

Solar activity began the week at moderate levels with an M3/1b flare at 08/1810 UTC from Region 1263 (N17, L=301, class/area Ekc/720 on 04 August). This event was associated with a type II radio sweep and a partial-halo coronal mass ejection which was mostly directed away from the west limb. Region 1263 produced an additional M2/1b flare at 09/0354 UTC. Activity levels increased to high as Region 1263 produced an X6/2b flare at 09/0805 UTC which was associated with type II and type IV radio sweeps as well as a full halo CME, which also appeared to be primary travelling away from the west limb. The X6 is the largest x-ray event for cycle 24 so far. Activity levels dropped down to low levels on 10 August as Region 1263 rotated around the west limb. Activity levels further decreased to very low levels on 12 August and remained there through the end of the summary period.

A greater than 10 MeV proton enhancement was observed beginning at 08/1905 UTC in association with the M3 flare from Region 1263. The enhancement peaked at 4 PFU at 08/2000 UTC. Greater than 100 MeV and 10 MeV proton events began on 09 August in association with the X6 flare described previously. The greater than 100 MeV proton event began at 09/0825 UTC, reached a peak of 2.6 PFU at 09/0840 UTC, and dropped below threshold at 09/1035 UTC. The greater than 10 MeV proton event began at 09/0845 UTC, reached a peak of 26 PFU at 09/1210 UTC, and ended at 09/1715 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 08 August and stayed high through the end of the day on 13 August. The electron flux levels were at normal to moderate levels on 14 August.

Geomagnetic field activity began the week at generally quiet to unsettled levels with isolated active and minor storm periods at the high latitudes. Activity decreased to quiet levels for 11-12 August and then increased slightly to quiet to unsettled levels for 14 August. Solar wind observations from the ACE spacecraft showed a positive polarity coronal hole high speed stream from 08-10 August. Solar wind data also indicated a solar sector boundary on the 13th at about 2000 UTC, followed by the onset of a negative polarity coronal hole high speed stream.

### **Space Weather Outlook** **17 August - 12 September 2011**

Solar activity is expected to be very low to low for 17-23 August. An increase to low to moderate is expected as old Region 1263 returns and transits the disk from 24 August to 06 September. Activity levels are likely to return to low or very low levels for the remainder of the outlook interval from 07-12 September. In addition there continues to be a chance that a new, rapidly emerging flux region could increase activity to moderate or greater levels at any time during the outlook period.

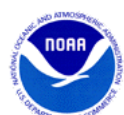
No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to increase to high levels for 18-23 August. Moderate levels are expected for 24-27 August, followed by a few days



for high levels for 28-29 August. Low to moderate levels should prevail for 30 August through 04 September, followed by another increase to high levels for 05-07 September. Normal levels should resume on 08 September and continue through the end of the outlook period.

Geomagnetic field activity is expected to be generally quiet to unsettled for 17-22 August as there may be weak driving from a coronal hole high speed stream (HSS). Quiet levels should prevail for 23-25 August and another increase to quiet to unsettled is expected for 26-28 August from another HSS. Quiet levels are expected to return for 29 August through 02 September. An increase to unsettled with a chance for active periods is expected for 03-05 September due to another recurrent HSS. Quiet levels should predominate for 06-10 September, and another increase to quiet to unsettled from a recurrent HSS is expected for 11-12 September.



### *Daily Solar Data*

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
08 August	102	80	510	B3.1	4	1	0	7	1	0	0	0
09 August	98	54	420	B4.3	5	1	1	11	1	1	0	0
10 August	90	43	250	B3.0	5	0	0	5	0	0	0	0
11 August	84	36	50	B2.4	2	0	0	0	0	0	0	0
12 August	83	25	20	A9.0	0	0	0	0	0	0	0	0
13 August	83	35	25	A8.2	0	0	0	0	0	0	0	0
14 August	88	0	0	B2.2	0	0	0	0	0	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day-sr)			Electron Fluence (electrons/cm <sup>2</sup> -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	08 August	1.7e+06	4.5e+04	4.1e+03		1.1e+08
09 August	4.7e+06	7.6e+05	3.1e+04		2.3e+08	
10 August	4.1e+06	1.4e+05	4.4e+03		2.5e+08	
11 August	9.3e+05	2.5e+04	2.8e+03		3.2e+08	
12 August	8.8e+05	1.4e+04	2.9e+03		2.8e+08	
13 August	1.1e+06	1.3e+04	3.0e+03		2.1e+08	
14 August	7.9e+05	1.3e+04	3.0e+03		2.4e+07	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	08 August	8	3-2-1-3-2-1-1-2	24	2-2-2-6-6-1-1-1	10
09 August	5	2-2-2-2-0-1-1-1	8	2-3-3-3-0-1-2-1	9	3-3-3-2-1-1-2-2
10 August	8	1-2-4-1-1-1-3-0	15	2-3-5-4-3-0-2-1	7	2-2-3-2-1-0-2-1
11 August	3	1-1-1-1-1-0-1-2	3	1-1-2-1-1-0-1-1	6	1-1-1-1-1-1-2-3
12 August	3	1-2-1-1-1-1-1-1	4	1-1-0-3-2-1-1-0	5	1-2-1-2-1-1-2-2
13 August	4	1-2-1-0-1-1-1-2	2	1-1-1-0-0-0-0-1	5	1-2-1-0-1-1-1-3
14 August	8	2-2-2-2-2-2-2-3	10	2-2-3-2-1-3-3-2	9	2-2-2-2-1-2-2-3

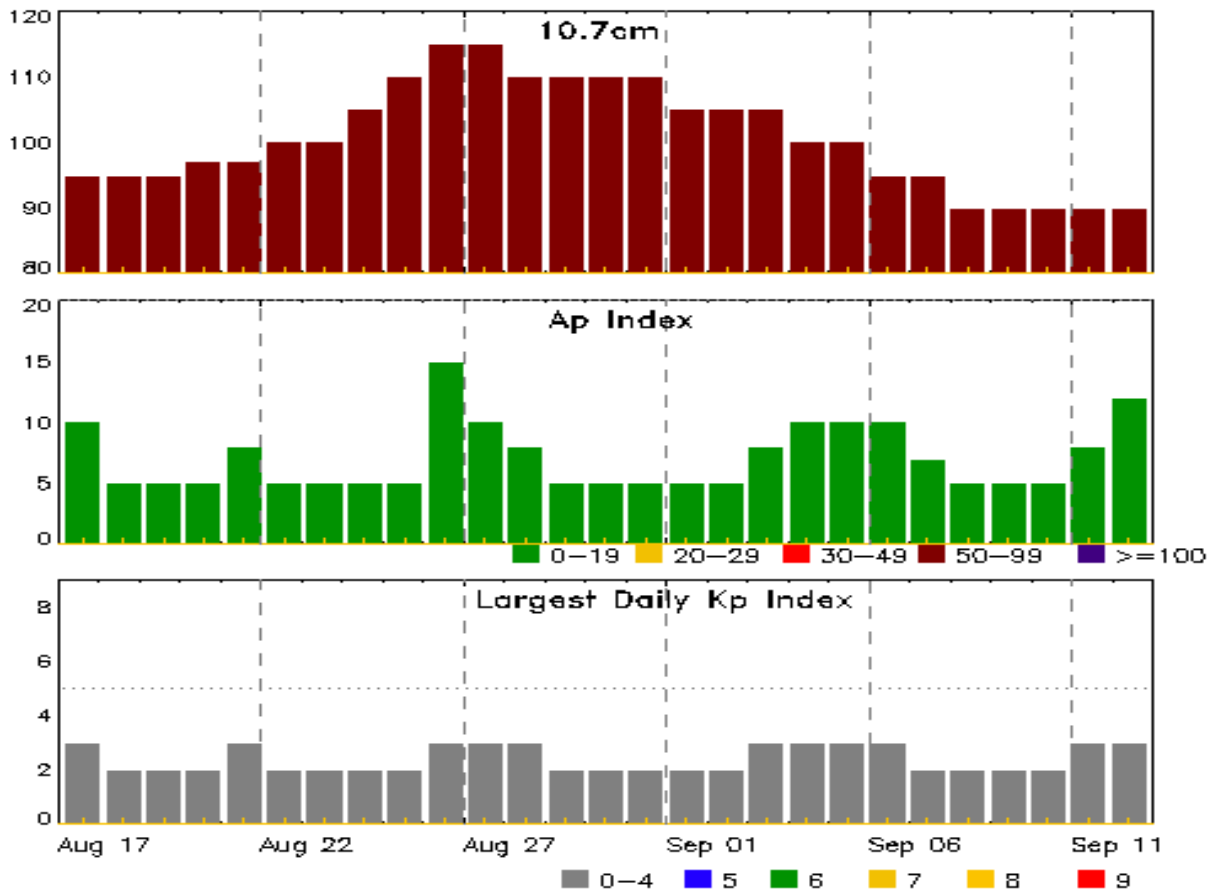


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
08 Aug 1331	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315
08 Aug 1904	SUMMARY: 10cm Radio Burst	08/1803 - 1818
08 Aug 1918	ALERT: Type II Radio Emission	08/1803
09 Aug 0511	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315
09 Aug 0802	ALERT: X-ray Flux exceeded M5	09/0802
09 Aug 0812	SUMMARY: X-ray Event exceeded X1	09/0748 - 0808
09 Aug 0827	SUMMARY: 10cm Radio Burst	09/0801 - 0806
09 Aug 0831	WARNING: Proton 100MeV Integral Flux $>$ 1pfu	09/0831 - 1500
09 Aug 0832	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	09/0832 - 1800
09 Aug 0840	ALERT: Proton Event 100MeV Integral Flux $>$ 1pfu	09/0840
09 Aug 0854	SUMMARY: 10cm Radio Burst	09/0817 - 0819
09 Aug 0856	ALERT: Type II Radio Emission	09/0801
09 Aug 0907	ALERT: Proton Event 10MeV Integral Flux $\geq$ 10pfu	09/0845
09 Aug 0917	ALERT: Type IV Radio Emission	09/0820
09 Aug 1746	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	09/0832 - 2100
09 Aug 2053	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	09/0845 - 1715
09 Aug 2103	SUMMARY: Proton Event 100MeV Integral Flux $>$ 1pfu	09/0825 - 1045
10 Aug 0500	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315
10 Aug 0659	WARNING: Geomagnetic K = 4	10/0659 - 1200
10 Aug 0711	ALERT: Geomagnetic K = 4	10/0711
10 Aug 1856	ALERT: Type II Radio Emission	10/1607
11 Aug 0501	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315
12 Aug 0503	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315
13 Aug 0544	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1315



## 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
17 Aug	95	10	3	31 Aug	110	5	2
18	95	5	2	01 Sep	105	5	2
19	95	5	2	02	105	5	2
20	97	5	2	03	105	8	3
21	97	8	3	04	100	10	3
22	100	5	2	05	100	10	3
23	100	5	2	06	95	10	3
24	105	5	2	07	95	7	2
25	110	5	2	08	90	5	2
26	115	15	3	09	90	5	2
27	115	10	3	10	90	5	2
28	110	8	3	11	90	8	3
29	110	5	2	12	90	12	3
30	110	5	2				



### *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 245	Radio Flux 2695	Intensity II	Intensity IV
08 Aug	1800	1810	1818	M3.5	0.022	1B	N16W61	1263	520	300	1	
09 Aug	0319	0354	0408	M2.5	0.035	1B	N18W68	1263				
09 Aug	0748	0805	0808	X6.9	0.190	2B	N17W69	1263	19000	710	1	

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
08 Aug	0119	0123	0129	B5.7			1263
08 Aug	0300	0310	0314	C1.3	SF	N19W57	1263
08 Aug	0602	0610	0617	B7.6			1263
08 Aug	1046	1046	1049		SF	N20W03	1266
08 Aug	1214	1220	1225	B8.0	SF	N20W63	1263
08 Aug	1247	1250	1252	B4.6			1263
08 Aug	1532	1536	1551	B8.1	SF	N17W62	1263
08 Aug	1626	1635	1649	C2.2	SF	N17W61	1263
08 Aug	1800	1810	1818	M3.5	1B	N16W61	1263
08 Aug	2029	2033	2037	B9.2			1263
08 Aug	2050	2054	2056	B6.9			
08 Aug	2200	2209	2220	C7.7	SF	N15W61	1263
08 Aug	2302	2322	2359	C5.3	SF	N19W65	1263
09 Aug	0009	0012	0042		SF	N18W65	1263
09 Aug	0319	0354	0408	M2.5	1B	N18W68	1263
09 Aug	0454	0458	0500		SF	N17W68	1263
09 Aug	0539	0539	0543		SF	N17W68	1263
09 Aug	0719	0723	0727	C1.4			1263
09 Aug	0728	0730	0732		SF	N16W69	1263
09 Aug	0748	0805	0808	X6.9	2B	N17W69	1263
09 Aug	1205	1205	1208		SF	N15W73	1263
09 Aug	1252	1255	1301		SF	N17W72	1263
09 Aug	1329	1345	1357	C2.2	SF	N16W79	1263
09 Aug	1435	1437	1450		SF	N16W80	1263
09 Aug	1543	1554	1604	C2.4	SF	N15W75	1263
09 Aug	1658	1702	1705	B8.6			
09 Aug	1804	1811	1842	C2.0			
09 Aug	2007	2007	2010		SF	N16W74	1263
09 Aug	2333	2343	2349	C3.9	SF	N18W79	1263



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
10 Aug	0841	0845	0851	B4.7			
10 Aug	0930	0937	0943	C2.4			1263
10 Aug	1021	1044	1055	C6.1			1263
10 Aug	1326	1333	1337	B8.1	SF	N20W82	1263
10 Aug	1342	1344	1350		SF	S22E36	
10 Aug	1403	1409	1411	C1.2	SF	N20W89	1263
10 Aug	1413	1415	1417		SF	N20W89	1263
10 Aug	1449	1524	1538	C1.5			
10 Aug	1654	1658	1702		SF	N20W91	1263
10 Aug	2035	2039	2041	C1.1			1263
11 Aug	0416	0426	0437	B6.9			
11 Aug	0739	0746	0754	C1.3			1263
11 Aug	0934	1023	1036	C6.2			1263
11 Aug	2254	2309	2324	B6.8			1266
12 Aug	2055	2100	2108	B1.9			1263
13 Aug	1425	1431	1435	B1.6			1269
13 Aug	2246	2255	2311	B1.8			



## Region Summary

Date	Location		Sunspot Characteristics					Flares												
	Lat CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical									
								C	M	X	S	1	2	3	4					
<b>Region 1263</b>																				
28 Jul	N18E73	302	260	9	Dho	3	B							2						
29 Jul	N18E59	303	310	7	Dho	5	B	1						2						
30 Jul	N18E48	301	470	9	Dhi	12	B							1						
31 Jul	N18E34	301	460	10	Dki	17	B	4						8						
01 Aug	N17E21	301	460	9	Dki	23	BGD	1						11						
02 Aug	N17E08	301	560	14	Eki	25	BGD	3						9						
03 Aug	N17W06	301	600	10	Dki	16	BGD	1	1				6	1						
04 Aug	N17W18	301	720	10	Ekc	17	BGD	2					10							
05 Aug	N16W31	300	570	11	Ekc	20	BGD	2					3							
06 Aug	N18W42	298	440	13	Ekc	23	BGD	2					9							
07 Aug	N17W55	298	510	14	Ekc	27	BGD	5					14							
08 Aug	N18W68	298	450	14	Ekc	13	BGD	4	1				6	1						
09 Aug	N17W81	298	340	14	Ehc	8	BGD	4	1	1			11	1	1					
10 Aug	N17W93	296	230	12	Eso	4	BG	4					4							
								33	3	1			96	3	1	0	0			

Crossed West Limb.  
 Absolute heliographic longitude: 301

<b>Region 1266</b>																				
04 Aug	N18E38	245	20	4	Cro	3	B													
05 Aug	N17E27	241	10	5	Bxo	5	B													
06 Aug	N17E13	244	plage																	
07 Aug	N18E01	242	30	5	Dso	8	B													
08 Aug	N18W12	242	50	6	Dsi	20	B						1							
09 Aug	N19W26	243	70	8	Dso	13	B													
10 Aug	N19W39	243	10	9	Bxo	7	B													
11 Aug	N19W49	240	10	2	Axx	2	A													
12 Aug	N19W63	241	plage																	
13 Aug	N20W74	238	5		Axx	1	A													
14 Aug	N20W88	239	plage																	
													0	0	0	1	0	0	0	0

Still on Disk.  
 Absolute heliographic longitude: 242





### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 1267</b>																							
05 Aug	S17E26	243	10	5	Bxo	6	B	1				1											
06 Aug	S17E13	243	60	6	Dso	10	BGD	2				3											
07 Aug	S17W00	243	40	7	Dso	8	B	1				2											
08 Aug	S17W14	243	10	7	Bxo	5	B																
09 Aug	S15W30	246	10	2	Axx	3	A																
10 Aug	S15W44	248	plage																				
11 Aug	S15W58	249	plage																				
12 Aug	S15W72	250	plage																				
13 Aug	S15W86	251	plage																				
								4	0	0		6	0	0	0	0	0						

Crossed West Limb.  
 Absolute heliographic longitude: 243

<b>Region 1268</b>																							
06 Aug	N17E34	222	10	4	Bxo	4	B																
07 Aug	N17E20	224	plage																				
08 Aug	N20E04	225	0	3	Axx	2	A																
09 Aug	N20W10	227	plage																				
10 Aug	N18W21	225	10	1	Axx	2	A																
11 Aug	N18W35	226	plage																				
12 Aug	N18W49	227	plage																				
13 Aug	N18W63	228	plage																				
14 Aug	N18W77	228	plage																				
								0	0	0		0	0	0	0	0	0						

Still on Disk.  
 Absolute heliographic longitude: 225

<b>Region 1269</b>																							
11 Aug	S22E17	173	20	2	Dro	2	B																
12 Aug	S22E03	174	10	4	Bxo	3	B																
13 Aug	S21W09	173	10	1	Axx	2	A																
14 Aug	S21W23	174	plage																				
								0	0	0		0	0	0	0	0	0						

Still on Disk.  
 Absolute heliographic longitude: 174



***Region Summary - continued***

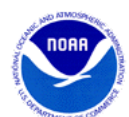
Date	Location		Sunspot Characteristics				Flares								
	Lat CMD	Lon	Heli 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical			
									C	M	X	S	1	2	3

***Region 1270***

11 Aug	N23E54	135	20	3	Dso	2	B										
12 Aug	N23E41	136	10	4	Bxo	2	B										
13 Aug	N23E29	135	10	5	Bxo	2	B										
14 Aug	N23E15	136	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 136

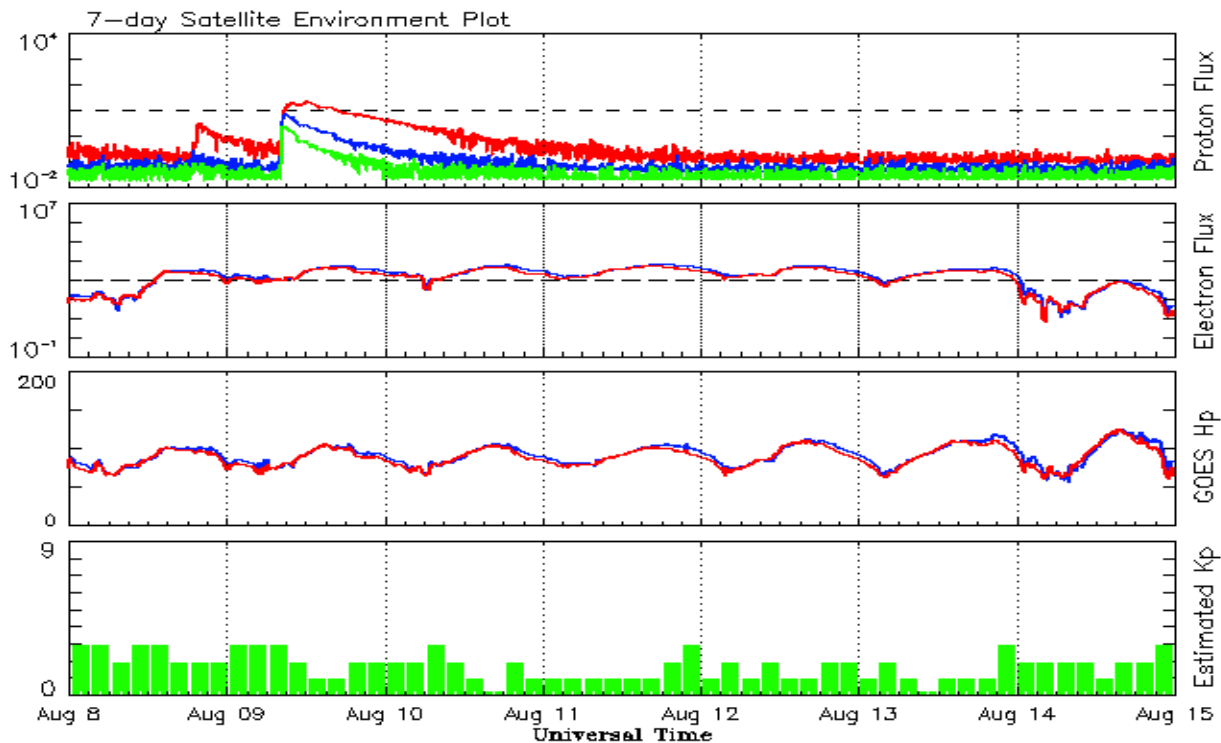


**Recent Solar Indices (preliminary)  
Observed monthly mean values**

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
<b>2009</b>									
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
<b>2010</b>									
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
<b>2011</b>									
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 08 August 2011*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-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.

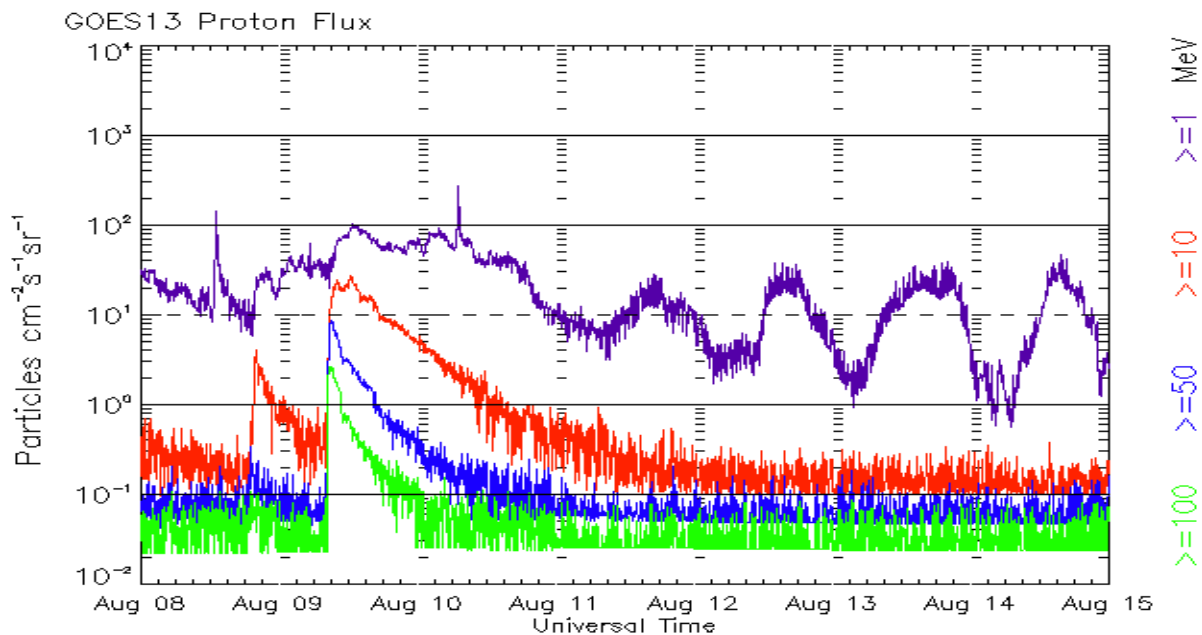
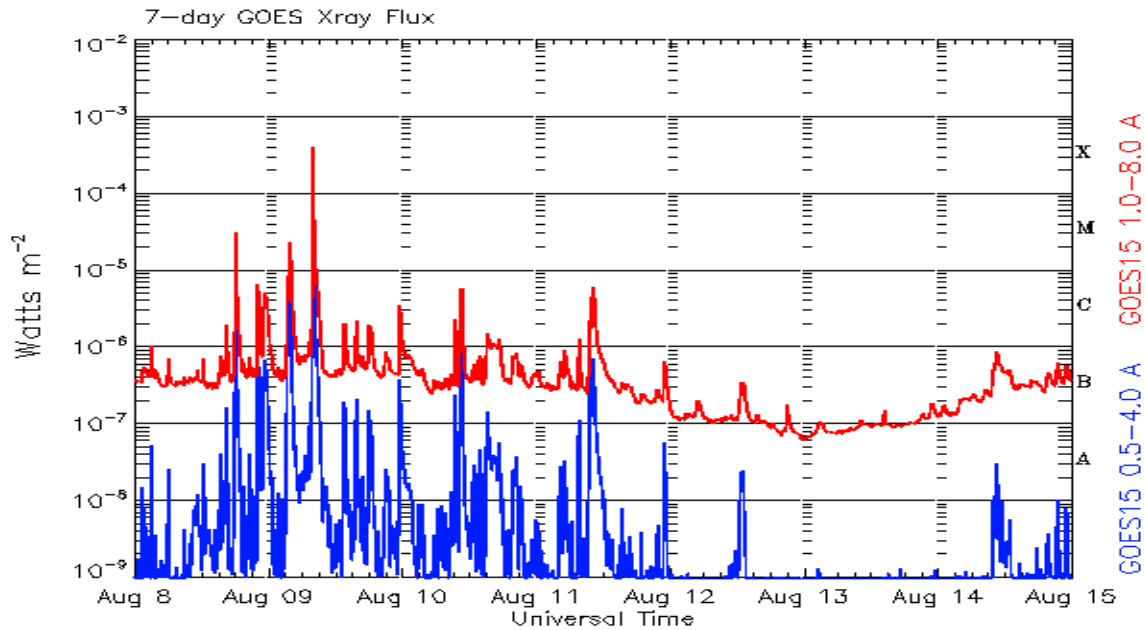
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 08 August 2011*

The x-ray plots contains five-minute averages x-ray flux (Watt/ $m^2$ ) 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/ $cm^2$  -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](mailto:SWPC.Webmaster@noaa.gov)

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