

Space Weather Highlights
25 February – 02 March 2008

SEC PRF 1696
04 March 2008

Solar activity was very low with no flares detected.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on all days but 28 February.

The geomagnetic field was at quiet to unsettled levels during 25 - 27 February. By early on 28 February, activity increased to unsettled to active levels with isolated minor storm periods observed at middle latitudes, while minor to major storm periods were observed at high latitudes. This activity persisted through midday on 01 March and was due to a recurrent coronal hole high speed stream. ACE solar wind measurements peaked at 837 km/s at 01/0603 UTC) while density peaked at 24 p/cc at 27/1541 UTC. Significant changes in the IMF were observed from late on 27 February through midday on 28 February including increased Bt (peak 11 nT at 27/1651 UTC) and intermittent periods of southward Bz (minimum -11 nT at 27/1651 UTC). The high-speed stream began decaying early on 02 March and ended the summary period with velocities near 575 km/s.

Space Weather Outlook
05 March – 31 March 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 on all days of the forecast period except 26 March.

The geomagnetic field is expected to be mostly quiet to unsettled on 05 - 07 March. Activity is expected to increase to unsettled to active levels during 08 - 13 March with minor to major storm periods possible at high latitudes due to a recurrent coronal hole high-speed stream. Quiet to unsettled conditions are expected during 14 - 24 March as the high-speed stream subsides. Activity is expected to increase to unsettled to active levels during 25 - 28 March with minor to major storm periods possible at high latitudes due to a recurrent coronal hole high-speed stream. Quiet to unsettled conditions are expected during 29 - 31 March as the high-speed stream subsides.



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	
25 February	71	12	20	<A1.0	0	0	0	0	0	0	0	0	0
26 February	71	13	30	<A1.0	0	0	0	0	0	0	0	0	0
27 February	71	12	30	<A1.0	0	0	0	0	0	0	0	0	0
28 February	70	12	30	<A1.0	0	0	0	0	0	0	0	0	0
29 February	70	0	0	<A1.0	0	0	0	0	0	0	0	0	0
01 March	69	0	0	<A1.0	0	0	0	0	0	0	0	0	0
02 March	69	0	0	<A1.0	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
	25 February	2.3E+6	1.8E+4	4.1E+3		1.2E+8
26 February	2.5E+6	1.8E+4	4.0E+3		1.0E+8	
27 February	2.6E+6	1.8E+4	4.4E+3		7.1E+7	
28 February	3.3E+6	1.8E+4	4.2E+3		4.4E+6	
29 February	1.8E+7	1.8E+4	3.8E+3		1.1E+8	
01 March	6.5E+6	1.6E+4	3.7E+3		7.5E+8	
02 March	2.3E+6	1.7E+4	4.2E+3		1.8E+9	

Daily Geomagnetic Data

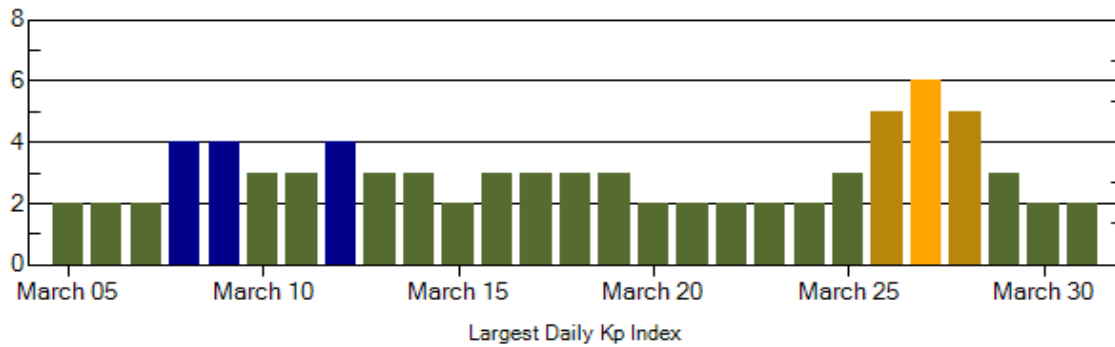
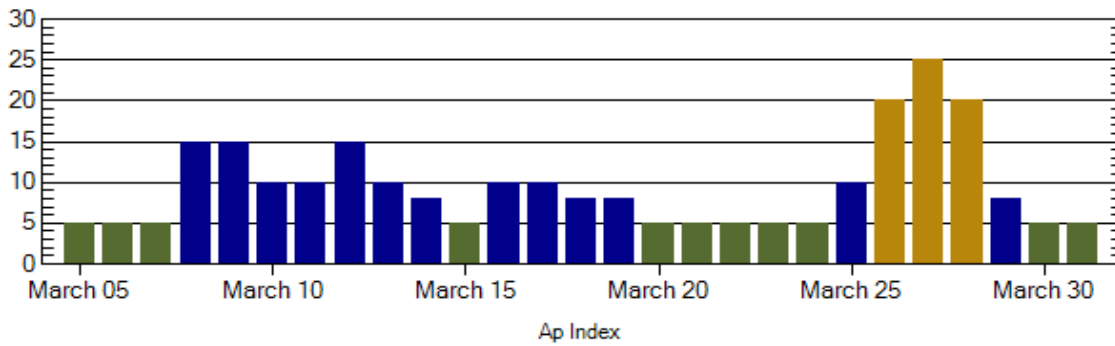
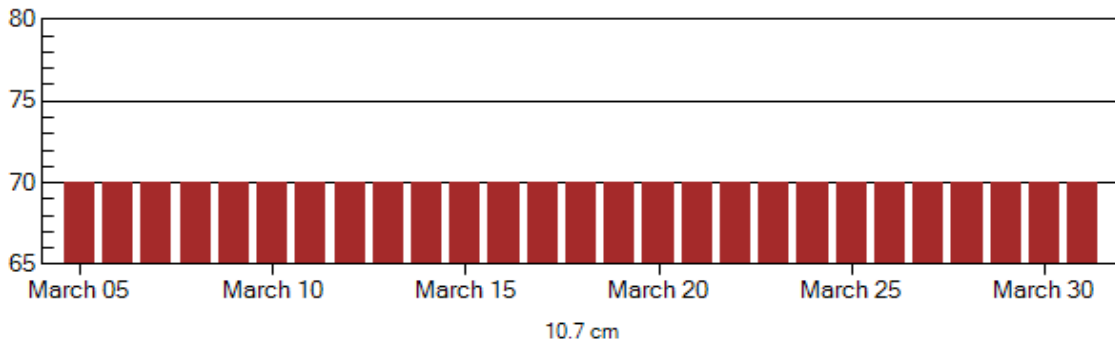
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	25 February	1	1-0-1-1-0-0-0-0	2	0-1-2-2-0-0-0-0	3
26 February	2	0-2-0-0-1-0-1-1	2	0-0-0-1-2-2-0-0	3	0-1-1-0-2-1-0-1
27 February	6	2-2-1-0-1-2-3-2	8	1-1-0-1-3-3-3-2	12	2-2-0-1-2-3-5-3
28 February	17	4-3-2-3-3-3-3-4	27	2-3-3-6-4-4-4-3	22	4-3-3-3-3-4-4-4
29 February	18	3-3-3-3-2-3-3-5	44	3-4-5-6-5-6-4-4	27	4-4-4-4-3-5-4-5
01 March	13	5-2-2-2-3-2-2-2	44	5-5-5-6-6-4-3-2	19	5-4-3-3-3-3-3-2
02 March	8	2-2-3-2-2-2-1-2	12	2-2-3-4-3-3-1-1	8	2-2-3-2-2-2-1-2



Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
25 Feb 0733	ALERT: Electron 2MeV Integral Flux >1000pfu	25 Feb0710
26 Feb 0938	ALERT: Electron 2MeV Integral Flux >1000pfu	26 Feb 0915
27 Feb 1152	ALERT: Electron 2MeV Integral Flux >1000pfu	27 Feb 1135
27 Feb 1859	WARNING: Geomagnetic K=4	27 Feb 1900 - 2359
27 Feb 1922	ALERT: Geomagnetic K=4	27 Feb 1922
28 Feb 0218	WARNING: Geomagnetic K=4	28 Feb 0230 - 1600
28 Feb 0237	ALERT: Geomagnetic K=4	28 Feb 0237
28 Feb 1552	EXTENDED WARNING: Geomagnetic K=4	28 Feb 0230 - 2359
28 Feb 2331	EXTENDED WARNING: Geomagnetic K=4	28 Feb 0230 - 29/1600
29 Feb 0830	WARNING: Geomagnetic K=5	29 Feb 0830 - 1600
29 Feb 0833	ALERT: Geomagnetic K=5	29 Feb 0832
29 Feb 1326	ALERT: Electron 2MeV Integral Flux >1000pfu	29 Feb 1305
29 Feb 1541	EXTENDED WARNING: Geomagnetic K=4	28 Feb 0230 - 29/2359
29 Feb 1644	WARNING: Geomagnetic K=5	29 Feb 1645 - 2359
29 Feb 2329	EXTENDED WARNING: Geomagnetic K=4	28 Feb 0230 - 01/1600
29 Feb 2338	EXTENDED WARNING: Geomagnetic K=5	29 Feb 1645 - 01/1200
01 Mar 0501	ALERT: Electron 2MeV Integral Flux >1000pfu	01 Mar 0500
02 Mar 0031	WARNING: Geomagnetic K=4	02 Mar 0035 - 1600
02 Mar 0500	ALERT: Electron 2MeV Integral Flux >1000pfu	02 Mar 0500





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
05 Mar	70	5	2	19 Mar	70	8	3
06	70	5	2	20	70	5	2
07	70	5	2	21	70	5	2
08	70	15	4	22	70	5	2
09	70	15	4	23	70	5	2
10	70	10	3	24	70	5	2
11	70	10	3	25	70	10	3
12	70	15	4	26	70	20	5
13	70	10	3	27	70	25	6
14	70	8	3	28	70	20	5
15	70	5	2	29	70	8	3
16	70	10	3	30	70	5	2
17	70	10	3	31	70	5	2
18	70	8	3				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	$\frac{1}{2}$		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			Optical	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End	Class.			
25 February	No Flares Observed						
26 February	No Flares Observed						
27 February	No Flares Observed						
28 February	No Flares Observed						
29 February	No Flares Observed						
01 March	No Flares Observed						
02 March	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 983

25 Feb S01W39	342	0020	04	Axx	002	A							
26 Feb S06W54	344	0030	04	Bxo	003	B							
27 Feb S05W67	344	0030	05	Bxo	002	B							
28 Feb S06W81	344	0030	06	Bxo	002	B							
29 Feb S06W94	344												

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 342



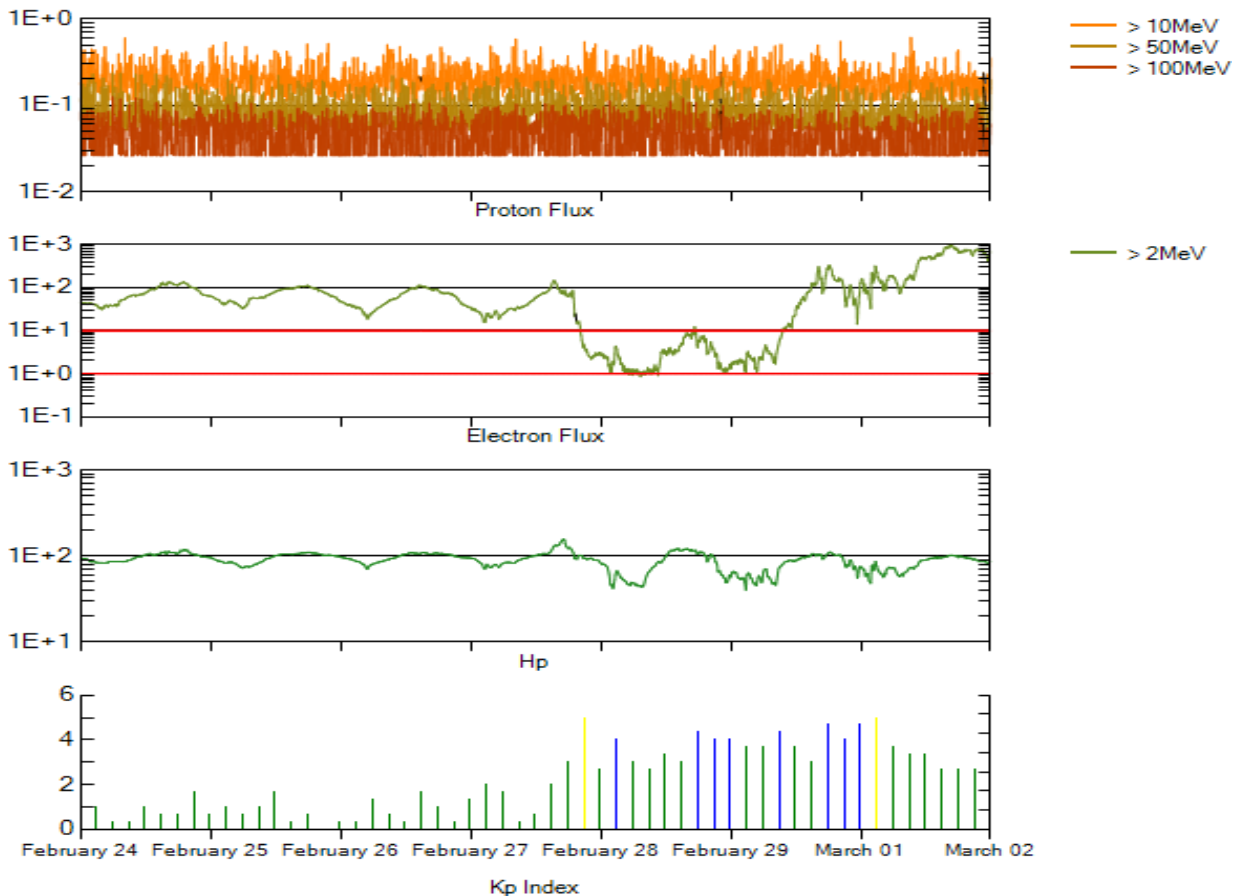
Recent Solar Indices (preliminary)
Of the observed monthly mean values

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
2006									
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	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			69.2		7	
September	4.8	2.4	0.50			67.1		9	
October	1.3	0.9	0.70			65.5		9	
November	2.5	1.7	0.68			69.7		5	
December	16.2	10.1	0.62			78.6		4	
2008									
January	5.1	3.4	0.67			72.1		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 24 February 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.

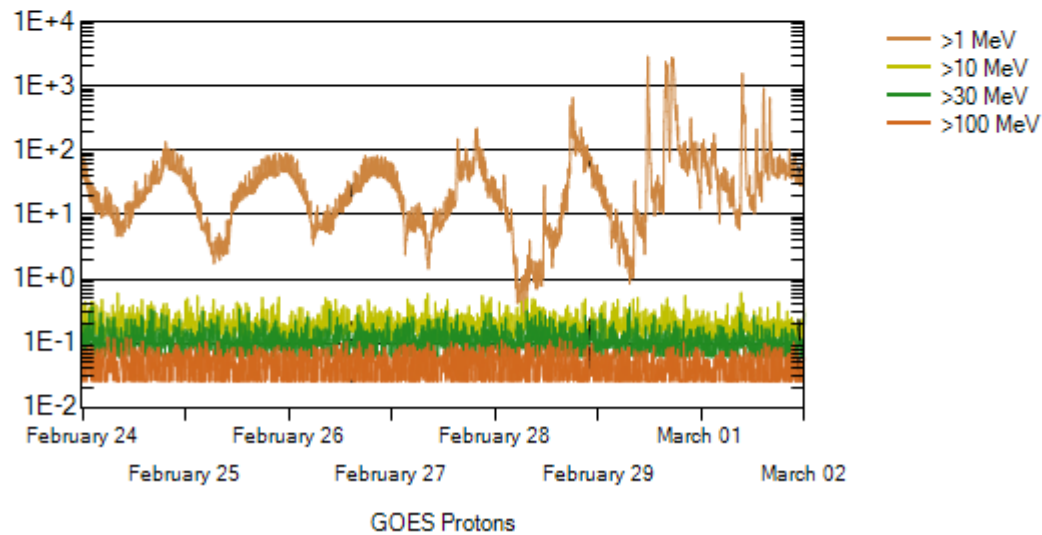
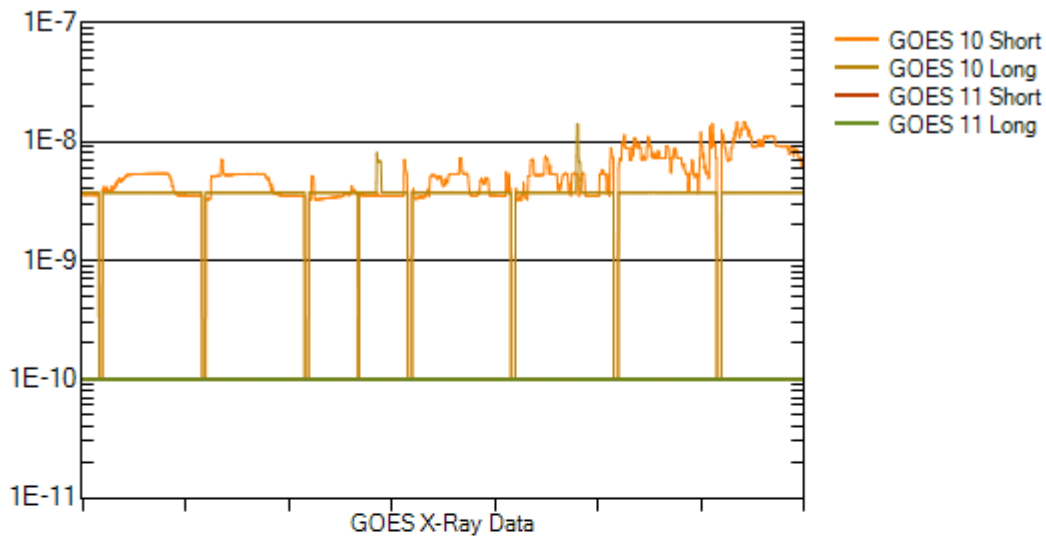
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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/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.

