

Space Weather Highlights
05 – 11 November 2007

SEC PRF 1680
13 November 2007

Solar activity was very low. No flares were detected. The visible disk was spotless during most of the period. Region 973 (S11, L = 019, class/area Axx/010 on 07 November) was numbered on 07 November, but quickly decayed to plage.

No proton events were observed at geosynchronous orbit.

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

The geomagnetic field was quiet during most of the period. However, ACE solar wind measurements indicated a recurrent co-rotating interaction region (CIR) and coronal hole wind stream commenced on 08 November. Interplanetary Magnetic Field changes associated with the CIR included increased Bt (peak 10.8 nT at 09/1557 UTC) and variable Bz (range 6.0 nT to -7.0 nT). Velocities gradually increased to a peak of 458.5 km/sec at 10/1438 UTC, then gradually decreased during the remainder of the period. Proton densities associated with the CIR increased to a peak of 10.2 p/cc at 09/1408UTC.

Space Weather Outlook
14 November – 10 December 2007

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 15 November - 01 December.

Activity is expected to be at unsettled to active levels during 14 - 15 November due to recurrent coronal hole effects. Quiet to unsettled conditions are expected during 16 - 20 November. Activity is expected to increase to unsettled to minor storm levels during 21 - 22 November as another recurrent coronal hole disturbs the field. Activity is expected to decrease to quiet to unsettled levels during 23 - 26 November as coronal hole effects subside. Activity is expected to decrease to quiet levels for the balance of the period.



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
05 November	67	0	0	<A1.0	0	0	0	0	0	0	0	0
06 November	69	11	10	<A1.0	0	0	0	0	0	0	0	0
07 November	68	0	0	<A1.0	0	0	0	0	0	0	0	0
08 November	70	0	0	<A1.0	0	0	0	0	0	0	0	0
09 November	70	0	0	<A1.0	0	0	0	0	0	0	0	0
10 November	70	0	0	<A1.0	0	0	0	0	0	0	0	0
11 November	69	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
05 November	1.5E+6	1.9E+4	4.4E+3		2.1E+7	
06 November	1.6E+6	1.9E+4	4.3E+3		2.2E+7	
07 November	1.6E+6	1.8E+4	4.4E+3		2.3E+7	
08 November	1.7E+6	1.9E+4	4.6E+3		1.6E+7	
09 November	1.5E+6	1.9E+4	4.5E+3		1.4E+7	
10 November	1.2E+6	1.8E+4	3.9E+3		1.1E+7	
11 November	1.0E+6	1.8E+4	4.2E+3		1.5E+7	

Daily Geomagnetic Data

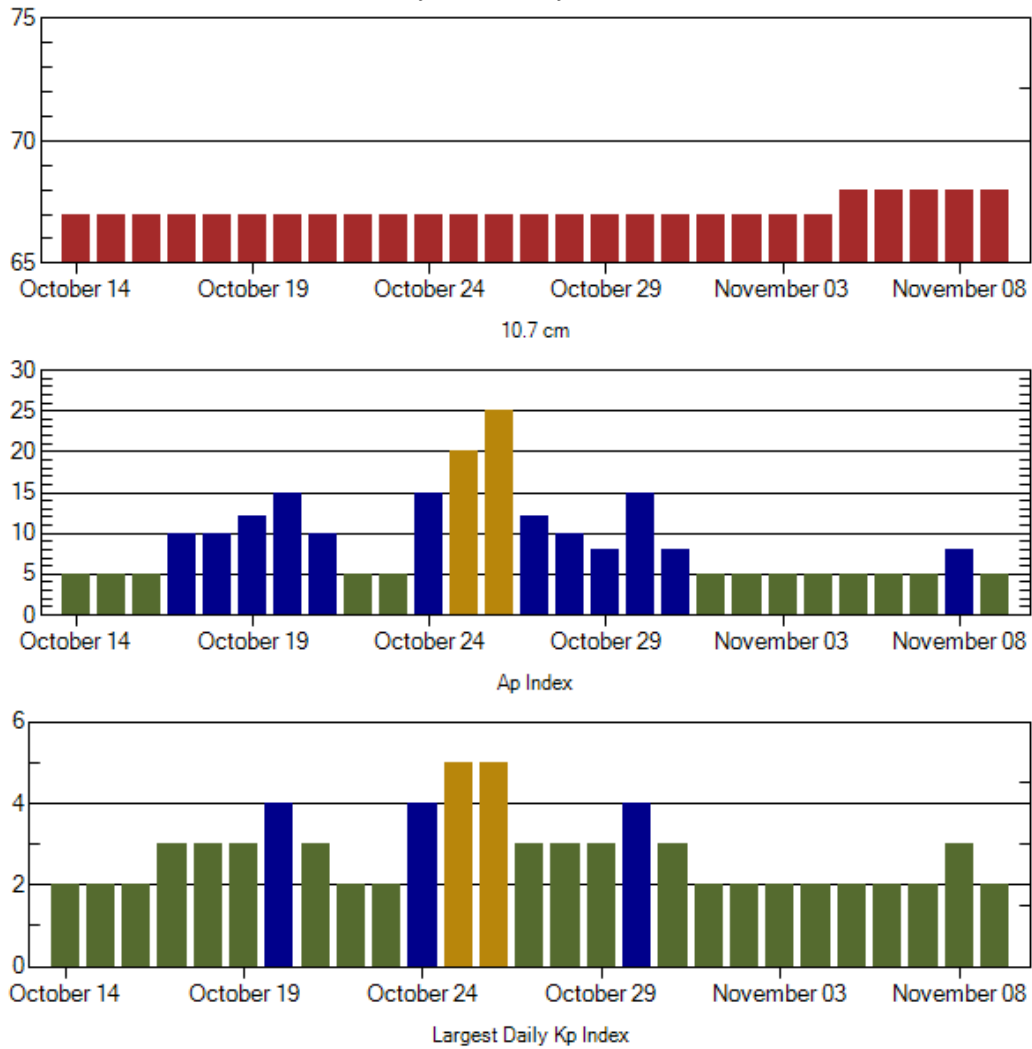
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 November	1	0-1-1-1-0-0-0-0	6	0-0-3-4-1-0-0-0	3	1-1-1-1-0-0-0-0
06 November	0	0-0-0-0-1-0-0-0	0	0-0-0-1-0-0-0-0	1	0-0-0-0-0-0-0-1
07 November	0	0-0-0-0-0-0-0-0	0	0-0-0-0-0-0-0-0	1	0-0-0-0-0-0-0-1
08 November	3	1-2-1-0-0-1-1-1	1	0-0-1-0-1-0-0-1	3	0-2-1-0-0-0-1-1
09 November	2	1-0-0-0-2-1-0-1	1	0-0-0-0-1-1-0-0	2	1-0-0-0-1-1-0-1
10 November	2	1-0-1-1-1-1-0-0	3	0-0-1-3-3-1-0-0	3	1-0-1-2-1-1-0-0
11 November	1	0-0-0-0-1-1-0-0	0	0-0-0-0-1-0-0-0	1	0-0-1-0-0-0-0-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
No Alerts Issued		



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
14 Nov	69	15	4	28 Nov	67	5	2
15	69	15	4	29	67	5	2
16	69	8	3	30	67	5	2
17	69	5	2	01 Dec	67	5	2
18	69	5	2	02	67	5	2
19	68	8	3	03	68	5	2
20	68	10	3	04	68	5	2
21	68	20	5	05	68	5	2
22	68	15	4	06	68	5	2
23	67	10	3	07	68	5	2
24	67	5	2	08	68	5	2
25	67	10	3	09	68	5	2
26	67	10	3	10	68	5	2
27	67	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	$\frac{1}{2}$			Integ		Imp/	Location	Rgn	Radio Flux		Intensity	
	Begin	Max	Max	Class	Flux	Brtns	Lat CMD	#	245	2695	II	IV
<i>No Events Observed</i>												

Flare List

Date	Time			Optical	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End	X-ray Class.			

05 November **No Flares Observed**
 06 November **No Flares Observed**
 07 November **No Flares Observed**
 08 November **No Flares Observed**
 09 November **No Flares Observed**
 10 November **No Flares Observed**
 11 November **No Flares Observed**

Region Summary

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

Region 973

06 Nov S11W54 019 0010 01 Axx 001 A
 07 Nov S11W67 019
 08 Nov S11W80 019

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 019



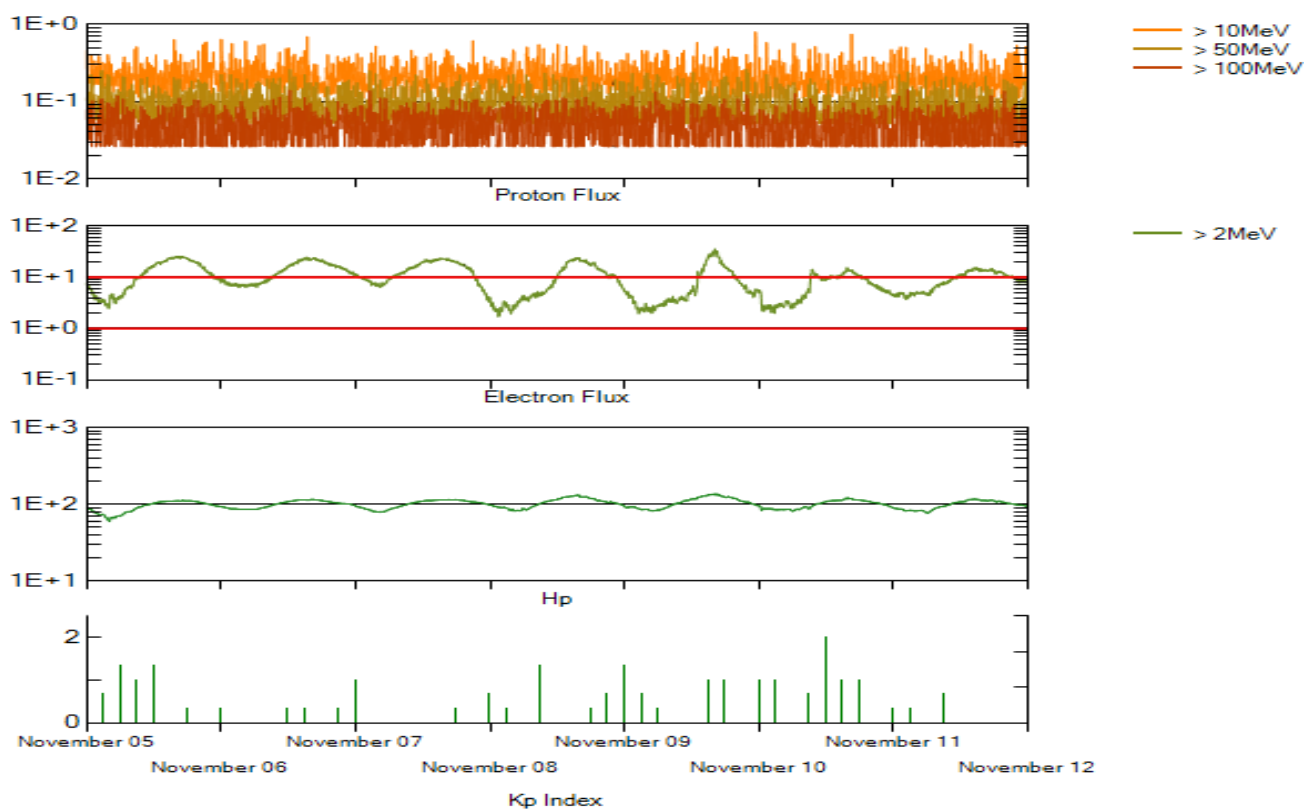
Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	by the observed monthly mean values					Radio Flux		Geomagnetic	
	Sunspot Numbers								
	Observed values	Ratio		Smooth values		*Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2006									
January	28.0	15.4	0.55	37.2	20.8	83.8	84.0	6	9.9
February	5.3	4.7	0.89	33.4	18.7	76.6	82.6	6	9.2
March	21.3	10.8	0.51	31.0	17.4	75.5	81.6	8	8.4
April	55.2	30.2	0.55	30.6	17.1	89.0	80.9	11	7.9
May	39.6	22.2	0.56	30.7	17.3	81.0	80.8	8	7.9
June	37.7	13.9	0.37	28.9	16.3	80.1	80.6	9	8.3
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			74.5		9	
June	20.0	12.0	0.60			73.7		7	
July	15.6	10.0	0.64			71.6		8	
August	9.9	6.2	0.63			69.2		7	
September	4.8	2.4	0.50			67.1		8	
October	1.3	0.9	0.70			65.5		9	

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 05 November 2007

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.

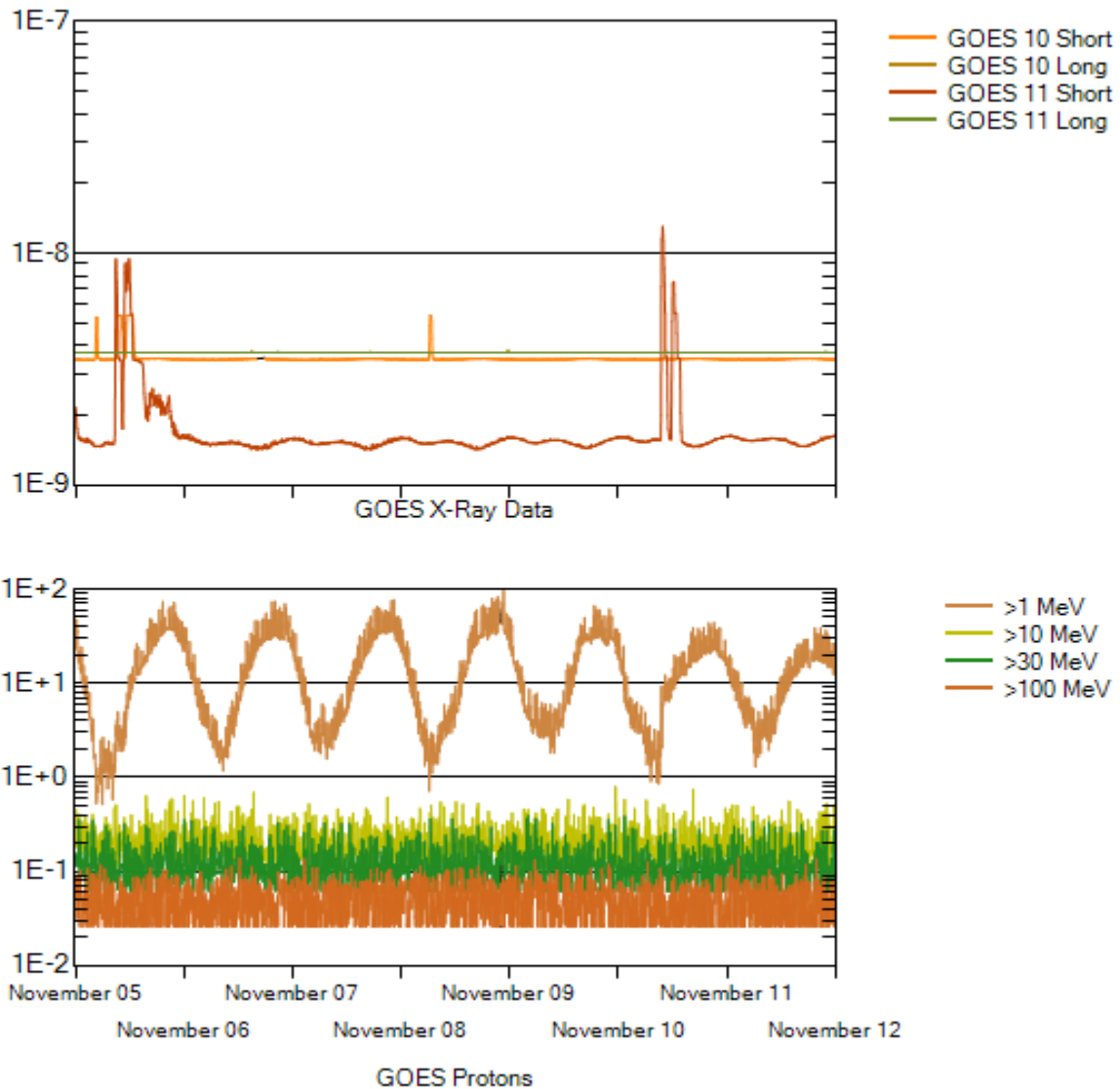
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²–sec –sr) with energies greater than 2 MeV at GOES-12 (W075).

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.

