

Space Weather Highlights
18 February – 24 February 2008

SEC PRF 1695
26 February 2008

Solar activity was very low with no flares detected. The visible disk has been spotless since 05 February.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels during the entire summary period.

The geomagnetic field was at quiet to active levels at middle latitudes during 18 - 22 February. During the same period, high latitudes observed mostly unsettled to active levels with isolated minor to major storm periods. This activity was due to a recurrent coronal hole high speed stream that became geoeffective midday on 18 February. ACE solar wind measurements (638 km/s at 19/0143 UTC) and density (5-5 p/cc at 18/0644 UTC) both peaked early in the period. Significant changes in the IMF were also observed early in the period including increased Bt (peak 8 nT at 18/1104 UTC) and intermittent periods of southward Bz (minimum -6 nT at 18/1411 UTC). The high-speed stream began decaying midday on 20 February and ended the summary period with velocities near 410 km/s.

Space Weather Outlook
27 February – 24 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 28 February and 08 March.

The geomagnetic field is expected to be mostly quiet to unsettled on 27 February. Activity is expected to increase to unsettled to active levels during 28 February - 01 March due to a recurrent coronal hole high-speed stream. Quiet to unsettled levels are expected during 02 - 07 March as the high-speed stream subsides. 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.



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
18 February	71	0	0	<A1.0	0	0	0	0	0	0	0	0
19 February	72	0	0	<A1.0	0	0	0	0	0	0	0	0
20 February	71	0	0	<A1.0	0	0	0	0	0	0	0	0
21 February	72	0	0	<A1.0	0	0	0	0	0	0	0	0
22 February	72	0	0	<A1.0	0	0	0	0	0	0	0	0
23 February	72	0	0	<A1.0	0	0	0	0	0	0	0	0
24 February	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
	18 February	4.1E+6	1.7E+4	3.7E+3		1.5E+8
19 February	2.0E+6	1.7E+4	3.8E+3		7.6E+7	
20 February	1.7E+6	1.7E+4	3.7E+3		1.2E+8	
21 February	3.7E+6	1.8E+4	4.0E+3		1.1E+8	
22 February	4.1E+6	1.8E+4	4.1E+3		1.0E+8	
23 February	2.9E+6	1.8E+4	3.9E+3		1.2E+8	
24 February	2.6E+6	1.9E+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
	18 February	9	1-1-1-3-3-2-2-3	27	0-0-2-5-6-5-3-3	12
19 February	10	3-3-3-2-2-2-2-1	29	2-3-5-5-6-4-2-1	12	3-3-3-2-3-2-2-2
20 February	5	2-3-2-1-1-1-0-0	9	1-1-4-4-2-2-0-0	7	2-3-3-1-1-1-1-1
21 February	3	0-0-1-1-2-2-1-0	8	0-0-2-3-4-3-1-0	6	0-0-1-2-3-2-1-1
22 February	3	0-1-3-1-1-1-0-0	5	0-0-2-3-3-1-0-0	4	0-2-2-1-1-1-0-1
23 February	3	0-0-1-0-1-2-2-1	4	0-0-1-1-2-3-1-1	4	0-0-1-0-1-1-2-1
24 February	2	1-1-0-0-1-1-1-0	0	0-0-0-1-0-0-0-0	3	1-0-0-1-1-1-2-1

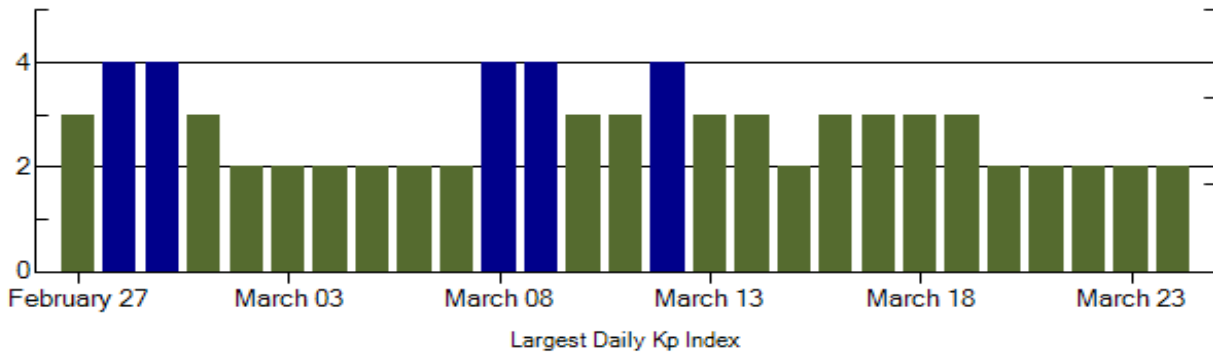
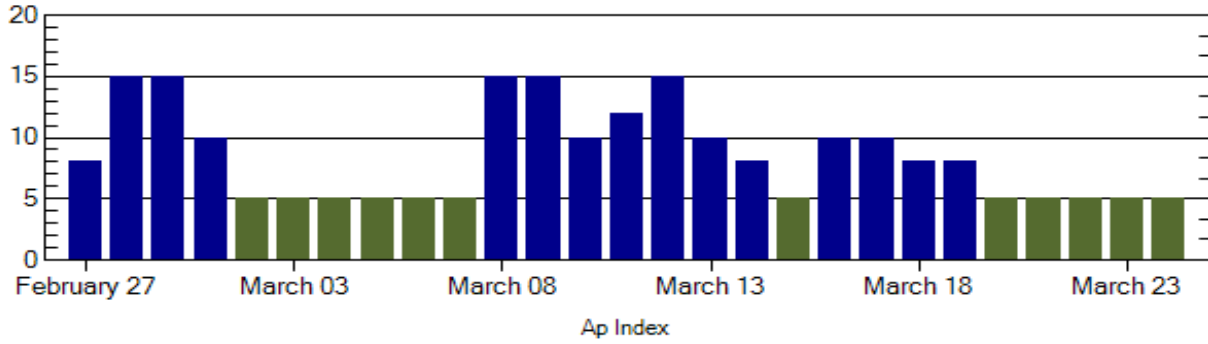
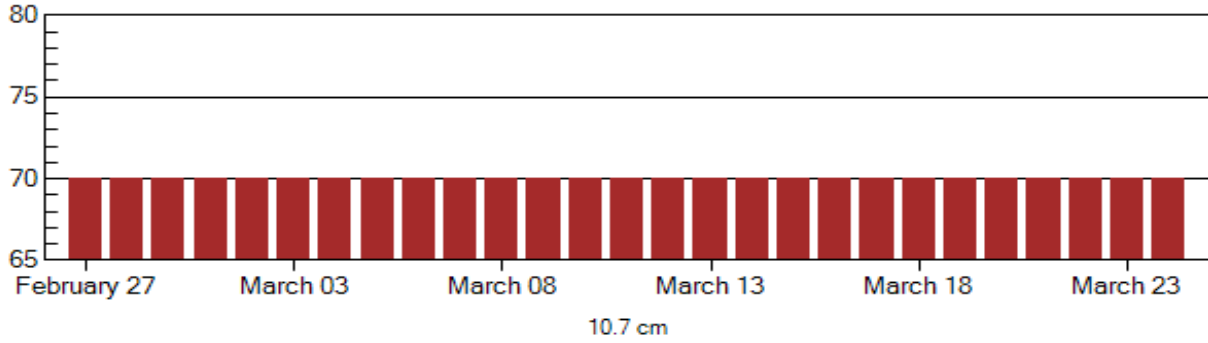


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UTC</u>
18 Feb 0502	ALERT: Electron 2MeV Integral Flux >1000pfu	18 Feb 0500
18 Feb 1116	WARNING: Geomagnetic K=4	18 Feb 1116 - 1600
18 Feb 1123	ALERT: Geomagnetic K=4	18 Feb 1123
19 Feb 0138	ALERT: Geomagnetic K=4	19 Feb 0133
19 Feb 0720	WARNING: Geomagnetic K=4	19 Feb 0720 – 1600
19 Feb 0723	ALERT: Geomagnetic K=4	19 Feb 0723
19 Feb 1327	ALERT: Electron 2MeV Integral Flux >1000pfu	19 Feb 1305
20 Feb 0718	ALERT: Geomagnetic K=4	20 Feb 0717
20 Feb 1042	ALERT: Electron 2MeV Integral Flux >1000pfu	20 Feb 1020
21 Feb 0931	ALERT: Electron 2MeV Integral Flux >1000pfu	21 Feb 0915
22 Feb 1111	ALERT: Electron 2MeV Integral Flux >1000pfu	22 Feb 1055
23 Feb 0851	ALERT: Electron 2MeV Integral Flux >1000pfu	23 Feb 0835
24 Feb 0502	ALERT: Electron 2MeV Integral Flux >1000pfu	24 Feb 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
27 Feb	70	8	3	12 Mar	70	15	4
28	70	15	4	13	70	10	3
29	70	15	4	14	70	8	3
01 Mar	70	10	3	15	70	5	2
02	70	5	2	16	70	10	3
03	70	5	2	17	70	10	3
04	70	5	2	18	70	8	3
05	70	5	2	19	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	12	3				



Energetic Events

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

No Events Observed

Flare List

Date	Time			Optical	Imp / Brtns	Location	Rgn
	Begin	Max	End	Class.		Lat CMD	
18 February	No Flares Observed						
19 February	No Flares Observed						
20 February	No Flares Observed						
21 February	No Flares Observed						
22 February	No Flares Observed						
23 February	No Flares Observed						
24 February	No Flares Observed						

Region Summary

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

No Active Regions



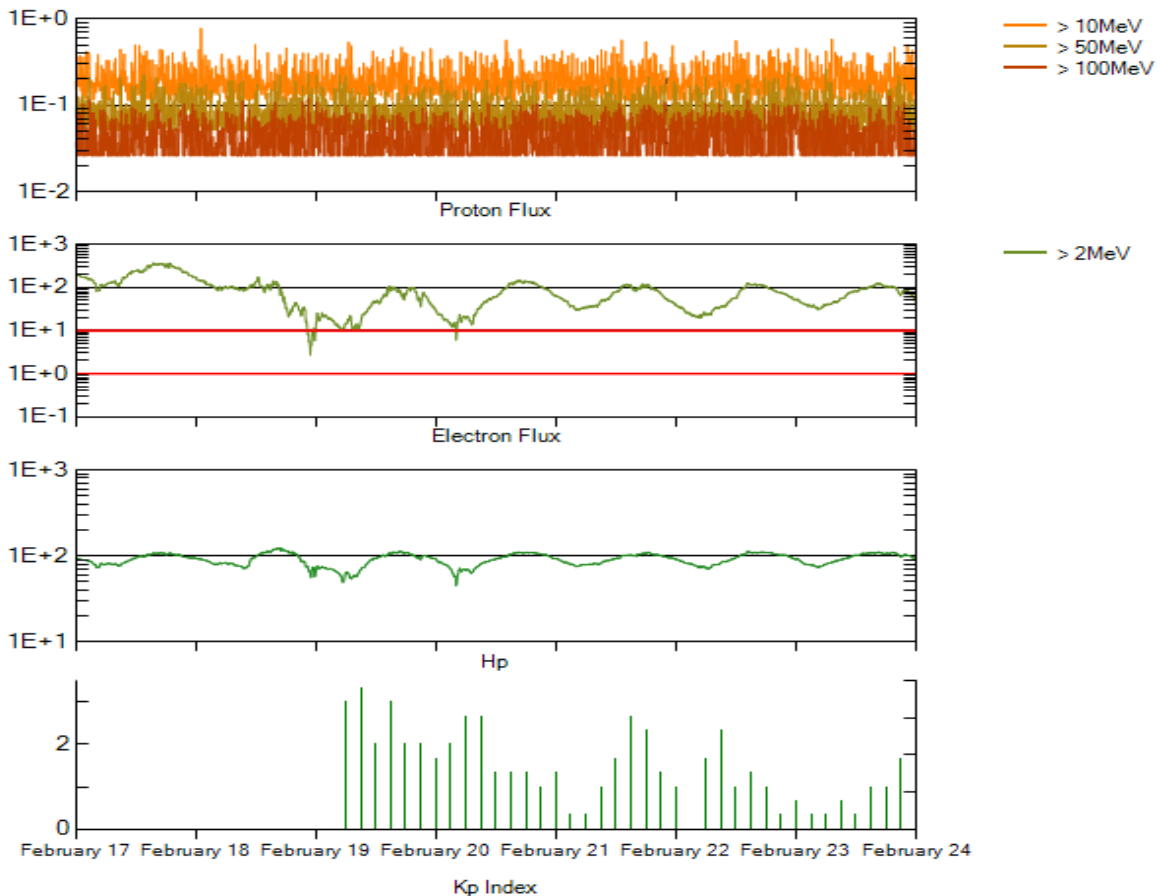
Recent Solar Indices (preliminary)
Of the observed monthly mean values

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									
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 17 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.

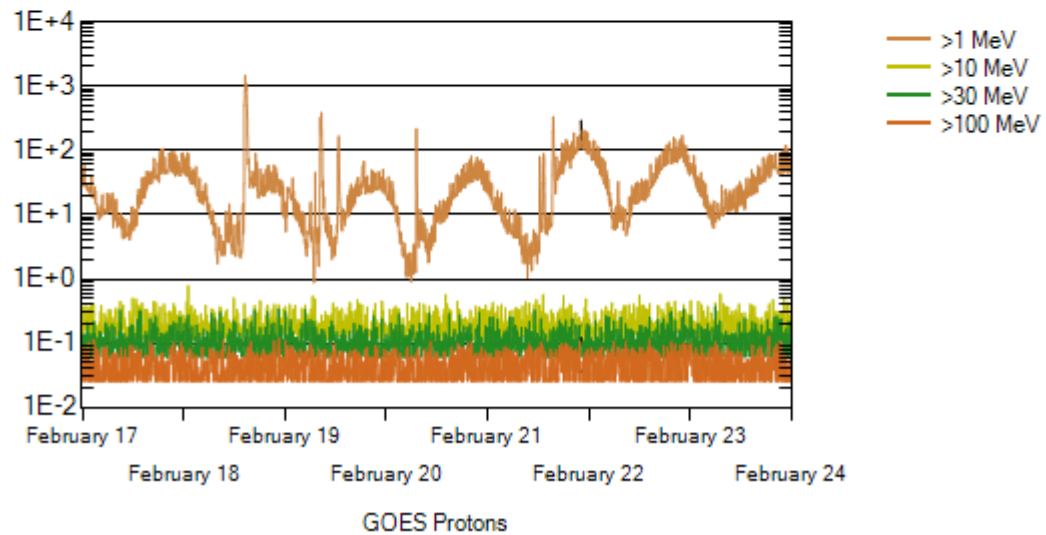
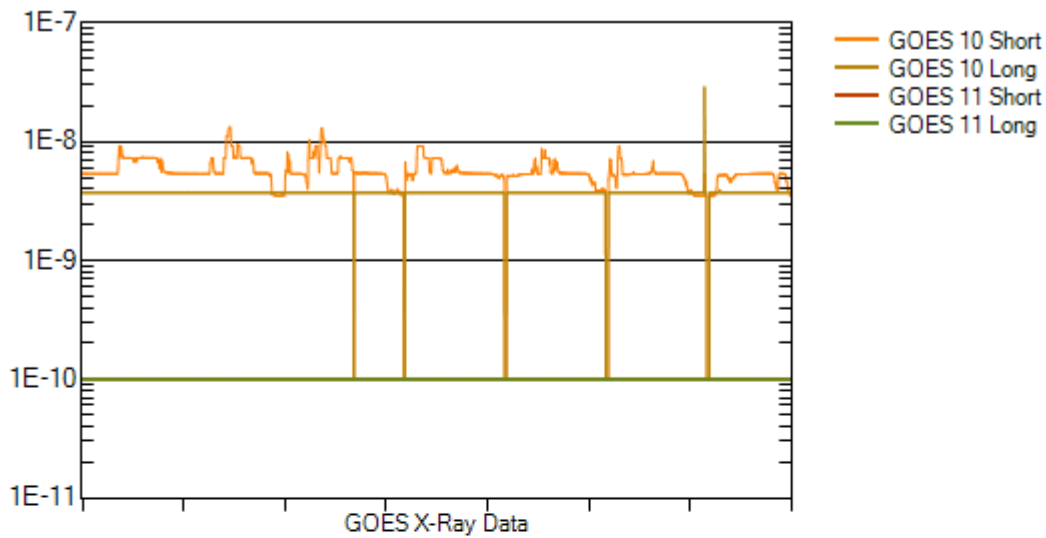
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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.

