JUNE 2005 NUMBER 730 - Part II

Solar-Geophysical Data comprehensive reports

Data for December 2004 and Miscellaneous
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

NEW DATA:
ACE Solar Wind, Interplanetary Magnetic Field and Particles -- Monthly Plots

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JUNE 2005 NUMBER 730 - Part II

Solar-Geophysical Data comprehensive reports

Data for December 2004 and Late Data

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SOLAR-GEOPHYSICAL DATA

Number 730
(Issued in Two Parts)

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ACE SOLAR WIND, INTERPLANETARY MAGNETIC FIELD AND PARTICLES

-- MONTHLY PLOTS

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Hα SOLAR FLARES

DECEMBER 2004

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0001	LEAR	01	0142	0144	0154	S14	W18	10707	11	29.8	12	SF		3	E		35		EF
0002	LEAR	01	0142E	0144	0209	S14	W18	10707	11	29.8	27D	SF		3	E		35		EF
0003	LEAR	01	0142E	0144	0242	S14	W18	10707	11	29.8	60D	SF		3	E		35		FS
0004		01	0706	0715	0821	N06	E20	10708	12	2.8	75	1N					89		FZ
	LEAR	01	0706	0715	0816	N06	E20	10708	12	2.8	70	SN		3	E		89		ZF
	KANZ	01	0726E	0726E	0826	N07	E21	10708	12	2.9	60D	1N		2	E				
		01	1013		1020	No Flare Patrol													
		01	1024		1026	No Flare Patrol													
		01	1144		1145	No Flare Patrol													
		01	1344		1356	No Flare Patrol													
		01	1358		1359	No Flare Patrol													
		01	1401		1402	No Flare Patrol													
		01	1409		1417	No Flare Patrol													
		01	1421		1427	No Flare Patrol													
0005	HOLL	01	1601	1603	1612	S19	W20	10707	11	30.1	11	SF		3	E		90		FH
0006	HOLL	01	1615	1620	1633	S18	W20	10707	11	30.1	18	SF		3	E		79		FH
0007	HOLL	01	1733	1734	1739	S17	W19	10707	11	30.3	6	SF		3	E		15		
0008	HOLL	01	1823	1830	1843	S17	W20	10707	11	30.2	20	SF		3	E		34		FH
		01	2058		2209	No Flare Patrol													
		01	2223		2243	No Flare Patrol													
		02	1054		1056	No Flare Patrol													
		02	1101		1403	No Flare Patrol													
		02	1600		1742	No Flare Patrol													
		02	1946		2052	No Flare Patrol													
0009	LEAR	02	2349	0001	0119	N09	E03	10708	12	3.2	90	2F		3	E		310		FZ
		03	0147		0158	No Flare Patrol													
		03	1016		1033	No Flare Patrol													
		03	1038		1039	No Flare Patrol													
		03	1041		1049	No Flare Patrol													
		03	1341		1413	No Flare Patrol													
		03	1712		2159	No Flare Patrol													
		04	0901		1101	No Flare Patrol													
		04	1104		1509	No Flare Patrol													
		04	1749		1803	No Flare Patrol													
		04	1808		2151	No Flare Patrol													
		05	0235		0322	No Flare Patrol													
		05	0344		0401	No Flare Patrol													
		05	0446		0520	No Flare Patrol													
		05	0531		0705	No Flare Patrol													
		05	0827		0849	No Flare Patrol													
		05	0941		1037	No Flare Patrol													
		05	1046		1156	No Flare Patrol													
		05	1209		1416	No Flare Patrol													
		06	0108		0203	No Flare Patrol													
		06	1017		1036	No Flare Patrol													
		06	1123		1124	No Flare Patrol													
		06	1132		1147	No Flare Patrol													
		06	1258		1259	No Flare Patrol													
		06	1309		1312	No Flare Patrol													
		06	1324		1329	No Flare Patrol													
		06	1444		1813	No Flare Patrol													
		06	1946		2150	No Flare Patrol													
		06	2207		2210	No Flare Patrol													
		08	1349		1658	No Flare Patrol													
		08	1745		1832	No Flare Patrol													
0010	HOLL	08	1942	1944	2010	N05	W03	10709	12	8.6	28	SF		3	E		34		FS
		09	0000		0759	No Flare Patrol													

DECEMBER 2004

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0011	LEAR	09	0009	0010	0015	S09	E49	10710	12	12.7	6	SF			3	E		16		F
		09	0851		0921	No Flare Patrol														
		09	1053		1100	No Flare Patrol														
		09	1350		1556	No Flare Patrol														
		09	2349		2400	No Flare Patrol														
		10	0000		0040	No Flare Patrol														
		10	1021		1042	No Flare Patrol														
		10	1350		1410	No Flare Patrol														
		11	2350		2400	No Flare Patrol														
		12	0000		0654	No Flare Patrol														
		12	2349		2352	No Flare Patrol														
		13	1352		1412	No Flare Patrol														
		14	2400		2400	No Flare Patrol														
		15	0000		0009	No Flare Patrol														
		15	0029		0035	No Flare Patrol														
		15	1353		1410	No Flare Patrol														
		15	1546		1648	No Flare Patrol														
		16	1319		1333	No Flare Patrol														
		16	1339		1342	No Flare Patrol														
		16	1353		1414	No Flare Patrol														
		16	1725		1735	No Flare Patrol														
		16	1748		1752	No Flare Patrol														
		16	1829		1859	No Flare Patrol														
		16	1906		1921	No Flare Patrol														
		17	1024		1425	No Flare Patrol														
		18	0818		0856	No Flare Patrol														
		18	0900		0902	No Flare Patrol														
		18	0906		0908	No Flare Patrol														
		18	0914		0915	No Flare Patrol														
		18	0917		0923	No Flare Patrol														
		18	1040		1042	No Flare Patrol														
		18	1050		1052	No Flare Patrol														
		18	1054		1055	No Flare Patrol														
		18	1100		1102	No Flare Patrol														
		18	1104		1107	No Flare Patrol														
		18	1249		1252	No Flare Patrol														
		18	1254		1302	No Flare Patrol														
		18	1431		1443	No Flare Patrol														
		18	2353		2400	No Flare Patrol														
		19	0000		0701	No Flare Patrol														
		20	0118		0410	No Flare Patrol														
		20	0437		0443	No Flare Patrol														
		20	1356		1416	No Flare Patrol														
		21	0059		0136	No Flare Patrol														
		21	0550		0638	No Flare Patrol														
		21	0643		0716	No Flare Patrol														
		21	1356		1417	No Flare Patrol														
		21	1459		1507	No Flare Patrol														
		21	1523		2242	No Flare Patrol														
		21	2310		2320	No Flare Patrol														
0012	KANZ	22	0849	0856	0858	S18	E70		12	27.7	9	SF			2	E				
		22	1357		1455	No Flare Patrol														
		22	1503		1825	No Flare Patrol														
		22	1912		1952	No Flare Patrol														
0013	HOLL	22	2016	2018	2037	S08	E13	10713	12	23.8	21	SF			3	E		26		FU
		22	2144		2152	No Flare Patrol														
		22	2200		2205	No Flare Patrol														
0014	LEAR	22	2333	2333	2343	S13	E04	10713	12	23.3	10	SF			3	E		63		U
0015	KANZ	23	1019E	1019E	1038	S08	E01	10713	12	23.5	19D	SF			2	E				
		23	1455		2204	No Flare Patrol														
		24	1449		1705	No Flare Patrol														
		25	1028		1031	No Flare Patrol														

Hα SOLAR FLARES

DECEMBER 2004

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
		25	1033		1037	No Flare Patrol													
		25	1039		1046	No Flare Patrol													
		25	1052		1054	No Flare Patrol													
		25	1056		1058	No Flare Patrol													
		25	1108		1112	No Flare Patrol													
		25	1114		1118	No Flare Patrol													
		25	1121		1122	No Flare Patrol													
		25	1125		1137	No Flare Patrol													
		25	1153		1227	No Flare Patrol													
		25	1323		1411	No Flare Patrol													
		26	1029		1419	No Flare Patrol													
		26	1954		2022	No Flare Patrol													
		26	2045		2205	No Flare Patrol													
		26	2217		2236	No Flare Patrol													
		26	2329		2400	No Flare Patrol													
		27	0000		0707	No Flare Patrol													
		27	0814		1418	No Flare Patrol													
		27	1451		1703	No Flare Patrol													
		27	1853		1948	No Flare Patrol													
		27	2004		2153	No Flare Patrol													
		27	2204		2213	No Flare Patrol													
0016	LEAR	27	2239	2242	2249	S11	W82	10713	12	21.8	10	SF	3	E		22		F	
0017	LEAR	27	2317	2318	2321	S11	W82	10713	12	21.8	4	SF	3	E		25		F	
0018	LEAR	28	0009	0011	0016	S11	W83	10713	12	21.8	7	1F	3	E		129		F	
0019	LEAR	28	0630	0631	0633	S10	W64	10713	12	23.5	3	SF	3	E		27		FH	
0020	LEAR	28	0915	0922	0926	S12	W75	10713	12	22.7	11	SF	3	E		67		F	
0021	LEAR	28	0931	0932	0934	S11	W77	10713	12	22.6	3	SF	3	E		13		F	
		28	1708		1720	No Flare Patrol													
0022	HOLL	28	1747	1747	1750	N05	E77	10715	01	3.5	3	SF	3	E		24			
0023	HOLL	28	2056	2057	2106	S12	W80	10713	12	22.8	10	SF	3	E		26		FR	
0024	LEAR	29	0258	0258	0303	S09	W90	10713	12	22.4	5	SF	3	E		33		EF	
		29	1220		1222	No Flare Patrol													
		29	1235		1240	No Flare Patrol													
		29	1248		1249	No Flare Patrol													
		29	1253		1254	No Flare Patrol													
		29	1257		1259	No Flare Patrol													
		29	1312		1313	No Flare Patrol													
		29	1331		1333	No Flare Patrol													
		29	1340		2051	No Flare Patrol													
0025	HOLL	29	2159	2159	2206	N01	E57	10715	01	3.2	7	SF	3	E		16			
		29	2336		2352	No Flare Patrol													
		30	0120		0128	No Flare Patrol													
		30	0503		0519	No Flare Patrol													
		30	0810		0817	No Flare Patrol													
0026	KANZ	30	0842	0842	0844	N04	E58	10715	01	3.7	2	SF	2	E					
0027		30	10374	10421	1114	N02	E52	10715	01	3.3	37	1N				91		FH	
	KANZ	30	1037	1042	1128	N02	E52	10715	01	3.3	51	1N	2	E					
	SVTO	30	1041	1043	1059	N03	E53	10715	01	3.4	18	SF	3	E		91		FH	
0028	SVTO	30	1316E	1318U	1320	N07	E51	10715	01	3.4	4D	SF	3	E		14			
		30	1455		1551	No Flare Patrol													
0029	HOLL	30	2145	2149	2159	N02	E50	10715	01	3.6	14	SF	3	E		97		FS	

Hα SOLAR FLARES

DECEMBER 2004

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0030		30	2205*	2217*	2256	N03	E48	10715	01	3.5	51	2N					368		FHU
	HOLL	30	2205	2217	2257	N03	E48	10715	01	3.5	52	2N		3	E		426		UF
	LEAR	30	2227	2228	2255	N03	E48	10715	01	3.5	28	2F		3	E		309		FH
0031	LEAR	31	0033	0036	0040	N03	E47	10715	01	3.5	7	SF		3	E		18		
0032	LEAR	31	0417	0429	0524	N05	E45	10715	01	3.5	67	SF		3	E		58		FZ
0033	LEAR	31	0625	0629	0706	N01	E46	10715	01	3.7	41	SF		3	E		17		FZ
		31	1402		1412	No Flare Patrol													
		31	1414		1420	No Flare Patrol													
0034	HOLL	31	1450	1452U	1539	N02	E40	10715	01	3.6	49	SF		3	E		39		F
		31	1453		1532	No Flare Patrol													
		31	1737		1745	No Flare Patrol													
		31	1753		1804	No Flare Patrol													
		31	2228		2232	No Flare Patrol													
		31	2242		2318	No Flare Patrol													

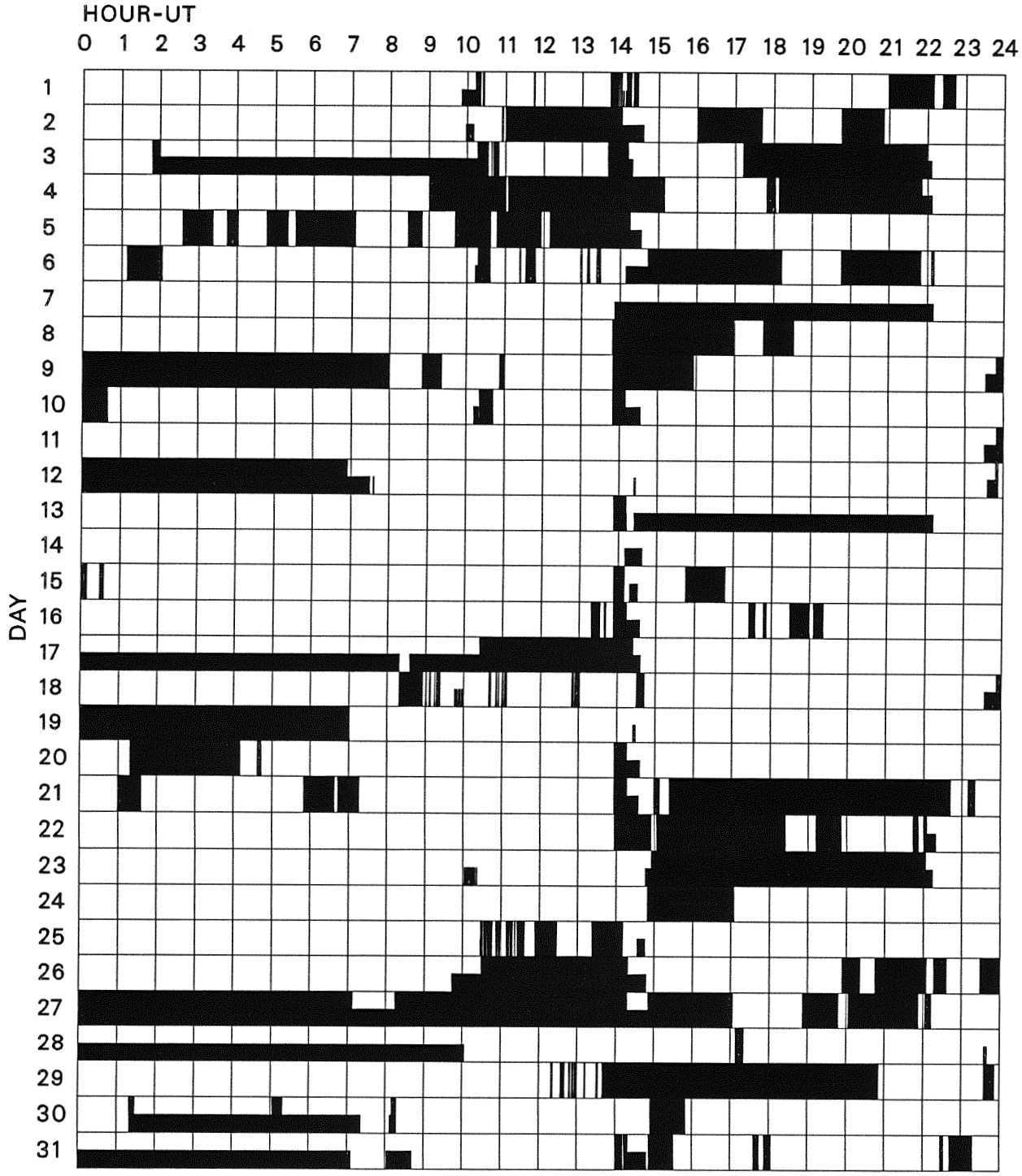
"Remarks"

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

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

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

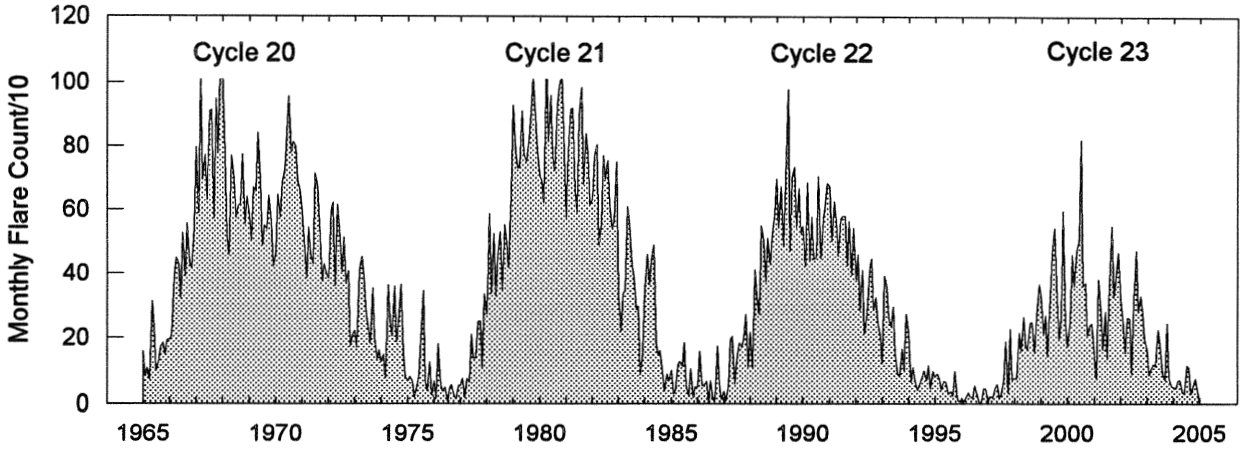
DECEMBER 2004



Times of no flare patrol, shown here as shaded areas, combine reports from the stations listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind (neither visual or cinematographic): portions of a panel with only the bottom half shaded mark times of only visual patrol.

Holloman
Kanzelhoehe
Learmonth
Kharkov
San Vito

Monthly Counts of Grouped Solar Flares
Jan 1965 - Dec 2004



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	177	164	248	249	155	268	367	2423
1999	330	212	271	145	330	466	544	368	192	264	598	243	3963
2000	175	248	462	362	473	505	818	364	372	208	241	246	4474
2001	147	77	383	284	164	282	137	376	549	325	405	468	3597
2002	318	261	155	263	259	91	318	474	280	329	279	196	3223
2003	164	87	112	122	117	226	181	94	73	245	78	53	1552
2004	49	47	71	72	32	33	118	112	30	54	76	34	728

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

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	204	IZMI	43	NS	0700.0		300.0D		20.0		
	127	TORN	44	NS	0730.0E		350.0D		6.0		V=1
	2840	PEKG	1	S	0020.0	0021.8	3.0	3.2			
	2804	VORO	1	S	0020.6	0021.6	1.9	4.8			
	245	LEAR	8	S	0107.0	0107.0	U	52.0			QL=4 ST=2 TYP=3
	2840	PEKG	5	S	0137.0	0140.9	8.0	25.8			
	2804	VORO	46	C	0139.4	0139.8	3.1	11.5			
	2800	HIRA	1	S	0140.0	0141.0	3.0	15.0			0
	1415	LEAR	8	S	0141.0	0141.0	U	52.0			QL=4 ST=2 TYP=3
	2804	VORO	29	PBI	0142.5	0142.5	13.0	4.8			
	245	LEAR	8	S	0614.0	0614.0	U	55.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0623.0	0623.0	U	99.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0623.0	0623.0	U	54.0			QL=4 ST=2 TYP=3
	2840	PEKG	3	S	0645.0	0714.7	67.0	150.9			
	610	SVTO	4	S/F	0701.0	0710.0	13.0	63.0			QL=2 ST=2 TYP=3
	610	SVTO	4	S/F	0701.0	0710.0	1019.0	62.0			QL=4 ST=1 TYP=3
	245	SVTO	48	C	0703.0	0713.0	19.0	200.0			QL=4 ST=2 TYP=8
	2695	SVTO	48	C	0703.0	0714.0	19.0	160.0			QL=4 ST=2 TYP=8
	410	SVTO	4	S/F	0703.0	0710.0	16.0	160.0			QL=4 ST=2 TYP=3
	245	SVTO	4	S/F	0703.0	0710.0	1017.0	140.0			QL=4 ST=1 TYP=3
	410	SVTO	4	S/F	0703.0	0710.0	1017.0	160.0			QL=4 ST=1 TYP=3
	204	IZMI	41	F	0703.1	0713.3	27.8	186.0			
	3000	IZMI	42	SER	0703.7	0704.6	2.8	75.0			
	245	LEAR	48	C	0704.0	0713.0	11.0	270.0			QL=4 ST=2 TYP=8
	2695	LEAR	48	C	0704.0	0714.0	14.0	130.0			QL=4 ST=2 TYP=8
	410	LEAR	4	S/F	0704.0	0710.0	11.0	140.0			QL=4 ST=2 TYP=3
	1415	SVTO	4	S/F	0704.0	0715.0	15.0	110.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	0704.0	0710.0	1016.0	170.0			QL=4 ST=1 TYP=3
	410	LEAR	4	S/F	0704.0	0710.0	1016.0	140.0			QL=4 ST=1 TYP=3
	2695	LEAR	4	S/F	0704.0	0710.0	1016.0	130.0			QL=4 ST=1 TYP=3
	1415	SVTO	4	S/F	0704.0	0709.0	1016.0	100.0			QL=4 ST=1 TYP=3
	900	GORK	4	S/F	0704.3	0709.7	165.0	80.0			
	1415	LEAR	4	S/F	0705.0	0715.0	13.0	120.0			QL=4 ST=2 TYP=3
	1415	LEAR	4	S/F	0705.0	0709.0	1015.0	110.0			QL=4 ST=1 TYP=3
	4995	SVTO	4	S/F	0707.0	0714.0	15.0	100.0			QL=4 ST=2 TYP=3
	4995	SVTO	4	S/F	0707.0	0710.0	1013.0	67.0			QL=4 ST=1 TYP=3
	3000	IZMI	45	C	0707.4	0714.4	25.0	145.0			
	2950	GORK	48	C	0708.6	0711.5	14.4	87.0			
	2950	GORK	48	C	0708.6	0714.6		110.0			
	610	LEAR	4	S/F	0709.0	0710.0	3.0	70.0			QL=4 ST=2 TYP=3
	15400	SVTO	8	S	0709.0	0709.0	2.0	37.0			QL=2 ST=2 TYP=3
	9100	GORK	20	GRF	0709.0	0715.0	27.0	35.0			
	610	LEAR	4	S/F	0709.0	0710.0	1011.0	70.0			QL=4 ST=1 TYP=3
	15400	SVTO	4	S/F	0709.0	0709.0	1011.0	37.0			QL=4 ST=1 TYP=3
	4995	LEAR	4	S/F	0710.0	0714.0	8.0	97.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	0710.0	0714.0	12.0	54.0			QL=4 ST=2 TYP=3
	4995	LEAR	4	S/F	0710.0	0710.0	1010.0	73.0			QL=4 ST=1 TYP=3
	8800	SVTO	4	S/F	0710.0	0710.0	1010.0	31.0			QL=4 ST=1 TYP=3
	1415	LEAR	8	S	0724.0	0724.0	U	53.0			QL=4 ST=2 TYP=3
	900	GORK	4	S/F	0729.2	0730.4	3.4	18.0			
	2950	GORK	1	S	0729.3	0730.1	3.0	6.1			
	245	SVTO	8	S	0738.0	0738.0	U	53.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0743.0	0743.0	1.0	370.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0743.0	0744.0	1.0	320.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	0753.9	0755.4	11.9	49.0			
	245	SVTO	8	S	0756.0	0756.0	U	51.0			QL=4 ST=2 TYP=3
	610	SVTO	4	S/F	0758.0	0806.0	12.0	79.0			QL=2 ST=2 TYP=3
	410	SVTO	4	S/F	0759.0	0808.0	10.0	110.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0808.0	0808.0	U	98.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0854.0	0854.0	U	59.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0854.0	0854.0	U	43.0			QL=4 ST=2 TYP=3
	33	UPIC	42	SER	0902.0	0910.5	16.0				
	2800	PENT	29	PBI	2048.0	2058.0	44.0U	21.0			
	610	LEAR	48	C	2345.0	2345.0	3.0	85.0			QL=4 ST=2 TYP=8
	610	LEAR	8	S	2357.0	2357.0	U	59.0			QL=4 ST=2 TYP=3
02	127	TORN	43	NS	0830.0		320.0		4.0		V=0
	235	CUBA	44	NS	1300.0E		510.0D		13.0		
	280	CUBA	44	NS	1300.0E		510.0D		71.0		

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

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
02	15400	LEAR	8	S	0000.0	0000.0	U	79.0			QL=4 ST=1 TYP=3
	15400	LEAR	4	S/F	0000.0	0000.0	8.0	79.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0035.0	0035.0	U	65.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0036.0	0036.0	U	61.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0152.0	0152.0	1.0	130.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1237.0	1237.0	U	71.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1237.0	1237.0	U	69.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1239.0	1240.0	1.0	80.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1239.0	1239.0	U	82.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1239.0	1239.0	1.0	170.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	1240.0	1240.0	U	130.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1434.0	1434.0	1.0	41.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1434.0	1435.0	1.0	63.0			QL=4 ST=2 TYP=3
	2804	VORO	46	C	2345.6	2446.0	70.0	93.7			
	2804	VORO	46	C	2345.6	2400.1	70.0	454.0			
	2800	HIRA	7	C	2346.0	0000.0	63.0	450.0			SR
	1415	LEAR	48	C	2347.0	2406.0	19.0	1700.0			QL=4 ST=1 TYP=8
	1415	LEAR	48	C	2347.0	2359.0	13.0	280.0			QL=4 ST=1 TYP=8
	1415	LEAR	4	S/F	2347.0	2348.0	13.0	72.0			QL=4 ST=1 TYP=3
	1415	LEAR	48	C	2347.0	2406.0	61.0	1700.0			QL=4 ST=2 TYP=8
	245	LEAR	48	C	2348.0	2359.0	12.0	890.0			QL=4 ST=1 TYP=8
	2695	LEAR	48	C	2348.0	0000.0	12.0	520.0			QL=4 ST=1 TYP=8
	2695	LEAR	48	C	2348.0	2359.0	12.0	340.0			QL=4 ST=1 TYP=8
	410	LEAR	49	GB	2348.0	2359.0	12.0	2200.0			QL=4 ST=1 TYP=6
	245	LEAR	4	S/F	2348.0	2348.0	12.0	87.0			QL=4 ST=1 TYP=3
	2695	LEAR	4	S/F	2348.0	2348.0	12.0	160.0			QL=4 ST=1 TYP=3
	245	LEAR	48	C	2348.0	2414.0	26.0	2900.0			QL=4 ST=1 TYP=8
	410	LEAR	48	C	2348.0	2415.0	27.0	5700.0			QL=4 ST=1 TYP=8
	2695	LEAR	48	C	2348.0	0000.0	59.0	520.0			QL=4 ST=2 TYP=8
	245	LEAR	48	C	2348.0	2421.0	69.0	3400.0			QL=4 ST=2 TYP=8
	410	LEAR	48	C	2348.0	2416.0	69.0	9400.0			QL=4 ST=2 TYP=8
	610	LEAR	48	C	2349.0	2401.0	12.0	3700.0			QL=4 ST=1 TYP=8
	610	LEAR	48	C	2349.0	2359.0	11.0	2000.0			QL=4 ST=1 TYP=8
	610	LEAR	48	C	2349.0	2417.0	67.0	9500.0			QL=4 ST=2 TYP=8
	2840	PEKG	47	GB	2354.0	2401.8	72.0	515.7			
	8800	LEAR	4	S/F	2356.0	0000.0	4.0	170.0			QL=4 ST=1 TYP=3
	8800	LEAR	4	S/F	2356.0	2359.0	4.0	96.0			QL=4 ST=1 TYP=3
	8800	LEAR	4	S/F	2356.0	0000.0	20.0	170.0			QL=4 ST=2 TYP=3
	4995	LEAR	4	S/F	2357.0	0000.0	3.0	240.0			QL=4 ST=1 TYP=3
	4995	LEAR	4	S/F	2357.0	2359.0	3.0	120.0			QL=4 ST=1 TYP=3
	4995	LEAR	4	S/F	2357.0	0000.0	19.0	240.0			QL=4 ST=2 TYP=3
03	127	TORN	44	NS	0730.0E		370.0D		3.0		V=0,DISTURBED
	410	LEAR	48	C	0107.0	0117.0	13.0	180.0			QL=4 ST=2 TYP=8
	245	LEAR	4	S/F	0112.0	0116.0	6.0	69.0			QL=4 ST=2 TYP=3
	610	LEAR	4	S/F	0115.0	0117.0	3.0	110.0			QL=4 ST=2 TYP=3
	410	LEAR	48	C	0126.0	0144.0	26.0	150.0			QL=4 ST=2 TYP=8
	410	LEAR	48	C	0126.0	0144.0	1354.0	150.0			QL=4 ST=1 TYP=8
	245	LEAR	4	S/F	0128.0	0140.0	16.0	67.0			QL=4 ST=2 TYP=3
	610	LEAR	48	C	0133.0	0134.0	14.0	160.0			QL=4 ST=2 TYP=8
	610	LEAR	48	C	0133.0	0134.0	1347.0	160.0			QL=4 ST=1 TYP=8
	410	LEAR	8	S	0208.0	0209.0	1.0	58.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0212.0	0214.0	2.0	78.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0258.0	0258.0	1.0	58.0			QL=4 ST=2 TYP=3
04	2950	GORK	22	GRF	1017.4	1022.8	13.6	3.5			
	2950	GORK	22	GRF	1017.4	1028.9		2.4			
	900	GORK	41	F	1020.3	1027.5		20.0			
	900	GORK	41	F	1020.3	1025.9	7.3	20.0			
	9100	GORK	7	C	1021.7	1022.8	4.3	8.0			
	9100	GORK	7	C	1021.7	1024.9		5.4			
	900	GORK	40	F	1028.9	1030.2	2.2	130.0			
	2950	GORK	46	C	1040.2	1048.2		7.1			
	2950	GORK	46	C	1040.2	1046.2	10.9	7.1			
	9100	GORK	2	S/F	1045.3	1045.7	1.4	11.0			
	900	GORK	41	F	1051.1	1053.5	8.9	13.0			
	900	GORK	41	F	1051.1	1055.5		16.0			
	2950	GORK	20	GRF	1052.9	1100.0	8.1D	11.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
08	610	PALE	8	S	2006.0	2006.0	U	200.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2032.0	2032.0	U	51.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	2032.0	2033.0	1.0	56.0			QL=4 ST=2 TYP=3
09	127	TORN	44	NS	0850.0E		240.0D		3.0		V=0
10	127	TORN	43	NS	1200.0		120.0		2.0		V=0
13	410	LEAR	8	S	2248.0	2248.0	U	53.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	2248.0	2248.0	U	53.0			QL=4 ST=4 TYP=3
14	127	TORN	43	NS	1110.0		170.0		2.0		V=1
15	127	TORN	43	NS	1140.0		140.0		4.0		V=1
	204	IZMI	42	SER	1046.9	1047.3	0.8	17.0			
16	127	TORN	43	NS	1030.0		170.0		4.0		V=0
19	235	CUBA	44	NS	1300.0E		510.0D		48.0		
	2804	VORO	21	GRF	0352.8	0422.0	86.0	7.2			
	2804	VORO	46	C	0355.5	0357.2	3.1	14.5			
20	235	CUBA	44	NS	1320.0E		490.0D		32.0		
	280	CUBA	44	NS	1320.0E		490.0D		87.0		
	245	LEAR	43	NS	2257.0	2328.0	63.0	66.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2257.0	2337.0	63.0	120.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	2257.0	2337.0	254.0	120.0			QL=4 ST=2 TYP=1
	245	LEAR	8	S	2237.0	2237.0	U	90.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2337.0	2337.0	U	70.0			QL=4 ST=2 TYP=3
21	245	LEAR	43	NS	0445.0	0445.0	1155.0	55.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	0445.0	0457.0	1155.0	74.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	0445.0	0843.0	1155.0	82.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	0445.0	1012.0	1155.0	1000.0			QL=4 ST=1 TYP=1
	204	IZMI	43	NS	0700.0		300.0D		55.0		
	235	CUBA	44	NS	1300.0E		480.0D		47.0		
	280	CUBA	44	NS	1330.0E		480.0D		145.0		
	245	LEAR	43	NS	2226.0	0146.0	94.0	160.0			QL=4 ST=1 TYP=1
	245	LEAR	44	NS	2226.0E	0146.0U	307.0D	160.0			QL=4 ST=2 TYP=1
	245	PALE	8	S	0037.0	0037.0	1.0	83.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	0038.0	0038.0	U	56.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0208.0	0208.0	U	250.0			QL=2 ST=2 TYP=3
	33	UPIC	8	S	0842.5	0843.0	1.0				
	2950	GORK	46	C	0923.7	0924.1	1.8	8.3			
	2950	GORK	46	C	0923.7	0924.6		5.9			
	204	IZMI	42	SER	0923.8	0924.4	0.9	224.0			
	9100	GORK	2	S/F	0923.9	0924.0	0.3	14.1			
	3000	IZMI	20	GRF	0923.9	0924.7	1.3	11.0	5.2		
	410	LEAR	8	S	0924.0	0924.0	U	89.0			QL=4 ST=2 TYP=3
	610	LEAR	8	S	1017.0	1017.0	U	210.0			QL=4 ST=2 TYP=3
	33	UPIC	8	S	1231.0	1231.5	1.0				
	410	SGMR	8	S	1400.0	1400.0	U	55.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1416.0	1416.0	U	180.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1455.0	1455.0	U	51.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1507.0	1507.0	U	78.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1509.0	1509.0	U	81.0			QL=4 ST=2 TYP=3
	410	SGMR	49	GB	1525.0	1525.0	U	700.0			QL=4 ST=2 TYP=6
	410	SGMR	8	S	1528.0	1528.0	1.0	210.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1553.0	1553.0	U	54.0			QL=4 ST=2 TYP=3
	4995	SGMR	8	S	1607.0	1608.0	1.0	63.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1710.0	1710.0	U	59.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	1848.0	1848.0	U	91.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	1848.0	1848.0	U	91.0			QL=4 ST=4 TYP=3
	245	SGMR	8	S	1848.0	1848.0	U	78.0			QL=4 ST=2 TYP=3
	2800	PENT		S	1905.0	1909.0	8.0	7.0			
	245	SGMR	8	S	1912.0	1912.0	U	65.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1940.0	1940.0	U	53.0			QL=4 ST=2 TYP=3
	245	PALE	49	GB	2005.0	2009.0	6.0	940.0			QL=4 ST=2 TYP=6
	245	SGMR	49	GB	2008.0	2008.0	2.0	670.0			QL=4 ST=2 TYP=6

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
21	410	SGMR	8	S	2008.0	2009.0	1.0	65.0			QL=4 ST=2 TYP=3
	410	PALE	8	S	2009.0	2009.0	U	81.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2009.0	2009.0	U	69.0			QL=4 ST=2 TYP=3
	1415	PALE	8	S	2009.0	2009.0	U	68.0			QL=4 ST=2 TYP=3
	610	SGMR	8	S	2009.0	2009.0	U	55.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2049.0	2049.0	U	67.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2103.0	2103.0	U	59.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2201.0	2201.0	U	86.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	2226.0	2229.0	6.0	230.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	2226.0	2229.0	6.0	75.0			QL=4 ST=2 TYP=3
	610	LEAR	4	S/F	2226.0	2231.0	6.0	31.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	2250.0	2250.0	U	98.0			QL=4 ST=2 TYP=3
22	204	IZMI	44	NS	0700.0E		300.0D		20.0		
	245	PALE	8	S	0116.0	0116.0	U	52.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0145.0	0146.0	1.0	130.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0200.0	0202.0	2.0	32.0			QL=4 ST=2 TYP=3
	610	LEAR	8	S	0200.0	0202.0	2.0	18.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	0201.0	0207.0	6.0	99.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0202.0	0202.0	U	64.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0232.0	0233.0	2.0	52.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0232.0	0232.0	1.0	250.0			QL=4 ST=2 TYP=3
	2840	PEKG	1	S	0601.0	0603.0	4.0	3.5			
	410	LEAR	8	S	0636.0	0636.0	U	78.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0639.0	0639.0	U	52.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0701.0	0702.0	1.0	75.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0701.0	0702.0	1.0	68.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	0716.6	0717.0	0.8	89.0			
	204	IZMI	42	SER	1115.5	1116.3	0.9	84.0			
	245	SGMR	8	S	1645.0	1645.0	1.0	240.0			QL=4 ST=2 TYP=3
23	245	LEAR	8	S	0207.0	0207.0	U	60.0			QL=4 ST=2 TYP=3
	204	IZMI	7	C	0734.7	0734.7	0.1	24.0			
	204	IZMI	41	F	0739.9	0740.2	0.4	11.0			
	204	IZMI	7	C	0745.9	0746.4	0.7	7.0			
	204	IZMI	42	SER	1059.6	1102.1	2.7	16.0			
24	204	IZMI	42	SER	1140.3	1140.7	0.6	16.0			
25	204	IZMI	42	SER	0741.4	0741.9	0.6	63.0			
	245	LEAR	8	S	0742.0	0743.0	1.0	54.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0742.0	0743.0	1.0	79.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	0742.5	0742.8	1.2	52.0			
	245	SVTO	8	S	0743.0	0743.0	U	50.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0743.0	0743.0	U	130.0			QL=4 ST=2 TYP=3
	33	UPIC	32	ABS	0851.0	0856.5	12.0				
	245	SVTO	8	S	1203.0	1203.0	U	51.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1649.0	1649.0	U	63.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2230.0	2230.0	U	56.0			QL=4 ST=2 TYP=3
27	204	IZMI	7	C	1058.1	1058.1	0.1	11.0			
28	410	SVTO	43	NS	0636.0	0650.0U	23.0	150.0			QL=4 ST=2 TYP=1
	410	SVTO	43	NS	0636.0	0650.0U	1044.0	150.0			QL=4 ST=1 TYP=1
	127	TORN	43	NS	0820.0	1123.4	340.0	90.0	5.0		V=1
	410	SVTO	43	NS	0943.0	0945.0	857.0	80.0			QL=4 ST=1 TYP=1
	2804	VORO	2	S/F	0008.0	0008.2	1.4	13.4			
	245	PALE	49	GB	0009.0	0010.0	1.0	540.0			QL=4 ST=2 TYP=6
	245	LEAR	49	GB	0009.0E	0009.0U	U	920.0			QL=2 ST=2 TYP=6
	2804	VORO	1	S	0119.5	0141.7	32.2	7.1			
	2840	PEKG	1	S	0120.0	0121.5	4.0	1.9			
	245	LEAR	49	GB	0450.0	0450.0	U	570.0			QL=4 ST=2 TYP=6
	410	LEAR	8	S	0545.0	0545.0	U	64.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0612.0	0612.0	U	71.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	0617.0	0621.0	5.0	240.0			QL=4 ST=2 TYP=3
	2840	PEKG	1	S	0624.0	0627.5	6.0	6.8			
	245	LEAR	8	S	0630.0	0630.0	U	70.0			QL=4 ST=2 TYP=3
	2840	PEKG	45	C	0631.0	0631.8	8.0	8.0			
	410	LEAR	48	C	0633.0	0641.0	24.0	340.0			QL=4 ST=3 TYP=8

SOLAR RADIO EMISSION
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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	410	LEAR	48	C	0633.0	0641.0	1047.0	340.0			QL=4 ST=1 TYP=8
	245	LEAR	8	S	0712.0	0712.0	U	59.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0712.0	0712.0	2.0	42.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0713.0	0714.0	1.0	30.0			QL=4 ST=2 TYP=3
	2840	PEKG	1	S	0805.0	0807.0	5.0	3.7			
	33	UPIC	45	C	0807.0	0807.5	4.5				
	245	SVTO	8	S	0830.0	0832.0	2.0	27.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0831.0	0831.0	U	59.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0831.0	0832.0	2.0	68.0			QL=4 ST=2 TYP=3
	2950	GORK	7	C	0831.5	0842.6		2.4			
	2950	GORK	7	C	0831.5	0838.6	12.3	4.8			
	9100	GORK	7	C	0837.2	0843.1		5.1			
	9100	GORK	7	C	0837.2	0838.6	6.6	7.5			
	9100	GORK	2	S/F	0858.2	0859.1	3.5	8.9			
	2950	GORK	40	F	0858.8	0905.4	14.1	4.9			
	204	IZMI	42	SER	0903.2	0904.3	2.6	179.0			
	245	SVTO	8	S	0904.0	0905.0	1.0	61.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0904.0	0904.0	U	25.0			QL=4 ST=2 TYP=3
	33	UPIC	42	SER	0904.0	0922.0	31.0				
	245	LEAR	8	S	0905.0	0905.0	U	71.0			QL=4 ST=2 TYP=3
	245	SVTO	48	C	0913.0	0914.0	4.0	220.0			QL=4 ST=2 TYP=8
	9100	GORK	4	S/F	0913.5	0915.0	4.0	28.0			
	127	TORN	45	C	0913.5	0914.7	2.5	380.0	50.0		
	2950	GORK	4	S/F	0913.8	0914.9	3.7	7.3			
	204	IZMI	42	SER	0913.9	0914.8	3.4	60.0			
	245	LEAR	8	S	0914.0	0914.0	U	240.0			QL=4 ST=2 TYP=3
	410	SVTO	48	C	0914.0	0918.0	4.0	94.0			QL=4 ST=2 TYP=8
	4995	SVTO	8	S	0914.0	0914.0	1.0	28.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	0914.0	0914.0	1.0	38.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0918.0	0918.0	U	91.0			QL=4 ST=2 TYP=3
	127	TORN	42	SER	0920.0	0920.8	12.0	440.0			DISTURBED
	204	IZMI	42	SER	0920.1	0921.2	4.3	161.0			
	410	SVTO	4	S/F	0923.0	0924.0	8.0	78.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0924.0	0924.0	1.0	60.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	0927.9	0930.4	4.3	626.0			
	9100	GORK	46	C	0928.0	0931.7	11.2	22.0			
	9100	GORK	46	C	0928.0	0934.8		40.0			
	245	LEAR	8	S	0929.0	0930.0	1.0	340.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	0929.0	0930.0	2.0	260.0			QL=4 ST=2 TYP=3
	2950	GORK	46	C	0930.0	0931.2	5.6	97.0			
	2950	GORK	46	C	0930.0	0934.8		15.0			
	3000	IZMI	42	SER	0930.9	0931.3	4.4	32.0			
	245	SVTO	8	S	0933.0	0934.0	1.0	85.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0934.0	0934.0	U	100.0			QL=4 ST=2 TYP=3
	4995	LEAR	8	S	0934.0	0934.0	U	59.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0934.0	0934.0	U	53.0			QL=4 ST=2 TYP=3
	4995	SVTO	8	S	0934.0	0934.0	1.0	63.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	0934.0	0934.0	1.0	49.0			QL=4 ST=2 TYP=3
	204	IZMI	45	C	0934.2	0934.3	0.2	188.0			
	410	LEAR	4	S/F	0939.0	0945.0	8.0	89.0			QL=4 ST=2 TYP=3
	410	SVTO	4	S/F	0943.0	0945.0	4.0	84.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1123.0	1123.0	U	68.0			QL=4 ST=2 TYP=3
	33	UPIC	42	SER	1123.0	1137.8	23.0				
	410	SVTO	48	C	1134.0	1134.0	6.0	87.0			QL=4 ST=2 TYP=8
	245	SVTO	4	S/F	1135.0	1139.0	5.0	55.0			QL=4 ST=2 TYP=3
	127	TORN	45	C	1135.7	1137.9	2.7	200.0	70.0		
	2695	SVTO	8	S	1137.0	1137.0	U	61.0			QL=4 ST=2 TYP=3
	127	TORN	47	GB	1229.9	1231.0	3.2	740.0	280.0		
	245	SVTO	48	C	1230.0	1231.0	5.0	440.0			QL=4 ST=2 TYP=8
	410	SVTO	4	S/F	1230.0	1231.0	5.0	210.0			QL=4 ST=2 TYP=3
	33	UPIC	48	C	1230.0	1232.0U	4.0				
	245	SGMR	49	GB	1257.0	1258.0	2.0	610.0			QL=4 ST=2 TYP=6
	245	SVTO	49	GB	1257.0	1258.0	2.0	570.0			QL=4 ST=2 TYP=6
	127	TORN	47	GB	1257.3	1258.8	2.7	1210.0	130.0		
	410	SGMR	8	S	1258.0	1258.0	1.0	260.0			QL=4 ST=2 TYP=3
	610	SGMR	8	S	1258.0	1259.0	1.0	25.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1258.0	1258.0	1.0	370.0			QL=4 ST=2 TYP=3
	33	UPIC	8	S	1301.0	1301.5	0.8				
	33	UPIC	8	S	1408.0	1408.5	0.8				

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	245	SGMR	8	S	1440.0	1440.0	U	69.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1440.0	1440.0	U	51.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1540.0	1548.0	9.0	51.0			QL=4 ST=2 TYP=3
	15400	SGMR	4	S/F	1540.0	1547.0	9.0	41.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1546.0	1547.0	1.0	83.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	1547.0	1549.0	2.0	69.0			QL=4 ST=2 TYP=3
	4995	SGMR	8	S	1548.0	1548.0	1.0	26.0			QL=4 ST=2 TYP=3
	1415	SGMR	8	S	1552.0	1552.0	U	70.0			QL=4 ST=2 TYP=3
	4995	SGMR	4	S/F	1743.0	1747.0	11.0	320.0			QL=4 ST=3 TYP=3
	8800	SGMR	4	S/F	1743.0	1747.0	11.0	290.0			QL=4 ST=3 TYP=3
	15400	SGMR	4	S/F	1743.0	1747.0	11.0	200.0			QL=4 ST=3 TYP=3
	610	PALE	48	C	1745.0	1747.0	2.0	290.0			QL=4 ST=2 TYP=8
	4995	PALE	8	S	1745.0	1747.0	2.0	310.0			QL=4 ST=2 TYP=3
	610	SGMR	4	S/F	1745.0	1747.0	5.0	260.0			QL=4 ST=2 TYP=3
	610	SGMR	4	S/F	1745.0	1747.0	9.0	260.0			QL=4 ST=3 TYP=3
	2695	SGMR	4	S/F	1745.0	1747.0	6.0	150.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1745.0	1747.0	9.0	160.0			QL=4 ST=3 TYP=3
	4995	SGMR	4	S/F	1745.0	1747.0	6.0	300.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1745.0	1747.0	6.0	270.0			QL=4 ST=2 TYP=3
	610	PALE	48	C	1745.0	1757.0	15.0	540.0			QL=4 ST=2 TYP=8
	4995	PALE	48	C	1745.0	1747.0	13.0	320.0			QL=4 ST=2 TYP=8
	610	PALE	48	C	1745.0	1747.0	375.0	290.0			QL=4 ST=1 TYP=8
	610	PALE	48	C	1745.0	1747.0	375.0	290.0			QL=4 ST=4 TYP=8
	4995	PALE	4	S/F	1745.0	1747.0	375.0	310.0			QL=4 ST=1 TYP=3
	4995	PALE	4	S/F	1745.0	1747.0	375.0	310.0			QL=4 ST=4 TYP=3
	245	PALE	8	S	1746.0	1746.0	U	130.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	1746.0	1746.0	U	130.0			QL=4 ST=4 TYP=3
	2695	PALE	8	S	1746.0	1747.0	1.0	110.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1746.0	1747.0	1.0	260.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1746.0	1746.0	1.0	170.0			QL=4 ST=2 TYP=3
	245	SGMR	8	S	1746.0	1746.0	1.0	170.0			QL=4 ST=3 TYP=3
	1415	SGMR	8	S	1746.0	1747.0	1.0	31.0			QL=4 ST=2 TYP=3
	1415	SGMR	4	S/F	1746.0	1747.0	8.0	32.0			QL=4 ST=3 TYP=3
	15400	SGMR	4	S/F	1746.0	1747.0	5.0	170.0			QL=4 ST=2 TYP=3
	2695	PALE	48	C	1746.0	1747.0	11.0	110.0			QL=4 ST=2 TYP=8
	8800	PALE	4	S/F	1746.0	1747.0	11.0	260.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	1746.0	1747.0	374.0	110.0			QL=4 ST=1 TYP=3
	2695	PALE	4	S/F	1746.0	1747.0	374.0	110.0			QL=4 ST=4 TYP=3
	8800	PALE	4	S/F	1746.0	1747.0	374.0	260.0			QL=4 ST=1 TYP=3
	8800	PALE	4	S/F	1746.0	1747.0	374.0	260.0			QL=4 ST=4 TYP=3
	15400	PALE	8	S	1747.0	1747.0	U	58.0			QL=4 ST=2 TYP=3
	15400	PALE	8	S	1747.0	1747.0	U	58.0			QL=4 ST=4 TYP=3
	410	SGMR	4	S/F	1755.0	1759.0	5.0	53.0			QL=4 ST=2 TYP=3
	410	PALE	4	S/F	1756.0	1759.0	4.0	63.0			QL=4 ST=2 TYP=3
	610	SGMR	48	C	1756.0	1757.0	4.0	480.0			QL=4 ST=2 TYP=8
	1415	SGMR	8	S	1756.0	1756.0	1.0	33.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1756.0	1757.0	1.0	92.0			QL=4 ST=2 TYP=3
	4995	SGMR	8	S	1756.0	1756.0	1.0	81.0			QL=4 ST=2 TYP=3
	2800	PENT	1	S	1956.0	1959.0	7.0	6.0			
29	127	TORN	44	NS	0750.0E		370.0D		8.0		V=1
	410	LEAR	43	NS	0754.0	0844.0	85.0	200.0			QL=4 ST=2 TYP=1
	245	LEAR	43	NS	0754.0	0756.0	966.0	130.0			QL=4 ST=1 TYP=1
	410	LEAR	43	NS	0754.0	0756.0	966.0	130.0			QL=4 ST=1 TYP=1
	410	LEAR	43	NS	0756.0	0759.0	964.0	130.0			QL=4 ST=1 TYP=1
	410	LEAR	43	NS	0756.0	0844.0	964.0	200.0			QL=4 ST=1 TYP=1
	610	LEAR	43	NS	0815.0	0817.0	55.0	100.0			QL=4 ST=2 TYP=1
	410	LEAR	43	NS	0815.0	0817.0	945.0	100.0			QL=4 ST=1 TYP=1
	610	LEAR	43	NS	0815.0	0817.0	945.0	100.0			QL=4 ST=1 TYP=1
	410	SVTO	43	NS	0822.0	0842.0	50.0	270.0			QL=4 ST=2 TYP=1
	410	SVTO	43	NS	0822.0	0826.0	938.0	270.0			QL=4 ST=1 TYP=1
	410	SVTO	43	NS	0822.0	0826.0	938.0	930.0			QL=4 ST=1 TYP=1
	204	IZMI	43	NS	0830.0		150.0		15.0		
	245	LEAR	43	NS	0842.0	0853.0	63.0	130.0			QL=4 ST=2 TYP=1
	245	LEAR	43	NS	0842.0	0842.0	918.0	54.0			QL=4 ST=1 TYP=1
	245	LEAR	43	NS	0842.0	0853.0	918.0	130.0			QL=4 ST=1 TYP=1
	235	CUBA	44	NS	1330.0E		230.0D		31.0		
	235	CUBA	44	NS	1619.8E	1620.8	38.1D	102.0	51.0		
	2840	PEKG	1	S	0638.0	0640.1	4.0	2.4			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
29	410	LEAR	8	S	0748.0	0748.0	U	92.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0748.0	0748.0	U	74.0			QL=4 ST=2 TYP=3
	410	SVTO	4	S/F	0755.0	0756.0	3.0	87.0			QL=4 ST=2 TYP=3
	410	SVTO	4	S/F	0755.0	0756.0	3.0	87.0			QL=4 ST=3 TYP=3
	410	SVTO	48	C	0823.0	0826.0	9.0	930.0			QL=2 ST=1 TYP=8
	410	LEAR	48	C	0823.0	0826.0	12.0	1300.0			QL=2 ST=2 TYP=8
	410	SVTO	48	C	0823.0	0826.0	12.0	930.0			QL=2 ST=2 TYP=8
	410	LEAR	48	C	0823.0	0826.0	937.0	1300.0			QL=2 ST=1 TYP=8
	410	SVTO	48	C	0823.0	0826.0	937.0	930.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	0826.0	0829.0	3.0	370.0			QL=2 ST=2 TYP=8
	610	SVTO	48	C	0826.0	0829.0	5.0	220.0			QL=2 ST=1 TYP=8
	610	SVTO	48	C	0826.0	0829.0	5.0	220.0			QL=2 ST=2 TYP=8
	610	SVTO	48	C	0826.0	0829.0	934.0	220.0			QL=2 ST=1 TYP=8
	245	SVTO	4	S/F	0828.0	0832.0	4.0	34.0			QL=2 ST=1 TYP=3
	245	SVTO	4	S/F	0828.0	0832.0	4.0	34.0			QL=2 ST=2 TYP=3
	245	SVTO	4	S/F	0828.0	0832.0	932.0	34.0			QL=2 ST=1 TYP=3
	245	LEAR	8	S	0835.0	0835.0	U	55.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	0852.0	0853.0	2.0	150.0			QL=2 ST=2 TYP=3
	245	SVTO	8	S	0853.0	0853.0	1.0	87.0			QL=2 ST=2 TYP=3
	1415	SGMR	4	S/F	1619.0	1625.0	15.0	280.0			QL=4 ST=2 TYP=3
	1415	SGMR	4	S/F	1619.0	1622.0	461.0	80.0			QL=4 ST=1 TYP=3
	1415	SGMR	4	S/F	1619.0	1623.0	461.0	170.0			QL=4 ST=1 TYP=3
	1415	SGMR	4	S/F	1619.0	1625.0	461.0	280.0			QL=4 ST=1 TYP=3
	2695	SGMR	48	C	1620.0	1624.0	13.0	510.0			QL=4 ST=2 TYP=8
	2695	SGMR	48	C	1620.0	1624.0	460.0	510.0			QL=4 ST=1 TYP=8
	2695	SGMR	4	S/F	1620.0	1622.0	460.0	360.0			QL=4 ST=1 TYP=3
	2695	SGMR	4	S/F	1620.0	1623.0	460.0	430.0			QL=4 ST=1 TYP=3
	4995	SGMR	4	S/F	1621.0	1623.0	7.0	420.0			QL=4 ST=2 TYP=3
	8800	SGMR	48	C	1621.0	1623.0	12.0	330.0			QL=4 ST=2 TYP=8
	8800	SGMR	48	C	1621.0	1623.0	459.0	330.0			QL=4 ST=1 TYP=8
	4995	SGMR	4	S/F	1621.0	1622.0	459.0	270.0			QL=4 ST=1 TYP=3
	4995	SGMR	4	S/F	1621.0	1623.0	459.0	420.0			QL=4 ST=1 TYP=3
	8800	SGMR	4	S/F	1621.0	1622.0	459.0	200.0			QL=4 ST=1 TYP=3
	8800	SGMR	4	S/F	1621.0	1623.0	459.0	330.0			QL=4 ST=1 TYP=3
	610	SGMR	48	C	1623.0	1626.0	5.0	140.0			QL=4 ST=2 TYP=8
	410	SGMR	49	GB	1623.0	1623.0	4.0	690.0			QL=4 ST=2 TYP=6
	15400	SGMR	4	S/F	1623.0	1625.0	6.0	170.0			QL=4 ST=2 TYP=3
	245	SGMR	49	GB	1623.0	1623.0	10.0	5400.0			QL=4 ST=2 TYP=6
	610	SGMR	48	C	1623.0	1626.0	457.0	140.0			QL=4 ST=1 TYP=8
	245	SGMR	49	GB	1623.0	1623.0	457.0	4400.0			QL=4 ST=1 TYP=6
	245	SGMR	49	GB	1623.0	1623.0	457.0	5400.0			QL=4 ST=1 TYP=6
	410	SGMR	49	GB	1623.0	1623.0	457.0	690.0			QL=4 ST=1 TYP=6
	410	SGMR	4	S/F	1623.0	1623.0	457.0	410.0			QL=4 ST=1 TYP=3
	610	SGMR	4	S/F	1623.0	1623.0	457.0	110.0			QL=4 ST=1 TYP=3
	15400	SGMR	4	S/F	1623.0	1623.0	457.0	140.0			QL=4 ST=1 TYP=3
	15400	SGMR	4	S/F	1623.0	1625.0	457.0	170.0			QL=4 ST=1 TYP=3
	610	SGMR	8	S	1636.0	1636.0	U	52.0			QL=4 ST=2 TYP=3
	1415	SGMR	8	S	1636.0	1636.0	1.0	54.0			QL=4 ST=2 TYP=3
	1415	SGMR	8	S	1645.0	1645.0	2.0	57.0			QL=4 ST=2 TYP=3
	610	SGMR	8	S	1647.0	1647.0	1.0	76.0			QL=4 ST=2 TYP=3
30	127	TORN	43	NS	1130.0		150.0		10.0		V=0
	127	TORN	43	NS	1130.0		150.0		10.0		V=0
	245	LEAR	8	S	0020.0	0020.0	1.0	59.0			QL=4 ST=2 TYP=3
	245	PALE	8	S	0021.0	0021.0	U	57.0			QL=4 ST=2 TYP=3
	2840	PEKG	1	S	0620.0	0622.3	7.0	2.4			
	245	LEAR	8	S	0630.0	0630.0	U	64.0			QL=4 ST=2 TYP=3
	610	SVTO	48	C	1033.0	1116.0	55.0	4700.0			QL=2 ST=2 TYP=8
	610	SVTO	48	C	1033.0	1039.0	807.0	120.0			QL=4 ST=1 TYP=8
	610	SVTO	48	C	1033.0	1042.0	807.0	370.0			QL=2 ST=1 TYP=8
	610	SVTO	48	C	1033.0	1116.0	807.0	4700.0			QL=2 ST=1 TYP=8
	610	SVTO	48	C	1033.0	1116.0	807.0	4700.0			QL=4 ST=1 TYP=8
	1415	SVTO	48	C	1037.0	1056.0	32.0	440.0			QL=4 ST=2 TYP=8
	1415	SVTO	48	C	1037.0	1038.0	803.0	120.0			QL=4 ST=1 TYP=8
	1415	SVTO	48	C	1037.0	1056.0	803.0	440.0			QL=4 ST=1 TYP=8
	1415	SVTO	4	S/F	1037.0	1038.0	803.0	120.0			QL=4 ST=1 TYP=3
	3000	IZMI	45	C	1037.2	1042.8	23.1	186.0			
	2695	SVTO	48	C	1038.0	1042.0	26.0	230.0			QL=4 ST=2 TYP=8
	4995	SVTO	48	C	1038.0	1042.0	28.0	260.0			QL=4 ST=2 TYP=8

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
30	8800	SVTO	48	C	1038.0	1042.0	23.0	130.0			QL=4 ST=2 TYP=8
	15400	SVTO	48	C	1038.0	1043.0	23.0	74.0			QL=4 ST=2 TYP=8
	410	SVTO	48	C	1038.0	1116.0	50.0	5200.0			QL=4 ST=2 TYP=8
	410	SVTO	48	C	1038.0	1048.0	802.0	150.0			QL=4 ST=1 TYP=8
	410	SVTO	48	C	1038.0	1116.0	802.0	5200.0			QL=4 ST=1 TYP=8
	2695	SVTO	48	C	1038.0	1042.0	802.0	230.0			QL=4 ST=1 TYP=8
	4995	SVTO	48	C	1038.0	1042.0	802.0	260.0			QL=4 ST=1 TYP=8
	8800	SVTO	48	C	1038.0	1042.0	802.0	130.0			QL=4 ST=1 TYP=8
	15400	SVTO	20	GRF	1038.0	1043.0	802.0	74.0			QL=4 ST=1 TYP=2
	410	SVTO	4	S/F	1038.0	1039.0	802.0	58.0			QL=4 ST=1 TYP=3
	2695	SVTO	4	S/F	1038.0	1039.0	802.0	110.0			QL=4 ST=1 TYP=3
	4995	SVTO	4	S/F	1038.0	1039.0	802.0	200.0			QL=4 ST=1 TYP=3
	8800	SVTO	4	S/F	1038.0	1039.0	802.0	120.0			QL=4 ST=1 TYP=3
	15400	SVTO	4	S/F	1038.0	1039.0	802.0	62.0			QL=4 ST=1 TYP=3
	15400	SVTO	4	S/F	1038.0	1043.0	802.0	74.0			QL=4 ST=1 TYP=3
	204	IZMI	46	C	1038.8	1116.8	77.9	480.0			
	127	TORN	49	GB	1039.0	1048.3	50.0	1140.0	150.0		
	127	TORN	49	GB	1039.0	1048.3	50.0	1140.0	150.0		
	33	UPIC	42	SER	1040.0	1048.0	21.0				
	245	SVTO	48	C	1040.0	1116.0	48.0	1500.0			QL=4 ST=2 TYP=8
	245	SVTO	48	C	1040.0	1116.0	800.0	1500.0			QL=4 ST=1 TYP=8
	245	SVTO	4	S/F	1040.0	1041.0	800.0	420.0			QL=4 ST=1 TYP=3
	204	IZMI	41	F	1040.7	1040.9	0.7	404.0			
	410	SVTO	8	S	1154.0	1154.0	2.0	77.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2153.0	2153.0	U	89.0			QL=4 ST=2 TYP=3
	1415	PALE	8	S	2153.0	2153.0	U	94.0			QL=4 ST=2 TYP=3
	610	PALE	48	C	2205.0	2219.0	21.0	1000.0			QL=4 ST=2 TYP=8
	610	PALE	48	C	2205.0	2208.0	115.0	720.0			QL=4 ST=1 TYP=8
	610	PALE	49	GB	2205.0	2208.0	115.0	720.0			QL=4 ST=1 TYP=6
	1415	PALE	48	C	2206.0	2209.0	8.0	160.0			QL=4 ST=2 TYP=8
	1415	LEAR	48	C	2206.0	2208.0	16.0	150.0			QL=2 ST=2 TYP=8
	1415	PALE	48	C	2206.0	2209.0	16.0	160.0			QL=4 ST=2 TYP=8
	1415	LEAR	48	C	2206.0	2208.0	114.0	150.0			QL=2 ST=1 TYP=8
	1415	PALE	4	S/F	2206.0	2206.0	114.0	150.0			QL=4 ST=1 TYP=3
	610	LEAR	48	C	2207.0	2219.0	19.0	1000.0			QL=2 ST=2 TYP=8
	2695	LEAR	4	S/F	2207.0	2209.0	12.0	180.0			QL=2 ST=2 TYP=3
	410	PALE	48	C	2207.0	2211.0	19.0	750.0			QL=4 ST=2 TYP=8
	410	LEAR	48	C	2207.0	2210.0	25.0	630.0			QL=2 ST=2 TYP=8
	410	LEAR	48	C	2207.0	2216.0	113.0	200.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	2207.0	2216.0	113.0	730.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	2207.0	2219.0	113.0	1000.0			QL=2 ST=1 TYP=8
	410	LEAR	49	GB	2207.0	2210.0	113.0	630.0			QL=2 ST=1 TYP=6
	410	LEAR	20	GRF	2207.0	2216.0	113.0	200.0			QL=2 ST=1 TYP=2
	610	LEAR	4	S/F	2207.0	2207.0	113.0	360.0			QL=2 ST=1 TYP=3
	2695	LEAR	4	S/F	2207.0	2209.0	113.0	180.0			QL=2 ST=1 TYP=3
	410	PALE	48	C	2207.0	2211.0	113.0	750.0			QL=4 ST=1 TYP=8
	410	PALE	4	S/F	2207.0	2208.0	113.0	310.0			QL=4 ST=1 TYP=3
	2695	PALE	4	S/F	2208.0	2210.0	4.0	230.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	2208.0	2210.0	9.0	230.0			QL=4 ST=2 TYP=3
	4995	PALE	4	S/F	2208.0	2209.0	3.0	84.0			QL=4 ST=2 TYP=3
	245	LEAR	49	GB	2208.0	2215.0	19.0	540.0			QL=2 ST=2 TYP=6
	245	PALE	48	C	2208.0	2213.0	13.0	440.0			QL=4 ST=2 TYP=8
	245	LEAR	49	GB	2208.0	2215.0	112.0	540.0			QL=2 ST=1 TYP=6
	245	PALE	4	S/F	2208.0	2208.0	112.0	85.0			QL=4 ST=1 TYP=3
	245	PALE	4	S/F	2208.0	2213.0	112.0	440.0			QL=4 ST=1 TYP=3
	2695	PALE	4	S/F	2208.0	2208.0	112.0	130.0			QL=4 ST=1 TYP=3
	4995	PALE	4	S/F	2208.0	2208.0	112.0	58.0			QL=4 ST=1 TYP=3
	8800	PALE	8	S	2209.0	2209.0	U	53.0			QL=4 ST=2 TYP=3
	4995	LEAR	4	S/F	2215.0	2216.0	3.0	36.0			QL=2 ST=2 TYP=3
	4995	LEAR	4	S/F	2215.0	2216.0	105.0	36.0			QL=2 ST=1 TYP=3
	410	PALE	4	S/F	2229.0	2230.0	3.0	74.0			QL=4 ST=2 TYP=3
	610	PALE	8	S	2230.0	2230.0	U	71.0			QL=4 ST=2 TYP=3
	2800	PENT	41	F	2233.0	2247.0	22.0	65.0			
	245	LEAR	48	C	2235.0	2300.0	37.0	630.0			QL=2 ST=2 TYP=8
	410	LEAR	48	C	2235.0	2257.0	35.0	1800.0			QL=2 ST=2 TYP=8
	610	LEAR	48	C	2235.0	2257.0	30.0	2000.0			QL=2 ST=2 TYP=8
	245	LEAR	48	C	2235.0	2240.0	85.0	110.0			QL=2 ST=1 TYP=8
	245	LEAR	48	C	2235.0	2256.0	85.0	510.0			QL=2 ST=1 TYP=8
	245	LEAR	48	C	2235.0	2300.0	85.0	630.0			QL=2 ST=1 TYP=8

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
30	410	LEAR	48	C	2235.0	2243.0	85.0	310.0			QL=2 ST=1 TYP=8
	410	LEAR	48	C	2235.0	2247.0	85.0	690.0			QL=2 ST=1 TYP=8
	410	LEAR	48	C	2235.0	2257.0	85.0	1800.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	2235.0	2244.0	85.0	680.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	2235.0	2247.0	85.0	870.0			QL=2 ST=1 TYP=8
	610	LEAR	48	C	2235.0	2257.0	85.0	2000.0			QL=2 ST=1 TYP=8
	410	LEAR	20	GRF	2235.0	2241.0	85.0	200.0			QL=2 ST=1 TYP=2
	245	LEAR	4	S/F	2235.0	2237.0	85.0	98.0			QL=2 ST=1 TYP=3
	410	LEAR	4	S/F	2235.0	2237.0	85.0	200.0			QL=2 ST=1 TYP=3
	610	LEAR	4	S/F	2235.0	2237.0	85.0	330.0			QL=2 ST=1 TYP=3
	1415	LEAR	48	C	2236.0	2247.0	24.0	1200.0			QL=2 ST=2 TYP=8
	610	PALE	48	C	2236.0	2258.0	29.0	1900.0			QL=4 ST=2 TYP=8
	410	PALE	48	C	2236.0	2258.0	32.0	1900.0			QL=4 ST=2 TYP=8
	1415	LEAR	48	C	2236.0	2247.0	84.0	1200.0			QL=2 ST=1 TYP=8
	1415	LEAR	4	S/F	2236.0	2237.0	84.0	110.0			QL=2 ST=1 TYP=3
	410	PALE	48	C	2236.0	2244.0	84.0	300.0			QL=4 ST=1 TYP=8
	410	PALE	48	C	2236.0	2257.0	84.0	1500.0			QL=4 ST=1 TYP=8
	610	PALE	48	C	2236.0	2244.0	84.0	540.0			QL=4 ST=1 TYP=8
	610	PALE	48	C	2236.0	2257.0	84.0	1400.0			QL=4 ST=1 TYP=8
	1415	PALE	48	C	2237.0	2247.0	23.0	1100.0			QL=4 ST=2 TYP=8
	245	PALE	48	C	2237.0	2301.0	32.0	520.0			QL=4 ST=2 TYP=8
	245	PALE	48	C	2237.0	2256.0	83.0	360.0			QL=4 ST=1 TYP=8
	1415	PALE	48	C	2237.0	2244.0	83.0	480.0			QL=4 ST=1 TYP=8
	1415	PALE	48	C	2237.0	2247.0	83.0	1100.0			QL=4 ST=1 TYP=8
	245	PALE	4	S/F	2237.0	2240.0	83.0	93.0			QL=4 ST=1 TYP=3
	2800	HIRA	7	C	2244.0	2248.0	7.0	55.0			SR
	2695	LEAR	4	S/F	2244.0	2247.0	6.0	71.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	2244.0	2247.0	76.0	71.0			QL=2 ST=1 TYP=3
	2695	PALE	8	S	2247.0	2247.0	1.0	78.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	2332.0	2332.0	4.0	44.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	2332.0	2333.0	3.0	53.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	2332.0	2332.0	28.0	44.0			QL=4 ST=1 TYP=3
	410	LEAR	4	S/F	2332.0	2333.0	28.0	53.0			QL=4 ST=1 TYP=3
31	127	TORN	44	NS	0750.0E		370.0D		6.0		V=1
	127	TORN	44	NS	0750.0E		370.0D		6.0		V=1
	2840	PEKG	1	S	0028.0	0030.9	7.0	5.1			
	2804	VORO	3	S	0029.7	0031.2	3.1	8.1			
	2800	HIRA	1	S	0030.0	0032.0	3.0	10.0			0
	410	LEAR	8	S	0030.0	0030.0	1.0	26.0			QL=4 ST=2 TYP=3
	610	LEAR	8	S	0030.0	0030.0	2.0	83.0			QL=4 ST=2 TYP=3
	610	LEAR	4	S/F	0030.0	0030.0	1410.0	83.0			QL=4 ST=1 TYP=3
	2804	VORO	46	C	0411.0	0434.2	40.0	24.2			
	2800	HIRA	7	C	0413.0	0434.0	33.0	25.0			0
	2840	PEKG	20	GRF	0422.0	0433.3	30.0	12.2			
	610	LEAR	48	C	0433.0	0438.0	1167.0	51.0			QL=4 ST=1 TYP=8
	410	LEAR	4	S/F	0433.0	0438.0	1167.0	60.0			QL=4 ST=1 TYP=3
	1415	LEAR	4	S/F	0433.0	0433.0	1167.0	40.0			QL=4 ST=1 TYP=3
	245	LEAR	4	S/F	0434.0	0435.0	1166.0	36.0			QL=4 ST=1 TYP=3
	410	LEAR	8	S	0438.0	0438.0	1.0	58.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0442.0	0443.0	2.0	230.0			QL=4 ST=2 TYP=3
	610	LEAR	8	S	0442.0	0443.0	1.0	170.0			QL=4 ST=2 TYP=3
	410	LEAR	8	S	0446.0	0448.0	2.0	91.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	0448.0	0456.0	13.0	270.0			QL=4 ST=2 TYP=3
	245	LEAR	8	S	0620.0	0620.0	U	52.0			QL=4 ST=2 TYP=3
	245	LEAR	4	S/F	0625.0	0626.0	3.0	160.0			QL=4 ST=2 TYP=3
	2840	PEKG	20	GRF	0629.0	0636.6	16.0	8.4			
	245	LEAR	4	S/F	0630.0	0632.0	6.0	160.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	0632.0	0635.0	3.0	86.0			QL=4 ST=2 TYP=3
	410	LEAR	4	S/F	0641.0	0643.0	4.0	57.0			QL=4 ST=2 TYP=3
	204	IZMI	42	SER	1055.5	1056.0	1.0	94.0			
	245	SGMR	8	S	1442.0	1442.0	U	210.0			QL=4 ST=2 TYP=3
	410	SGMR	8	S	1442.0	1442.0	U	250.0			QL=4 ST=2 TYP=3
	610	SGMR	8	S	1442.0	1442.0	U	190.0			QL=4 ST=2 TYP=3
	4995	SGMR	8	S	1442.0	1442.0	1.0	59.0			QL=4 ST=2 TYP=3
	245	SVTO	8	S	1442.0	1442.0	U	210.0			QL=4 ST=2 TYP=3
	410	SVTO	8	S	1442.0	1442.0	2.0	280.0			QL=4 ST=2 TYP=3
	610	SVTO	8	S	1442.0	1442.0	1.0	190.0			QL=4 ST=2 TYP=3
	4995	SVTO	8	S	1442.0	1442.0	2.0	54.0			QL=4 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 2004

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
31	8800	SVTO	8	S	1442.0	1442.0	1.0	54.0			QL=4 ST=2 TYP=3
	15400	SVTO	8	S	1442.0	1442.0	1.0	30.0			QL=4 ST=2 TYP=3
	1415	SVTO	4	S/F	1442.0	1443.0	4.0	40.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1442.0	1443.0	4.0	36.0			QL=4 ST=2 TYP=3
	410	SGMR	48	C	1449.0	1450.0	11.0	220.0			QL=4 ST=2 TYP=8
	410	SVTO	48	C	1449.0	1450.0	11.0	230.0			QL=4 ST=2 TYP=8
	610	SVTO	8	S	1450.0	1450.0	U	52.0			QL=4 ST=2 TYP=3
	245	SVTO	48	C	1454.0	1456.0	9.0	260.0			QL=4 ST=2 TYP=8
	245	SGMR	48	C	1456.0	1457.0	7.0	320.0			QL=4 ST=2 TYP=8
	1415	SGMR	4	S/F	1510.0	1515.0	9.0	120.0			QL=4 ST=2 TYP=3
	1415	SGMR	4	S/F	1510.0	1514.0	530.0	93.0			QL=4 ST=1 TYP=3
	1415	SGMR	4	S/F	1510.0	1515.0	530.0	120.0			QL=4 ST=1 TYP=3
	245	SGMR	4	S/F	1511.0	1513.0	8.0	160.0			QL=4 ST=2 TYP=3
	410	SGMR	48	C	1511.0	1517.0	10.0	270.0			QL=4 ST=2 TYP=8
	610	SGMR	48	C	1511.0	1517.0	10.0	610.0			QL=4 ST=2 TYP=8
	410	SGMR	48	C	1511.0	1517.0	529.0	270.0			QL=4 ST=1 TYP=8
	610	SGMR	48	C	1511.0	1517.0	529.0	610.0			QL=4 ST=1 TYP=8
	245	SGMR	4	S/F	1511.0	1513.0	529.0	160.0			QL=4 ST=1 TYP=3
	410	SGMR	4	S/F	1511.0	1513.0	529.0	180.0			QL=4 ST=1 TYP=3
	610	SGMR	4	S/F	1511.0	1512.0	529.0	160.0			QL=4 ST=1 TYP=3
	2695	SGMR	4	S/F	1512.0	1514.0	8.0	120.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1512.0	1514.0	528.0	100.0			QL=4 ST=1 TYP=3
	2695	SGMR	4	S/F	1512.0	1514.0	528.0	120.0			QL=4 ST=1 TYP=3
	4995	SGMR	4	S/F	1513.0	1514.0	6.0	85.0			QL=4 ST=2 TYP=3
	4995	SGMR	4	S/F	1513.0	1514.0	527.0	76.0			QL=4 ST=1 TYP=3
	4995	SGMR	4	S/F	1513.0	1514.0	527.0	85.0			QL=4 ST=1 TYP=3
	245	SGMR	4	S/F	1528.0	1532.0	11.0	120.0			QL=4 ST=2 TYP=3
	410	SGMR	4	S/F	1529.0	1530.0	8.0	150.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

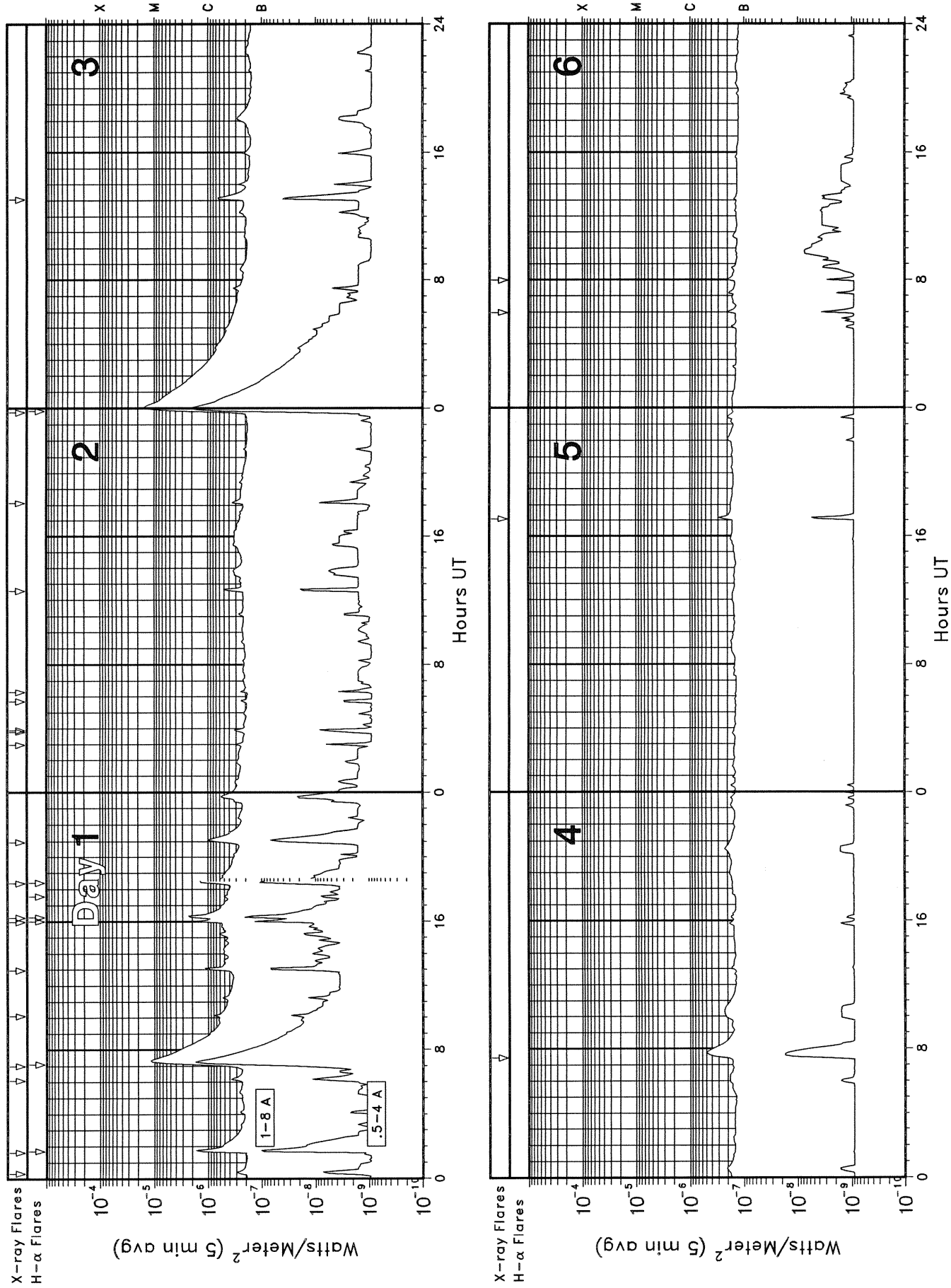
BERN = Berne	HUMN = Humain	ONDR = Ondrejov	SVTO = San Vito
CRIM = Crimea	IZMI = IZMIRAN	PEKG = Peking	TORN = Torun
CUBA = Havana	KISV = Kislovodsk	PALE = Palehua	TRST = Trieste
GORK = Gorky	KRAK = Krakow	PENT = Penticton	TYKW = Toyokawa
HIRA = Hiraiso	LEAR = Learmonth	POTS = Potsdam	UPIC = Upice
HUAN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

Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precusor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major

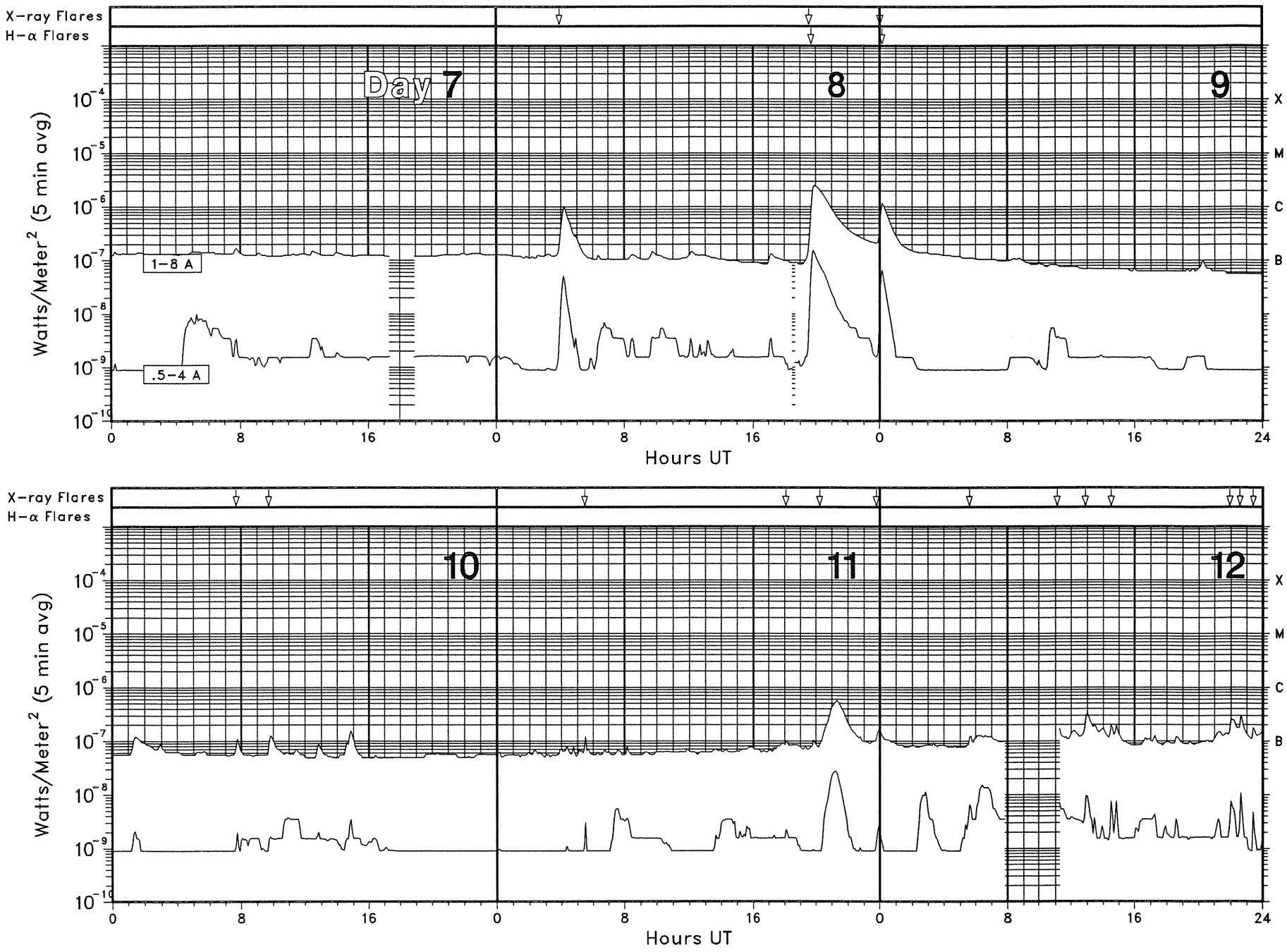
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

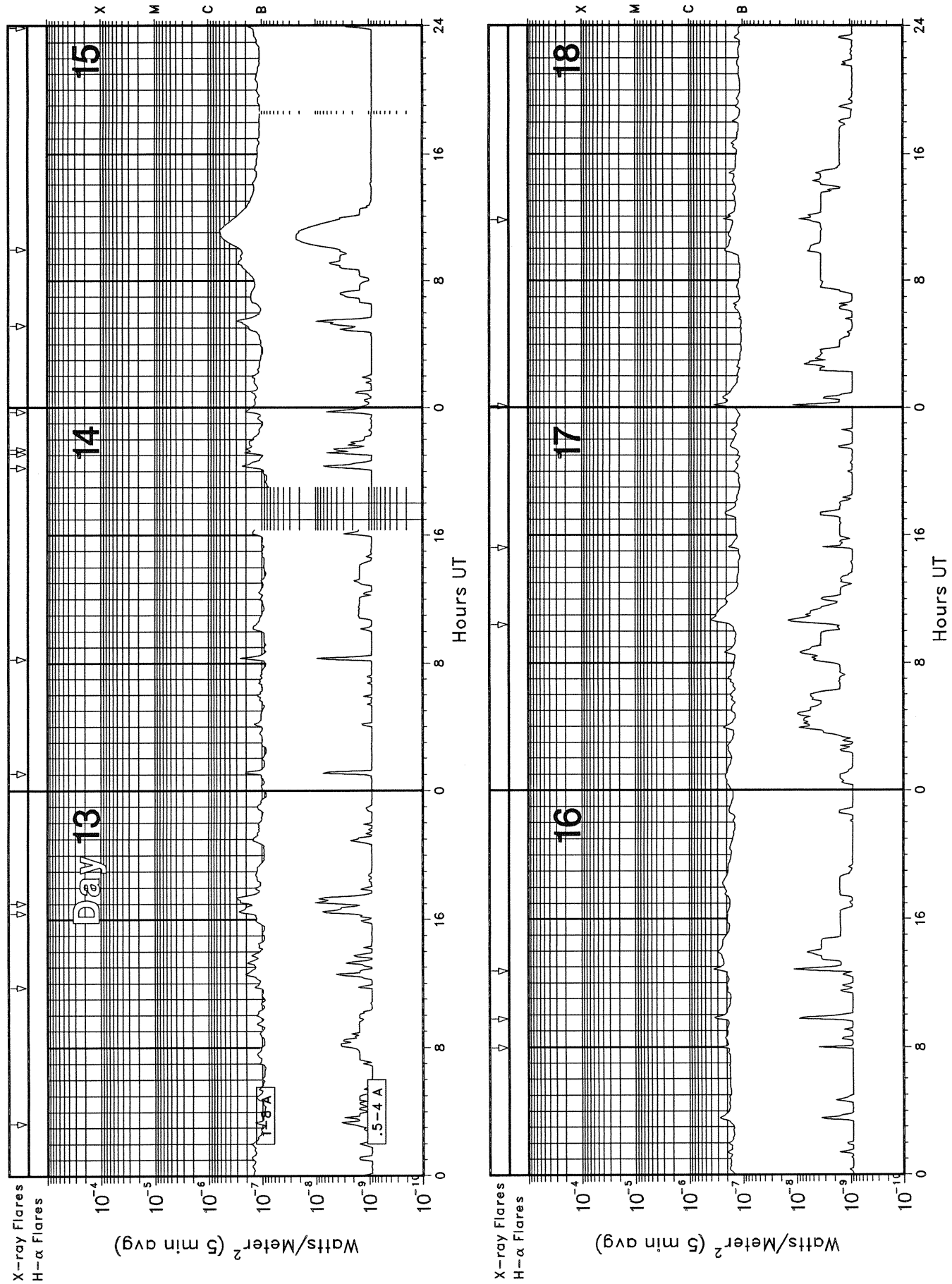
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; and Hiraiso, Japan 500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


GOES X-RAY DETECTOR
December 2004
Day 1
1-8 A
.5-4 A
X-ray Flares
H-α Flares
Watts/Meter² (5 min avg)
Hours UT
X
M
C
B
1
2
3
4
5
6

GOES X-RAY DETECTOR

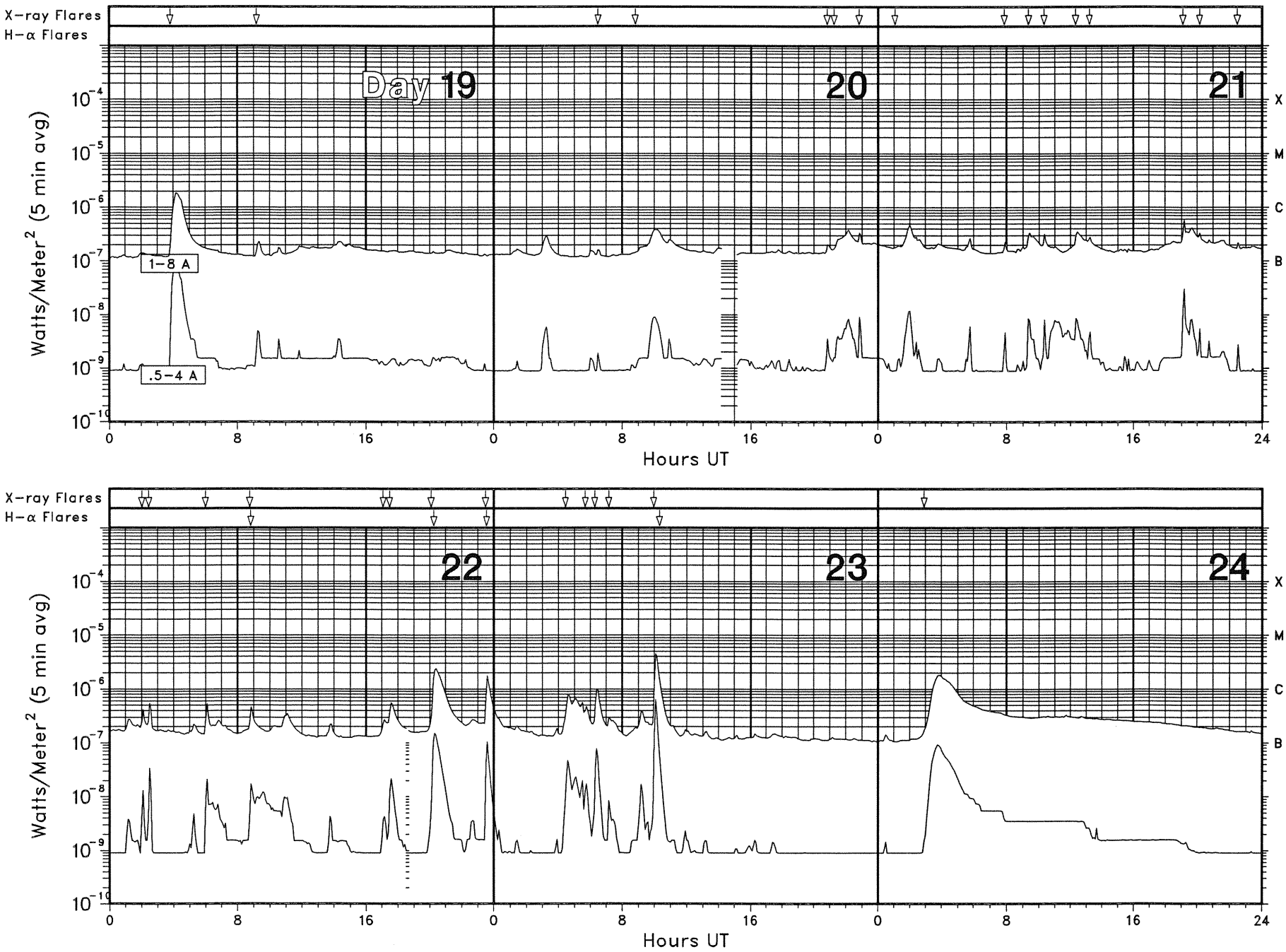
December 2004

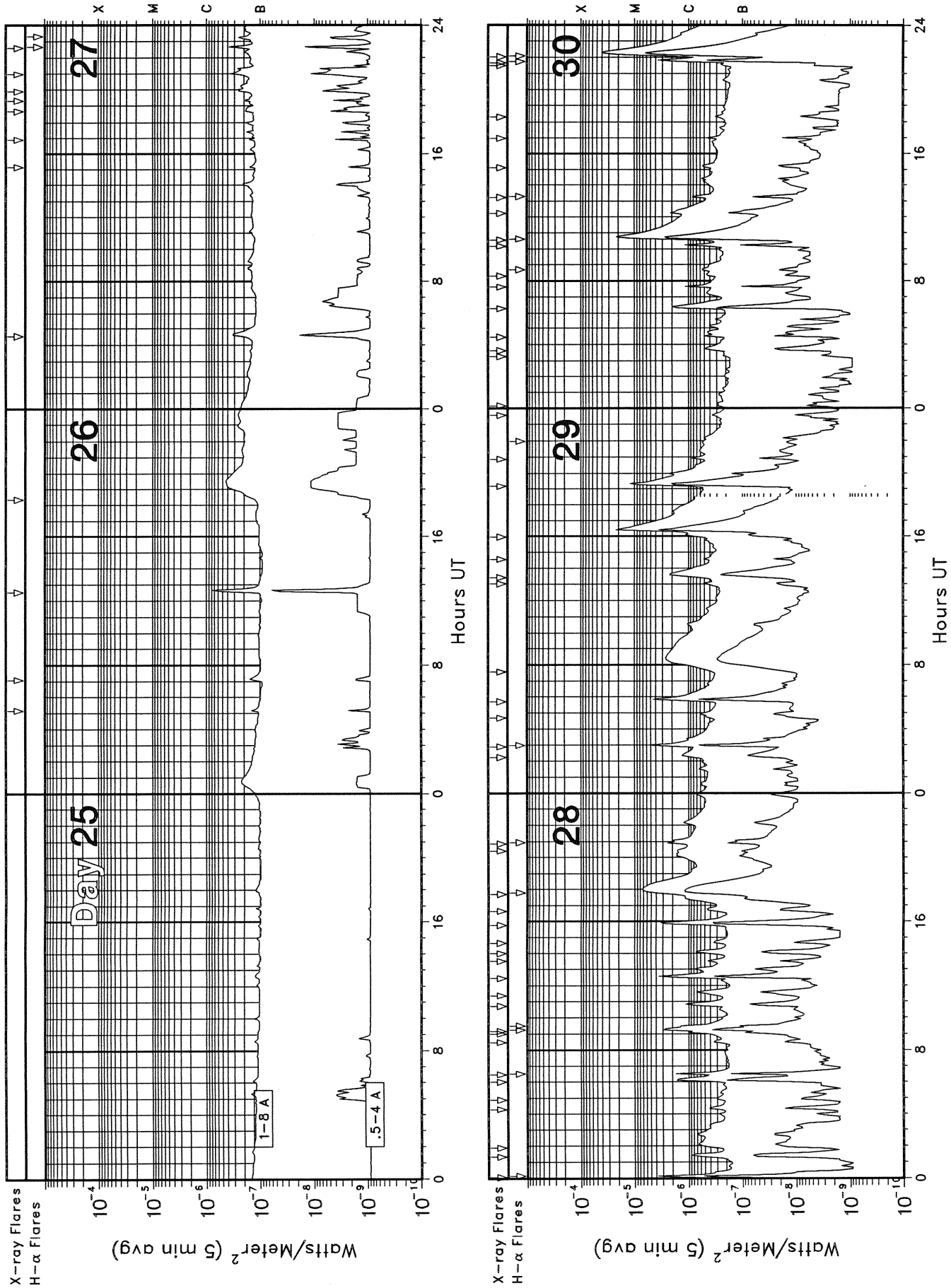



GOES X-RAY DETECTOR
December 2004
Day 13
14
15
16
17
18
X-ray Flares
H-α Flares
Watts/Meter² (5 min avg)
Hours UT
1-8 A
.5-4 A
X
M
C
B
0
8
16
24
10⁻⁴
10⁻⁵
10⁻⁶
10⁻⁷
10⁻⁸
10⁻⁹
10⁻¹⁰

GOES X-RAY DETECTOR

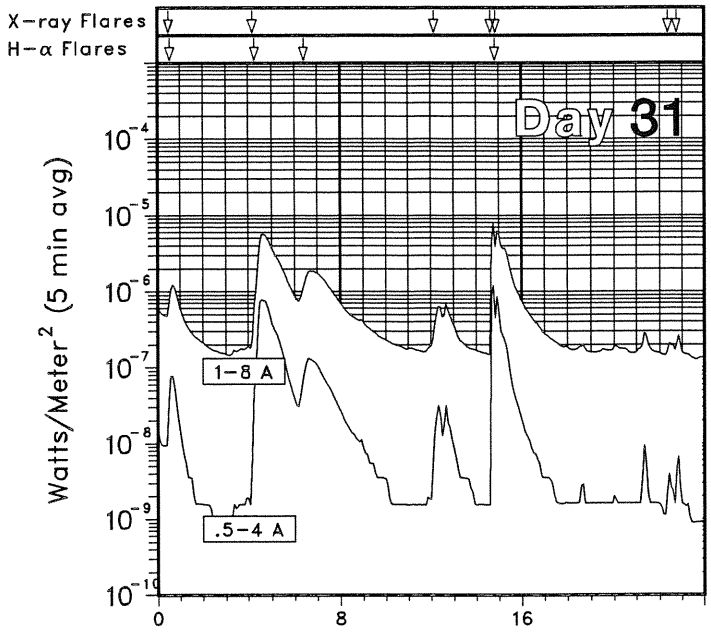
December 2004




GOES X-RAY DETECTOR
December 2004
Day 25
26
27
28
29
30
1-8 A
.5-4 A
X-ray Flares
H-α Flares
Watts/Meter² (5 min avg)
Hours UT
X
M
C
B

GOES X-RAY DETECTOR

December 2004



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

December 2004

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp	Xray	Flux	NOAA/ USAF Region
01	0020	0024	0031				B	3.2	1.9E-04	
01	0137	0145	0151	S14	W18	SF	C	1.9	1.0E-03	10707
01	0606	0612	0620				B	3.7	2.7E-04	
01	0700	0720	0741	N06	E20	SN	M	1.1	1.8E-02	10708
01	1007	1010	1013				B	9.0	2.8E-04	10707
01	1257	1306	1309				C	1.3	6.8E-04	10707
01	1558	1603	1605	S19	W20	SF	C	2.6	5.9E-04	10707
01	1614	1619	1621	S18	W20	SF	C	4.2	1.0E-03	10707
01	1821	1830	1835	S17	W20	SF	C	1.5	1.0E-03	10707
01	2057	2105	2117				B	9.9	9.6E-04	10706
02	0257	0300	0303				B	3.4	1.1E-04	
02	0347	0350	0352				B	3.3	8.5E-05	10707
02	0353	0356	0359				B	3.6	1.1E-04	10707
02	0542	0545	0548				B	2.7	9.0E-05	
02	0617	0621	0624				B	2.5	9.3E-05	
02	1234	1240	1242				B	7.3	2.3E-04	10707
02	1808	1814	1817				B	3.8	1.8E-04	
02	2344	2406	2435				M	1.5	2.9E-02	10708
03	1302	1308	1315				B	8.0	4.4E-04	10707
04	0726	0746	0808				B	4.9	1.0E-03	
05	1705	1710	1715				B	3.1	1.6E-04	10706
06	0558	0601	0607				B	2.2	1.1E-04	
06	0758	0802	0807				B	2.1	1.1E-04	
08	0354	0414	0431				C	1.0	1.5E-03	
08	1934	1959	2044	N05	W03	SF	C	2.5	7.4E-03	10709
09	0001	0012	0029	S09	E49	SF	C	1.1	1.5E-03	10710
10	0742	0746	0752				B	1.1	6.1E-05	
10	0945	0952	1004				B	1.2	1.3E-04	
11	0528	0533	0535				B	1.3	4.5E-05	
11	1805	1808	1810				B	1.2	3.0E-05	
11	2014	2122	2148				B	5.8	1.9E-03	10711
11	2347	2401	2407				B	1.7	1.7E-04	10711
12	0535	0539	0543				B	1.4	6.1E-05	10711
12	1106	1110	1118				B	1.8	1.2E-04	
12	1252	1259	1312				B	3.2	3.3E-04	10710
12	1430	1433	1436				B	2.3	7.3E-05	10711
12	2156	2205	2219				B	2.6	3.2E-04	10711
12	2233	2238	2243				B	3.4	1.7E-04	10711
12	2325	2329	2331				B	2.4	6.8E-05	10711
13	0315	0319	0323				B	1.5	6.5E-05	10711
13	1144	1147	1152				B	1.4	6.0E-05	
13	1623	1630	1639				B	2.8	2.3E-04	10711
13	1701	1724	1730				B	3.1	4.5E-04	10711
14	0103	0111	0113				B	2.5	1.2E-04	10711
14	0815	0820	0824				B	3.0	1.2E-04	10711
14	2011	2020	2028				B	2.4	1.9E-04	10711
14	2105	2111	2118				B	2.3	1.4E-04	10711
14	2121	2125	2129				B	2.2	9.5E-05	10711
14	2343	2347	2355				B	2.2	1.4E-04	10711
15	0507	0528	0533				B	3.1	3.7E-04	10711
15	0955	1108	1136				B	6.2	2.9E-03	
15	2352	2355	2357				B	2.3	5.7E-05	10711
16	0758	0801	0804				B	2.8	8.8E-05	
16	0945	0949	0954				B	3.8	1.8E-04	10711
16	1245	1250	1259				B	3.7	2.6E-04	
17	1024	1042	1119				B	3.9	9.9E-04	10712
17	1513	1517	1522				B	1.9	9.4E-05	
18	0006	0010	0014				B	4.0	1.5E-04	10710
18	1147	1151	1154				B	2.5	8.9E-05	10713
19	0349	0414	0437				C	1.8	3.6E-03	10713
19	0911	0920	0928				B	2.3	2.1E-04	10713
20	0630	0634	0637				B	1.8	7.0E-05	10713
20	0850	1006	1034				B	3.9	2.1E-03	
20	2048	2054	2103				B	1.9	1.6E-04	10713
20	2115	2211	2227				B	3.9	1.2E-03	10713
20	2249	2254	2257				B	3.9	1.6E-04	10713
21	0103	0201	0213				B	4.7	1.1E-03	
21	0752	0756	0758				B	2.6	8.0E-05	10713
21	0920	0925	0928				B	4.0	1.6E-04	10713
21	1018	1022	1025				B	3.4	1.2E-04	10713
21	1219	1224	1243				B	3.7	4.6E-04	
21	1312	1315	1317				B	3.2	8.7E-05	10713
21	1906	1910	1912				B	9.1	2.0E-04	10713
21	2009	2011	2013				B	3.5	8.0E-05	
21	2229	2232	2235				B	2.2	7.3E-05	
22	0201	0206	0210				B	4.7	1.9E-04	
22	0227	0234	0236				B	8.8	2.6E-04	10713
22	0600	0605	0611				B	6.0	2.8E-04	
22	0845	0852	0857				B	5.2	2.7E-04	
22	1705	1710	1720				B	2.8	2.3E-04	
22	1729	1737	1747				B	5.6	5.1E-04	
22	2006	2025	2049	S08	E13	SF	C	2.3	4.2E-03	10713
22	2329	2336	2348	S13	E04	SF	C	1.8	1.4E-03	10713
23	0426	0439	0451				B	8.2	9.1E-04	10713
23	0541	0545	0552				B	5.1	3.0E-04	10713
23	0617	0629	0636				C	1.1	8.5E-04	10713
23	0709	0713	0717				B	3.5	1.4E-04	10713
23	0957	1008	1016				C	5.1	3.2E-03	10713
24	0255	0356	0504	S23	E45	SF	C	1.8	8.6E-03	
26	0509	0513	0515				B	1.6	5.1E-05	
26	0705	0709	0719				B	1.6	1.2E-04	
26	1232	1240	1244				B	9.9	3.9E-04	10713
26	1820	1929	2017				B	4.3	2.2E-03	
27	0432	0439	0446				B	3.4	2.5E-04	
27	1509	1513	1516				B	1.5	5.9E-05	
27	1653	1656	1658				B	1.9	4.7E-05	10714
27	1840	1843	1845				B	2.4	5.8E-05	
27	1918	1921	1924				B	2.2	7.0E-05	
27	1952	2000	2005				B	2.7	1.8E-04	
27	2058	2102	2107				B	3.7	1.7E-04	10713
27	2235	2240	2243	S11	W82	SF	B	4.7	1.6E-04	10713
28	0004	0010	0012	S11	W83	1F	C	7.2	1.3E-03	10713
28	0119	0131	0133				B	9.8	6.4E-04	10713
28	0153	0244	0255				B	7.2	2.1E-03	
28	0417	0421	0428				B	4.6	2.5E-04	10713
28	0453	0503	0507				B	3.2	2.4E-04	10713

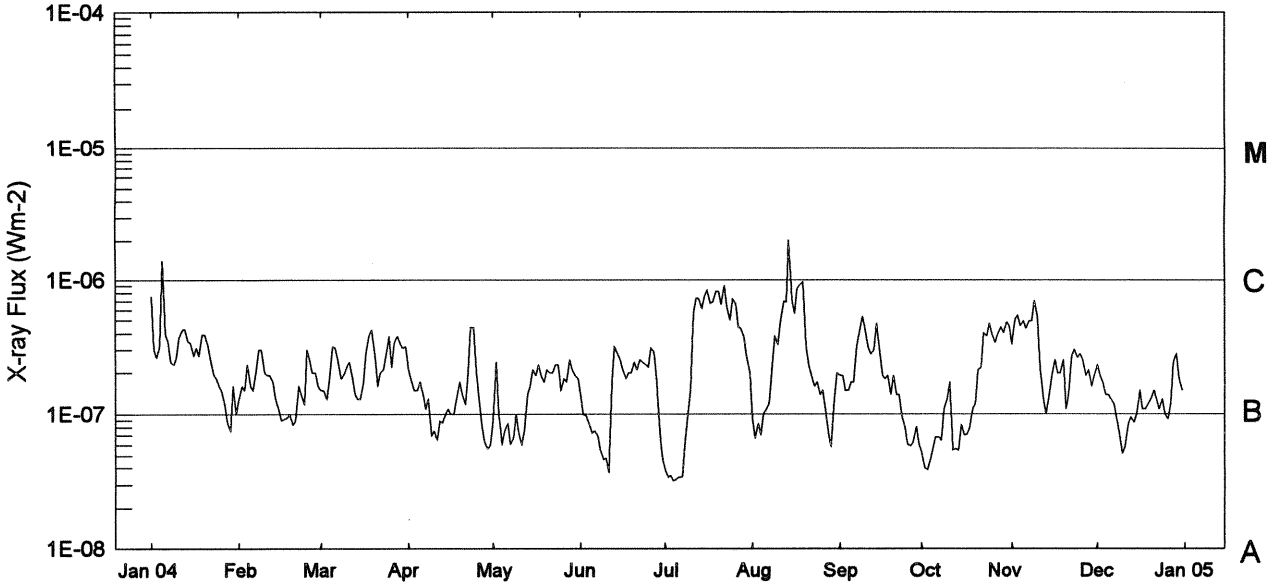
GOES S O L A R X-RAY F L A R E S

Preliminary Listing

December 2004

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	Flux	NOAA/ USAF Region
28	0600	0609	0613				C2.3	9.7E-04	10713
28	0628	0631	0634	S10	W64	SF	C2.4	5.3E-04	10713
28	0829	0832	0837				B4.0	1.6E-04	10713
28	0901	0906	0910				C1.1	4.1E-04	10713
28	0911	0918	0925	S12	W75	SF	C3.5	1.9E-03	10713
28	1043	1051	1057				C1.1	7.2E-04	10713
28	1122	1138	1141				B9.0	5.8E-04	10713
28	1228	1235	1240				C4.3	1.6E-03	10713
28	1330	1334	1336				B5.2	1.6E-04	10713
28	1359	1410	1413				B8.8	5.2E-04	10713
28	1438	1443	1450				B3.7	2.3E-04	10713
28	1545	1555	1600				C4.1	2.0E-03	10713
28	1638	1645	1653				B4.7	3.8E-04	10715
28	1741	1801	1828	N05	E77	SF	C7.2	1.6E-02	10715
28	2025	2029	2032				C1.9	7.0E-04	10715
28	2051	2057	2059	S12	W80	SF	C3.5	9.5E-04	10713
29	0214	0222	0236				C1.3	1.5E-03	10713
29	0253	0300	0303	S09	W90	SF	C7.5	2.4E-03	10713
29	0441	0500	0504				B6.1	6.9E-04	10713
29	0542	0553	0558				C4.9	2.4E-03	10713
29	0734	0824	0935				C2.6	1.2E-02	10713
29	1302	1305	1307				B6.7	1.6E-04	10713
29	1325	1338	1350				C2.5	2.4E-03	10713
29	1434	1438	1440				B6.3	1.9E-04	10713
29	1557	1627	1638				M2.3	1.8E-02	10715
29	1910	1920	1925				M1.4	6.9E-03	10713
29	2052	2056	2100				B9.5	3.7E-04	10713
29	2334	2338	2341				B4.0	1.5E-04	10713
30	0010	0013	0016				B3.5	1.1E-04	10713
30	0316	0320	0323				B2.5	9.0E-05	
30	0338	0346	0356				B5.1	4.4E-04	10713
30	0427	0431	0434	N03	E59	1F	B6.0	1.7E-04	10715
30	0617	0624	0631	N04	E60	SF	C2.5	1.3E-03	10715
30	0738	0742	0744				C1.6	3.7E-04	10715
30	0819	0843	0849				B6.5	8.4E-04	10715
30	1010	1017	1019				C1.3	4.5E-04	10715
30	1034	1047	1057	N03	E53	SF	M2.2	1.7E-02	10715
30	1214	1217	1219				C2.6	6.4E-04	10715
30	1313	1319	1322	N07	E51	SF	C1.0	4.2E-04	10715
30	1507	1511	1513				B5.8	1.8E-04	10715
30	1658	1702	1705				B5.1	1.7E-04	10715
30	1818	1821	1823				B3.8	9.4E-05	10715
30	2130	2136	2138				B2.8	1.2E-04	10715
30	2141	2152	2156	N02	E50	SF	C4.1	1.8E-03	10715
30	2202	2218	2228	N03	E48	2N	M4.2	3.6E-02	10715
31	0029	0043	0054				C1.2	1.5E-03	
31	0030	0043	0054	N03	E47	SF	C1.2	1.5E-03	10715
31	0411	0444	0513	N05	E45	SF	C5.7	1.3E-02	10715
31	1210	1224	1231				B7.2	6.8E-04	10715
31	1438	1445	1448				M1.2	3.4E-03	10715
31	1452	1459	1504	N02	E40	SF	C6.8	4.1E-03	10715
31	2222	2226	2231				B2.0	1.0E-04	
31	2245	2253	2256				B2.7	1.6E-04	10715

Preliminary GOES Satellite Daily X-Ray Background
Jan 2004 - Dec 2004



Day	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	B7.5	B1.3	B1.5	B2.1	A9.1	B1.4	A3.9	A9.1	B1.9	A4.0	B3.3	B2.3
2	B3.0	B1.6	B1.5	B1.7	B2.4	B1.0	A3.4	A6.6	B1.9	A3.9	B5.1	B1.9
3	B2.6	B1.5	B1.3	B1.5	B1.0	A9.7	A3.5	A8.5	B1.5	A4.5	B5.4	B1.7
4	B3.2	B2.3	B1.8	B1.5	A6.0	A8.5	A3.2	A7.0	B1.5	A5.7	B4.5	B1.4
5	C1.4	B1.6	B3.2	B1.7	A7.5	A7.2	A3.3	B1.0	B1.7	A6.8	B4.9	B1.4
6	B3.9	B1.5	B3.1	B1.4	A8.5	A7.5	A3.4	B1.1	B1.7	A6.8	B4.3	B1.3
7	B3.5	B2.1	B2.5	B1.1	A6.1	A6.9	A3.4	B1.2	B3.2	A6.4	B4.9	B1.2
8	B2.4	B3.0	B1.8	B1.3	A6.6	A5.5	A5.9	B2.3	B4.0	B1.1	B4.9	A9.2
9	B2.3	B3.0	B1.9	A6.9	B1.0	A4.7	B1.0	B3.8	B5.3	B1.3	B7.0	A6.8
10	B2.6	B2.0	B2.2	A7.5	A7.3	A4.8	B1.5	B3.3	B4.3	B1.7	B5.2	A5.2
11	B3.7	B1.9	B2.4	A6.5	A6.0	A3.7	B5.7	B4.9	B3.1	A5.5	B2.1	A5.8
12	B4.2	B1.9	B1.9	A8.9	A7.6	B1.7	B7.3	B6.9	B2.8	A5.6	B1.3	A8.5
13	B4.3	B1.7	B1.4	A8.6	B1.4	B3.2	B7.2	B6.8	B3.0	A5.5	B1.0	A9.5
14	B3.5	B1.3	B1.3	B1.0	B1.6	B2.8	B6.1	C2.0	B4.7	A8.3	B1.4	A8.7
15	B3.4	B1.1	B1.3	B1.1	B2.1	B2.5	B7.5	B7.0	B3.2	A7.0	B1.9	B1.0
16	B2.7	A9.0	B1.7	B1.0	B1.9	B2.1	B8.4	B5.6	B1.9	A7.1	B2.5	B1.5
17	B3.1	A9.2	B2.9	B1.0	B2.3	B1.8	B6.7	B8.7	B1.8	A7.9	B2.0	B1.1
18	B2.7	A9.4	B3.9	B1.3	B1.9	B2.0	B6.8	B9.2	B1.9	B1.1	B2.0	B1.1
19	B3.9	B1.0	B4.2	B1.7	B1.7	B2.0	B8.2	B9.7	B1.4	B1.2	B2.5	B1.2
20	B3.9	A8.3	B2.7	B1.4	B2.1	B2.4	B8.2	B3.2	B1.9	B2.1	B1.1	B1.3
21	B3.3	A8.9	B1.6	B1.2	B2.0	B2.1	B6.5	B2.3	B1.4	B2.2	B1.4	B1.5
22	B2.5	B1.6	B2.0	B2.0	B2.0	B2.5	B9.1	B1.9	B1.4	B4.0	B2.7	B1.3
23	B1.9	B1.4	B2.1	B4.4	B2.3	B2.4	B6.2	B1.6	A9.8	B3.8	B3.0	B1.1
24	B1.8	B1.2	B2.7	B4.4	B2.3	B2.3	B5.0	B1.7	A8.1	B4.7	B2.6	B1.3
25	B1.6	B3.0	B3.8	B2.0	B1.5	B2.2	B7.2	B1.4	A6.1	B3.9	B2.8	B1.0
26	B1.5	B2.5	B2.2	B1.2	B1.8	B3.1	B6.6	B1.5	A5.9	B3.4	B2.5	A9.2
27	B1.2	B2.0	B3.4	A7.8	B1.7	B2.9	B4.4	B1.0	A6.2	B3.9	B1.9	B1.2
28	A8.7	B2.0	B3.8	A6.2	B2.5	B1.7	B4.3	A7.1	A8.1	B4.4	B2.1	B2.4
29	A7.5	B1.6	B3.4	A5.6	B2.1	A7.3	B3.7	A5.8	A6.1	B4.0	B1.6	B2.8
30	B1.6		B3.1	A6.0	B1.9	A4.8	B2.6	B1.3	A5.4	B4.8	B1.9	B1.8
31	B1.0		B3.2		B1.8		B2.0	B2.0		B4.5		B1.5

Levels below B1.0 are unreliable.

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 2004

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
08	DSF	0908U	2223U	N06	E04	12	8.7	2	08	0	0	E	LEAR		
08	DSF	1917	1942	N01	W07	12	8.3		14	0	0	E	HOLL	0709	Flare Associated
15	EPL	2245	0113D	N25	E90	12	22.9	1		9	9	E	LEAR		
16	EPL	1556	2145	N25	E90	12	23.6	1		8	8	E	HOLL		
19	DSF	2328U	1417U	N22	E54	12	24.1		19	0	0	E	HOLL		
24	DSF	1445U	0721U	N03	E15	12	25.7		06	0	0	E	SVTO		
28	LPS	1832	1905	N03	E78	01	3.6	1		0	0	E	HOLL		
29	BSL	0309	0320	S23	W90	12	22.2	3		9	9	E	LEAR	0713	

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.

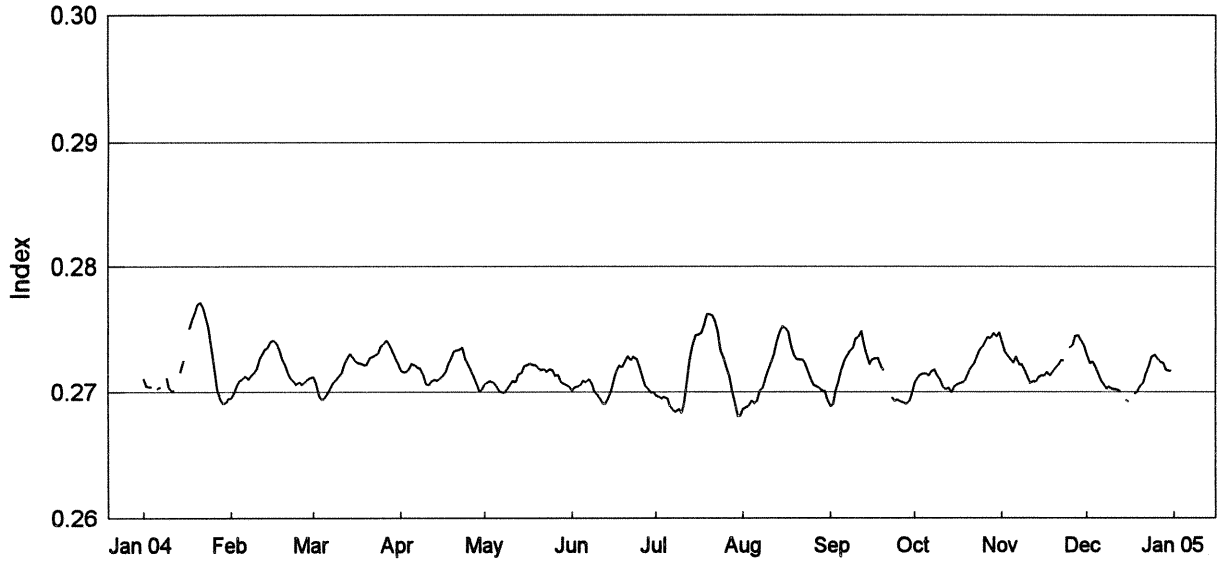
The remark "Bright Emission 1/3" indicates that bright emission was observed 1/3 of time.
The remark "Normal Emission 1/3" indicates that normal emission was observed 1/3 of time.

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

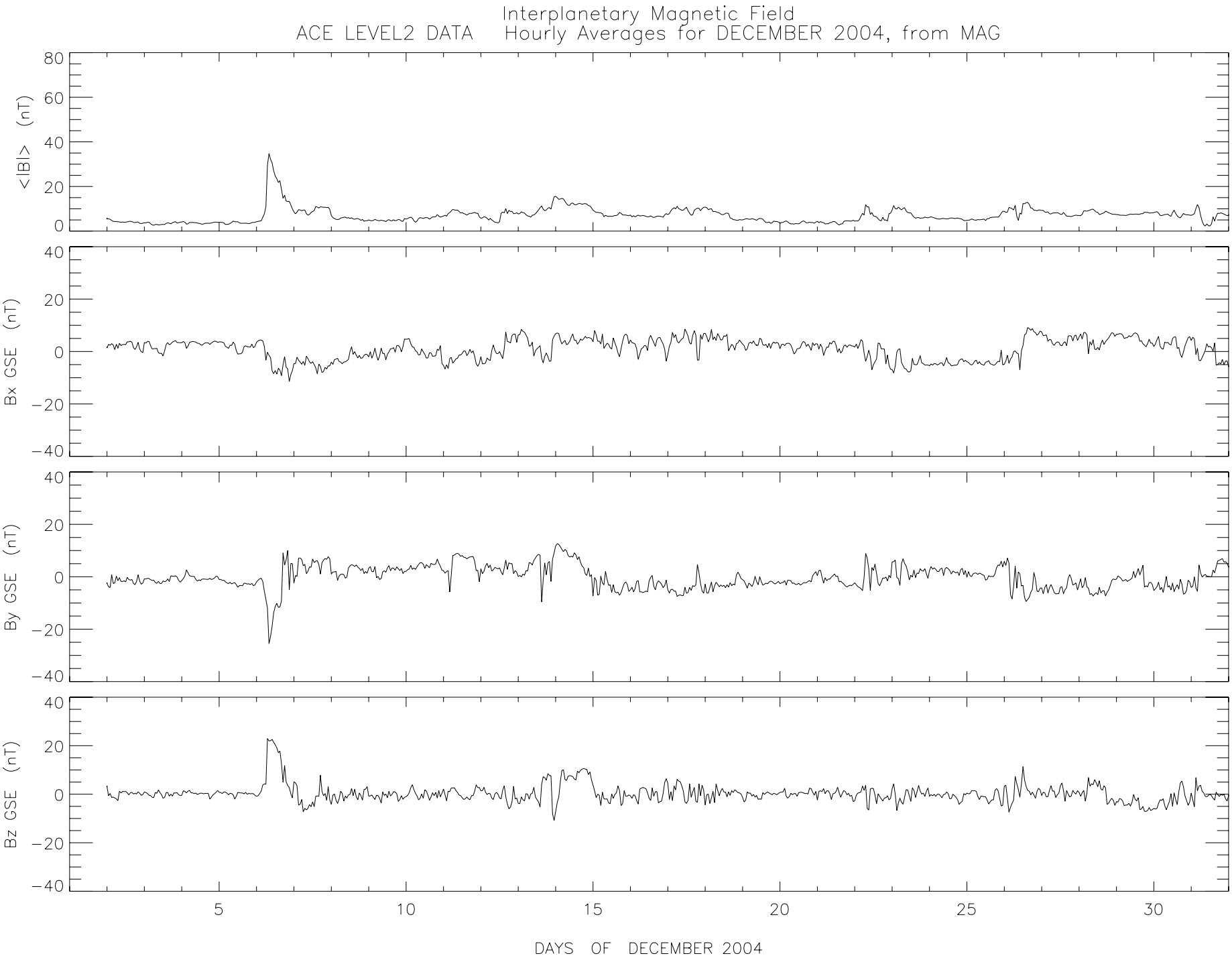
NOTE: The U.S. Air Force solar observing sites (HOLL, LEAR, RAMY, AND SVTO) have changed operational requirements and will only report the following: BSL, EPL, LPS, SPY, and DSF's.

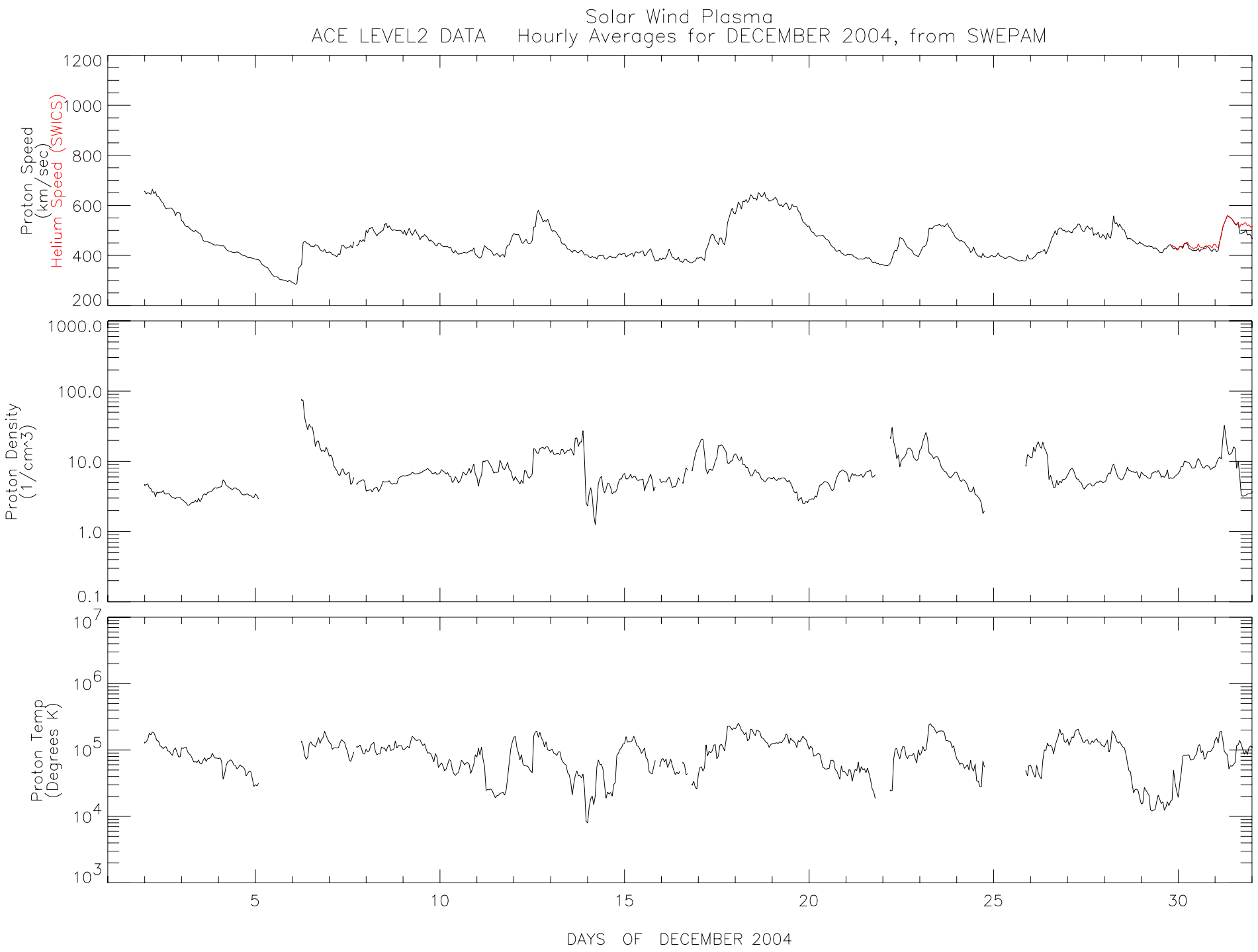
NOAA Solar Ultraviolet (UV) MgII Core-to-Wing Index
Jan 2004 - Dec 2004
Version 9.1

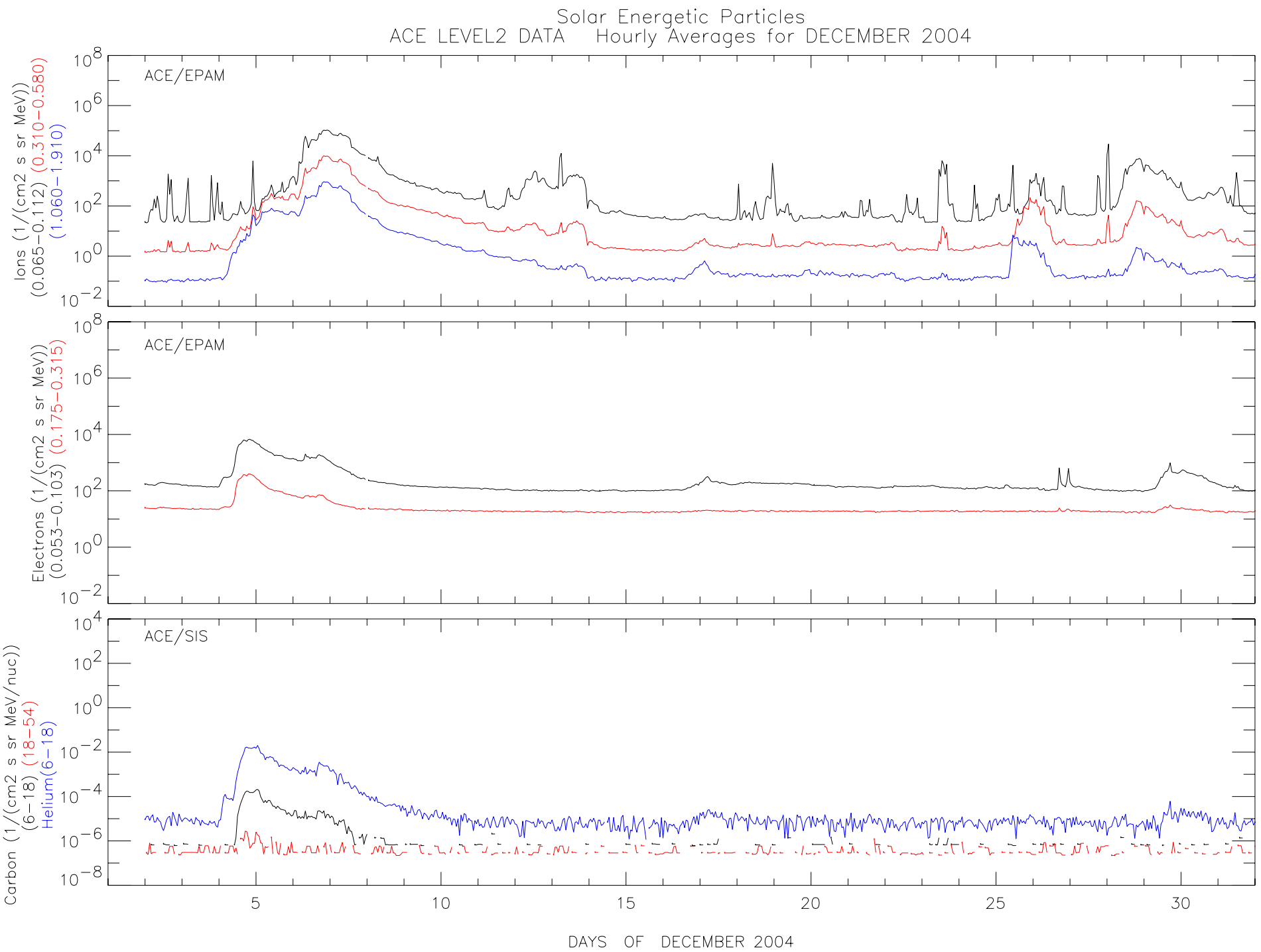


Day	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.2711	0.2695	0.2712	0.2717	0.2706	0.2701	0.2697	0.2686	0.2689	0.2707	0.2739	0.2729
2	0.2705	0.2699	0.2707	0.2716	0.2708	0.2704	0.2697	0.2688	0.2690	0.2711	0.2731	0.2723
3	0.2704	0.2705	0.2696	0.2716	0.2709	0.2705	0.2695	0.2689	0.2701	0.2713	0.2729	0.2724
4	0.2704	0.2709	0.2694	0.2718	0.2707	0.2706	0.2696	0.2693	0.2709	0.2715	0.2725	0.2720
5	----	0.2711	0.2695	0.2723	0.2705	0.2709	0.2695	0.2691	0.2717	0.2714	0.2722	0.2714
6	0.2703	0.2713	0.2698	0.2721	0.2701	0.2708	0.2689	0.2692	0.2724	0.2712	0.2728	0.2709
7	0.2705	0.2710	0.2703	0.2719	0.2700	0.2710	0.2686	0.2701	0.2728	0.2717	0.2721	0.2705
8	----	0.2713	0.2707	0.2719	0.2700	0.2707	0.2684	0.2703	0.2732	0.2718	0.2721	0.2702
9	0.2711	0.2715	0.2710	0.2714	0.2702	0.2700	0.2686	0.2711	0.2735	0.2713	0.2717	0.2704
10	0.2703	0.2719	0.2712	0.2707	0.2706	0.2698	0.2683	0.2718	0.2742	0.2709	0.2712	0.2702
11	0.2701	0.2725	0.2715	0.2705	0.2709	0.2695	0.2690	0.2724	0.2743	0.2704	0.2707	0.2702
12	0.2701	0.2730	0.2721	0.2708	0.2708	0.2691	0.2706	0.2730	0.2748	0.2702	0.2708	0.2702
13	----	0.2734	0.2727	0.2710	0.2714	0.2691	0.2726	0.2739	0.2737	0.2703	0.2708	0.2701
14	0.2716	0.2735	0.2730	0.2709	0.2715	0.2696	0.2736	0.2746	0.2729	0.2700	0.2712	---
15	0.2725	0.2740	0.2727	0.2710	0.2720	0.2701	0.2745	0.2752	0.2721	0.2705	0.2713	0.2693
16	----	0.2741	0.2725	0.2712	0.2721	0.2711	0.2745	0.2750	0.2725	0.2706	0.2712	0.2692
17	0.2750	0.2738	0.2723	0.2715	0.2723	0.2718	0.2746	0.2747	0.2727	0.2707	0.2715	---
18	0.2756	0.2733	0.2723	0.2721	0.2722	0.2721	0.2752	0.2737	0.2726	0.2708	0.2712	0.2698
19	0.2762	0.2727	0.2722	0.2727	0.2722	0.2720	0.2761	0.2728	0.2719	0.2709	0.2716	0.2700
20	0.2770	0.2722	0.2721	0.2732	0.2719	0.2724	0.2761	0.2726	0.2717	0.2715	0.2719	0.2704
21	0.2772	0.2716	0.2727	0.2733	0.2717	0.2728	0.2760	0.2726	---	0.2719	0.2721	0.2707
22	0.2767	0.2711	0.2728	0.2734	0.2718	0.2725	0.2756	0.2726	---	0.2722	0.2725	0.2714
23	0.2757	0.2708	0.2729	0.2735	0.2716	0.2728	0.2747	0.2722	0.2695	0.2727	0.2724	0.2720
24	0.2749	0.2706	0.2731	0.2726	0.2718	0.2726	0.2733	0.2717	0.2693	0.2732	---	0.2727
25	0.2732	0.2708	0.2736	0.2722	0.2718	0.2720	0.2727	0.2710	0.2694	0.2736	0.2735	0.2729
26	0.2718	0.2706	0.2738	0.2716	0.2713	0.2714	0.2719	0.2706	0.2692	0.2739	0.2737	0.2726
27	0.2702	0.2708	0.2741	0.2712	0.2713	0.2705	0.2712	0.2705	0.2692	0.2743	0.2744	0.2724
28	0.2694	0.2710	0.2738	0.2707	0.2708	0.2703	0.2701	0.2704	0.2690	0.2743	0.2745	0.2723
29	0.2691	0.2711	0.2732	0.2701	0.2707	0.2700	0.2692	0.2702	0.2693	0.2746	0.2741	0.2717
30	0.2691		0.2727	0.2702	0.2706	0.2700	0.2681	0.2701	0.2699	0.2744	0.2736	0.2716
31	0.2695		0.2723		0.2705		0.2681	0.2694		0.2747		0.2716
Mean	0.2722	0.2717	0.2720	0.2717	0.2711	0.2709	0.2716	0.2715	0.2715	0.2719	0.2723	0.2723

Data at: http://www.sec.noaa.gov/ftpmenu/sbuv.html


Interplanetary Magnetic Field
ACE LEVEL2 DATA Hourly Averages for DECEMBER 2004, from MAG
<|B|> (nT)
Bx GSE (nT)
By GSE (nT)
Bz GSE (nT)
80
60
40
20
0
40
20
0
−20
−40
5
10
15
20
25
30
DAYS OF DECEMBER 2004


Solar Wind Plasma
ACE LEVEL2 DATA Hourly Averages for DECEMBER 2004, from SWEPAM
Proton Speed (km/sec)
Helium Speed (SWICS)
1200
1000
800
600
400
200
Proton Density (1/cm^3)
1000.0
100.0
10.0
1.0
0.1
Proton Temp (Degrees K)
10^7
10^6
10^5
10^4
10^3
5
10
15
20
25
30
DAYS OF DECEMBER 2004


Solar Energetic Particles
ACE LEVEL2 DATA Hourly Averages for DECEMBER 2004
ACE/EPAM
Ions (1/(cm2 s sr MeV))
(0.065–0.112) (0.310–0.580)
(1.060–1.910)
ACE/EPAM
Electrons (1/(cm2 s sr MeV))
(0.053–0.103) (0.175–0.315)
ACE/SIS
Carbon (1/(cm2 s sr MeV/nuc))
(6–18) (18–54)
Helium(6–18)
DAYS OF DECEMBER 2004

SOLAR CORONAL MASS EJECTIONS (CMEs) FROM SOHO/LASCO

http://cdaw.gsfc.nasa.gov/

Center for Solar Physics and Space Weather (CSPSW) – The Catholic University of America/NRL/NASA

DECEMBER 2004

First C2 Appearance		Central Position	Width Angular	Linear Fit	—2nd order speed—			Accel	Measurement Position	Remarks
Date	Time UT	Angle degree	Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s	m/s^2	Angle degree	
2004/12/01	07:31:46	0	>198	834	896	772	802	-6.6	39	Partial Halo
2004/12/01	18:54:00	331	56	608	414	791	795	19.5	331	
2004/12/02	07:50:05	8	28	466	542	386	0	-15.7	10	
2004/12/02	08:50:05	38	3	483	430	534	966	33.7	39	
2004/12/03	00:26:05	Halo	360	1216	1314	1108	1136	-19.8	333	
2004/12/03	19:27:20	86	17	222	139	302	890	31.7	86	Only C2
2004/12/07	01:50:05	58	6	521	529	514	429	-3.9	60	Only C2
2004/12/07	15:06:05	112	27	150	77	219	649	17.0	115	Only C2
2004/12/08	05:26:06	163	7	561	498	628	1227	54.1	161	Only C2/3 points
2004/12/08	20:26:05	Halo	360	611	773	459	0	-87.2	310	Only C2/3 points
2004/12/11	15:40:20	94	34	521	592	449	180	-16.6	89	
2004/12/11	21:24:05	279	3	394	379	409	439	2.1	277	
2004/12/11	22:36:05	311	38	243	188	305	1005	40.3	313	Only C2/3 points
2004/12/12	02:00:05	218	5	476	341	625	1279	64.2	221	
2004/12/12	09:00:05	86	22	1036	1246	842	0	-84.5	80	
2004/12/12	14:12:05	131	24	813	880	745	725	-10.5	122	
2004/12/12	21:24:05	312	79	682	702	664	620	-4.5	296	
2004/12/13	23:12:05	91	10	247	----	----	----	------	91	Only C2/3 points
2004/12/14	00:48:06	59	39	412	289	554	517	7.5	58	
2004/12/15	08:24:05	280	15	753	680	826	1099	30.8	276	
2004/12/15	10:12:06	144	75	514	481	549	563	3.5	134	
2004/12/15	17:36:05	Halo	360	621	704	537	502	-11.1	1	
2004/12/15	23:48:05	263	16	537	476	604	619	6.6	261	
2004/12/16	04:24:05	138	24	725	804	645	0	-56.0	132	Only C2
2004/12/17	14:48:05	340	5	648	----	----	----	------	341	Only C2/2 points
2004/12/18	09:36:05	57	61	311	212	409	744	27.9	56	
2004/12/18	10:24:05	272	72	499	515	483	446	-2.7	279	
2004/12/19	08:36:05	133	49	532	498	566	639	7.5	123	
2004/12/19	10:48:06	40	70	275	0	483	1319	71.8	48	
2004/12/20	00:36:05	324	5	441	382	499	1193	53.3	321	Only C2
2004/12/20	01:12:06	108	15	455	823	86	0	-511.8	104	Only C2/3 points
2004/12/20	14:36:05	108	75	886	793	986	1252	53.7	118	Only 3 points
2004/12/24	05:24:05	120	86	312	316	308	271	-1.2	113	
2004/12/24	05:36:05	291	92	779	614	961	1336	58.0	302	
2004/12/24	16:24:05	248	33	181	86	277	427	8.9	249	
2004/12/25	07:24:06	74	101	256	230	281	626	13.8	58	Only C2
2004/12/25	20:57:13	157	7	307	300	314	327	0.7	159	
2004/12/25	22:12:05	333	40	113	176	58	0	-32.6	328	Only C2
2004/12/26	00:24:05	283	77	703	653	760	742	5.2	297	
2004/12/26	11:48:05	88	9	703	328	1063	2794	328.0	86	Only C2

SOLAR CORONAL MASS EJECTIONS (CMEs)
FROM SOHO/LASCO

http://cdaw.gsfc.nasa.gov/

Center for Solar Physics and Space Weather (CSPSW) – The Catholic University of America/NRL/NASA

DECEMBER 2004

First C2 Appearance		Central Position	Width Angular	Linear Fit	—2nd order speed—			Accel	Measurement Position	Remarks
Date	Time UT	Angle degree	Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s	m/s^2	Angle degree	
2004/12/26	13:12:05	240	61	199	194	204	362	3.8	248	Only C2
2004/12/26	17:00:05	134	5	677	771	582	0	-131.6	132	Only C2/3 points
2004/12/26	19:12:05	117	24	837	768	913	903	9.7	121	
2004/12/26	23:36:37	67	93	213	194	231	464	7.3	81	Only C2
2004/12/27	07:12:05	232	13	713	544	883	1361	64.5	239	
2004/12/27	14:24:05	255	23	414	495	325	0	-25.0	260	
2004/12/27	21:12:08	249	34	326	400	252	0	-41.2	255	Only C2
2004/12/27	23:12:05	236	45	322	323	320	301	-0.6	246	Only C2
2004/12/28	00:36:06	224	70	358	444	264	0	-15.9	234	
2004/12/28	01:48:05	228	66	360	432	282	0	-17.0	238	
2004/12/28	02:48:05	102	44	757	740	774	816	4.9	99	
2004/12/28	03:48:05	247	23	487	434	543	827	20.7	249	
2004/12/28	06:36:05	235	56	414	502	312	0	-10.7	238	
2004/12/28	09:48:05	226	65	487	585	391	251	-11.8	233	
2004/12/28	13:12:05	235	57	600	720	483	0	-43.2	240	
2004/12/28	16:12:05	227	73	553	572	533	523	-2.3	235	
2004/12/28	18:12:05	75	110	350	207	486	452	6.5	92	
2004/12/28	21:04:13	242	58	498	493	503	501	0.4	243	
2004/12/29	01:57:05	235	7	640	597	680	838	14.7	233	
2004/12/29	03:21:06	222	34	579	762	382	0	-24.7	232	
2004/12/29	06:21:07	227	41	553	592	514	518	-3.7	233	
2004/12/29	07:45:06	103	24	305	189	419	1149	53.2	102	Only C2
2004/12/29	09:21:05	105	36	345	293	399	440	4.6	103	
2004/12/29	10:57:05	227	32	649	788	515	0	-28.7	233	
2004/12/29	16:45:05	239	12	607	726	479	440	-15.2	243	
2004/12/29	16:45:05	71	140	774	938	602	703	-17.2	79	Partial Halo
2004/12/29	19:45:05	244	30	550	580	520	485	-4.3	241	
2004/12/30	00:45:05	238	27	398	531	264	0	-41.2	239	
2004/12/30	07:57:05	266	8	579	----	----	----	------	266	
2004/12/30	10:57:06	72	>176	1247	1154	1334	1312	15.7	91	Partial Halo
2004/12/30	17:45:05	87	54	231	180	282	489	8.4	92	
2004/12/30	22:30:05	Halo	360	1035	1039	1031	1032	-0.6	82	
2004/12/31	15:30:05	61	143	802	868	735	752	-7.8	87	Partial Halo
2004/12/31	17:06:05	277	116	293	313	273	0	-4.3	279	
2004/12/31	22:30:05	228	28	511	565	457	0	-26.0	231	

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CME heights are measured at the fastest segment of the leading edge
PA= Postion Angle measured from Solar North in degrees (Counter clockwise)
ONLINE -- Click on date to view java script movies
ONLINE -- Click on time to see height-time digital files
ONLINE -- Click on speed to view height-time plot
Numbers in 2nd order fit columns correspond to the speed at the last height of measurement and at a distance of 20 solar radii.