

Space Weather Highlights
10 – 16 September 2007

SEC PRF 1672
18 September 2007

Solar activity was very low. No flares were detected.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 10, 11, and 13 September.

The geomagnetic field was quiet at all latitudes during a majority of the period. ACE solar wind data indicated a recurrent coronal hole wind stream occurred during 14 – 16 September, though it was not geoeffective. The wind stream began around 14/2000 UTC, then subsided on 16 September. The onset of the stream was preceded by a solar sector boundary crossing (away (+) to toward (-)) at approximately 12/1000 UTC. Peak velocity associated with the stream was 360 km/sec at 15/0404 UTC, while density peaked at 30 p/cc at 14/1632 UTC. IMF variance associated with the stream included a maximum total field intensity of 11 nT at 14/2138 UTC and a minimum Bz reading of -8 nT at 14/2352 UTC.

Space Weather Outlook
19 September – 15 October 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 24 September – 10 October.

Geomagnetic field activity is expected to be at quiet to unsettled levels during 19 - 22 September. Activity is expected to increase to unsettled to active levels during 23 – 24 September due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to quiet to unsettled levels during 25 – 28 September as the stream subsides. Activity is expected to increase to unsettled to minor storm levels during 29 – 30 September due to another recurrent coronal hole high-speed stream. Activity is expected to decrease to quiet to unsettled levels during 01 – 02 October. Activity is expected to increase to unsettled to active levels during 03 – 04 October due to another recurrent coronal hole high-speed stream. Mostly quiet conditions are expected during the remainder 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
10 September	67	0	0	<A1.0	0	0	0	0	0	0	0	0
11 September	66	0	0	<A1.0	0	0	0	0	0	0	0	0
12 September	66	0	0	<A1.0	0	0	0	0	0	0	0	0
13 September	66	0	0	<A1.0	0	0	0	0	0	0	0	0
14 September	67	0	0	<A1.0	0	0	0	0	0	0	0	0
15 September	68	0	0	<A1.0	0	0	0	0	0	0	0	0
16 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
10 September	8.4E+5	1.8E+4	4.1E+3		1.0E+8	
11 September	8.3E+5	1.8E+4	4.1E+3		8.2E+7	
12 September	9.0E+5	1.9E+4	4.4E+3		3.9E+7	
13 September	1.5E+6	1.9E+4	4.4E+3		5.6E+7	
14 September	2.0E+6	1.8E+4	4.2E+3		2.1E+7	
15 September	7.7E+5	1.9E+4	4.0E+3		3.0E+6	
16 September	6.9E+5	1.7E+4	3.9E+3		3.8E+6	

Daily Geomagnetic Data

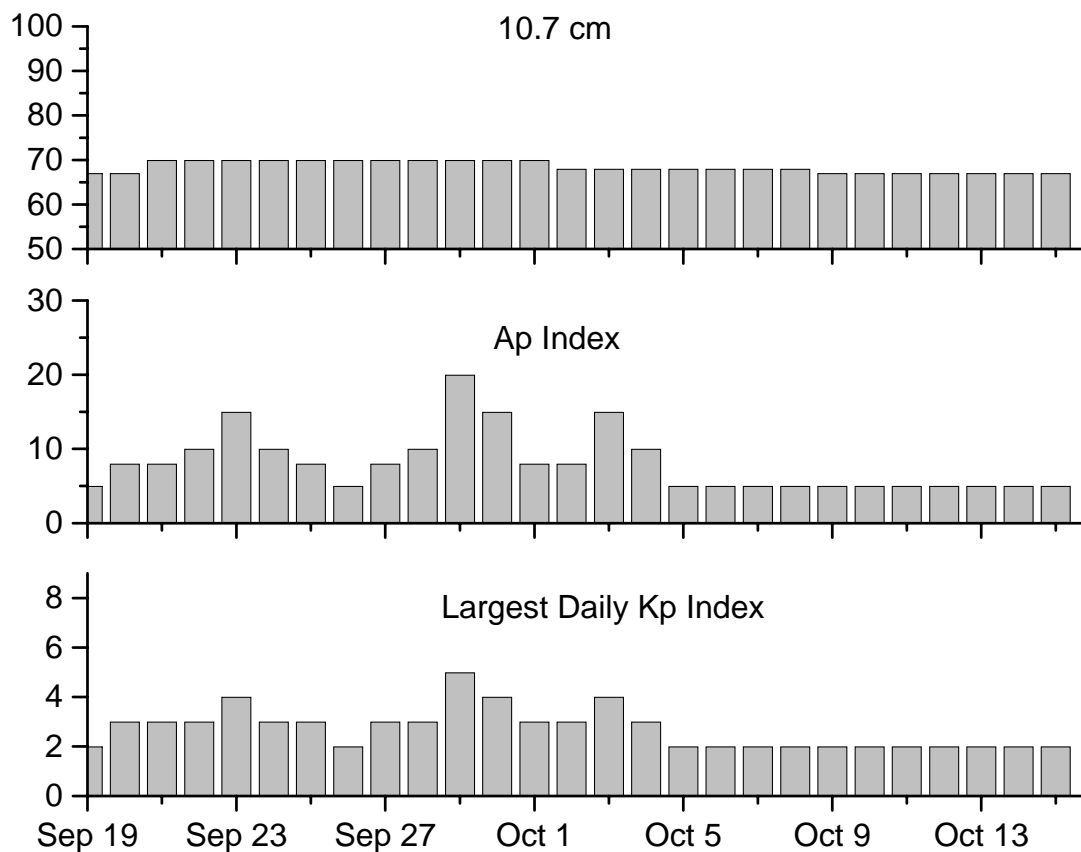
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
10 September	2	0-0-1-1-1-1-0-0	0	0-0-1-0-0-0-0-0	2	1-0-1-0-0-0-0-1
11 September	2	0-0-1-1-1-1-0-1-0	1	0-0-1-1-1-0-0-0	2	0-0-1-1-1-0-0-1
12 September	2	1-0-1-0-1-1-0-0	1	0-1-1-1-0-0-0-0	2	1-1-0-1-0-0-0-1
13 September	1	0-0-0-0-0-0-1-1	0	0-0-0-0-0-0-0-0	2	1-0-0-0-0-1-1-1
14 September	3	0-0-0-1-1-2-2-2	1	0-0-0-0-0-1-1-1	4	1-0-0-0-0-2-3-2
15 September	3	2-0-0-0-1-1-2-1	2	2-0-0-0-0-0-1-1	4	2-1-0-1-1-1-1-2
16 September	2	1-1-0-0-2-0-1-0	0	1-0-0-0-0-0-0-0	2	1-1-0-0-0-0-0-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
10 Sep 0936	ALERT: Electron 2MeV Integral Flux >1000pfu	10 Sep 0905
11 Sep 1203	ALERT: Electron 2MeV Integral Flux >1000pfu	11 Sep 1140
13 Sep 1313	ALERT: Electron 2MeV Integral Flux >1000pfu	13 Sep 1255



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
19 Sep	67	5	2	03 Oct	68	15	4
20	67	8	3	04	68	10	3
21	70	8	3	05	68	5	2
22	70	10	3	06	68	5	2
23	70	15	4	07	68	5	2
24	70	10	3	08	68	5	2
25	70	8	3	09	67	5	2
26	70	5	2	10	67	5	2
27	70	8	3	11	67	5	2
28	70	10	3	12	67	5	2
29	70	20	5	13	67	5	2
30	70	15	4	14	67	5	2
01 Oct	70	8	3	15	67	5	2
02	68	8	3				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	$\frac{1}{2}$			Integ		Imp/		Rgn	Radio Flux		Intensity	
	Begin	Max	Max	Class	Flux	Brtns	Lat CMD		245	2695	II	IV

No Events Observed

Flare List

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

10 September **No Flares Observed**
 11 September **No Flares Observed**
 12 September **No Flares Observed**
 13 September **No Flares Observed**
 14 September **No Flares Observed**
 15 September **No Flares Observed**
 16 September **No Flares Observed**

Region Summary

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

No active regions.

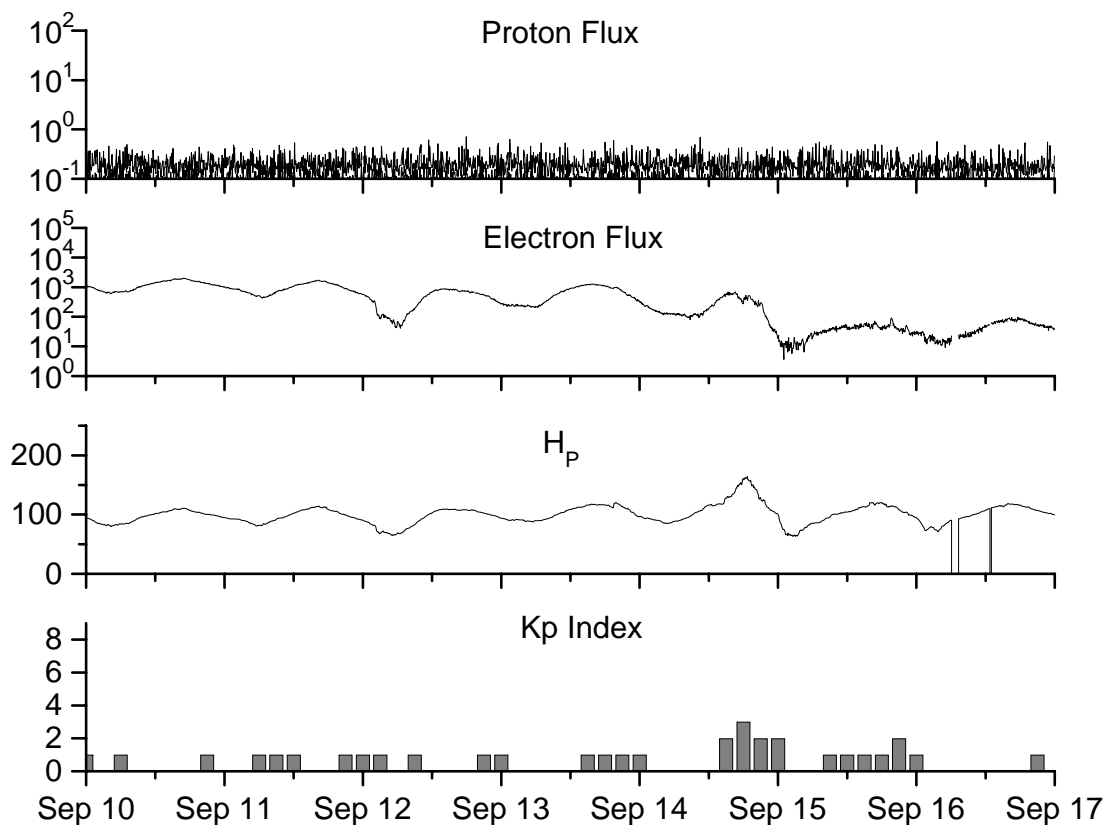


Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values	Ratio	Smooth values	*Penticton	Smooth	Planetary	Smooth		
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2005									
September	39.2	22.1	0.56	42.9	25.9	90.8	87.8	21	11.8
October	13.0	8.5	0.65	42.6	25.5	76.7	87.4	7	11.6
November	32.2	18.0	0.56	42.1	24.9	86.3	86.7	8	11.1
December	62.6	41.2	0.66	40.1	23.0	90.8	85.4	7	10.4
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			77.8		6	
March	9.7	4.8	0.49			72.3		7	
April	6.9	3.7	0.54			72.4		9	
May	19.4	11.7	0.60			74.5		8	
June	20.0	12.0	0.60			73.7		7	
July	15.6	10.0	0.64			71.6		7	
August	9.9	6.2	0.63			69.2		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 10 September 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.

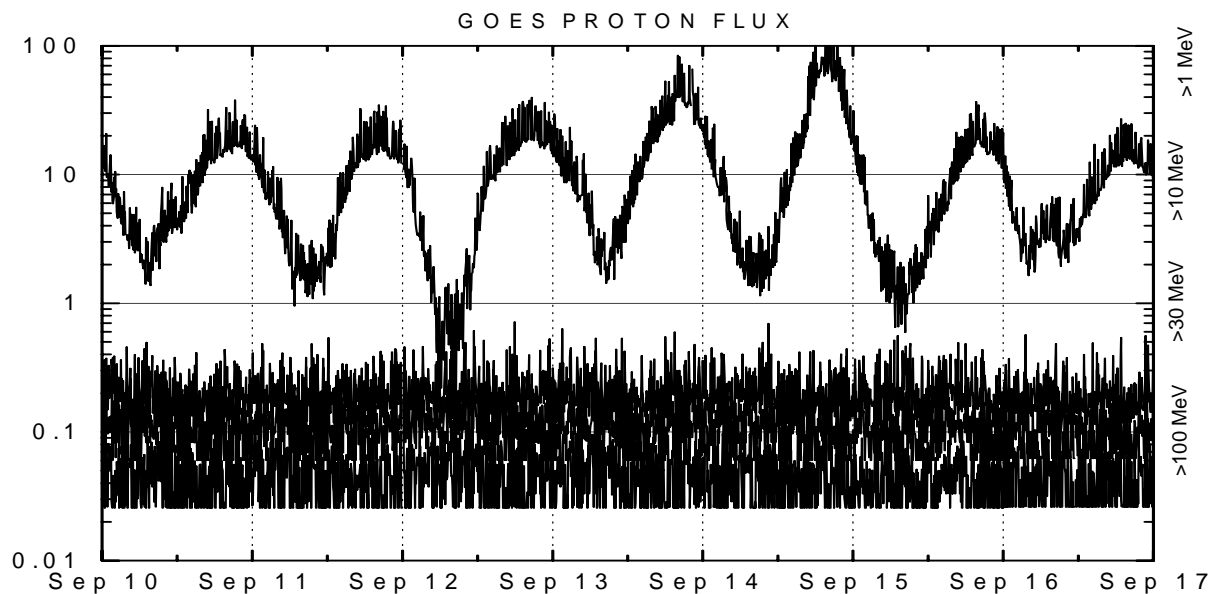
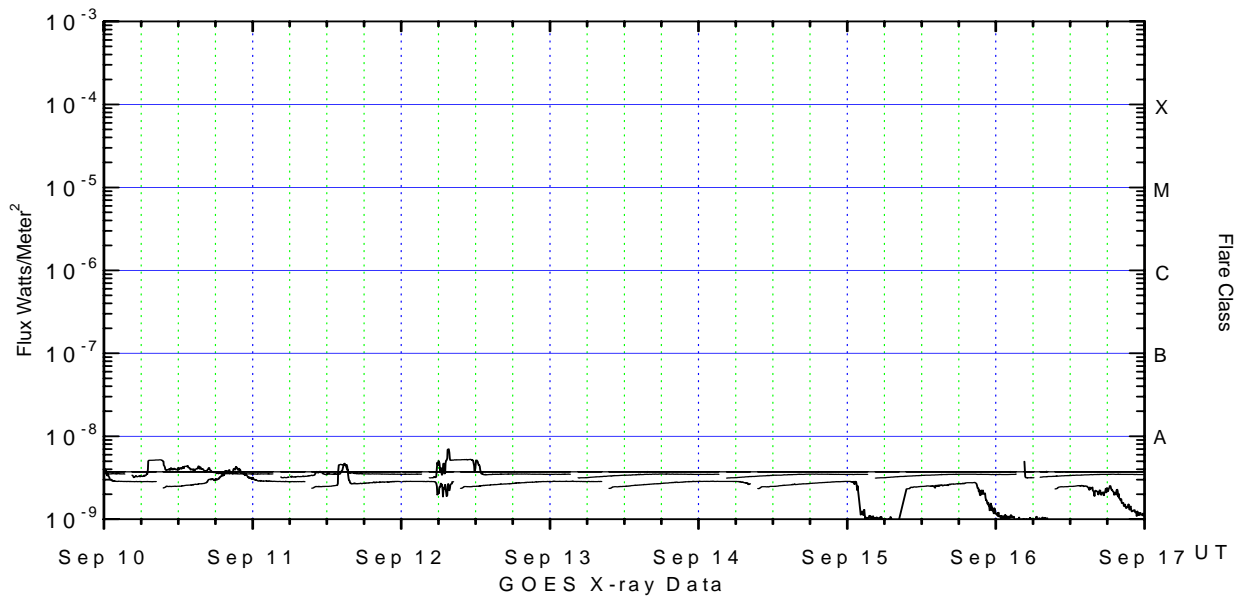
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-12 (W075).

H_p 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.

