

Space Weather Highlights
27 October - 02 November 2008

SWPC PRF 1731
04 November 2008

Solar activity was very low through the period. New-cycle polarity Region 1007 (N35, L = 250, class/area Bxi/060 on 02 November) produced isolated B-class flares on 02 November.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit increased to high levels during 30 October - 02 November.

Geomagnetic field activity was at quiet levels during 27 - 28 October. Activity increased to active levels during 29 - 30 October. Activity decreased to quiet to unsettled levels on 31 October. Activity decreased to quiet levels during the remainder of the period. ACE solar wind measurements indicated a recurrent coronal hole high-speed stream (CH HSS) commenced on 28 October. Solar wind velocities increased from a low of 287 km/sec at 28/0056 UTC to a high of 741 km/sec at 29/1648 UTC. Velocities began to gradually decrease on 31 October as the HSS subsided. Interplanetary magnetic field changes associated with the onset of the CH HSS included increased Bt (peak 14 nT at 28/1841 UTC) and intermittent periods of southward Bz (minimum -10 nT at 29/0447 UTC).

Space Weather Outlook
05 - November - 01 December 2008

Solar activity is expected to be at very low levels. However, there will be a chance for low activity (isolated low-level C-class flares) during 20 November - 01 December with the return of (old) Region 1007 to the visible disk.

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 05 - 15 November and 26 November - 01 December.

Geomagnetic field activity is expected to be at quiet levels on 05 November. Activity is expected to increase to unsettled levels on 06 November. A further increase to active to major storm levels is expected during 07 - 08 November due to a recurrent coronal hole high-speed stream (CH HSS). Activity is expected to decrease to unsettled levels on 09 November as the HSS subsides. Quiet conditions are expected during 10 - 24 November. Field activity is expected to increase to unsettled to active levels during 25 - 27 November due to a recurrent CH HSS. Activity is expected to decrease to quiet levels during 28 November - 01 December as the HSS 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			Optical					
					C	M	X	S	1	2	3	4	
27 October	67	0	0	<A1.0	0	0	0	0	0	0	0	0	0
28 October	67	0	0	<A1.0	0	0	0	0	0	0	0	0	0
29 October	67	0	0	<A1.0	0	0	0	0	0	0	0	0	0
30 October	67	13	20	<A1.0	0	0	0	0	0	0	0	0	0
31 October	68	16	30	<A1.0	0	0	0	0	0	0	0	0	0
01 November	67	16	20	<A1.0	0	0	0	0	0	0	0	0	0
02 November	69	17	60	<A1.0	0	0	0	2	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
	27 October	5.5E+5	1.9E+4	4.2E+3		1.6E+6
28 October	1.3E+6	1.9E+4	4.2E+3		2.0E+6	
29 October	1.4E+6	1.8E+4	3.8E+3		1.6E+6	
30 October	3.2E+6	1.8E+4	3.9E+3		7.0E+7	
31 October	1.7E+6	1.7E+4	3.6E+3		2.0E+8	
01 November	1.7E+6	1.7E+4	4.1E+3		1.7E+8	
02 November	1.5E+6	1.8E+4	3.8E+3		1.3E+8	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	27 October	1	0-0-0-0-1-1-1-0	0	0-0-0-0-0-0-0-0	1
28 October	5	0-0-2-2-1-2-2-2	2	0-0-0-1-0-1-2-0	4	0-0-1-1-1-2-2-2
29 October	16	2-3-4-1-4-3-3-3	19	1-3-5-2-4-4-3-2	11	2-2-4-1-2-2-3-3
30 October	11	3-2-2-2-2-4-2-2	18	3-2-2-5-4-4-2-1	11	3-2-2-3-2-4-3-2
31 October	5	1-2-1-1-0-1-3-1	7	2-2-3-2-1-1-1-2	6	1-3-2-1-1-1-1-2
01 November	0	1-0-0-0-0-0-0-0	0	1-0-0-0-0-0-0-0	1	1-0-0-0-0-0-0-1
02 November	2	0-0-0-1-2-1-1-1	4	0-0-0-3-3-0-0-1	2	0-0-0-1-1-0-0-1

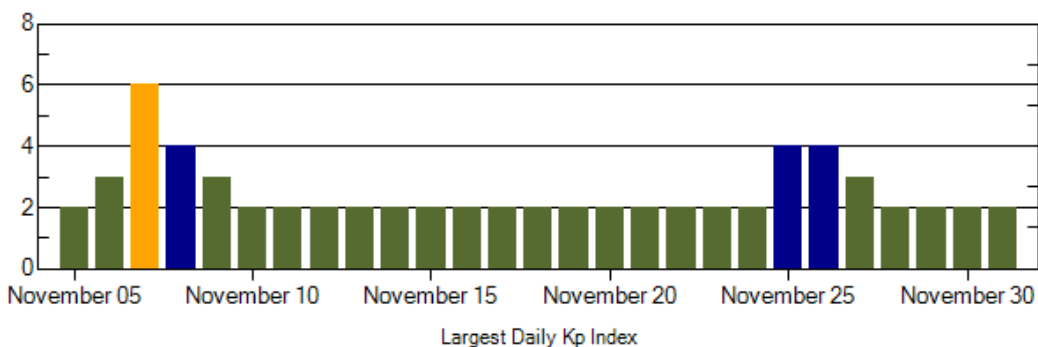
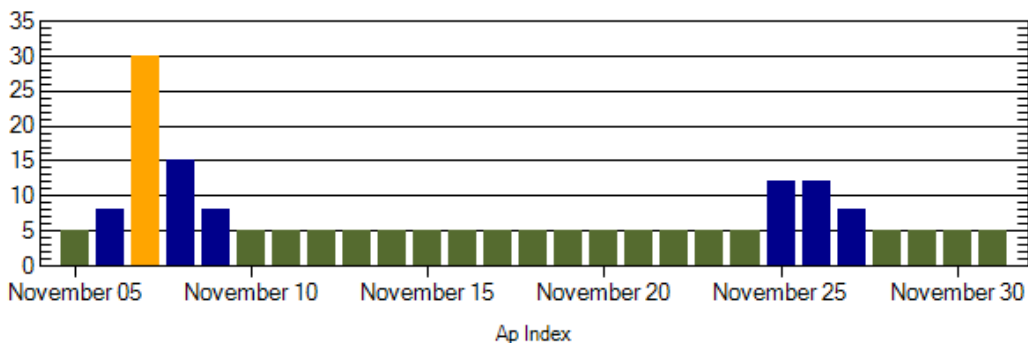
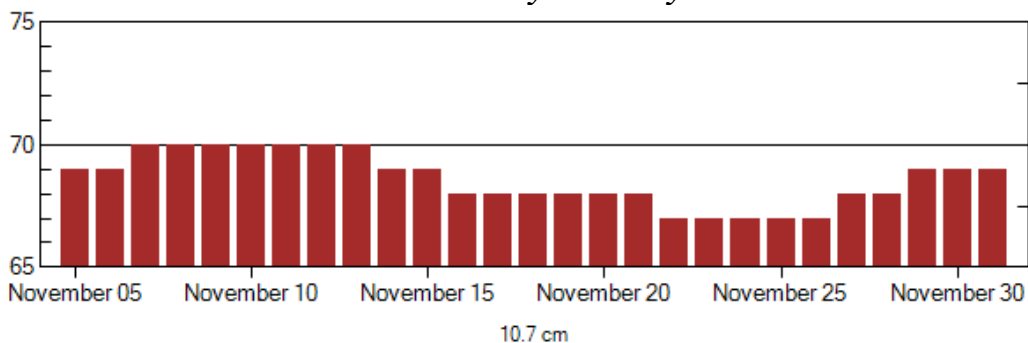


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UTC</u>
29 Oct 0641	ALERT: Geomagnetic K=4	29 Oct 0640
30 Oct 1624	ALERT: Electron 2MeV Integral Flux >1000pfu	30 Oct 1605
30 Oct 1637	WARNING: Geomagnetic K=4	30 Oct 1640 - 2359
30 Oct 1923	CANCEL WARNING: Geomagnetic K=4	30 Oct 1637
31 Oct 0524	ALERT: Electron 2MeV Integral Flux >1000pfu	31 Oct 0505
01 Nov 0501	ALERT: Electron 2MeV Integral Flux >1000pfu	01 Nov 0500
02 Nov 0512	ALERT: Electron 2MeV Integral Flux >1000pfu	02 Nov 0500



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
05 Nov	69	5	2	19	68	5	2
06	69	8	3	20	68	5	2
07	70	30	6	21	68	5	2
08	70	15	4	22	67	5	2
09	70	8	3	23	67	5	2
10	70	5	2	24	67	5	2
11	70	5	2	25	67	12	4
12	70	5	2	26	67	12	4
13	70	5	2	27	68	8	3
14	69	5	2	28	68	5	2
15	69	5	2	29	69	5	2
16	68	5	2	30	69	5	2
17	68	5	2	01 Dec	69	5	2
18	68	5	2				



Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray	Imp /	Location	Rgn
	Begin	Max	End	Class.	Brtns	Lat	CMD
27 October	No	Observed					
28 October	No	Observed					
29 October	No	Observed					
30 October	No	Observed					
31 October	No	Observed					
01 November	No	Observed					
02 November	1322	1328	1338	B2.7			
02 November	1436	1440	1444	B1.5			
02 November	1504	1505	1511	B7.2	Sf	N35W19	1007
02 November	2015	2016	2020	B5.7	Sf	N36W29	1007

Region Summary

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

Region 1007

30 Oct	N35E15	252	0020	04	Bxo	003	B										
31 Oct	N34E04	250	0030	04	Bxo	006	B										
01 Nov	N35W10	251	0020	07	Bxo	006	B										
02 Nov	N35W25	253	0060	07	Bxi	007	B				2						
								0	0	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 250



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

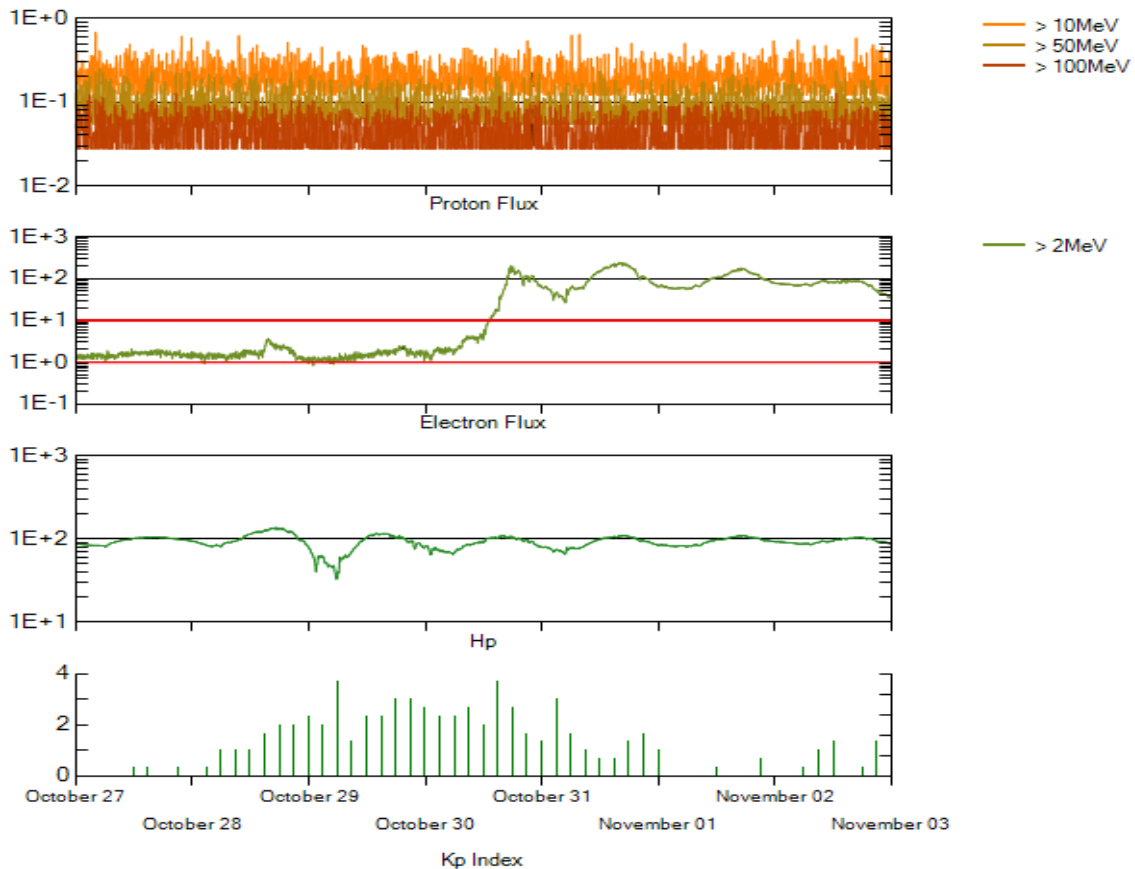
Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SEC	Ratio RI	Ratio RI/SEC	Smooth values SEC	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2006									
November	31.5	21.5	0.68	22.3	12.7	86.4	78.5	9	8.5
December	22.2	13.6	0.61	20.7	12.1	84.3	77.9	15	8.5
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	5.3	3.3	72.9	69.5	10	7.4
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	
September	1.5	1.1	0.73			67.1		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 27 October 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.

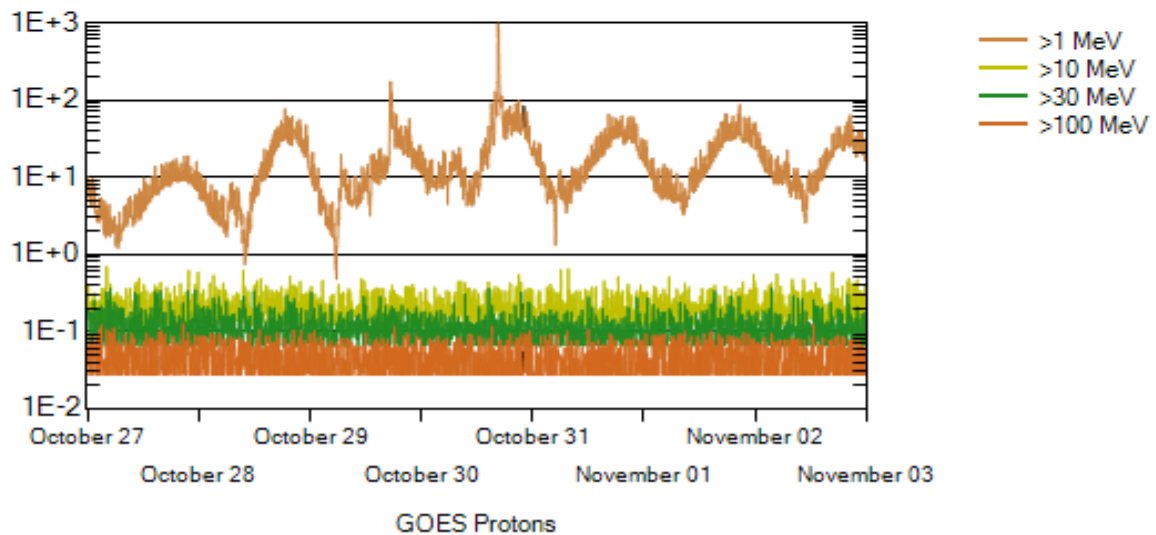
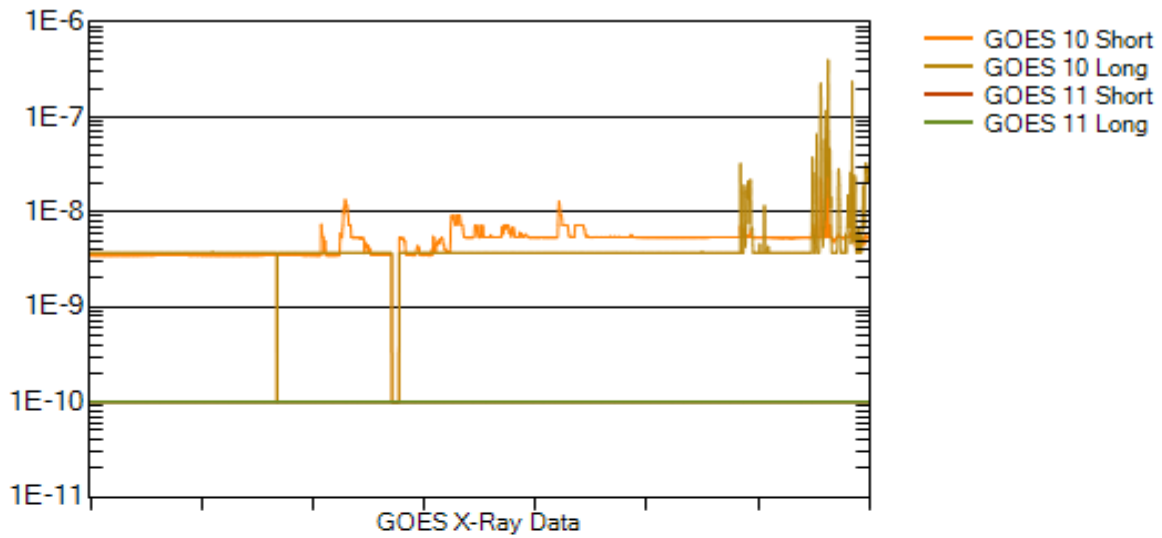
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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.





Active Regions



October 2008
(Month 145)

Comparison of Cycles at current month in cycle

