Space Weather Highlights **SEC PRF 1720**
11 – 17 August 2008 **19 August 2008**

Solar activity was very low. No flares were detected. The visible disk was spotless.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels during 11 - 13 August and 15 - 16 August.

Geomagnetic field activity was at quiet to unsettled levels during the period. Brief periods of active levels were also observed at high latitudes on 11, 14, and 17 August. ACE solar wind observations indicated a recurrent coronal hole high-speed stream was in progress at the start of the period. Velocities reached a maximum of 657 km/sec at 11/0500 UTC, then gradually decreased through 16 August with a minimum velocity of 310 km/sec observed at 16/1555 UTC. Minor variations were noted in the IMF as velocities decreased. A co-rotating interaction region (CIR) commenced late on 16 August associated with a minor increase in velocities (peak 402 km/sec at 17/2226 UTC), increased proton densities (peak 29 p/cc at 16/2211 UTC), intermittent periods of southward IMF Bz (minimum - 7 nT at 16/2122 UTC), and increased IMF Bt (peak 10 nT at 16/2059 UTC).

Space Weather Outlook
20 Aug – 15 Sep 2008

Solar activity is expected to be very low.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels during 20 - 23 August, 07 - 12 September, and 15 September.

Geomagnetic field activity is expected to be at unsettled to active levels during 20 August due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to quiet levels during 21 August - 03 September. Activity is expected to increase to unsettled levels on 04 September. A further increase to active to minor storm levels is expected on 05 September due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to quiet to unsettled levels during 06 - 07 September as the high-speed stream subsides. Activity is expected to decrease to quiet levels during 08 - 11 September. Activity is expected to increase to unsettled to active levels during 12 - 14 September due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to mostly quiet levels on 15 September as the high-speed stream subsides.

Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background	Flares: X-ray Flux C	M	X	Optical S	1	2	3	4
11 August	66	0	0	<A1.0	0	0	0	0	0	0	0	0
12 August	65	0	0	<A1.0	0	0	0	0	0	0	0	0
13 August	65	0	0	<A1.0	0	0	0	0	0	0	0	0
14 August	66	0	0	<A1.0	0	0	0	0	0	0	0	0
15 August	65	0	0	<A1.0	0	0	0	0	0	0	0	0
16 August	66	0	0	<A1.0	0	0	0	0	0	0	0	0
17 August	67	0	0	<A1.0	0	0	0	0	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ^{2}-day-sr) >1 MeV	>10 MeV	>100 MeV	Electron Fluence (electrons/cm^2-day-sr) >.6 MeV	>2MeV	>4 MeV
11 August	9.0E+5	1.7E+4	3.7E+3		1.9E+8	
12 August	1.3E+6	1.7E+4	3.6E+3		4.0E+8	
13 August	1.3E+6	1.6E+4	3.6E+3		5.7E+8	
14 August	1.7E+6	1.8E+4	3.8E+3		7.2E+7	
15 August	2.3E+6	1.7E+4	3.8E+3		5.4E+7	
16 August	3.2E+6	1.8E+4	3.9E+3		4.1E+7	
17 August	1.1E+6	1.8E+4	3.8E+3		4.5E+6	

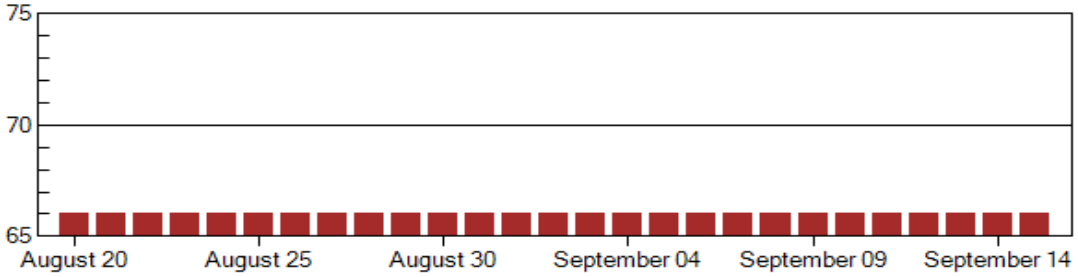
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg A	K-indices	High Latitude College A	K-indices	Estimated Planetary A	K-indices
11 August	6	3-2-1-1-2-1-1-2	7	2-2-1-2-4-1-1-0	7	3-2-1-1-2-1-1-2
12 August	6	2-2-2-1-1-3-1-1	7	2-2-2-2-3-2-1-0	6	3-2-2-1-1-1-1-1
13 August	3	2-1-0-1-1-0-1-1	2	1-1-0-1-1-0-0-1	5	2-2-1-1-1-0-1-2
14 August	4	2-3-1-1-1-0-1-0	6	2-4-0-0-1-1-1-1	5	2-3-1-0-1-1-1-1
15 August	3	2-2-0-0-1-1-0-1	2	2-1-1-0-0-0-0-0	4	2-2-0-0-1-1-1-1
16 August	4	0-1-1-1-0-1-2-3	2	1-0-2-0-0-0-0-1	5	1-0-1-1-1-1-1-3
17 August	5	3-1-1-2-1-1-0-1	10	3-1-2-4-4-1-0-0	7	3-2-1-2-2-2-2-2

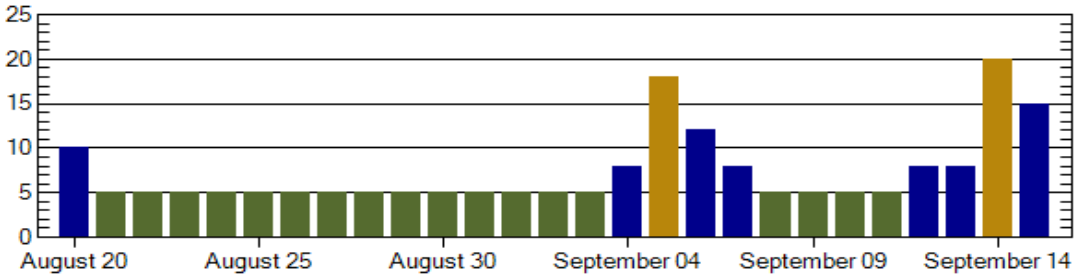
Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
11 Aug 0821	ALERT: Electron 2MeV Integral Flux >1000pfu	11 Aug 0800
12 Aug 0501	ALERT: Electron 2MeV Integral Flux >1000pfu	12 Aug 0500
13 Aug 0509	ALERT: Electron 2MeV Integral Flux >1000pfu	13 Aug 0500
15 Aug 1604	ALERT: Electron 2MeV Integral Flux >1000pfu	15 Aug 1544
16 Aug 1424	ALERT: Electron 2MeV Integral Flux >1000pfu	16 Aug 1405

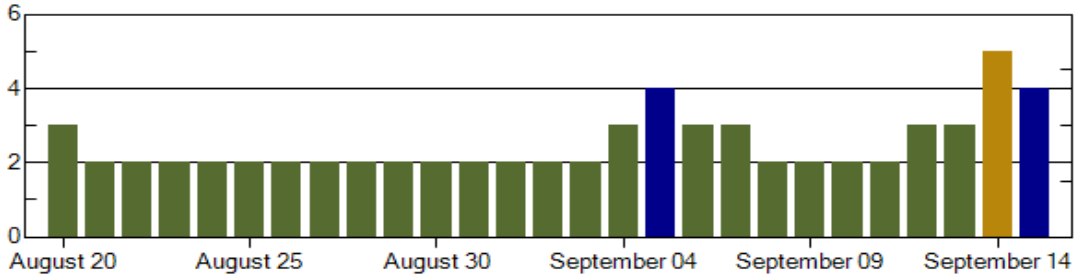
Twenty-seven Day Outlook



10.7 cm



Ap Index



Largest Daily Kp Index

Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
20 Aug	66	10	3	03 Sep	66	5	2
21 Aug	66	5	2	04 Sep	66	8	3
22 Aug	66	5	2	05 Sep	66	18	4
23 Aug	66	5	2	06 Sep	66	12	3
24 Aug	66	5	2	07 Sep	66	8	3
25 Aug	66	5	2	08 Sep	66	5	2
26 Aug	66	5	2	09 Sep	66	5	2
27 Aug	66	5	2	10 Sep	66	5	2
28 Aug	66	5	2	11 Sep	66	5	2
29 Aug	66	5	2	12 Sep	66	8	3
30 Aug	66	5	2	13 Sep	66	8	3
32 Aug	66	5	2	14 Sep	66	20	5
01 Sep	66	5	2	15 Sep	66	15	4
02 Sep	66	5	2				

Energetic Events

Date	Time Begin	Time Max	Time ½ Max	X-ray Class	X-ray Integ Flux	Optical Information Imp/ Brtns	Optical Information Location Lat CMD	Optical Information Rgn #	Peak Radio Flux 245	Peak Radio Flux 2695	Sweep Freq Intensity II	Sweep Freq Intensity IV
No Events Observed												

Flare List

Date	Time Begin	Time Max	Time End	Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
11 Aug	***No Flares Observed***						
12 Aug	***No Flares Observed***						
13 Aug	***No Flares Observed***						
14 Aug	***No Flares Observed***						
15 Aug	***No Flares Observed***						
16 Aug	***No Flares Observed***						
17 Aug	***No Flares Observed***						

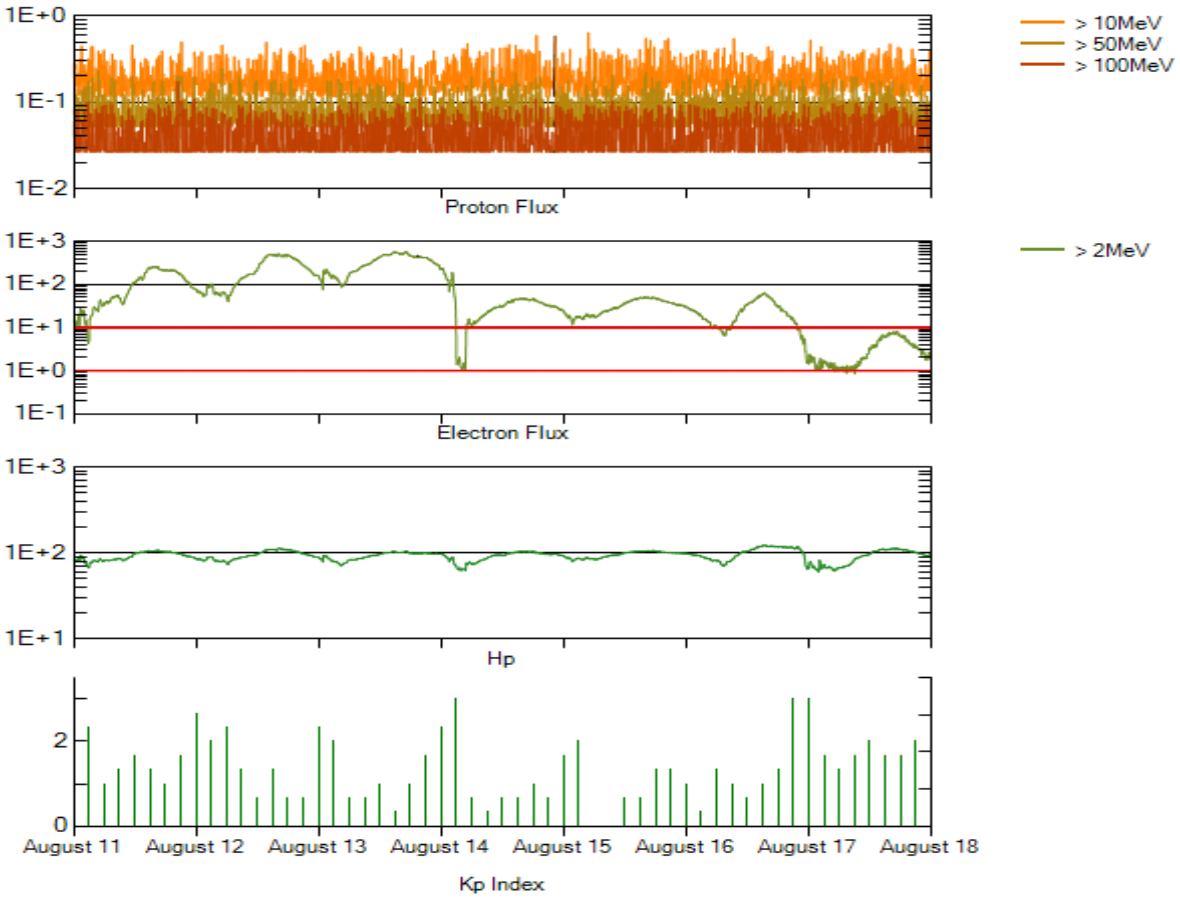
Region Summary

Date	Location (° Lat ° CMD)	Location Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Sunspot Characteristics Extent (helio)	Sunspot Characteristics Spot Class	Sunspot Characteristics Spot Count	Sunspot Characteristics Mag Class	Flares X-ray C	Flares X-ray M	Flares X-ray X	Flares Optical S	Flares Optical 1	Flares Optical 2	Flares Optical 3	Flares Optical 4
No Regions Reported															

Recent Solar Indices (preliminary)
Of the observed monthly mean values

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
Month	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
				2006					
July	22.6	12.2	0.54	27.2	15.3	75.8	80.3	7	8.7
August	22.8	12.9	0.57	27.6	15.6	79.0	80.3	9	8.7
September	25.2	14.5	0.58	27.7	15.6	77.8	80.2	8	8.7
October	15.7	10.4	0.66	25.2	14.2	74.3	79.4	8	8.6
November	31.5	21.5	0.68	22.3	12.7	86.4	78.5	9	8.5
December	22.2	13.6	0.61	20.7	12.1	84.3	77.9	15	8.5
				2007					
January	26.6	16.9	0.64	19.7	12.0	83.5	77.5	6	8.4
February	17.2	10.6	0.62	18.9	11.6	77.8	76.9	6	8.4
March	9.7	4.8	0.49	17.5	10.8	72.3	76.0	8	8.4
April	6.9	3.7	0.54	16.0	9.9	72.4	75.2	9	8.5
May	19.4	11.7	0.60	14.2	8.7	74.5	74.2	9	8.4
June	20.0	12.0	0.60	12.8	7.7	73.7	73.2	7	7.8
July	15.6	10.0	0.64	11.6	7.0	71.6	72.5	8	7.4
August	9.9	6.2	0.63	10.2	6.1	69.2	71.8	7	7.6
September	4.8	2.4	0.50	9.9	5.9	67.1	71.5	9	7.8
October	1.3	0.9	0.70	10.0	6.1	65.5	71.5	9	7.9
November	2.5	1.7	0.68	9.4	5.7	69.7	71.1	5	7.8
December	16.2	10.1	0.62	8.1	5.0	78.6	70.5	4	7.8
				2008					
January	5.1	3.4	0.67			72.1		6	
February	3.8	2.1	0.55			71.2		9	
March	15.9	9.3	0.58			72.9		10	
April	4.9	2.9	0.59			70.3		9	
May	5.7	2.9	0.51			68.4		6	
June	4.2	3.1	0.74			65.9		7	

NOTE: All smoothed values after September 2002 and monthly values after March 2003 are preliminary estimates. The lowest smoothed sunspot index number for Cycle 22, RI = 8.0, occurred in May 1996. The highest smoothed sunspot number for Cycle 23, RI= 120.8, occurred April 2000.
*After June 1991, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.



Weekly Geosynchronous Satellite Environment Summary
Week Beginning 11 August 2008

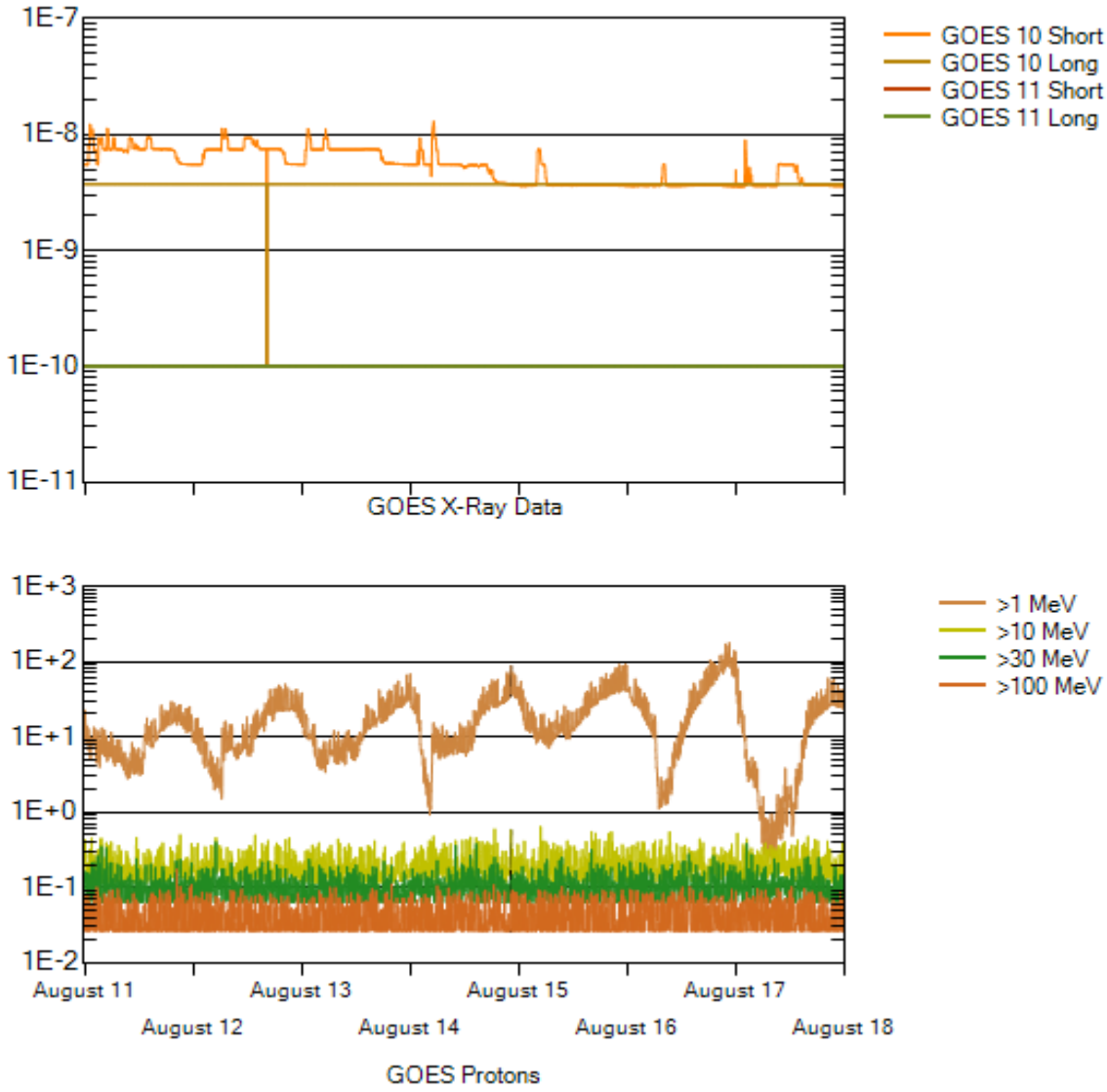
Protons plot contains the five-minute averaged integral proton flux (protons/cm^2 –sec –sr) as measured by GOES-11 (W135) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

Electrons plot contains the five-minute averaged integral electron flux (electrons/cm^2 –sec –sr) with energies greater than 2 MeV at GOES-12 (W075).

Hp plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-12. The H 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 SEC 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

X-ray plot contains five-minute averaged x-ray flux (watts/m$^{2)}$ as measured by GOES 10 (W060) and GOES 11 (W135) in two wavelength bands, .05 -. 4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm^2 –sec-sr) as measured by GOES-11 (W135) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu (protons/cm^2-sec-sr) at greater than 10 MeV.