

Space Weather Highlights
09 - 15 January 2006

SEC PRF 1585
17 January 2006

Solar activity ranged from very low to low. Only one C-class flare was observed during the period, a C1.0 at 15/1445 UTC from Region 847 (S09, L=046, class/area, Cao/030 on 15 January). No other 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 during the period.

The geomagnetic field ranged from quiet to unsettled levels at all latitudes. Solar wind speed ranged from a high of about 430 km/s late on 15 January to a low of near 270 km/s late on 10 January. The Bz component of the IMF generally did not vary much beyond +/- 5 nT for the entire period. By late on 15 January, the IMF Bz began to fluctuate between -7 to +10 nT, wind speed increased from about 325 km/s to about 430 km/s, and temperature and density increased. These increases were all indicative of a co-rotating interaction region in advance of a recurrent coronal hole wind stream.

Space Weather Outlook
18 January - 13 February 2006

Solar activity is expected to be at very low to 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 levels on 24 January – 01 February.

The geomagnetic field is expected to range from quiet to minor storm levels. Active to minor storm periods are possible on 23 – 24 January and again on 12 February, both due to effects from 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 ⁻⁶ hemi.)	X-ray Background	Flares								
					X-ray Flux			Optical					
					C	M	X	S	1	2	3	4	
09 January	78	11	30	<A1.0	0	0	0	0	0	0	0	0	0
10 January	78	11	20	<A1.0	0	0	0	0	0	0	0	0	0
11 January	77	12	20	<A1.0	0	0	0	0	0	0	0	0	0
12 January	77	12	20	<A1.0	0	0	0	0	0	0	0	0	0
13 January	77	0	0	<A1.0	0	0	0	0	0	0	0	0	0
14 January	77	0	0	<A1.0	0	0	0	0	0	0	0	0	0
15 January	81	32	70	A1.7	1	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
	09 January	6.1E+5	1.5E+4	3.8E+3		7.3E+6
10 January	7.0E+5	1.5E+4	3.6E+3		1.1E+7	
11 January	7.9E+5	1.5E+4	3.8E+3		9.3E+6	
12 January	5.4E+5	1.6E+4	4.0E+3		2.5E+6	
13 January	5.9E+5	1.5E+4	4.0E+3		3.4E+6	
14 January	5.8E+5	1.4E+4	3.4E+3		1.8E+6	
15 January	7.5E+5	1.6E+4	3.8E+3		2.8E+6	

Daily Geomagnetic Data

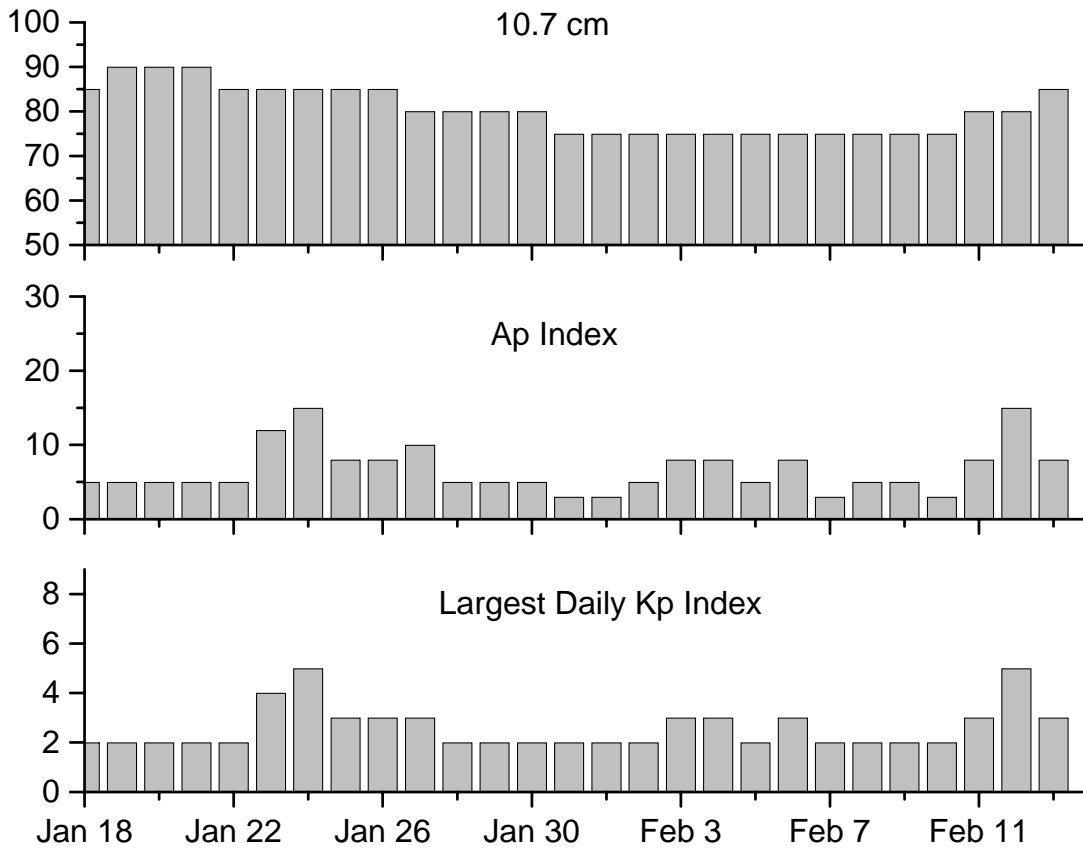
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 January	1	0-1-0-0-1-0-0-0	0	0-0-0-0-0-0-0-0	2
10 January	2	0-0-0-0-2-2-0-0	1	1-0-0-1-0-1-0-0	1	0-0-0-0-0-1-0-0
11 January	1	0-0-0-0-2-1-0-0	2	0-0-0-0-3-1-0-0	2	0-0-0-0-1-1-1-1
12 January	2	1-1-1-1-0-2-0-0	1	0-0-1-2-0-0-0-0	3	1-1-1-1-0-0-0-1
13 January	4	1-0-0-0-2-2-3-1	2	0-0-0-0-2-2-1-0	2	1-0-0-0-1-1-0-1
14 January	2	0-0-0-1-2-2-1-0	1	0-0-0-1-0-0-0-1	3	0-1-0-1-1-1-1-1
15 January	4	1-1-0-0-1-2-2-2	1	0-0-0-0-0-1-2-0	4	2-1-0-0-0-2-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
13 Jan 1327	ALERT: Type II Radio Emission	Jan 13 0004
15 Jan 2259	WARNING: Geomagnetic K = 4	Jan 16 0001 -1600



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
18 Jan	85	5	2	01 Feb	75	3	2
19	90	5	2	02	75	5	2
20	90	5	2	03	75	8	3
21	90	5	2	04	75	8	3
22	85	5	2	05	75	5	2
23	85	12	4	06	75	8	3
24	85	15	5	07	75	3	2
25	85	8	3	08	75	5	2
26	85	8	3	09	75	5	2
27	80	10	3	10	75	3	2
28	80	5	2	11	80	8	3
29	80	5	2	12	80	15	5
30	80	5	2	13	85	8	3
31	75	3	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½	Max	Integ	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
09 January	No Flares Observed						
10 January	No Flares Observed						
11 January	No Flares Observed						
12 January	No Flares Observed						
13 January	No Flares Observed						
14 January	No Flares Observed						
15 January	1047	1051	1054	B1.0			
	1248	1251	1253	B1.1			
	1318	1322	1329	B1.3			
	1442	1445	1447	C1.0			847
	1611	1615	1618	B2.4			847
	1742	1745	1749	B1.7			847



Region Summary

Date	Location		Sunspot Characteristics				Flares											
	° Lat	° CMD	Helio Lon	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
									C	M	X	S	1	2	3	4		
<i>Region 845</i>													Region Summary					
06 Jan	N18E72		085	0050	02	Cao	002	B										
07 Jan	N19E56		088	0050	02	Hsx	001	A										
08 Jan	N18E44		086	0040	02	Hax	001	A										
09 Jan	N18E30		087	0030	02	Hsx	001	A										
10 Jan	N18E18		086	0020	02	Hax	001	A										
11 Jan	N17E04		087	0020	02	Hax	002	A										
12 Jan	N18W08		086	0020	01	Hax	002	A										
13 Jan	N18W21		086															
14 Jan	N18W34		086															
										0	0	0	0	0	0	0	0	0
Still on Disk.																		
Absolute heliographic longitude: 087																		
<i>Region 846</i>																		
15 Jan	N05W30		068	0040	05	Dso	007	B										
										0	0	0	0	0	0	0	0	0
Still on Disk.																		
Absolute heliographic longitude: 068																		
<i>Region 847</i>																		
15 Jan	S09W08		046	0030	05	Cao	005	B		1								
										1	0	0	0	0	0	0	0	0
Still on Disk.																		
Absolute heliographic longitude: 046																		

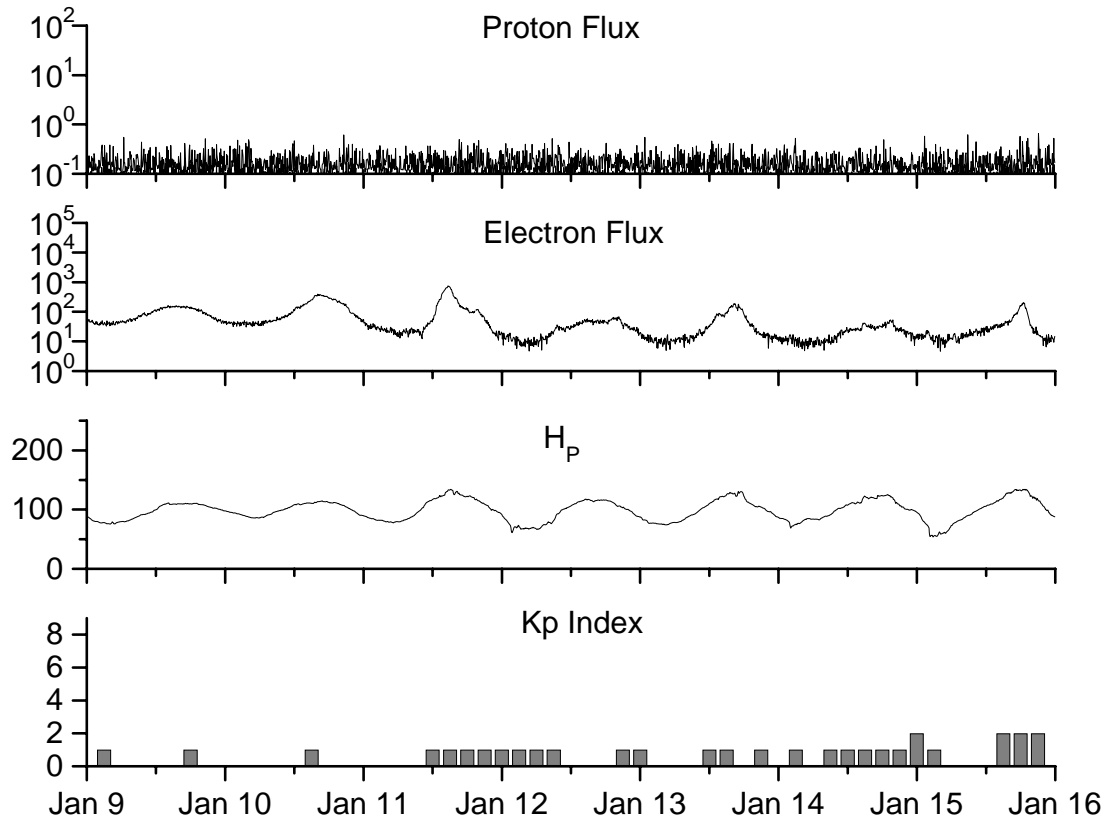


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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
2004									
January	62.3	37.7	0.61	87.9	52.0	114.1	116.3	22	18.1
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	

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 09 January 2006

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W108) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

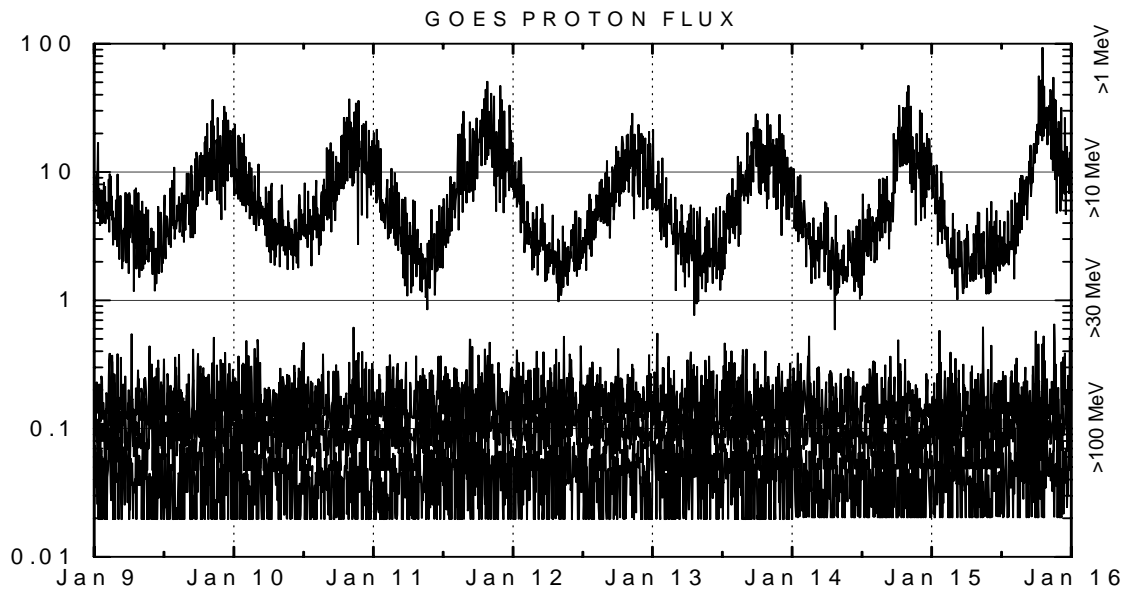
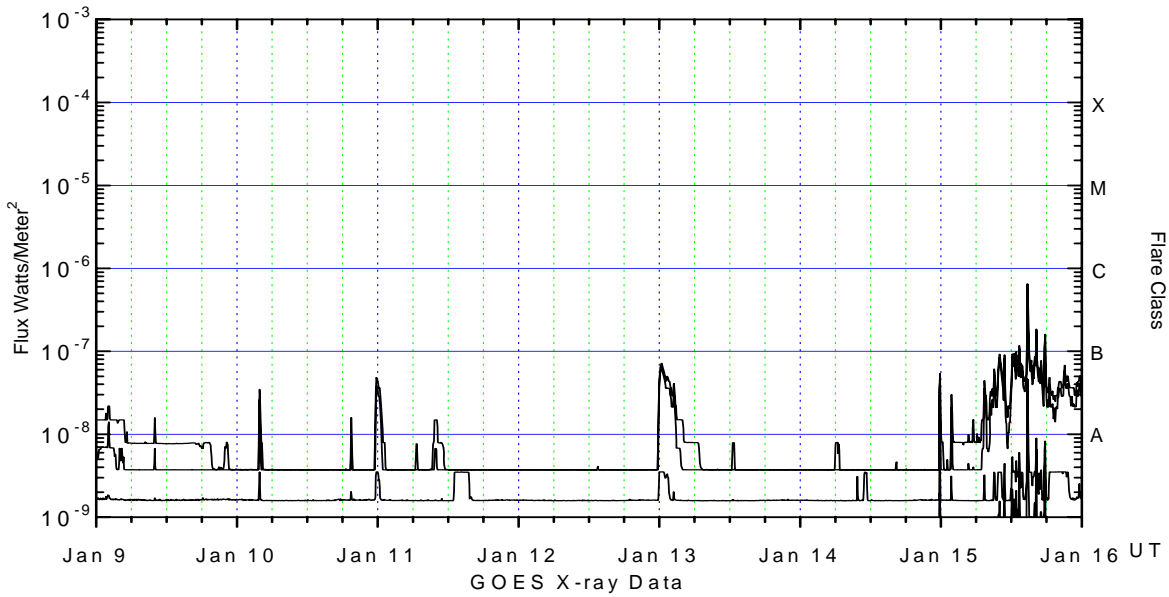
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-12 (W75).

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/m²) 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 (protons/cm²-sec-sr) as measured by GOES-11 (W108) 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.

