

Space Weather Highlights
22 August - 28 August 2011

SWPC PRF 1878
30 August 2011

Solar activity was at very low to low levels. Region 1271 (N16, L=059, class/area Ehc/290 on 18 August) produced four low-level C-class flares during the period. All other regions on the disk were relatively stable and quiet. There were no Earth-directed CMEs observed during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels during the entire period.

Geomagnetic field activity was at quiet to unsettled levels on 22 - 25 August due to a weak coronal hole high speed stream (CH HSS). Activity decreased to mostly quiet levels for the remainder of the period.

Space Weather Outlook
31 August - 26 September 2011

Solar activity is expected to be very low to low throughout the forecast period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels from 31 August - 03 September. The flux is expected to increase to moderate to high levels during 04 - 09 September due to CH HSS effects. Normal to moderate flux levels are expected during 10 - 11 September. A return to moderate to high flux levels is expected on 13 - 14 September following a second CH HSS. Normal to moderate levels are expected from 15 - 25 September. Moderate to high flux levels are expected on 26 September due to effects of another CH HSS.

Geomagnetic field activity is expected to be at mostly quiet levels during 31 August - 02 September. Activity is expected to increase to quiet to unsettled levels, with isolated active periods, during 03 - 05 September as a CH HSS disturbs the field. Quiet levels are forecast for 06 - 10 September. An increase to quiet to unsettled levels is expected during 11 - 12 September due to another CH HSS. Predominately quiet levels are expected for the remainder of the period with the exception of 18 - 19 September and 24 - 25 September, when quiet to unsettled levels are expected due to recurrent CH HSS effects.



Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
22 August	108	82	380	B2.5	1	0	0	0	0	0	0	0
23 August	104	81	370	B2.4	0	0	0	2	0	0	0	0
24 August	104	75	220	B2.5	1	0	0	8	0	0	0	0
25 August	104	97	340	B2.9	0	0	0	4	0	0	0	0
26 August	105	76	330	B2.7	2	0	0	5	0	0	0	0
27 August	104	63	310	B2.5	0	0	0	0	0	0	0	0
28 August	101	73	200	B2.2	0	0	0	5	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day -sr)			Electron Fluence (electrons/cm ² -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	22 August	4.0e+05	1.2e+04	3.0e+03		1.3e+07
23 August	4.1e+05	1.2e+04	3.0e+03		5.2e+06	
24 August	2.9e+05	1.2e+04	2.9e+03		3.6e+06	
25 August	2.0e+05	1.2e+04	3.2e+03		5.9e+06	
26 August	2.2e+05	1.3e+04	3.1e+03		5.8e+06	
27 August	2.3e+05	1.2e+04	2.9e+03		4.5e+06	
28 August	1.5e+05	1.3e+04	3.0e+03		1.4e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	22 August	5	2-1-2-1-0-1-2-2	-1	2-1-3--1--1--1-2--1	7
23 August	8	2-0-1-2-2-2-3-3	-1	1-1-1-1-2-2-3--1	9	3-0-1-1-2-2-4-3
24 August	5	3-1-0-2-2-1-0-2	5	3-1-1-1-2-2-0-1	6	3-1-0-1-2-2-0-2
25 August	4	1-0-0-1-2-2-2-1	8	2-1-1-3-3-3-1-1	4	2-0-0-1-2-1-2-2
26 August	3	0-0-0-1-1-1-2-2	1	0-0-0-0-0-1-1-1	3	1-0-0-0-1-1-2-2
27 August	3	2-0-1-0-1-1-2-1	-1	-1--1-1-1--1-3-3--1	5	2-0-0-0-2-2-2-2
28 August	4	1-1-1-2-0-1-2-2	0	1--1-0--1-1-1--1-1	6	2-1-1-2-2-1-2-2

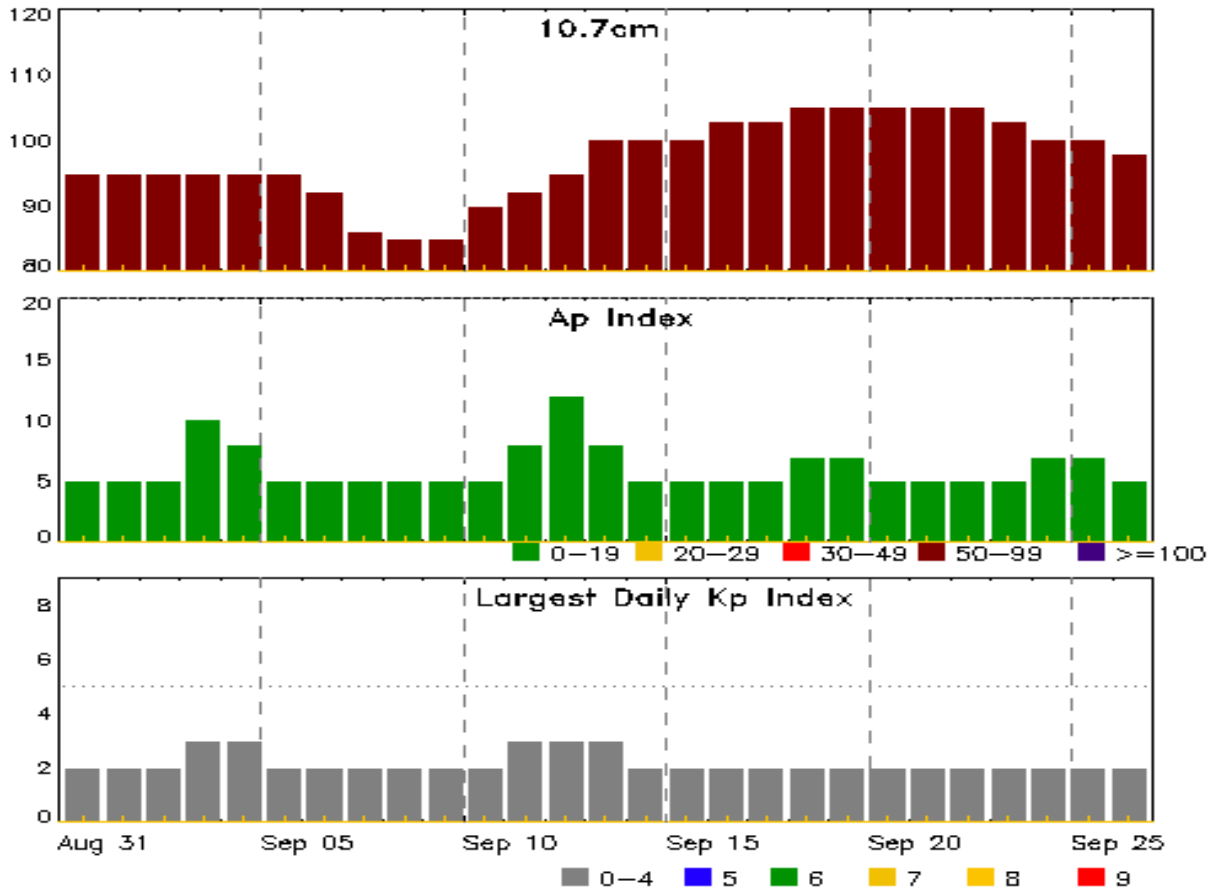


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
28 Aug 0452	ALERT: Type II Radio Emission	28/0420



Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
31 Aug	95	5	2	14 Sep	100	5	2
01 Sep	95	5	2	15	100	5	2
02	95	5	2	16	103	5	2
03	95	10	3	17	103	5	2
04	95	8	3	18	105	7	2
05	95	5	2	19	105	7	2
06	92	5	2	20	105	5	2
07	86	5	2	21	105	5	2
08	85	5	2	22	105	5	2
09	85	5	2	23	103	5	2
10	90	5	2	24	100	7	2
11	92	8	3	25	100	7	2
12	95	12	3	26	98	5	2
13	100	8	3				



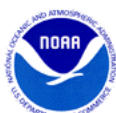
Energetic Events

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
22 Aug	0049	0057	0109	B5.1			1271
22 Aug	0141	0148	0201	B6.7			1271
22 Aug	0944	0949	0951	B9.7			1274
22 Aug	1152	1156	1159	B5.6			
22 Aug	1206	1210	1212	B6.2			
22 Aug	1515	1604	1638	C1.1			1271
22 Aug	1850	1854	1900	B5.5			
22 Aug	1957	2003	2010	B9.9			1271
23 Aug	0101	0125	0134	B5.7			1271
23 Aug	0549	0553	0600	B5.4			
23 Aug	1354	1355	1408		SF	N19W21	1271
23 Aug	1548	1551	1554	B4.0			
23 Aug	1711	1718	1733		SF	N19W24	1271
24 Aug	0653	0655	0658		SF	N19W31	1271
24 Aug	0902	0921	0959		SF	N19W33	1271
24 Aug	1022	1025	1033	B4.1	SF	N14W38	1271
24 Aug	1253	1255	1307		SF	N19W34	1271
24 Aug	1629	1634	1640	C1.1	SF	N16W36	1271
24 Aug	1644	1650	1655	B5.0	SF	N13W41	1271
24 Aug	1732	1735	1738	B5.5	SF	N16W38	1271
24 Aug	1817	1820	1822	B4.5			
24 Aug	2012	2015	2018	B4.3	SF	N16W38	1271
25 Aug	0654	0702	0713	B9.5			1277
25 Aug	0808	0811	0814	B4.8			1271
25 Aug	0829	0832	0834	B5.3	SF	S20W41	1272
25 Aug	0935	0938	0941	B4.4			1271
25 Aug	1023	1026	1034	B4.6			1277
25 Aug	1341	1343	1345		SF	N15W49	1271
25 Aug	1515	1519	1522		SF	N17W50	1271
25 Aug	1526	1527	1531		SF	N17W51	1271
25 Aug	1645	1652	1701	B9.6			1279
25 Aug	2156	2203	2209	B8.9			1271



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
26 Aug	0041	0045	0055	B4.4			
26 Aug	0329	0334	0336	C1.0	SF	N20W55	1271
26 Aug	0432	0440	0444	B7.9	SF	N21W56	1271
26 Aug	0638	0643	0650	B6.5			
26 Aug	0826	0830	0834	B4.0			
26 Aug	0858	0902	0908	B7.6	SF	N19W58	1271
26 Aug	1112	1117	1123	B6.3	SF	N18E33	
26 Aug	1211	1215	1217	B4.4			
26 Aug	1304	1313	1317	C2.3			1271
26 Aug	1330	1333	1336	B9.0			1279
26 Aug	1519	1526	1534	B6.4			1279
26 Aug	1731	1731	1740		SF	N15E69	1279
27 Aug	0442	0446	0452	B8.7			1275
28 Aug	0417	0417	0421		SF	N23W73	1271
28 Aug	1314	1314	1320		SF	S21E74	1281
28 Aug	1341	1342	1355		SF	S19E71	1281
28 Aug	1356	1400	1404	B5.4	SF	S19E75	1281
28 Aug	1958	2002	2006	B3.4	SF	S18E68	1281



Region Summary

Date	Location		Sunspot Characteristics					Flares												
	Lat	CMD	Helio Lon	Area 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical								
									C	M	X	S	1	2	3	4				
Region 1271																				
15 Aug	N17E74		64	120	6	Dso	3	B	2											
16 Aug	N15E63		62	240	7	Dsi	4	B												
17 Aug	N16E50		62	240	11	Esi	9	BGD	1											
18 Aug	N16E38		59	290	11	Ehc	16	B	2			5								
19 Aug	N16E25		59	240	11	Esi	12	BG												
20 Aug	N16E10		61	260	10	Dho	22	B	1			3								
21 Aug	N16W01		59	240	12	Eao	15	B												
22 Aug	N17W16		60	280	11	Ekc	28	BG	1											
23 Aug	N17W29		61	270	11	Eki	21	B				2								
24 Aug	N17W42		60	180	11	Esi	25	B	1			8								
25 Aug	N17W56		61	140	11	Esi	15	BD				3								
26 Aug	N17W69		61	80	9	Dso	6	B	2			3								
27 Aug	N16W82		61	60	7	Cso	4	B												
28 Aug	N16W96		62	plage								1								
									10	0	0	25	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 59

Region 1272																				
16 Aug	S19E67		57	10	2	Cro	2	B												
17 Aug	S19E55		56	60	7	Cso	2	B	3			5								
18 Aug	S22E41		56	60	4	Cso	3	B	1			2								
19 Aug	S21E27		57	30	2	Hax	2	A												
20 Aug	S22E15		56	50	7	Cao	5	B				1								
21 Aug	S21E03		54	90	6	Dao	8	B	2			8								
22 Aug	S21W08		52	60	6	Dsi	11	B												
23 Aug	S21W20		52	40	7	Dso	6	B												
24 Aug	S21W36		54	20	3	Cro	4	B												
25 Aug	S21W49		55	0	1	Axx	1	A				1								
26 Aug	S21W62		55	plage																
27 Aug	S21W76		55	plage																
28 Aug	S21W90		56	plage																
									7	0	0	17	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 54



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
									C	M	X	S	1	2	3	4	
Region 1273																	
17 Aug	S18W03	114	10	5	Bxo	3	B										
18 Aug	S18W09	112	10	4	Bxo	4	B										
19 Aug	S18W28	113	10	1	Axx	2	A										
20 Aug	S18W42	114	plage														
21 Aug	S18W56	115	plage														
22 Aug	S18W70	116	plage														
23 Aug	S18W84	116	plage														
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 114

Region 1274																	
20 Aug	N19E70	2	30	3	Hrx	2	A										
21 Aug	N18E57	1	30	2	Cro	2	B										
22 Aug	N18E42	2	30	3	Dso	2	B										
23 Aug	N19E30	2	30	2	Hsx	2	A										
24 Aug	N18E16	2	10	3	Cro	4	B										
25 Aug	N17E05	1	10	2	Bxo	2	B										
26 Aug	N17W09	2	plage														
27 Aug	N17W23	2	plage														
28 Aug	N17W37	3	plage														
								0	0	0	0	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 1

Region 1275																	
21 Aug	N06E68	350	30	3	Cro	1	B										
22 Aug	N07E55	349	10	5	Cso	1	B										
23 Aug	N08E39	351	20	1	Hsx	1	A										
24 Aug	N07E26	352	10	2	Axx	2	A										
25 Aug	N07E17	350	10	6	Bxo	3	B										
26 Aug	N07E05	348	30	4	Dso	2	B										
27 Aug	N07W08	346	30	2	Cso	2	B										
28 Aug	N07W19	344	10	4	Bxo	4	B										
								0	0	0	0	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 348



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Helio Lon	Area 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
								C	M	X	S	1	2	3	4		
Region 1276																	
23 Aug	N20E48	344	10		Axx	1	A										
24 Aug	N20E34	345	plage														
25 Aug	N20E20	346	plage														
26 Aug	N20E07	346	plage														
27 Aug	N20W07	346	plage														
28 Aug	N20W21	347	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 346

Region 1277																	
25 Aug	N17E62	304	50	2	Hsx	1	A										
26 Aug	N17E50	303	80	2	Hsx	1	A										
27 Aug	N17E38	302	80	1	Hsx	1	A										
28 Aug	N17E25	300	40	1	Hsx	1	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 300

Region 1278																	
25 Aug	N16W40	46	10	3	Bxo	4	B										
26 Aug	N16W53	46	20	3	Cso	3	B										
27 Aug	N16W67	46	plage														
28 Aug	N16W81	49	0		Axx	1	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 46

Region 1279																	
25 Aug	N14E75	291	120	5	Hsx	1	A										
26 Aug	N13E61	292	90	2	Hsx	1	A					1					
27 Aug	N13E47	291	120	2	Hsx	3	A										
28 Aug	N13E34	291	80	3	Cso	3	B										
								0	0	0	1	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 291



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares								
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical			
									C	M	X	S	1	2	3

Region 1280

26 Aug	N17E24	329	30	3	Cro	3	B										
27 Aug	N17E10	328	20	2	Cro	3	B										
28 Aug	N17W03	328	10	3	Bxo	2	B										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 328

Region 1281

28 Aug	S21E65	260	60	6	Cso	2	B					4					
									0	0	0	4	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 260

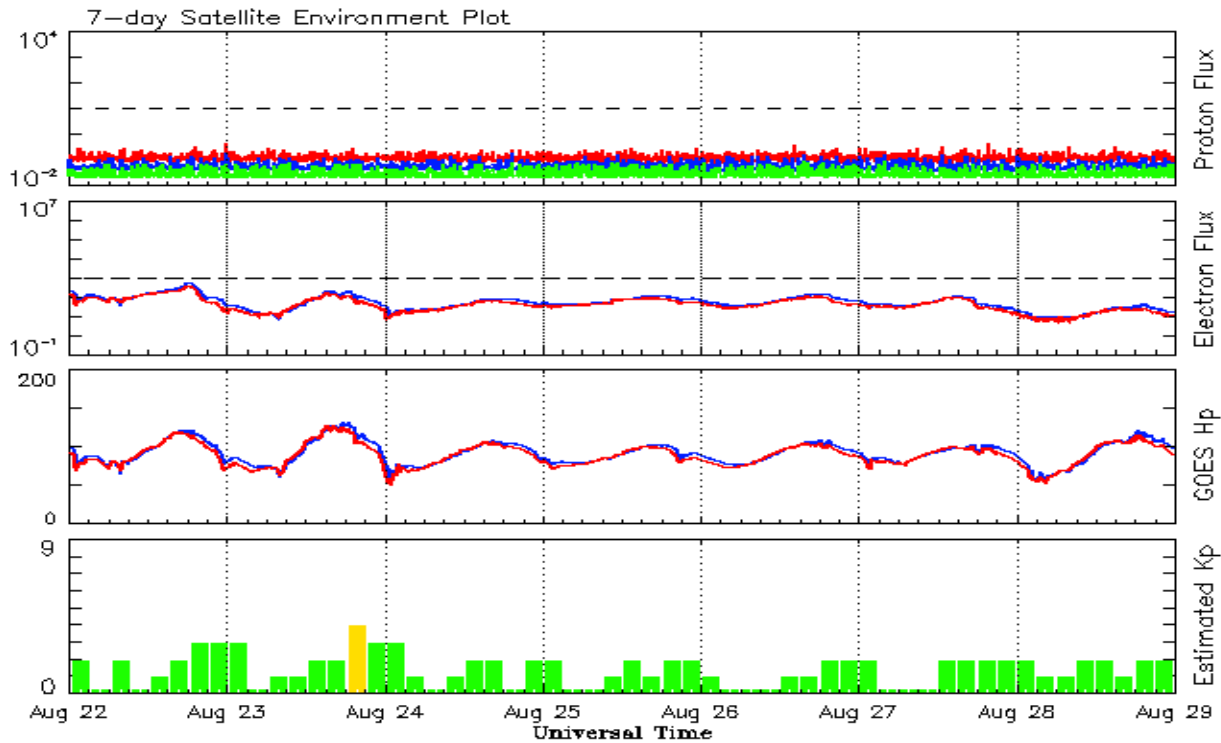


Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2009									
August	0.3	0.0	0.00	7.7	4.8	67.4	72.1	5	3.8
September	6.6	4.3	0.64	9.9	6.2	70.5	73.3	4	3.8
October	7.0	4.8	0.66	11.3	7.1	72.3	74.1	3	4.1
November	7.7	4.1	0.55	12.4	7.6	73.6	74.5	3	4.5
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
2010									
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
April	11.2	8.0	0.71	21.4	14.0	75.9	78.3	10	5.5
May	19.9	8.7	0.44	23.8	15.5	73.8	79.0	8	5.7
June	17.9	13.6	0.75	25.2	16.4	72.6	79.7	7	5.8
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67	35.9	23.2	81.6	85.3	6	6.4
November	36.1	21.5	0.60	40.5	26.5	82.5	87.7	5	6.4
December	22.0	14.4	0.66	43.8	28.8	84.3	89.6	4	6.5
2011									
January	32.1	18.8	0.59	47.2	31.0	83.7	91.2	6	6.7
February	53.2	29.6	0.55			94.5		6	
March	81.0	55.8	0.69			115.3		7	
April	81.7	54.4	0.67			112.6		9	
May	61.4	41.6	0.68			95.9		9	
June	55.5	37.0	0.67			95.8		8	
July	67.0	43.9	0.66			94.2		9	

Note: Values are final except for the most recent 6 months which are considered preliminary.
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 22 August 2011*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

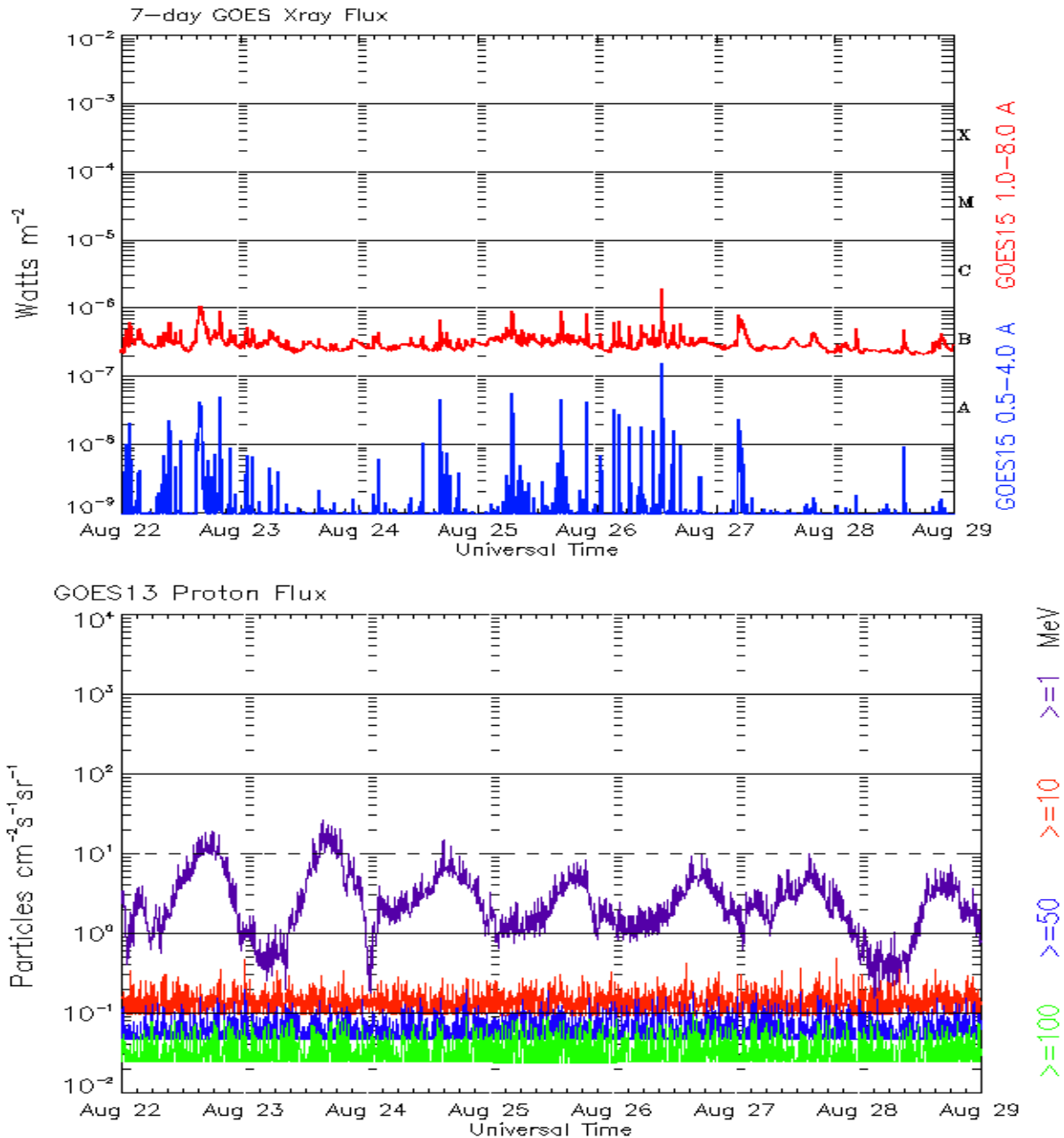
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

Kp plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 22 August 2011*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm² -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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