

Space Weather Highlights
22 September - 28 September 2008

SWPC PRF 1726
30 September 2008

Solar activity was very low. No flares were detected. The visible disk was spotless during most of the period. However, Region 1002 (N25, L = 076, class/area Dso/030 on 22 September), a new cycle-polarity spot group; emerged on 22 September, then decayed to plage on 24 September.

No proton events were observed at geosynchronous orbit.

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

Geomagnetic field activity was at mostly quiet levels during the period. ACE solar wind measurements indicated minor changes during the period. Velocities ranged from 245 - 395 km/sec during the period. IMF Bt ranged from 01 - 07 nT and Bz ranged from -07 nT to +07 nT during the period.

Space Weather Outlook
01 - 27 October 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 02 - 14 October.

Geomagnetic field activity is expected to be at active to minor storm levels on 01 October due to a recurrent coronal hole high-speed stream (CH HSS). Activity is expected to decrease to unsettled levels during 02 - 05 October as the CH HSS subsides. Quiet conditions are expected during 06 - 11 October. Activity is expected to increase to active levels on 12 October due to a recurrent CH HSS. Activity is expected to decrease to unsettled levels on 13 October as the CH HSS subsides. Quiet conditions are expected during 14 - 27 October.



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
22 September	69	18	30	<A1.0	0	0	0	0	0	0	0	0
23 September	69	16	20	<A1.0	0	0	0	0	0	0	0	0
24 September	68	0	0	<A1.0	0	0	0	0	0	0	0	0
25 September	68	0	0	<A1.0	0	0	0	0	0	0	0	0
26 September	68	0	0	<A1.0	0	0	0	0	0	0	0	0
27 September	67	0	0	<A1.0	0	0	0	0	0	0	0	0
28 September	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
	22 September	3.4E+5	1.8E+4	4.4E+3		2.9E+6
23 September	3.2E+5	1.9E+4	4.4E+3		3.2E+6	
24 September	3.6E+5	1.9E+4	4.2E+3		3.5E+6	
25 September	6.7E+5	1.9E+4	4.4E+3		4.5E+6	
26 September	4.1E+5	1.9E+4	4.3E+3		1.3E+6	
27 September	5.0E+5	1.9E+4	4.2E+3		1.7E+6	
28 September	4.2E+5	1.8E+4	4.2E+3		2.1E+6	

Daily Geomagnetic Data

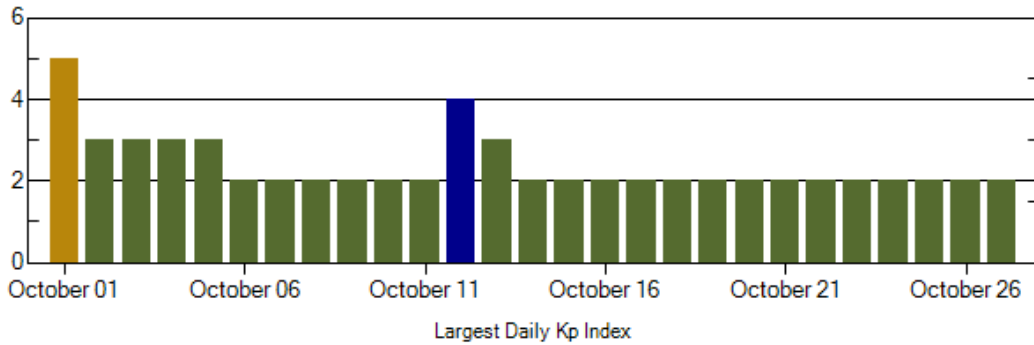
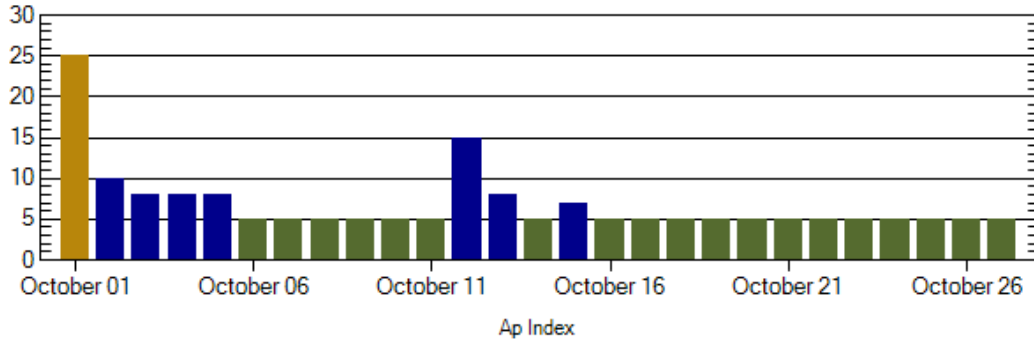
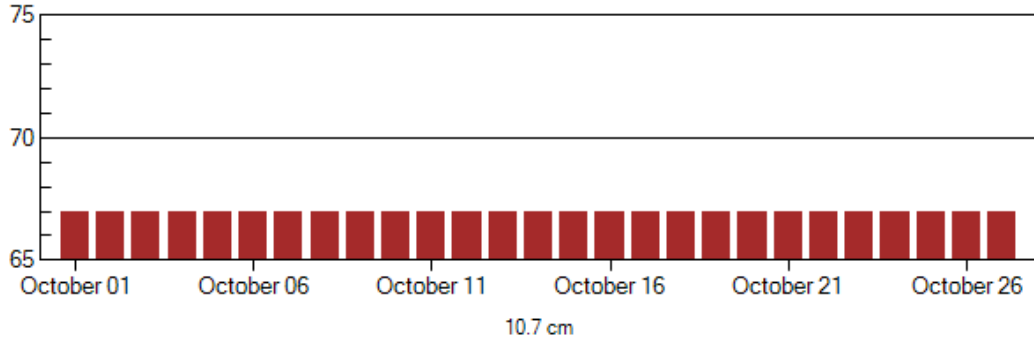
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	22 September	2	2-2-0-0-0-0-0-1	1	2-1-0-0-0-0-0-0	4
23 September	2	0-0-2-1-1-0-0-0	1	0-0-1-1-1-0-0-0	3	0-0-1-1-1-1-1-1
24 September	1	0-1-0-1-0-0-0-1	2	0-0-1-2-2-0-0-0	4	1-1-0-1-2-1-1-2
25 September	1	0-0-0-0-0-0-1-2	1	0-0-0-0-0-0-1-1	4	0-0-0-0-1-1-3-3
26 September	2	2-1-0-0-1-0-0-0	1	1-1-0-0-0-0-0-0	4	2-1-0-0-1-1-1-1
27 September	1	0-0-0-0-0-1-1-1	0	0-0-0-0-0-0-1-0	2	0-0-0-0-1-1-2-1
28 September	2	0-1-1-0-2-1-0-0	3	0-0-0-2-3-0-0-0	3	0-1-1-1-2-1-0-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
28 Sep 2121	WATCH: Geomagnetic A=20	01 Oct



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
01 Oct	67	25	5	15 Oct	67	7	2
02	67	10	3	16	67	5	2
03	67	8	3	17	67	5	2
04	67	8	3	18	67	5	2
05	67	8	3	19	67	5	2
06	67	5	2	20	67	5	2
07	67	5	2	21	67	5	2
08	67	5	2	22	67	5	2
09	67	5	2	23	67	5	2
10	67	5	2	24	67	5	2
11	67	5	2	25	67	5	2
12	67	15	4	26	67	5	2
13	67	8	3	27	67	5	2
14	67	5	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq
	Begin	Max	Class	Flux	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	
22 Sep	<i>No Flares Observed</i>						
23 Sep	<i>No Flares Observed</i>						
24 Sep	<i>No Flares Observed</i>						
25 Sep	<i>No Flares Observed</i>						
26 Sep	<i>No Flares Observed</i>						
27 Sep	<i>No Flares Observed</i>						
28 Sep	<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

Region 1002

22 Sep	N25W27	076	0030	05	Dso	008	B										
23 Sep	N26W40	075	0020	04	Cro	006	B										
24 Sep	N26W53	075															
25 Sep	N26W66	075															
26 Sep	N26W79	075															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 076



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

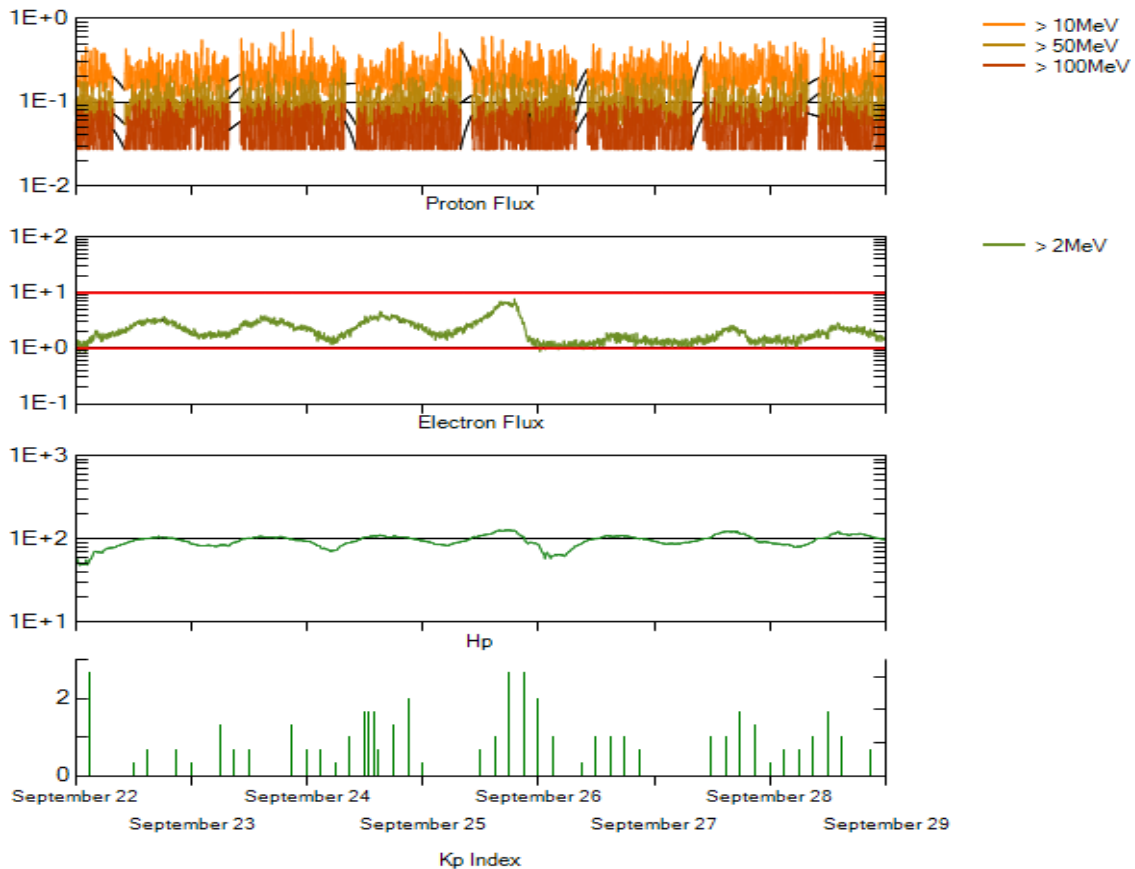
Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SEC	Ratio RI	Ratio RI/SEC	Smooth values SEC	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2006									
October	15.7	10.4	0.66	25.2	14.2	74.3	79.4	8	8.6
November	31.5	21.5	0.68	22.3	12.7	86.4	78.5	9	8.5
December	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	5.9	3.6	71.2	69.6	9	7.6
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	
August	0.0	0.5	**			66.4		5	

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.

**SEC sunspot number was less than RI value, so a ratio could not be done.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 22 September 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.

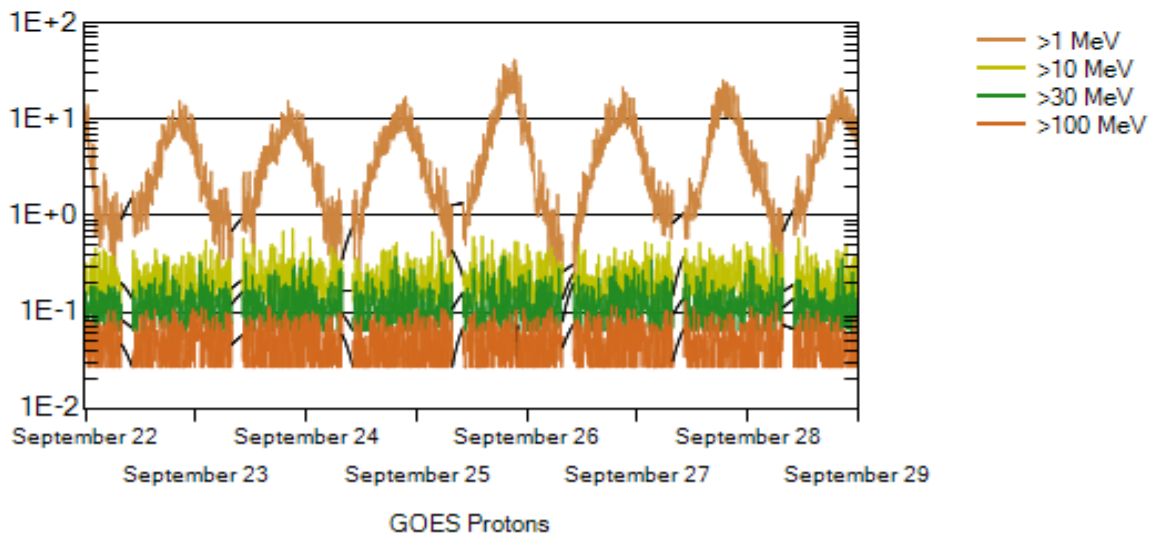
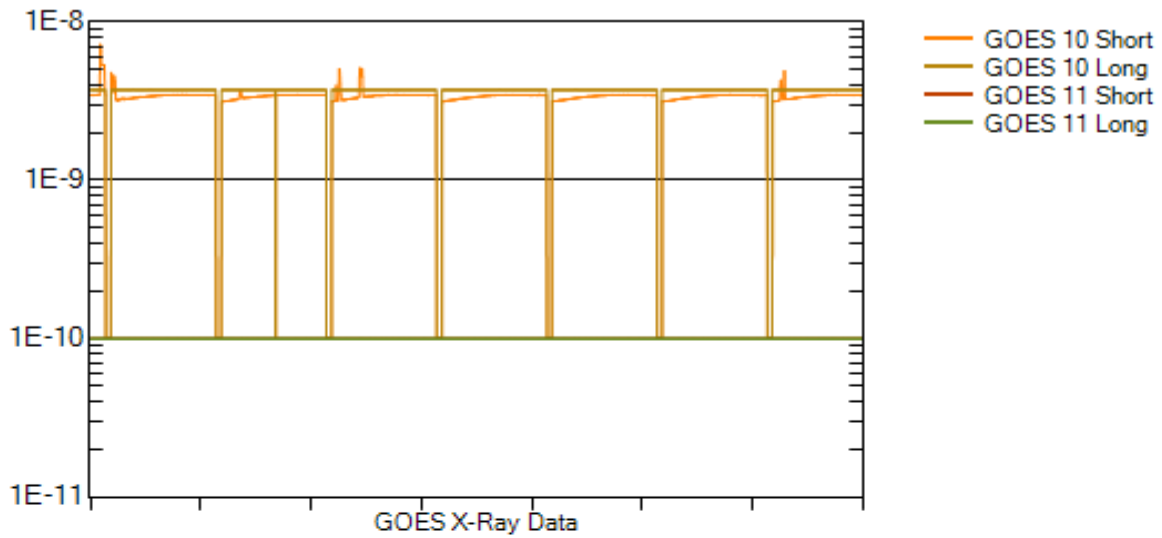
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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/m²) 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/cm²-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/cm²-sec-sr) at greater than 10 MeV.

