBI	0821.5	0848.5	186.5					
610	LEAR	4 S/F	0825.0	0826.0	3.0	370.0			QL=4 ST=2 TYP=3	
1415	LEAR	4 S/F	0825.0	0827.0	3.0	33.0			QL=4 ST=2 TYP=3	
2950	GORK	42 SER	0825.6	0827.5	72.2	8.5				
410	LEAR	8 S	0826.0	0826.0	1.0	45.0			QL=4 ST=2 TYP=3	
3000	IZMI	29 PBI	0836.0	0928.5	134.0	40.0				
410	LEAR	20 GRF	0838.0	0847.0	9.0	160.0			QL=4 ST=2 TYP=2	
610	LEAR	8 S	0839.0	0840.0	1.0	93.0			QL=4 ST=3 TYP=3	
1415	LEAR	8 S	0839.0	0840.0	1.0	53.0			QL=4 ST=3 TYP=3	
610	LEAR	8 S	0856.0	0856.0		61.0		U	QL=4 ST=2 TYP=3	
2695	LEAR	8 S	0857.0	0858.0	2.0	50.0			QL=4 ST=2 TYP=3	
4995	LEAR	4 S/F	0857.0	0858.0	3.0	35.0			QL=4 ST=2 TYP=3	
9100	GORK	2 S/F	0857.3	0858.8	2.7	16.0				
1415	LEAR	8 S	0858.0	0859.0	2.0	68.0			QL=4 ST=2 TYP=3	
204	IZMI	45 C	0935.9	0936.0	0.6	7320.0				
610	SGMR	8 S	1338.0	1338.0		340.0			QL=4 ST=3 TYP=3	
610	SVTO	8 S	1338.0	1338.0		240.0		U	QL=2 ST=3 TYP=3	
33	UPIC	45 C	1338.0	1339.5	2.0					
245	SGMR	8 S	1433.0	1434.0	1.0	430.0			QL=2 ST=2 TYP=3	
245	SVTO	8 S	1433.0	1434.0	1.0	440.0			QL=2 ST=3 TYP=3	
2800	PENT	1 S	1508.0	1512.0	8.0	44.0				
245	PALE	8 S	1724.0	1724.0	1.0	250.0			QL=2 ST=2 TYP=3	
410	SGMR	4 S/F	1901.0	1902.0	8.0	62.0			QL=2 ST=2 TYP=3	

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MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
07	245	SVTO	43 NS	0401.0	0702.00	675.0	250.0			QL=2 ST=2 TYP=1
	410	SVTO	43 NS	0453.0	0907.0	591.0	280.0			QL=4 ST=2 TYP=1
	127	TORN	44 NS	0620.0E	1156.0	520.00	150.0	20.0		V=1
	204	IZMI	44 NS	0630.0E		360.00		90.0		
	410	LEAR	43 NS	0635.0	0701.0	61.0	120.0			QL=4 ST=2 TYP=1
	410	SGMR	43 NS	0952.0	1109.0	313.0	160.0			QL=4 ST=2 TYP=1
	245	SGMR	43 NS	0952.0	1055.00	404.0	290.0			QL=4 ST=2 TYP=1
	235	CUBA	44 NS	1310.0E		520.00		27.0		
	280	CUBA	44 NS	1310.0E		520.00		39.0		
	245	SGMR	43 NS	1842.0	2000.0	79.0	150.0			QL=4 ST=2 TYP=1
	245	PALE	43 NS	2055.0	2236.0	194.0	210.0			QL=2 ST=2 TYP=1
	245	SGMR	43 NS	2152.0	2110.0	95.0	110.0			QL=4 ST=2 TYP=1
	245	LEAR	8 S	0044.0	0044.0	U	260.0			QL=4 ST=2 TYP=3
	2840	PEKG	5 S	0107.0	0111.0	6.0	17.3			
	5730	IRKU	4 S/F	0107.0	0108.9	9.5	15.0		U	
	500	HIRA	42 SER	0107.5	0108.7	3.0	840.0			WL
	1415	LEAR	8 S	0108.0	0109.0	1.0	280.0			QL=4 ST=2 TYP=3
	2695	LEAR	8 S	0108.0	0109.0	1.0	17.0			QL=4 ST=2 TYP=3
	610	LEAR	8 S	0108.0	0109.0	1.0	280.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0108.0	0108.0	U	490.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0108.0	0108.0	1.0	67.0			QL=4 ST=2 TYP=3
	1415	PALE	8 S	0108.0	0109.0	1.0	310.0			QL=4 ST=2 TYP=3
	610	PALE	8 S	0108.0	0109.0	1.0	350.0			QL=2 ST=2 TYP=3
	2800	HIRA	1 S	0109.2	0109.7	1.0	12.0		4.0	
	245	SVTO	8 S	0455.0	0456.0	1.0	180.0			QL=2 ST=2 TYP=3
	5730	IRKU	1 S	0507.7	0508.0	2.0	2.0		U	
	410	LEAR	49 GB	0531.0	0532.0	2.0	540.0			QL=4 ST=2 TYP=6
	245	LEAR	49 GB	0531.0	0532.0	2.0	850.0			QL=4 ST=2 TYP=6
	2695	LEAR	8 S	0532.0	0532.0	1.0	37.0			QL=4 ST=2 TYP=3
	1415	LEAR	8 S	0532.0	0532.0	1.0	19.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0532.0	0532.0	1.0	9.0			QL=4 ST=2 TYP=3
	4995	LEAR	8 S	0532.0	0532.0	1.0	18.0			QL=4 ST=2 TYP=3
	610	LEAR	8 S	0532.0	0532.0	1.0	79.0			QL=4 ST=2 TYP=3
	1415	SVTO	8 S	0532.0	0532.0	1.0	21.0			QL=4 ST=3 TYP=3
	410	SVTO	8 S	0532.0	0532.0	U	230.0			QL=2 ST=2 TYP=3
	610	SVTO	8 S	0532.0	0532.0	U	72.0			QL=2 ST=2 TYP=3
	2695	SVTO	8 S	0532.0	0532.0	1.0	41.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0532.0	0532.0	U	13.0			QL=2 ST=2 TYP=3
	4995	SVTO	8 S	0532.0	0532.0	1.0	20.0			QL=4 ST=2 TYP=3
	245	SVTO	49 GB	0532.0	0532.0	U	1300.0			QL=2 ST=2 TYP=6
	2840	PEKG	5 S	0532.0	0532.3	8.0	43.2			
	600	GORK	3 S	0532.0	0532.6	1.0	33.0			
	500	HIRA	42 SER	0532.2	0532.6	0.5	340.0			0
	2950	GORK	3 S	0532.5	0532.6	1.6	38.2			
	5730	IRKU	4 S/F	0532.6	0532.7	5.4	12.0		U	
	2800	HIRA	8 S	0533.1	0533.2	0.2	35.0			0
	5730	IRKU	1 S	0605.9	0606.4	1.3	1.0		U	
	600	GORK	4 S/F	0619.8	0620.7	1.2	24.2			
	600	GORK	40 F	0714.1	0714.3	5.6	4.4			
	600	GORK	2 S/F	0742.4	0743.5	2.1	5.1			
	9100	GORK	5 S	0742.7	0744.3	5.3	12.0			
	2950	GORK	5 S	0743.1	0743.5	0.9	2.8			
	204	IZMI	25 R	1007.6		113.00		110.0		
	3000	IZMI	22 GRF	1107.7	1110.9	12.30	22.0			
	8800	SVTO	4 S/F	1108.0	1110.0	9.0	61.0			QL=2 ST=3 TYP=3
	8800	SVTO	4 S/F	1108.0	1110.0	9.0	61.0			QL=4 ST=3 TYP=3
	4995	SVTO	4 S/F	1108.0	1110.0	8.0	56.0			QL=4 ST=3 TYP=3
	8800	SVTO	4 S/F	1108.0	1110.0	9.0	61.0			QL=4 ST=3 TYP=3
	410	SVTO	4 S/F	1109.0	1109.0	4.0	130.0			QL=2 ST=3 TYP=3
	2695	SVTO	8 S	1110.0	1111.0	1.0	26.0			QL=4 ST=3 TYP=3
	15400	SVTO	8 S	1113.0	1114.0	1.0	26.0			QL=4 ST=3 TYP=3
	15400	SGMR	8 S	1333.0	1334.0	2.0	61.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1333.0	1334.0	2.0	68.0			QL=2 ST=3 TYP=3
	15400	SVTO	8 S	1333.0	1334.0	2.0	55.0			QL=4 ST=3 TYP=3
	2800	PENT	4 S/F	1340.0	1346.0	20.0	23.0			
	15400	SVTO	4 S/F	1342.0	1346.0	8.0	49.0			QL=4 ST=2 TYP=3
	4995	SGMR	4 S/F	1343.0	1346.0	4.0	50.0			QL=4 ST=2 TYP=3
	15400	SGMR	4 S/F	1343.0	1346.0	8.0	56.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1343.0	1346.0	4.0	48.0			QL=2 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N  
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MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak (10 -22 W/m 2 Hz)	Mean			
07	8800	SVTO	4 S/F	1343.0	1346.0	9.0	58.0			QL=2 ST=2 TYP=3	
	4995	SVTO	4 S/F	1343.0	1346.0	9.0	49.0			QL=4 ST=2 TYP=3	
	410	SVTO	8 S	1344.0	1344.0		63.0		U	QL=2 ST=2 TYP=3	
	245	SVTO	4 S/F	1344.0	1345.0	4.0	150.0			QL=2 ST=2 TYP=3	
	2695	SVTO	4 S/F	1346.0	1346.0	6.0	22.0			QL=4 ST=2 TYP=3	
	2695	SVTO	4 S/F	1346.0	1346.0	1404.0	22.0			QL=4 ST=2 TYP=3	
	2800	PENT	1 S	1446.0	1448.0	5.0	6.0				
	2800	PENT	1 S	1616.0	1617.0	2.0	5.0				
	245	SGMR	8 S	1806.0	1806.0		56.0		U		
	245	PALE	8 S	1826.0	1827.0	2.0	56.0			QL=2 ST=2 TYP=3	
	245	SGMR	8 S	1826.0	1827.0	1.0	80.0			QL=2 ST=2 TYP=3	
	245	PALE	8 S	1842.0	1843.0	2.0	70.0			QL=2 ST=2 TYP=3	
	245	PALE	8 S	1844.0	1844.0		130.0		U	QL=2 ST=2 TYP=3	
	245	PALE	8 S	1923.0	1925.0	2.0	100.0			QL=2 ST=2 TYP=3	
	200	HIRA	42 SER	2235.0	2236.4	2.0	330.0			O	
245	SGMR	8 S	2236.0	2236.0	1.0	200.0			QL=2 ST=2 TYP=3		
08	245	PALE	43 NS	0045.0	0100.0	210.0	150.0			QL=2 ST=2 TYP=1	
	245	LEAR	43 NS	0114.0	0114.0	246.0	140.0			QL=4 ST=2 TYP=1	
	245	SVTO	43 NS	0404.0	0405.0	156.0	84.0			QL=4 ST=3 TYP=1	
	204	IZMI	44 NS	0600.0E		360.0D		30.0			
	127	TORN	44 NS	0620.0E	0844.8	180.0D	50.0	10.0		V=1	
	280	CUBA	44 NS	1300.0E		530.0D		37.0			
	235	CUBA	44 NS	1300.0E		530.0D		29.0			
	245	SVTO	43 NS	1458.0	1458.0	6.0	58.0			QL=4 ST=2 TYP=1	
	245	SGMR	43 NS	1503.0	1505.0	3.0	59.0			QL=4 ST=2 TYP=1	
	245	SGMR	43 NS	1635.0	2313.0	403.0	390.0			QL=4 ST=2 TYP=1	
	245	SVTO	43 NS	1637.0	1637.0		60.0		U	QL=4 ST=2 TYP=1	
	245	PALE	43 NS	1740.0	2210.0	647.0	300.0			QL=2 ST=2 TYP=1	
	410	PALE	43 NS	1749.0	1811.0	22.0	62.0			QL=2 ST=3 TYP=1	
	410	SGMR	43 NS	1749.0	1752.0	21.0	63.0			QL=4 ST=2 TYP=1	
	410	SGMR	43 NS	1903.0	1903.0	2.0	78.0			QL=4 ST=2 TYP=1	
	410	SGMR	43 NS	2129.0	2129.0	40.0	91.0			QL=4 ST=2 TYP=1	
	245	LEAR	8 S	0006.0	0006.0	1.0	98.0			QL=4 ST=2 TYP=3	
	245	LEAR	4 S/F	0059.0	0100.0	3.0	96.0			QL=4 ST=2 TYP=3	
	2840	PEKG	4 S/F	0151.0	0158.0	41.0	35.7				
	4995	PALE	4 S/F	0155.0	0157.0	6.0	66.0			QL=4 ST=2 TYP=3	
	8800	PALE	4 S/F	0155.0	0159.0	6.0	150.0			QL=4 ST=2 TYP=3	
	610	PALE	4 S/F	0155.0	0158.0	6.0	15.0			QL=4 ST=2 TYP=3	
	4995	LEAR	4 S/F	0156.0	0157.0	7.0	61.0			QL=4 ST=3 TYP=3	
	410	LEAR	4 S/F	0156.0	0158.0	7.0	32.0			QL=4 ST=3 TYP=3	
	245	LEAR	49 GB	0156.0	0157.0	6.0	2400.0			QL=4 ST=3 TYP=6	
	15400	LEAR	4 S/F	0156.0	0157.0	7.0	130.0			QL=2 ST=3 TYP=3	
	610	LEAR	4 S/F	0156.0	0158.0	7.0	11.0			QL=4 ST=3 TYP=3	
	8800	LEAR	4 S/F	0156.0	0159.0	7.0	130.0			QL=4 ST=3 TYP=3	
	2695	LEAR	4 S/F	0156.0	0158.0	7.0	30.0			QL=4 ST=3 TYP=3	
	1415	PALE	4 S/F	0156.0	0158.0	5.0	35.0			QL=4 ST=2 TYP=3	
	1415	PALE	4 S/F	0156.0	0158.0	7.0	35.0			QL=4 ST=2 TYP=3	
	2695	PALE	4 S/F	0156.0	0158.0	7.0	35.0			QL=4 ST=2 TYP=3	
	245	PALE	49 GB	0156.0	0156.0	6.0	2900.0			QL=2 ST=2 TYP=6	
	610	PALE	4 S/F	0156.0	0158.0	7.0	15.0			QL=4 ST=2 TYP=3	
	8800	PALE	4 S/F	0156.0	0159.0	7.0	140.0			QL=4 ST=2 TYP=3	
	4995	PALE	4 S/F	0156.0	0157.0	7.0	62.0			QL=4 ST=2 TYP=3	
	15400	PALE	4 S/F	0156.0	0157.0	7.0	130.0			QL=4 ST=2 TYP=3	
	410	PALE	4 S/F	0156.0	0158.0	7.0	35.0			QL=2 ST=2 TYP=3	
	500	HIRA	4 S/F	0156.5	0158.0	6.0	150.0		20.0		O
	200	HIRA	4 S/F	0156.5	0156.6	3.0	660.0				O
1415	LEAR	4 S/F	0157.0	0157.0	6.0	35.0				QL=4 ST=3 TYP=3	
2800	HIRA	3 S	0157.2	0159.0	8.0	27.0		11.0		O	
2840	PEKG	46 C	0511.0	0601.0	82.0	429.0					
5730	IRKU	1 S	0523.5	0524.5	2.2	1.0			U		
5730	IRKU	1 S	0526.0	0532.0	536.0	2.0			U		
5730	IRKU	1 S	0543.6	0544.2	1.4	1.0			U		
2950	GORK	47 GB	0545.5	0601.0	16.3	451.0					
5730	IRKU	46 C	0555.0	0601.0	77.0	384.0			U		
600	GORK	47 GB	0555.0	0558.7	19.3	172.6					
500	HIRA	46 C	0555.5	0558.2	14.0	15.0		4.0		MR	
2800	HIRA	46 C	0555.5	0611.5	20.0	370.0		110.0		WR	
610	LEAR	4 S/F	0556.0	0558.0	6.0	170.0				QL=4 ST=3 TYP=3	

S O L A R R A D I O E M I S S I O N  
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MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak	Mean		
							(10 <sup>-22</sup> W/m <sup>2</sup> Hz)			
08	410	LEAR	4 S/F	0556.0	0558.0	5.0	300.0			QL=4 ST=3 TYP=3
	410	SVTO	4 S/F	0556.0	0558.0	4.0	400.0			QL=2 ST=3 TYP=3
	610	SVTO	4 S/F	0556.0	0558.0	4.0	170.0			QL=2 ST=3 TYP=3
	2695	LEAR	4 S/F	0556.0	0601.0	14.0	430.0			QL=4 ST=3 TYP=3
	2695	SVTO	4 S/F	0556.0	0601.0	14.0	440.0			QL=4 ST=3 TYP=3
	9100	GORK	4 S/F	0556.5	0600.9	9.5	442.00			
	1415	LEAR	4 S/F	0557.0	0601.0	11.0	64.0			QL=4 ST=3 TYP=3
	8800	LEAR	4 S/F	0557.0	0601.0	11.0	400.0			QL=4 ST=3 TYP=3
	4995	LEAR	49 GB	0557.0	0601.0	14.0	560.0			QL=4 ST=3 TYP=6
	4995	SVTO	49 GB	0557.0	0601.0	13.0	520.0			QL=4 ST=3 TYP=6
	1415	SVTO	4 S/F	0557.0	0601.0	11.0	65.0			QL=4 ST=3 TYP=3
	8800	SVTO	4 S/F	0557.0	0601.0	15.0	420.0			QL=2 ST=3 TYP=3
	200	HIRA	46 C	0557.2	0600.9	5.0	210.0	25.0		WL
	245	LEAR	48 C	0558.0	0601.0	4.0	2900.0			QL=4 ST=3 TYP=8
	245	SVTO	48 C	0558.0	0601.0	4.0	3500.0			QL=2 ST=3 TYP=8
	15400	SVTO	4 S/F	0558.0	0601.0	12.0	270.0			QL=4 ST=3 TYP=3
	3000	IZMI	45 C	0558.3E	0601.1	19.0U	422.0			
	33	UPIC	42 SER	0558.5	0559.3	28.5				
	15400	LEAR	8 S	0600.0	0601.0	1.0	44.0			QL=2 ST=3 TYP=3
	204	IZMI	45 C	0600.0E	0601.3	5.3D	650.0			
	9100	GORK	29 PBI	0606.0	0606.0	39.0	100.0			
	2950	GORK	29 PBI	0608.8	0608.8	21.6	39.5			
	245	LEAR	8 S	0625.0	0625.0	1.0	350.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0625.0	0625.0	1.0	400.0			QL=2 ST=2 TYP=3
	200	HIRA	42 SER	0625.2	0628.2	5.0	90.0			WL
	410	LEAR	8 S	0626.0	0626.0	U	30.0			QL=4 ST=2 TYP=3
	410	SVTO	8 S	0627.0	0629.0	2.0	27.0			QL=2 ST=3 TYP=3
	245	SVTO	8 S	0627.0	0628.0	2.0	110.0			QL=2 ST=3 TYP=3
	245	LEAR	8 S	0628.0	0628.0	U	110.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0629.0	0629.0	U	45.0			QL=4 ST=2 TYP=3
	204	IZMI	41 F	0927.1	0927.3	4.0	400.0			
	245	SGMR	8 S	1144.0	1144.0	U	62.0			QL=2 ST=2 TYP=3
	245	SVTO	8 S	1144.0	1144.0	U	65.0			QL=2 ST=2 TYP=3
	410	SVTO	8 S	1324.0	1325.0	1.0	24.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1325.0	1325.0	U	210.0			QL=2 ST=2 TYP=3
	245	SVTO	8 S	1325.0	1325.0	U	170.0			QL=2 ST=2 TYP=3
	2800	PENT	40 F	1351.0	1405.0	69.0	12.0			
	2800	PENT	1 S	1611.0	1612.0	3.0	6.0			
	245	PALE	8 S	1821.0	1821.0	U	400.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1821.0	1821.0	1.0	350.0			QL=2 ST=3 TYP=3
245	PALE	8 S	2028.0	2028.0	U	180.0			QL=2 ST=2 TYP=3	
410	PALE	8 S	2129.0	2129.0	U	77.0			QL=2 ST=2 TYP=3	
1415	PALE	8 S	2240.0	2241.0	1.0	110.0			QL=4 ST=2 TYP=3	
245	PALE	8 S	2240.0	2241.0	1.0	220.0			QL=2 ST=2 TYP=3	
245	SGMR	8 S	2240.0	2241.0	1.0	200.0			QL=2 ST=2 TYP=3	
1415	SGMR	8 S	2240.0	2241.0	1.0	96.0			QL=4 ST=2 TYP=3	
245	LEAR	8 S	2315.0	2315.0	1.0	100.0			QL=4 ST=2 TYP=3	
245	LEAR	8 S	2340.0	2340.0	1.0	290.0			QL=4 ST=2 TYP=3	
245	PALE	49 GB	2340.0	2340.0	1.0	580.0			QL=2 ST=2 TYP=6	
200	HIRA	8 S	2340.7	2340.9	0.7	2000.0			0	
09	245	LEAR	43 NS	0138.0	0156.0	279.0	100.0			QL=4 ST=2 TYP=1
	245	SVTO	43 NS	0401.0	0402.0	24.0	75.0			QL=4 ST=2 TYP=1
	245	SVTO	43 NS	0548.0	0549.0	29.0	62.0			QL=4 ST=2 TYP=1
	204	IZMI	44 NS	0600.0E		118.0D		40.0		
	127	TORN	44 NS	0620.0E	1044.2	520.0D	70.0	14.0		V=2
	235	CUBA	44 NS	1300.0E		530.0D		13.0		
	280	CUBA	44 NS	1310.0E		520.0D		21.0		
	410	SGMR	43 NS	1805.0	1806.0	9.0	110.0			QL=4 ST=2 TYP=1
	410	SGMR	43 NS	2001.0	2002.0	14.0	91.0			QL=4 ST=2 TYP=1
	2840	PEKG	1 S	0015.0	0019.0	8.0	3.8			
	2800	PENT	1 S	0017.0	0018.0	5.0	4.0			
	410	LEAR	8 S	0022.0	0022.0	2.0	85.0			QL=4 ST=2 TYP=3
	410	PALE	8 S	0022.0	0022.0	2.0	150.0			QL=2 ST=2 TYP=3
	410	LEAR	8 S	0055.0	0055.0	U	130.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0102.0	0103.0	1.0	59.0			QL=4 ST=2 TYP=3
	2840	PEKG	5 S	0146.0	0202.0	24.0	4.9			
5730	IRKU	46 C	0310.0	0337.0	43.0	125.0		U		
2800	HIRA	46 C	0310.7	0324.5	39.0	190.0	40.0		0	

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
09	2840	PEKG	46 C	0314.0	0324.0	38.0	229.0			
	500	HIRA	46 C	0321.5	0345.2	29.0	1400.0			WR
	2695	LEAR	4 S/F	0322.0	0323.0	3.0	210.0			QL=4 ST=2 TYP=3
	1415	LEAR	4 S/F	0322.0	0324.0	10.0	160.0			QL=4 ST=2 TYP=3
	2695	PALE	48 C	0322.0	0323.0	25.0	240.0			QL=4 ST=2 TYP=8
	1415	PALE	4 S/F	0322.0	0324.0	24.0	170.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0323.0	0323.0	2.0	61.0			QL=4 ST=2 TYP=3
	4995	LEAR	4 S/F	0323.0	0323.0	9.0	150.0			QL=4 ST=2 TYP=3
	245	PALE	48 C	0323.0	0324.0	7.0	340.0			QL=2 ST=2 TYP=8
	410	PALE	48 C	0323.0	0345.0	29.0	1400.0			QL=4 ST=2 TYP=8
	610	PALE	48 C	0323.0	0345.0	29.0	2500.0			QL=4 ST=2 TYP=8
	4995	PALE	48 C	0323.0	0337.0	24.0	190.0			QL=4 ST=2 TYP=8
	200	HIRA	42 SER	0323.5	0324.9	6.0	200.0			0
	610	LEAR	48 C	0325.0	0345.0	24.0	2500.0			QL=4 ST=2 TYP=8
	410	LEAR	48 C	0325.0	0345.0	25.0	1600.0			QL=4 ST=2 TYP=8
	15400	LEAR	4 S/F	0335.0	0336.0	4.0	52.0			QL=2 ST=2 TYP=3
	8800	PALE	4 S/F	0335.0	0337.0	4.0	77.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0336.0	0338.0	2.0	56.0			QL=4 ST=2 TYP=3
	15400	PALE	8 S	0336.0	0336.0	2.0	43.0			QL=4 ST=2 TYP=3
	410	PALE	4 S/F	0415.0	0418.0	5.0	180.0			QL=4 ST=2 TYP=3
	410	SVTO	4 S/F	0415.0	0418.0	7.0	180.0			QL=2 ST=2 TYP=3
	245	SVTO	4 S/F	0415.0	0417.0	6.0	95.0			QL=2 ST=2 TYP=3
	500	HIRA	46 C	0415.7	0418.5	8.0	40.0	11.0		WR
	5730	IRKU	1 S	0453.2	0453.5	0.8	1.0		U	
	5730	IRKU	1 S	0506.8	0507.3	4.0	3.0		U	
	5730	IRKU	4 S/F	0530.5	0536.2	44.5	21.0		U	
	9100	GORK	22 GRF	0531.1	0535.1	18.2	28.0			
	2840	PEKG	5 S	0533.0	0536.0	24.0	21.7			
	1415	LEAR	4 S/F	0534.0	0536.0	3.0	13.0			QL=4 ST=2 TYP=3
	15400	LEAR	4 S/F	0534.0	0536.0	3.0	21.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	0535.0	0536.0	2.0	22.0			QL=4 ST=2 TYP=3
	4995	LEAR	8 S	0535.0	0536.0	2.0	26.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0535.0	0536.0	2.0	18.0			QL=4 ST=2 TYP=3
	610	LEAR	8 S	0535.0	0536.0	2.0	30.0			QL=4 ST=2 TYP=3
	2950	GORK	4 S/F	0535.6	0536.9	3.3	21.8			
	2800	HIRA	3 S	0536.5	0537.2	3.0	16.0	6.0		WL
	204	IZMI	7 C	0847.5	0847.6	0.5	143.0			
	8800	SVTO	8 S	1101.0	1102.0	1.0	44.0			QL=2 ST=2 TYP=3
	15400	SVTO	8 S	1101.0	1101.0	1.0	38.0			QL=4 ST=2 TYP=3
	610	SGMR	8 S	1428.0	1428.0	U	130.0			QL=4 ST=2 TYP=3
	610	SVTO	8 S	1428.0	1428.0	U	170.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	1708.0	1708.0	2.0	68.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1708.0	1708.0	U	61.0			QL=2 ST=2 TYP=3
	245	SVTO	8 S	1708.0	1708.0	U	71.0			QL=2 ST=2 TYP=3
	410	PALE	8 S	1805.0	1806.0	1.0	110.0			QL=4 ST=2 TYP=3
200	HIRA	8 S	2001.3	2001.6	0.7	40.0			0	
200	HIRA	8 S	2213.0	2213.2	0.5	240.0			WL	
10	204	IZMI	44 NS	0600.0E		360.0D		15.0		
	127	TORN	43 NS	0727.0	1224.9	450.0		10.0		V=2
	235	CUBA	44 NS	1310.0E		520.0D		16.0		
	280	CUBA	44 NS	1310.0E		520.0D		28.0		
	245	SGMR	44 NS	1732.0E	2308.0	349.0D	190.0			QL=2 ST=2 TYP=1
	245	PALE	43 NS	1832.0	0215.0	587.0	150.0			QL=2 ST=2 TYP=1
	245	LEAR	43 NS	2328.0	0215.0	608.0	150.0			QL=4 ST=2 TYP=1
	245	LEAR	8 S	0647.0	0647.0	1.0	110.0			QL=4 ST=2 TYP=3
	200	HIRA	42 SER	0647.0	0647.1	0.7	30.0			0
	204	IZMI	42 SER	0647.0	0647.1	1.3	307.0			
	245	LEAR	8 S	0719.0	0719.0	2.0	72.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0719.0	0719.0	U	65.0			QL=2 ST=2 TYP=3
	33	UPIC	32 ABS	0811.0	0825.0	31.0				
	3000	IZMI	22 GRF	0816.4	0908.4	90.5	6.0			
	5730	IRKU	20 GRF	0817.5	0855.0	77.5	12.0		U	
	245	LEAR	8 S	0822.0	0822.0	1.0	79.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0822.0	0822.0	1.0	110.0			QL=2 ST=2 TYP=3
	5730	IRKU	1 S	0947.6	0949.3	4.3	6.0		U	
	2840	PEKG	1 S	0948.0	0949.0	3.0	5.7			
	3000	IZMI	7 C	0948.8	0949.4	2.2	4.0			
8800	SGMR	4 S/F	1317.0	1318.0	3.0	260.0			QL=4 ST=2 TYP=3	

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
10	2695	SGMR	4 S/F	1317.0	1319.0	4.0	300.0			QL=4 ST=2 TYP=3
	4995	SGMR	49 GB	1317.0	1318.0	4.0	510.0			QL=4 ST=2 TYP=6
	8800	SVTO	4 S/F	1317.0	1318.0	3.0	480.0			QL=2 ST=2 TYP=3
	2695	SVTO	4 S/F	1317.0	1319.0	4.0	320.0			QL=4 ST=2 TYP=3
	4995	SVTO	49 GB	1317.0	1318.0	4.0	610.0			QL=4 ST=2 TYP=6
	15400	SGMR	8 S	1318.0	1318.0	1.0	78.0			QL=4 ST=2 TYP=3
	15400	SVTO	8 S	1318.0	1318.0	1.0	76.0			QL=4 ST=2 TYP=3
	1415	SGMR	8 S	1319.0	1319.0	1.0	38.0			QL=4 ST=2 TYP=3
	1415	SVTO	8 S	1319.0	1319.0	1.0	35.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1625.0	1625.0	2.0	53.0			QL=2 ST=2 TYP=3
	245	PALE	8 S	1731.0	1732.0	1.0	59.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1732.0	1732.0	U	55.0			QL=2 ST=2 TYP=3
	410	PALE	8 S	2313.0	2313.0	U	57.0			QL=2 ST=2 TYP=3
2840	PEKG	1 S	2316.0	2320.0	10.0	3.8				
11	245	SVTO	43 NS	0402.0	1452.0	810.0	200.0			QL=2 ST=2 TYP=1
	204	IZMI	44 NS	0600.0E		360.0D		80.0		
	127	TORN	44 NS	0620.0E		520.0D		30.0		V=3
	245	SGMR	43 NS	1001.0	1107.0	743.0	210.0			QL=4 ST=2 TYP=1
	280	CUBA	44 NS	1331.0E		499.0D		38.0		
	235	CUBA	44 NS	1331.0E		499.0D		43.0		
	410	SGMR	43 NS	1403.0	1403.0	1.0	58.0			QL=4 ST=2 TYP=1
	245	PALE	43 NS	1639.0	1701.0U	333.0	160.0			QL=2 ST=2 TYP=1
	5730	IRKU	8 S	2326.1	2326.1	2326.1	1.0		U	
	5730	IRKU	8 S	2327.4	2327.7	2327.7	3.0		U	
	2800	PENT	1 S	2341.0	2342.0	2.0	9.0			
	5730	IRKU	4 S/F	2341.0	2342.3	5.1	15.0		U	
	12	204	IZMI	44 NS	0600.0E		360.0D		50.0	
127		TORN	44 NS	0620.0E		520.0D		60.0		V=2
245		SVTO	43 NS	0631.0	1038.0	576.0	64.0			QL=4 ST=2 TYP=1
245		SGMR	43 NS	0946.0	1157.0U	421.0	59.0			QL=4 ST=2 TYP=1
245		SGMR	43 NS	2000.0	2004.0	4.0	74.0			QL=4 ST=2 TYP=1
3000		IZMI	7 C	0608.6	0608.6	0.2	30.0			
2800		PENT	1 S	1843.0	1844.0	3.0	5.0			
245		SGMR	8 S	1940.0	1941.0	1.0	54.0			QL=2 ST=2 TYP=3
245		PALE	4 S/F	2212.0	2212.0	3.0	62.0			QL=2 ST=2 TYP=3
245		SGMR	8 S	2212.0	2212.0	1.0	62.0			QL=2 ST=2 TYP=3
245		SGMR	8 S	2222.0	2222.0	1.0	57.0			QL=4 ST=2 TYP=3
13	204	IZMI	44 NS	0600.0E		300.0D		20.0		
	127	TORN	44 NS	0620.0E		520.0D		8.0		V=2
	3000	IZMI	5 S	0635.7	0636.8	1.9	5.0	2.5		
	3000	IZMI	40 F	0651.5	0714.5	66.0	6.0			
	500	HIRA	4 S/F	2043.0	2043.5	1.0	24.0	5.0		0
14	5730	IRKU	1 S	0156.0	0157.2	2.0	2.0		U	
	5730	IRKU	4 S/F	0259.2	0300.4	3.1	4.0		U	
	2950	GORK	24 R	0835.5	0940.4	65.0D	5.6			
	2800	PENT	1 S	1656.0	1657.0	7.0	14.0			
	245	PALE	8 S	1841.0	1841.0	1.0	290.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1841.0	1841.0	1.0	240.0			QL=4 ST=2 TYP=3
	2800	PENT	1 S	1858.0	1859.0	5.0	6.0			
	245	SGMR	8 S	2051.0	2051.0	U	57.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	2210.0	2210.0	1.0	84.0			QL=4 ST=2 TYP=3
200	HIRA	8 S	2210.6	2211.0	0.7	35.0			0	
15	235	CUBA	44 NS	1311.0E		519.0D		8.0		
	280	CUBA	44 NS	1311.0E		510.0D		15.0		
	5730	IRKU	1 S	0017.5	0019.0	3.5	2.0		U	
	245	PALE	4 S/F	0041.0	0043.0	3.0	190.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0043.0	0043.0	U	98.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0145.0	0145.0	U	73.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0145.0	0145.0	U	130.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	0145.0	0145.0	U	160.0			QL=4 ST=2 TYP=3
	410	PALE	8 S	0145.0	0145.0	U	74.0			QL=4 ST=2 TYP=3
	33	UPIC	46 C	1022.7	1024.0	3.5				
	245	PALE	8 S	1942.0	1942.0	U	140.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1942.0	1942.0	U	120.0			QL=4 ST=2 TYP=3

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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		
15	[	245 PALE	49 GB	2222.0	2224.0	4.0	960.0			QL=4 ST=2 TYP=6
		245 SGMR	49 GB	2222.0	2224.0	5.0	790.0			QL=4 ST=2 TYP=6
16	[	280 CUBA	44 NS	1310.0E		520.0D		17.0		
		235 CUBA	44 NS	1310.0E		520.0D		9.0		
	245 SGMR	8 S	1927.0	1927.0	2.0	67.0			QL=4 ST=2 TYP=3	
	245 PALE	8 S	2001.0	2002.0	1.0	57.0			QL=4 ST=2 TYP=3	
	245 SGMR	4 S/F	2001.0	2002.0	3.0	120.0			QL=2 ST=2 TYP=3	
	200 HIRA	6 S	2001.0	2001.7	1.2	45.0	13.0		WR	
	245 SGMR	8 S	2049.0	2050.0	1.0	67.0			QL=4 ST=2 TYP=3	
	200 HIRA	8 S	2049.9	2050.1	0.5	30.0			0	
200 HIRA	46 C	2159.5	2201.1	2.0	10.0	3.0		WR		
17	[	280 CUBA	44 NS	1320.0E		510.0D		14.0		
		235 CUBA	44 NS	1320.0E		510.0D		8.0		
	2840 PEKG	1 S	0145.0	0155.0	15.0	4.7				
	500 HIRA	8 S	0439.2	0439.3	0.2	7.0			MR	
	200 HIRA	6 S	0439.5	0441.2	2.0	50.0	10.0		MR	
	245 LEAR	8 S	0440.0	0440.0	1.0	110.0			QL=4 ST=2 TYP=3	
	245 SVTO	8 S	0440.0	0440.0	2.0	120.0			QL=4 ST=3 TYP=3	
	200 HIRA	42 SER	0445.2	0445.4	3.0	7.0			MR	
	3000 IZMI	5 S	0815.8	0818.5	6.7	4.0	2.0			
	3000 IZMI	20 GRF	0915.4	0923.9	10.6	4.0				
	33 UPIC	42 SER	0916.5	1006.5	181.0					
	245 SVTO	8 S	1006.0	1006.0	1.0	76.0			QL=4 ST=2 TYP=3	
	204 IZMI	41 F	1006.0	1006.6	2.5	71.0				
	127 TORN	4 S/F	1006.0	1006.6	2.6	60.0	30.0			
204 IZMI	42 SER	1109.9	1110.7	1.1	27.0					
18	[	280 CUBA	44 NS	1310.0E		520.0D		14.0		
		235 CUBA	44 NS	1310.0E		520.0D		7.0		
19	[	2840 PEKG	1 S	0536.0	0539.0	6.0	2.5			
		5730 IRKU	1 S	0538.3	0539.0	1.7	2.0		U	
	2840 PEKG	1 S	0756.0	0758.0	11.0	3.9				
	2950 GORK	6 S	0758.0	0758.4	1.5	5.8				
	5730 IRKU	1 S	0758.1	0758.4	1.8	2.0		U		
	33 UPIC	32 ABS	0801.0	0804.0	9.0					
	33 UPIC	48 C	0951.7	0955.5	25.3					
2840 PEKG	40 F	1004.0	1004.5	2.0	17.5					
22	[	235 CUBA	44 NS	1300.0E		530.0D		7.0		
		280 CUBA	44 NS	1300.0E		530.0D		14.0		
	33 UPIC	45 C	1405.5	1406.5	2.0					
	245 SGMR	4 S/F	2030.0	2131.0	61.0	80.0			QL=4 ST=3 TYP=3	
	410 SGMR	4 S/F	2030.0	2131.0	61.0	93.0			QL=4 ST=3 TYP=3	
	200 HIRA	42 SER	2126.7	2127.0	5.0	60.0			0	
	245 SGMR	8 S	2130.0	2131.0	1.0	80.0			QL=4 ST=3 TYP=3	
	500 HIRA	8 S	2130.7	2130.9	0.5	6.0			0	
245 SGMR	4 S/F	2131.0	0000.0	149.0	80.0			QL=4 ST=3 TYP=3		
23	[	235 CUBA	44 NS	1300.0E		530.0D		8.0		
		280 CUBA	44 NS	1300.0E		530.0D		16.0		
	245 SGMR	43 NS	1945.0	2004.0	28.0	91.0			QL=4 ST=2 TYP=1	
	200 HIRA	42 SER	0112.6	0122.5	10.0	110.0			0	
	245 LEAR	8 S	0113.0	0114.0	1.0	59.0			QL=4 ST=2 TYP=3	
	245 LEAR	8 S	0116.0	0116.0	1.0	70.0			QL=4 ST=2 TYP=3	
	245 PALE	8 S	0116.0	0116.0	1.0	100.0			QL=4 ST=2 TYP=3	
	245 LEAR	8 S	0122.0	0122.0	1.0	310.0			QL=4 ST=2 TYP=3	
	245 PALE	8 S	0122.0	0122.0	1.0	410.0			QL=4 ST=2 TYP=3	
	500 HIRA	8 S	0122.6	0122.8	0.4	8.0			0	
	200 HIRA	46 C	0322.1	0325.5	4.5	35.0	7.0		0	
	245 PALE	8 S	0325.0	0325.0	U	67.0			QL=4 ST=2 TYP=3	
	245 SVTO	8 S	0538.0	0538.0	1.0	52.0			QL=4 ST=2 TYP=3	
	5730 IRKU	1 S	0924.9	0925.1	5.1	5.0		U		
	245 SGMR	8 S	1222.0	1222.0	U	75.0			QL=4 ST=2 TYP=3	
	245 SVTO	8 S	1222.0	1222.0	U	84.0			QL=4 ST=2 TYP=3	
245 PALE	8 S	1934.0	1934.0	1.0	180.0			QL=4 ST=2 TYP=3		
245 SGMR	8 S	1934.0	1934.0	1.0	190.0			QL=4 ST=2 TYP=3		



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Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
23	245 PALE	8 S	1944.0	1945.0	1.0	61.0			QL=4 ST=2 TYP=3
	200 HIRA	46 C	2002.9	2004.4	3.0	80.0	20.0		0
	245 PALE	8 S	2003.0	2004.0	2.0	95.0			QL=4 ST=2 TYP=3
	245 PALE	8 S	2011.0	2011.0	U	57.0			QL=4 ST=2 TYP=3
	200 HIRA	8 S	2011.0	2011.3	0.6	80.0			0
24	204 IZMI	43 NS	0600.0		360.0		35.0		
	245 SVTO	43 NS	0858.0	0859.0	1.0	80.0			QL=4 ST=3 TYP=1
	245 SGMR	43 NS	1020.0	2110.0	801.0	120.0			QL=4 ST=2 TYP=1
	245 SVTO	43 NS	1146.0	1351.0	357.0	110.0			QL=4 ST=2 TYP=1
	280 CUBA	44 NS	1300.0E		530.00		31.0		
	235 CUBA	44 NS	1300.0E		530.00		24.0		
	245 LEAR	43 NS	2310.0	0617.0U	620.0	180.0			QL=4 ST=2 TYP=1
	245 PALE	8 S	0053.0	0053.0	1.0	57.0			QL=4 ST=3 TYP=3
	5730 IRKU	1 S	0143.6	0148.2	8.4	1.0		U	
	245 LEAR	8 S	0758.0	0758.0	U	82.0			QL=4 ST=2 TYP=3
	245 SVTO	8 S	0758.0	0758.0	U	72.0			QL=2 ST=2 TYP=3
	33 UPIC	45 C	0820.5	0821.5	2.5				
	204 IZMI	42 SER	0820.6	0820.7	1.2	68.0			
	204 IZMI	42 SER	0829.2	0831.0	22.0	165.0			
	245 LEAR	8 S	0830.0	0831.0	1.0	95.0			QL=4 ST=2 TYP=3
	245 SVTO	8 S	0830.0	0831.0	1.0	90.0			QL=2 ST=2 TYP=3
	245 LEAR	8 S	0858.0	0859.0	1.0	71.0			QL=4 ST=2 TYP=3
245 SVTO	8 S	1046.0	1046.0	1.0	50.0			QL=2 ST=2 TYP=3	
245 SVTO	8 S	1115.0	1115.0	U	62.0			QL=2 ST=2 TYP=3	
25	245 SVTO	43 NS	0353.0	1322.0	831.0	340.0			QL=2 ST=3 TYP=1
	204 IZMI	44 NS	0710.0E		290.00		70.0		
	245 SGMR	43 NS	0935.0	1853.0U	571.0	190.0			QL=4 ST=2 TYP=1
	245 PALE	44 NS	1725.0E	1726.0U	395.00	71.0			QL=2 ST=1 TYP=1
	245 LEAR	4 S/F	0007.0	0011.0	4.0	52.0			QL=4 ST=2 TYP=3
	245 LEAR	8 S	0537.0	0537.0	1.0	200.0			QL=4 ST=2 TYP=3
	245 SVTO	8 S	0537.0	0537.0	1.0	230.0			QL=2 ST=2 TYP=3
	200 HIRA	8 S	0537.4	0537.7	0.7	380.0			WR
	5730 IRKU	4 S/F	0847.0U	0849.0U	8.0U	8.0U		U	
	410 LEAR	4 S/F	0849.0	0851.0	3.0	150.0			QL=4 ST=2 TYP=3
	245 LEAR	8 S	0849.0	0850.0	2.0	380.0			QL=4 ST=2 TYP=3
	245 SVTO	8 S	0849.0	0850.0	2.0	450.0			QL=2 ST=2 TYP=3
	410 SVTO	4 S/F	0849.0	0851.0	3.0	260.0			QL=2 ST=2 TYP=3
	127 TORN	7 C	0849.0	0849.7	3.0	670.0		280.0	
	600 GORK	4 S/F	0849.6	0851.8	2.7	10.6			
	500 HIRA	4 S/F	0849.7	0850.0	1.5	13.0		4.0	
	200 HIRA	46 C	0849.7	0850.2	2.0	150.0		35.0	
	2950 GORK	5 S	0849.8	0850.4	2.8	2.6			
	500 HIRA	8 S	0851.2	0851.3	0.3	100.0			WL
	127 TORN	40 F	1154.6	1155.2	13.4	180.0		7.0	
	245 SGMR	8 S	1243.0	1244.0	2.0	330.0			QL=2 ST=2 TYP=3
	245 SVTO	8 S	1243.0	1244.0	1.0	290.0			QL=2 ST=2 TYP=3
	410 SVTO	8 S	1244.0	1244.0	U	39.0			QL=2 ST=2 TYP=3
	410 SGMR	4 S/F	1417.0	1419.0	4.0	52.0			QL=4 ST=2 TYP=3
	410 SVTO	4 S/F	1418.0	1419.0	4.0	60.0			QL=2 ST=2 TYP=3
	245 SVTO	8 S	1503.0	1504.0	2.0	120.0			QL=2 ST=2 TYP=3
	410 SVTO	8 S	1503.0	1503.0	U	68.0			QL=2 ST=2 TYP=3
245 SGMR	8 S	2014.0	2014.0	1.0	81.0			QL=2 ST=2 TYP=3	
245 SGMR	8 S	2037.0	2037.0	1.0	55.0			QL=2 ST=2 TYP=3	
245 SGMR	8 S	2114.0	2115.0	1.0	60.0			QL=2 ST=2 TYP=3	
245 PALE	8 S	2133.0	2133.0	U	360.0			QL=2 ST=2 TYP=3	
245 SGMR	8 S	2133.0	2133.0	U	330.0			QL=2 ST=2 TYP=3	
200 HIRA	8 S	2133.2	2133.5	0.6	90.0			0	
245 SGMR	8 S	2236.0	2238.0	2.0	50.0			QL=2 ST=2 TYP=3	
26	204 IZMI	44 NS	0600.0E		360.00		20.0		
	245 SVTO	43 NS	0918.0	1453.0	507.0	180.0			QL=4 ST=2 TYP=1
	127 TORN	43 NS	0923.0		337.0		1.0		V=1, ATMO, STORM
	245 SGMR	43 NS	0935.0	1017.0	814.0	390.0			QL=4 ST=2 TYP=1
	235 CUBA	44 NS	1300.0E		530.00		21.0		
	280 CUBA	44 NS	1300.0E		530.00		27.0		
	245 PALE	43 NS	1728.0	1730.0	76.0	160.0			QL=2 ST=2 TYP=1
	245 LEAR	43 NS	2311.0	0817.0	619.0	530.0			QL=4 ST=2 TYP=1

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Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean	Int	Remarks
26	245	LEAR	8 S	0142.0	0142.0	U	51.0			QL=4 ST=2 TYP=3
	204	IZMI	25 R	0911.0U		169.0D		30.0		
	245	SVTO	8 S	1017.0	1017.0	1.0	300.0			QL=2 ST=2 TYP=3
	410	SGMR	8 S	1246.0	1246.0	U	59.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	1306.0	1307.0	1.0	210.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1926.0	1926.0	1.0	130.0			QL=2 ST=2 TYP=3
	410	SGMR	8 S	1926.0	1926.0	1.0	160.0			QL=2 ST=2 TYP=3
	2800	PENT	8 S	2032.0	2033.0	2.0	27.0			
2800	HIRA	1 S	2032.2	2032.5	0.6	19.0	4.0		0	
27	245	PALE	43 NS	0027.0	0027.0U	1435.0	85.0			QL=2 ST=2 TYP=1
	245	PALE	43 NS	0146.0	0312.0	164.0	200.0			QL=2 ST=2 TYP=1
	245	SVTO	43 NS	0449.0	0711.0	293.0	130.0			QL=4 ST=2 TYP=1
	204	IZMI	44 NS	0600.0E		360.0D		85.0		
	127	TORN	44 NS	0620.0E	0950.8	460.0D	510.0	40.0		V=3
	280	CUBA	43 NS	1300.0		64.0D		32.0		
	235	CUBA	43 NS	1300.0		64.0D		35.0		
	245	PALE	8 S	0115.0	0115.0	1.0	110.0			QL=2 ST=2 TYP=3
	200	HIRA	46 C	0312.5	0312.9	4.0	90.0	11.0		0
	245	SVTO	8 S	0422.0	0422.0	1.0	130.0			QL=2 ST=3 TYP=3
	2840	PEKG	1 S	0459.0	0501.0	6.0	13.2			
	5730	IRKU	4 S/F	0459.0	0501.0	32.0	19.0		U	
	500	HIRA	46 C	0500.2	0500.4	0.8	120.0	20.0		0
	2800	HIRA	3 S	0500.5	0501.0	1.5	10.0	3.0		0
	410	LEAR	8 S	0700.0	0700.0	U	56.0			QL=4 ST=2 TYP=3
	410	SVTO	8 S	0700.0	0700.0	1.0	81.0			QL=2 ST=3 TYP=3
	245	SVTO	49 GB	0817.0	0817.0	U	600.0			QL=2 ST=2 TYP=6
	204	IZMI	41 F	0817.3	0817.5	0.7	1000.0			
	200	HIRA	8 S	0817.5	0817.6	0.3	290.0			WR
	245	SGMR	49 GB	1102.0	1102.0	6.0	1200.0			QL=2 ST=3 TYP=6
	410	SGMR	8 S	1102.0	1102.0	1.0	320.0			QL=4 ST=2 TYP=3
	245	SVTO	49 GB	1102.0	1102.0	1.0	1000.0			QL=2 ST=2 TYP=6
	410	SVTO	8 S	1102.0	1102.0	1.0	360.0			QL=4 ST=2 TYP=3
	3000	IZMI	22 GRF	1108.4	1116.2	21.7	33.0			
	2695	SGMR	8 S	1113.0	1114.0	1.0	30.0			QL=4 ST=2 TYP=3
	4995	SGMR	4 S/F	1113.0	1116.0	5.0	58.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1113.0	1115.0	2.0	31.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1113.0	1116.0	3.0	30.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1113.0	1116.0	5.0	51.0			QL=2 ST=2 TYP=3
	4995	SVTO	4 S/F	1113.0	1116.0	5.0	60.0			QL=4 ST=2 TYP=3
	33	UPIC	3 S	1202.0	1202.5	1.0				
	127	TORN	42 SER	1213.0	1223.4	18.5	1550.0			
	33	UPIC	45 C	1233.7	1234.5	1.8				
	280	CUBA	48 C	1305.2	1320.1	33.9	201.0			
	235	CUBA	48 C	1309.1	1321.1	29.0D	228.0			
	610	SVTO	20 GRF	1310.0	1320.0	39.0	200.0			QL=2 ST=2 TYP=2
	245	SGMR	48 C	1311.0	1320.0	17.0	200.0			QL=2 ST=2 TYP=8
	610	SGMR	20 GRF	1311.0	1319.0	24.0	190.0			QL=4 ST=2 TYP=2
	410	SGMR	48 C	1311.0	1325.0	20.0	210.0			QL=4 ST=2 TYP=8
	410	SVTO	48 C	1311.0	1325.0	21.0	230.0			QL=4 ST=2 TYP=8
245	SVTO	48 C	1311.0	1320.0	20.0	170.0			QL=2 ST=2 TYP=8	
1415	SGMR	20 GRF	1313.0	1323.0	25.0	370.0			QL=4 ST=2 TYP=2	
1415	SVTO	20 GRF	1313.0	1323.0	30.0	390.0			QL=4 ST=2 TYP=2	
2695	SGMR	20 GRF	1314.0	1322.0	26.0	400.0			QL=4 ST=2 TYP=2	
2695	SVTO	20 GRF	1314.0	1323.0	33.0	390.0			QL=4 ST=2 TYP=2	
33	UPIC	47 GB	1314.0	1319.5	51.8					
4995	SVTO	4 S/F	1315.0	1322.0	30.0	230.0			QL=4 ST=2 TYP=3	
4995	SGMR	20 GRF	1316.0	1322.0	22.0	230.0			QL=4 ST=2 TYP=2	
8800	SVTO	4 S/F	1317.0	1322.0	19.0	120.0			QL=2 ST=2 TYP=3	
8800	SGMR	4 S/F	1318.0	1322.0	17.0	98.0			QL=4 ST=2 TYP=3	
15400	SVTO	4 S/F	1319.0	1324.0	30.0	54.0			QL=4 ST=2 TYP=3	
15400	SGMR	4 S/F	1320.0	1322.0	11.0	52.0			QL=4 ST=2 TYP=3	
245	SGMR	49 GB	1331.0	1333.0	7.0	560.0			QL=2 ST=3 TYP=6	
245	SVTO	49 GB	1331.0	1333.0	4.0	580.0			QL=2 ST=3 TYP=6	
245	SGMR	49 GB	1332.0	1333.0	2.0	510.0			QL=2 ST=2 TYP=6	
127	TORN	4 S/F	1332.0	1333.0	4.0	1780.0	290.0			
410	SVTO	8 S	1333.0	1334.0	2.0	76.0			QL=4 ST=3 TYP=3	
245	SVTO	4 S/F	1614.0	1618.0	5.0	320.0			QL=2 ST=3 TYP=3	
410	SVTO	4 S/F	1614.0	1618.0	4.0	29.0			QL=2 ST=3 TYP=3	

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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		
27	410	SGMR	8 S	1618.0	1618.0	U	20.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1618.0	1618.0	U	350.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	1618.0	1618.0	1.0	320.0			QL=4 ST=3 TYP=3
	410	SVTO	8 S	1618.0	1618.0	U	29.0			QL=4 ST=3 TYP=3
	245	PALE	49 GB	1640.0	1641.0	1.0	530.0			QL=2 ST=2 TYP=6
	245	SVTO	8 S	1640.0	1641.0	1.0	380.0			QL=4 ST=2 TYP=3
	245	PALE	4 S/F	1705.0	1705.0	7.0	120.0			QL=2 ST=2 TYP=3
	245	SGMR	8 S	1705.0	1705.0	1.0	110.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	1705.0	1705.0	1.0	99.0			QL=4 ST=3 TYP=3
	245	SGMR	8 S	1946.0	1946.0	U	65.0			QL=4 ST=3 TYP=3
	200	HIRA	8 S	1946.0	1946.2	0.5	90.0			0
	245	SGMR	8 S	2031.0	2032.0	2.0	290.0			QL=4 ST=2 TYP=3
	610	SGMR	8 S	2032.0	2032.0	U	23.0			QL=4 ST=2 TYP=3
	410	SGMR	8 S	2032.0	2032.0	1.0	42.0			QL=4 ST=2 TYP=3
	500	HIRA	42 SER	2032.0	2032.1	0.3	34.0			0
	200	HIRA	42 SER	2032.2	2032.5	15.0	40.0			0
	245	SGMR	8 S	2118.0	2118.0	U	76.0			QL=4 ST=3 TYP=3
245	SGMR	8 S	2237.0	2238.0	1.0	53.0			QL=4 ST=2 TYP=3	
410	SGMR	8 S	2237.0	2237.0	U	2.0			QL=4 ST=2 TYP=3	
200	HIRA	8 S	2302.2	2302.3	0.2	90.0			0	
28	204	IZMI	42 SER	0617.0	0621.9	6.7	371.0			QL=4 ST=2 TYP=3
	245	LEAR	4 S/F	0618.0	0621.0	4.0	100.0			QL=4 ST=2 TYP=3
	410	LEAR	4 S/F	0619.0	0622.0	5.0	17.0			QL=4 ST=2 TYP=3
	610	LEAR	4 S/F	0620.0	0622.0	4.0	27.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0621.0	0621.0	1.0	120.0			QL=4 ST=2 TYP=3
	5730	IRKU	1 S	0621.0	0622.5	3.0	3.0		U	
	200	HIRA	4 S/F	0621.5	0621.7	1.0	80.0		11.0	WR
	410	SVTO	8 S	0622.0	0622.0	U	22.0			QL=4 ST=2 TYP=3
	610	SVTO	8 S	0622.0	0622.0	U	27.0			QL=2 ST=2 TYP=3
	500	HIRA	8 S	0622.1	0622.2	0.2	20.0			0
	2950	GORK	1 S	0622.2	0622.5	0.5	1.5			
	600	GORK	8 S	0622.3	0622.5	0.8	17.0			
	500	HIRA	42 SER	0630.9	0633.1	2.5	8.0			0
	200	HIRA	42 SER	0632.6	0634.6	3.0	50.0			WR
	204	IZMI	41 F	0634.6	0634.7	0.4	132.0			
	245	LEAR	8 S	0709.0	0709.0	1.0	370.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0709.0	0709.0	U	300.0			QL=4 ST=2 TYP=3
	410	SVTO	49 GB	0709.0	0709.0	1.0	790.0			QL=4 ST=2 TYP=6
	245	SVTO	8 S	0709.0	0709.0	1.0	360.0			QL=4 ST=2 TYP=3
	204	IZMI	42 SER	0725.0	0731.0	7.3	146.0			
	245	LEAR	8 S	0726.0	0728.0	2.0	57.0			QL=4 ST=2 TYP=3
	500	HIRA	42 SER	0726.2	0728.1	5.0	6.0			0
	200	HIRA	42 SER	0726.2	0730.9	5.0	60.0			0
	410	LEAR	8 S	0728.0	0728.0	U	19.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0728.0	0728.0	U	71.0			QL=4 ST=2 TYP=3
	245	LEAR	4 S/F	0729.0	0731.0	4.0	58.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0730.0	0731.0	1.0	74.0			QL=4 ST=2 TYP=3
	245	LEAR	4 S/F	0735.0	0736.0	3.0	61.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	0736.0	0736.0	1.0	76.0			QL=4 ST=2 TYP=3
	33	UPIC	42 SER	0810.5	0849.5U	248.5				
	204	IZMI	42 SER	0812.6	0814.0	6.4	52.0			
	200	HIRA	42 SER	0813.0	0814.1	1.3	11.0			0
	500	HIRA	42 SER	0833.0	0833.2	0.3	11.0			0
204	IZMI	41 F	0848.8	0851.9	4.4	39.0				
200	HIRA	46 C	0849.0	0852.0	4.0	17.0		4.0	0	
600	GORK	3 S	0851.0	0851.5	1.5	51.0				
245	SVTO	8 S	0951.0	0951.0	1.0	140.0			QL=4 ST=2 TYP=3	
204	IZMI	42 SER	1037.9	1039.2	1.9	26.0				
410	SGMR	8 S	1124.0	1125.0	1.0	21.0			QL=4 ST=2 TYP=3	
245	SVTO	8 S	1124.0	1125.0	2.0	150.0			QL=4 ST=3 TYP=3	
204	IZMI	45 C	1124.9	1125.6	1.1	539.0				
245	SGMR	8 S	1125.0	1125.0	1.0	120.0			QL=4 ST=2 TYP=3	
410	SVTO	8 S	1125.0	1125.0	U	24.0			QL=4 ST=3 TYP=3	
245	SVTO	8 S	1125.0	1125.0	U	150.0			QL=4 ST=2 TYP=3	
204	IZMI	41 F	1150.8	1151.1	0.8	40.0				
15400	SGMR	4 S/F	1345.0	1348.0	8.0	21.0			QL=4 ST=2 TYP=3	
2695	SGMR	4 S/F	1345.0	1348.0	8.0	26.0			QL=4 ST=2 TYP=3	
8800	SGMR	4 S/F	1346.0	1348.0	7.0	50.0			QL=4 ST=2 TYP=3	

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

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MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean	Int	Remarks
28	4995	SGMR	4 S/F	1346.0	1348.0	7.0	47.0			QL=4 ST=2 TYP=3
	1415	SGMR	4 S/F	1346.0	1348.0	4.0	15.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1347.0	1348.0	4.0	46.0			QL=2 ST=2 TYP=3
	4995	SVTO	4 S/F	1347.0	1348.0	4.0	40.0			QL=4 ST=2 TYP=3
	2800	PENT	40 F	1347.0	1349.0	13.0	28.0			
	15400	SVTO	4 S/F	1348.0	1350.0	3.0	22.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1348.0	1348.0	U	16.0			QL=4 ST=2 TYP=3
	1415	SVTO	8 S	1348.0	1348.0	U	11.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1425.0	1425.0	U	130.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	1425.0	1425.0	U	120.0			QL=4 ST=2 TYP=3
	33	UPIC	42 SER	1445.5	1450.0	38.0				
	245	SGMR	8 S	1448.0	1450.0	2.0	240.0			QL=4 ST=3 TYP=3
	245	SVTO	8 S	1449.0	1450.0	1.0	240.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1450.0	1450.0	U	240.0			QL=4 ST=3 TYP=3
	245	PALE	8 S	1712.0	1713.0	2.0	190.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1713.0	1713.0	U	170.0			QL=4 ST=2 TYP=3
	245	SVTO	8 S	1713.0	1713.0	U	180.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1738.0	1738.0	U	52.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	1759.0	1759.0	1.0	110.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1759.0	1759.0	1.0	100.0			QL=4 ST=2 TYP=3
	245	PALE	49 GB	1902.0	1902.0	U	730.0			QL=4 ST=2 TYP=6
	4995	PALE	8 S	1902.0	1903.0	1.0	53.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	1902.0	1903.0	2.0	62.0			QL=4 ST=2 TYP=3
	1415	PALE	8 S	1902.0	1903.0	2.0	55.0			QL=4 ST=2 TYP=3
	1415	SGMR	4 S/F	1902.0	1903.0	3.0	58.0			QL=4 ST=2 TYP=3
	4995	SGMR	8 S	1902.0	1903.0	2.0	48.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1902.0	1903.0	4.0	55.0			QL=4 ST=2 TYP=3
	245	SGMR	49 GB	1902.0	1902.0	1.0	650.0			QL=4 ST=2 TYP=6
	2800	PENT	4 S/F	1902.0	1903.0	13.0	61.0			
	245	PALE	8 S	1922.0	1922.0	1.0	120.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1922.0	1922.0	1.0	110.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	1929.0	1931.0	2.0	61.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	2010.0	2012.0	2.0	72.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	2011.0	2012.0	1.0	75.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	2011.0	2012.0	1.0	72.0			QL=4 ST=3 TYP=3
	245	SGMR	8 S	2011.0	2012.0	1.0	73.0			QL=4 ST=3 TYP=3
	200	HIRA	3 S	2011.9	2012.5	1.2	30.0	10.0		
	2800	HIRA	8 S	2012.0	2012.1	0.2	50.0			WL
	200	HIRA	42 SER	2104.0	2127.0	33.0	330.0			O
	245	PALE	8 S	2118.0	2118.0	1.0	190.0			QL=4 ST=2 TYP=3
	245	SGMR	8 S	2118.0	2118.0	1.0	180.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	2126.0	2127.0	1.0	72.0			QL=4 ST=2 TYP=3
245	SGMR	8 S	2127.0	2127.0	U	62.0			QL=4 ST=2 TYP=3	
29	245	LEAR	8 S	0000.0	0000.0	1.0	100.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	0000.0	0000.0	U	120.0			QL=4 ST=2 TYP=3
	2840	PEKG	3 S	0048.0	0056.0	26.0	124.0			
	2700	PURP	3 S	0053.0	0057.0	10.0	117.0			
	5730	IRKU	45 C	0053.9	0056.7	6.8	98.0		U	
	8800	LEAR	4 S/F	0055.0	0056.0	5.0	65.0			QL=4 ST=2 TYP=3
	15400	LEAR	4 S/F	0055.0	0056.0	5.0	97.0			QL=2 ST=2 TYP=3
	4995	LEAR	8 S	0055.0	0056.0	2.0	86.0			QL=4 ST=2 TYP=3
	4995	PALE	8 S	0055.0	0056.0	2.0	84.0			QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	0055.0	0056.0	3.0	64.0			QL=4 ST=2 TYP=3
	2800	HIRA	46 C	0055.5	0056.7	5.0	90.0	30.0		WL
	500	HIRA	46 C	0055.9	0056.5	5.0	170.0	20.0		O
	2695	LEAR	8 S	0056.0	0057.0	2.0	110.0			QL=4 ST=2 TYP=3
	410	LEAR	49 GB	0056.0	0057.0	2.0	570.0			QL=4 ST=2 TYP=6
	1415	LEAR	8 S	0056.0	0057.0	2.0	66.0			QL=4 ST=2 TYP=3
	610	LEAR	49 GB	0056.0	0056.0	1.0	1600.0			QL=4 ST=2 TYP=6
	2695	PALE	8 S	0056.0	0056.0	2.0	140.0			QL=4 ST=2 TYP=3
	1415	PALE	8 S	0056.0	0056.0	2.0	66.0			QL=4 ST=2 TYP=3
	410	PALE	49 GB	0056.0	0057.0	2.0	640.0			QL=4 ST=2 TYP=6
	15400	PALE	8 S	0056.0	0056.0	2.0	65.0			QL=4 ST=2 TYP=3
	610	PALE	49 GB	0056.0	0056.0	1.0	1800.0			QL=4 ST=2 TYP=6
	2800	PENT	8 S	0056.0	0057.0	6.0	110.0			
245	LEAR	49 GB	0057.0	0100.0	6.0	560.0			QL=4 ST=2 TYP=6	
245	PALE	49 GB	0057.0	0100.0	6.0	760.0			QL=4 ST=2 TYP=6	
200	HIRA	8 S	0057.0	0057.1	0.2	50.0			O	

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

MAY 1998

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean	Int	Remarks
29	200	HIRA	46 C	0058.5	0059.0	6.0	680.0			WR
		IZMI	7 C	0631.5	0632.0	1.1	14.0			
	5730	IRKU	4 S/F	0656.3	0659.4	6.7	10.0		U	
		IRKU	1 S	0706.8	0708.0	2.8	2.0		U	
	245	LEAR	8 S	0911.0	0911.0	1.0	150.0			QL=4 ST=2 TYP=3
	410	PALE	8 S	2309.0	2309.0		76.0			QL=4 ST=2 TYP=3
		PALE	8 S	2309.0	2309.0		110.0			QL=4 ST=2 TYP=3
500	HIRA	8 S	2309.0	2309.1	0.2	26.0			WR	
30	235	CUBA	44 NS	1300.0E		530.0D		9.0		
		CUBA	44 NS	1300.0E		530.0D		14.0		
	500	HIRA	42 SER	2247.5	2249.6	2.5	12.0			0
	200	HIRA	46 C	2248.0	2252.0	7.0	1300.0			0
	245	PALE	48 C	2248.0	2251.0	7.0	500.0			QL=4 ST=2 TYP=8
245	SGMR	48 C	2248.0	2248.0	8.0	480.0			QL=4 ST=2 TYP=8	
31	235	CUBA	44 NS	1300.0E		530.0D		8.0		
		CUBA	44 NS	1300.0E		530.0D		15.0		
	245	LEAR	4 S/F	0207.0	0211.0	5.0	88.0			QL=4 ST=2 TYP=3
		PALE	8 S	0208.0	0208.0	1.0	96.0			QL=4 ST=2 TYP=3
	245	PALE	8 S	0210.0	0211.0	1.0	110.0			QL=4 ST=2 TYP=3
	245	LEAR	8 S	0339.0	0339.0	1.0	130.0			QL=4 ST=2 TYP=3
		PALE	8 S	0339.0	0339.0		190.0			QL=4 ST=2 TYP=3
	2840	PEKG	4 S/F	0354.0	0355.0	4.0	21.2			
	2950	GORK	2 S/F	0355.2	0355.6	2.9	21.0			
	9100	GORK	5 S	0355.5	0355.7	0.9	6.5			
	2800	HIRA	3 S	0355.5	0355.7	2.0	16.0		5.0	0
		IRKU	4 S/F	0455.3	0455.6	1.2	11.0		U	
	204	IZMI	7 C	0613.5	0613.6	0.3	124.0			
	204	IZMI	7 C	0616.1	0616.2	0.2	108.0			
	204	IZMI	7 C	1024.8	1024.9	0.2	176.0			
	204	IZMI	7 C	1143.2	1143.3	0.2	54.0			
	245	PALE	49 GB	1643.0	1643.0		570.0			QL=4 ST=2 TYP=6
SVTO		49 GB	1643.0	1643.0		680.0			QL=4 ST=3 TYP=6	
200	HIRA	8 S	2024.7	2025.0	0.6	300.0			0	

Reports are received routinely from the following observatories:

BERN = Berne	HUMN = Humain	ONDR = Ondrejov	SVTO = San Vito
CRIM = Crimea	IZMI = IZMIRAN	PEKG = Peking	TORN = Torun
CUBA = Havana	KISV = Kislovodsk	PALE = Palehua	TRST = Trieste
GORK = Gorky	KRAK = Krakow	PENT = Penticton	TYKW = Toyokawa
HIRA = Hiraiso	LEAR = Learmonth	POTS = Potsdam	UPIC = Upice
HUAN = Huancayo	NOBE = Nobeyama	SGMR = Sagamore Hill	

Explanation of Type Code:

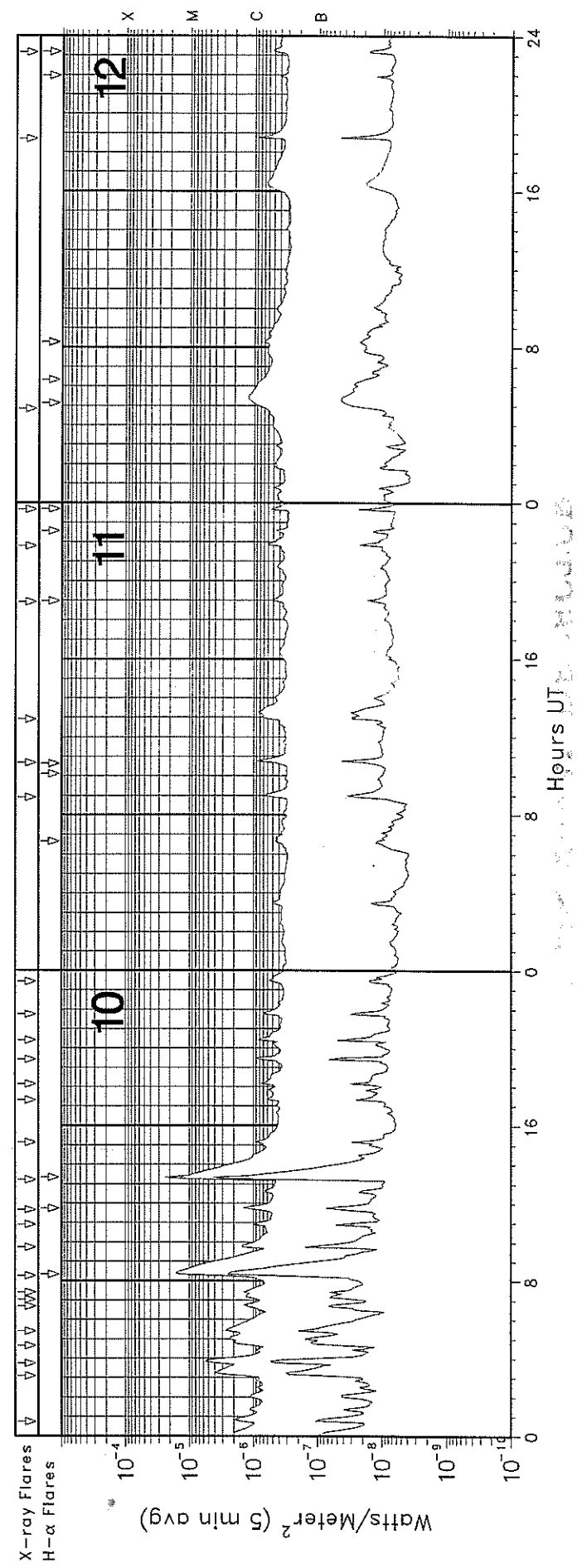
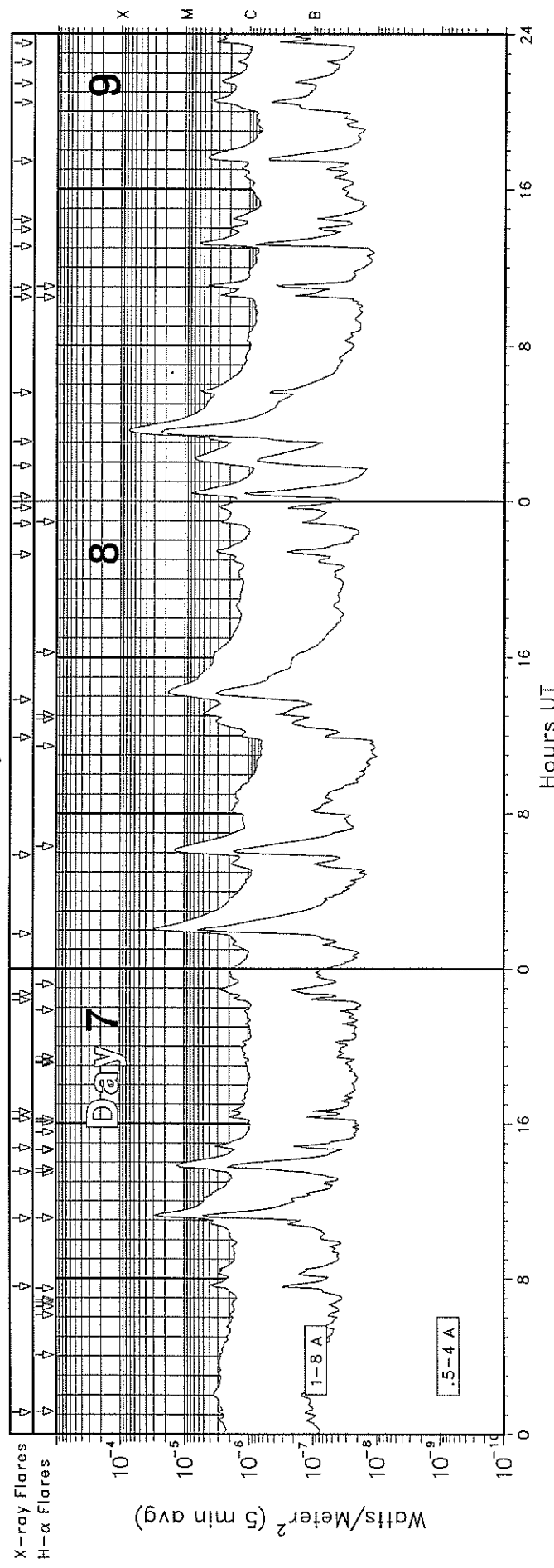
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 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	4O Rise Only	16A Fall A	27AF Rise and Fall AF	
21A Simple 3A GRF	4OF Rise Only F	26O Fall Only	31A Post Burst Decrease A	
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A	

RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; and Hiraiso, Japan 500 and 200 MHz.



# GOES X-RAY DETECTOR

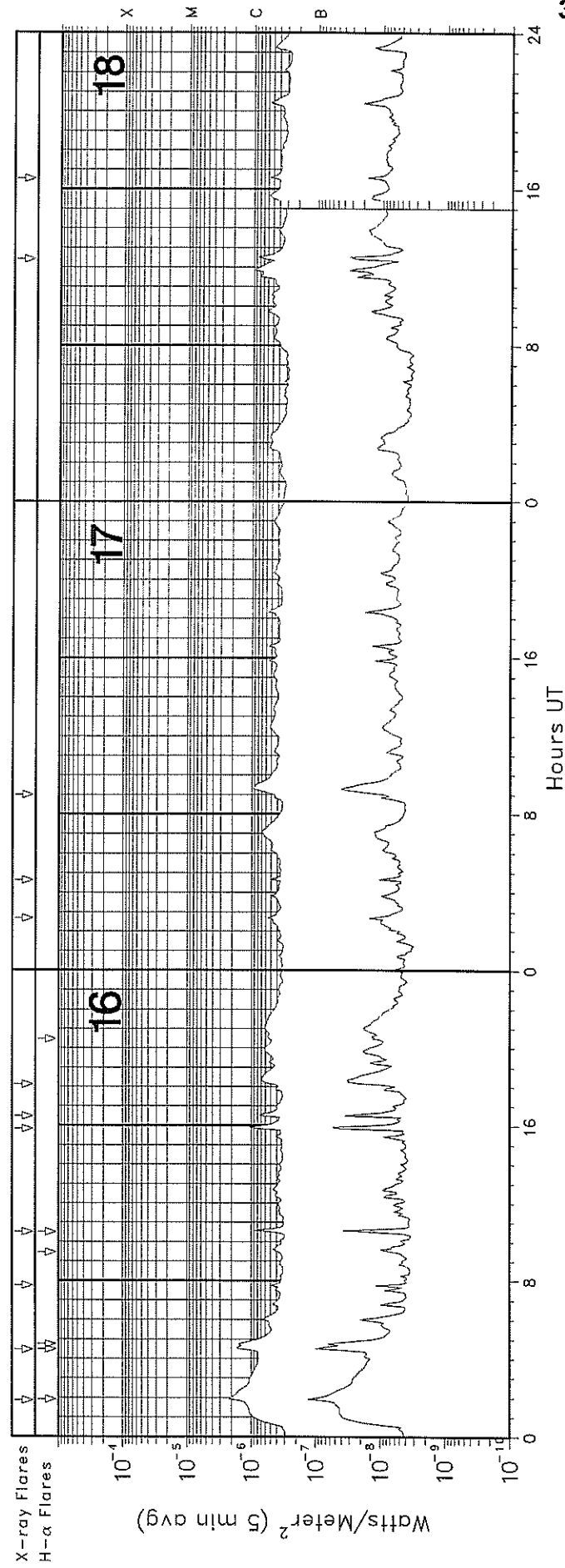
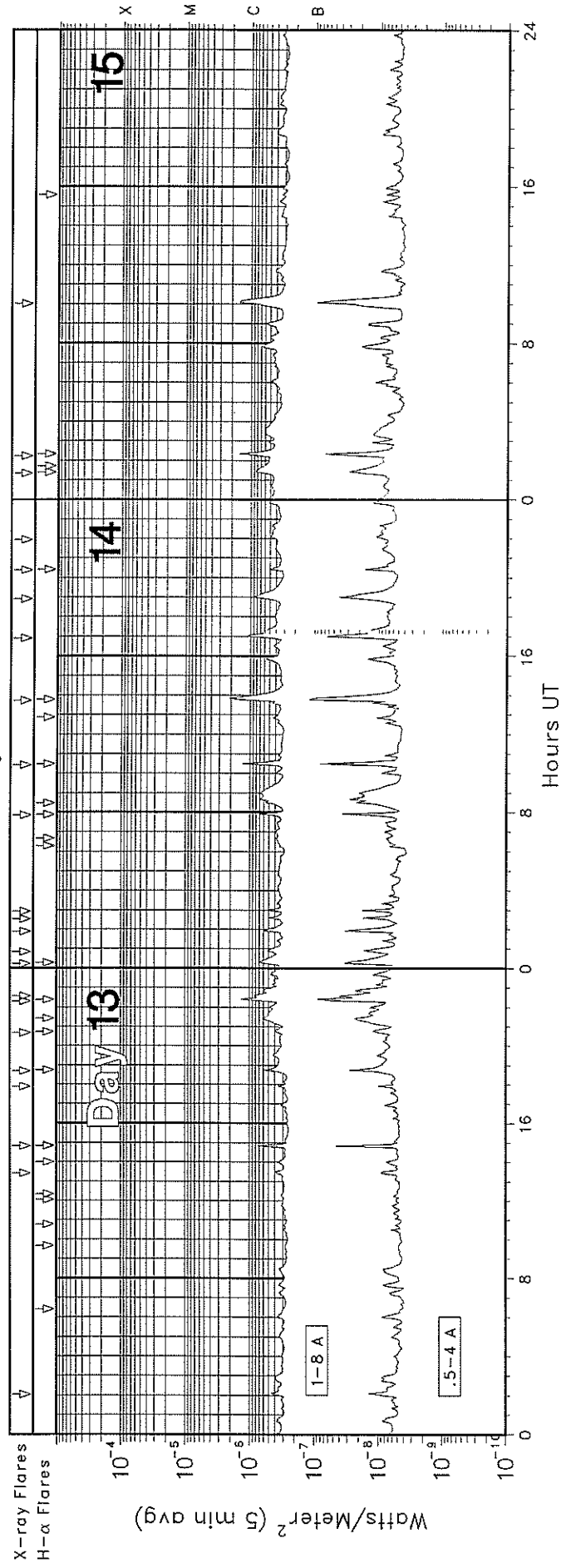
May 1998



Hours UT

# GOES X-RAY DETECTOR

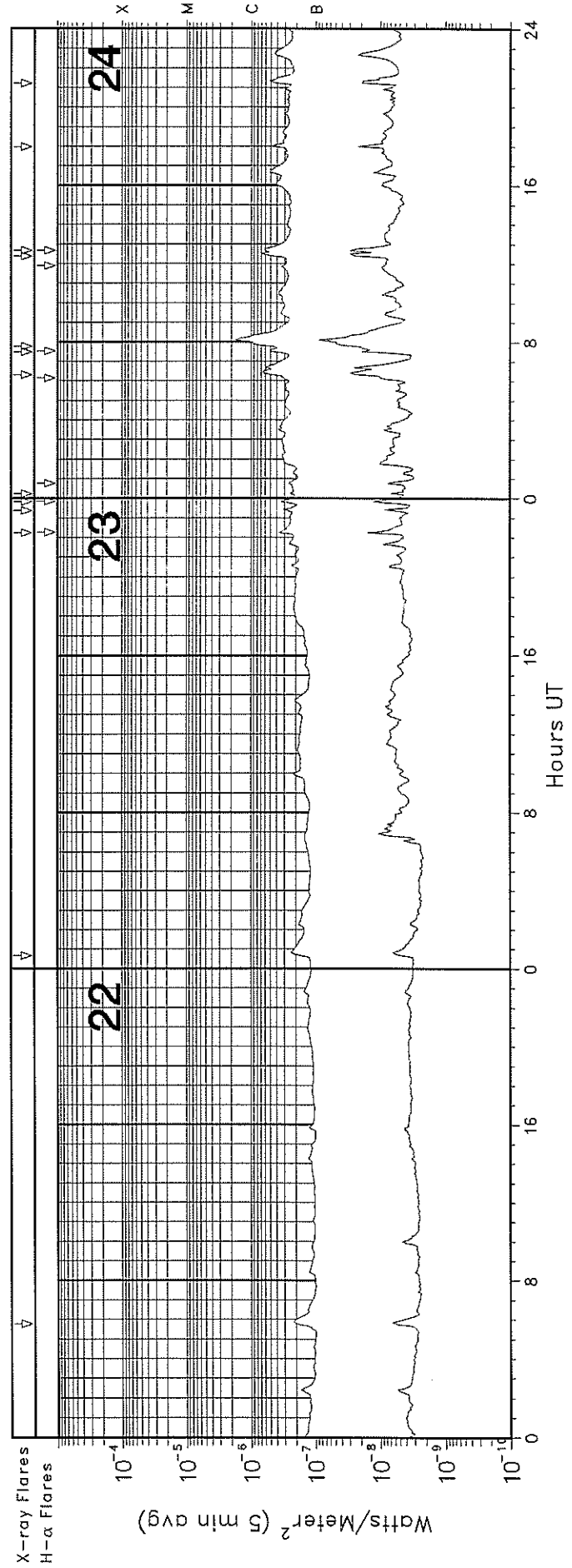
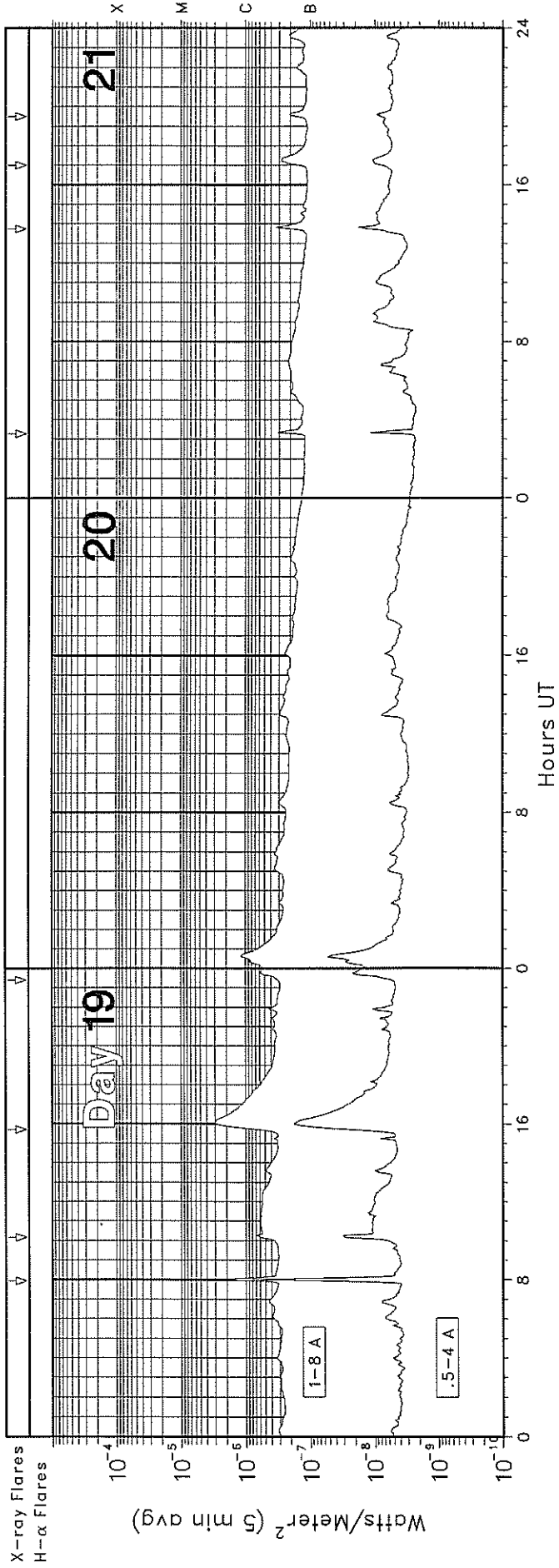
May 1998





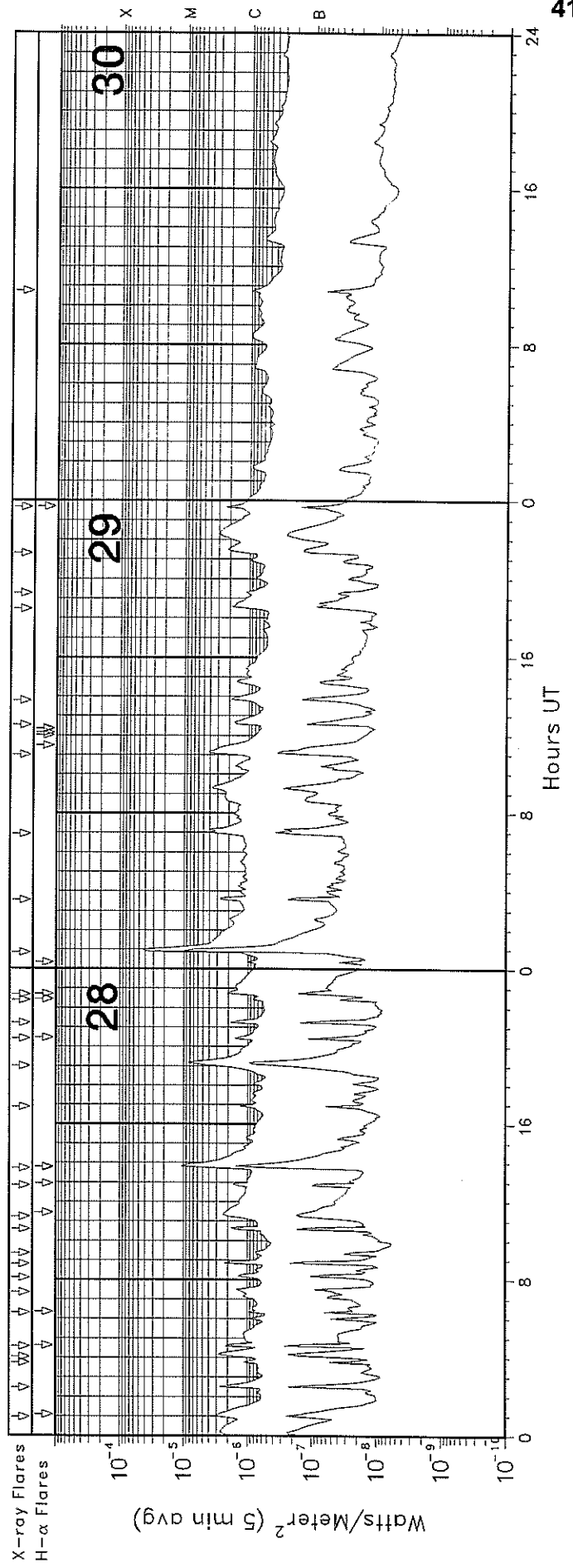
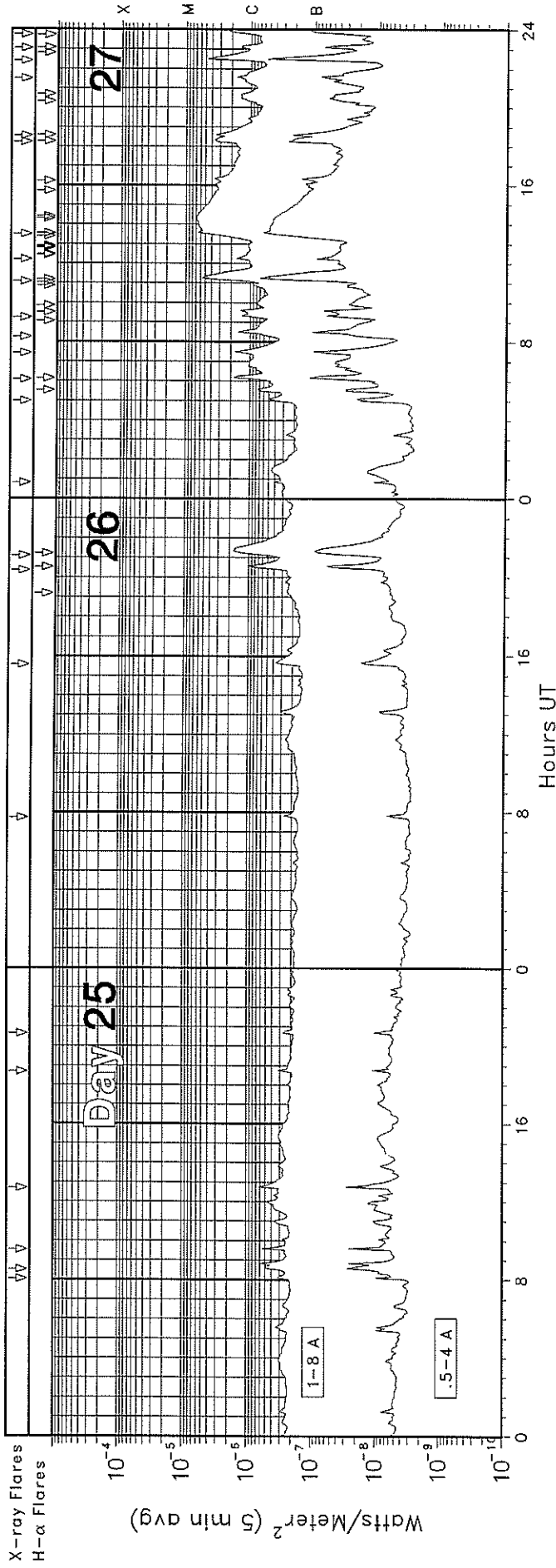
# GOES X-RAY DETECTOR

May 1998

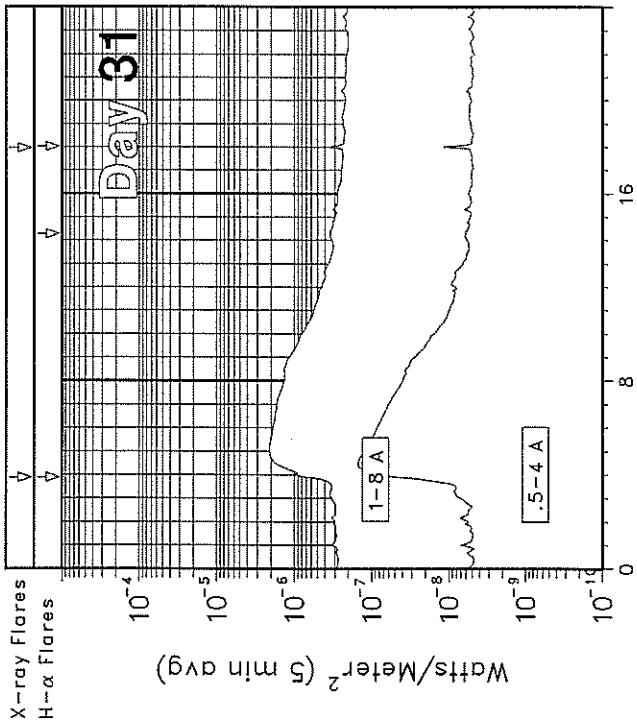


# GOES X-RAY DETECTOR

May 1998



# GOES X-RAY DETECTOR May 1998



GOES SOLAR X-RAY FLARES  
 \*\*Preliminary Listing\*\*

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May 1998

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region	Flux
01	0621	0625	0628				B5.9	1.9E-04	
01	0303	0308	0312				C1.1	5.1E-04	
01	0603	0608	0614	N23	E42	SF	B5.8 8214	3.1E-04	
01	0857	0901	0905	N24	E42		B9.4 8214	3.7E-04	
01	1126	1132	1137	N25	E41	SF	B7.8 8214	3.6E-04	
01	1158	1205	1214				C1.9 8210	1.2E-03	
01	1254	1300	1304	N25	E40		M1.1 8214	3.9E-03	
01	1441	1453	1500	S21	W03		C1.7 8210	1.2E-03	
01	1731	1757	1817	N26	E38	SF	C2.1 8214	5.3E-03	
01	2008	2030	2035	N26	E37		C2.8 8210	3.1E-03	
01	2115	2124	2133				C1.2	1.1E-03	
01	2140	2151	2159	S18	W05	SF	C2.6 8210	2.1E-03	
01	2236	2254	2308	N25	E35	SF	M1.2 8210	1.6E-02	
02	0152	0203	0212	N24	E34	SF	C2.7 8214	2.1E-03	
02	0329	0334	0337				C1.1	3.3E-04	
02	0448	0500	0521	S20	W07		C5.4 8210	7.9E-03	
02	1006	1020	1035				C1.4	2.1E-03	
02	1314	1317	1319	N25	E26	SF	B6.5 8214	1.7E-04	
02	1331	1342	1351	S15	W15	3B	X1.1 8210	6.7E-02	
02	1747	1750	1752	N25	E20	SF	C2.1 8214	3.7E-04	
02	1942	1945	1951				B8.9	4.2E-04	
02	2037	2101	2121	S19	W20		C5.6 8210	1.1E-02	
03	0548	0552	0555				B4.6	1.7E-04	
03	1002	1019	1036	S20	W26	SN	C2.5 8210	4.1E-03	
03	1558	1605	1613	N27	E07	SF	C1.0 8214	7.4E-04	
03	1823	1836	1850	S17	W35	1F	C4.0 8210	4.3E-03	
03	2112	2129	2149	S13	W34	1B	M1.4 8214	2.1E-02	
04	0007	0019	0320	S11	W41	1F	B9.2 8210	8.7E-03	
04	0341	0357	0430				C1.0	2.3E-03	
04	0808	0811	0814	N25	W02	SF	B8.4 8214	2.6E-04	
04	1544	1547	1551				B8.6	3.1E-04	
04	1709	1718	1725	N27	W05		C2.9 8214	2.2E-03	
04	1824	1831	1840				C1.1	9.1E-04	
04	2059	2103	2108				B5.8	2.7E-04	
04	2112	2118	2131				B8.9	8.6E-04	
04	2219	2306	2340				C1.9 8214	6.2E-03	
04	2358	2407	2423				B3.0	3.5E-03	
05	0438	0443	0446				C1.1	4.2E-04	
05	0515	0518	0520				B7.1	1.7E-04	
05	0527	0531	0534	S12	W50	SF	C1.5 8210	4.8E-04	
05	0932	0942	0946				C1.1	8.3E-04	
05	1028	1034	1037				C2.2	7.9E-04	
05	1156	1202	1204				C7.7	1.6E-03	
05	1610	1615	1618	N26	W18	SF	C1.2 8214	5.1E-04	
05	1622	1627	1634	N26	W18	SF	C3.6	1.8E-03	
05	1844	1854	1902	N26	W22		C3.5	3.1E-03	
05	1927	1938	1942				C7.3	5.4E-03	
05	2047	2057	2104	N26	W22	SF	C2.6 8214	2.2E-03	
05	2210	2215	2232	N26	W23	SF	C2.3 8214	2.6E-03	
05	2302	2307	2313	S15	W60	2N	C2.4 8210	1.3E-03	
05	2316	2319	2321				C2.1	5.5E-04	
05	2327	2346	2402	S16	W60	2N	M2.5 8210	3.4E-02	
06	0411	0442	0447	S12	W63	SF	C4.0 8210	4.5E-03	
06	0453	0506	0517				C8.4	8.9E-03	
06	0606	0615	0617	S12	W65	SF	C2.8 8210	1.5E-03	
06	0621	0627	0635	S14	W66	SF	C3.8 8210	2.5E-03	
06	0659	0703	0705	S13	W66	SF	C3.7 8210	1.1E-03	
06	0710	0725	0741	S11	W65	1N	M2.9 8210	3.7E-02	
06	0758	0809	0820	S11	W65	1N	X2.7	2.1E-01	
06	1332	1337	1340				C6.8 8210	2.2E-03	
06	1653	1656	1658				C1.6	4.1E-04	

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region	Flux
06	1708	1713	1717				C3.1	8214	1.3E-03
06	1835	1844	1858	N28	W32	SF	C2.9	8210	3.4E-03
06	2204	2207	2211	S14	W72	SF	C1.5	8210	5.8E-04
07	0106	0110	0112	N29	W40	SF	C3.5	8214	1.1E-03
07	0735	0739	0744	S22	E73		C4.8	8218	2.1E-03
07	1105	1116	1127	N29	W47	1B	M2.9	8214	2.6E-02
07	1331	1350	1405	N28	W47	SF	M1.3	8218	1.7E-02
07	1446	1449	1457	N27	W41		C3.7	8214	2.0E-03
07	1616	1622	1629	N26	W41		C2.0	8214	1.4E-03
07	1637	1642	1646				C1.9		9.3E-04
07	2224	2229	2235				C1.8		1.0E-03
07	2242	2256	2306				C2.9		3.2E-03
08	0149	0204	0217				M3.1		3.1E-02
08	0553	0608	0626				M1.4		2.0E-02
08	1154	1306	1334	N25	W51	1N	C5.4	8214	1.7E-02
08	1350	1415	1437				M1.8		3.6E-02
08	2117	2130	2146				C3.5		4.4E-03
08	2251	2258	2311	N32	W65	SF	C2.7	8214	2.8E-03
08	2340	2344	2350				C3.2		1.8E-03
09	0015	0027	0037				C8.3		7.4E-03
09	0149	0213	0233				C7.0		1.2E-02
09	0304	0340	0355				M7.7		1.1E-01
09	0534	0540	0545				C6.2		3.5E-03
09	1030	1037	1044				C2.9	8214	1.9E-03
09	1059	1106	1112	N29	W71	SF	C4.7	8214	2.8E-03
09	1305	1315	1324				C6.6		4.9E-03
09	1356	1401	1417				C2.0		2.0E-03
09	1426	1431	1437				C1.9		1.1E-03
09	1726	1738	1757				C4.5		6.5E-03
09	2027	2035	2043				C3.9		3.2E-03
09	2127	2136	2145				C2.7		2.7E-03
09	2232	2236	2246				C1.6		1.2E-03
09	2331	2338	2345				C3.5		2.3E-03
10	0044	0049	0100				C1.9		1.6E-03
10	0305	0318	0334				C4.0		5.1E-03
10	0344	0354	0401				C5.7		4.8E-03
10	0438	0504	0519				C2.4		4.5E-03
10	0523	0528	0534				C2.9		1.7E-03
10	0640	0647	0650				C1.4		7.9E-04
10	0702	0716	0721				C1.3		8.8E-02
10	0724	0728	0733				C1.4		7.1E-04
10	0815	0826	0845				M1.6		2.1E-02
10	0944	0948	0953				C2.1		8.1E-04
10	1055	1058	1102				C1.1		4.2E-04
10	1140	1145	1154	S28	E87	SF	C1.5		9.6E-04
10	1313	1320	1323	S29	E88	SF	M3.9		9.6E-03
10	1508	1511	1515				C1.0	8220	3.8E-04
10	1718	1722	1732				B6.3		4.7E-04
10	1808	1812	1816				B8.4		3.4E-04
10	1925	1929	1931				C1.6		3.6E-04
10	2025	2028	2031				C1.3		3.3E-04
10	2144	2148	2153				B9.5		3.7E-04
10	2326	2330	2337				B5.8		3.5E-04
11	0854	0903	0910				B6.9		5.6E-04
11	1041	1047	1052	S22	E05		B9.6	8218	4.8E-04
11	1254	1317	1334				B8.4		1.7E-03
11	1856	1900	1907	S22	E02	SF	B5.6	8218	3.2E-04
11	2148	2153	2159				B6.6		3.7E-04
11	2339	2343	2346	S21	E01	SF	B7.7	8218	2.2E-04

GOES SOLAR X-RAY FLARES  
\*\*Preliminary Listing\*\*

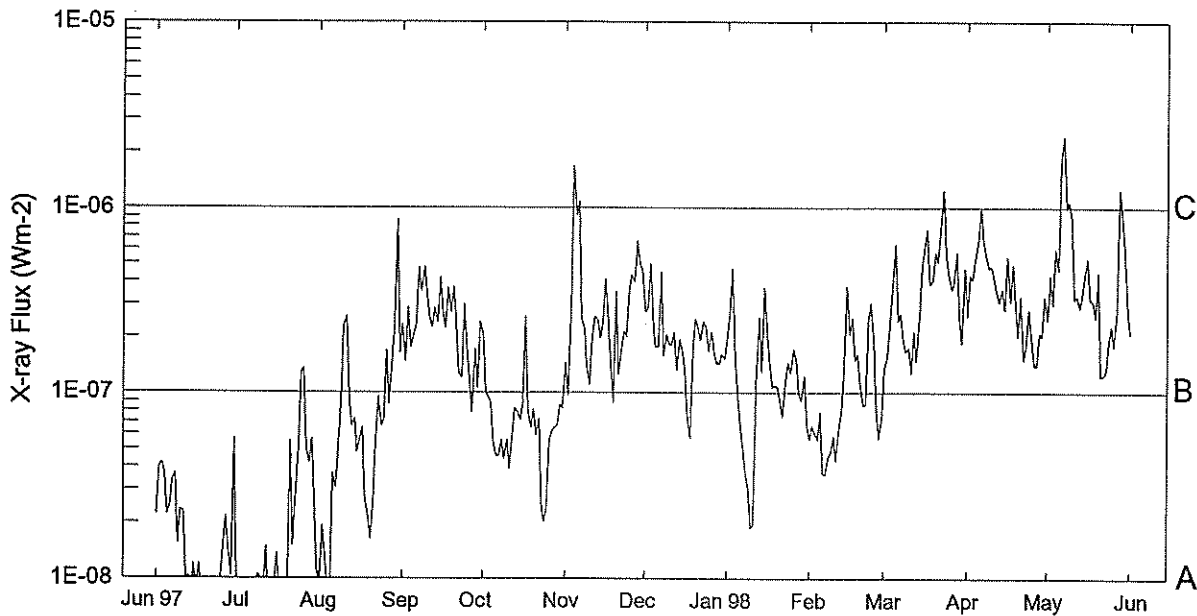
May 1998

Start Day (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region	Flux
12	0449	0527	0651	S20	E02	SF	C1.2 8218	6.7E-03
12	1842	1846	1850				C1.0	3.6E-04
12	2310	2315	2323	S21	W06	SF	B4.9 8218	3.5E-04
13	0202	0206	0210				B4.8	2.1E-04
13	1326	1330	1332				B4.6	1.4E-04
13	1450	1452	1455	S22	W16	SF	C1.1 8218	2.2E-04
13	1753	1756	1758				B3.5	9.4E-05
13	1842	1846	1849	S21	W18	SF	B7.0 8218	2.2E-04
13	2041	2044	2055	S18	W25	SF	B4.2 8218	3.3E-04
13	2219	2225	2230	S20	W18	SF	C1.6 8218	6.6E-04
13	2234	2237	2241				B8.5	3.2E-04
14	0014	0018	0030	S20	W19	SF	B7.9 8218	6.0E-04
14	0051	0055	0103				B5.4	3.5E-04
14	0154	0158	0202				B8.2	2.8E-04
14	0232	0236	0240				B5.3	2.2E-04
14	0257	0301	0304				B5.9	2.0E-04
14	0752	0756	0758	N23	E45	SF	B9.1 8222	2.4E-04
14	1026	1033	1036	S22	W26	SF	C1.5 8218	5.7E-04
14	1344	1350	1357	S26	E38	SF	C2.4 8220	1.3E-03
14	1655	1704	1709				C1.2	7.6E-04
14	1856	1900	1913				B9.8	7.9E-04
14	2023	2027	2032	S21	W31	SF	B5.5 8218	2.5E-04
14	2157	2209	2252				B4.9	1.5E-03
15	0121	0128	0142				B8.8	9.6E-04
15	0214	0221	0224				C1.8 8218	6.9E-04
15	1002	1009	1015				C1.7	1.1E-03
16	0152	0157	0209	S21	W44	SF	C2.2 8218	2.0E-03
16	0427	0433	0452	S21	W45	SF	C1.6 8222	2.2E-03
16	0744	0747	0750				B5.3	1.7E-04
16	1030	1036	1040				B9.3	4.1E-04
16	1549	1556	1601				C1.1	6.4E-04
16	1629	1634	1638				B9.9	4.0E-04
16	1807	1823	1852				B6.2	1.5E-03
17	0240	0243	0246				B6.4	2.0E-04
17	0438	0442	0444				B5.7	1.7E-04
17	0859	0920	0941				B9.5	1.9E-03
18	1224	1231	1236				B9.2	5.4E-04
18	1632	1636	1641				B5.7	2.8E-04
19	0756	0802	0804				C4.4	9.6E-04
19	1010	1015	1018				B7.9	3.2E-04
19	1541	1605	1634				C3.0 8218	6.8E-03
19	2324	2438	2505				C1.1	4.2E-03
21	0317	0323	0327				B3.7	1.6E-04
21	1344	1351	1357				B3.6	2.1E-04
21	1701	1718	1732				B2.8	4.4E-04
21	1930	1940	1945				B2.1	1.7E-04
22	0546	0551	0559				B2.1	1.6E-04
23	0040	0048	0100				B2.3	2.6E-04
23	2214	2217	2221	N19	W10	SF	B4.4 8226	1.5E-04
23	2322	2327	2329				B3.4	1.3E-04
23	2349	2351	2354	N18	W10	SF	B3.9 8226	9.6E-05
24	0013	0016	0018				B2.9	7.2E-05
24	0618	0632	0636	N17	W16		B6.8 8226	6.3E-04
24	0728	0733	0740	N16	W17	SF	B5.6 8226	3.5E-04
24	0746	0807	0817				C1.8	2.0E-03
24	1223	1232	1238				B6.9	5.1E-04

Start Day (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region	Flux
24	1240	1243	1248	N17	W20	SF	B7.2 8226	3.1E-04
24	1758	1803	1807				B5.4	2.4E-04
24	2113	2120	2128				B5.4	4.0E-04
25	0803	0808	0814				B3.4	2.0E-04
25	0832	0839	0849				B5.2	4.6E-04
25	0932	0937	0940				B6.5	2.2E-04
25	1242	1246	1252				B7.0	3.2E-04
25	1842	1846	1849				B3.6	1.2E-04
25	2039	2044	2047				B3.3	1.3E-04
26	0746	0750	0754				B2.9	1.2E-04
26	1534	1542	1558				B3.6	4.4E-04
26	2022	2035	2040	N21	W50	1F	C1.2 8226	7.4E-04
26	2107	2125	2141	N21	W52	SF	C1.7 8226	2.7E-03
27	0048	0052	0055				B4.2	1.6E-04
27	0459	0505	0513				B5.2	3.6E-04
27	0605	0611	0620	N19	W55	SF	C1.8 8226	1.3E-03
27	0725	0731	0735				C1.8	8.9E-04
27	0816	0831	0839				C1.6	1.3E-03
27	0914	0936	0941	S23	W85	SF	C1.5 8224	1.8E-03
27	1106	1118	1130	S23	W86		C5.8 8224	5.7E-03
27	1213	1217	1221				C1.8	7.3E-04
27	1330	1335	1450	N18	W58		C7.5 8226	3.0E-02
27	1814	1819	1822	S20	W84	SF	C5.0 8224	1.7E-03
27	1833	1837	1840	S20	W83	SF	C3.8 8224	1.4E-03
27	2131	2134	2138				C2.1	6.8E-04
27	2225	2232	2241				C5.4	3.2E-03
27	2304	2309	2313	N25	E47	SF	C1.6 8227	7.7E-04
27	2346	2413	2442	S21	W85		C2.6 8224	7.2E-03
28	0056	0101	0113	S22	W86	SF	C3.3 8224	2.8E-03
28	0227	0232	0238				C3.0	1.4E-03
28	0343	0347	0351				C1.2	4.9E-04
28	0402	0413	0420				C2.9	2.4E-03
28	0433	0439	0442	N20	W75	SF	C3.1 8226	1.1E-03
28	0618	0623	0626	N20	W78	SF	C1.2 8226	4.2E-04
28	0721	0724	0729				C1.2	5.4E-04
28	0806	0814	0817				C1.9	8.3E-04
28	0847	0853	0858				C2.8	1.2E-03
28	0921	0924	0927				C1.0 8226	3.0E-04
28	1035	1040	1042				C3.2	8.5E-04
28	1113	1126	1144	N28	E39	SF	C2.3 8227	3.9E-03
28	1250	1255	1257	N22	W80	SF	C2.6 8226	7.6E-04
28	1343	1353	1400	N18	W87	SF	M1.1 8226	7.2E-03
28	1652	1657	1700				C1.5	5.6E-04
28	1859	1912	1918				C8.7 8226	6.6E-03
28	2024	2028	2031	N20	W80	SF	C2.2 8226	6.7E-04
28	2113	2119	2121				C2.4	8.1E-04
28	2224	2228	2234				B9.7 8226	4.9E-04
28	2241	2248	2257	N20	W83	SF	C2.2 8226	1.6E-03
29	0051	0059	0103				M6.7	2.3E-02
29	0334	0340	0342				C4.1	1.4E-03
29	0655	0711	0715				C4.9	4.2E-03
29	1100	1110	1126				C4.3	5.0E-03
29	1232	1240	1250				C1.9	1.6E-03
29	1347	1353	1401				C2.0	1.4E-03
29	1828	1838	1854				C1.9	2.3E-03
29	1916	1920	1923				C1.1	4.4E-04
29	2119	2132	2149				C2.2	3.3E-03
29	2340	2344	2346	S21	E76	SF	C3.6	8.5E-04
30	1044	1048	1052				C1.0	4.5E-04
31	0353	0515	0841				C2.0	2.9E-02
31	1759	1802	1804	S22	E56	SF	B4.4 8230	1.0E-04

# Preliminary GOES Satellite Daily X-Ray Background Jun 97 - May 98

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Day	Jun 97	Jul	Aug	Sep	Oct	Nov	Dec	Jan 98	Feb	Mar	Apr	May
1	<A1.0	<A1.0	B2.3	B2.0	B1.4	B1.4	B2.7	B1.9	A5.6	B1.3	B2.6	B2.4
2	<A1.0	A1.9	B1.4	B1.0	A9.7	A9.7	B2.8	B2.6	A6.6	B1.5	B4.3	B4.2
3	<A1.0	A1.3	B2.8	A9.4	B2.6	B2.6	B4.9	B4.7	A6.1	B2.2	B4.1	B2.9
4	<A1.0	<A1.0	B1.7	A8.9	C1.6	C1.6	B2.2	B1.4	A5.5	B3.6	B5.2	B5.8
5	<A1.0	<A1.0	B2.0	A5.3	B9.1	B9.1	B1.7	A9.4	A7.9	B6.3	B6.6	B4.6
6	<A1.0	A3.6	B2.3	A4.5	C1.0	C1.0	B1.7	A6.5	A3.6	B2.4	C1.0	C1.8
7	<A1.0	A3.0	B4.7	A4.6	B2.4	B2.4	B4.4	A5.0	A3.5	B2.6	B6.6	C2.4
8	<A1.0	A5.2	B3.5	A5.5	B2.2	B2.2	B1.5	A3.8	A4.5	B1.9	B5.6	B9.9
9	A1.0	A8.8	B4.8	A4.4	B1.4	B1.4	B2.0	A2.9	A4.7	B1.6	B4.7	C1.0
10	A1.0	B2.3	B3.3	A5.5	B1.1	B1.1	B1.8	A1.8	A5.7	B1.7	B4.8	B8.7
11	<A1.0	B2.5	B2.4	A3.9	B2.0	B2.0	B1.8	A1.9	A4.3	B1.2	B4.1	B3.1
12	A1.4	A9.5	B2.2	A5.8	B2.5	B2.5	B2.1	B1.1	A6.6	B2.1	B3.5	B3.3
13	<A1.0	A6.6	B2.8	A8.2	B2.4	B2.4	B1.3	B2.5	A7.9	B1.4	B3.1	B2.8
14	<A1.0	A7.2	B2.4	A7.9	B1.9	B1.9	B1.9	B1.3	B1.4	B2.5	B3.6	B3.2
15	<A1.0	A4.7	B4.1	A7.1	B2.3	B2.3	B1.6	B3.6	B3.7	B4.8	B2.8	B4.4
16	A1.3	A5.7	B2.6	A8.6	B4.1	B4.1	B1.3	B2.0	B2.0	B6.1	B5.4	B5.3
17	<A1.0	A6.5	B2.2	B2.5	B2.6	B2.6	A7.5	B1.5	B2.5	B7.6	B3.1	B3.1
18	<A1.0	A2.7	B3.6	A8.0	B1.3	B1.3	A5.7	B1.0	B1.4	B3.8	B4.9	B3.0
19	A1.0	A2.1	B2.7	A6.5	A8.9	A8.9	B1.7	B1.0	B1.6	B4.0	B3.0	B2.5
20	<A1.0	A1.6	B3.7	A8.1	B3.5	B3.5	B2.4	B1.0	B1.1	B5.7	B2.0	B4.4
21	A5.5	A2.4	B2.3	A5.8	B1.2	B1.2	B2.2	A8.6	A8.6	B5.1	B3.3	B1.2
22	A1.5	A5.5	B1.2	A7.2	B1.7	B1.7	B1.9	A7.4	A8.6	B7.5	B1.5	B1.2
23	A2.6	A9.5	B1.2	A2.4	B2.1	B2.1	B2.4	B1.1	B2.4	C1.2	B1.8	B1.3
24	A5.0	A6.6	B2.9	A2.0	B2.0	B2.0	B2.2	B1.4	B3.0	B5.6	B2.8	B1.8
25	B1.2	A7.2	B1.7	A2.3	B3.6	B3.6	B1.6	B1.2	B1.8	B4.3	B2.0	B2.2
26	B1.3	B1.6	B1.0	A5.5	B4.3	B4.3	B2.1	B1.7	A8.0	B3.6	B1.4	B1.7
27	A5.0	A8.7	A7.8	A6.3	B3.9	B3.9	B1.6	B1.5	A5.6	B3.8	B1.4	B2.7
28	A4.2	B1.4	B1.7	A6.5	B6.6	B6.6	B1.4	A9.9	A7.5	B5.6	B2.1	C1.2
29	A5.6	B2.3	B1.0	A6.7	B5.0	B5.0	B1.4	A9.1		B2.5	B2.0	B8.8
30	A2.7	B8.6	B2.4	A8.6	B4.6	B4.6	B1.6	B1.2		B1.8	B3.3	B5.9
31	A1.1	B1.6		A8.2			B1.5	A6.6		B4.6		B2.7

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May 98

ACTIVE PROMINENCES AND FILAMENTS

MAY 1998

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
06	ADF	0938E	1032	N31	W39	05	3.4	1	03	9		V	KHAR		
06	DSD	0950	1035	N29	W40	05	3.4	2	10	9	9	V	KHAR		
06	ADF	1123	1136	N31	W39	05	3.5	1	03		9	V	KHAR		
06	LPS	2349	0005	S11	W58	05	2.6	1		9	9	E	HOLL	8210	Flare Associated
08	APR	0812E	0921D	S19	W90	05	1.5	1	10			P	WROC		
08	BSL	0828	0838D	S19	W90	05	1.5	0	1			P	WROC		
08	EPL	1217E	1250	S12	W90	05	1.7	2	11			P	WROC		
08	LPS	1542	1744	S14	W90	05	1.8			6	7	E	HOLL	8210	
08	LPS	1625E	1900D	S14	W90	05	1.9			6	6	E	RAMY	8210	
09	APR	0746E	1029D	N22	E90	05	16.2	1	7			P	WROC		
09	EPL	0841E	0847D	S27	W90	05	2.3	1	5			P	WROC		
09	EPL	1110E	1112D	S18	W90	05	2.6	1	3			P	WROC		
09	EPL	1520	1608	S22	W90	05	2.7	3		9	9	E	HOLL	8213	
09	EPL	1528	1543D	S24	W90	05	2.7	3		9	9	E	RAMY	8213	
09	EPL	1528	1545	S23	W90	05	2.7	1		9	9	E	SVTO	8213	
10	EPL	0939E	1121D	S29	E90	05	17.4	2	7			P	WROC		
10	BSL	1329	1345	S30	E90	05	17.6			9	9	E	HOLL		Flare Associated
10	BSL	1329E	1535D	S32	E90	05	17.7			9	9	E	SVTO		Bright Emission 1/3
10	BSL	1331	1349	S28	E90	05	17.6			9	9	E	RAMY		Bright Emission 1/3
10	LPS	1412	1645D	S31	E90	05	17.7			9	9	E	HOLL	8220	
10	LPS	1412E	1602	S29	E90	05	17.6			9	9	E	RAMY	8220	
10	DSF	2214U	1121U	S33	W44	05	7.4	2	21	0	0	E	RAMY		
11	DSF	0146U	1225U	S17	W71	05	5.7		22	0	0	E	HOLL		
11	APR	0730E	1259D	N32	W90	05	4.2	1	4			P	WROC		
11	DSD	1050	1059	S22	E20	05	13.0	1	01			V	KHAR		
11	ADF	1112	1137	S19	E66	05	16.5	1	02		9	V	KHAR		
11	ADF	1117	1200D	S22	E20	05	13.0	1	01		9	V	KHAR		
11	DSF	2216U	1041U	S15	E67	05	17.0	2	05	0	0	E	RAMY		
13	DSD	0920E	0937	N30	E54	05	17.5	1	03	9	9	V	KHAR		
13	DSD	0932U	1110D	S19	W15	05	12.3	1	02	9	9	V	KHAR		
13	DSD	0940	1020	S19	W15	05	12.3	1	02	9	9	V	KHAR		
13	DSD	1140	1150	S19	W15	05	12.3	1	02	9	9	V	KHAR		
13	DSD	1204	1230	S20	W16	05	12.3	1	02	9	9	V	KHAR		
14	DSF	1613U	0600U	S39	W59	05	9.9	2	13	0	0	E	SVTO		
14	DSF	1910U	1136U	S39	W61	05	9.8	1	13	0	0	E	RAMY		
15	DSF	1613U	0600U	S39	W59	05	10.9	2	13	0	0	E	SVTO		
17	BSL	1117	1148D	S30	W90	05	10.4	0	4			P	WROC		
18	BSL	0839	0844	N22	W90	05	11.4	0	1			P	WROC		
18	BSL	0850E	0857	S23	W90	05	11.4	0	2			P	WROC		
18	BSL	1153E	1205D	S27	E90	05	25.5	0	2			P	WROC		
18	DSF	1816U	1512U	N29	W32	05	16.2	2	20	0	0	E	HOLL		
19	EPL	0752	0843	S22	W90	05	12.4	2	12			P	WROC		
19	DSF	0830U	0948U	S29	E44	05	22.8	3	17	0	0	E	SVTO		
19	DSF	0926U	0309U	N29	W46	05	15.8	1	20	0	0	E	LEAR		
19	EPL	0959E	1043D	N06	W90	05	12.7	3	50			P	WROC		
19	BSL	1034E	1043D	S19	W90	05	12.6	0	3			P	WROC		
19	BSL	1233E	1250D	S15	W90	05	12.7	2	10			P	WROC		
19	EPL	1555	1610	S20	W90	05	12.8	3		9	9	E	HOLL	8218	
19	EPL	1555	1606	S21	W90	05	12.8	3		9	9	E	SVTO	8218	
23	DSF	1720U	1142U	S21	E48	05	27.4	2	05	0	0	E	RAMY	8225	
28	EPL	0738E	1047D	N17	W90	05	21.5	2	20			P	WROC		
28	EPL	0901E	0924	N19	W90	05	21.5	3		9	9	E	SVTO	8226	
28	EPL	1334	1434	N19	W90	05	21.7	3		9	9	E	HOLL	8226	
28	EPL	1409E	1417	N20	W90	05	21.7	3		9	9	E	SVTO	8226	
28	EPL	1906	1924	N20	W90	05	21.9	3		9	9	E	HOLL	8226	
28	EPL	1907	1922D	N10	W90	05	22.0	3		9	9	E	RAMY	8226	
28	DSF	2121U	1136U	S11	W04	05	28.6	2	06	0	0	E	RAMY	8225	

## ACTIVE PROMINENCES AND FILAMENTS

47  
May 98

MAY 1998

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	DSF	0429U	0039U	N43	W27	05 27.0	2	15	0	0	E	LEAR		
29	BSL	0654	0711D	S26	W90	05 22.3					P	WROC		
29	EPL	0654E	0707D	N27	W90	05 22.3	2	11			P	WROC		
29	BSL	0702	0717	N18	W90	05 22.4	2	12			P	WROC		
29	EPL	0708	0750	N17	W90	05 22.4	2	21			P	WROC		
29	BSL	0812	0842	N24	W90	05 22.4	0	4			P	WROC		
29	EPL	0844	0905D	N25	W90	05 22.4	2	9			P	WROC		
29	EPL	0942	1018	N25	W90	05 22.4	2	17			P	WROC		
29	BSL	1036E	1111	N17	W90	05 22.6	1	6			P	WROC		
29	BSL	1151E	1238	N15	W90	05 22.7	0	2			P	WROC		
29	BSL	1153	1215	N14	W90	05 22.7	1	06	9	9	V	KHAR		
29	BSL	1201	1302D	N25	W90	05 22.5	0	4			P	WROC		
29	EPL	1201	1302D	N25	W90	05 22.5	2	17			P	WROC		
29	BSL	1203	1228	N19	W90	05 22.7	1	08		9	V	KHAR		
29	BSL	1217	1228	N15	W90	05 22.7	1	03	6	6	V	KHAR		
29	BSL	1228	1230D	N21	W90	05 22.7	1	06	6	9	V	KHAR		
29	EPL	1832	1852	S26	W90	05 22.8	3		8	4	E	HOLL		
29	DSF	2013U	1113U	S17	E37	06 1.6	2	15	0	0	E	RAMY		
30	DSF	1453U	0632U	S42	E07	05 31.2		15	0	0	E	SVTO		
31	EPL	0807E	1230D	S23	W90	05 24.4	2	9			P	WROC		

ADF = Active Dark Filament

AFS = Arch Filament System

APR = Active Prominence

ASR = Active Surge Region

BSD = Bright Surge on Disk

BSL = Bright Surge on Limb

CAP = CAP Prominence (Tandberg-Hanssen)

CRN = Coronal Rain

DSD = Dark Surge on Disk

DSF = Disappearing Solar Filament

EPL = Eruptive Prominence on Limb

LPS = Loops

MDP = Mound Prominence

SDF/DSF = Sudden Disappearing Filament

SPY = Spray

SSB = Solar Sector Boundary

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

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

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

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

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

ABST = Abastumani

ATHN = Athens

BUCA = Bucharest

CATA = Catania

HOLL = Holloman

KHAR = Kharkov

LEAR = Learmonth

PALE = Palehua

RAMY = Ramey

SVTO = San Vito

VORO = Voroshilov

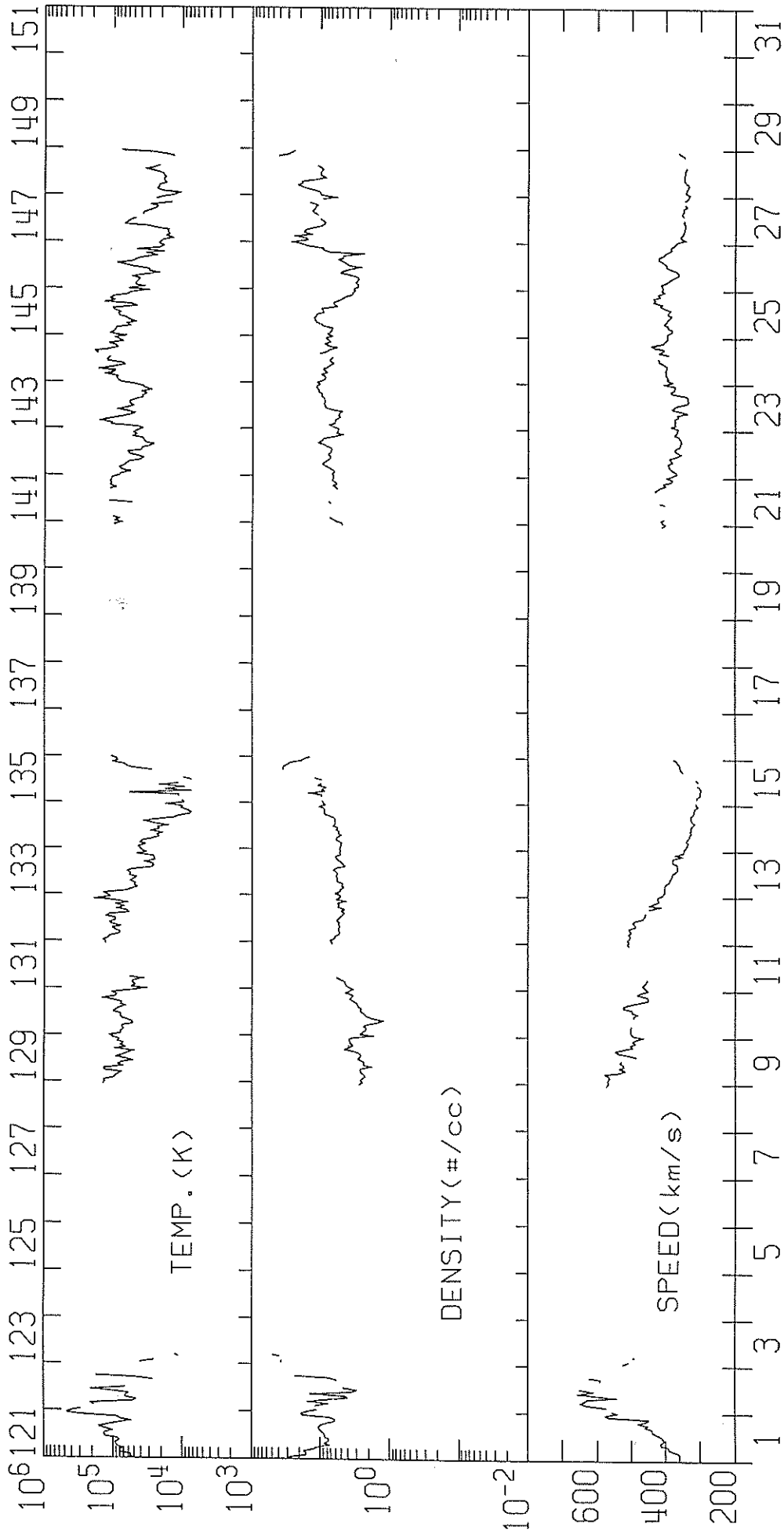
VALA = Valasske Mezirici

WROC = Wroclaw



IMP 8 SOLAR WIND PLASMA  
MAY 1998

MIT/CSR IMP 8 PLASMA PARAMETERS



MAY 1998

MAY 1998

IMP 8 MIT ONE-HOUR AVERAGES

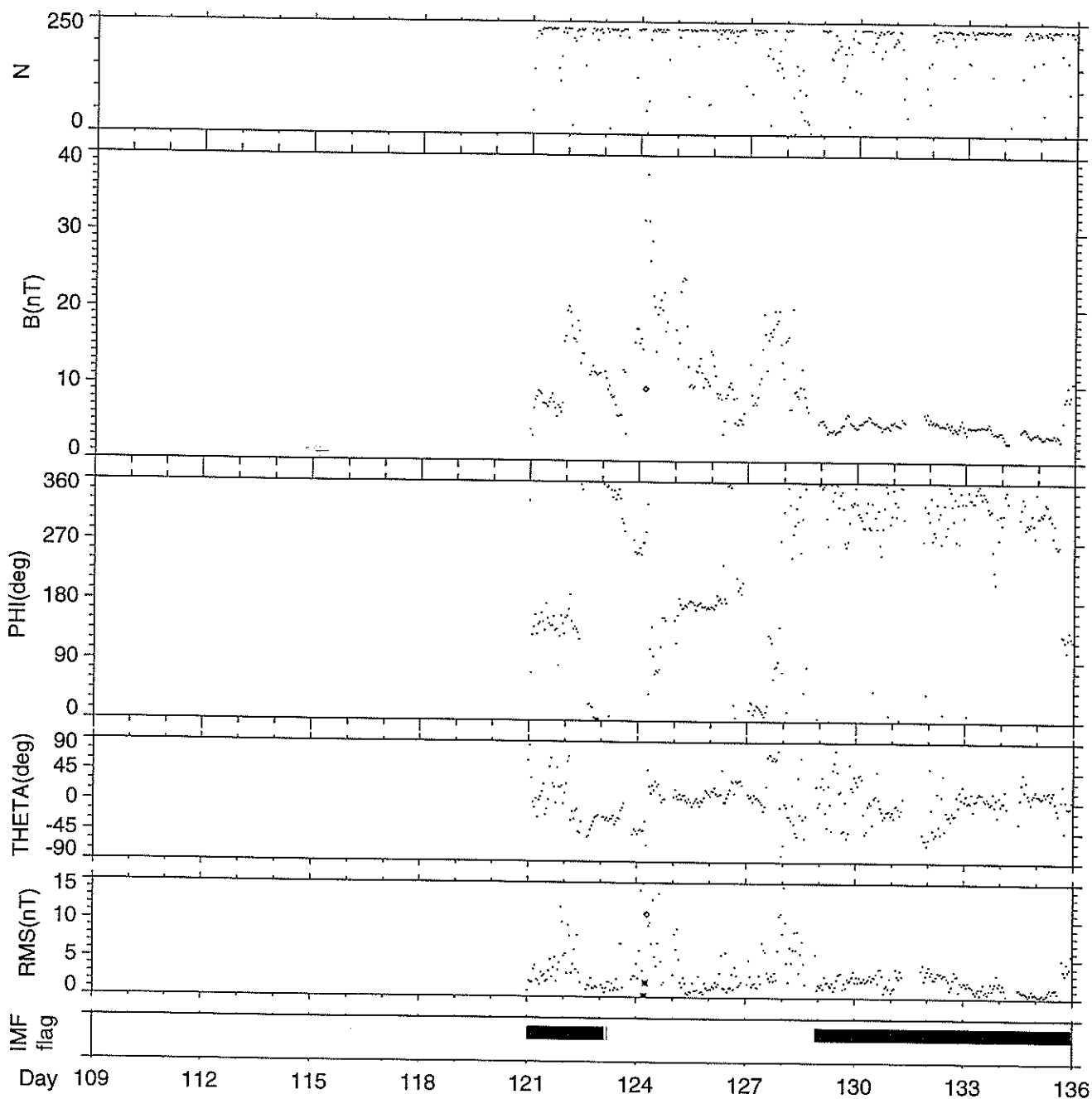
### IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages

(c) DOY 121 - 136

May 1 1998 -

May 16 1998



Generation Date : Wed Sep 16 09:56:06 1998

NOTE: The IMF "flag" (black boxes at the bottom of the plots) indicates where the interplanetary magnetic field regions are according to a dynamic model of the location of the bow shock. At all other times IMP-8 is in the magnetosphere.

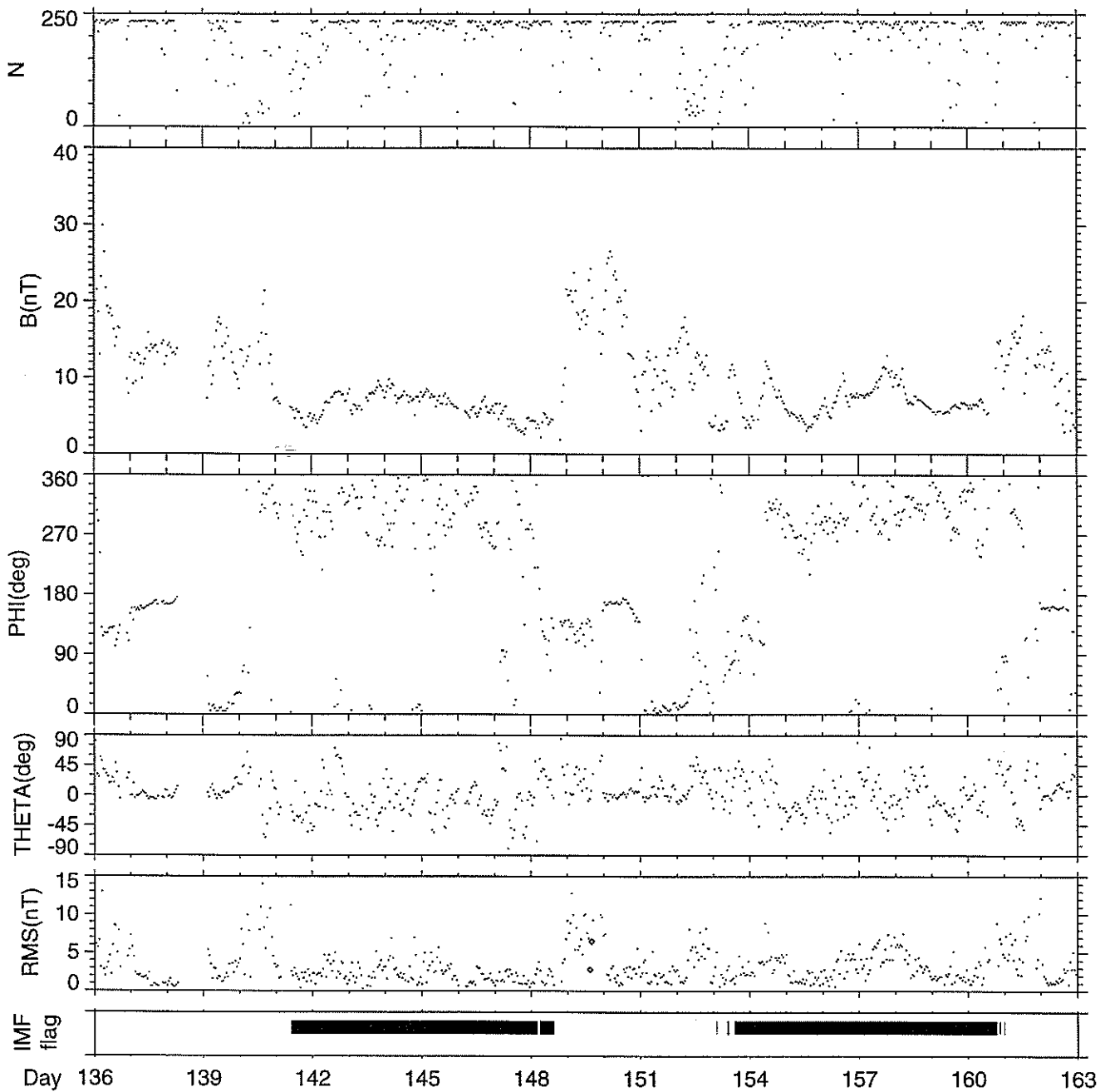
### IMP-8 Magnetic Field Data in GSE Coordinates

1 Hour Averages

(c) DOY 136 - 163

May 16 1998 -

June 12 1998



Generation Date : Wed Sep 16 09:56:31 1998

NOTE: The IMF "flag" (black boxes at the bottom of the plots) indicates where the interplanetary magnetic field regions are according to a dynamic model of the location of the bow shock. At all other times IMP-8 is in the magnetosphere.

# International Geophysical Calendar 1999 (Final)

## EXPLANATIONS

This Calendar continues the series begun for the IGY years 1957-58, and is issued annually to recommend dates for solar and geophysical observations, which cannot be carried out continuously. Thus, the amount of observational data in existence tends to be larger on Calendar days. The recommendations on data reduction and especially the flow of data to World Data Centers (WDCs) in many instances emphasize Calendar days. The Calendar is prepared by the International Space Environment Service (ISES) with the advice of spokesmen for the various scientific disciplines. For some programs, greater detail concerning recommendations appears from time to time published in IAGA News, IUGG Chronicle, URSI Information Bulletin or other scientific journals or newsletters. For on-line information, see <http://www.sec.noaa.gov/ises/ises.html>.

The definitions of the designated days remain as described on previous Calendars. Universal Time (UT) is the standard time for all world days. Regular Geophysical Days (RGD) are each Wednesday. Regular World Days (RWD) are three consecutive days each month (always Tuesday, Wednesday and Thursday near the middle of the month). Priority Regular World Days (PRWD) are the RWD which fall on Wednesdays. Quarterly World Days (QWD) are one day each quarter and are the PRWD which fall in the World Geophysical Intervals (WGI). The WGI are fourteen consecutive days in each season, beginning on Monday of the selected month, and normally shift from year to year. In 1999 the WGI will be February, May, August and November.

### The **Solar Eclipses** are:

- **16 February 1999.** An annular eclipse with annularity visible in a path across Australia from west to northeast, extending from north of Perth to near Cairns. A partial eclipse will be visible in the south Atlantic Ocean, southern Africa and Madagascar except its northern tip, Indonesia except for northwestern Sumatra, the extreme southern Malaysian peninsula including Singapore, the southern Philippines, Papua New Guinea, Australia, the southern island of New Zealand, and most of Antarctica. The magnitude will be 99.3%, with a maximum duration of 40 seconds.
- **11 August 1999.** A total eclipse with totality beginning in the Atlantic off the northeast American coast, reaching Europe at Land's End in Britain, and extending through parts of France, Belgium, Luxembourg, Germany, Austria, Hungary, Serbia, Romania, Bulgaria, Turkey, Iraq, Iran, Pakistan, and India. The magnitude of totality is 103%, and the maximum eclipse will occur over Romania and last 2 minutes 23 seconds. The path is especially narrow, never exceeding 113 km. The partial eclipse will be visible from northeastern US and Canada at sunrise,

Greenland, all of Europe, most of Asia except the extreme east, and with the eastern limit extending southward through Bangladesh and east of Calcutta in India. The northern half of Africa will also see a partial eclipse.

**Web Sites:** <http://umbra.gsfc.nasa.gov/eclipse/predictions/eclipse-paths.html>;  
International Astronomical Union Working Group on Eclipses:  
[http://www.williams.edu/Astronomy/IAU\\_eclipses](http://www.williams.edu/Astronomy/IAU_eclipses)

**References:**

Fred Espenak, Fifty Year Canon of Solar Eclipses: 1986-2035, NASA Reference Publication 1178 Revised, July 1987.

Leon Golub and Jay M. Pasachoff, The Solar Corona, Cambridge University Press, 1998. <http://www.williams.edu/Astronomy/corona>

Jay M. Pasachoff, Astronomy: From the Earth to the Universe, 5th ed., Saunders College Publishing, 1998. <http://www.williams.edu/Astronomy/jay>

Provided by Jay M. Pasachoff  
Williams College, Williamstown, MA  
01267, USA  
Chair, Working Group on Eclipses of  
the International Astronomical Union

**Meteor Showers** (selected by R. Hawkes, Mount Allison Univ, Canada, rhawkes@mta.ca) include the most prominent regular showers. The dates for Northern Hemisphere meteor showers are: Jan 3-5 (Quadrantid); Apr 21-23 (Lyrid); May 4-6 (Eta-Aquarid); Jun 6-11 (Arietid, Zeta-Perseid); Jun 27-29 (Beta-Taurid); Aug 11-14 (Perseid); Oct 21-23 (Orionid); Nov 16-19 (Leonid); Dec 13-15 (Geminid); Dec 22-24, 1999 (Ursid); and Jan 3-5, 2000 (Quadrantid). The dates for Southern Hemisphere meteor showers are: May 4-6 (Eta-Aquarid); Jun 6-11 (Arietid, Zeta-Perseid); Jun 27-29 (Beta-Taurid); Jul 27-Aug 2 (S. Delta-Aquarid, Alpha-Aurigid); Oct 21-23 (Orionid); Nov 16-19 (Leonid); and Dec 13-15, 1999 (Geminid).

The occurrence of **unusual solar or geophysical conditions** is announced or forecast by the ISES through various types of geophysical "**Alerts**" (which are widely distributed by telegram and radio broadcast on a current schedule). Stratospheric warmings (STRATWARM) are also designated. The meteorological telecommunications network coordinated by WMO carries these worldwide Alerts once daily soon after 0400 UT. For definitions of Alerts see ISES "Synoptic Codes for Solar and Geophysical Data", March 1990 and its amendments. Retrospective World Intervals are selected and announced by MONSEE and elsewhere to provide additional analyzed data for particular events studied in the ICSU Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) programs.

## RECOMMENDED SCIENTIFIC PROGRAMS

### OPERATIONAL EDITION

(The following material was reviewed in 1998 by spokesmen of IAGA, WMO and URSI as suitable for coordinated geophysical programs in 1999.)

**Airglow and Aurora Phenomena.** Airglow and auroral observatories operate with their full capacity around the New Moon periods. However, for progress in understanding the mechanism of many phenomena, such as low latitude aurora, the coordinated use of all available techniques, optical and radio, from the ground and in space is required. Thus, for the airglow and aurora 7-day periods on the Calendar, ionosonde, incoherent scatter, special satellite or balloon observations, etc., are especially encouraged. Periods of approximately one weeks' duration centered on the New Moon are proposed for high resolution of ionospheric, auroral and magnetospheric observations at high latitudes during northern winter.

**Atmospheric Electricity.** Non-continuous measurements and data reduction for continuous measurements of atmospheric electric current density, field, conductivities, space charges, ion number densities, ionosphere potentials, condensation nuclei, etc.; both at ground as well as with radiosondes, aircraft, rockets; should be done with first priority on the RGD each Wednesday, beginning on 6 January 1999 at 0000 UT, 13 January at 0600 UT, 20 January at 1200 UT, 27 January at 1800 UT, etc. (beginning hour shifts six hours each week, but is always on Wednesday). Minimum program is at the same time on PRWD beginning with 13 January at 0600 UT. Data reduction for continuous measurements should be extended, if possible, to cover at least the full RGD including, in addition, at least 6 hours prior to indicated beginning time. Measurements prohibited by bad weather should be done 24 hours later. Results on sferics and ELF are wanted with first priority for the same hours, short-period measurements centered around the minutes 35-50 of the hours indicated. Priority Weeks are the weeks that contain a PRWD; minimum priority weeks are the ones with a QWD. The World Data Centre for Atmospheric Electricity, 7 Karbysheva, St. Petersburg 194018, USSR, is the collection point for data and information on measurements.

**Geomagnetic Phenomena.** It has always been a leading principle for geomagnetic observatories that operations should be as continuous as possible and the great majority of stations undertake the same program without regard to the Calendar.

Stations equipped for making magnetic observations, but which cannot carry out such observations and reductions on a continuous schedule are encouraged to carry out such work at least on RWD (and during times of MAGSTORM Alert).

**Ionospheric Phenomena.** Special attention is continuing on particular events that cannot be forecast in advance with reasonable certainty. These will be identified by Retrospective World Intervals. The importance of obtaining full observational coverage is therefore stressed even if it is possible to analyze the detailed data only for the chosen events. In the case of vertical incidence sounding, the need to obtain quarter-hourly ionograms at as many stations as possible is particularly stressed and takes priority over recommendation (a) below when both are not practical.

For the **vertical incidence (VI) sounding program**, the summary recommendations are: (a) All stations should make soundings on the hour and every quarter hour; (b) On RWDs, ionogram soundings should be made at least every quarter hour and preferably every five minutes or more frequently, particularly at high latitudes; (c) All stations are encouraged to make f-plots on RWDs; f-plots should be made for high latitude stations, and for so-called "representative" stations at lower latitudes for all days (i.e., including RWDs and WGs) (Continuous records of ionospheric parameters are acceptable in place of f-plots at temperate and low latitude stations); (d) Copies of all ionogram scaled parameters, in digital form if possible, be sent to WDCs; (e) Stations in the eclipse zone and its conjugate area should take continuous observations on solar eclipse days and special observations on adjacent days. See also recommendations under Airglow and Aurora Phenomena.

For the **incoherent scatter observation program**, every effort should be made to obtain measurements at least on the Incoherent Scatter Coordinated Observation Days, and intensive series should be attempted whenever possible in WGs, on Dark Moon Geophysical Days (DMGD) or the Airglow and Aurora Periods. The need for collateral VI observations with not more than quarter-hourly spacing at least during all observation periods is stressed.

Special programs include:

DATABASE -- Incoherent Scatter Database -- emphasis on broad latitudinal coverage of the F region (Anthony van Eyken - [tony@eiscat.no](mailto:tony@eiscat.no));

Hi-TRAC -- High Time Resolution Auroral Radar Convection (J. Holt -- [jmh@haystack.mit.edu](mailto:jmh@haystack.mit.edu));

LTCS -- Lower Thermosphere Coupling Study (M. Buonsanto - [mjb@haystack.mit.edu](mailto:mjb@haystack.mit.edu); C. Fesen - [fesen@tides.dartmouth.edu](mailto:fesen@tides.dartmouth.edu));

POLITE -- Plasmaspheric Observations of Light Ions in the Topside Exosphere -- global coordinated measurements of topside light ions. Simultaneous optical observations of neutral hydrogen and helium are highly desirable where possible (Phillip Erickson - [pje@hyperion.haystack.edu](mailto:pje@hyperion.haystack.edu));

WLS -- Wide-Latitude Substorm Dynamics (John Foster - jcf@hyperion.haystack.edu).  
**Special programs:** Dr. Anthony P. van Eyken, EISCAT Scientific Association,  
Ramfjordmoen, N-9027 Ramfjordbotn, Norway. Tel. +47 77692166; Fax +47 77692380;  
e-mail: tony@eiscat.no; URSI Working Group G.5.  
See [http://www.eiscat.uit.no/URSI\\_ISWG](http://www.eiscat.uit.no/URSI_ISWG) for complete definitions.

For the ionospheric drift or wind measurement by the various radio techniques, observations are recommended to be concentrated on the weeks including RWDs.

For traveling ionosphere disturbances, propose special periods for coordinated measurements of gravity waves induced by magnetospheric activity, probably on selected PRWD and RWD.

For the ionospheric absorption program half-hourly observations are made at least on all RWDs and half-hourly tabulations sent to WDCs. Observations should be continuous on solar eclipse days for stations in eclipse zone and in its conjugate area. Special efforts should be made to obtain daily absorption measurements at temperate latitude stations during the period of Absorption Winter Anomaly, particularly on days of abnormally high or abnormally low absorption (approximately October-March, Northern Hemisphere; April-September, Southern Hemisphere).

For back-scatter and forward scatter programs, observations should be made and analyzed at least on all RWDs.

For synoptic observations of mesospheric (D region) electron densities, several groups have agreed on using the RGD for the hours around noon.

For ELF noise measurements involving the earth-ionosphere cavity resonances any special effort should be concentrated during the WGI.

It is recommended that more intensive observations in all programs be considered on days of unusual meteor activity.

**Meteorology.** Particular efforts should be made to carry out an intensified program on the RGD -- each Wednesday, UT. A desirable goal would be the scheduling of meteorological rocketsondes, ozone sondes and radiometer sondes on these days, together with maximum-altitude rawinsonde ascents at both 0000 and 1200 UT.



During **WGI and STRATWARM Alert Intervals**, intensified programs are also desirable, preferably by the implementation of RGD-type programs (see above) on Mondays and Fridays, as well as on Wednesdays.

**Global Atmosphere Watch (GAW)** The World Meteorological Organizations (WMO) GAW integrates many monitoring and research activities involving measurement of atmospheric composition. Serves as an early warning system to detect further changes in atmospheric concentrations of greenhouse gases, changes in the ozone layer and in the long range transport of pollutants, including acidity and toxicity of rain as well as of atmospheric burden of aerosols (dirt and dust particles). Contact WMO, 41, avenue Giuseppe-Motta, P.O. Box 2300, 1211 Geneva 2, Switzerland.

**Solar Phenomena.** Observatories making specialized studies of solar phenomena, particularly using new or complex techniques, such that continuous observation or reporting is impractical, are requested to make special efforts to provide to WDCs data for solar eclipse days, RWDs and during PROTON/FLARE ALERTS. The attention of those recording solar noise spectra, solar magnetic fields and doing specialized optical studies is particularly drawn to this recommendation.

**ISCS (International Solar Cycle Studies).** Program within the SCOSTEP (Scientific Committee on Solar-Terrestrial Physics): 1998-2002. Its focus is on observations and basic research directed toward understanding the underlying and resulting processes associated with the rising and maximum phase of a solar cycle. Contacts are S.T. Wu, Univ of Alabama, Huntsville Dept. Mech. Eng. & Ctr. for Space Plasma & Aeron. Res., Huntsville, AL 35899 USA, (205)895-6413, Fax (205)895-6328, wu@cspar.uah.edu, and V. Obridko, IZMIRAN, Solar Physics Department, 142092 Troitsk, Moscow, Russia, 095-344-0926, Fax 095-334-0124, obridko@lars.izmiran.troitsk.su.

**Space Weather Month, October, 1999 -- Solar Terrestrial Energy Program (STEP) Results, Applications, and Modeling Phase (RAMP) [S-RAMP].** The S-RAMP space weather month: global coordinated ground-based and space-borne observations of space weather phenomena covering the entire space weather chain from the surface of the Sun to the effects on the near-Earth space and ground-based technological systems. Contacts: Dr. David Boteler (Boteler@Geolab.nrcan.gc.ca) and Dr. Phil Wilkinson, IPS Radio and Space Services, P.O. Box 1386, Haymarket, NSW 1240, Australia, +61 2 9213 8003, Fax +61 2 9213 8060 (Phil@ips.gov.au).

**Space Research, Interplanetary Phenomena, Cosmic Rays, Aeronomy.** Experimenters should take into account that observational effort in other disciplines tends to be intensified on the days marked on the Calendar, and schedule balloon and

rocket experiments accordingly if there are no other geophysical reasons for choice. In particular it is desirable to make rocket measurements of ionospheric characteristics on the same day at as many locations as possible; where feasible, experimenters should endeavor to launch rockets to monitor at least normal conditions on the Quarterly World Days (QWD) or on RWDs, since these are also days when there will be maximum support from ground observations. Also, special efforts should be made to assure recording of telemetry on QWD and Airglow and Aurora Periods of experiments on satellites and of experiments on spacecraft in orbit around the Sun.

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The **International Space Environment Service (ISES)** is a permanent scientific service of the International Union of Radio Science (URSI), with the participation of the International Astronomical Union and the International Union Geodesy and Geophysics. ISES adheres to the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) of the International Council of Scientific Unions (ICSU). The ISES coordinates the international aspects of the world days program and rapid data interchange.

This Calendar for 1999 has been drawn up by H.E. Coffey, of the ISES Steering Committee, in association with spokesmen for the various scientific disciplines in SCOSTEP, IAGA and URSI and other ICSU organizations. Similar Calendars are issued annually beginning with the IGY, 1957-58, and are published in various widely available scientific publications.

Published for the International Council of Scientific Unions and with financial assistance of UNESCO.

Additional copies are available upon request to ISES Chairman, Dr. R. Thompson, IPS Radio and Space Services, Department of Administrative Services, P.O. Box 1386, Haymarket, NSW 1240, Australia (FAX number (61)(2)9213 8060; e-mail richard@ips.gov.au), or ISES Secretary for World Days, Miss H.E. Coffey, WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder, Colorado 80303, USA (FAX number (303)497-6513; e-mail hcoffey@ngdc.noaa.gov).

The calendar is available on-line at <http://www.sec.noaa.gov/ises/ises.html>.

## Footnotes to front of calendar --

NOTES on other dates and programs of interest:

1. Days with **significant meteor shower activity** are: Northern Hemisphere 3-5 Jan; 21-23 Apr; 4-6 May; 6-11, 27-29 Jun; 11-14 Aug; 21-23 Oct; 16-19 Nov; 13-15, 22-24 Dec 1999; 3-5 Jan 2000. Southern Hemisphere 4-6 May; 6-11, 27-29 Jun; 27 Jul-2 Aug; 21-23 Oct; 16-19 Nov; 13-15 Dec 1999. These can be studied for their own geophysical effects or may be "geophysical noise" to other experiments.
2. **Global Atmosphere Watch (GAW)** -- early warning system for changes in greenhouse gases, ozone layer, and long range transport of pollutants. (See Explanations.)
3. **ISCS (International Solar Cycle Studies)** Observing Program 1998-2002: SCOSTEP Study of processes associated with the rising and maximum phase of the solar cycle. (See Explanations.)
4. **Space Weather Month - S-RAMP -- SCOSTEP Project. October 1999.** Solar Terrestrial Energy Program (S) - Results, Applications, and Modeling Phase (RAMP). (See Explanations.)
5. **+ Incoherent Scatter Coordinated Observations Days** (see Explanations) starting at 1600 UT on the first day of the intervals indicated, and ending at 1600 UT on the last day of the intervals: 12-13 Jan Hi-TRAC/DataBase; 9-12 Feb Global Ionosphere-Thermosphere Coupling Study; 2-12 Mar Joint Obs. Of Effects of Storms in Lower Thermosphere Project (observe 4 days within 10-day alert interval); 20-22 Apr WLS/UARC/TERRIERS; 6-8 Jul Global Iono. Convection/Mid-Jul Baseline; 7-9 Sep LTCS; 4-29 Oct 3-day floating WLS/Space Weather Campaign (S-RAMP); 8-9 Oct POLITE; 14-15 Dec POLITE,

where **DATABASE** = Incoherent Scatter Database (A. van Eyken -- [tony@eiscat.no](mailto:tony@eiscat.no));

**HiTRAC** = High Time Resolution Auroral Radar Convection (J. Holt -- [jmh@haystack.mit.edu](mailto:jmh@haystack.mit.edu));

**LTCS** = Lower-Thermosphere Coupling Study (M. Buonsanto - [mjb@haystack.mit.edu](mailto:mjb@haystack.mit.edu); C. Fesen - [fesen@tides.dartmouth.edu](mailto:fesen@tides.dartmouth.edu)).

**POLITE** = Plasmaspheric Observations of Light Ions in the Topside Exosphere (P. Erickson -- [pje@hyperion.haystack.edu](mailto:pje@hyperion.haystack.edu));

**WLS** = Wide-Latitude Substorm Dynamics (J. Foster -- [jcf@hyperion.haystack.edu](mailto:jcf@hyperion.haystack.edu)).

See [http://www.eiscat.uit.no/URSI\\_ISWG](http://www.eiscat.uit.no/URSI_ISWG) for complete definitions.

## FINAL EDITION, September 1998



# **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."