

**Space Weather Highlights**  
**27 February – 05 March 2006**

**SEC PRF 1592**  
**07 March 2006**

Solar activity was at very low levels. Only two small regions were visible on the disk this 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. Generally, quiet to unsettled conditions were observed at all latitudes. Isolated minor storm periods were observed at high latitudes midday on 28 February and again on 01 March. Solar wind speed ranged from a low of about 325 km/s late on 27 February to a high of near 450 km/s late on 01 March. For the majority of the period, the Bz component of the IMF did not vary much beyond +/- 7 nT.

**Space Weather Outlook**  
**08 March – 03 April 2006**

Solar activity is expected to be at very low levels.

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 level on 20 – 25 March.

The geomagnetic field is expected to range from quiet to minor storm levels. Unsettled to active conditions are expected on 08 – 11 March, while active to minor storm levels are expected on 19 – 21 March, both due to recurrent coronal hole wind streams. Otherwise, quiet to unsettled conditions are expected.



**Daily Solar Data**

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background	Flares								
					X-ray Flux			Optical					
					C	M	X	S	1	2	3	4	
27 February	77	11	10	A1.4	0	0	0	0	0	0	0	0	0
28 February	77	11	20	A1.3	0	0	0	0	0	0	0	0	0
01 March	77	0	0	A1.3	0	0	0	0	0	0	0	0	0
02 March	76	0	0	<A1.0	0	0	0	0	0	0	0	0	0
03 March	76	0	0	<A1.0	0	0	0	0	0	0	0	0	0
04 March	75	13	10	<A1.0	0	0	0	0	0	0	0	0	0
05 March	74	28	20	<A1.0	0	0	0	0	0	0	0	0	0

**Daily Particle Data**

Date	Proton Fluence (protons/cm <sup>2</sup> -day-sr)			Electron Fluence (electrons/cm <sup>2</sup> -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>.6 MeV	>2MeV	>4 MeV
	27 February	2.7E+5	1.5E+4	3.7E+3		1.9E+7
28 February	5.5E+5	1.5E+4	3.6E+3		9.4E+6	
01 March	6.9E+5	1.5E+4	3.4E+3		6.9E+6	
02 March	5.2E+5	1.6E+4	3.6E+3		5.6E+6	
03 March	5.6E+5	1.6E+4	3.6E+3		9.1E+6	
04 March	5.5E+5	1.5E+4	3.7E+3		1.3E+7	
05 March	5.9E+5	1.6E+4	3.5E+3		1.3E+7	

**Daily Geomagnetic Data**

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	27 February	2	1-0-2-0-1-0-0-1	3	1-1-2-1-2-0-0-0	3
28 February	2	0-0-0-2-0-1-1-1	7	0-0-0-5-2-0-1-0	5	0-0-0-3-2-1-1-2
01 March	5	2-2-2-2-2-2-0-0	11	1-1-1-3-5-3-0-0	7	2-2-1-2-3-2-1-1
02 March	4	0-1-1-0-3-2-0-1	2	0-0-1-2-2-0-0-0	4	0-1-1-1-1-1-2-1
03 March	2	1-0-0-0-1-1-2-0	1	0-0-0-1-1-0-1-0	4	1-0-0-1-1-2-2-1
04 March	1	0-1-2-0-0-0-0-0	1	1-0-2-0-0-0-0-0	3	0-0-1-0-0-1-0-1
05 March	1	1-0-0-0-0-1-0-0	0	0-0-0-0-0-0-0-0	2	1-0-0-0-1-1-2-1

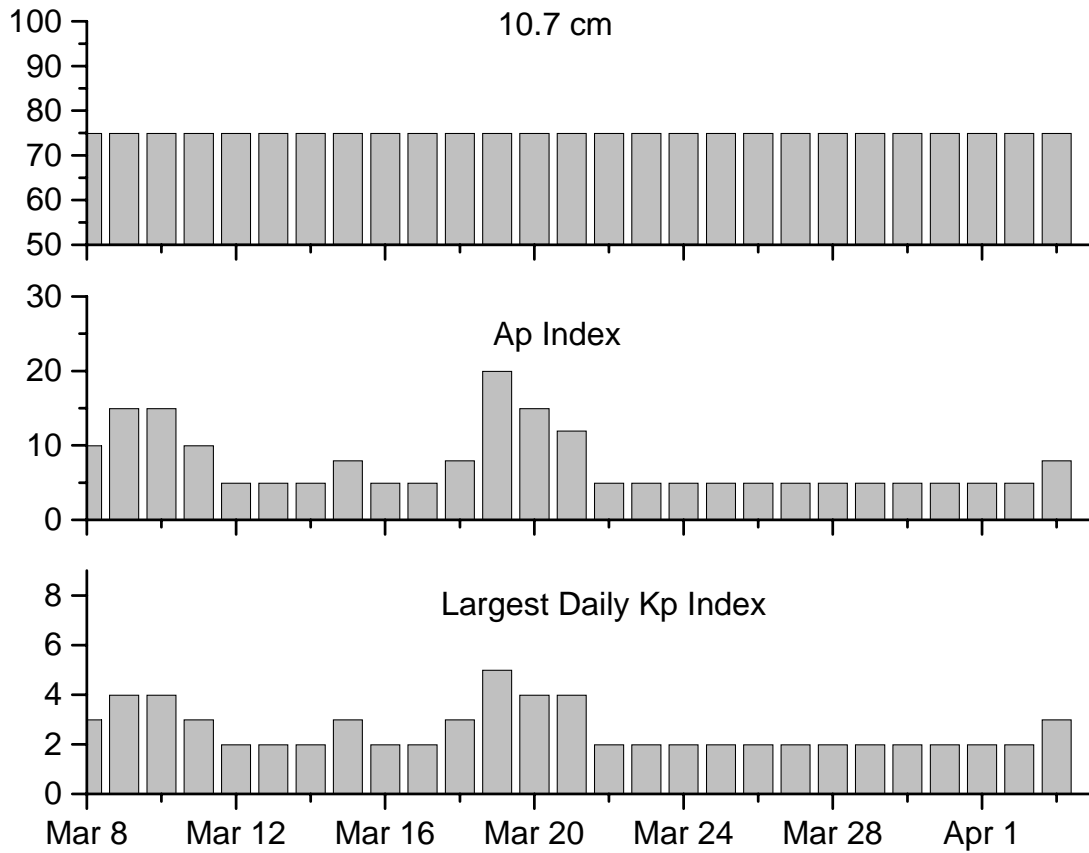
**Alerts and Warnings Issued**

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
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**No Alerts Issued**



## 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
08 March	75	10	3	22 March	75	5	2
09	75	15	4	23	75	5	2
10	75	15	4	24	75	5	2
11	75	10	3	25	75	5	2
12	75	5	2	26	75	5	2
13	75	5	2	27	75	5	2
14	75	5	2	28	75	5	2
15	75	8	3	29	75	5	2
16	75	5	2	30	75	5	2
17	75	5	2	31	75	5	2
18	75	8	3	01 April	75	5	2
19	75	20	5	02	75	5	2
20	75	15	4	03	75	8	3
21	75	12	4				



***Energetic Events***

Date	Time		X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	1/2 Max	Integ	Imp/	Location	Rgn	Radio Flux		Intensity	
								Class	Flux	Brtns	Lat

***No Events Observed***

***Flare List***

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
27 February	0859	0906	0909	B3.1			856
28 February	No Flares						Observed
01 March	No Flares						Observed
02 March	No Flares						Observed
03 March	No Flares						Observed
04 March	No Flares						Observed
05 March	No Flares						Observed

***Region Summary***

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

***Region 856***

27 Feb	S08E69	123	0010	00	Axx	001	A												
28 Feb	S09E54	124	0020	01	Axx	001	A												
01 Mar	S12E41	125																	
02 Mar	S12E28	125																	
03 Mar	S12E15	125																	
04 Mar	S10E01	125	0010	02	Axx	003	A												
05 Mar	S10W12	125	0010	04	Axx	005	A												

Still on Disk.

Absolute heliographic longitude: 125

***Region 857***

05 Mar	N08E41	072	0010	04	Cso	003	B												
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Still on Disk.

Absolute heliographic longitude: 072

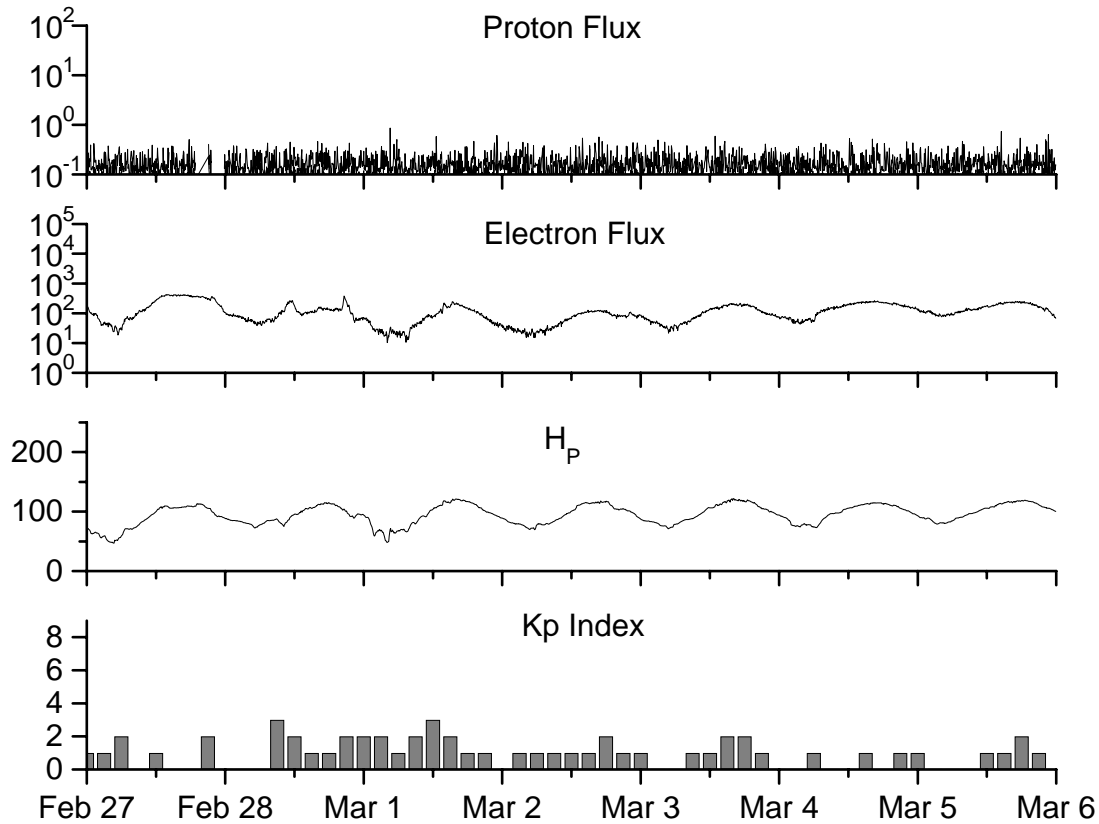


**Recent Solar Indices (preliminary)  
of the observed monthly mean values**

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
<b>2004</b>									
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
<b>2005</b>									
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	
<b>2005</b>									
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 27 February 2006*

*Protons* plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by GOES-11 (W105) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

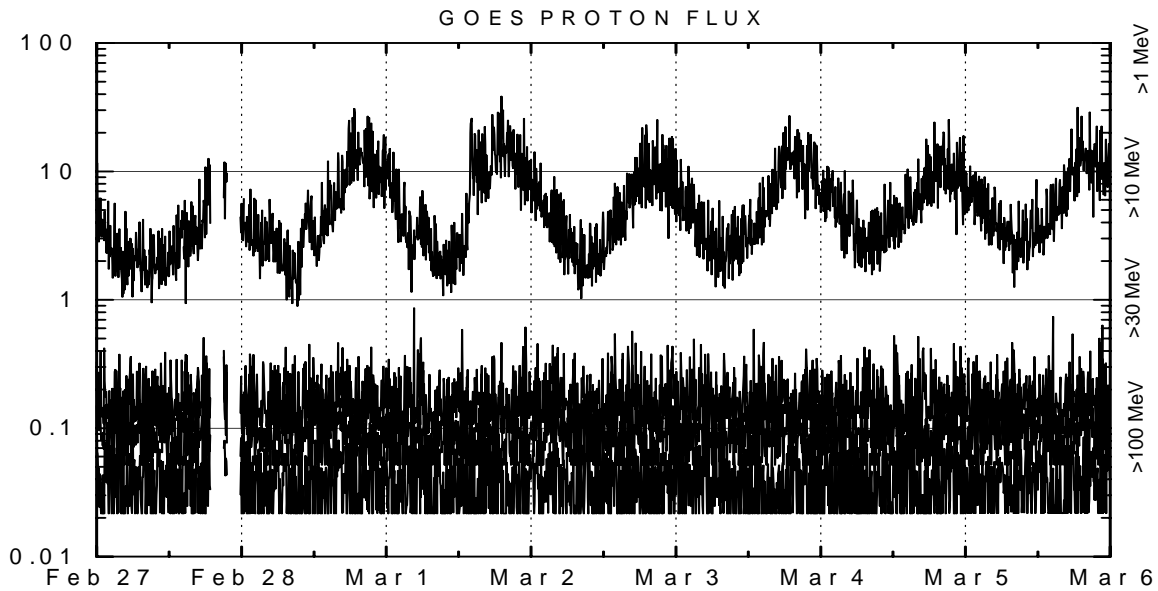
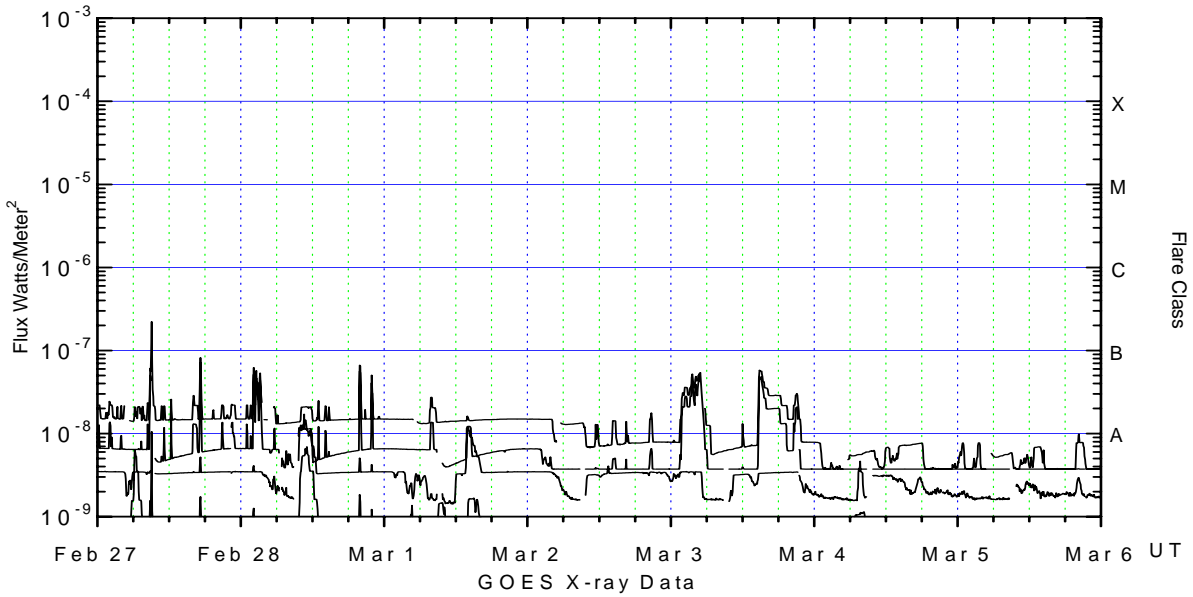
*Electrons* plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV at GOES-12 (W75).

*H<sub>p</sub>* 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<sub>p</sub>* 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<sub>p</sub> 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<sub>p</sub> 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<sup>2</sup>) as measured by GOES 12 (W75) and GOES 10 (W136) 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/cm<sup>2</sup>-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 (protons/cm<sup>2</sup>-sec-sr) at greater than 10 MeV.

