

Solar activity was very low. Isolated low-level B-class flares were detected early on 26 March. 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 throughout the period.

Geomagnetic field activity was at quiet levels at all latitudes on 23 March. Field activity increased to quiet to unsettled levels on 24 March with minor storm periods detected at high latitudes. Activity increased to quiet to active levels on 25 March. Activity decreased to quiet to unsettled levels during 26 - 27 March. A further decrease to quiet levels at all latitudes occurred during 28 - 29 March. ACE solar wind observations indicated the 24 - 25 March activity increase was associated with periods of enhanced solar wind velocities (peak 526 km/sec at 24/2352 UTC), weakly enhanced interplanetary magnetic field (IMF) Bt (peak 8 nT at 23/1958 UTC), and intermittent southward IMF Bz (minimum -6 nT at 24/1225 UTC).

Space Weather Outlook

01 - 27 April 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 increase to high levels during 10-14 April. Normal flux levels are expected during the rest of the period.

Geomagnetic field activity is expected to be at mostly quiet levels through 08 April. Activity is expected to increase to unsettled to active levels during 09 - 10 April due to a recurrent coronal hole high-speed stream. Activity is expected to decrease to quiet levels during 11 - 19 April. Activity is expected to increase to quiet to unsettled levels during 20 - 21 April. Activity is expected to decrease to quiet levels during 22 - 27 April.



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
23 March	68	0	0	<A1.0	0	0	0	0	0	0	0	0
24 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
25 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
26 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
27 March	72	0	0	<A1.0	0	0	0	0	0	0	0	0
28 March	71	0	0	<A1.0	0	0	0	0	0	0	0	0
29 March	71	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
	23 March	2.4e+05	1.9e+04	4.3e+03		2.7e+05
24 March	3.9e+05	1.9e+04	4.4e+03		2.1e+05	
25 March	5.4e+05	1.9e+04	4.2e+03		5.4e+06	
26 March	6.0e+05	2.1e+04	4.7e+03		6.2e+06	
27 March	7.0e+05	1.9e+04	4.4e+03		7.2e+06	
28 March	6.2e+05	2.0e+04	4.6e+03		7.4e+06	
29 March	7.1e+05	1.8e+04	4.5e+03		6.8e+06	

Daily Geomagnetic Data

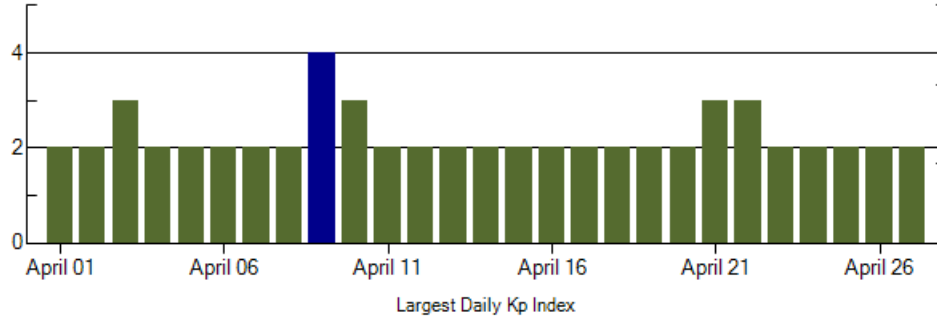
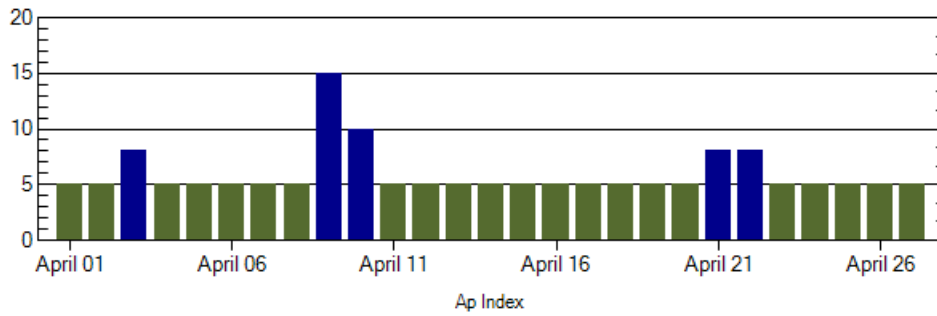
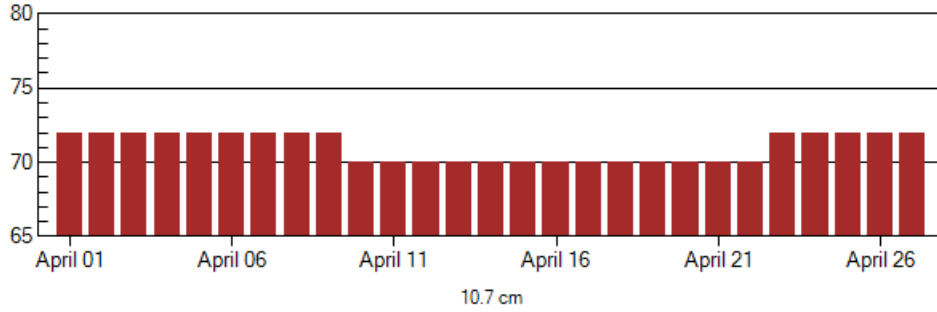
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	23 March	2	1-0-1-0-0-1-2-1	1	1-0-0-0-0-0-1-0	3
24 March	6	0-2-3-2-2-1-1-1	18	1-2-5-5-3-3-1-1	8	0-3-2-3-3-2-1-2
25 March	7	3-3-2-2-1-1-1-1	9	2-2-4-3-1-1-1-1	10	4-4-2-3-1-1-1-1
26 March	6	1-2-3-1-2-1-1-1	5	1-2-3-0-2-2-1-0	7	2-3-3-0-2-1-1-1
27 March	2	0-0-0-0-1-1-2-1	4	0-0-0-0-2-3-2-1	4	0-0-0-0-1-2-3-2
28 March	2	1-0-0-0-1-0-1-1	2	1-0-0-1-0-0-1-1	4	1-0-0-0-1-2-2-2
29 March	4	2-1-1-1-1-1-1-1	2	1-0-1-1-0-0-0-1	5	1-1-1-1-1-2-1-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
25 Mar 0254	ALERT: Geomagnetic K = 4	25 Mar 0250
25 Mar 0325	ALERT: Geomagnetic K = 4	25 Mar 0324
26 Mar 0726	ALERT: Geomagnetic K = 4	26 Mar 0725



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
01 Apr	72	5	2	15 Apr	70	5	2
02	72	5	2	16	70	5	2
03	72	8	3	17	70	5	2
04	72	5	2	18	70	5	2
05	72	5	2	19	70	5	2
06	72	5	2	20	70	5	2
07	72	5	2	21	70	8	3
08	72	5	2	22	70	8	3
09	72	15	4	23	72	5	2
10	70	10	3	24	72	5	2
11	70	5	2	25	72	5	2
12	70	5	2	26	72	5	2
13	70	5	2	27	72	5	2
14	70	5	2				



Energetic Events

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
			½	Integ	Imp/	Location		Rgn	Radio Flux		Intensity	
	Begin	Max	Max	Class	Flux	Brtns	Lat	CMD	#	245	2695	II

No Events Observed

Flare List

Date	Time			X-ray	Imp /	Optical	Rgn	
	Begin	Max	End	Class.	Brtns	Location	Lat CMD	
23 March	No Flares Observed							
24 March	No Flares Observed							
25 March	No Flares Observed							
26 March	No Flares Observed							
27 March	No Flares Observed							
28 March	No Flares Observed							
29 March	No Flares Observed							

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

No active regions.



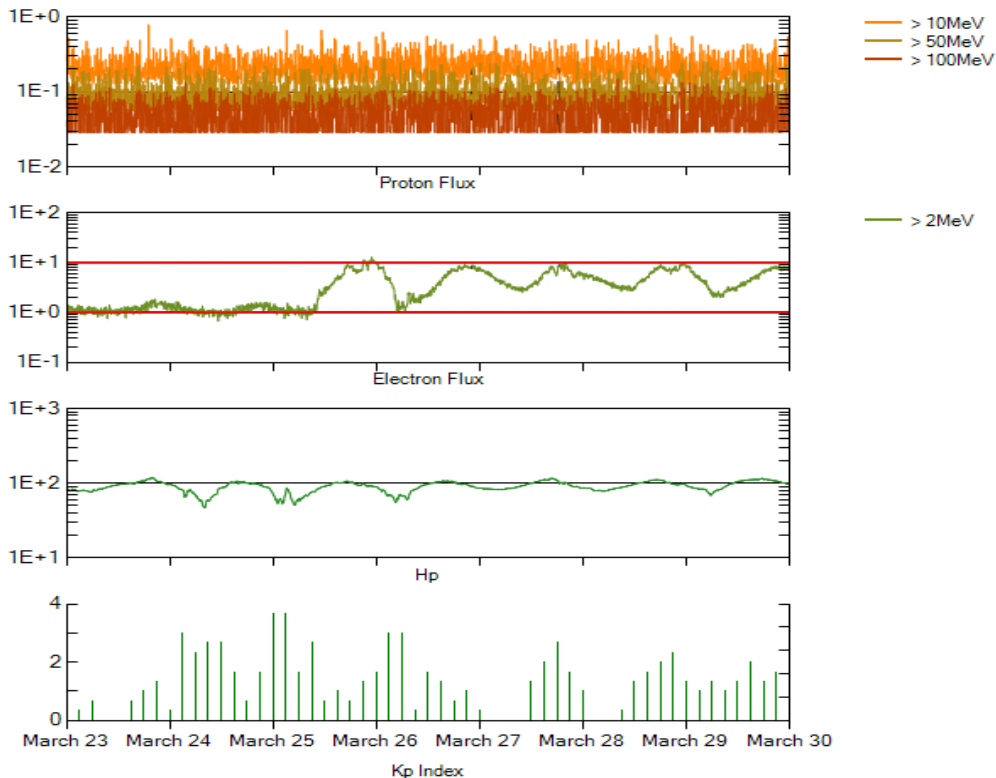
Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed SEC	values RI	Ratio RI/SEC	Smooth SEC	values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2007									
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	5.3	3.3	70.3	69.6	9	7.1
May	5.7	2.9	0.51	5.7	3.5	68.4	69.7	6	6.9
June	4.2	3.1	0.74	5.2	3.2	65.9	69.2	7	6.8
July	1.0	0.5	0.50	4.5	2.7	65.8	68.8	6	6.6
August	0.0	0.5	**	4.4	2.6	66.4	68.6	5	6.2
September	1.5	1.1	0.73			67.1		5	
October	5.2	2.9	0.56			68.3		6	
November	6.8	4.1	0.60			68.6		3	
December	1.3	0.8	0.62			69.2		2	
2009									
January	2.8	1.5	0.54			69.8		3	
February	2.5	1.4	0.55			70.1		4	

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 23 March 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.

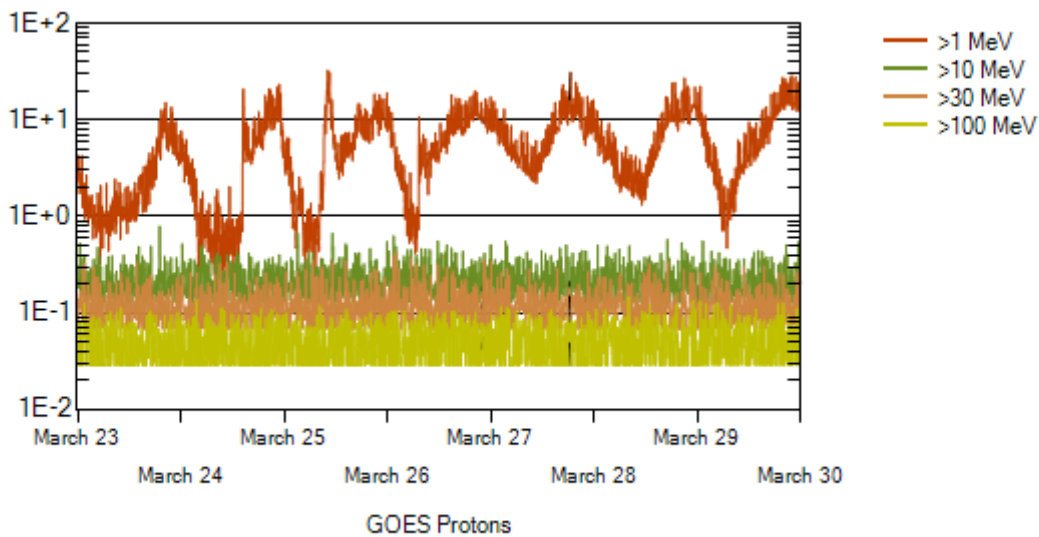
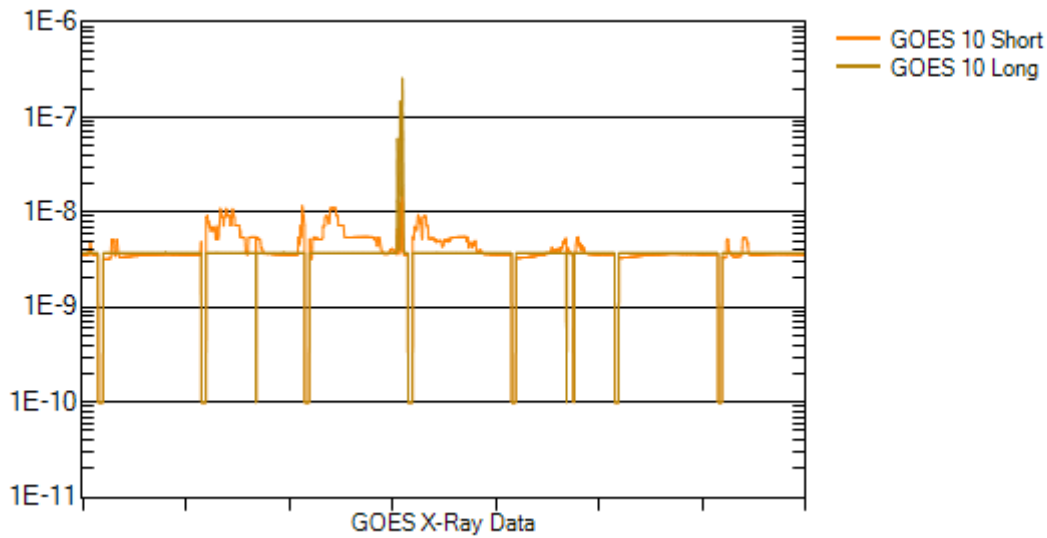
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-11 (W135).

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/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.

