

Space Weather Highlights
05 February – 11 February 2007

SEC PRF 1641
13 February 2007

Solar activity was at very low to low levels. Region 940 (S04, L=041, class/area, Dsi/290 on 31 January) produced an isolated C1.2 flare at 08/2246 UTC as the region rotated around the west limb. LASCO imagery observed a CME shortly after the event which appeared to have a western trajectory, but was not Earth-directed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels 05 February, and again on 08 – 11 February.

The geomagnetic field was generally at quiet to unsettled levels at all latitudes. High latitudes experienced isolated active to minor storm conditions midday on 04, 07, and 08 February due to southward Bz. Solar wind speeds ranged from a low of about 330 km/s midday on 05 February to a high near 475 km/s midday on 09 February. The Bz component of the IMF fluctuated between ± 8 nT for about 24 hours beginning early on the 6th. Thereafter, and through the balance of the period, Bz did not vary much beyond ± 5 nT. Activity decreased to quiet levels during the latter half of 01 February, and remained so for the balance of the period. By 30 January, the IMF Bz relaxed, and did not vary much beyond ± 5 nT for the remainder of the period. Solar wind speed gradually decreased after 31 January, and ended the period near 325 km/s.

Space Weather Outlook
14 February – 12 March 2007

Solar activity is expected to be at very low to 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 on 14 – 24 February, 26 February – 04 March, and again on 07 – 11 March.

The geomagnetic field is expected to be at quiet to minor storm conditions. Active to minor storm levels are expected on 14 February due to a recurrent coronal hole high speed stream. Quiet to unsettled conditions are expected on 15 – 24 February. On 25 – 27 February, a recurrent coronal hole high speed stream is expected to produce active to minor storm periods. Quiet to unsettled levels are expected on 28 February – 10 March. Another recurrent coronal hole high speed stream is possible on 11 – 12 March that is expected to produce active to minor storm levels.



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 February	83	25	300	A1.8	0	0	0	0	0	0	0	0
06 February	82	23	320	A1.8	0	0	0	0	0	0	0	0
07 February	82	23	240	A2.2	0	0	0	0	0	0	0	0
08 February	78	22	230	A2.2	1	0	0	0	0	0	0	0
09 February	77	11	110	<A1.0	0	0	0	0	0	0	0	0
10 February	76	11	120	<A1.0	0	0	0	0	0	0	0	0
11 February	75	0	0	<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 February	1.8E+6	1.6E+4	3.6E+3		2.4E+8	
06 February	1.2E+6	1.6E+4	3.6E+3		1.6E+7	
07 February	1.7E+6	1.6E+4	3.4E+3		2.1E+7	
08 February	1.1E+6	1.7E+4	4.0E+3		8.3E+7	
09 February	8.5E+5	1.8E+4	4.0E+3		1.2E+8	
10 February	5.1E+5	1.7E+4	4.3E+3		1.3E+8	
11 February	5.1E+5	1.8E+4	4.2E+3		1.0E+8	

Daily Geomagnetic Data

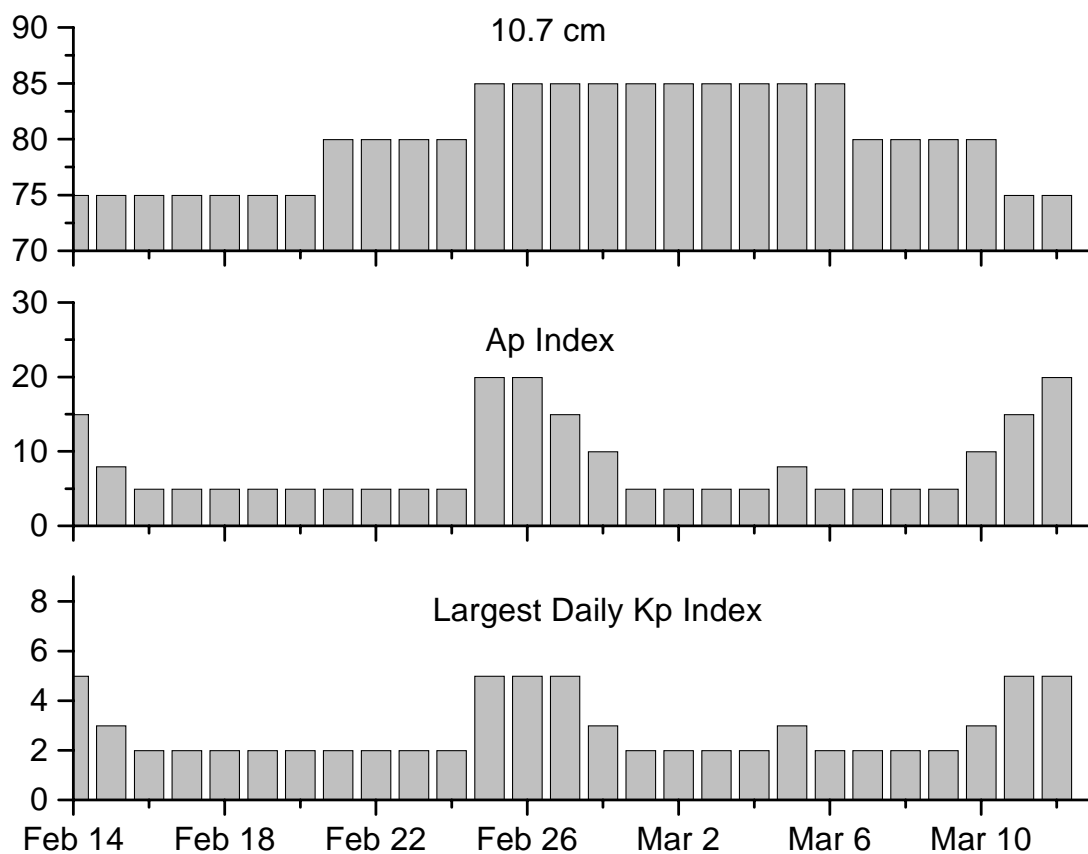
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 February	4	1-1-2-1-1-1-1-2	7	0-0-2-2-4-2-1-1	6	1-1-1-1-2-2-2-2
06 February	6	1-2-3-2-1-1-1-1	10	1-3-3-3-3-1-1-2	8	1-3-3-3-1-0-1-1
07 February	8	2-1-2-2-2-2-3-2	18	1-2-3-5-5-2-2-2	10	3-2-3-3-2-2-3-2
08 February	6	2-2-2-2-2-2-1-1	14	3-1-3-5-3-3-1-0	7	2-3-2-2-1-2-1-1
09 February	3	1-2-2-1-0-1-1-0	4	2-1-1-3-1-1-0-0	4	1-2-2-1-0-0-1-1
10 February	2	2-1-0-0-0-1-0-1	4	1-2-0-2-0-2-1-1	3	1-1-0-0-0-1-1-1
11 February	1	0-1-0-0-0-0-1-1	1	0-0-0-1-0-0-1-1	2	0-1-0-0-0-0-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
05 Feb 0506	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05 Feb 0500
08 Feb 1233	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	08 Feb 1210
09 Feb 0826	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	09 Feb 0810
10 Feb 0547	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10 Feb 0525
11 Feb 0736	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	11 Feb 0720



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 Feb	75	15	5	28 Feb	85	10	3
15	75	8	3	01 Mar	85	5	2
16	75	5	2	02	85	5	2
17	75	5	2	03	85	5	2
18	75	5	2	04	85	5	2
19	75	5	2	05	85	8	2
20	75	5	2	06	85	5	2
21	80	5	2	07	80	5	2
22	80	5	2	08	80	5	2
23	80	5	2	09	80	5	2
24	80	5	2	10	80	10	3
25	85	20	5	11	75	15	5
26	85	20	5	12	75	20	5
27	85	15	5				



Energetic Events

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

No Events Observed

Flare List

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
05 February	<i>No Flares Observed</i>						
06 February	<i>No Flares Observed</i>						
07 February	<i>No Flares Observed</i>						
08 February	2238	2246	2251	C1.2			940
09 February	<i>No Flares Observed</i>						
10 February	<i>No Flares Observed</i>						
11 February	<i>No Flares Observed</i>						

Region Summary

Location			Sunspot Characteristics					Flares							
Date	(° Lat ° CMD)	Helio	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 940															
26 Jan	S06E77	039	0120	01	Hax	001	A								
27 Jan	S06E62	041	0170	04	Hax	001	A								
28 Jan	S06E49	040	0180	07	Dao	003	B								
29 Jan	S05E35	041	0240	06	Dso	006	B	2				2			
30 Jan	S04E21	042	0280	07	Dao	012	B	1				1			
31 Jan	S04E09	041	0290	10	Dsi	011	B								
01 Feb	S04W06	043	0290	07	Dso	010	B					1			
02 Feb	S04W19	043	0250	08	Dhi	015	B								
03 Feb	S04W31	041	0210	08	Dai	014	B								
04 Feb	S05W44	041	0190	07	Dso	007	B								
05 Feb	S05W58	043	0180	07	Cao	004	B								
06 Feb	S05W71	043	0130	05	Cso	002	B								
07 Feb	S05W84	043	0120	02	Hax	001	A								
08 Feb	S05W97	043	0120	02	Hsx	001	A	1							
								4	0	0	4	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 043



Region Summary – continued.

Location			Sunspot Characteristics												
			Flares					X-ray			Optical				
Date	(° Lat ° CMD)	Helio Lon	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	C	M	X	S	1	2	3	4
<i>Region 941</i>															
29 Jan	S09E69	007	0110	05	Hsx	001	A								
30 Jan	S06E56	007	0130	03	Hsx	001	A								
31 Jan	S08E43	007	0150	03	Hhx	001	A								
01 Feb	S07E29	008	0150	02	Hsx	001	A								
02 Feb	S07E17	007	0140	03	Hsx	001	A								
03 Feb	S07E04	006	0140	02	Hax	001	A								
04 Feb	S07W10	007	0120	03	Hsx	001	A								
05 Feb	S07W22	007	0120	03	Hsx	001	A								
06 Feb	S07W35	007	0190	03	Hsx	001	A								
07 Feb	S07W48	007	0120	02	Hsx	002	A								
08 Feb	S07W61	007	0110	02	Hsx	001	A								
09 Feb	S07W75	007	0110	02	Hsx	001	A								
10 Feb	S07W89	008	0120	02	Hsx	001	A								
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude: 006															

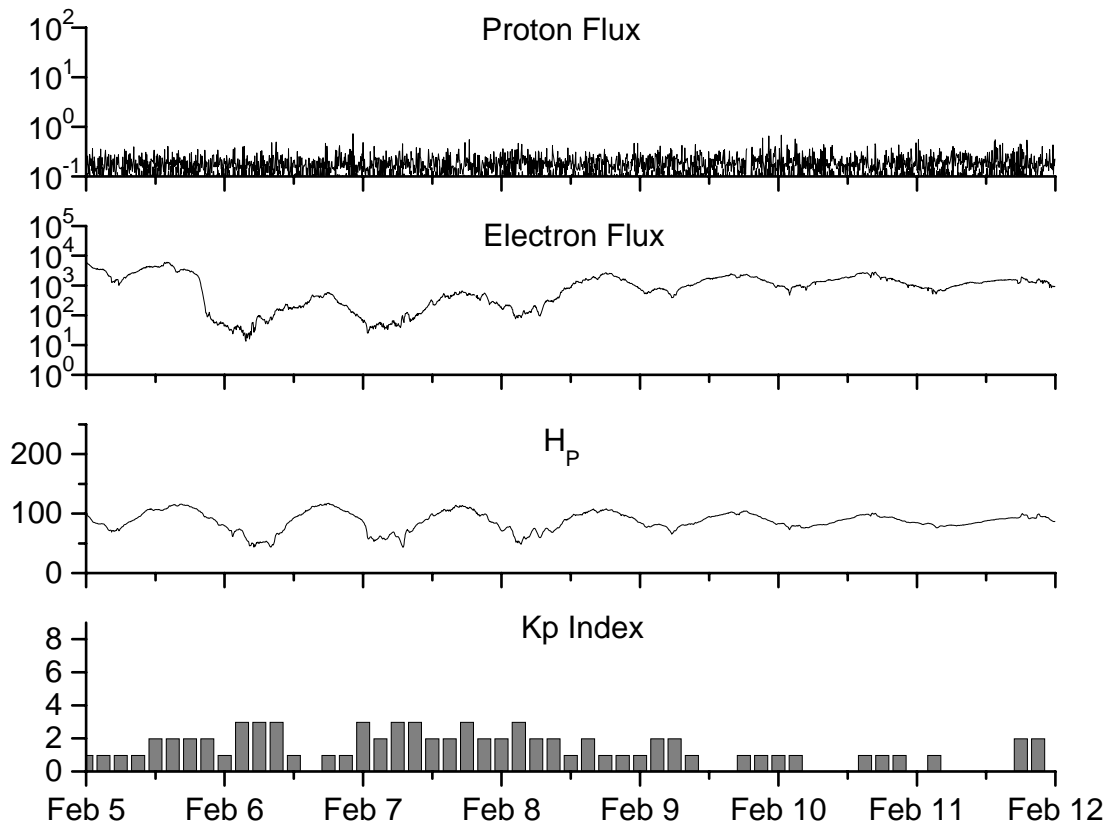


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values	Ratio	Smooth values	*Penticton	Smooth	Planetary	Smooth		
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2005									
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	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		5	

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 February 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.

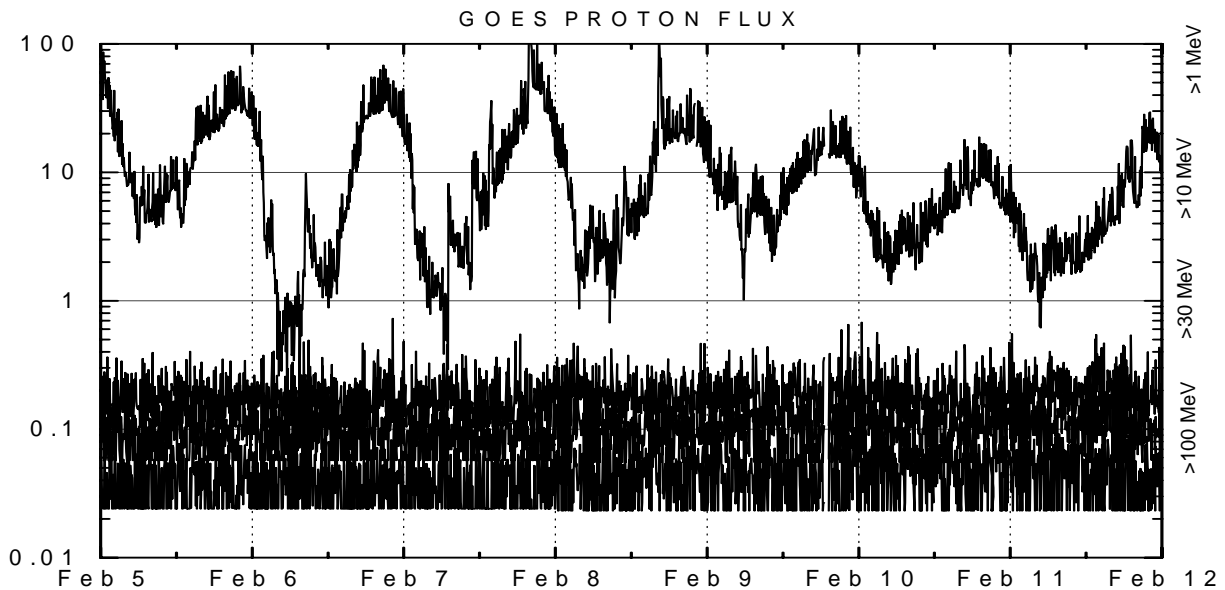
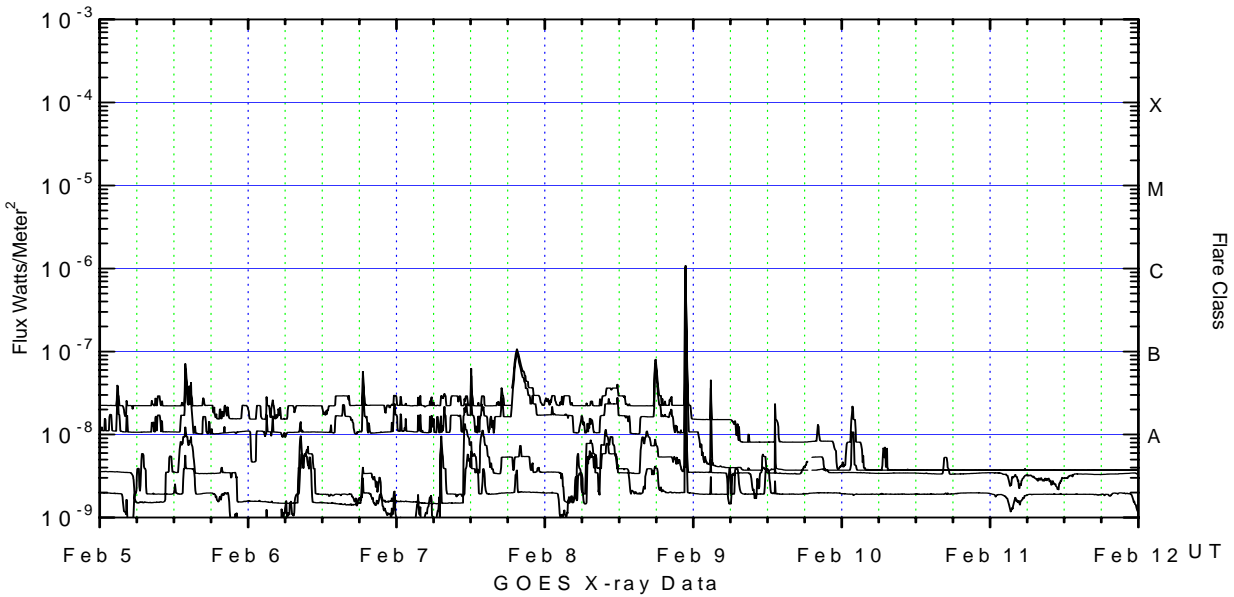
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²–sec–sr) with energies greater than 2 MeV at GOES-12 (W075).

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.

