

Space Weather Highlights
28 January – 03 February 2008

SEC PRF 1692
05 February 2008

Solar activity was very low. New Region 982 (S10, L=245, class/area, Cro/030 on 01 February) formed on the disk on 29 January and only produced low-level B-class activity.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 28 January, 31 January, and 02 - 03 February.

The geomagnetic field was at mostly quiet levels during 28 - 31 January. Activity increased to active to minor storm levels by midday on 01 February. Isolated major storm periods were observed at high latitudes midday on 02 and 03 February. Activity decreased to mostly quiet to unsettled levels by late on 03 February. ACE solar wind measurements detected a co-rotating interaction region (CIR) at about 31/0900 UTC in advance of a recurrent coronal hole high-speed stream (HSS) that began about 31/2100 UTC. Peak wind velocities during this stream were 638 km/sec at 02/2354 UTC. Density peaked at 16 p/cc at 31/1540 UTC while the IMF Bt peaked at 9.0 nT at 31/1646 UTC. Intermittent periods of southward Bz reached a minimum of -9.6 nT at 31/1624 UTC. The period ended with velocities steady at about 600 km/s and the IMF Bz not varying much beyond +/- 5 nT.

Space Weather Outlook
06 February – 03 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 during 06 - 08 February, 10 - 24 February, 27 February, and 29 February - 03 March.

The geomagnetic field is expected to be quiet during 06 - 07 February. Activity is expected to increase to unsettled to active levels on 08 - 13 February due to the onset of a recurrent coronal hole high-speed stream. Quiet conditions are expected during 14 - 27 February. Activity is expected to increase to mostly unsettled to active levels during 28 February - 03 March due to another recurrent 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	
28 January	71	0	0	<A1.0	0	0	0	0	0	0	0	0	0
29 January	72	13	20	<A1.0	0	0	0	0	0	0	0	0	0
30 January	73	14	60	<A1.0	0	0	0	0	0	0	0	0	0
31 January	72	15	50	<A1.0	0	0	0	0	0	0	0	0	0
01 February	71	19	30	<A1.0	0	0	0	0	0	0	0	0	0
02 February	71	16	20	<A1.0	0	0	0	0	0	0	0	0	0
03 February	71	14	10	<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
	28 January	2.1E+6	2.0E+4	4.6E+3		6.2E+7
29 January	1.8E+6	1.8E+4	4.4E+3		4.3E+7	
30 January	1.8E+6	1.9E+4	4.4E+3		4.5E+7	
31 January	2.8E+6	1.9E+4	4.7E+3		5.7E+7	
01 February	2.6E+6	1.9E+4	4.4E+3		5.5E+6	
02 February	2.1E+6	1.9E+4	4.5E+3		8.0E+7	
03 February	9.2E+6	1.7E+4	3.7E+3		4.1E+8	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	28 January	2	0-1-0-1-1-1-1-1	4	0-0-0-3-2-0-1-1	2
29 January	3	1-2-2-1-1-0-0-0	3	1-2-2-2-1-0-0-0	4	1-2-1-2-1-0-0-0
30 January	1	0-1-0-0-0-1-0-0	1	1-2-0-0-0-0-0-0	2	1-2-0-0-0-0-0-1
31 January	3	0-0-0-0-1-2-2-2	2	0-0-0-0-0-1-2-2	5	0-0-0-0-1-2-3-3
01 February	10	2-2-3-2-2-2-3-3	25	3-2-2-5-3-5-5-3	18	3-2-3-3-2-4-5-4
02 February	19	5-5-2-2-3-2-3-2	28	4-4-4-4-6-2-3-3	19	4-5-3-2-3-2-3-3
03 February	10	3-2-2-3-2-2-3-2	35	3-2-5-6-5-5-3-3	12	3-2-3-3-2-3-3-2

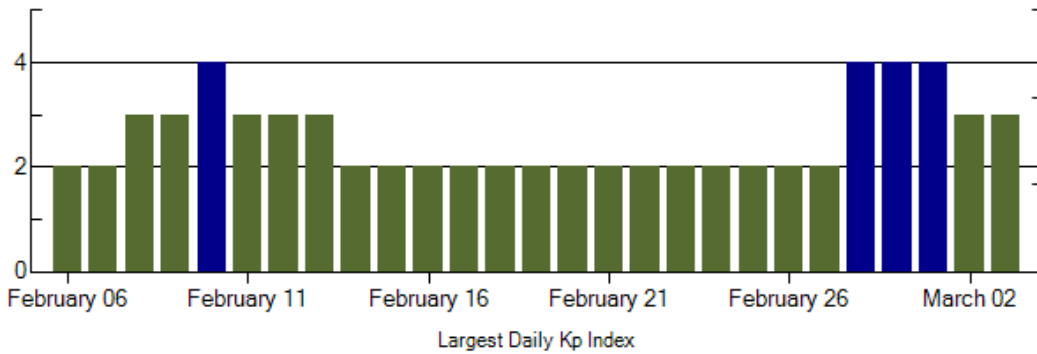
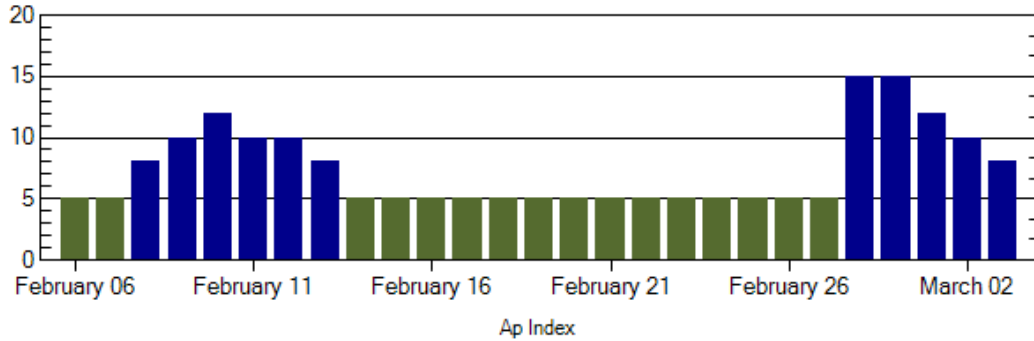
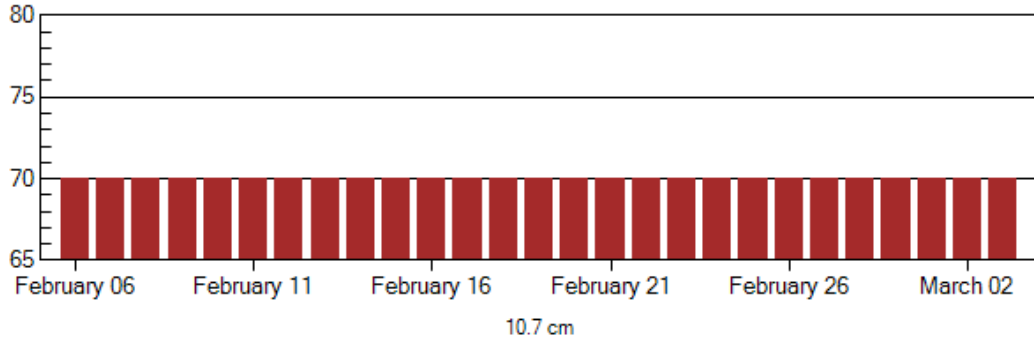


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UTC</u>
28 Jan 1256	ALERT: Electron 2MeV Integral Flux >1000pfu	28 Jan 1245
31 Jan 1345	ALERT: Electron 2MeV Integral Flux >1000pfu	31 Jan 1330
31 Jan 1639	WARNING: Geomagnetic K=4	31 Jan 1640 - 2359
31 Jan 1747	ALERT: Geomagnetic K=4	31 Jan 1740
31 Jan 2330	EXTENDED WARNING: Geomagnetic K=4	31 Jan 1640 - 01/1600
01 Feb 1610	WARNING: Geomagnetic K=4	01 Feb 1610 - 2359
01 Feb 1735	ALERT: Geomagnetic K=4	01 Feb 1735
01 Feb 2353	EXTENDED WARNING: Geomagnetic K=4	01 Feb 1610 - 02/1600
02 Feb 0256	ALERT: Geomagnetic K=5	02 Feb 0255
02 Feb 0345	WARNING: Geomagnetic K=5	02 Feb 0345 - 1600
02 Feb 1426	ALERT: Electron 2MeV Integral Flux >1000pfu	02 Feb 1405
03 Feb 0532	ALERT: Electron 2MeV Integral Flux >1000pfu	03 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
06 Feb	70	5	2	20 Feb	70	5	2
07	70	5	2	21	70	5	2
08	70	8	3	22	70	5	2
09	70	10	3	23	70	5	2
10	70	12	4	24	70	5	2
11	70	10	3	25	70	5	2
12	70	10	3	26	70	5	2
13	70	8	3	27	70	5	2
14	70	5	2	28	70	15	4
15	70	5	2	29	70	15	4
16	70	5	2	01 Mar	70	12	4
17	70	5	2	02	70	10	3
18	70	5	2	03	70	8	3
19	70	5	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	$\frac{1}{2}$		Integ		Imp/	Location		Radio Flux		Intensity		
	Begin	Max	Max	Class	Flux	Brtns	Lat	CMD	#	245	2695	II

No Events Observed

Flare List

Date	Time			Optical	Imp / Brtns	Location		Rgn
	Begin	Max	End	Class.		Lat	CMD	
28 January	No Flares Observed							
29 January	1728	1734	1743	B1.2				982
30 January	1821	1846	1900	A3.0				
31 January	No Flares Observed							
01 February	No Flares Observed							
02 February	No Flares Observed							
03 February	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 982

29 Jan	S09E53	246	0020	04	Bxo	003	B									
30 Jan	S09E40	246	0060	05	Bxo	004	B									
31 Jan	S08E25	248	0050	05	Dso	005	B									
01 Feb	S10E14	245	0030	07	Cro	009	B									
02 Feb	S08W02	248	0020	04	Bxo	006	B									
03 Feb	S08W16	249	0010	02	Bxo	004	B									

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 248



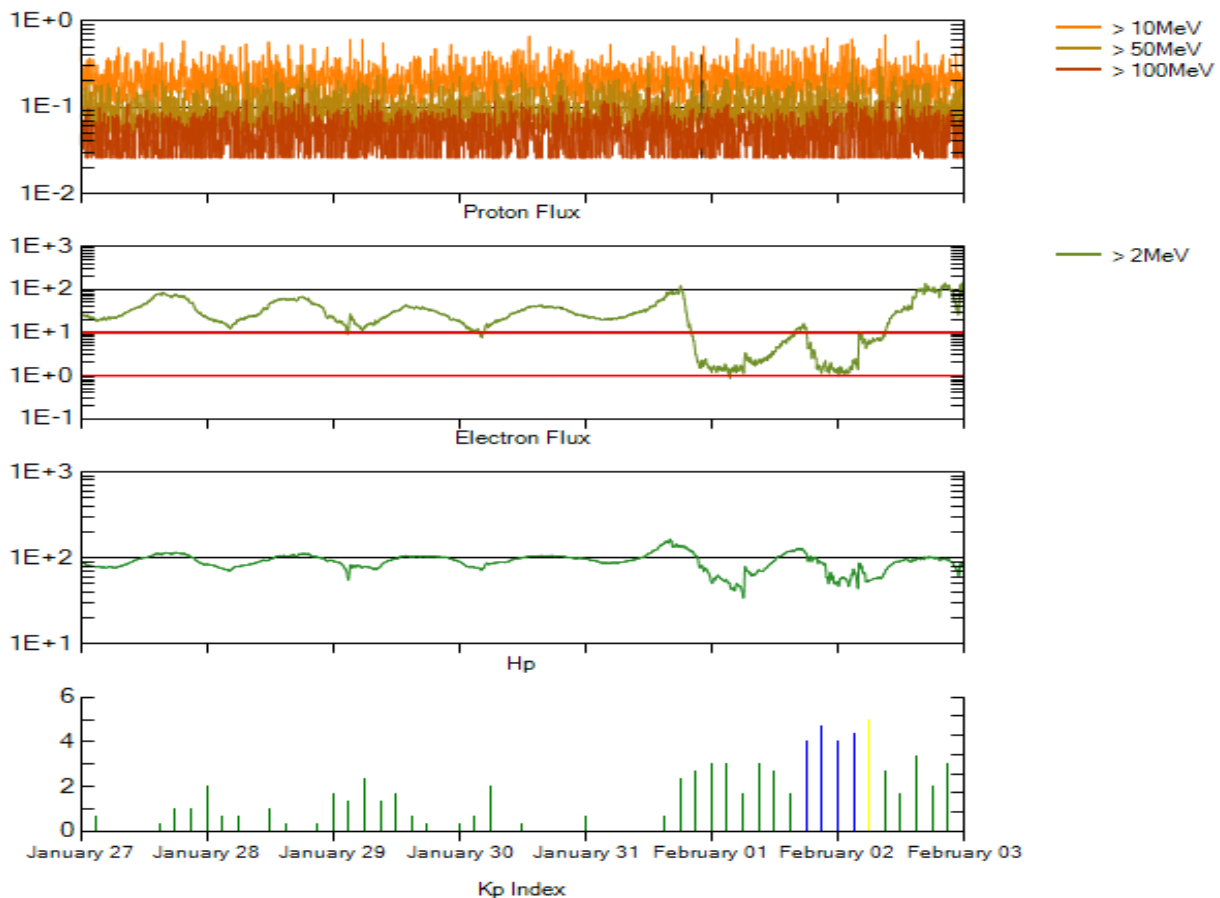
Recent Solar Indices (preliminary)
Of the observed monthly mean values

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
2006									
January	28.0	15.4	0.55	37.2	20.8	83.8	84.0	6	9.9
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			71.6		8	
August	9.9	6.2	0.63			69.2		7	
September	4.8	2.4	0.50			67.1		8	
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	

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 27 January 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.

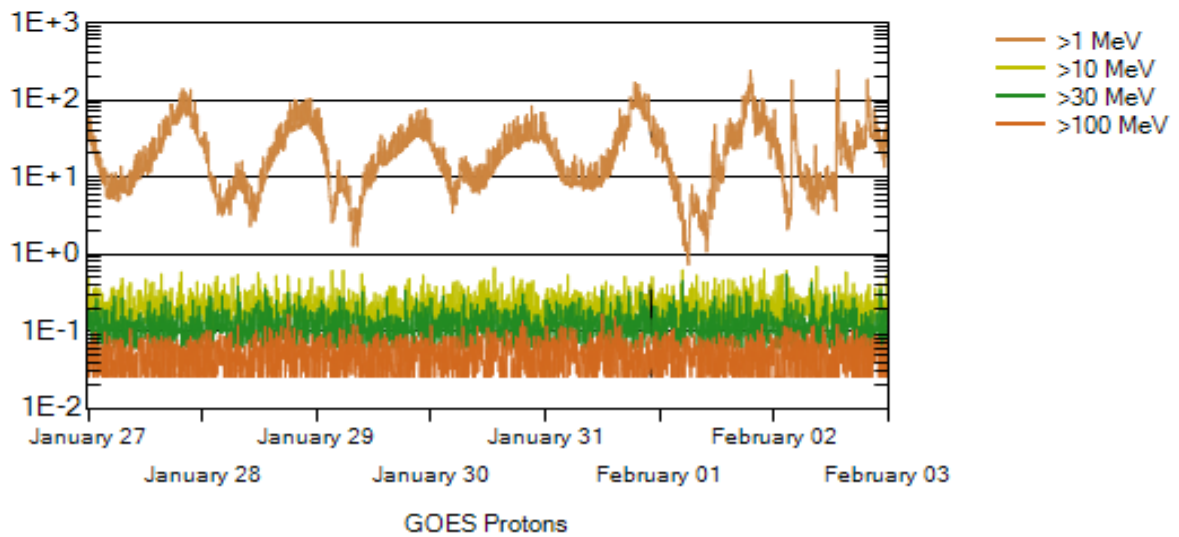
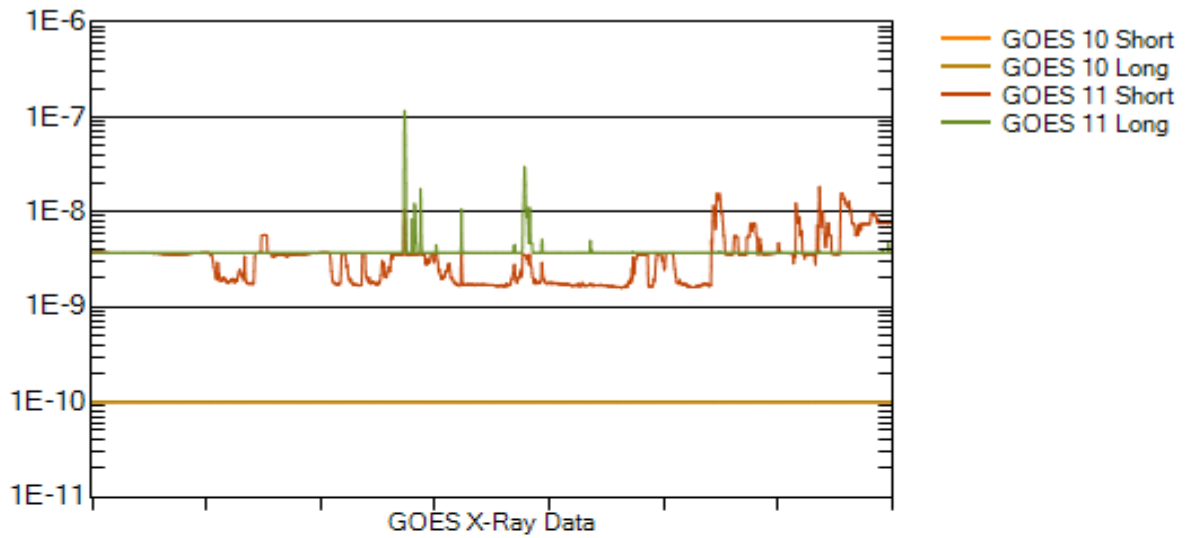
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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.

