

Space Weather Highlights
05 – 11 March 2007

SEC PRF 1645
13 March 2007

Solar activity was very low. The disk was spotless on 08 – 09 March.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels during 07 – 11 March.

The geomagnetic field was at quiet to unsettled levels on 05 March. At middle latitudes, activity increased to unsettled to active levels on 06 – 07 March, while high latitudes observed active to major storm levels, all due to a recurrent coronal hole high-speed stream. By 08 March, activity decreased to quiet to unsettled levels at all latitudes for a majority of the balance of the period. Isolated active to major storm periods were observed at high latitudes midday on 11 March. ACE near real-time solar wind data indicated the recurrent high-speed stream began early on 06 March, reached a peak of about 650 km/sec midday on 07 March, and then began to gradually subside late on the 7th. Maximum IMF variability occurred as the high-speed stream commenced with a minimum southward Bz reading of -10 nT observed early on 06 March and a maximum Bt reading of 10 nT near the same time.

Space Weather Outlook
14 March – 09 April 2007

Solar activity is expected to be at very low levels.

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 14 – 23 March, 28 - 31 March, and 03 – 07 April.

The geomagnetic field is expected to be at unsettled to minor storm levels during 14 – 15 March, 26 – 27 March, 02 – 03 April, and 08 – 09 April, all due to recurrent coronal hole high-speed 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
05 March	72	27	80	<A1.0	0	0	0	0	0	0	0	0
06 March	72	26	50	<A1.0	0	0	0	0	0	0	0	0
07 March	73	11	10	<A1.0	0	0	0	0	0	0	0	0
08 March	73	0	0	<A1.0	0	0	0	0	0	0	0	0
09 March	72	0	0	<A1.0	0	0	0	0	0	0	0	0
10 March	71	16	30	<A1.0	0	0	0	0	0	0	0	0
11 March	71	14	70	<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
05 March	1.6E+6	1.7E+4	3.8E+3		2.5E+7	
06 March	1.1E+6	1.7E+4	3.9E+3		1.1E+7	
07 March	3.0E+6	1.6E+4	3.7E+3		1.4E+8	
08 March	1.2E+6	1.7E+4	3.8E+3		9.6E+8	
09 March	1.0E+6	1.7E+4	3.7E+3		8.4E+8	
10 March	8.7E+5	1.7E+4	3.6E+3		2.5E+8	
11 March	1.0E+6	1.7E+4	3.7E+3		8.0E+7	

Daily Geomagnetic Data

Date	Middle Latitude		High Latitude		Estimated	
	Fredericksburg		College		Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 March	6	2-0-1-2-2-2-3-1	12	1-0-1-5-3-3-2-2	8	3-0-0-3-2-2-3-2
06 March	14	4-4-2-3-3-1-1-3	26	3-5-2-5-6-1-1-1	18	4-5-2-3-3-2-1-3
07 March	12	3-3-3-3-2-2-2-3	21	3-2-4-5-4-4-2-2	14	3-3-4-3-2-3-3-3
08 March	3	3-2-0-0-0-0-1-0	5	3-1-1-3-0-0-1-0	4	2-2-0-0-0-1-0-1
09 March	1	0-0-0-0-1-0-1-1	2	0-0-0-1-1-1-1-0	2	0-0-0-0-0-0-1-2
10 March	2	1-1-0-1-1-0-1-1	2	1-1-1-1-0-1-1-0	4	2-1-1-1-0-0-1-1
11 March	6	0-0-1-3-2-2-2-2	20	1-0-3-6-4-3-3-1	8	1-0-1-3-2-2-3-2

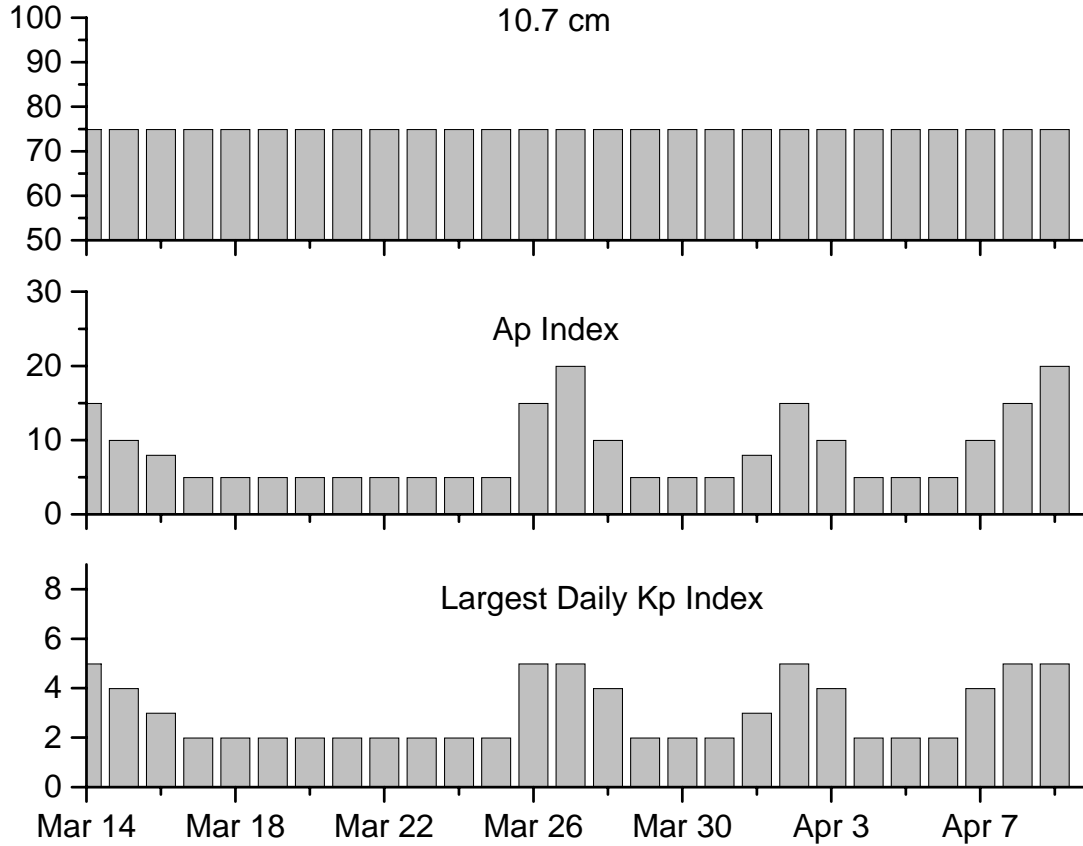


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
05 Mar 1156	WARNING: Geomagnetic K=4	05 Mar 1157 - 1600
05 Mar 1204	ALERT: Geomagnetic K=4	05 Mar 1159
06 Mar 0153	ALERT: Geomagnetic K=4	06 Mar 0150
06 Mar 0155	WARNING: Geomagnetic K=4	06 Mar 0200 - 1600
06 Mar 0323	ALERT: Geomagnetic K=5	06 Mar 0320
07 Mar 0020	WARNING: Geomagnetic K=4	07 Mar 0020 - 08 /1600
07 Mar 0747	ALERT: Geomagnetic K=4	07 Mar 0746
07 Mar 1042	ALERT: Electron 2MeV Integral Flux >1000pfu	07 Mar 1020
08 Mar 0503	ALERT: Electron 2MeV Integral Flux >1000pfu	08 Mar 0500
09 Mar 0500	ALERT: Electron 2MeV Integral Flux >1000pfu	09 Mar 0500
10 Mar 0758	ALERT: Electron 2MeV Integral Flux >1000pfu	10 Mar 0735
11 Mar 0502	ALERT: Electron 2MeV Integral Flux >1000pfu	11 Mar 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
14 Mar	75	15	5	28 Mar	75	10	4
15	75	10	4	29	75	5	2
16	75	8	3	30	75	5	2
17	75	5	2	31	75	5	2
18	75	5	2	01 Apr	75	8	3
19	75	5	2	02	75	15	5
20	75	5	2	03	75	10	4
21	75	5	2	04	75	5	2
22	75	5	2	05	75	5	2
23	75	5	2	06	75	5	2
24	75	5	2	07	75	10	4
25	75	5	2	08	75	15	5
26	75	5	5	09	75	20	5
27	75	20	5				



[illegible]

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				

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

22 Feb	S10E75	046	0120	03	Hsx	001	A
23 Feb	S03E61	046	0110	03	Hsx	001	A
24 Feb	S07E49	044	0090	03	Hsx	001	A
25 Feb	S08E37	043	0110	03	Hsx	002	A
26 Feb	S07E22	045	0110	03	Hkx	001	A
27 Feb	S06E11	043	0100	02	Hsx	001	A
28 Feb	S06W04	045	0100	02	Hsx	001	A
01 Mar	S06W17	045	0090	02	Hsx	001	A
02 Mar	S05W30	044	0090	03	Hsx	001	A
03 Mar	S06W43	044	0090	02	Hsx	001	A
04 Mar	S06W57	045	0060	02	Hax	001	A
05 Mar	S05W70	045	0060	02	Hsx	002	A
06 Mar	S07W84	046	0020	01	Axx	001	A

Absolute heliographic longitude: 045



Region Summary-Continued

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

Region 945

26 Feb S06E60	007	0020	02	Hsx	001	A
27 Feb S05E48	006	0020	01	Axx	002	A
28 Feb S05E34	007	0030	01	Axx	001	A
01 Mar S05E21	007					
02 Mar S07E11	003	0070	02	Dao	002	B
03 Mar S07W02	003					
04 Mar S06W17	005	0010	03	Axx	003	A
05 Mar S06W30	005	0020	03	Dro	005	B
06 Mar S06W43	005	0030	02	Bxo	005	B
07 Mar S07W56	004	0010	01	Axx	001	A
08 Mar S07W69	004					
09 Mar S07W82	004					
10 Mar S07W95	004					

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 003

Region 946

10 Mar N10W46	315	0030	05	Bxo	006	B
11 Mar N10W59	315	0070	05	Dso	004	B

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 315

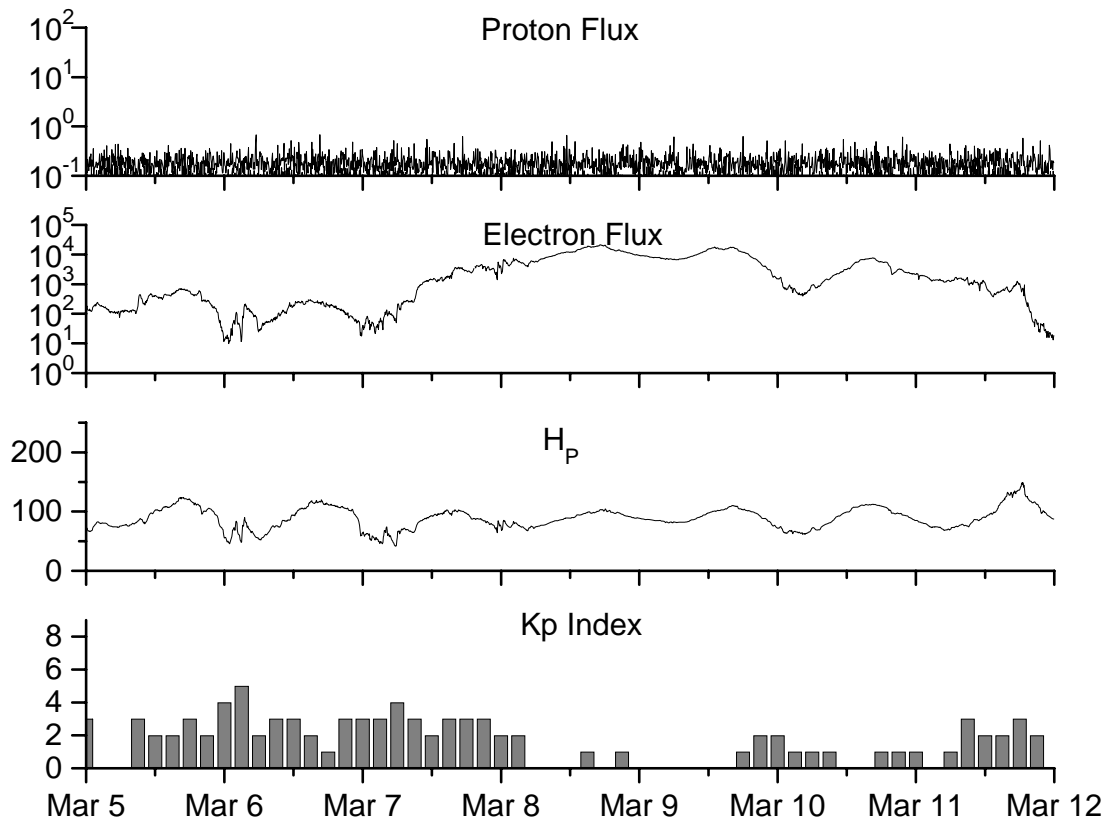


***Recent Solar Indices (preliminary)
of the observed monthly mean values***

Month	Sunspot Numbers				Radio Flux		Geomagnetic		
	<u>Observed values</u>	<u>Ratio</u>	<u>Smooth values</u>	<u>*Penticton</u>	<u>Smooth</u>	<u>Planetary</u>	<u>Smooth</u>		
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2005									
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	48.1	29.2	96.6	90.9	16	13.1
August	65.6	36.4	0.55	45.4	27.5	90.7	89.3	16	12.2
September	39.2	22.1	0.56	42.9	25.9	90.8	87.8	21	11.8
October	13.0	8.5	0.65	42.6	25.5	76.7	87.4	7	11.6
November	32.2	18.0	0.56	42.1	24.9	86.3	86.7	8	11.1
December	62.6	41.2	0.66	40.1	23.0	90.8	85.4	7	10.4
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			79.0		9	
September	25.2	14.5	0.58			77.8		8	
October	15.7	10.4	0.66			74.3		8	
November	31.5	21.5	0.68			86.4		9	
December	22.2	13.6	0.61			84.3		15	
2007									
January	26.6	16.9	0.64			83.5		6	
February	17.2	10.6	0.62			77.8		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 05 March 2007

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.

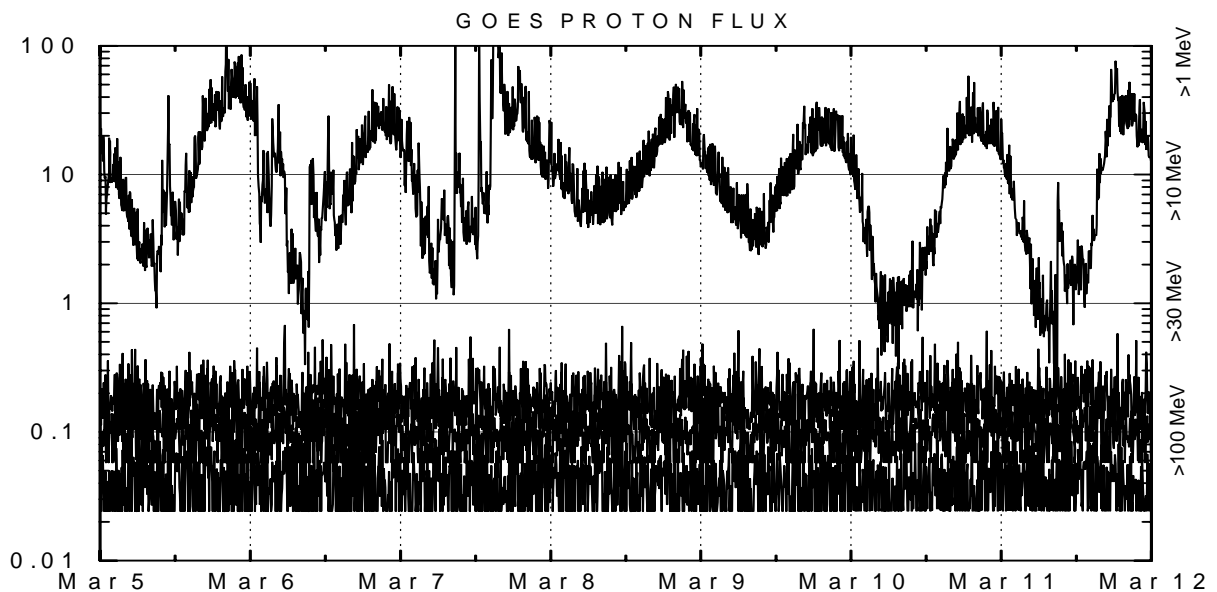
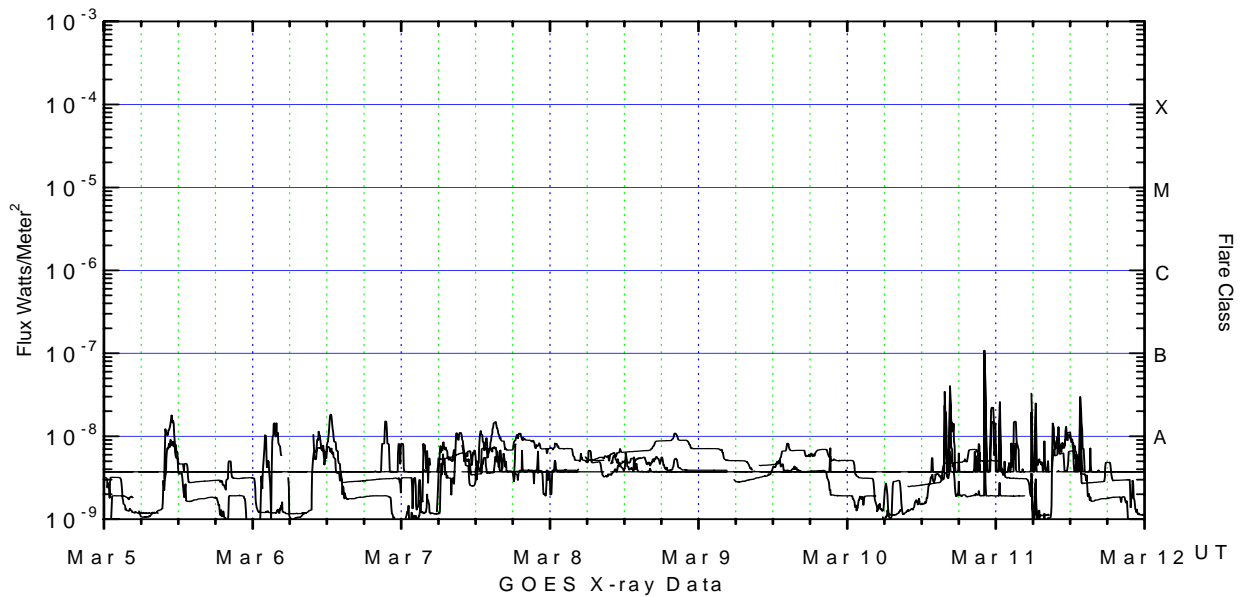
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²–sec –sr) with energies greater than 2 MeV at GOES-12 (W075).

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 (W075) 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.

