

Solar activity was very low. No flares were observed. 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 9 - 13 March. High levels were observed on 14 - 15 March.

Geomagnetic field activity was at predominantly quiet levels during 09 - 12 March. Activity increased to unsettled to minor storm levels on 13 March. Quiet to active conditions prevailed on 14 March through mid-day on 15 March, when activity returned to quiet levels. ACE solar wind data indicated the activity was due to a coronal hole high-speed stream (CH HSS). Velocities increased to a maximum of 587 km/s at 13/2111 UTC and then gradually decreased to the end of the period, with a velocity of 435 km/s at 15/2359 UTC. During this period, the interplanetary magnetic field Bt increased to a maximum of 20 nT at 12/2147 UTC, and Bz reached a minimum of -11 nT at 13/0108 UTC.

Space Weather Outlook
18 March - 13 April 2009

Solar activity is expected to be at very low levels.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to remain at high levels through 18 March. Normal flux levels are expected during the rest of the period.

Geomagnetic field activity is expected to be at predominantly quiet levels through 08 April. Activity is expected to increase to unsettled to active levels during 09 - 10 April, with a chance for minor storm periods at high latitudes due to a recurrent CH HSS. Mostly quiet activity is 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
09 March	68	0	0	<A1.0	0	0	0	0	0	0	0	0
10 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
11 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
12 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
13 March	68	0	0	<A1.0	0	0	0	0	0	0	0	0
14 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0
15 March	68	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 March	1.1E+6	1.9E+4	4.4E+3		8.8E+5
10 March	1.9E+6	2.0E+4	4.7E+3		1.0E+6	
11 March	1.9E+6	1.9E+4	4.4E+3		6.6E+5	
12 March	1.9E+6	1.9E+4	4.2E+3		2.1E+5	
13 March	8.3E+5	1.9E+4	4.1E+3		1.3E+6	
14 March	1.7E+6	2.0E+4	4.2E+3		3.1E+7	
15 March	9.4E+5	2.0E+4	4.4E+3		1.3E+8	

Daily Geomagnetic Data

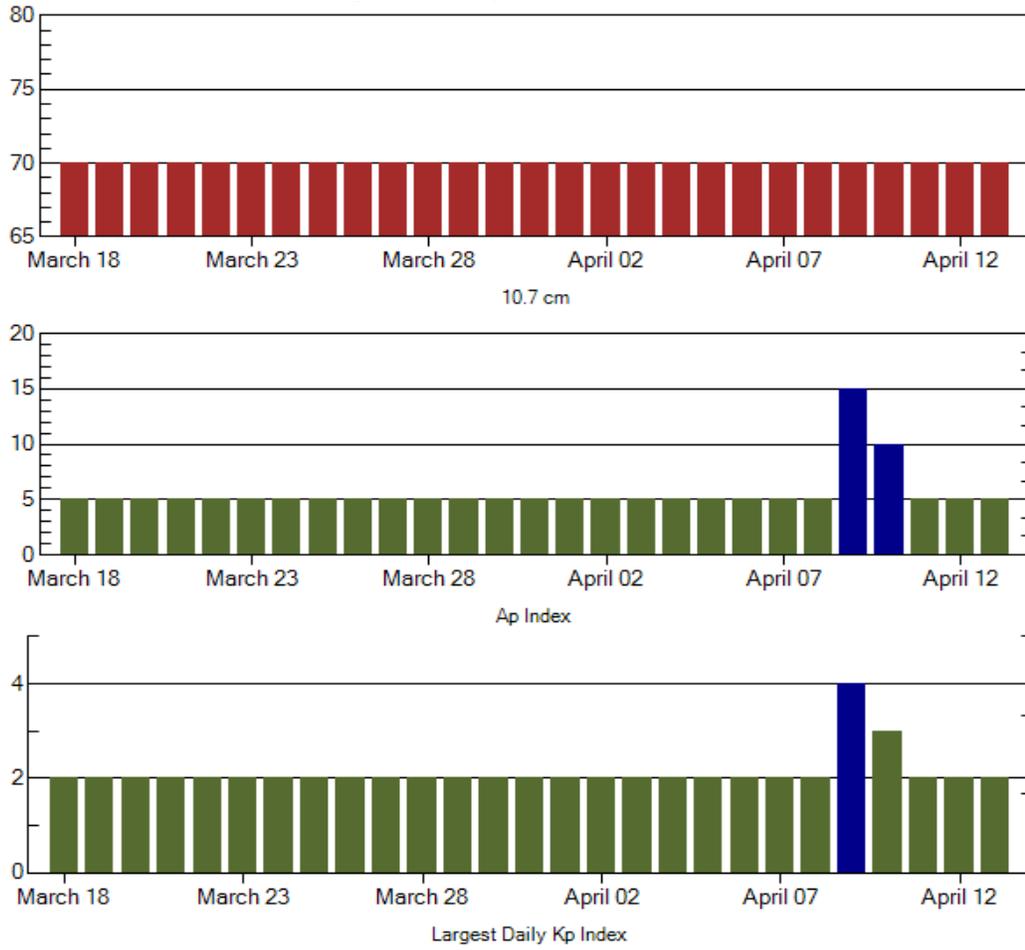
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 March	1	0-0-0-1-1-0-0-0	1	0-0-0-1-1-0-0-0	2
10 March	3	1-0-0-0-2-2-1-0	1	0-0-0-0-0-2-1-0	3	1-0-0-0-1-2-1-1
11 March	2	0-0-0-0-1-0-1-2	1	0-0-1-0-0-0-0-1	3	0-0-0-0-0-1-1-2
12 March	6	2-2-1-1-1-1-2-3	3	2-2-0-0-0-0-1-1	6	3-2-0-0-0-0-1-2
13 March	10	4-3-2-2-2-1-2-2	24	3-3-4-5-5-4-1-2	16	5-4-4-2-2-2-2-2
14 March	7	3-1-2-1-1-2-1-3	12	1-2-4-4-1-3-2-2	9	3-2-2-2-1-2-2-3
15 March	5	2-2-2-1-2-1-0-1	7	1-3-3-3-2-0-0-1	7	3-3-2-2-1-2-0-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
12 Mar 2311	WARNING: Geomagnetic K = 4	12 Mar 2315 - 13/1600
13 Mar 0049	ALERT: Geomagnetic K = 4	13 Mar 0048
14 Mar 1939	ALERT: Electron 2MeV Integral Flux >= 1000pfu	14 Mar 1920
15 Mar 1248	ALERT: Electron 2MeV Integral Flux >= 1000pfu	15 Mar 1230



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 Mar	70	5	2	01 Apr	70	5	2
19	70	5	2	02	70	5	2
20	70	5	2	03	70	5	2
21	70	5	2	04	70	5	2
22	70	5	2	05	70	5	2
23	70	5	2	06	70	5	2
24	70	5	2	07	70	5	2
25	70	5	2	08	70	5	2
26	70	5	2	09	70	15	4
27	70	5	2	10	70	10	3
28	70	5	2	11	70	5	2
29	70	5	2	12	70	5	2
30	70	5	2	13	70	5	2
31	70	5	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	1/2		Integ		Imp/	Location		Radio Flux		Intensity		
	Begin	Max	Max	Class	Flux	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	
09 Mar	No Flares Observed							
10 Mar	No Flares Observed							
11 Mar	No Flares Observed							
12 Mar	No Flares Observed							
13 Mar	No Flares Observed							
14 Mar	No Flares Observed							
15 Mar	No Flares Observed							

Region Summary

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

Region 1014

06 Mar	S04E00	034	0020	02	Bxo	002	B								
07 Mar	S01W14	035	0020	02	Bxo	002	B								
08 Mar	S01W27	035													
09 Mar	S01W40	035													
10 Mar	S01W53	035													
13 Mar	S01W92	035													

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 034



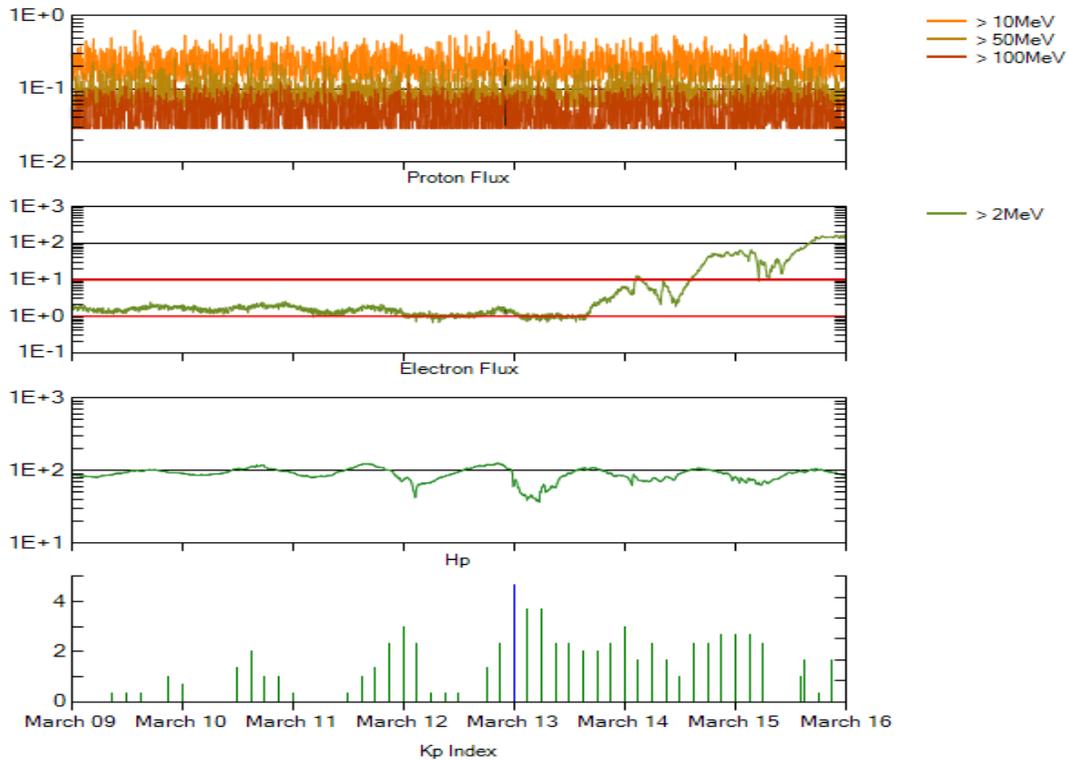
Recent Solar Indices (preliminary)
Of the observed monthly mean values

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									
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	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	**			66.4		5	
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	

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 09 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.

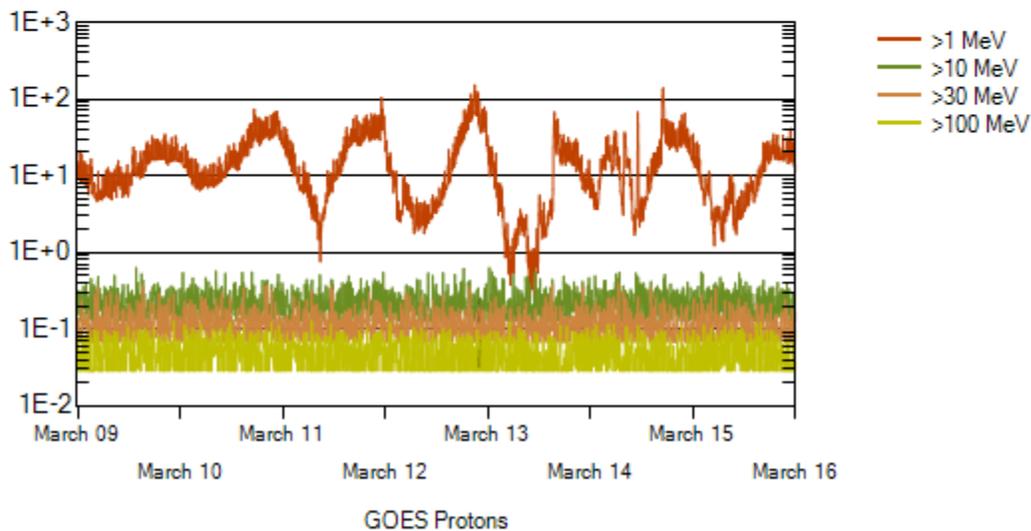
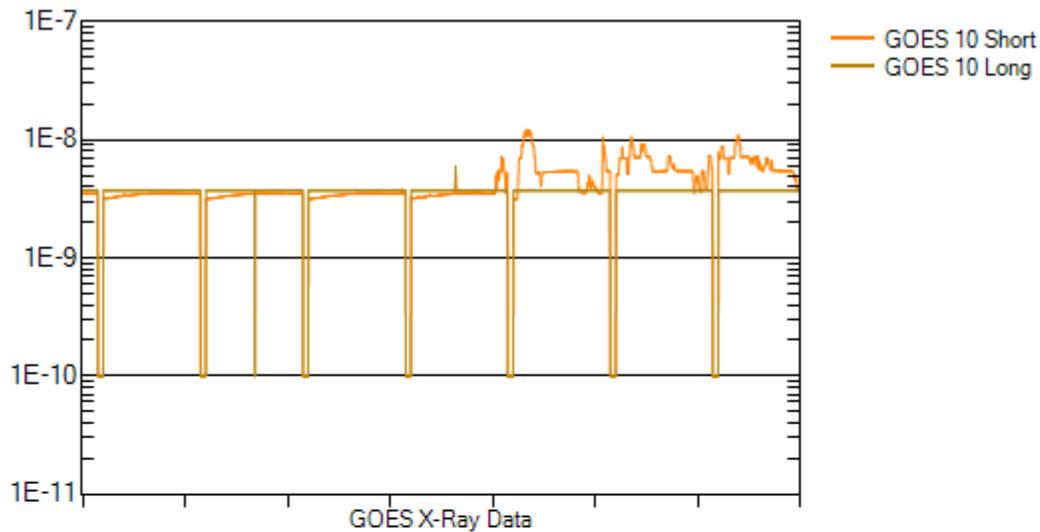
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-11 (W135).

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.

