

JANUARY 2009 NUMBER 773 - Part II

Solar-Geophysical Data comprehensive reports



Data for July 2008

Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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NATIONAL OCEANIC AND
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NATIONAL ENVIRONMENTAL SATELLITE,
DATA, AND INFORMATION SERVICE

NATIONAL GEOPHYSICAL
DATA CENTER

BOULDER,
COLORADO



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JANUARY 2009 NUMBER 773 - Part II

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Data for July 2008

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NATIONAL GEOPHYSICAL DATA CENTER

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SOLAR-GEOPHYSICAL DATA

Number 773

(Issued in Two Parts)

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Solar-Terrestrial Physics Division

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J U L Y 2 0 0 8

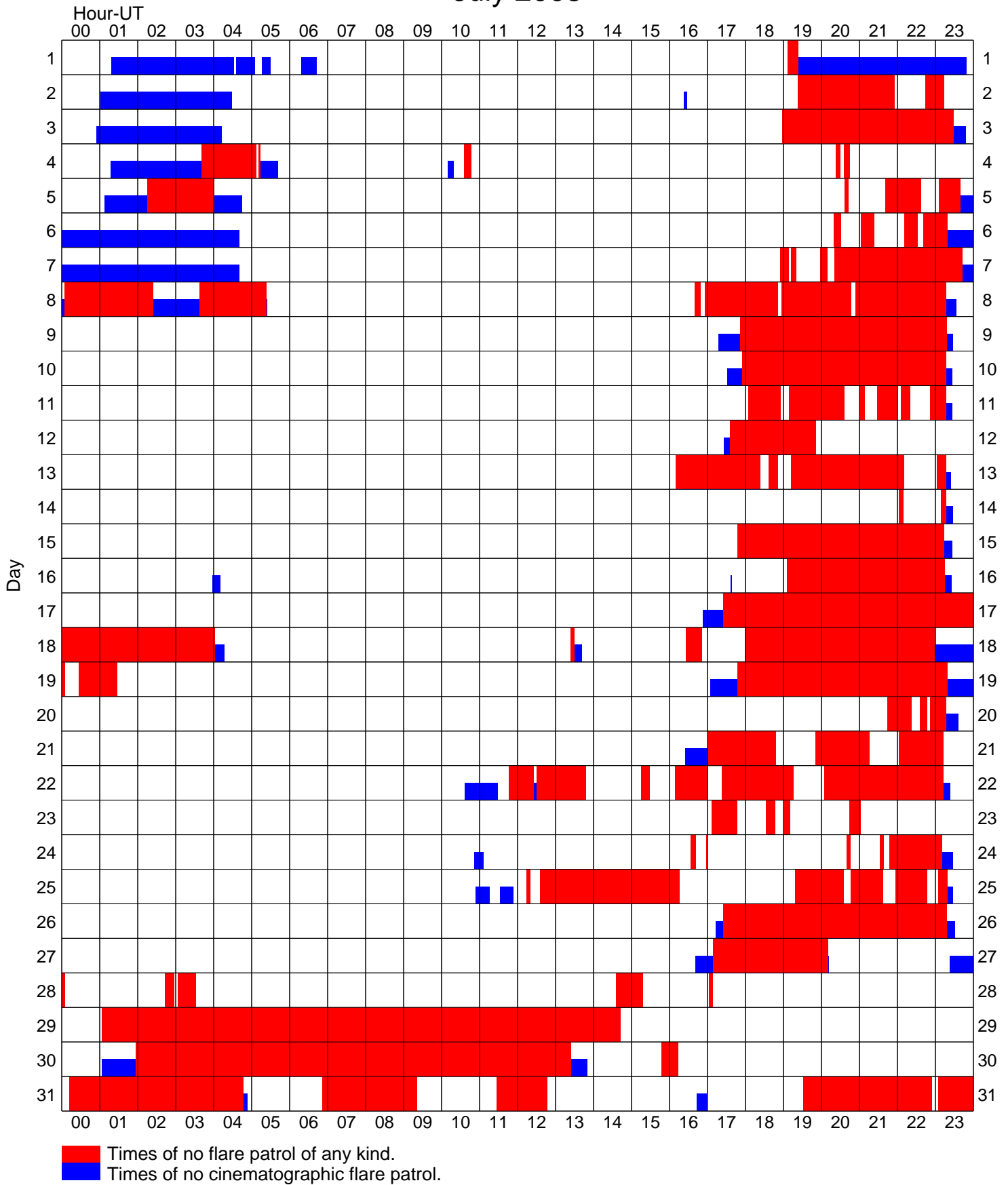
Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF Region	CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
														Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
	24	2040			2046	No	Flare	Patrol										
	24	2132			2138	No	Flare	Patrol										
	24	2147			2310	No	Flare	Patrol										
	25	1214			1220	No	Flare	Patrol										
	25	1236			1616	No	Flare	Patrol										
	25	1918			2035	No	Flare	Patrol										
	25	2046			2137	No	Flare	Patrol										
	25	2157			2247	No	Flare	Patrol										
	25	2305			2319	No	Flare	Patrol										
	26	1725			2318	No	Flare	Patrol										
	27	1709			2011	No	Flare	Patrol										
	28	0000			0005	No	Flare	Patrol										
	28	0243			0258	No	Flare	Patrol										
	28	0304			0332	No	Flare	Patrol										
	28	1436			1518	No	Flare	Patrol										
	28	1702			1708	No	Flare	Patrol										
	29	0104			1443	No	Flare	Patrol										
	30	0157			1324	No	Flare	Patrol										
	30	1548			1614	No	Flare	Patrol										
	31	0012			0447	No	Flare	Patrol										
	31	0652			0921	No	Flare	Patrol										
	31	1127			1247	No	Flare	Patrol										
	31	1931			2254	No	Flare	Patrol										
	31	2305			2400	No	Flare	Patrol										

"Remarks"

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

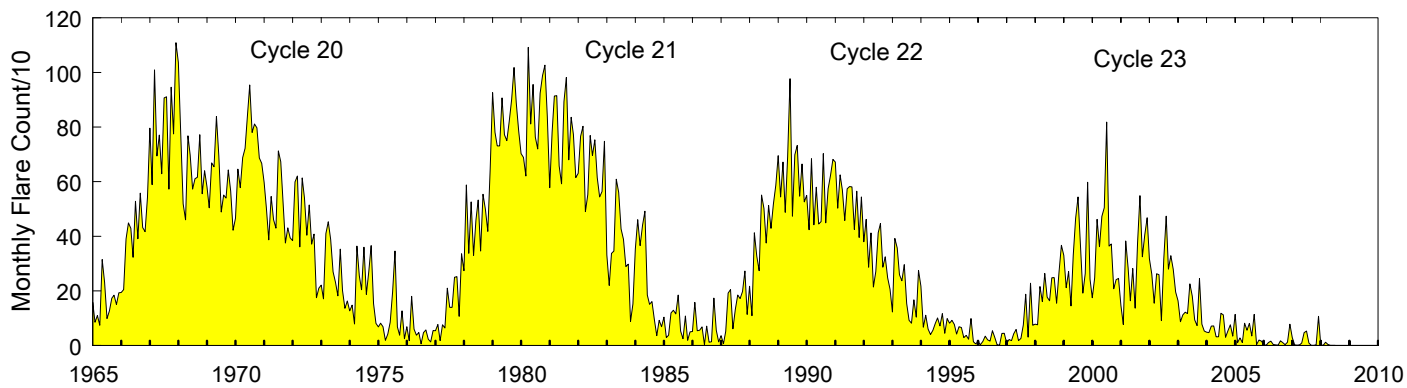
Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual

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



Stations participating: Holloman, Learmonth, SanVito, Kanzelhoehe.

Monthly Counts of Grouped Solar Flares Jan 1965 - Jul 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						18

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

8
Jul 08

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

JULY 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		
19	33 UPIC	3 S	0736.0	0736.3	0.5U				

Reports are received routinely from the following observatories:

LEAR = Learmonth SGMR = Sagamore Hill SVTO = San Vito

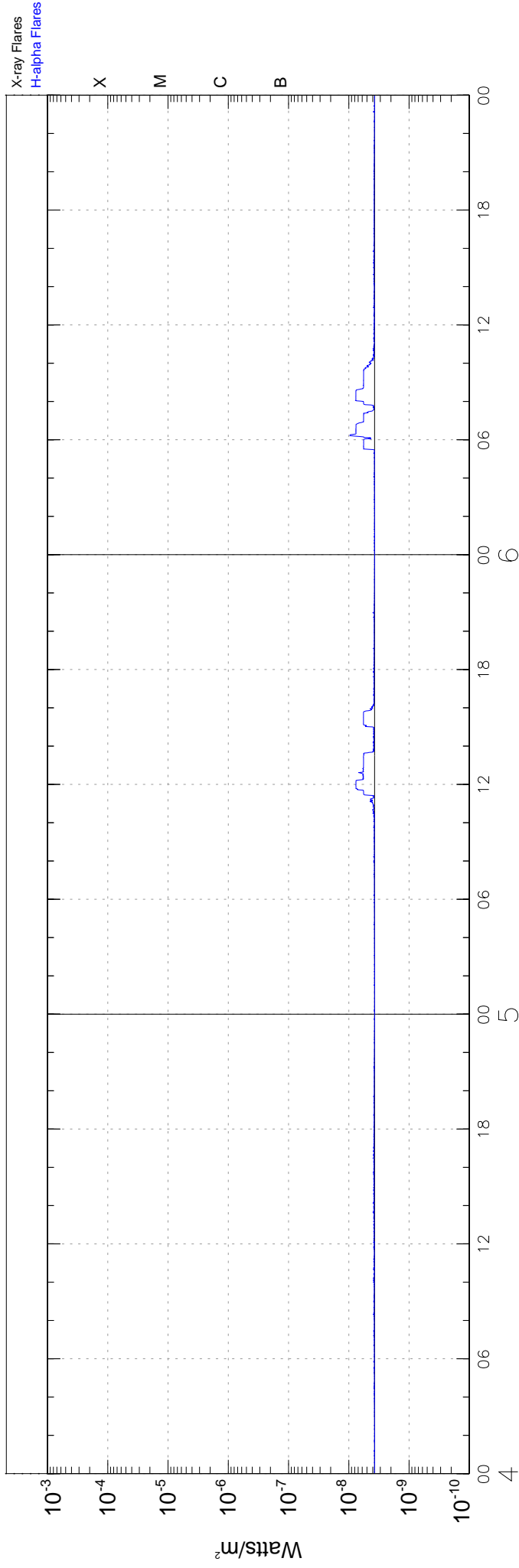
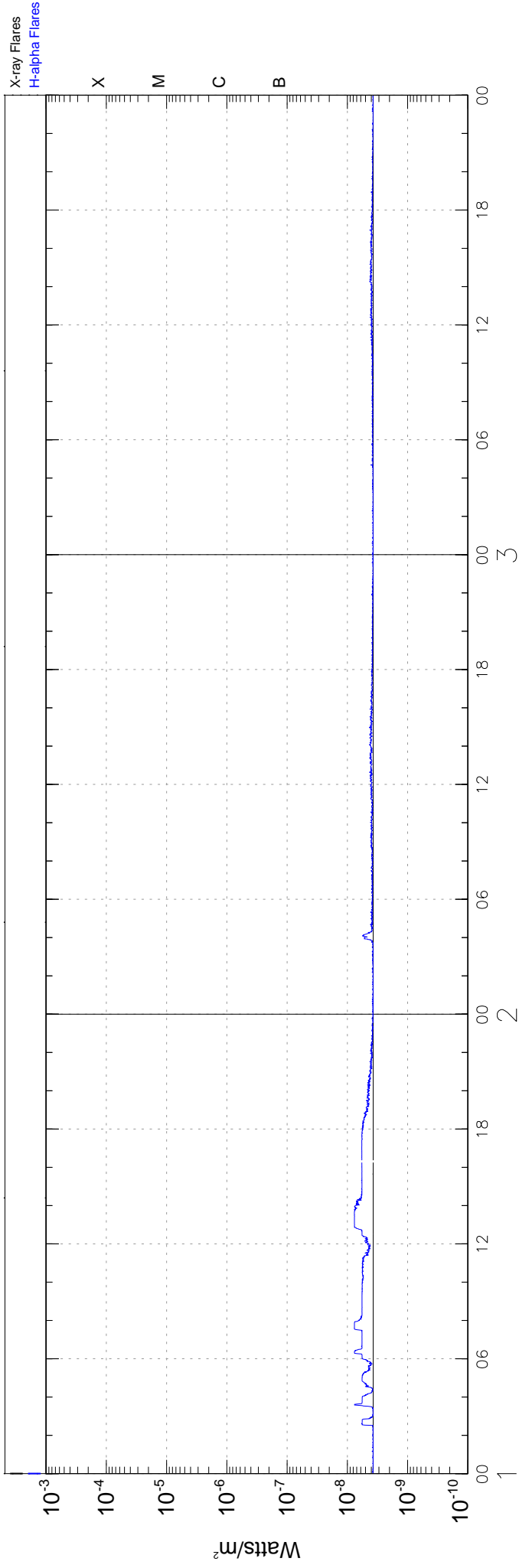
Explanation of Type Code:

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

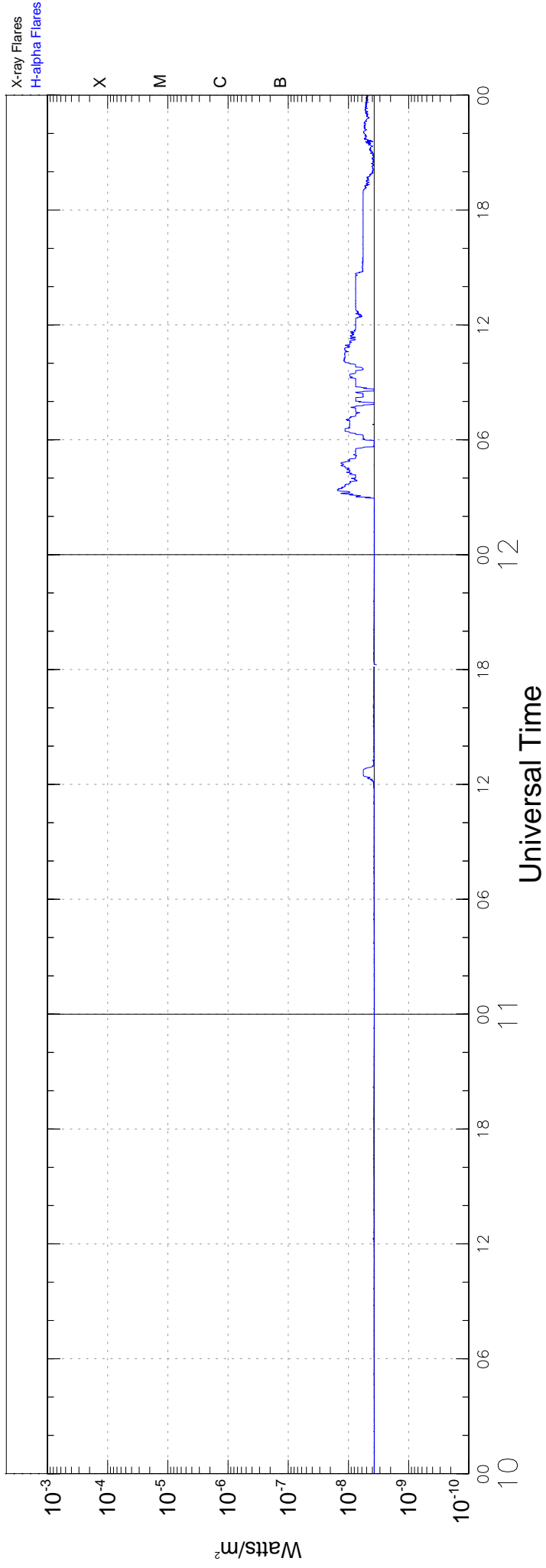
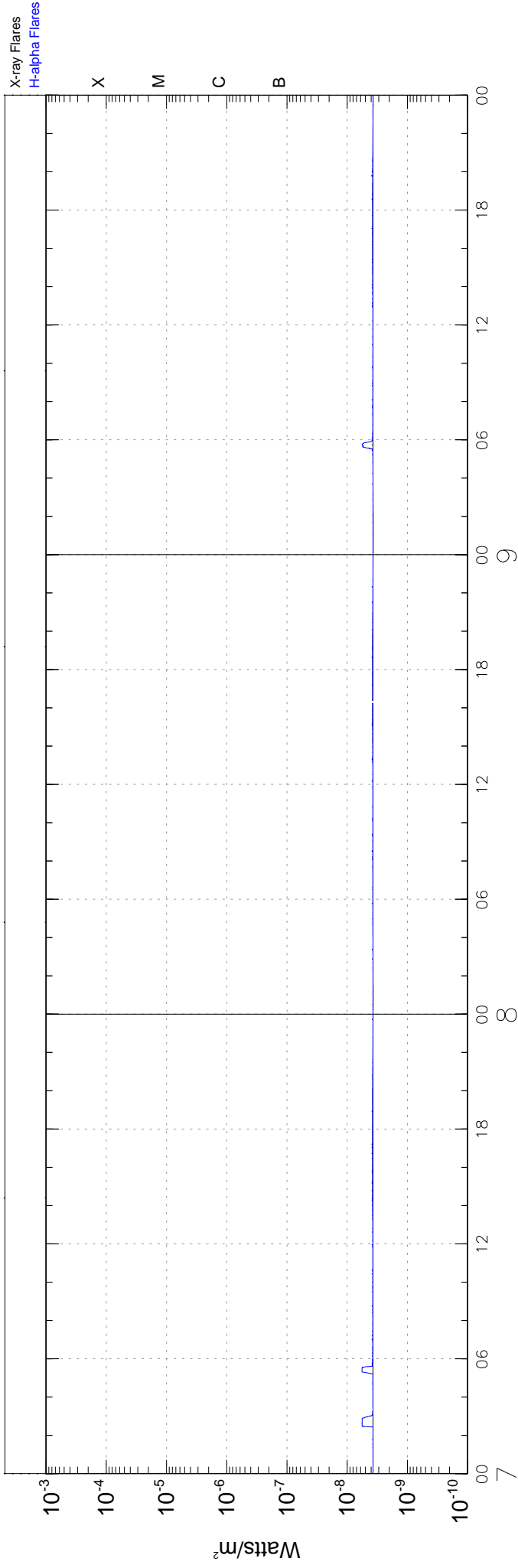
GOES-10 Solar X-Rays (1-Minute Averages)

July 2008

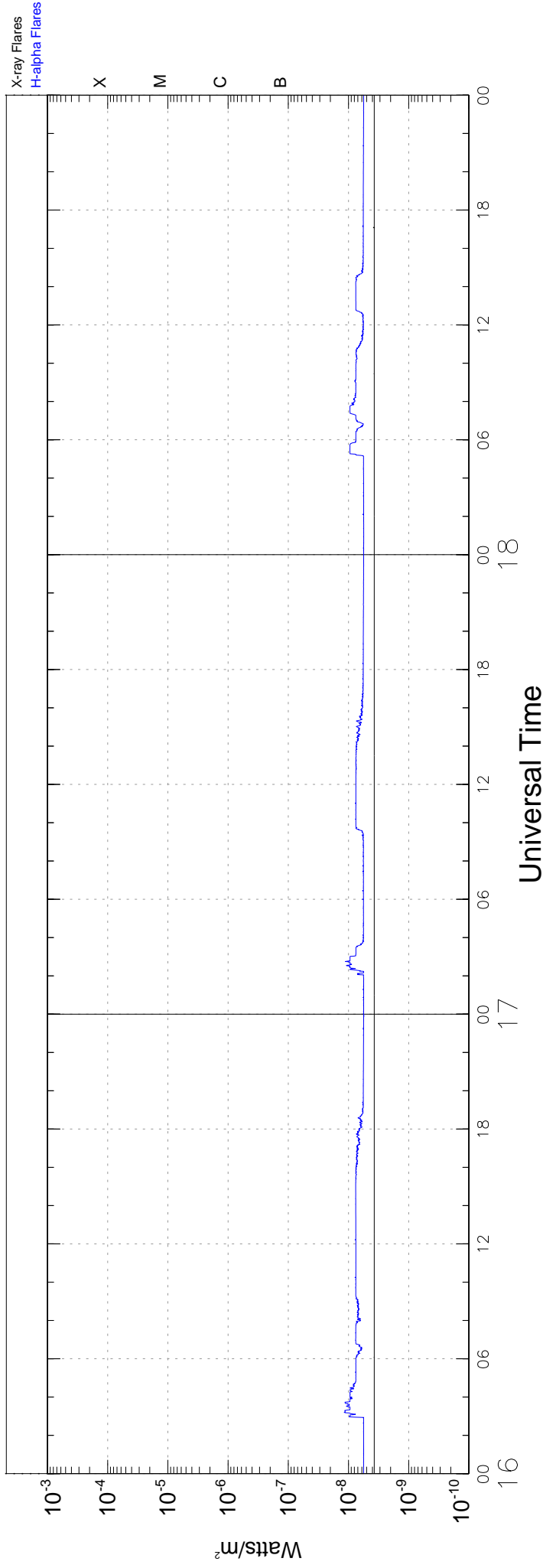
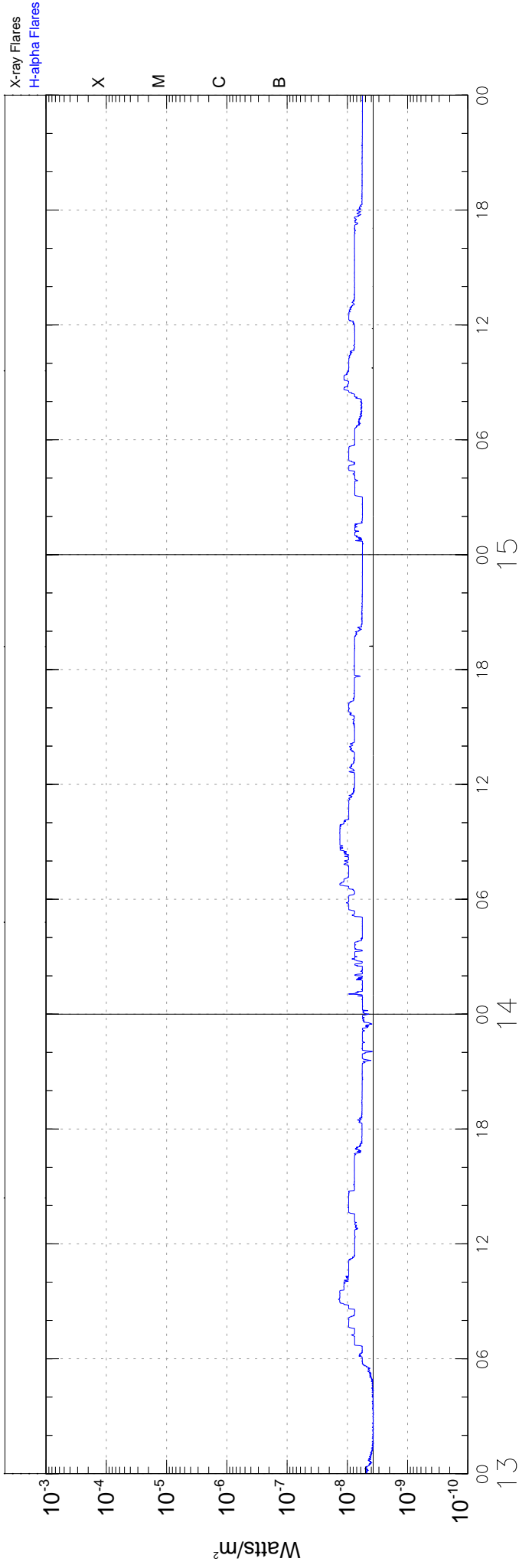


Universal Time

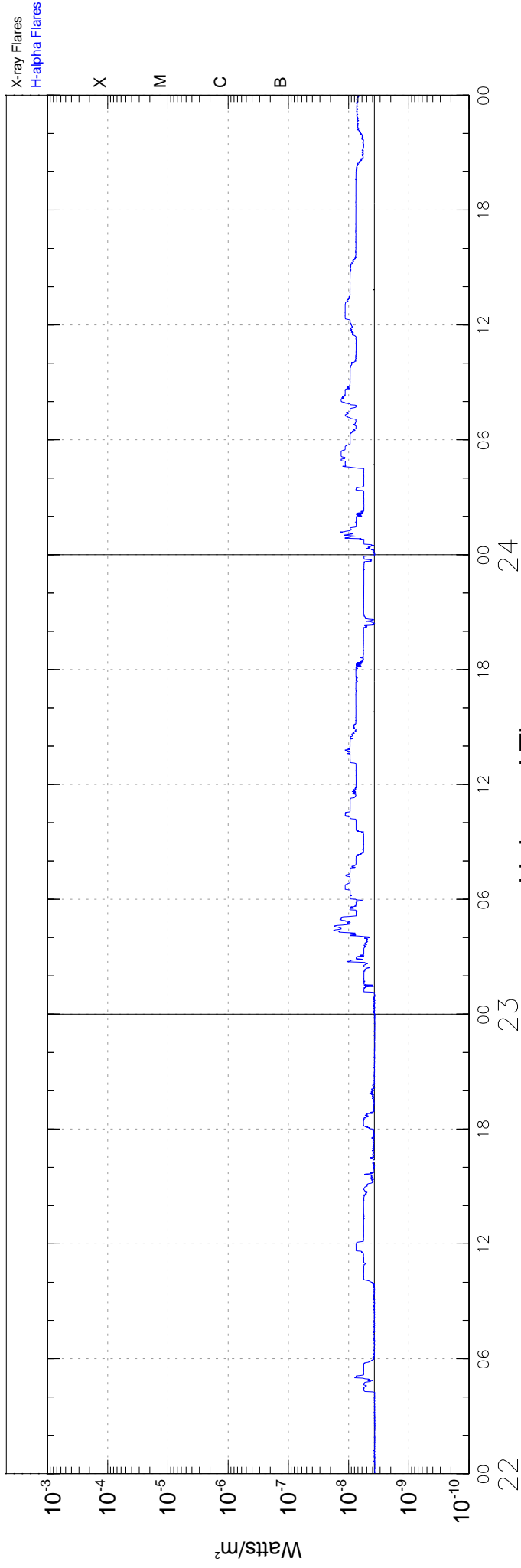
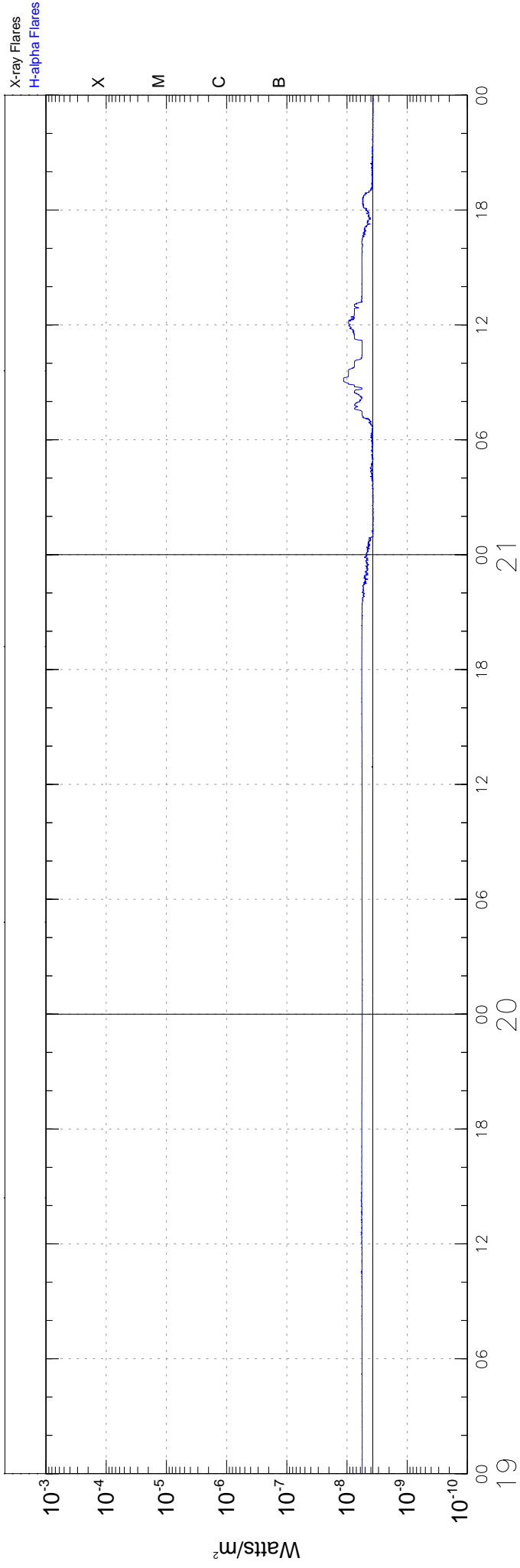
GOES-10 Solar X-Rays (1-Minute Averages) July 2008



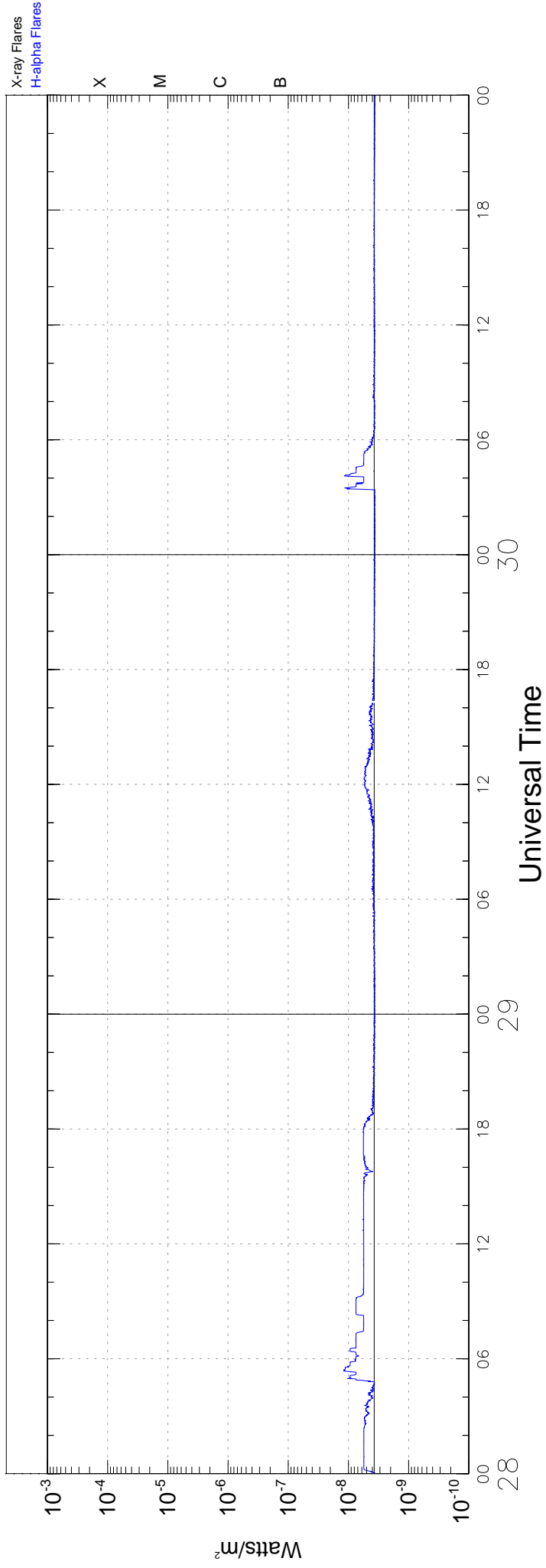
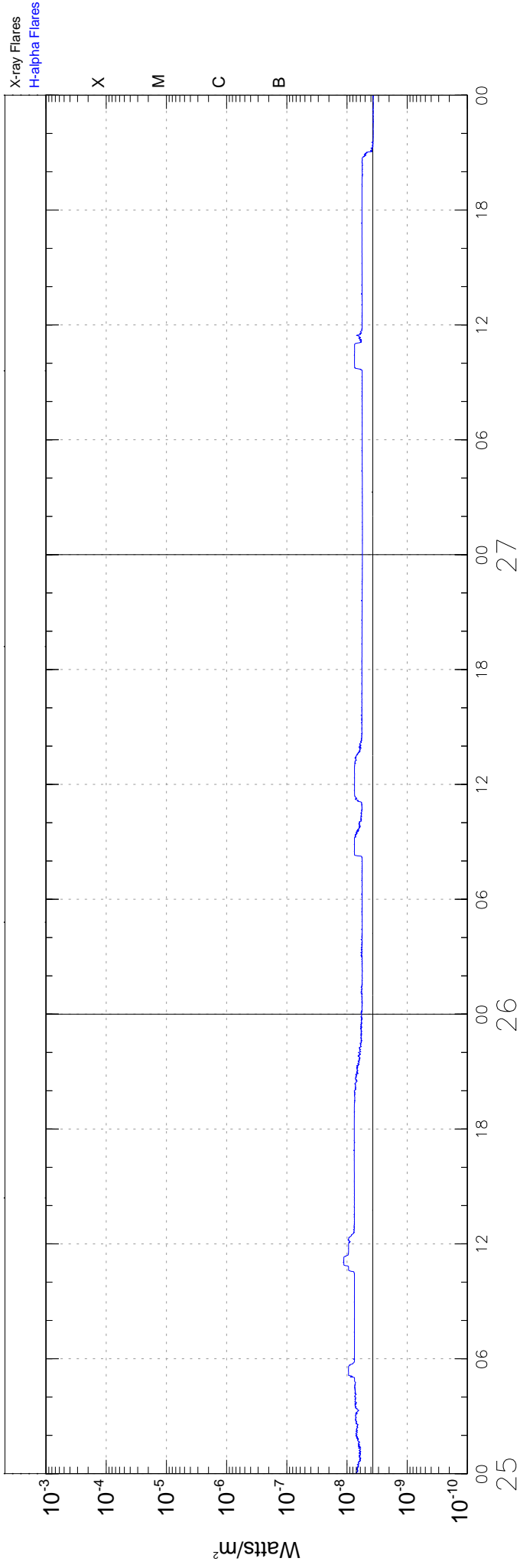
GOES-10 Solar X-Rays (1-Minute Averages) July 2008



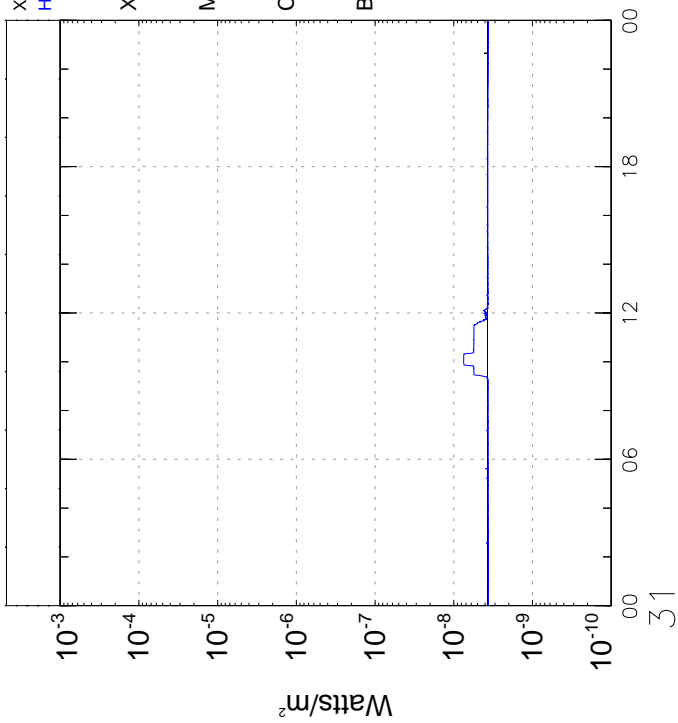
GOES-10 Solar X-Rays (1-Minute Averages) July 2008



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

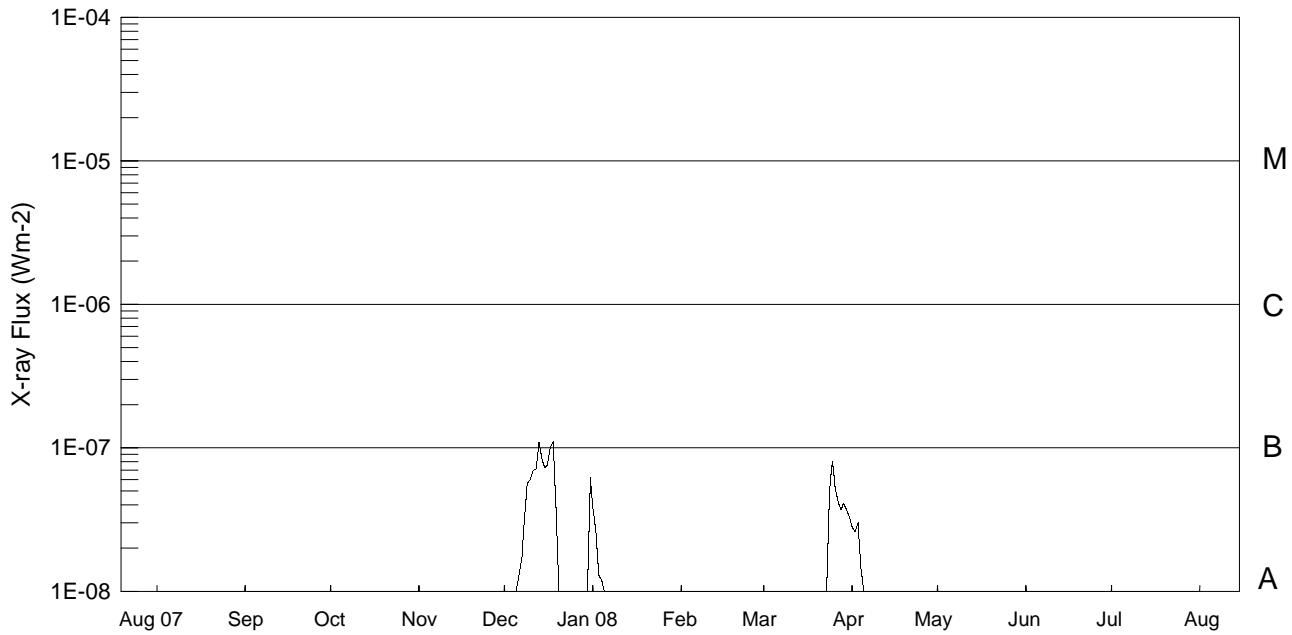


X-ray Flares
H-alpha Flares



Preliminary GOES Satellite Daily X-Ray Background Aug 2007 - Jul 2008

15
Jul 08



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

Levels below B1.0 are unreliable.

JULY 2008

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

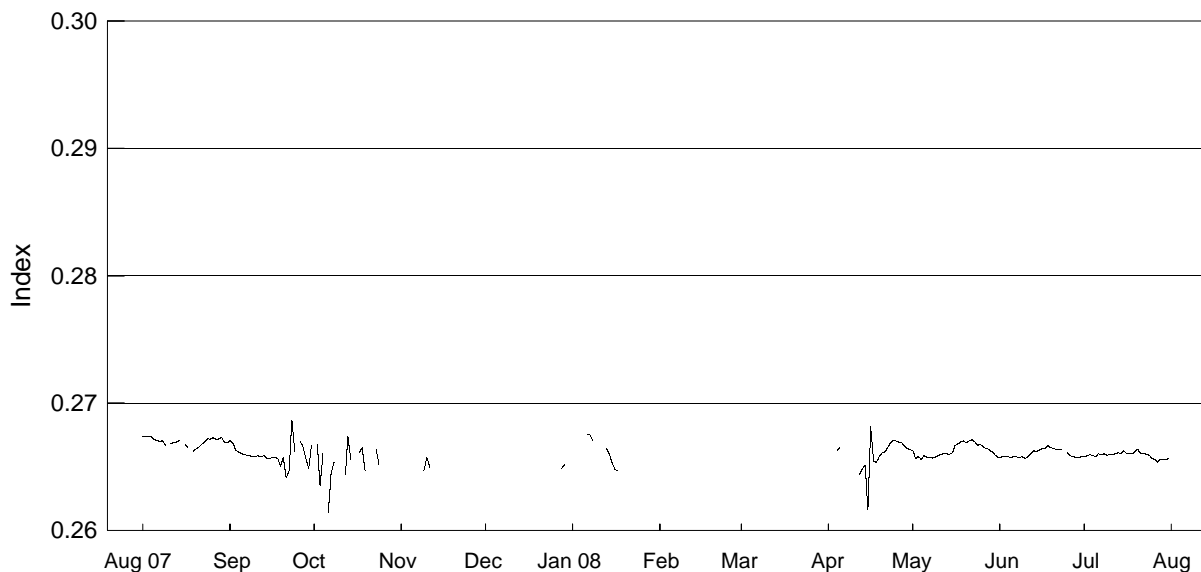
- | | | |
|-------------------|------------------|--------------------------|
| ABST = Abastumani | HOLL = Holloman | RAMY = Ramey |
| ATHN = Athens | KHAR = Kharkov | SVTO = San Vito |
| BUCA = Bucharest | LEAR = Learmonth | VORO = Voroshilov |
| CATA = Catania | PALE = Palehua | VALA = Valasske Mezirici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

Aug 2007 - Jul 2008

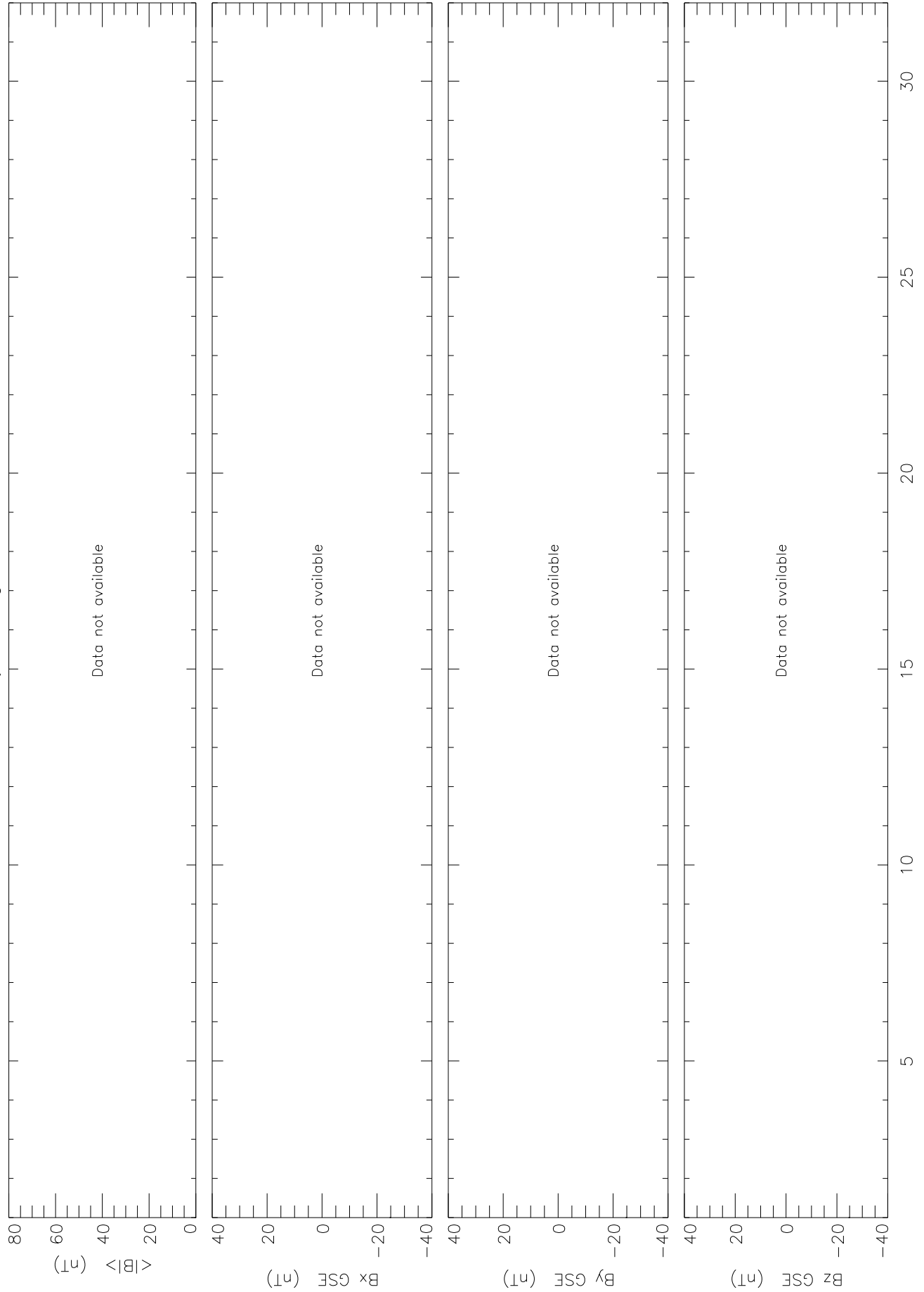
Version 9.1



Day	Aug 07	Sep	Oct	Nov	Dec	Jan 08	Feb	Mar	Apr	May	Jun	Jul
1	0.2674	0.2671	---	---	---	---	---	---	---	0.2663	0.2657	0.2658
2	0.2674	0.2669	0.2668	---	---	0.2658	---	---	---	0.2657	0.2658	0.2659
3	0.2674	0.2663	0.2635	---	---	---	---	---	---	0.2658	0.2658	0.2660
4	0.2674	0.2662	0.2661	---	---	---	---	---	0.2663	0.2656	0.2658	0.2659
5	0.2672	0.2661	---	---	---	---	---	---	0.2665	0.2659	0.2657	0.2658
6	0.2671	0.2660	0.2615	---	---	0.2675	---	---	---	0.2657	0.2659	0.2661
7	0.2670	0.2659	0.2645	0.2644	---	0.2675	---	---	---	0.2657	0.2658	0.2659
8	0.2671	0.2659	0.2654	---	---	0.2671	---	---	---	0.2657	0.2658	0.2660
9	0.2667	0.2658	---	0.2647	---	---	---	---	---	0.2658	0.2658	0.2659
10	---	0.2659	---	0.2658	---	---	---	---	---	0.2659	0.2657	0.2660
11	0.2668	0.2659	---	0.2650	---	0.2527	---	---	---	0.2660	0.2658	0.2660
12	0.2669	0.2658	0.2644	---	---	---	---	---	0.2644	0.2660	0.2661	0.2660
13	0.2670	0.2659	0.2674	---	---	0.2664	---	---	0.2649	0.2660	0.2663	0.2661
14	0.2671	0.2657	0.2655	---	---	0.2659	---	---	0.2651	0.2660	0.2662	0.2661
15	---	0.2656	---	---	---	0.2653	---	---	0.2617	0.2661	0.2663	0.2663
16	0.2668	0.2657	---	---	---	0.2648	---	---	0.2682	0.2667	0.2665	0.2660
17	0.2665	0.2657	0.2661	---	---	0.2647	---	---	0.2655	0.2668	0.2665	0.2660
18	---	0.2656	0.2665	---	---	---	---	---	0.2654	0.2670	0.2667	0.2660
19	0.2662	0.2650	0.2647	---	---	---	---	---	0.2658	0.2670	0.2665	0.2662
20	0.2664	0.2657	---	---	---	---	---	---	0.2661	0.2669	0.2665	0.2664
21	0.2666	0.2641	---	---	---	---	---	---	0.2662	0.2670	0.2664	0.2661
22	0.2668	0.2647	---	---	---	---	---	---	0.2665	0.2672	0.2664	0.2660
23	0.2670	0.2687	0.2664	---	---	---	---	---	0.2669	0.2670	0.2664	0.2660
24	0.2672	0.2662	0.2652	---	0.2665	---	---	---	0.2671	0.2667	---	0.2659
25	0.2672	---	---	---	---	---	---	---	0.2670	0.2668	0.2661	0.2657
26	0.2673	0.2670	---	---	---	---	---	---	0.2669	0.2666	0.2659	0.2656
27	0.2672	0.2666	---	---	---	---	---	---	0.2669	0.2664	0.2659	0.2654
28	0.2672	0.2656	---	---	0.2649	---	---	---	0.2666	0.2664	0.2657	0.2656
29	0.2673	0.2649	0.2658	---	0.2652	---	---	---	0.2664	0.2662	0.2657	0.2656
30	0.2669	0.2667	---	---	---	---	---	---	0.2664	0.2662	0.2658	0.2656
31	0.2669	---	---	---	---	---	---	---	---	0.2660	---	0.2656
Mean	0.2670	0.2660	0.2653	0.2650	0.2655	0.2661	---	---	0.2660	0.2663	0.2660	0.2659

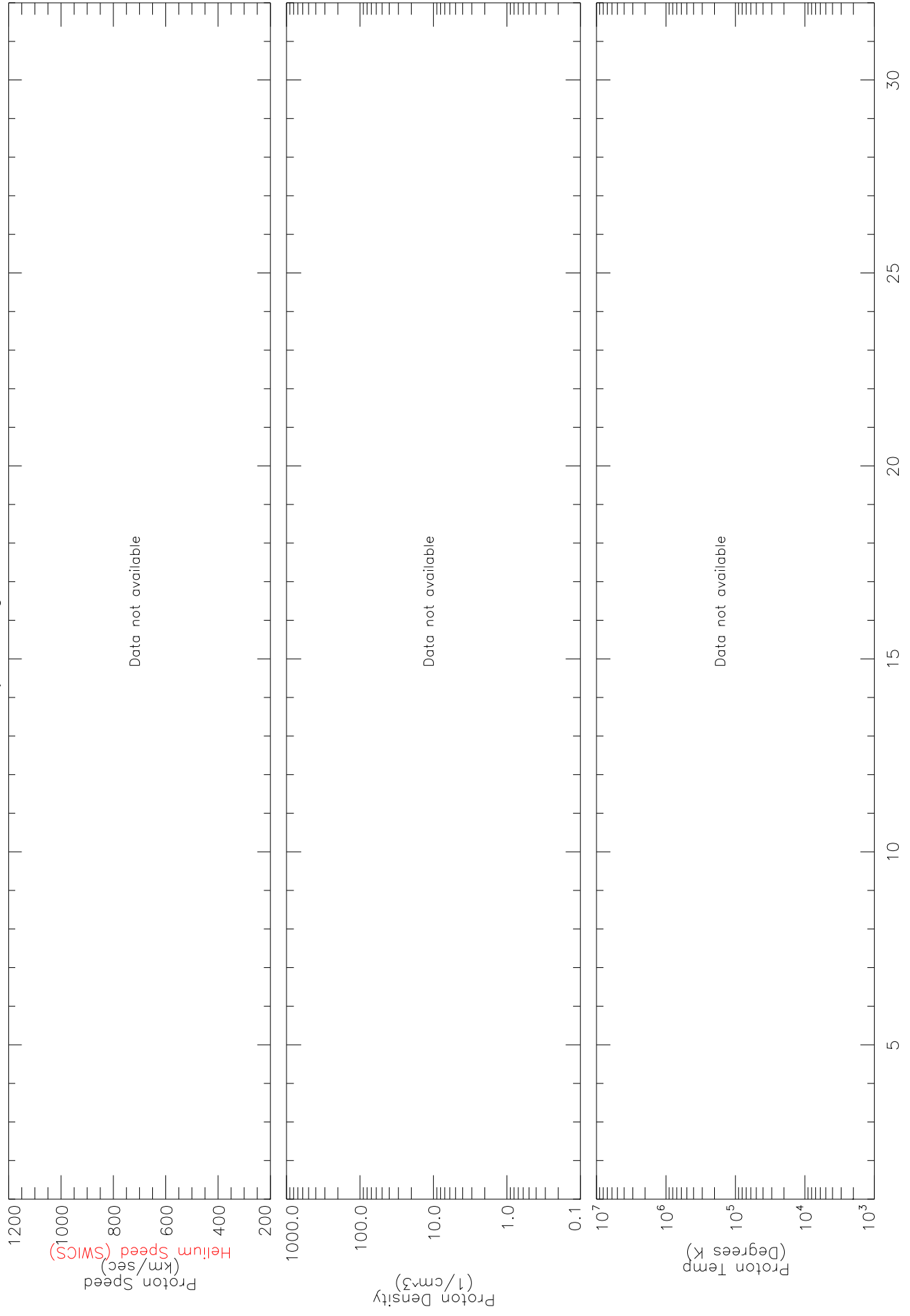
Data at: <http://www.swpc.noaa.gov/ftpmenu/sbuw.html>

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

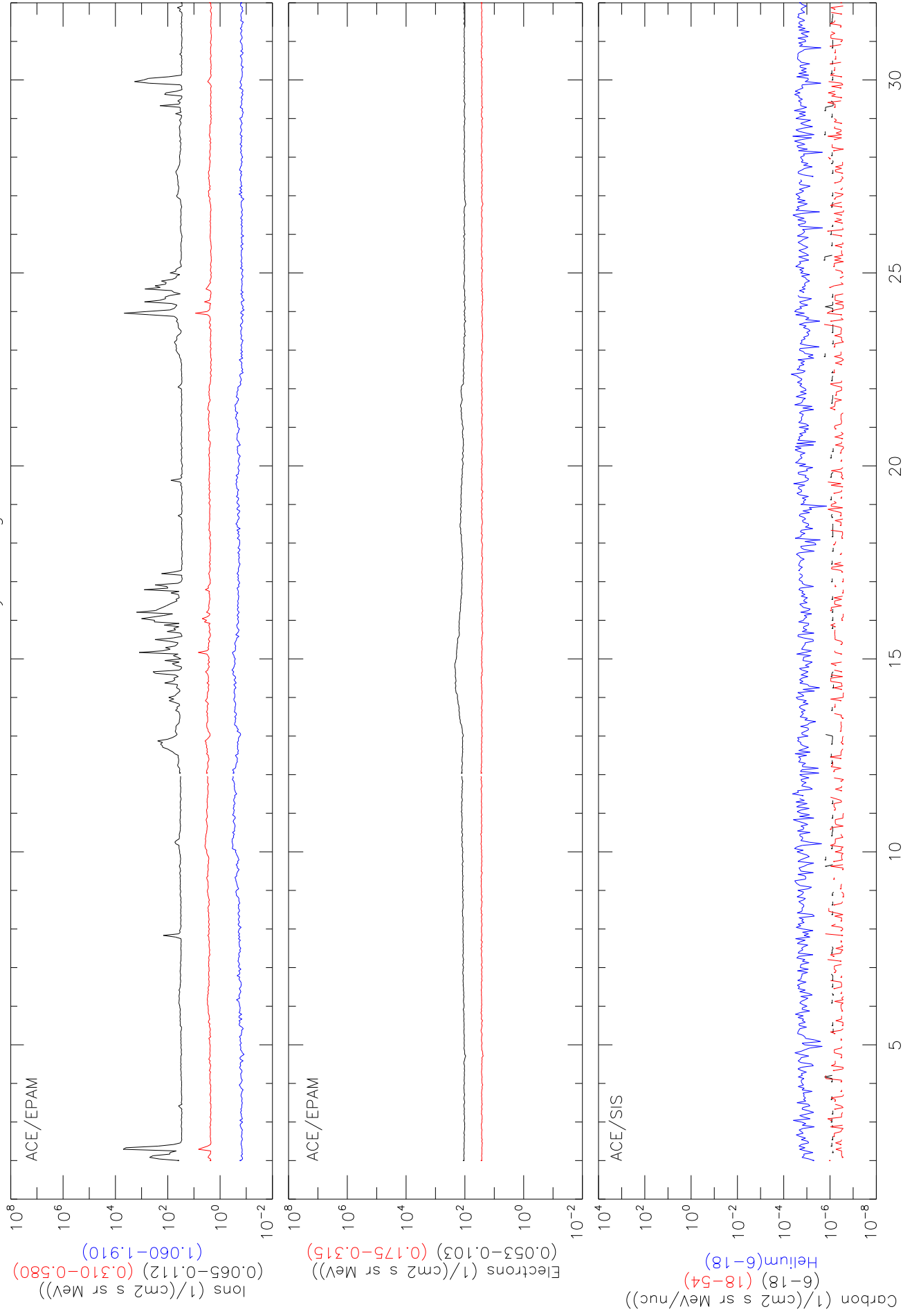


DAYS OF JULY 2008

ACE LEVEL2 DATA Solar Wind Plasma Hourly Averages for JULY 2008, from SWEPAM



Solar Energetic Particles ACE LEVEL2 DATA Hourly Averages for JULY 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
JULY 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	
2008/07/01	01:42:04	295	4	309	286	332	425	4.9*	294	Very Poor Event
2008/07/01	02:50:04	295	16	302	276	332	367	2.4*	295	
2008/07/01	16:06:04	297	6	144	73	212	260	2.8*	294	Very Poor Event
2008/07/02	01:27:12	55	8	461	----	----	----	-----	60	Very Poor; 2pts; Only C2
2008/07/02	05:50:04	250	10	397	459	337	0	-20.6*	256	Poor Event; Only C2
2008/07/03	22:30:04	254	9	375	----	----	----	-----	260	Very Poor; 2pts; Only C2
2008/07/04	02:30:04	188	3	297	48	570	2415	241.7*	192	Very Poor; 3pts; Only C2
2008/07/04	17:54:04	251	17	432	343	521	1130	49.9*	256	Poor Event; Only C2
2008/07/05	01:31:38	130	10	515	657	382	0	-78.4*	124	Very Poor; 3pts; Only C2
2008/07/05	10:33:59	246	9	286	275	297	430	4.6*	253	Very Poor; Only; C2
2008/07/05	19:31:36	116	30	327	352	300	221	-3.2*	114	
2008/07/06	00:30:05	120	18	483	605	355	298	-12.1*	112	Very Poor Event
2008/07/06	12:06:04	120	25	337	185	500	482	8.3*	114	
2008/07/06	23:06:51	112	8	359	260	458	499	8.1*	110	Very Poor Event
2008/07/07	03:30:04	114	8	323	278	371	472	6.4*	110	Very Poor Event
2008/07/07	04:30:06	13	7	379	84	703	2609	287.3*	15	Very Poor; 3pts; Only C2
2008/07/07	09:54:04	12	7	405	449	364	0	-39.1*	15	Very Poor; 3pts; Only C2
2008/07/07	09:54:04	160	132	235	0	675	628	16.2*	138	Partial Halo
2008/07/09	10:30:17	354	5	662	944	385	0	-158.8*	356	Very Poor; Only; C2
2008/07/09	18:06:04	356	5	447	597	297	0	-104.2*	357	Very Poor; 3pts; Only C2
2008/07/10	05:06:04	353	4	288	278	298	461	5.5*	352	Very Poor; Only; C2
2008/07/10	07:06:04	76	9	201	138	268	299	3.2*	80	Poor Event
2008/07/10	07:30:05	353	7	400	511	295	0	-58.4*	354	Very Poor; 3pts; Only C2
2008/07/10	15:06:26	270	21	426	243	607	848	27.0*	269	Very Poor Event
2008/07/10	21:30:07	17	7	394	278	520	1650	110.9*	26	Very Poor; 3pts; Only C2
2008/07/11	06:30:04	77	8	141	210	77	0	-35.9*	78	Very Poor; 3pts; Only C2
2008/07/11	09:54:17	253	36	186	161	212	307	3.1*	249	Very Poor Event
2008/07/11	19:31:37	18	7	683	890	479	0	-147.6*	24	Very Poor; 3pts;
2008/07/12	01:31:38	332	4	111	206	25	0	-20.6*	329	Very Poor; Only; C2
2008/07/12	17:30:05	118	40	363	333	395	425	2.9*	98	
2008/07/13	14:06:04	56	7	281	217	349	404	5.2*	60	Very Poor Event
2008/07/14	07:06:04	102	15	336	289	382	667	14.9*	102	Very Poor; Only; C2
2008/07/14	10:30:15	97	29	232	213	252	270	1.2*	84	Very Poor Event
2008/07/15	01:31:41	175	4	531	476	590	1224	55.5*	173	Very Poor; 3pts; Only C2
2008/07/16	17:54:04	18	5	236	299	172	0	-22.3*	23	Very Poor; Only; C2
2008/07/16	23:30:04	171	6	319	190	461	1707	125.3*	168	Very Poor; 3pts; Only C2
2008/07/17	01:31:38	171	5	357	----	----	----	-----	171	Very Poor; 2pts; Only C2
2008/07/17	10:30:18	73	6	149	86	217	244	2.2*	78	Very Poor Event
2008/07/17	13:31:40	96	29	212	342	76	0	-51.3*	95	Poor Event; Only C2
2008/07/18	02:06:06	69	8	196	225	167	0	-2.3*	72	Very Poor Event

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
JULY 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	
2008/07/19	00:54:04	241	7	177	177	177	177	-0.0*	248	Very Poor Event	
2008/07/19	17:30:04	243	14	190	212	170	0	-8.5*	249	Very Poor; Only; C2	
2008/07/19	22:30:04	97	21	119	139	98	0	-6.8*	99	Very Poor; Only; C2	
2008/07/20	07:31:41	294	16	284	93	503	1215	64.2*	289	Very Poor; Only; C2	
2008/07/20	10:34:03	116	14	110	120	100	0	-4.0*	104	Very Poor; Only; C2	
2008/07/21	05:06:04	28	10	358	174	541	1770	127.5*	32	Very Poor; 3pts;Only C2	
2008/07/21	13:31:38	228	47	200	146	250	526	11.0*	223	Very Poor; Only; C2	
2008/07/21	18:30:04	290	26	318	300	337	361	1.7*	284	Poor Event	
2008/07/21	21:54:04	161	6	205	227	182	0	-10.4*	159	Very Poor; 3pts;Only C2	
2008/07/22	16:06:04	33	10	326	542	110	0	-148.9*	39	Very Poor; 3pts;Only C2	
2008/07/22	18:54:04	274	5	255	269	241	95	-3.0*	279	Very Poor Event	
2008/07/22	21:30:09	189	6	518	552	481	0	-33.1*	189	Very Poor; 3pts;Only C2	
2008/07/23	05:30:04	201	7	441	179	730	2471	255.1*	202	Very Poor; 3pts;Only C2	
2008/07/23	15:30:04	94	15	167	182	150	0	-1.8*	93	Very Poor Event	
2008/07/24	00:54:04	289	14	224	195	252	461	7.4*	284	Very Poor; Only; C2	
2008/07/24	05:54:04	286	11	278	138	411	955	37.0*	287	Very Poor; Only; C2	
2008/07/25	12:54:04	250	7	296	354	234	0	-20.3*	254	Very Poor; Only; C2	
2008/07/26	08:06:04	131	10	191	224	159	0	-13.0*	123	Very Poor; Only; C2	
2008/07/26	11:30:04	211	4	246	215	281	885	30.6*	215	Very Poor; 3pts;Only C2	
2008/07/26	19:30:04	255	17	244	222	267	328	2.4*	261	Poor Event	
2008/07/27	17:06:04	245	10	486	244	731	1806	134.1*	251	Very Poor; Only; C2	
2008/07/27	18:30:05	188	6	175	142	206	548	12.0*	192	Very Poor; Only; C2	
2008/07/27	22:30:04	359	4	242	78	417	1271	68.6*	360	Very Poor; Only; C2	
2008/07/28	06:54:04	276	25	213	200	225	335	3.0*	283	Very Poor; Only; C2	
2008/07/28	10:54:04	61	10	317	322	311	278	-1.1*	67	Very Poor Event	
2008/07/28	20:30:06	48	60	54	20	87	181	1.3*	44	Very Poor; Only; C2	
2008/07/29	01:31:40	257	7	149	213	88	0	-21.6*	259	Very Poor; Only; C2	
2008/07/29	10:54:04	251	6	296	326	265	0	-11.0*	254	Very Poor; Only; C2	
2008/07/29	23:30:04	170	9	599	----	----	----	-----	166	Very Poor; 2pts;Only C2	
2008/07/30	15:54:04	244	7	409	405	414	473	2.6*	250	Very Poor; Only; C2	
2008/07/30	23:06:04	60	20	309	219	407	428	5.8*	73		
2008/07/31	02:06:04	334	9	482	324	643	1484	86.5*	330	Poor Event; Only C2	
2008/07/31	02:06:04	267	37	164	184	141	130	-0.7*	269	Poor Event	
2008/07/31	02:54:04	178	3	155	170	140	0	-8.5*	175	Very Poor; Only; C2	
2008/07/31	08:30:04	95	76	117	90	147	291	3.2*	106	Very Poor; Only; C2	
2008/07/31	12:06:04	296	88	164	42	287	282	3.3*	292		

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

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