

Solar activity was very low. Isolated eruptive activity was observed in a plage region near S28W01 on 16 October. EIT wave activity and weak X-ray enhancements were associated with these eruptions. At around 17/1900 UTC, this plage region (near S28W14) produced a two-ribbon flare. An associated faint, slow-moving (around 230 km/sec), Earth-directed partial halo CME was associated with this flare. The visible disk was spotless.

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 predominantly quiet levels during the period. Isolated unsettled periods were observed at mid-latitudes early on 16 October. The period began with ACE solar wind velocities at 419 km/s, before reaching a peak of 431 km/s at 12/0114 UTC, and decreasing to 292 km/s at 15/0345 UTC. A second velocity peak reached 439 km/s at 16/0015 UTC and ended the period around 291 km/s. Interplanetary magnetic field activity showed intermittent periods of southward Bz during the period (minimum -5 nT at 15/1641 UTC). Bt reached a maximum of 11 nT at 15/1033 UTC. Density reached a maximum of 16 p/cc at 15/0912 UTC.

Space Weather Outlook

21 October 2009 – 16 November 2009

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 be at normal levels through the period.

Geomagnetic field activity is expected to be at predominantly quiet levels during 21-23 October. Quiet to unsettled levels, with isolated active to minor storm conditions at high latitudes, are expected on 24-25 October, due to a recurrent coronal hole high-speed stream. Predominantly quiet levels are expected for the rest 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
12 October	70	0	0	<A1.0	0	0	0	0	0	0	0	0
13 October	70	0	0	<A1.0	0	0	0	0	0	0	0	0
14 October	71	0	0	<A1.0	0	0	0	0	0	0	0	0
15 October	70	0	0	<A1.0	0	0	0	0	0	0	0	0
16 October	70	0	0	<A1.0	0	0	0	0	0	0	0	0
17 October	71	0	0	<A1.0	0	0	0	0	0	0	0	0
18 October	70	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
12 October	3.6e+05	1.9e+04	4.4e+03		4.2e+04	
13 October	3.6e+05	2.0e+04	4.2e+03		4.0e+04	
14 October	3.8e+05	2.0e+04	4.4e+03		3.8e+04	
15 October	6.5e+05	2.1e+04	4.5e+03		4.3e+04	
16 October	4.6e+05	2.0e+04	4.3e+03		4.4e+04	
17 October	5.2e+05	2.0e+04	4.6e+03		3.2e+04	
18 October	5.0e+05	2.1e+04	4.6e+03		4.7e+04	

Daily Geomagnetic Data

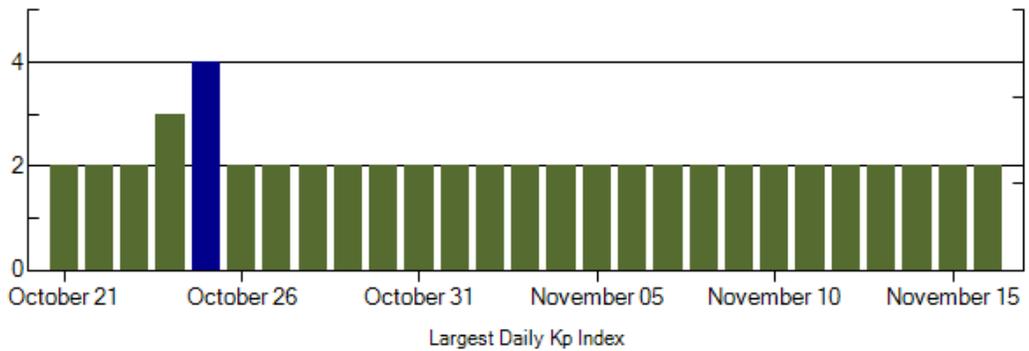
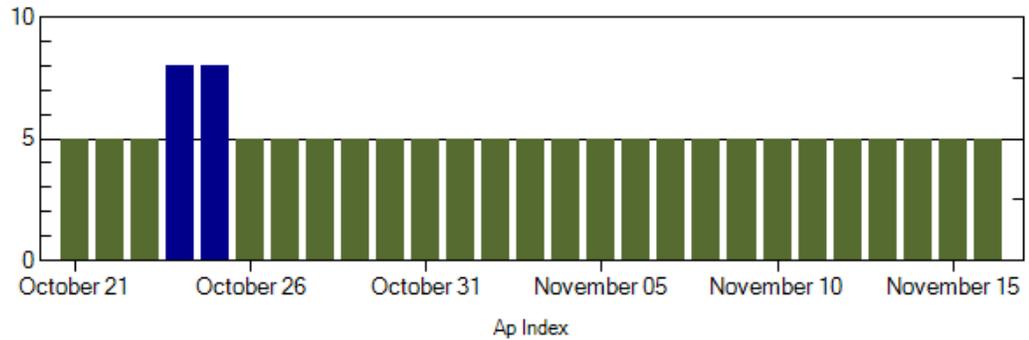
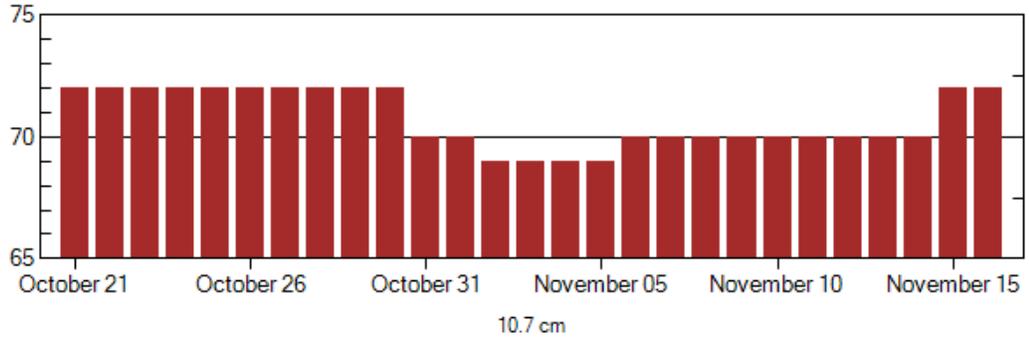
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	12 October	1	0-0-0-0-1-0-1-0	0	0-0-1-1-0-0-0-0	2
13 October	2	0-0-1-0-1-0-1-1	2	0-0-1-1-2-0-0-0	2	0-0-1-1-1-1-0-1
14 October	0	0-0-0-0-0-0-0-1	0	0-0-0-0-0-0-0-0	2	0-0-0-0-1-1-2-1
15 October	3	0-0-1-1-2-1-2-1	2	0-0-2-0-0-1-1-0	4	0-0-2-0-2-1-2-1
16 October	3	3-1-0-0-1-0-0-0	1	1-1-0-0-0-0-0-0	4	2-2-1-0-0-1-1-0
17 October	0	0-0-0-1-0-0-0-0	0	0-0-0-1-0-0-0-0	2	0-0-0-0-1-0-1-1
18 October	0	0-0-0-0-0-0-0-0	1	0-0-1-1-0-1-0-0	1	0-0-0-0-1-1-0-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
<i>No Alerts Issued</i>		



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
21 Oct	72	5	2	04 Nov	69	5	2
22 Oct	72	5	2	05 Nov	69	5	2
23 Oct	72	5	2	06 Nov	70	5	2
24 Oct	72	8	3	07 Nov	70	5	2
25 Oct	72	8	4	08 Nov	70	5	2
26 Oct	72	5	2	09 Nov	70	5	2
27 Oct	72	5	2	10 Nov	70	5	2
28 Oct	72	5	2	11 Nov	70	5	2
29 Oct	72	5	2	12 Nov	70	5	2
30 Oct	72	5	2	13 Nov	70	5	2
31 Oct	70	5	2	14 Nov	70	5	2
01 Nov	70	5	2	15 Nov	72	5	2
02 Nov	69	5	2	16 Nov	72	5	2
03 Nov	69	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	
12 October	No Flares Observed						
13 October	No Flares Observed						
14 October	No Flares Observed						
15 October	No Flares Observed						
16 October	No Flares Observed						
17 October	No Flares Observed						
18 October	No Flares Observed						

Region Summary

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

No Active Regions



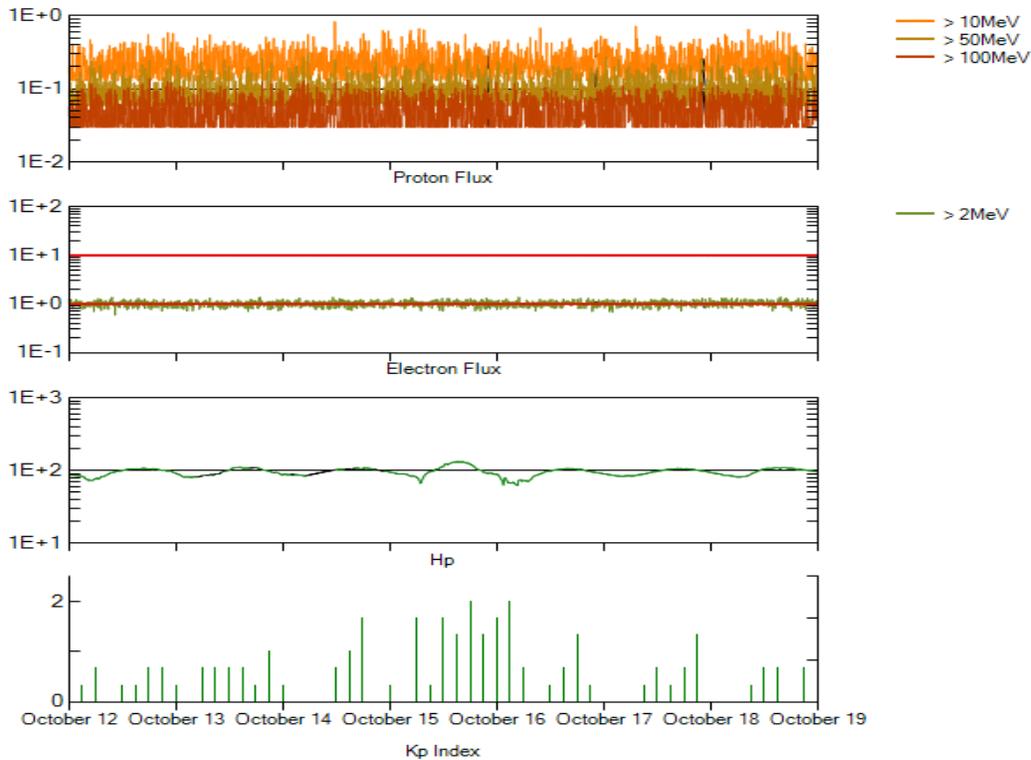
Recent Solar Indices (preliminary)
Of the observed monthly mean values

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
2007									
October	1.3	0.9	0.69	10.0	6.0	67.5	71.8	7	7.9
November	2.5	1.7	0.68	9.4	5.7	69.6	71.4	7	7.8
December	16.2	10.1	0.62	8.1	4.9	78.5	70.8	6	7.8
2008									
January	5.1	3.3	0.65	6.9	4.2	74.3	70.3	8	7.8
February	3.8	2.1	0.55	5.9	3.6	71.1	69.9	11	7.6
March	15.9	9.3	0.58	5.3	3.3	72.9	69.8	11	7.5
April	4.9	2.9	0.59	5.3	3.4	70.2	69.8	9	7.3
May	5.7	3.2	0.56	5.7	3.5	68.4	69.8	6	7.2
June	4.2	3.4	0.81	5.2	3.3	65.9	69.4	7	7.0
July	1.0	0.8	0.80	4.5	2.8	65.7	68.8	5	6.8
August	0.0	0.5	**	4.4	2.7	66.3	68.6	5	6.3
September	1.5	1.1	0.73	3.7	2.3	67.1	68.4	6	5.8
October	5.2	2.9	0.56	2.9	1.9	68.3	68.2	7	5.4
November	6.8	4.1	0.60	2.7	1.8	68.6	68.3	4	5.1
December	1.3	0.8	0.62	2.7	1.7	69.2	68.5	4	4.9
2009									
January	2.8	1.3	0.46	3.0	1.8	69.8	68.7	4	4.7
February	2.5	1.4	0.56	3.1	1.9	70.0	68.9	5	4.7
March	0.7	0.7	1.00	3.4	2.0	69.2	69.0	5	4.5
April	1.2	1.2	1.00			69.7		4	
May	3.9	2.9	0.74			70.5		4	
June	6.6	2.6	0.39			68.6		4	
July	5.0	3.5	0.70			68.2		4	
August	0.3	0.0	0.00			67.4		5	
September	6.6	4.2	0.64			70.4		3	

NOTE: Values are final except for the most recent 6 months which are considered preliminary. Cycle 23 started in May 1996 with an RI=8.0. Cycle 23 maximum was April 2000 with an RI=120.8.

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





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 12 October 2009*

GOES-11 designated Primary Electron Satellite and GOES-10 Secondary: December 1, 2008 the GOES-12 Electron sensor began experiencing periods of noise and sensor is unreliable.

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.

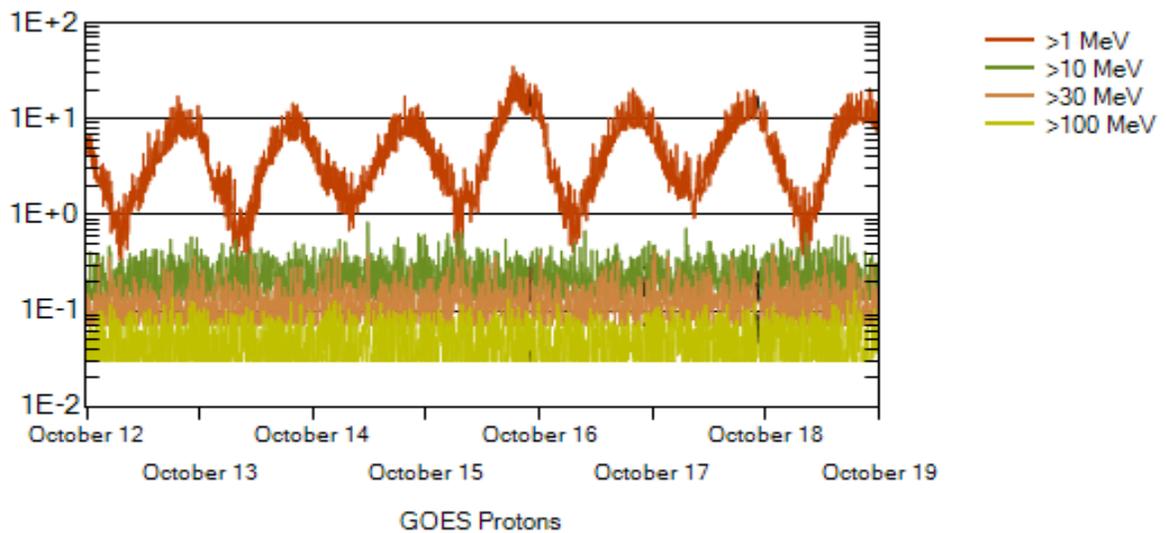
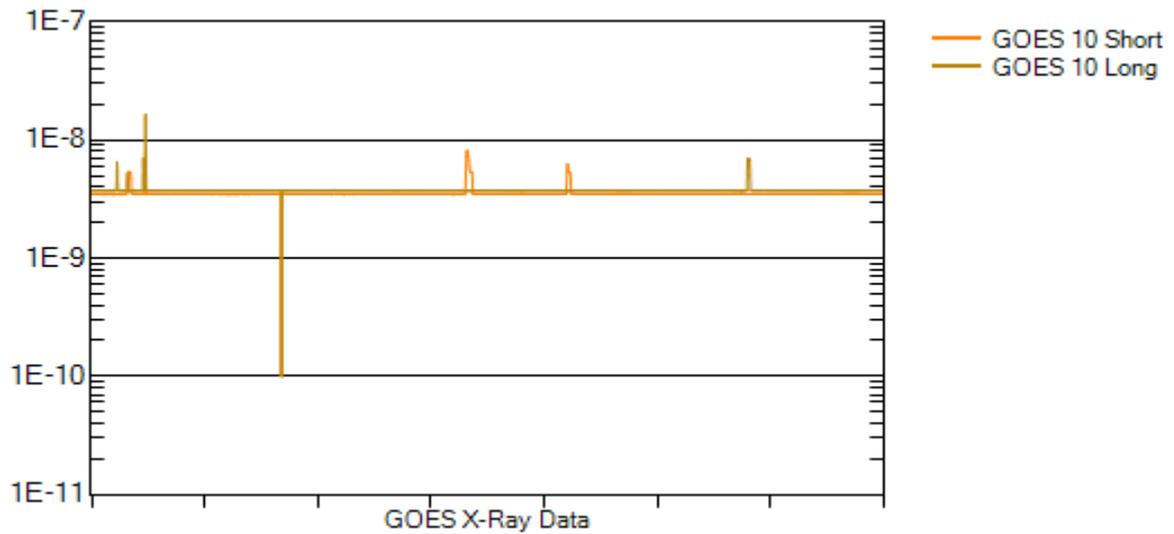
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-11.

Hp plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-11. 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 SWPC 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 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.

