

APRIL 2009 NUMBER 776 - Part II

Solar-Geophysical Data comprehensive reports



Data for October 2008

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NATIONAL ENVIRONMENTAL SATELLITE,
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APRIL 2009 NUMBER 776 - Part II

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Data for October 2008

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NATIONAL GEOPHYSICAL DATA CENTER

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SOLAR-GEOPHYSICAL DATA

Number 776

(Issued in Two Parts)

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CONTENTS

PART I (PROMPT REPORTS)

Page

DETAILED INDEX FOR 2008-2009	2
DATA FOR MARCH 2009	3- 32
DATA FOR FEBRUARY 2009	33- 91

PART II (COMPREHENSIVE REPORTS)

Page

DETAILED INDEX FOR 2008-2009	2
DATA FOR OCTOBER 2008	3- 22

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	AUG	SEP	OCT	NOV	DEC	Jan 09	FEB	Mar
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	770A 40	771A 40	772A 40	773A 42	774A 40	775A 38	776A 40	
A.2aa	International Sunspot Numbers	769A 24	770A 23	771A 24	772A 23	773A 24	774A 24	775A 20	776A 24
A.2c	American Sunspot Numbers	769A 24	770A 23	771A 24	772A 23	773A 24	774A 24	775A 20	776A 24
A.3a	Mt. Wilson Magnetograms	770A 40	771A 40	772A 40	773A 42	774A 40	775A 38	776A 40	
A.3b	Sunspot Mag Class and Regions	770A 77	771A 75	772A 77	773A 77	774A 77	775A 75	776A 73	
A.3c	Kitt Peak Magnetograms	770A 40	771A 40	772A 40	773A 42	774A 40	775A 38	776A 40	
A.3d	Mean Solar Mag Field (Stanford)	769A 30	770A 29	771A 31	772A 30	773A 30	774A 30	775A 28	776A 30
A.3e	Stanford Magnetograms	770A 40	771A 40	772A 40	773A 42	774A 40	775A 38	776A 40	
A.4	H-alpha Filtergrams	770A 40	771A 40	772A 40	773A 42	774A 40	775A 38	776A 40	
A.5d	PhotometricCa FaculaeSanFernando	Jan 92-Dec 96-631B 22; 1997-1998 663B 66							
A.6c	Stanford Solar Mag Field Map	770A 34	771A 34	772A 34	773A 36	774A 34	775A 32	776A 34	
A.6d	Kitt Peak Mag Field Synoptic Map	770A 39	771A 39	772A 39	773A 41	774A 39	775A 37	776A 39	
A.6f	Active Prominences and Filaments	774B 16	775B 15	776B 16					
A.6g	Sac Peak Coronal Line Maps	770A 36	771A 36	772A 36	773A 39	774A 37	775A 35	776A 37	
A.6h	Photometric WL SanFernando	Jul-Dec 96 630B 32; 1997-1998 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	770A 38	771A 38	772A 38	773A 40	774A 38	775A 36	776A 38	
A.7j	Coronal Hole Daily Maps (NSO/KP)								
A.7k	Coronal Index (Slovak Academy)	1939-1996 - 644B 28							
A.7m	Coronal Mass Ejections (CSPSW)	774B 21	775B 20	776B 21					
A.8aa	2800 MHz- Solar Flux (Penticton)	769A 24	770A 23	771A 24	772A 23	773A 24	774A 24	775A 20	776A 24
A.8ac	2800 MHz Adj Solar Flux (Pent.)	769A 24	770A 23	771A 24	772A 23	773A 24	774A 24	775A 20	776A 24
A.8g	Adjusted Daily Solar Flux SGMR	769A 24	770A 23	771A 24	772A 23	773A 24	774A 24	775A 20	776A 24
A.10g	Nancay Radioheliolo 150.9&327MHz	770A 83	771A 80	772A 83	773A 84	774A 83	775A 80	776A 78	
A.10h	Nobeyama Radioheliogr 17 GHz	770A 71	771A 70	772A 71	773A 72	774A 71	775A 69	776A 68	
A.11g	Solar X-ray GOES (graphs)	774B 9	775B 9	776B 9					
A.11g	Solar X-ray GOES (event table)	769A 28	770A 27	771A 28	772A 27	773A 28	774A 28	775A 26	776A 28
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.11p	Solar UV Mg II Daily Index	774B 17	775B 16	776B 17					
A.12g	Solar Particles (GOES)	769A 4	770A 4	771A 4	772A 4	773A 4	774A 4	775A 4	776A 4
A.12i	Solar Energetic Particles (ACE)	774B 20	775B 19	776B 20					
A.13g	Solar Plasma (ACE)	774B 19	775B 18	776B 19					
A.16c	ERBS	NOAA-9 & Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-May 2001 684B 26 - Complete Mission							
A.16e	VIRGO/SOHO Solar Irradiance	Jan 96-Sep 00 in 678B 46							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan94 in 611A118							
A.17d	ACE Interplanetary Mag Field	774B 18	775B 17	776B 18					
C.	SOLAR FLARE-ASSOCIATED EVENT								
C.1a	H-alpha Flares	769A 27	770A 26	771A 27	772A 26	773A 27	774A 27	775A 25	776A 27
C.1ba	H-alpha Flare Groups	774B 4	775B 4	776B 4					
C.1d	Flare Patrol Observations	774B 6	775B 6	776B 6					
C.1h	H-alpha Flare Index (ImpxDur)	Jan 76-Dec 85 in 639B 26; Jan 86-Oct 96 in 635B 24; Jan 96-Dec 98 in 665B 63							
C.3	Radio Bursts Fixed Frequency	774B 8	775B 8	776B 8					
C.3	Radio Bursts Fixed Freq Selected	769A 29	770A 28	771A 29	772A 28	773A 29	774A 29	775A 27	776A 29
C.4	Radio Bursts Spectral	770A 79	771A 77	772A 79	773A 80	774A 79	775A 77	776A 75	
C.6	Sudden Ionospheric Disturbances	770A 78	771A 76	772A 78	773A 79	774A 78	775A 76	776A 74	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	770A 90	771A 87	772A 90	773A 92	774A 88	775A 85	776A 83	
D.1ba	27-day Chart of Kp Indices	770A 92	771A 89	772A 91	773A 94	774A 90	775A 87	776A 85	
D.1cb	Monthly Mean aa Indices	770A 93	771A 90	772A 93	773A 95	774A 91	775A 89	776A 86	
D.1d	Principal Magnetic Storms	770A 97	771A 94	772A 97	773A 99	774A 95	775A 95	776A 90	
D.1f	Sudden Commencements	770A 98	771A 95	772A 98	773A100	774A 96	775A 96	776A 91	
D.1g	Equatorial Indices Dst	770A 95	771A 92	772A 95	773A 97	774A 93	775A 93	776A 88	
D.1l	Polar Cap (PC) Index	770A 96	771A 93	772A 96	773A 98	774A 94	775A 94	776A 89	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1h	Cosmic Ray Neutron Cts (Thule)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1l	Cosmic Ray Neutron Cts (Kiel)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1n	Cosmic Ray Neutron Cts (Beijing)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1m	Cosmic Ray Neutron (Haleakala)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1o	Cosmic Ray Neutron (Moscow)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
F.1p	Cosmic Ray Neutron Cts (Calgary)	770A 84	771A 82	772A 85	773A 87	774A 85	775A 82	776A 80	
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	769A 20	770A 20	771A 20	772A 19	773A 20	774A 20	775A 18	776A 20

The entry "748A 48" under Oct, for example, means the sunspot drawings for Oct appear in SOLAR-GEOPHYSICAL DATA No 748, Part I, and that they begin on page 48, "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

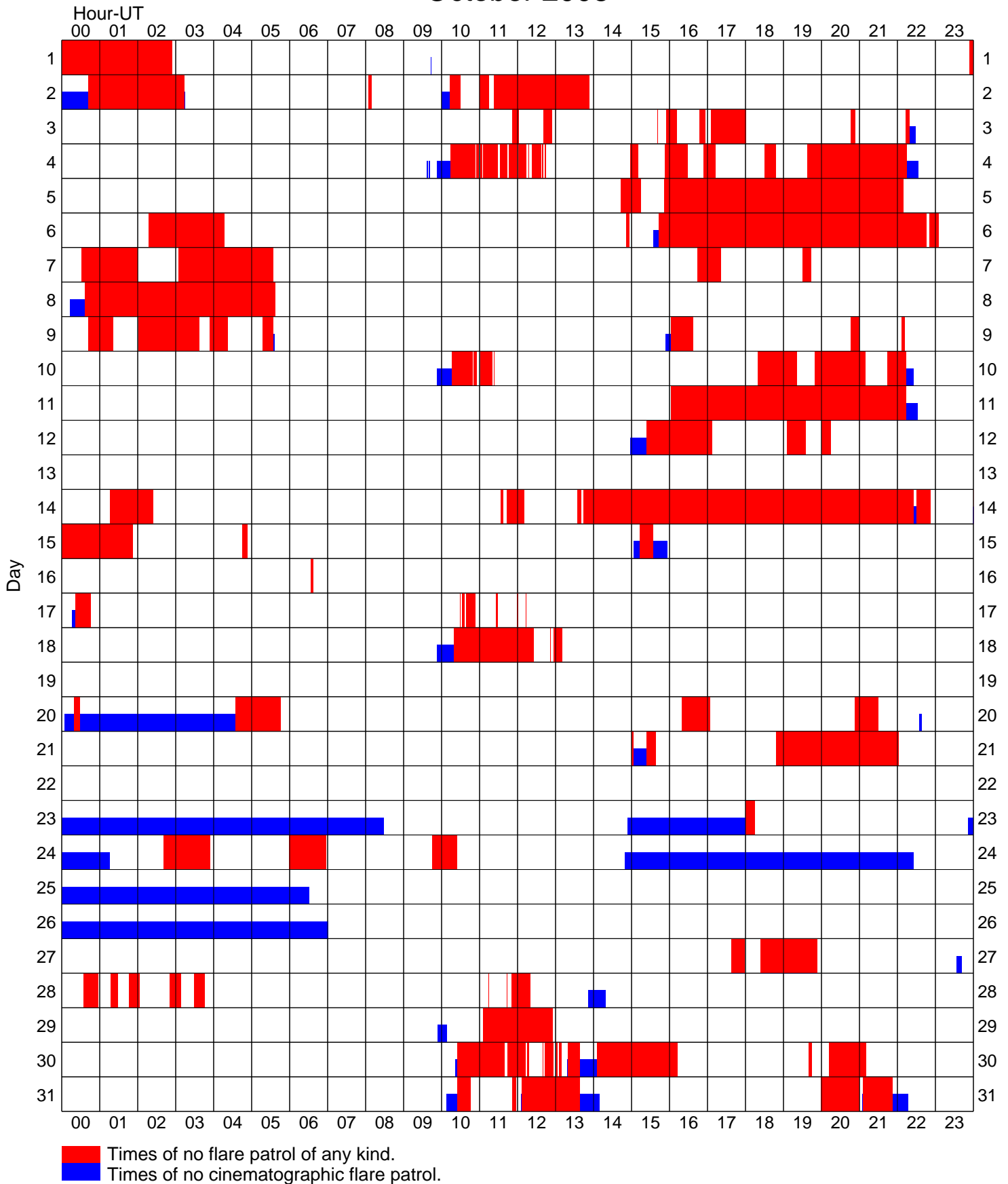
Comprehensive Reports

Number 776 Part II

DATA FOR OCTOBER 2008

	Page
SOLAR FLARES	
H-alpha Solar Flare Groups	4- 5
Intervals of No Flare Patrol Observation	6
Number of Solar Flares January 1965-present	7
SOLAR RADIO BURSTS AT FIXED FREQUENCIES	8
SOLAR X-RAY RADIATION FROM GOES SATELLITE	
Graphs	9- 14
Preliminary Event List -- See Solar X-ray Flare List in Jun Prompt Reports	
Preliminary Daily Average Background	15
ACTIVE PROMINENCES AND FILAMENTS	16
SOLAR ULTRAVIOLET DAILY DATA FROM NOAA SATELLITE	
NOAA Mg II Daily Index Version 9.1	17
INTERPLANETARY ENVIRONMENT HOURLY AVERAGE PLOTS	
FROM ADVANCED COMPOSITION EXPLORER (ACE) SATELLITE	
Interplanetary Magnetic Field -- MAG	18
Solar Wind Plasma -- SWEPAM	19
Solar Energetic Particles -- EPAM/SIS (Ions, Electrons, and Carbon)	20
SOLAR CORONAL MASS EJECTIONS from SOHO/LASCO SATELLITE	
Table of Events	21- 22

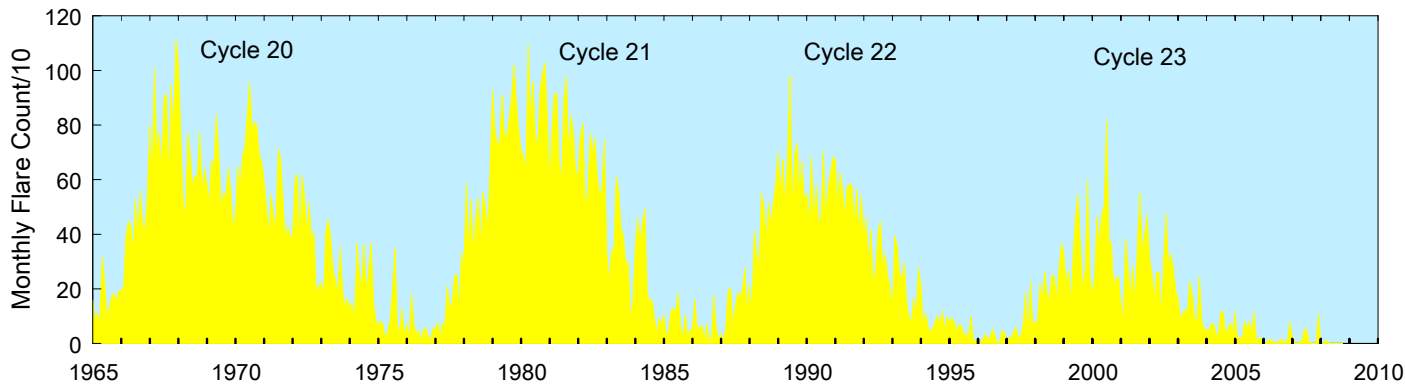
Intervals of No Flare Patrol Observation for Preceding Solar Flare Table October 2008



Stations participating: Holloman, Learmonth, SanVito, Kanzelhoehe.

Monthly Counts of Grouped Solar Flares

Jan 1965 - Oct 2008



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
2005	114	10	28	11	82	56	81	35	114	4	20	16	571
2006	4	0	11	16	4	2	1	17	11	3	12	78	159
2007	29	2	1	2	9	47	53	9	0	0	2	107	261
2008	2	0	12	4	0	0	0	0	0	0			18

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

8
Oct 08

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

October 2008

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		

No Reports

Reports are received routinely from the following observatories:

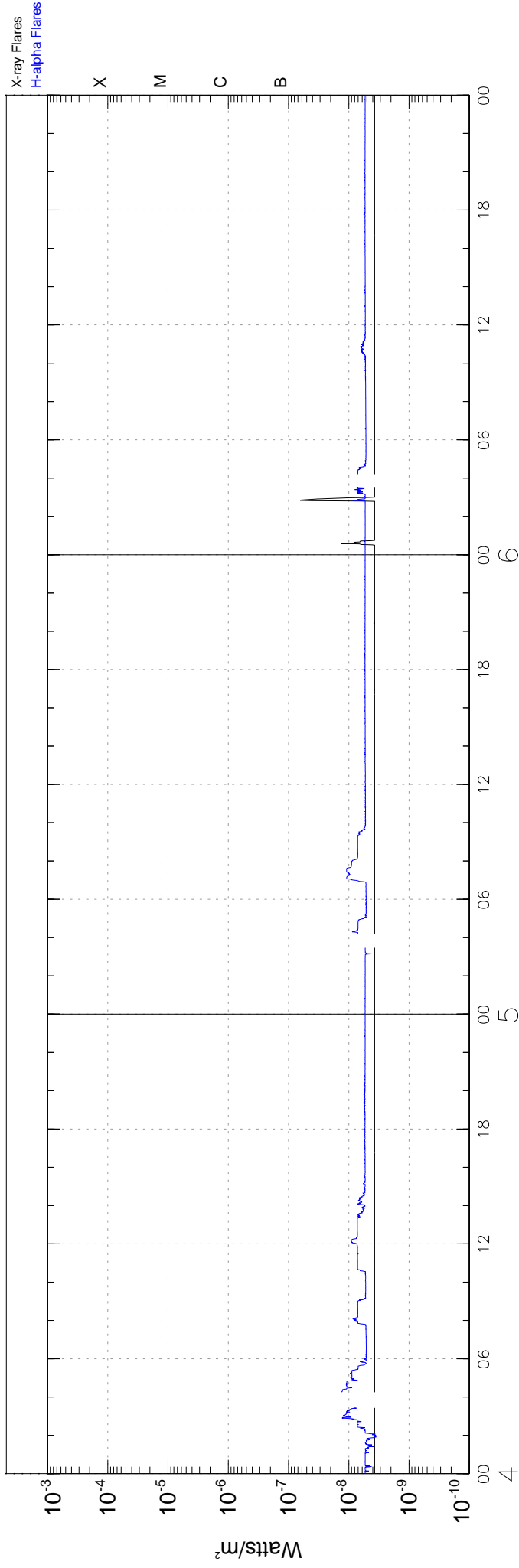
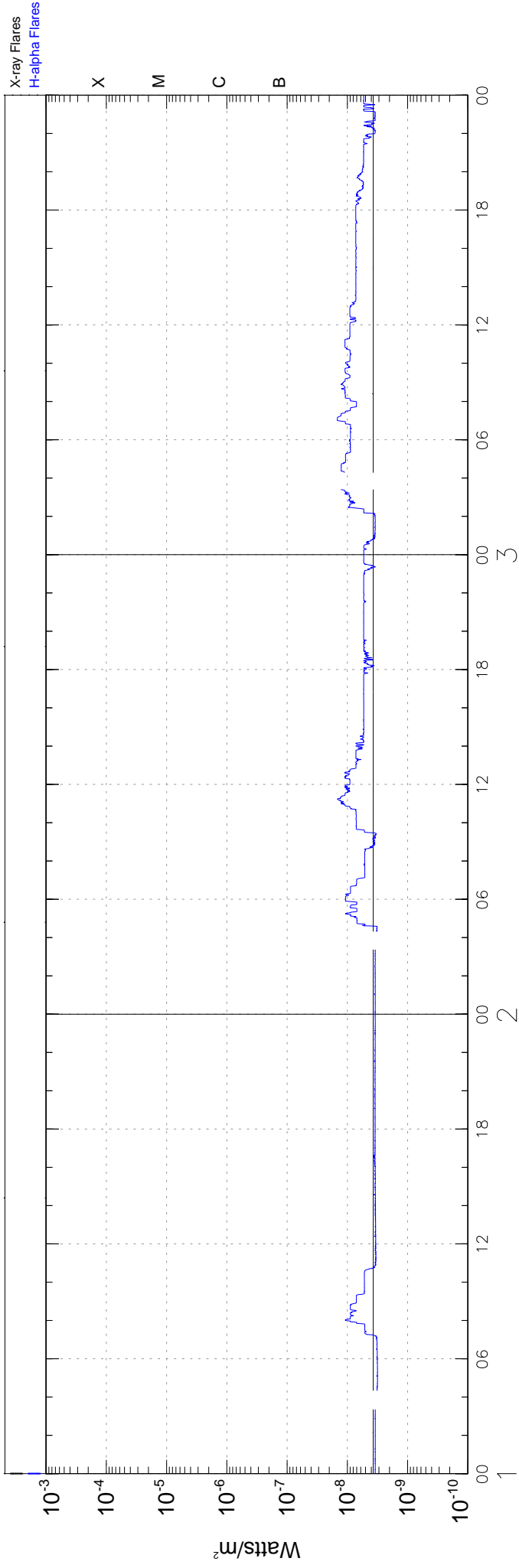
CUBA = Havana	LEAR = Learmonth	SGMR = Sagamore Hill
GORK = Gorky	PEKG = Peking	SVTO = San Vito
HIRA = Hiraiso	PALE = Palehua	TORN = Torun
IZMI = IZMIRAN	PENT = Penticton	UPIC = Upice

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	

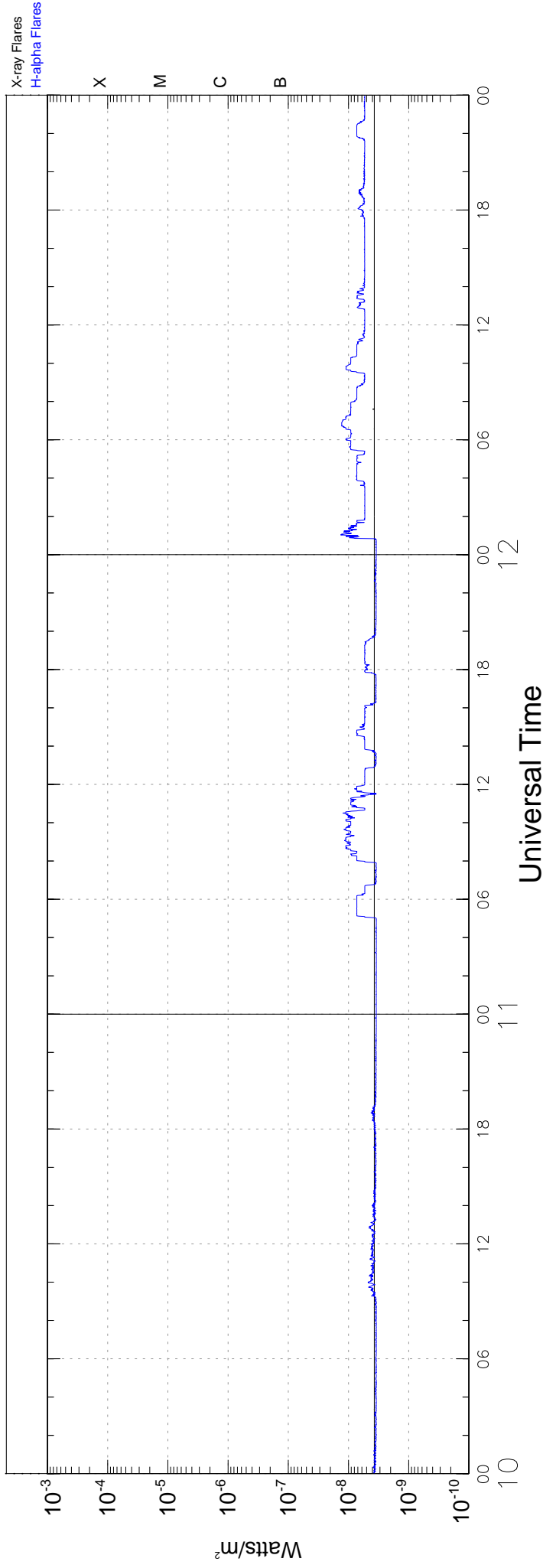
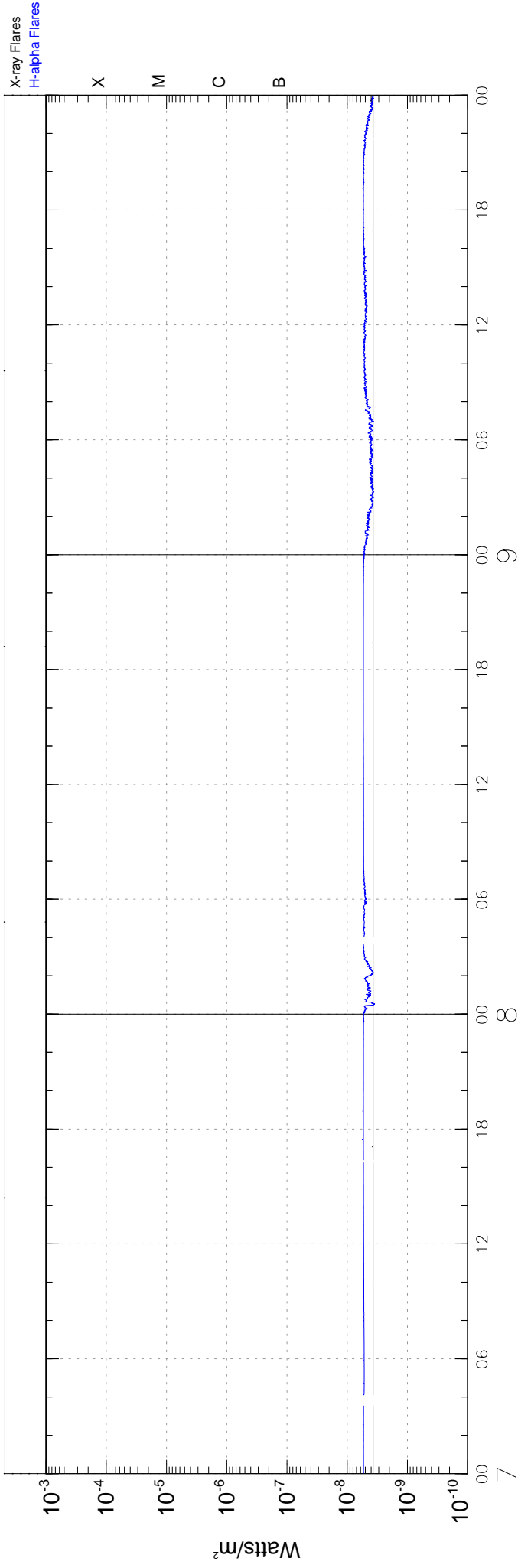
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; and Hiraiso, Japan 500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

GOES-10 Solar X-Rays (1-Minute Averages) October 2008

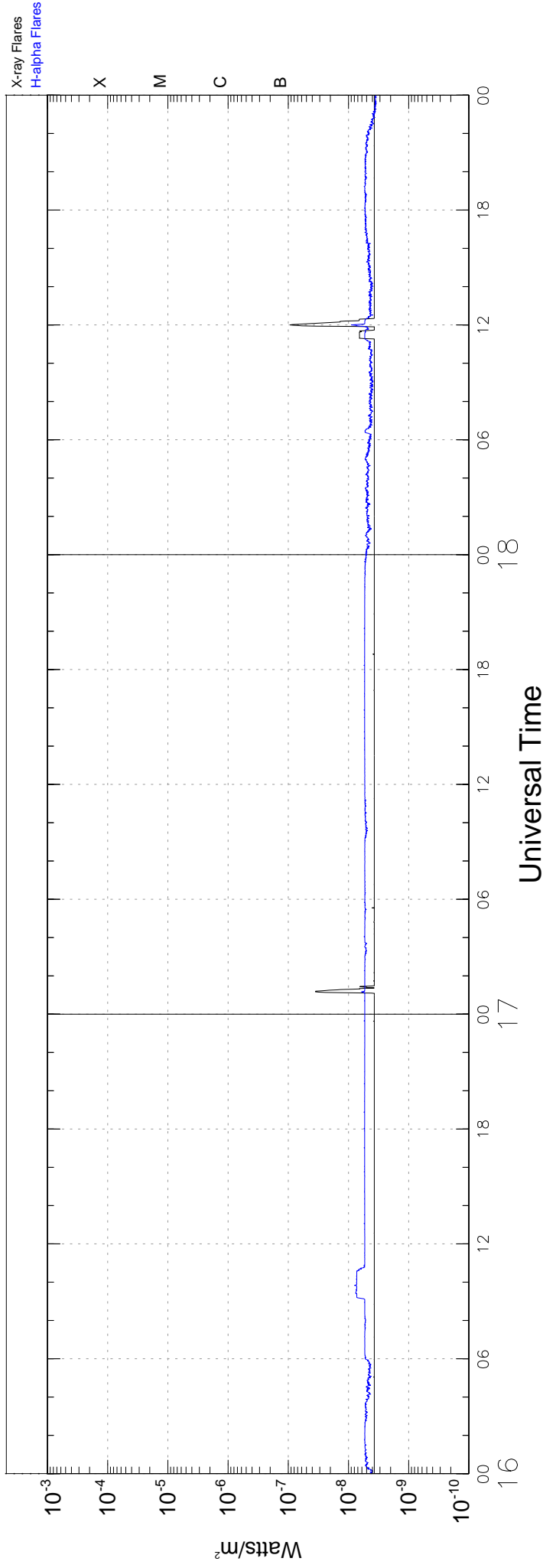
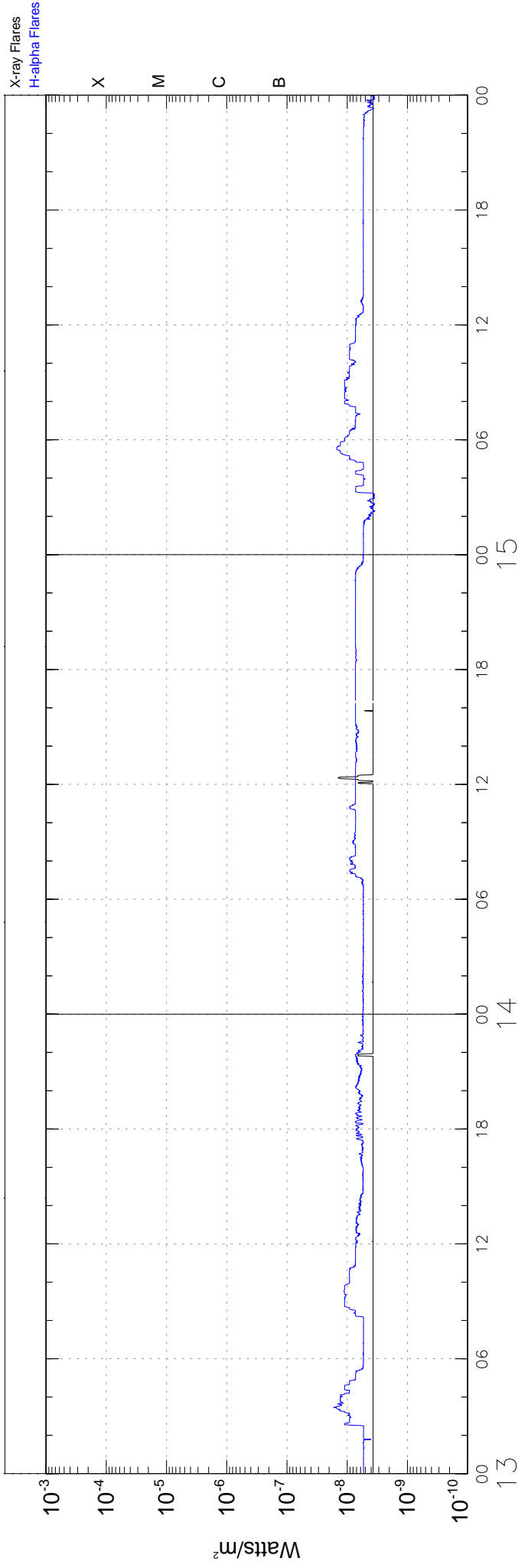


Universal Time

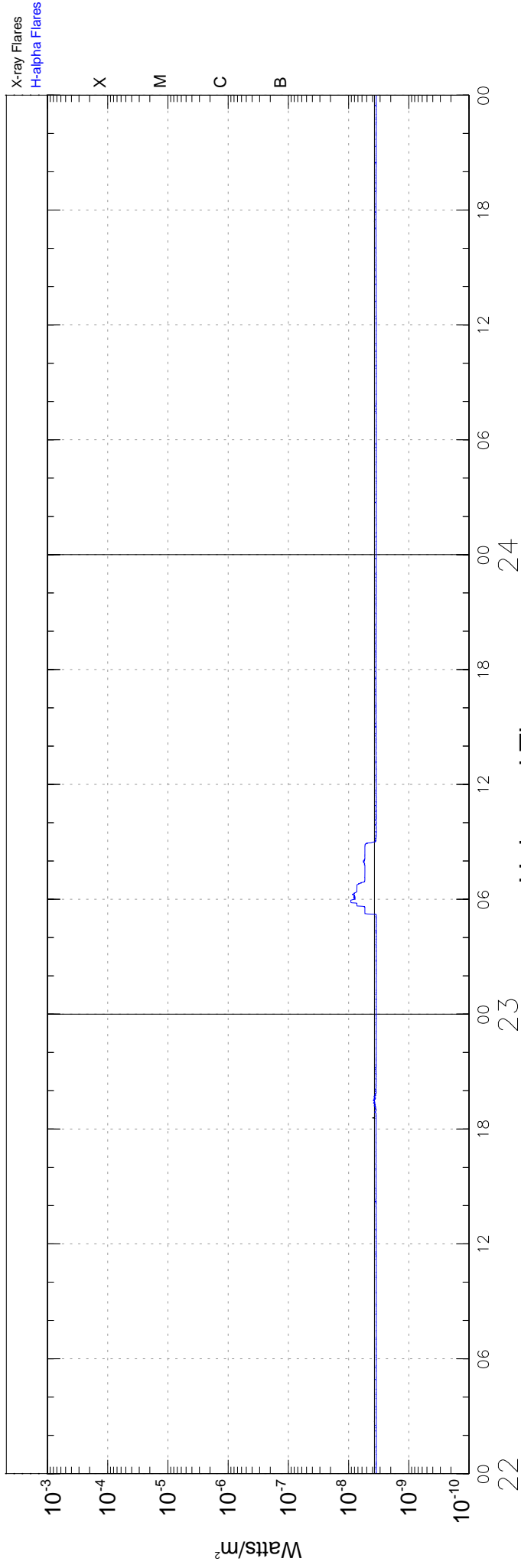
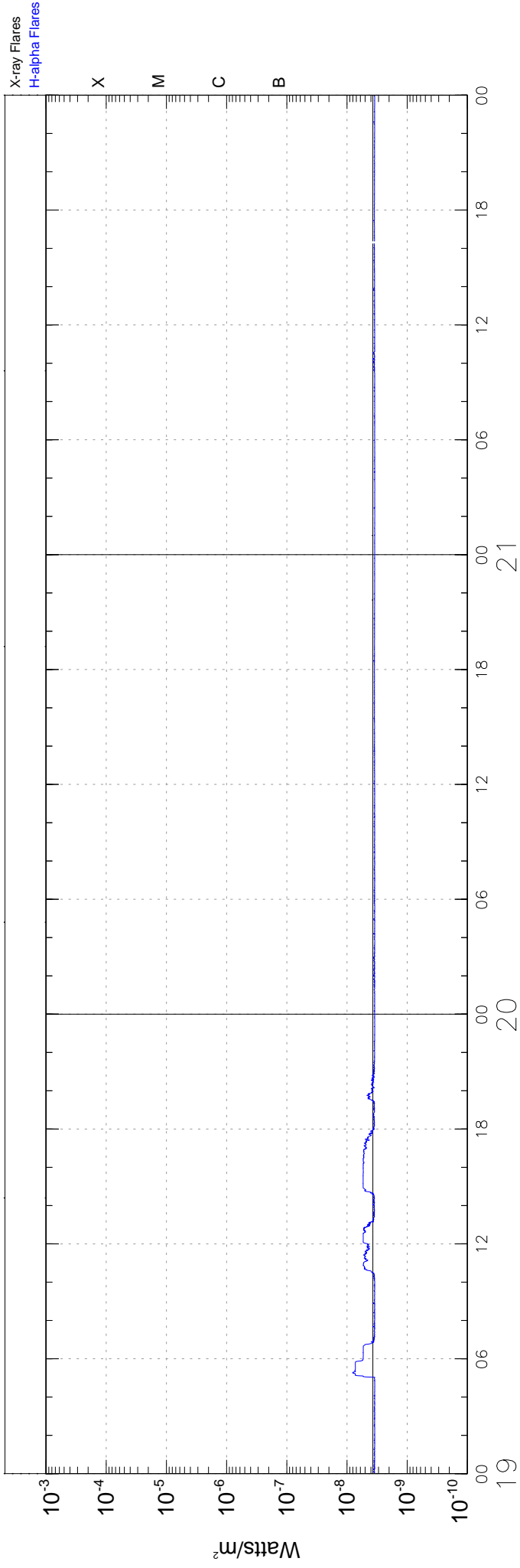
GOES-10 Solar X-Rays (1-Minute Averages) October 2008



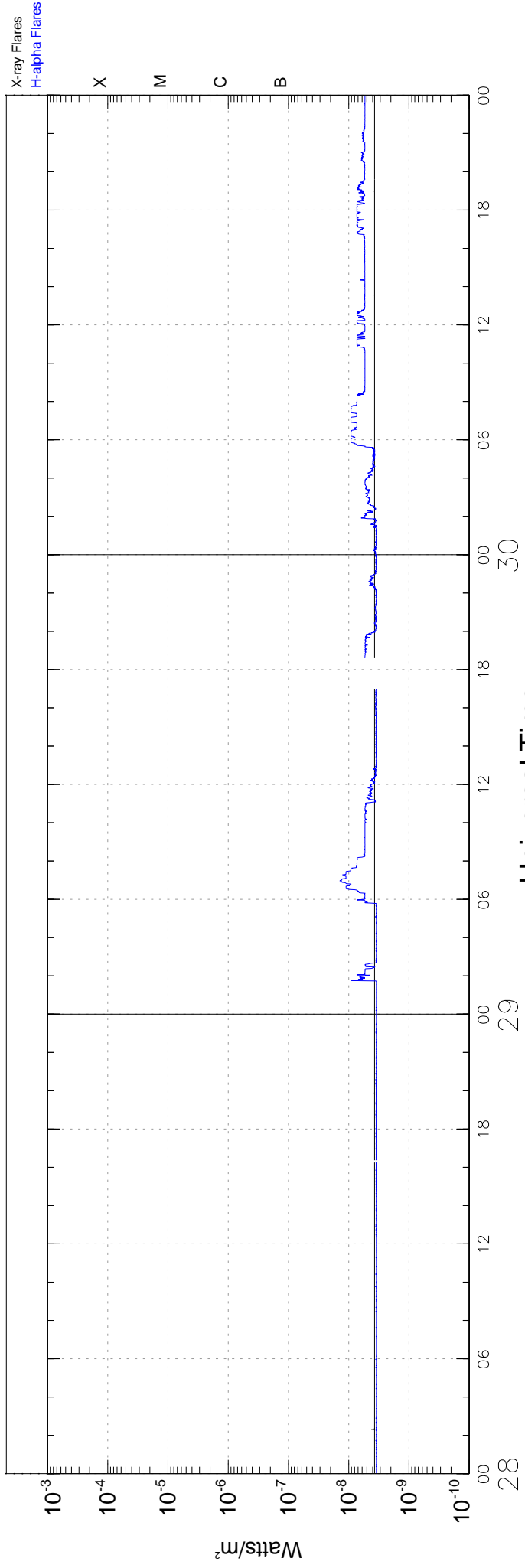
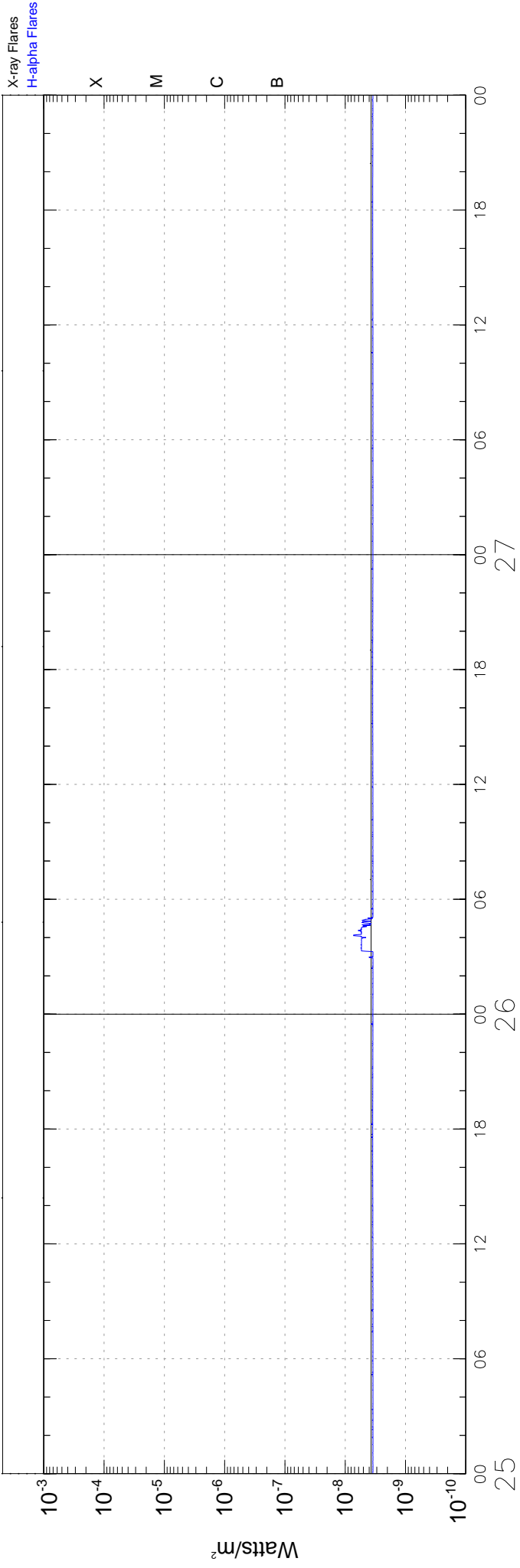
GOES-10 Solar X-Rays (1-Minute Averages) October 2008



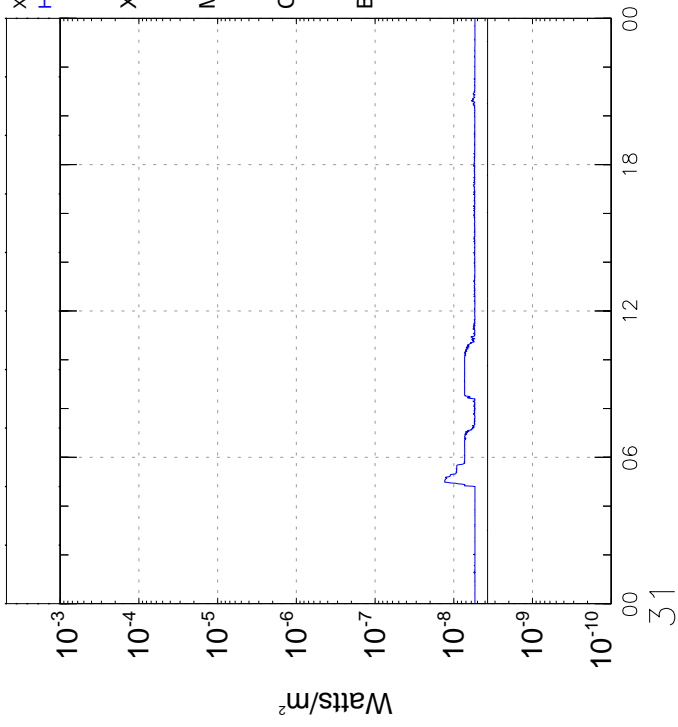
GOES-10 Solar X-Rays (1-Minute Averages) October 2008



GOES-10 Solar X-Rays (1-Minute Averages) October 2008



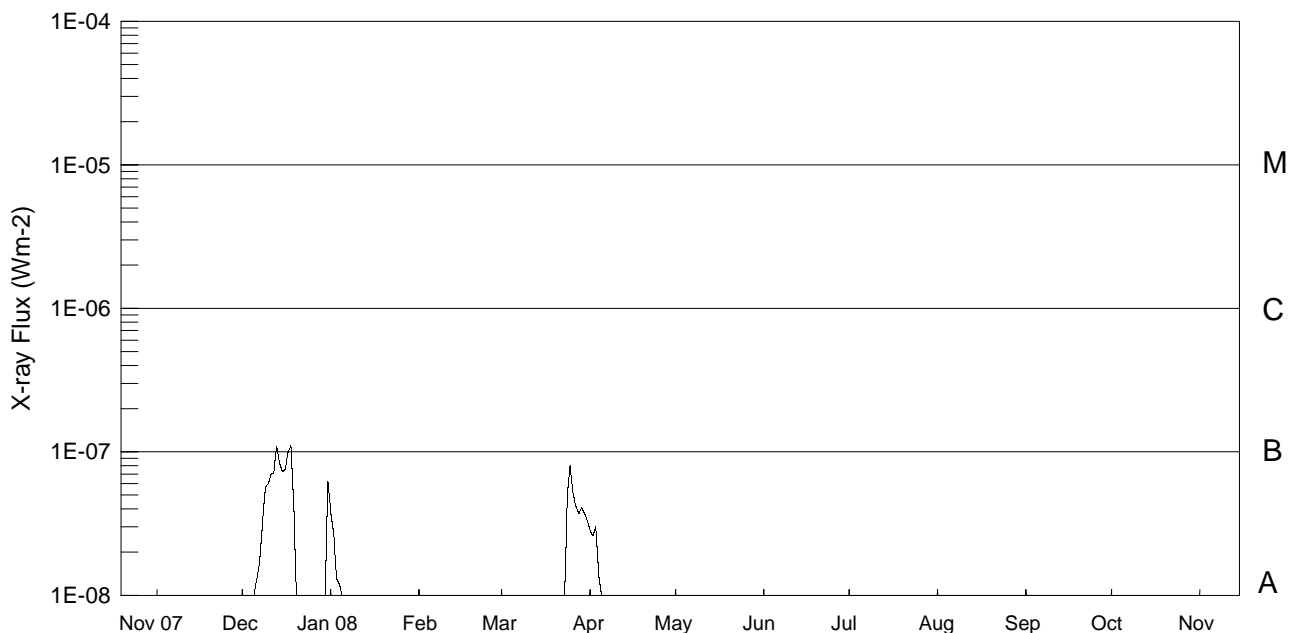
X-ray Flares
H-alpha Flares



Preliminary GOES Satellite Daily X-Ray Background

Nov 2007 - Oct 2008

15
Oct 08



Day	Nov 07	Dec	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	<A1.0	<A1.0	A3.8	<A1.0	<A1.0	A2.8	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
2	<A1.0	<A1.0	A2.7	<A1.0	<A1.0	A2.6	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
3	<A1.0	<A1.0	A1.3	<A1.0	<A1.0	A3.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
4	<A1.0	<A1.0	A1.2	<A1.0	<A1.0	A1.4	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
5	<A1.0	<A1.0	A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
6	<A1.0	A1.3	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
7	<A1.0	A1.7	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
8	<A1.0	A3.2	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
9	<A1.0	A5.7	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
10	<A1.0	A6.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
11	<A1.0	A7.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
12	<A1.0	A7.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
13	<A1.0	B1.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
14	<A1.0	A8.4	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
15	<A1.0	A7.3	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
16	<A1.0	A7.5	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
17	<A1.0	B1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
18	<A1.0	B1.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
19	<A1.0	A4.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
20	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
21	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
22	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
23	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
24	<A1.0	<A1.0	<A1.0	<A1.0	A5.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
25	<A1.0	<A1.0	<A1.0	<A1.0	A8.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
26	<A1.0	<A1.0	<A1.0	<A1.0	A5.2	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
27	<A1.0	<A1.0	<A1.0	<A1.0	A4.2	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
28	<A1.0	<A1.0	<A1.0	<A1.0	A3.7	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
29	<A1.0	<A1.0	<A1.0	<A1.0	A4.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
30	<A1.0	<A1.0	<A1.0		A3.7	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0
31		A6.2	<A1.0		A3.3		<A1.0		<A1.0	<A1.0		<A1.0

Levels below B1.0 are unreliable.

16
Oct 08

ACTIVE PROMINENCES AND FILAMENTS

OCTOBER 2008

Event	Start	End						Blue	Red			NOAA/				
Day	Type	(UT)	(UT)	Lat	CMD	CMP	Mo	Day	Imp	Extent	(.1 A)	(.1 A)	Obs	Sta	Reg#	Remarks

No Reports

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

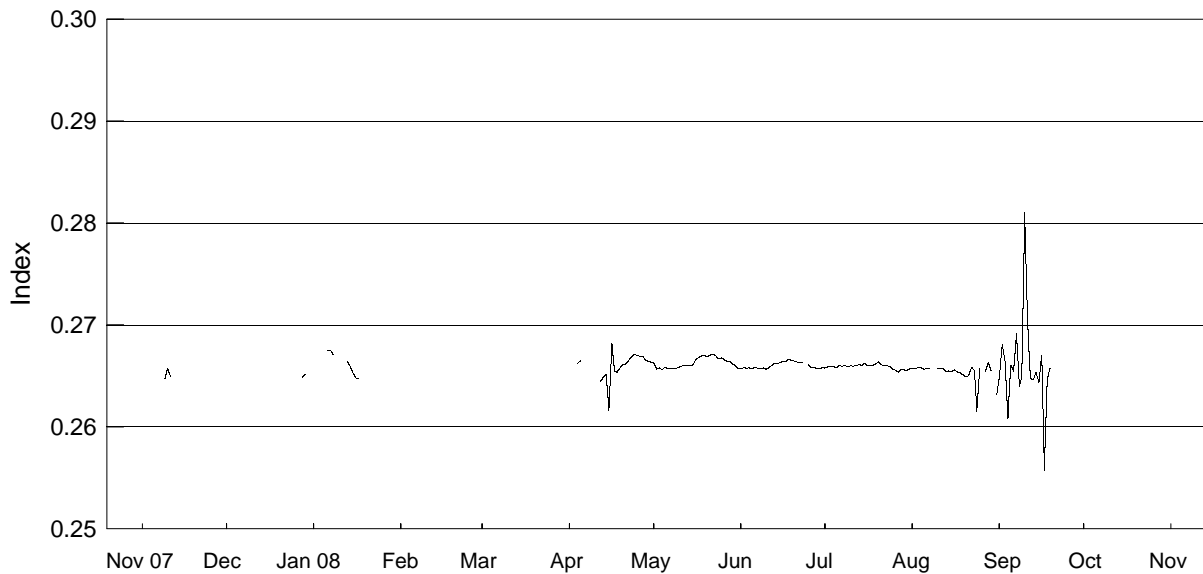
ABST = Abastumani	HOLL = Holloman	RAMY = Ramey
ATHN = Athens	KHAR = Kharkov	SVTO = San Vito
BUCA = Bucharest	LEAR = Learmonth	VORO = Voroshilov
CATA = Catania	PALE = Palehua	VALA = Valasske Mezirici
		WROC = Wroclaw

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

Nov 2007 - Oct 2008

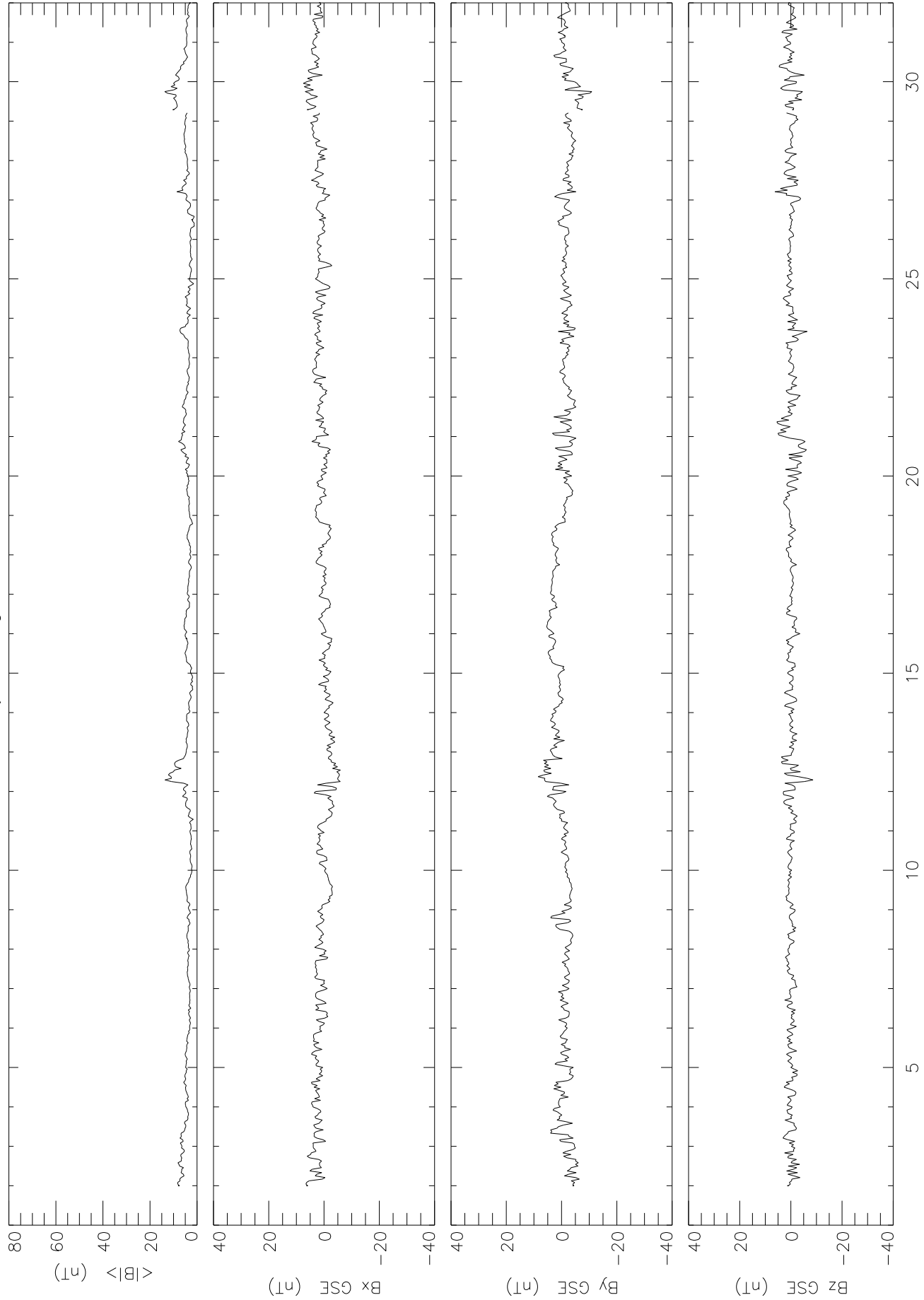
Version 9.1



Day	Nov 07	Dec	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	---	---	---	---	---	---	0.2663	0.2657	0.2658	0.2657	0.2650	---
2	---	---	0.2658	---	---	---	0.2657	0.2658	0.2659	0.2657	0.2681	---
3	---	---	---	---	---	---	0.2658	0.2658	0.2660	0.2658	0.2664	---
4	---	---	---	---	---	0.2663	0.2656	0.2658	0.2659	0.2658	0.2608	---
5	---	---	---	---	---	0.2665	0.2659	0.2657	0.2658	0.2657	0.2661	---
6	---	---	0.2675	---	---	---	0.2657	0.2659	0.2661	0.2657	0.2655	---
7	0.2644	---	0.2675	---	---	---	0.2657	0.2658	0.2659	0.2657	0.2692	---
8	---	---	0.2671	---	---	---	0.2657	0.2658	0.2660	---	0.2640	---
9	0.2647	---	---	---	---	---	0.2658	0.2658	0.2659	---	0.2649	---
10	0.2658	---	---	---	---	---	0.2659	0.2657	0.2660	0.2658	0.2810	---
11	0.2650	---	0.2527	---	---	---	0.2660	0.2658	0.2660	0.2657	0.2704	---
12	---	---	---	---	---	0.2644	0.2660	0.2661	0.2660	0.2657	0.2648	---
13	---	---	0.2664	---	---	0.2649	0.2660	0.2663	0.2661	0.2654	0.2646	---
14	---	---	0.2659	---	---	0.2651	0.2660	0.2662	0.2661	0.2655	0.2654	---
15	---	---	0.2653	---	---	0.2617	0.2661	0.2663	0.2663	0.2654	0.2644	---
16	---	---	0.2648	---	---	0.2682	0.2667	0.2665	0.2660	0.2656	0.2671	---
17	---	---	0.2647	---	---	0.2655	0.2668	0.2665	0.2660	0.2654	0.2557	---
18	---	---	---	---	---	0.2654	0.2670	0.2667	0.2660	0.2653	0.2647	---
19	---	---	---	---	---	0.2658	0.2670	0.2665	0.2662	0.2651	0.2658	---
20	---	---	---	---	---	0.2661	0.2669	0.2665	0.2664	0.2649	---	---
21	---	---	---	---	---	0.2662	0.2670	0.2664	0.2661	0.2650	---	---
22	---	---	---	---	---	0.2665	0.2672	0.2664	0.2660	0.2659	0.2637	---
23	---	---	---	---	---	0.2669	0.2670	0.2664	0.2660	0.2656	---	---
24	---	0.2665	---	---	---	0.2671	0.2667	---	0.2659	0.2615	---	---
25	---	---	---	---	---	0.2670	0.2668	0.2661	0.2657	0.2657	0.2561	---
26	---	---	---	---	---	0.2669	0.2666	0.2659	0.2656	---	---	---
27	---	---	---	---	---	0.2669	0.2664	0.2659	0.2654	0.2654	---	---
28	---	0.2649	---	---	---	0.2666	0.2664	0.2657	0.2656	0.2664	---	---
29	---	0.2652	---	---	---	0.2664	0.2662	0.2657	0.2656	0.2655	---	---
30	---	---	---	---	---	0.2664	0.2662	0.2658	0.2656	---	---	---
31	---	---	---	---	---	---	0.2660	---	0.2656	0.2632	---	---
Mean	0.2650	0.2655	0.2661	---	---	0.2660	0.2663	0.2660	0.2659	0.2651	0.2654	---

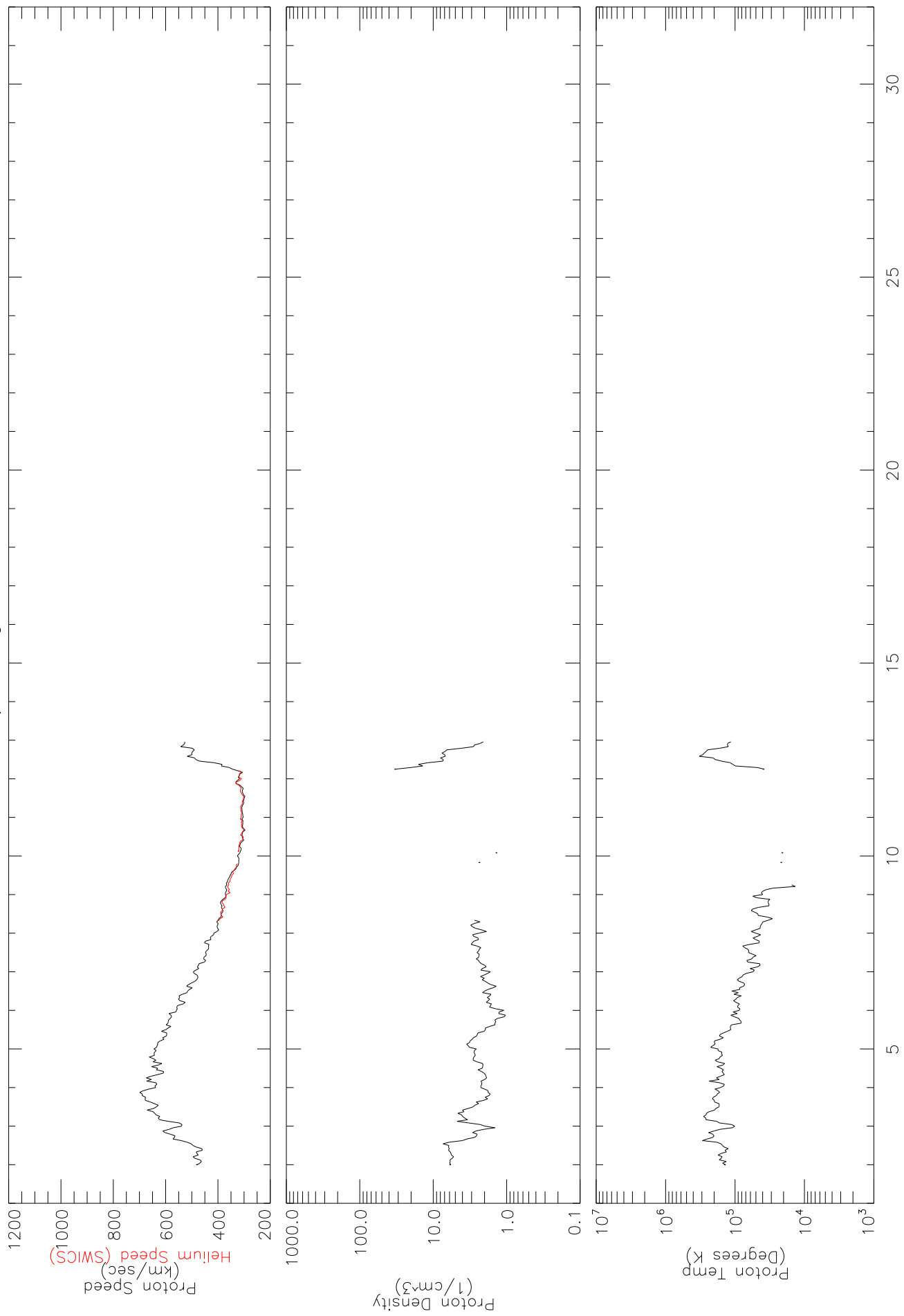
Data at: <http://www.swpc.noaa.gov/ftpmenu/sbuw.html>

ACE LEVEL2 DATA Interplanetary Magnetic Field
Hourly Averages for OCTOBER 2008, from MAG

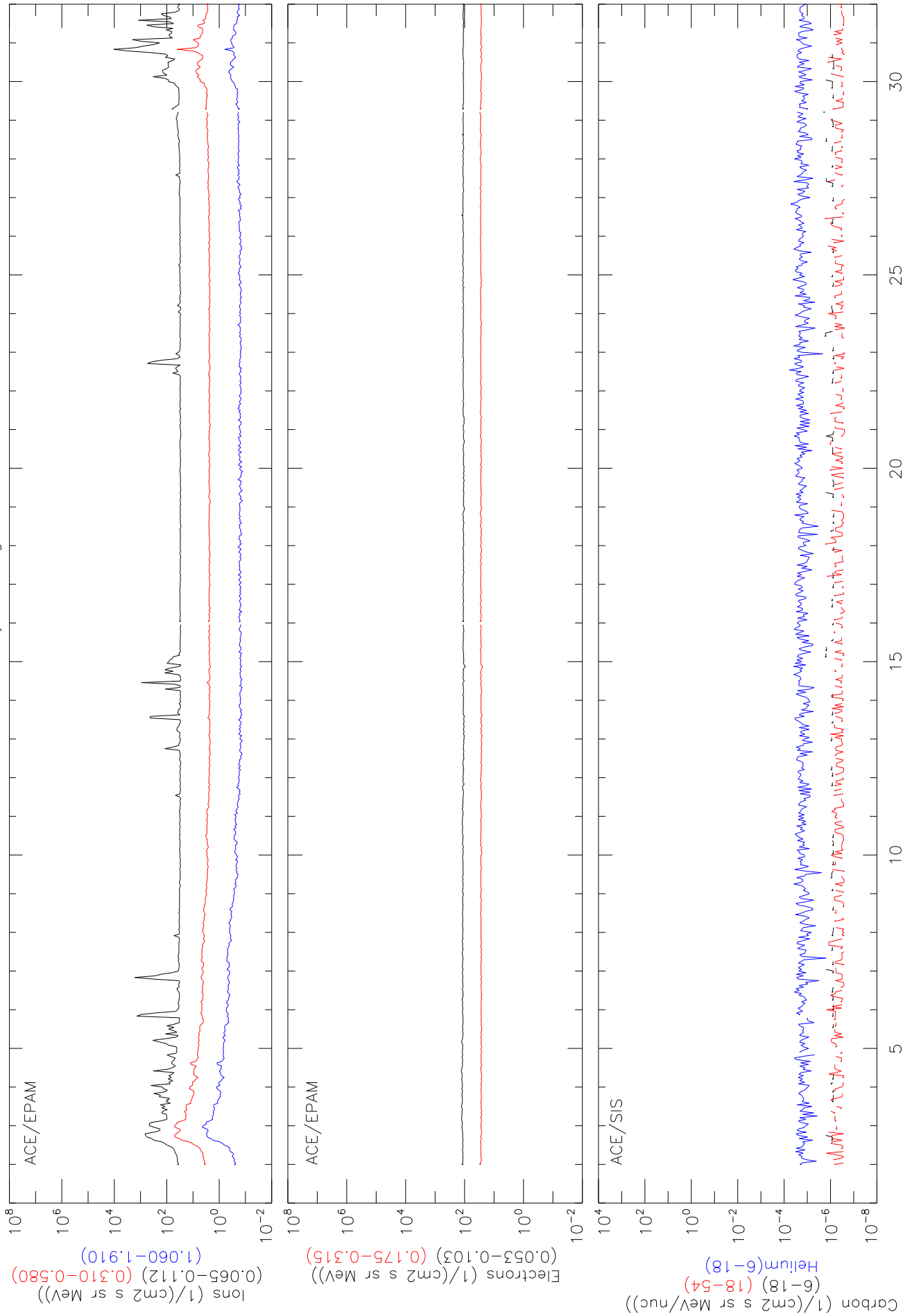


DAYS OF OCTOBER 2008

ACE LEVEL2 DATA Hourly Averages for OCTOBER 2008, from SWEFAM



Solar Energetic Particles ACE LEVEL2 DATA Hourly Averages for OCTOBER 2008



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
OCTOBER 2008

First C2 Appearance		Central Width			Linear Fit			Measurement		Remarks
Date	Time UT	Position Angle degree	Angular Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s	Accel m/s ²	Position Angle degree	
2008/10/01	06:06:05	112	29	188	0	388	577	13.9*	113	Poor Event
2008/10/01	08:26:04	262	19	158	188	128	0	-9.7*	262	Poor Event; Only C2
2008/10/01	10:26:06	324	8	220	89	357	1148	54.9*	317	Very Poor Event; Only C2
2008/10/02	07:27:11	47	8	226	269	183	0	-18.0*	53	Very Poor Event; Only C2
2008/10/02	11:50:04	356	5	278	425	121	0	-40.3*	356	Poor Event; Only C2
2008/10/03	12:06:04	236	24	203	186	221	263	1.5*	234	Very Poor Event
2008/10/03	12:26:04	287	14	186	261	112	0	-14.5*	287	Very Poor Event; Only C2
2008/10/03	15:23:31	293	14	207	167	246	338	3.6*	291	Poor Event
2008/10/04	00:06:05	74	49	122	0	226	240	2.4*	75	
2008/10/04	00:26:23	236	24	264	84	446	450	8.4*	236	
2008/10/04	12:06:04	254	21	189	161	221	240	1.4*	254	Poor Event
2008/10/04	19:42:04	68	12	331	347	312	300	-1.4*	70	Poor Event
2008/10/04	22:26:04	241	8	376	347	408	405	2.0*	243	Poor Event
2008/10/05	03:50:04	236	10	197	184	210	225	0.7*	240	Very Poor Event
2008/10/05	19:26:05	255	56	157	0	349	328	4.5*	256	
2008/10/06	05:50:04	97	16	214	173	261	271	2.0*	93	Very Poor Event
2008/10/06	17:30:04	187	5	284	291	277	143	-2.6*	191	Very Poor Event; Only C2
2008/10/07	03:06:05	90	49	239	248	230	204	-0.8	102	
2008/10/08	07:30:04	290	13	317	470	171	0	-61.4*	283	Poor Event; Only C2
2008/10/08	07:30:04	100	41	267	369	161	0	-29.1*	105	Poor Event; Only C2
2008/10/08	16:54:04	84	47	179	136	224	331	3.8*	87	Very Poor Event
2008/10/08	19:30:04	249	10	242	310	176	0	-26.7*	252	Very Poor Event; Only C2
2008/10/09	02:54:04	296	31	251	281	221	181	-1.9*	288	Very Poor Event
2008/10/09	19:30:04	285	12	225	304	150	0	-21.6*	282	Very Poor Event; Only C2
2008/10/09	19:30:04	76	16	187	140	233	525	10.6*	78	Very Poor Event; Only C2
2008/10/10	03:06:04	190	5	420	169	673	1845	137.6*	191	Very Poor Event; Only C2
2008/10/10	12:06:05	79	9	168	150	184	228	1.3*	87	Very Poor Event
2008/10/10	14:30:04	286	10	245	237	254	309	1.7*	282	Poor Event
2008/10/10	19:30:04	23	6	461	585	337	0	-70.2*	29	Very Poor Event; Only C2
2008/10/11	16:30:04	75	18	318	298	339	376	2.2*	80	Very Poor Event
2008/10/12	07:31:39	75	30	200	162	236	288	2.4*	83	Very Poor Event
2008/10/12	10:34:02	243	7	357	261	453	1219	58.6*	244	Very Poor Event; Only C2
2008/10/14	11:30:04	184	8	277	316	238	0	-22.4*	182	Very Poor Event; Only C2
2008/10/16	20:58:41	72	19	532	449	609	758	15.8*	76	
2008/10/16	21:30:07	352	4	209	284	138	0	-20.3*	351	Very Poor Event; Only C2
2008/10/17	03:54:04	189	6	893	678	1102	1955	138.7*	193	Poor Event
2008/10/17	07:31:39	Halo	360	143	0	295	411	7.0*	125	
2008/10/17	16:54:04	113	11	377	350	405	418	2.2*	116	
2008/10/17	22:30:05	13	2	193	----	----	----	-----	14	Very Poor; 2 pts; Only C2
2008/10/18	00:54:04	110	16	196	155	239	351	4.1*	112	Poor Event
2008/10/18	07:31:39	106	24	145	156	135	0	-1.7*	108	Very Poor Event; Only C2
2008/10/18	13:31:42	187	10	307	158	470	1901	151.7*	190	Very Poor; 3 pts; 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
OCTOBER 2008

First C2 Appearance		Central Width			Linear Fit			----2nd order speed----		Accel	Measurement	
Date	Time UT	Position Angle degree	Angular Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s		m/s ²	Position Angle degree	Remarks	
2008/10/18	16:30:04	51	6	260	312	210	0		-21.7*	54	Very Poor Event; Only C2	
2008/10/18	17:06:04	289	23	200	283	115	0		-19.3*	287	Very Poor Event; Only C2	
2008/10/18	22:30:05	71	10	222	252	190	0		-6.8*	73	Very Poor Event; Only C2	
2008/10/19	09:06:04	77	12	393	288	498	779		21.6*	77	Very Poor Event	
2008/10/20	06:54:04	12	5	217	135	303	982		39.0*	15	Very Poor Event; Only C2	
2008/10/20	10:06:04	69	7	316	311	320	379		1.9*	75	Very Poor Event; Only C2	
2008/10/20	22:08:05	256	45	107	59	161	170		1.1*	264	Very Poor Event	
2008/10/21	11:06:05	49	151	216	63	384	365		5.4*	81	Partial Halo	
2008/10/22	08:54:04	336	8	669	903	436	0		-136.5*	334	Very Poor Event; Only C2	
2008/10/22	12:30:04	337	12	262	146	374	1043		43.9*	336	Very Poor Event; Only C2	
2008/10/22	23:06:04	61	7	424	303	548	1283		65.6*	67	Very Poor Event; Only C2	
2008/10/23	07:54:05	65	10	315	304	327	346		1.2*	72	Very Poor Event	
2008/10/24	18:54:05	287	9	173	121	225	388		5.7*	286	Very Poor Event	
2008/10/26	03:30:11	311	8	465	66	904	3036		389.1*	308	Very Poor; 3 pts; Only C2	
2008/10/26	03:30:11	283	11	269	274	264	83		-2.9*	276	Very Poor Event; Only C2	
2008/10/26	12:54:04	259	65	172	0	356	304		3.8*	262		
2008/10/27	05:30:04	101	15	267	244	292	326		2.0*	99	Poor Event	
2008/10/27	19:54:04	263	8	250	176	325	392		5.2*	264	Very Poor Event	
2008/10/28	16:54:04	184	5	157	186	129	0		-15.5*	185	Very Poor Event; Only C2	
2008/10/30	11:54:04	278	47	183	0	426	433		8.0*	280		
2008/10/31	00:30:06	12	7	248	158	336	907		33.9*	14	Very Poor Event; Only C2	
2008/10/31	04:30:06	12	5	565	311	844	2473		247.0*	13	Very Poor; 3 pts; Only C2	
2008/10/31	05:30:05	290	15	188	161	217	309		2.9*	290	Very Poor Event	
2008/10/31	11:06:05	186	7	433	680	186	0		-171.5*	190	Very Poor; 3 pts; Only C2	
2008/10/31	17:30:04	201	6	131	126	135	268		2.3*	203	Very Poor Event; Only C2	

* Acceleration is uncertain due to either poor height measurement or a small number of height-time measurements.