

Space Weather Highlights
09 – 15 June 2008

SEC PRF 1711
17 June 2008

Solar activity was very low. No flares were detected. The visible solar disk was spotless until 11 June when Region 998 (S09, L = 291, class/area, Cro/040 on 10 June) was numbered. This region decayed to spotless plage on 14 June, and was still on the visible solar disk as the summary period ended.

No proton events were observed at geosynchronous orbit.

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

Geomagnetic field activity was at quiet levels from 09 June through midday on 14 June. Wind speed measurements from the ACE spacecraft were declining from around 450 km/s at the beginning of the period to about 300 km/s early on 14 June. A co-rotating interaction region was observed on 14 June at approximately 1130Z. Soon thereafter, geomagnetic activity increased to unsettled to minor storm conditions, and remained at this level through 15 June. Wind speeds quickly increased to just below 700 km/s with interplanetary magnetic field Bz component values ranging between +13 and -17 nT. Early on 15 June a transition into a recurrent coronal hole high speed stream occurred. This continued through the end of the summary period as wind speeds stayed around 650 km/s.

Space Weather Outlook
18 June – 14 July 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 18 - 23 June and again on 13 - 14 July.

Geomagnetic field activity is expected to be at unsettled levels during 18 - 20 June due to a recurrent coronal hole high speed stream. Activity is expected to decrease to quiet levels during 21 - 24 June. Activity is expected to increase to unsettled levels during 25 - 27 June again due to a recurrent coronal hole high speed stream. Activity is expected to decrease to quiet levels during 28 June - 02 July as the coronal hole rotates out of a geoeffective position. Activity is expected to increase to unsettled levels during 03 - 05 July due to another coronal hole high speed stream. Activity is expected to decrease to quiet levels for 06 - 10 July. From 11 July through the end of the period expect unsettled to active conditions due to a coronal hole high speed stream.



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
09 June	66	0	0	<A1.0	0	0	0	0	0	0	0	0
10 June	66	14	40	<A1.0	0	0	0	0	0	0	0	0
11 June	66	11	20	<A1.0	0	0	0	0	0	0	0	0
12 June	67	13	30	<A1.0	0	0	0	0	0	0	0	0
13 June	67	13	20	<A1.0	0	0	0	0	0	0	0	0
14 June	67	0	0	<A1.0	0	0	0	0	0	0	0	0
15 June	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
	09 June	1.2E+6	1.8E+4	4.1E+3		1.5E+7
10 June	1.6E+6	1.7E+4	4.1E+3		2.0E+7	
11 June	1.7E+6	1.7E+4	4.0E+3		1.6E+7	
12 June	1.9E+6	1.8E+4	4.0E+3		1.8E+7	
13 June	2.2E+6	1.8E+4	4.3E+3		1.6E+7	
14 June	3.2E+6	1.8E+4	4.0E+3		1.2E+7	
15 June	1.9E+6	1.7E+4	3.9E+3		1.3E+7	

Daily Geomagnetic Data

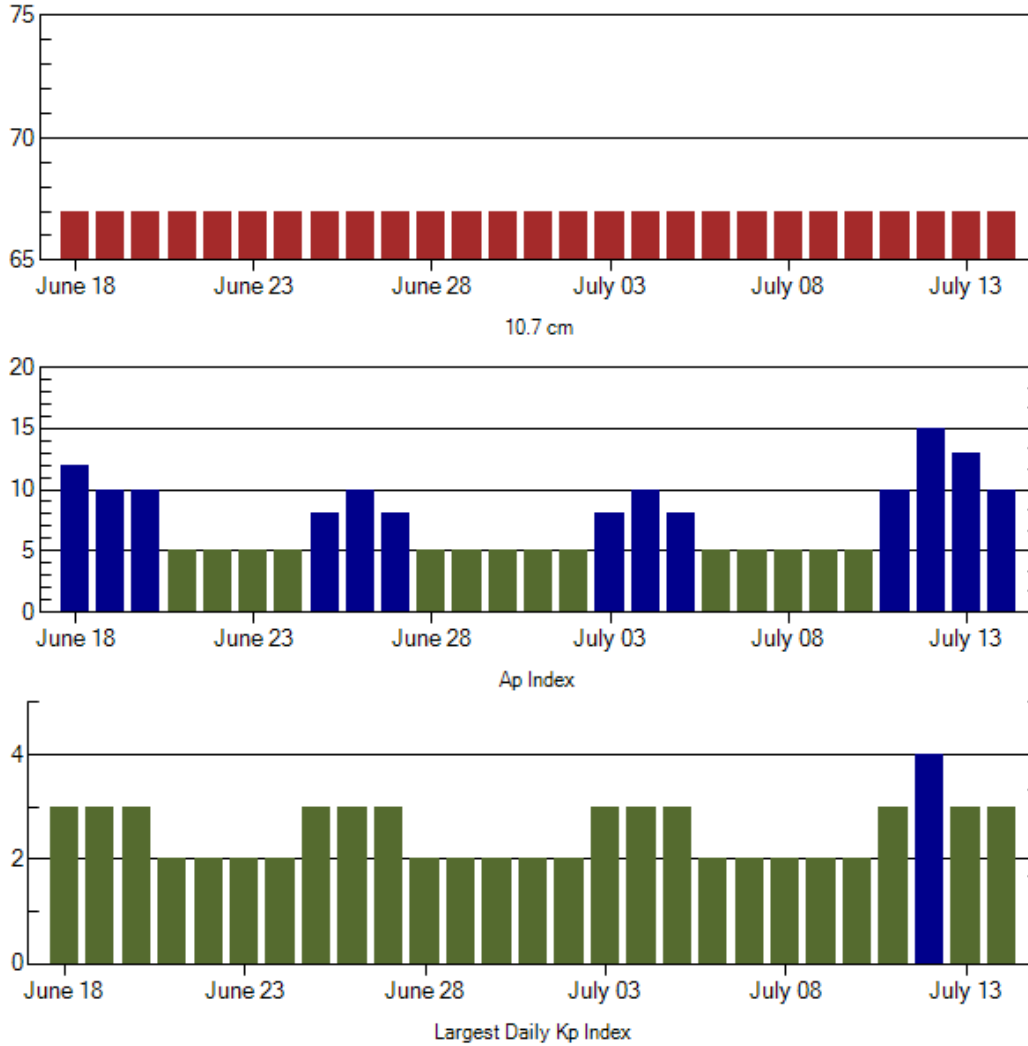
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 June	2	1-0-0-1-0-0-2-1	2	1-1-0-0-1-0-1-1	5
10 June	1	0-0-0-0-1-1-0-0	1	1-0-0-0-1-0-0-0	4	1-0-0-0-1-2-1-1
11 June	3	1-1-1-1-1-1-0-1	1	1-0-1-0-0-0-0-0	4	1-1-1-1-1-2-1-1
12 June	2	0-0-0-1-1-1-1-1	0	0-0-0-0-0-0-0-1	3	1-0-0-1-1-1-1-1
13 June	1	0-0-0-0-1-1-1-0	1	0-0-0-0-0-1-1-0	3	1-0-0-0-0-1-1-1
14 June	16	1-0-1-0-2-3-5-5	8	0-0-1-0-1-3-3-4	16	0-1-0-0-1-3-5-5
15 June	14	4-4-3-2-2-2-2-3	30	4-4-6-4-5-3-2-2	20	4-5-4-3-3-2-3-3

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
14 Jun 1742	WARNING: Geomagnetic K = 4	14 Jun 1745 – 2359
14 Jun 2126	ALERT: Geomagnetic K = 4	14 Jun 2124
14 Jun 2131	WARNING: Geomagnetic K = 5	14 Jun 2130 – 15/1600
14 Jun 2159	ALERT: Geomagnetic K = 5	14 Jun 2157
15 Jun 1554	EXTENDED WARNING: Geomagnetic K = 4	14 Jun 1745 – 15/2359
15 Jun 2354	EXTENDED WARNING: Geomagnetic K = 4	14 Jun 1745 – 16/1600



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



Energetic Events

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

Flare List

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
09 Jun	<i>No Flares Observed</i>						
10 Jun	<i>No Flares Observed</i>						
11 Jun	<i>No Flares Observed</i>						
12 Jun	<i>No Flares Observed</i>						
13 Jun	<i>No Flares Observed</i>						
14 Jun	<i>No Flares Observed</i>						
15 Jun	<i>No Flares Observed</i>						

Region Summary

Date	Location		Sunspot Characteristics							Flares										
	(° Lat ° CMD)	Helio Lon	Area (10 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical									
								C	M	X	S	1	2	3	4					
<i>Region 998</i>																				
10 Jun	S09E53	291	0040	04	Cro	004	B													
11 Jun	S09E38	292	0020	01	Hsx	001	A													
12 Jun	S09E26	291	0030	04	Cso	003	B													
13 Jun	S10E12	292	0020	02	Cso	003	B													
14 Jun	S10W01	292																		
15 Jun	S10W14	292																		
								0	0	0	0	0	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 292



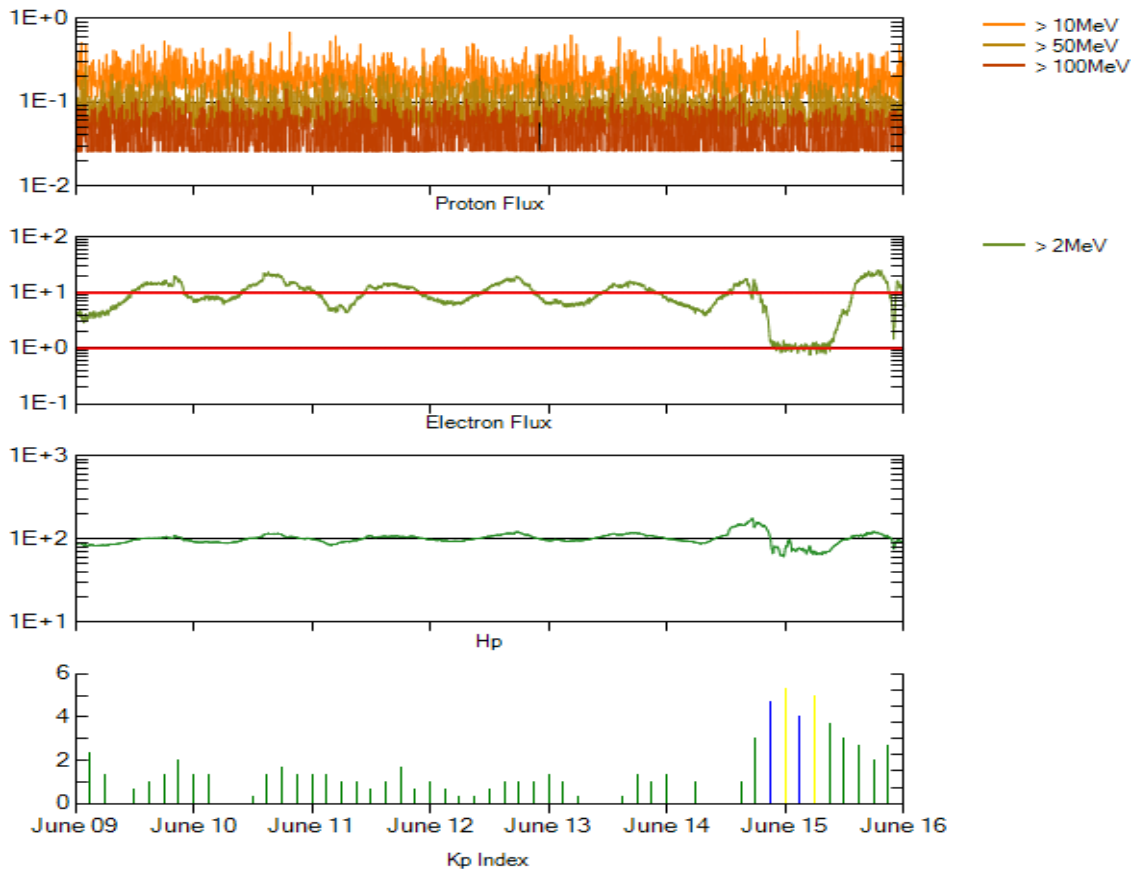
Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	Sunspot Numbers			Smooth values		Radio Flux		Geomagnetic	
	Observed SEC	values RI	Ratio RI/SEC	SEC	RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2006									
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	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			78.6		4	
2008									
January	5.1	3.4	0.67			72.1		6	
February	3.8	2.1	0.55			71.2		9	
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	

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 09 June 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.

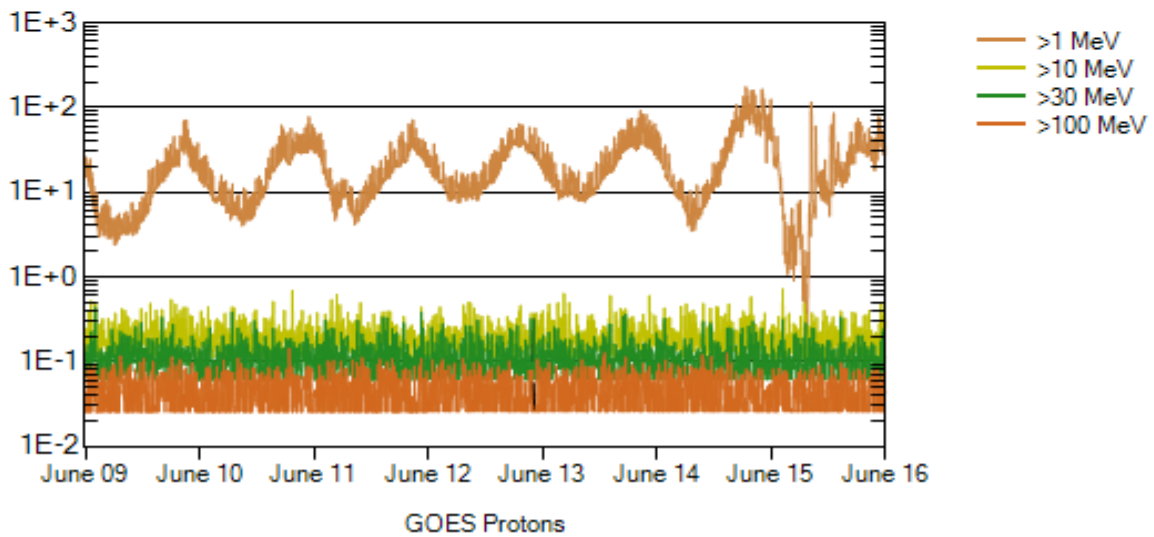
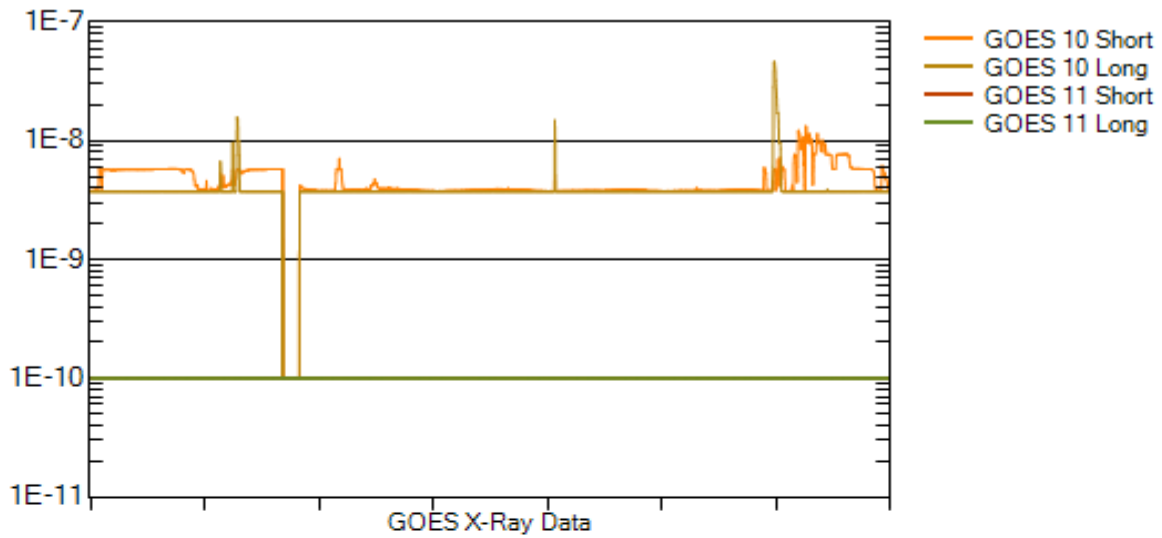
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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/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.

