

**Space Weather Highlights
18 - 24 August 2008**

**SEC PRF 1721
26 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 19 - 24 August.

Geomagnetic field activity ranged from unsettled to minor storm levels on 18 August with major to severe storm periods observed at high latitudes. Activity decreased to predominantly quiet to unsettled levels during 19 - 21 August, though active to major storm periods were observed at high latitudes on 19 August. Activity decreased to quiet levels during 22 - 24 August. ACE solar wind data indicated a recurrent coronal hole high-speed stream commenced on 18 August. Velocities increased to a maximum of 660 km/sec at 18/1353 UTC, then gradually decreased during the rest of the period with a minimum of 297 km/sec at 24/2309 UTC. Interplanetary magnetic field changes associated with the onset of the high-speed stream included increased Bt (maximum 12 nT at 18/1040 UTC) and intermittent periods of southward Bz (minimum -10 nT at 18/1013 UTC).

**Space Weather Outlook
27 August - 22 September 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 07 - 12 September and 15 - 22 September.

Geomagnetic field activity is expected to be at quiet levels during 27 August - 04 September. Activity is expected to increase to active levels 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. Quiet conditions are expected during 08 - 11 September. Activity is expected to increase to unsettled levels during 12 - 13 September. Activity is expected to increase to active to minor storm levels on 14 September due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to unsettled levels during 15 - 16 September as the high-speed stream subsides. Quiet conditions are expected during 17 - 22 September.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
18 August	66	0	0	<A1.0	0	0	0	0	0	0	0	0
19 August	67	0	0	<A1.0	0	0	0	0	0	0	0	0
20 August	66	0	0	<A1.0	0	0	0	0	0	0	0	0
21 August	67	0	0	<A1.0	0	0	0	0	0	0	0	0
22 August	68	0	0	<A1.0	0	0	0	0	0	0	0	0
23 August	68	0	0	<A1.0	0	0	0	0	0	0	0	0
24 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)			Electron Fluence (electrons/cm ² -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>.6 MeV	>2MeV	>4 MeV
	18 August	2.5E+6	1.8E+4	3.8E+3		1.1E+7
19 August	9.7E+5	1.7E+4	3.9E+3		1.2E+8	
20 August	8.9E+5	1.8E+4	4.1E+3		2.0E+8	
21 August	8.3E+5	1.9E+4	3.9E+3		1.6E+8	
22 August	8.3E+5	1.9E+4	4.1E+3		1.6E+8	
23 August	1.1E+6	1.9E+4	4.1E+3		1.8E+8	
24 August	9.9E+5	1.8E+4	4.4E+3		9.6E+7	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	18 August	15	2-3-3-3-4-2-3-3	40	2-3-4-6-7-4-3-2	23
19 August	7	2-2-3-2-2-1-1-2	20	3-2-4-6-3-2-1-1	8	3-3-2-2-2-1-2-2
20 August	5	3-1-2-1-1-1-1-1	4	2-2-1-1-2-1-0-1	6	3-3-2-1-1-1-0-1
21 August	4	0-0-1-3-1-0-1-2	4	0-0-1-4-1-0-0-0	4	0-0-1-3-1-1-1-2
22 August	2	1-1-2-1-0-0-0-0	4	1-0-2-3-1-0-0-0	4	1-1-1-1-1-1-1-2
23 August	2	1-1-0-0-1-0-0-1	0	0-0-0-0-1-0-0-0	2	1-1-0-0-1-0-0-1
24 August	2	0-0-1-0-1-0-1-1	1	0-0-2-1-0-0-0-0	4	0-1-1-0-1-0-1-1

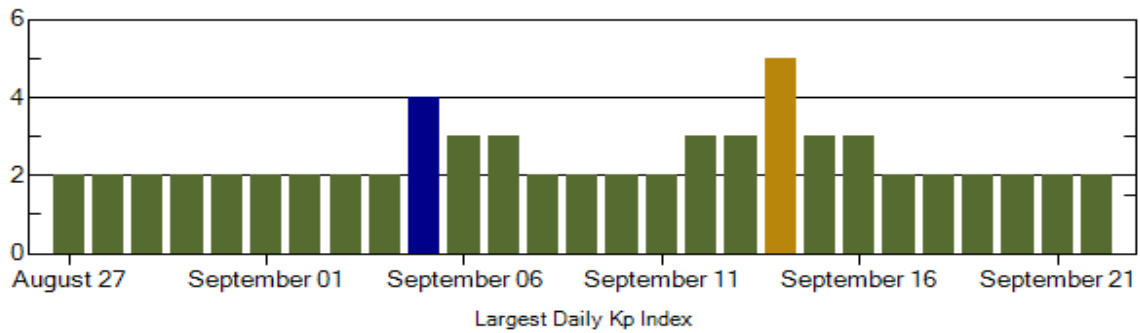
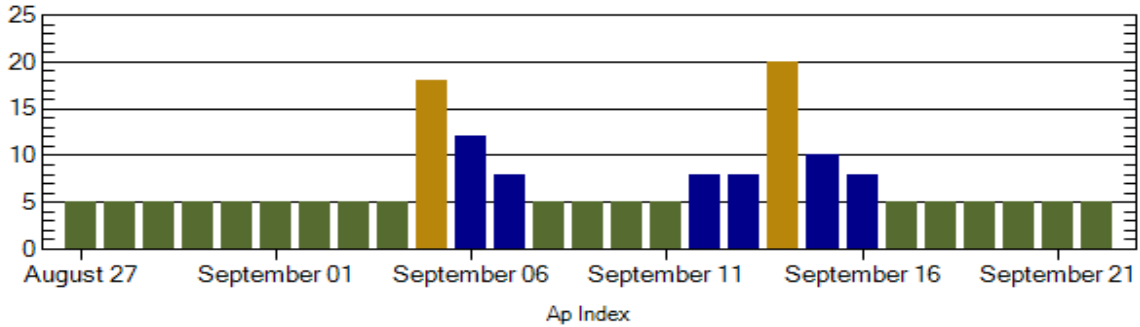
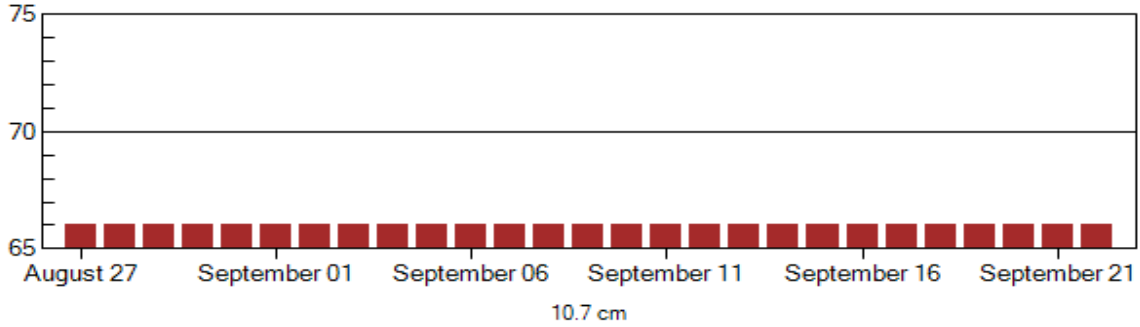


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UTC</u>
18 Aug 0410	ALERT: Geomagnetic K= 4	18 Aug 0408
18 Aug 0857	WARNING: Geomagnetic K= 4	18 Aug 0856 - 1600
18 Aug 0900	ALERT: Geomagnetic K= 4	18 Aug 0859
18 Aug 1431	ALERT: Geomagnetic K= 5	18 Aug 1430
18 Aug 1544	EXTENDED WARNING: Geomagnetic K= 4	18 Aug 0856 - 2359
18 Aug 1654	WARNING: Geomagnetic K= 5	18 Aug 1655 - 1800
18 Aug 1703	ALERT: Geomagnetic K= 5	18 Aug 1701
18 Aug 2354	EXTENDED WARNING: Geomagnetic K= 4	18 Aug 0856 - 19/0700
19 Aug 1220	ALERT: Electron 2MeV Integral Flux>1000pfu	19 Aug 1200
20 Aug 0632	ALERT: Electron 2MeV Integral Flux>1000pfu	20 Aug 0615
21 Aug 0513	ALERT: Electron 2MeV Integral Flux>1000pfu	21 Aug 0510
22 Aug 0742	ALERT: Electron 2MeV Integral Flux>1000pfu	22 Aug 0720
23 Aug 0525	ALERT: Electron 2MeV Integral Flux>1000pfu	23 Aug 0500
24 Aug 1031	ALERT: Electron 2MeV Integral Flux>1000pfu	24 Aug 1015



Twenty-seven Day Outlook



Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
27 August	66	5	2	10 Sept	66	5	2
28	66	5	2	11	66	5	2
29	66	5	2	12	66	8	3
30	66	5	2	13	66	8	3
31	66	5	2	14	66	20	5
01 Sept	66	5	2	15	66	10	3
02	66	5	2	16	66	8	3
03	66	5	2	17	66	5	2
04	66	5	2	18	66	5	2
05	66	18	4	19	66	5	2
06	66	12	3	20	66	5	2
07	66	8	3	21	66	5	2
08	66	5	2	22	66	5	2
09	66	5	2				



Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical	Rgn
	Begin	Max	End			Location Lat CMD	
18 Aug	<i>No Flares Observed</i>						
19 Aug	<i>No Flares Observed</i>						
20 Aug	<i>No Flares Observed</i>						
21 Aug	<i>No Flares Observed</i>						
22 Aug	<i>No Flares Observed</i>						
23 Aug	<i>No Flares Observed</i>						
24 Aug	<i>No Flares Observed</i>						

Region Summary

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

No active regions.



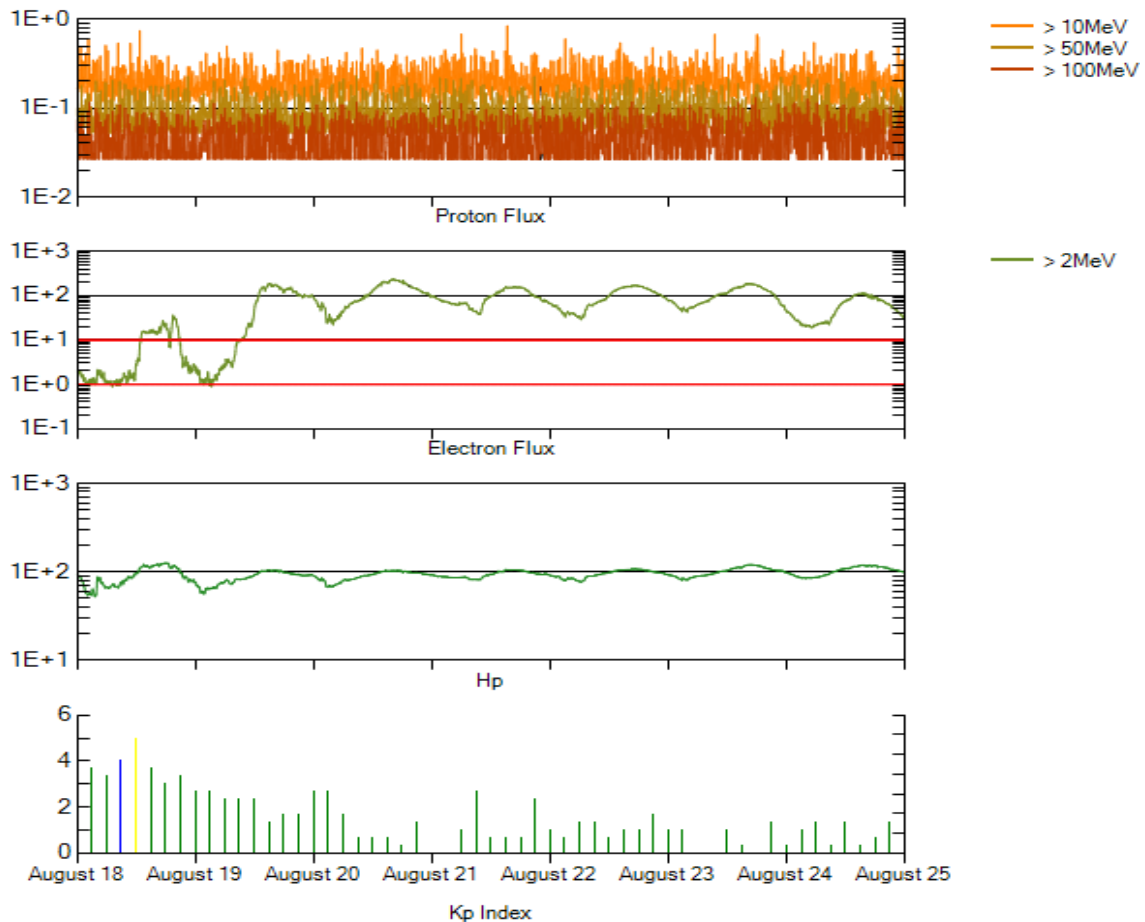
Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	Sunspot Numbers			Smooth values		Radio Flux		Geomagnetic	
	Observed SEC	values RI	Ratio RI/SEC	SEC	RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2006									
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	6.9	4.2	72.1	70.0	6	7.7
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	
July	1.0	0.5	0.50			65.8		6	

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 18 August 2008*

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-11 (W135) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

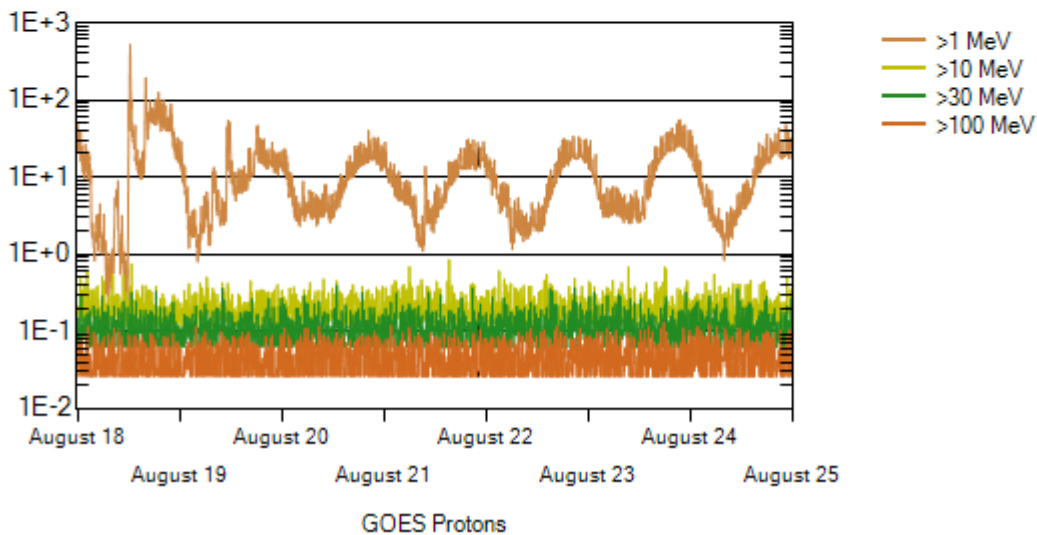
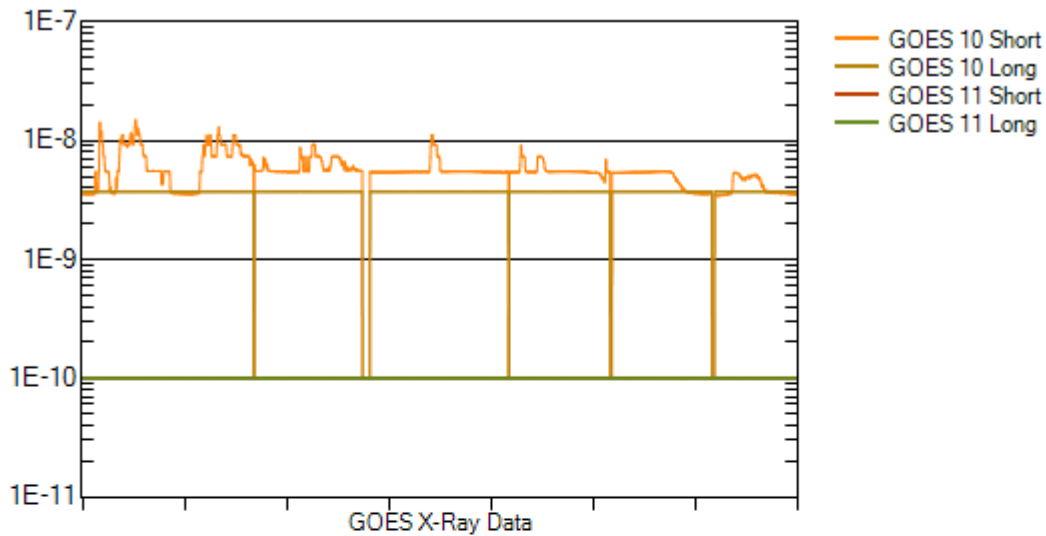
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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 ($\text{protons/cm}^2\text{-sec-sr}$) as measured by GOES-11 (W135) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu ($\text{protons/cm}^2\text{-sec-sr}$) at greater than 10 MeV.

