

Space Weather Highlights
17 July – 23 July 2006

SEC PRF 1612
25 July 2006

Solar activity was at very low levels. New Region 901 (N06, L=007, class/area, Dao/130 on 23 July) rotated onto the visible disk on 22 July. This region, a simple beta magnetic group, produced only a few B-class flares. A partial halo CME was first seen in LASCO imagery at 20/1354 UTC. EIT imagery showed a large filament eruption and post-eruption loops in the southeastern quadrant of the solar disk that began near 20/1236 UTC.

No greater than 10 MeV proton events were observed.

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

The geomagnetic field was at quiet levels the entire summary period. Solar wind speed ranged from a high of near 375 km/s early in the summary period to a low of about 275 km/s midday on 19 July. The Bz component of the IMF did not vary much beyond +/- 4 nT throughout the entire period.

Space Weather Outlook
26 July – 21 August 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 02 – 05 August.

The geomagnetic field is expected to be mostly quiet to unsettled for the majority of the forecast period. Recurrent coronal hole high speed wind streams are expected to rotate into geoeffective positions on 31 July – 01 August and again on 07 – 08 August. Active to minor storm periods are possible on 31 July – 01 August while unsettled to active periods are possible on 07 – 08 August.



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	
17 July	71	23	40	<A1.0	0	0	0	0	0	0	0	0	0
18 July	71	26	90	<A1.0	0	0	0	0	0	0	0	0	0
19 July	71	24	90	<A1.0	0	0	0	0	0	0	0	0	0
20 July	72	14	20	A1.0	0	0	0	0	0	0	0	0	0
21 July	73	12	10	A1.7	0	0	0	0	0	0	0	0	0
22 July	74	16	40	A3.0	0	0	0	0	0	0	0	0	0
23 July	77	21	130	A4.8	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
	17 July	2.9E+5	1.6E+4	3.9E+3		9.0E+6
18 July	3.1E+5	1.6E+4	4.0E+3		7.6E+6	
19 July	3.8E+5	1.6E+4	4.0E+3		6.9E+6	
20 July	3.9E+5	1.6E+4	4.1E+3		4.1E+6	
21 July	4.4E+5	1.7E+4	4.2E+3		2.7E+6	
22 July	5.3E+5	1.7E+4	4.4E+3		2.5E+6	
23 July	4.8E+5	1.6E+4	3.9E+3		2.7E+6	

Daily Geomagnetic Data

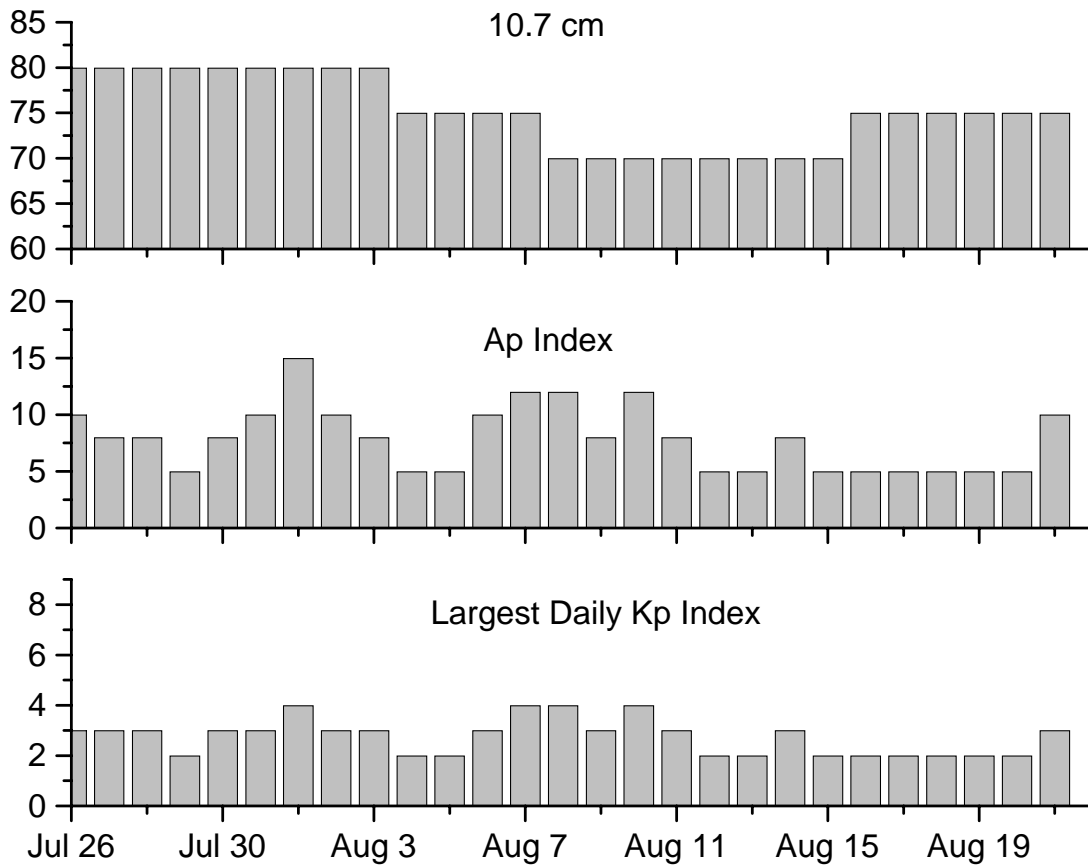
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	17 July	2	0-0-1-0-2-1-1-1	2	1-1-0-1-2-0-1-0	4
18 July	2	1-1-0-1-0-1-1-0	1	0-1-0-1-0-0-1-0	3	1-1-0-0-1-1-1-1
19 July	2	1-1-0-0-1-0-1-1	2	1-1-0-0-0-0-1-1	2	1-1-0-0-0-0-1-1
20 July	2	0-1-0-0-1-0-1-1	1	1-1-0-0-0-0-1-0	3	1-1-0-0-1-1-1-1
21 July	1	1-0-0-0-0-0-1-0	1	0-1-0-0-0-0-1-1	2	1-0-0-0-1-0-1-1
22 July	3	0-2-1-1-1-1-0-2	1	0-1-1-0-0-0-0-1	4	1-2-1-1-1-1-1-2
23 July	4	2-1-2-1-1-0-1-1	2	1-1-2-1-1-0-0-0	4	2-1-2-1-1-1-1-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
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
26 July	80	10	3	09 August	70	8	3
27	80	8	3	10	70	12	4
28	80	8	3	11	70	8	3
29	80	5	2	12	70	5	2
30	80	8	3	13	70	5	2
31	80	10	3	14	70	8	3
01 August	80	15	4	15	70	5	2
02	80	10	3	16	75	5	2
03	80	8	3	17	75	5	2
04	75	5	2	18	75	5	2
05	75	5	2	19	75	5	2
06	75	10	3	20	75	5	2
07	75	12	4	21	75	10	3
08	70	12	4				



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

No Events Observed

Flare List

Date	Time			Optical	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End	X-ray Class.			
17 July	<i>No Flares Observed</i>						
18 July	0816	0821	0830	B1.3			900
	1104	1107	1111	B1.5			900
19 July	0105	0111	0118	B2.8			900
	1431	1441	1447	B6.3			900
20 July	2256	2301	2306	B1.1			
21 July	1831	1847	1856	B2.3			900
22 July	0007	0014	0022	B1.8			900
	0040	0044	0046	B1.6			901
	0128	0132	0135	B5.3			901
	0254	0258	0301	B1.4			901
	0814	0817	0821	B1.2			900
	1056	1059	1102	B1.1			900
	2227	2232	2245	B1.2			901
	23 July	0246	0253	0301	B2.2		
	0547	0557	0615	B1.1			
	1703	1717	1731	B2.2			
	2320	2325	2332	B1.4			



Region Summary

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

Region 899

05 Jul	S05E69	232	0090	07	Dro	002	B										
06 Jul	S05E56	231	0100	09	Dso	006	B										
07 Jul	S05E40	234	0080	09	Dao	007	B										
08 Jul	S05E27	234	0060	08	Dao	005	B										
09 Jul	S06E15	233	0040	07	Cao	006	B										
10 Jul	S06W05	240	0030	07	Cso	008	B										
11 Jul	S06W18	240	0020	03	Bxo	003	B										
12 Jul	S05W28	236	0010	04	Bxo	002	B										
13 Jul	S05W41	236	0001	00	Axx	001	A										
14 Jul	S04W53	235															
15 Jul	S04W66	235															
16 Jul	S04W79	235															
17 Jul	S04W92	235															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 240

Region 900

14 Jul	S05E43	139	0040	05	Cso	005	B										
15 Jul	S05E30	139	0050	10	Cao	007	B										
16 Jul	S06E16	140	0040	08	Bxo	010	B										
17 Jul	S05E02	140	0040	07	Bxo	013	B										
18 Jul	S05W12	141	0090	08	Dsi	016	B										
19 Jul	S04W25	141	0090	09	Dso	014	B										
20 Jul	S04W38	141	0020	06	Bxo	004	B										
21 Jul	S06W52	142	0010	02	Bxo	002	B										
22 Jul	S06W65	142															
23 Jul	S06W78	142															

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 140

Region 901

22 Jul	N06E70	006	0040	06	Cso	006	B										
23 Jul	N06E56	007	0130	08	Dao	011	B										

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 007

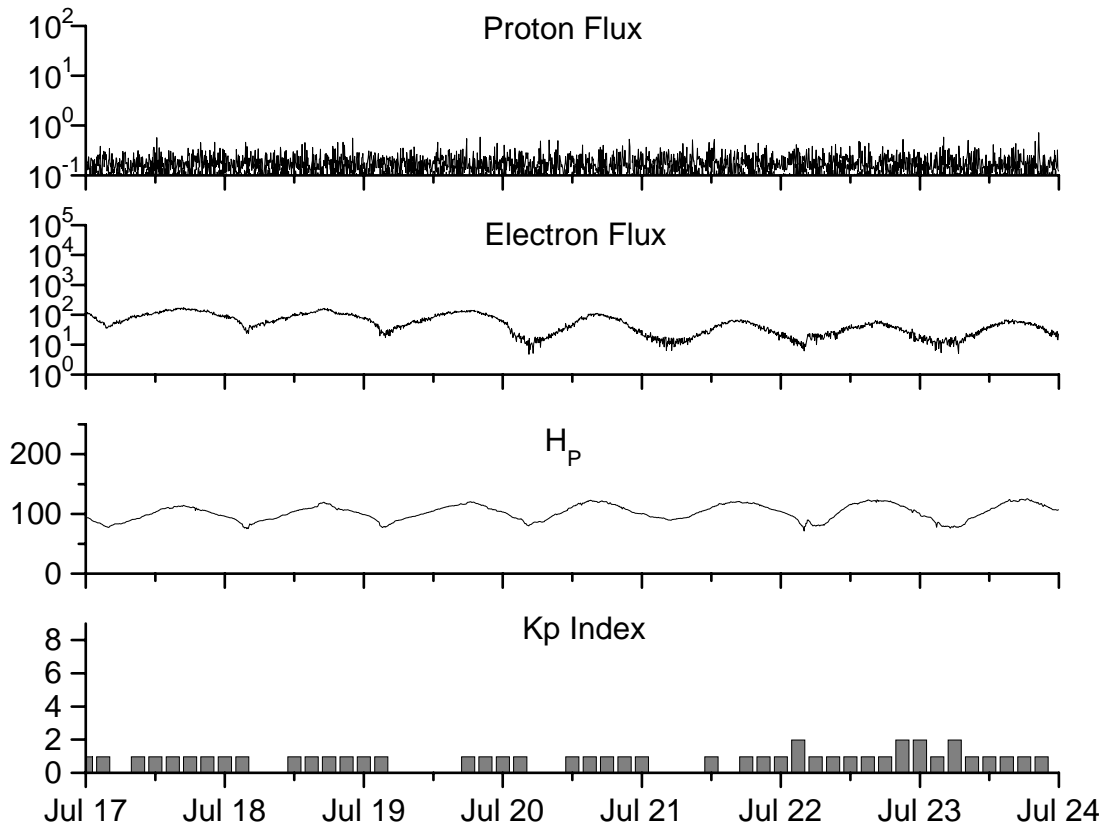


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SEC	Ratio RI	Ratio RI/SEC	Smooth values SEC	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2004									
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	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			83.8		6	
February	5.3	4.7	0.89			76.6		6	
March	21.3	10.8	0.51			75.5		8	
April	55.2	30.2	0.55			89.0		11	
May	39.6	22.2	0.56			81.0		8	
June	37.7	13.9	0.37			80.1		8	

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 17 July 2006*

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.

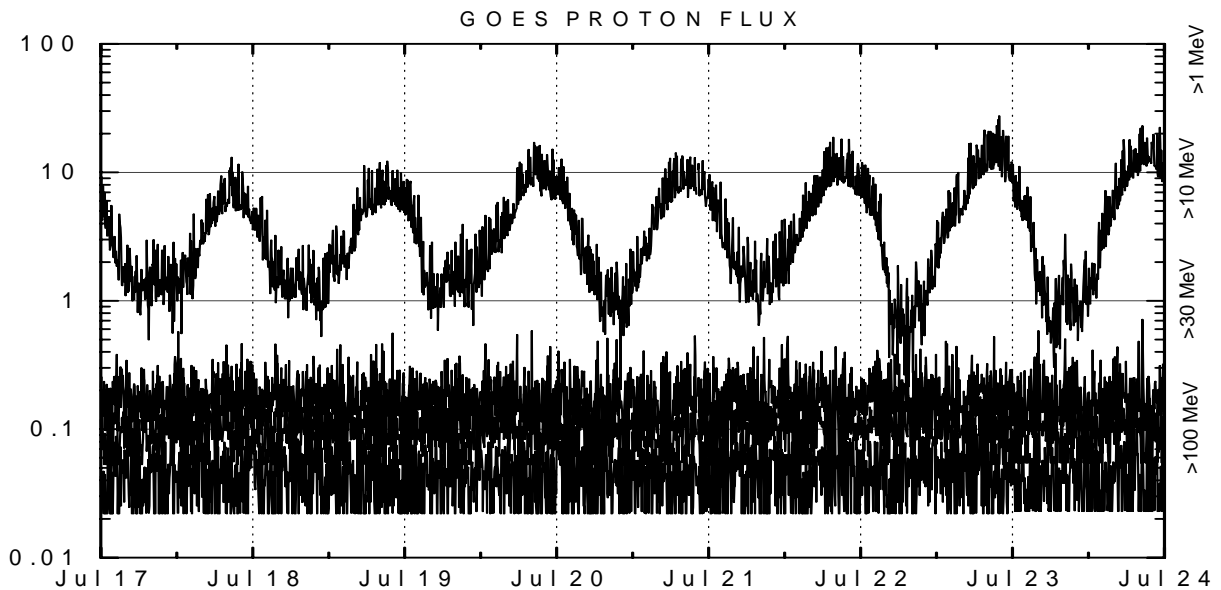
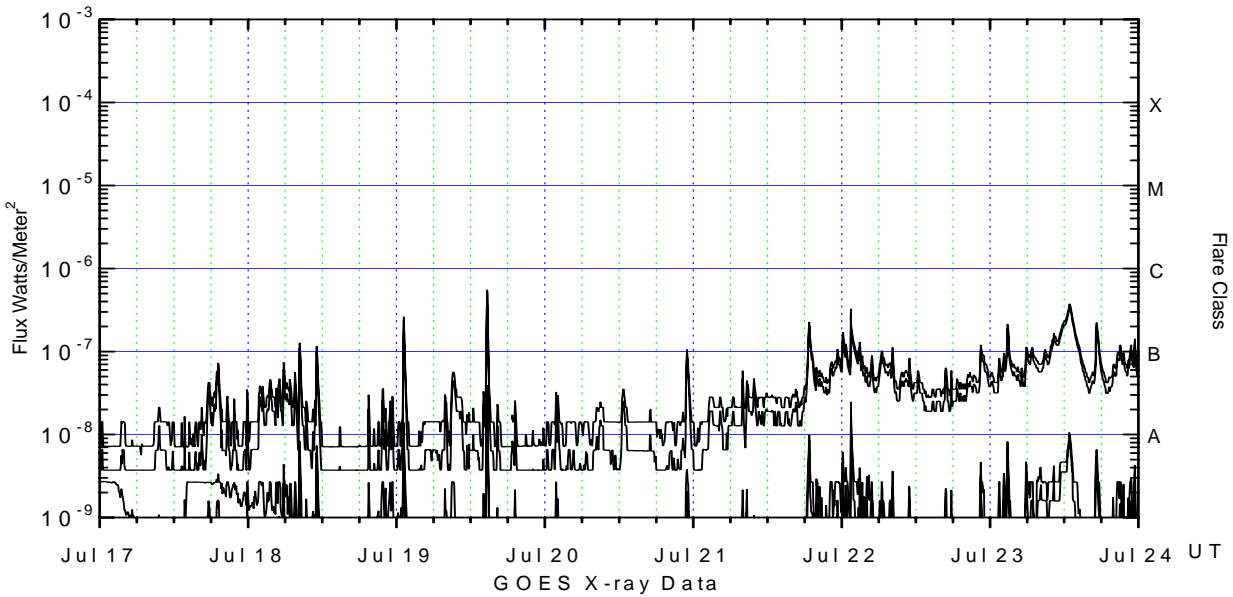
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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.

