

Space Weather Highlights
06 – 12 February 2006

SEC PRF 1589
14 February 2006

Solar activity was at very low levels. Only minor B-class activity was observed during the period.

No greater than 10 MeV proton events were observed this period.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels for the period.

Generally, quiet to unsettled conditions were observed during the period at all latitudes. A nine hour period of active to severe storm conditions was observed at high latitudes midday on 06 February due to a solar sector boundary crossing earlier on that date. For the period, solar wind speed ranged from a low of about 280 km/s early on 11 February to a high of about 500 km/s early on 12 February. The summary period ended with wind speed at about 350 km/s. The Bz component of the IMF was generally weak, not varying much beyond +/- 5 nT for the period. However, there was a 12-hour segment early on 06 February when the Bz was oriented steady southward at about -10 nT during the solar sector boundary crossing.

Space Weather Outlook
15 February - 13 March 2006

Solar activity is expected to be at very low levels during the forecast period.

No greater than 10 MeV proton events are expected.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 23 – 27 February.

The geomagnetic field is expected to range from quiet to minor storm levels. Active to minor storm periods are possible on 21 - 23 February due to effects from a recurrent coronal hole wind stream. Otherwise, quiet to unsettled conditions are expected.



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	
06 February	75	0	0	<A1.0	0	0	0	0	0	0	0	0	0
07 February	74	0	0	<A1.0	0	0	0	0	0	0	0	0	0
08 February	74	12	10	<A1.0	0	0	0	0	0	0	0	0	0
09 February	75	24	20	<A1.0	0	0	0	0	0	0	0	0	0
10 February	75	13	20	<A1.0	0	0	0	0	0	0	0	0	0
11 February	76	11	30	<A1.0	0	0	0	0	0	0	0	0	0
12 February	76	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
06 February	6.8E+5	1.5E+4	3.7E+3		1.9E+6	
07 February	4.4E+5	1.6E+4	3.6E+3		3.3E+6	
08 February	3.4E+5	1.5E+4	3.8E+3		2.7E+6	
09 February	3.4E+5	1.6E+4	3.7E+3		3.2E+6	
10 February	4.0E+5	1.6E+4	3.7E+3		2.1E+6	
11 February	4.1E+5	1.6E+4	3.8E+3		1.0E+6	
12 February	3.7E+5	1.5E+4	3.6E+3		9.2E+5	

Daily Geomagnetic Data

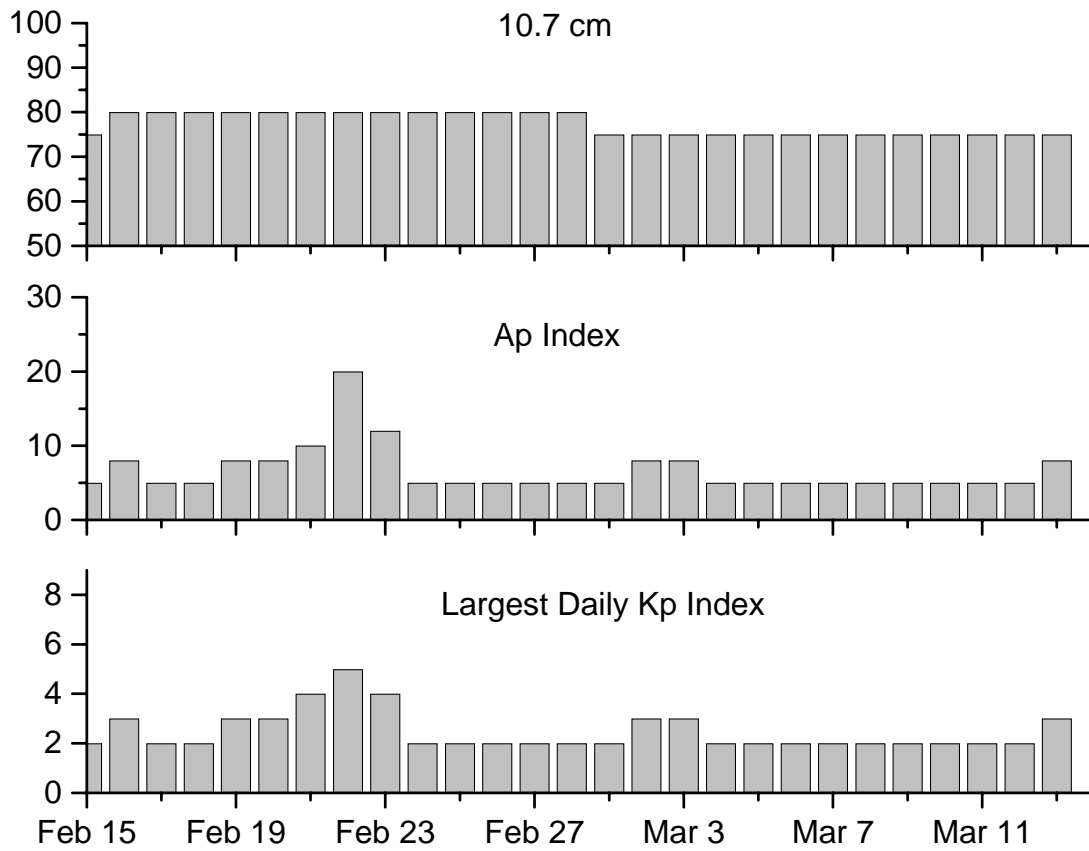
Date	Middle Latitude		High Latitude		Estimated	
	Fredericksburg		College		Planetary	
	A	K-indices	A	K-indices	A	K-indices
06 February	11	1-3-2-2-3-2-3-3	32	0-2-4-5-7-3-2-3	12	1-4-2-2-3-2-3-3
07 February	4	2-1-1-0-0-2-1-2	3	2-1-2-0-1-1-0-0	4	1-1-1-0-1-1-1-2
08 February	2	2-1-2-0-0-0-0-0	2	0-0-2-2-1-0-0-0	3	2-0-2-1-1-0-0-0
09 February	2	0-0-0-0-1-3-1-0	1	0-0-0-1-1-0-1-0	2	0-0-0-0-1-0-1-1
10 February	2	1-0-0-0-0-0-1-2	1	0-0-0-1-0-0-0-1	2	1-0-0-0-0-0-1-2
11 February	4	2-1-2-0-2-2-1-0	6	1-0-2-1-4-2-1-0	6	2-1-2-0-2-3-1-1
12 February	2	1-1-1-0-1-1-0-0	2	0-2-0-0-2-1-0-0	3	2-2-1-0-1-0-0-0

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
06 Feb 0442	ALERT: Geomagnetic K=4	06 Feb 0440
06 Feb 0444	WARNING: Geomagnetic K= 4 expected	06 Feb 0445
08 Feb 0759	ALERT: Geomagnetic K=4	08 Feb 0759



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
15 Feb	75	5	2	01 Mar	75	5	2
16	80	8	3	02	75	8	3
17	80	5	2	03	75	8	3
18	80	5	2	04	75	5	2
19	80	8	3	05	75	5	2
20	80	8	3	06	75	5	2
21	80	10	4	07	75	5	2
22	80	20	5	08	75	5	2
23	80	12	4	09	75	5	2
24	80	5	2	10	75	5	2
25	80	5	2	11	75	5	2
26	80	5	2	12	75	5	2
27	80	5	2	13	75	8	3
28	80	5	2				



Energetic Events

Date	Time		X-ray	Optical Information			Peak		Sweep Freq	
	1/2		Integ	Imp/	Location	Rgn	Radio Flux		Intensity	
	Begin	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	X-ray Class.			
06 February	No Flares Observed						
07 February	No Flares Observed						
08 February	1627	1633	1635	B3.4			
	2110	2113	2115	B1.1			
09 February	No Flares Observed						
10 February	No Flares Observed						
11 February	No Flares Observed						
12 February	No Flares Observed						

Region Summary

Date	Location		Sunspot Characteristics												
	Helio		Area (10 ⁶ hemi)	Extent (helio)	Flares			X-ray				Optical			
	(° Lat ° CMD)	Lon			Spot Class	Spot Count	Mag Class	C	M	X	S	1	2	3	4

Region 852

08 Feb	S10W04	087	0010	01	Hsx	002	A										
09 Feb	S11W17	087	0010	01	Axx	003	A										
10 Feb	S11W30	087															
11 Feb	S11W43	087															
12 Feb	S11W56	087															

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 87

Region 853

09 Feb	S11W49	119	0010	01	Hax	001	A										
10 Feb	S09W64	120	0020	04	Bxo	003	B										
11 Feb	S09W78	121	0030	01	Hsx	001	A										
12 Feb	S09W91	121															

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 119

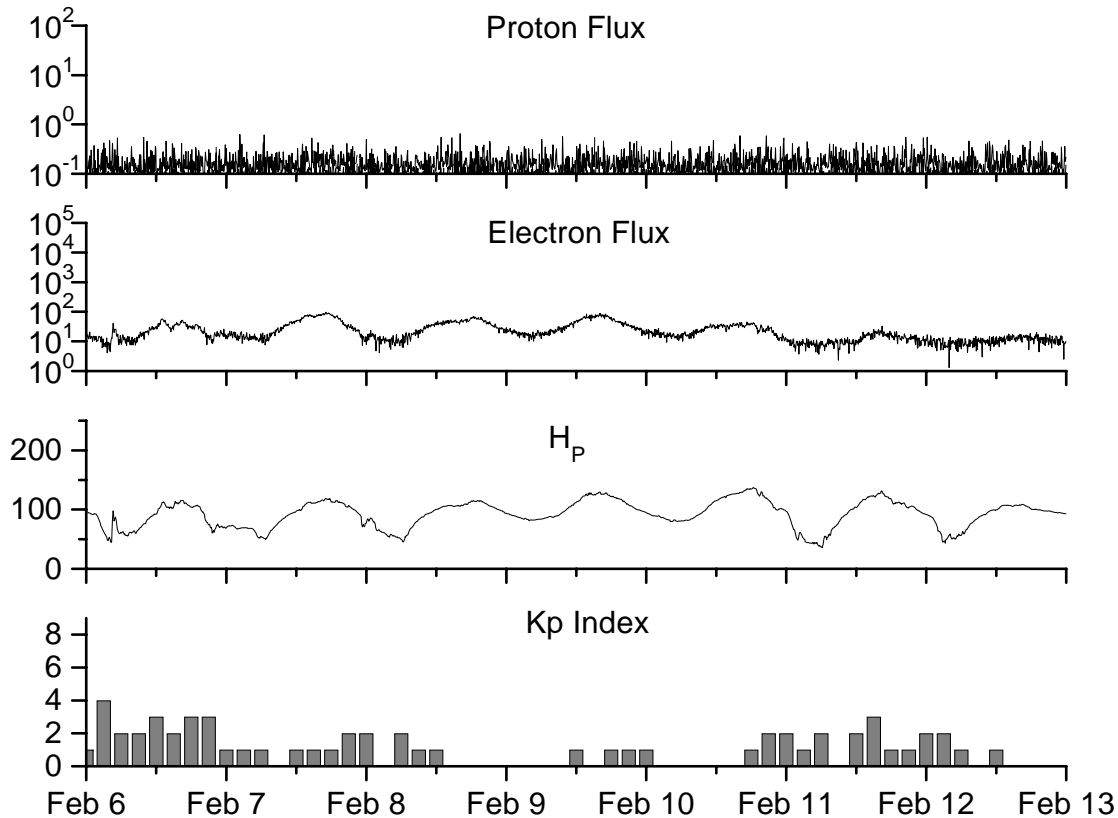


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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
2004									
February	75.6	45.8	0.61	84.2	49.4	107.0	115.5	13	17.7
March	81.0	49.1	0.61	80.9	47.2	112.2	114.6	14	16.9
April	59.3	39.3	0.66	77.9	45.6	101.2	112.3	11	15.5
May	77.3	41.5	0.54	74.1	43.9	99.8	109.2	8	14.3
June	78.9	43.2	0.55	70.4	41.7	97.4	107.2	8	14.0
July	87.8	51.0	0.58	68.3	40.2	118.5	105.9	23	13.8
August	69.5	40.9	0.59	66.6	39.3	110.1	105.0	11	13.8
September	50.0	27.7	0.55	63.7	37.6	103.1	103.7	10	13.6
October	77.9	48.4	0.62	61.3	35.9	105.7	102.1	9	13.5
November	70.5	43.7	0.62	60.0	35.4	113.2	101.5	26	14.1
December	34.7	17.9	0.52	58.8	35.3	94.6	101.3	11	14.8
2005									
January	52.0	31.3	0.60	57.3	34.7	102.4	100.3	22	14.7
February	45.4	29.1	0.64	56.4	34.0	97.3	98.5	11	14.6
March	41.0	24.8	0.60	55.8	33.6	90.0	97.2	12	15.3
April	41.5	24.4	0.59	52.6	31.7	85.9	95.5	12	15.7
May	65.4	42.6	0.65	48.3	29.0	99.5	93.2	20	14.8
June	59.8	39.6	0.66	47.9	28.9	93.7	91.9	13	13.9
July	71.0	39.9	0.56			96.6		16	
August	65.6	36.4	0.55			90.7		16	
September	39.2	22.1	0.56			90.8		21	
October	13.0	8.5	0.65			76.7		7	
November	32.2	18.0	0.56			86.3		8	
December	62.6	41.2	0.66			90.8		7	
2005									
January	28.0	15.4	0.55			83.8		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 06 February 2006*

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-11 (W107) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

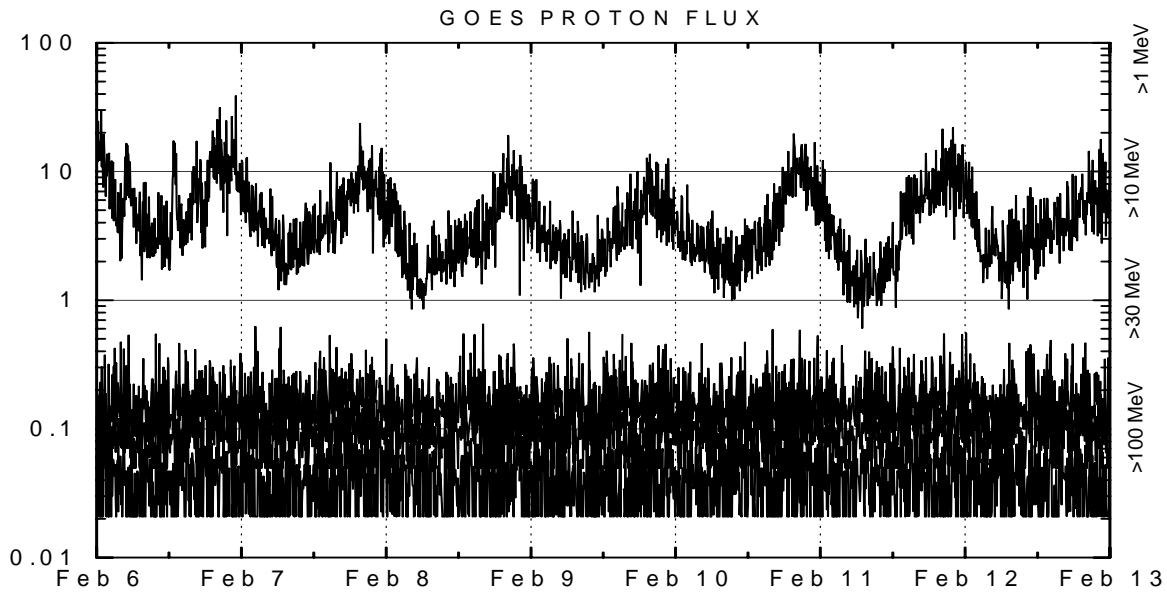
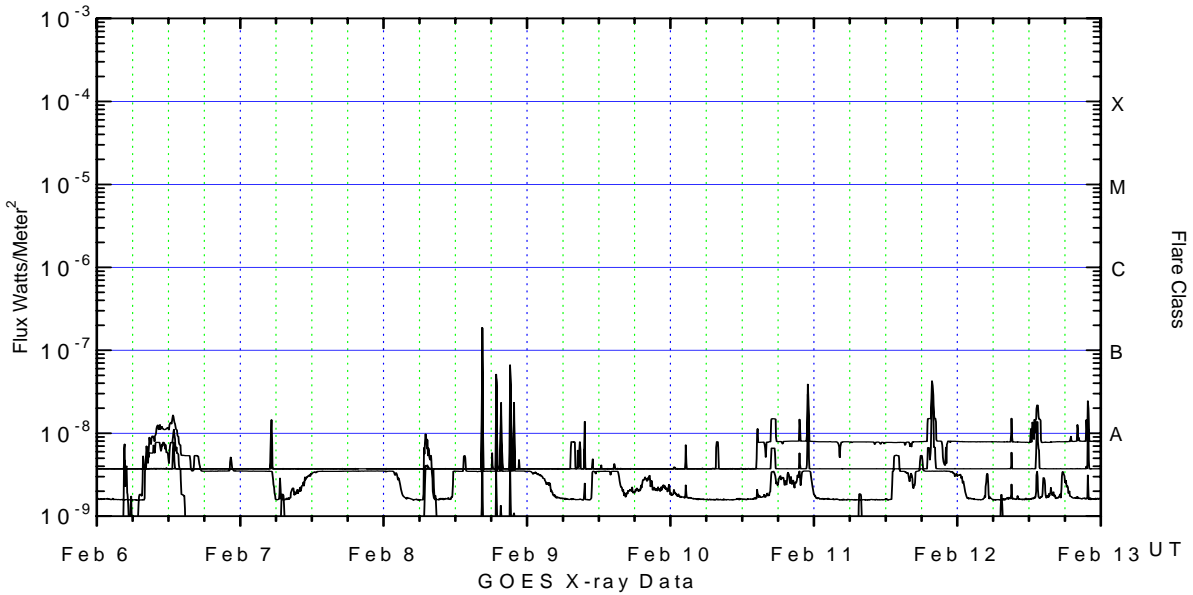
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W75).

H_p 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.

K_p 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 K_p 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 K_p 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 12 (W75) and GOES 10 (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 (W107) 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.

