

Solar activity was at very low to moderate levels. Region 898 (S08, L=328, class/area, Cki/420 on 06 July) rotated on to the disk as a simple beta magnetic class and produced only B-class flares. From 03 – 05 July, Region 898 was in a slow growth phase and managed several isolated C-class flares. By 06 July, this region became a beta gamma delta magnetic class with an area of 420 millionths. On 06 July, the region produced the largest event of the period, an M2.5/2f long duration flare at 06/0823 UTC, and was accompanied by Type II (565 km/s) and Type IV radio sweeps. An associated partial halo CME (median plane of sky speed 600 km/s) was observed in LASCO imagery off the southwest limb. The Region was in decay by 07 July, only producing C-flare activity. On 08 -09 July, this region continued to decay, producing low level B-class activity.

An enhancement of the 10 MeV protons occurred on 06 July and continued into 07 July due to the M2 flare on 06 July. The enhancement reached a maximum of 2.5 pfu's at 07/250 UTC before returning to normal background levels on 07 July. This enhancement did not reach event levels of 10 pfu's.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 06 – 09 July.

The geomagnetic field ranged from quiet to minor storm levels. Solar wind speed ranged from a low around 280 km/s late on 03 July to a high of 640 km/s early on 05 July. The period began with a wind speed around 330 km/s with the IMF Bz not varying much beyond +/- 3 nT. The geomagnetic field remained quiet until 04 July when a coronal hole high speed stream moved into geoeffective position. Total magnetic field increased to 18 nT, while the IMF Bz fluctuated between +/- 12 nT. Wind speed increased to around 640 km/s. The geomagnetic field responded with unsettled to active periods midday on 04 July. Early on 05 July, active to minor storm periods were observed at middle latitudes, while active to major storm periods occurred at high latitudes. By midday on 05 July, the IMF Bz relaxed, not varying much beyond +/- 4 nT, and by midday on 06 July, the solar wind speed was in decline. Two periods of minor storming was observed at high latitudes midday on 06 July before returning to quiet to unsettled conditions. The geomagnetic field was mostly quiet until the end of the period when a shock was observed at the ACE spacecraft around 09/2045 UTC. The shock was associated with the 06 July CME and caused the wind speed to increase from 350 km/s to 440 km/s, while the IMF Bz fluctuated between +7 nT to -5 nT. A sudden impulse of 48 nT was observed at the Boulder magnetometer at 09/2137 UTC. The geomagnetic field at middle latitudes observed an active period due to this shock, while high latitudes only observed quiet conditions. The period ended with the solar wind speed around 420 km/s.



Space Weather Outlook
12 July – 07 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 12 – 19 July and again 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 12 July, 25 – 26 July, and again on 31 July – 01 August. Active to major storm conditions are possible on 12 July, while active to minor storm periods are possible on 25 – 26 July and 31 July – 01 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	
03 July	86	38	380	A5.9	1	0	0	0	0	0	0	0	0
04 July	88	40	370	A8.6	1	0	0	0	0	0	0	0	0
05 July	85	28	520	B1.2	1	0	0	0	0	0	0	0	0
06 July	85	34	520	B1.0	0	1	0	0	0	1	0	0	0
07 July	80	35	480	A5.9	3	0	0	0	0	0	0	0	0
08 July	77	34	420	A4.9	0	0	0	0	0	0	0	0	0
09 July	75	33	300	A3.5	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
03 July	3.1E+5	1.7E+4	3.9E+3		1.1E+7	
04 July	7.2E+5	1.6E+4	3.5E+3		2.9E+6	
05 July	4.3E+6	1.6E+4	3.5E+3		6.3E+6	
06 July	3.1E+6	7.0E+4	4.5E+3		2.9E+8	
07 July	3.3E+6	7.8E+4	3.8E+3		3.0E+8	
08 July	2.0E+6	2.3E+4	3.4E+3		2.2E+8	
09 July	2.3E+6	1.9E+4	3.4E+3		2.2E+8	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	03 July	2	0-0-1-1-0-1-1-1	2	0-1-0-2-0-2-0-0	4
04 July	11	0-1-1-2-4-2-3-4	11	1-2-1-3-4-2-2-3	13	1-1-1-2-4-3-3-4
05 July	18	4-4-5-1-2-2-2-3	28	4-5-6-4-3-3-2-2	19	4-5-5-2-2-2-2-4
06 July	7	3-2-3-1-1-1-1-2	17	3-2-5-5-1-2-1-1	11	4-3-3-3-1-1-2-2
07 July	5	1-1-1-2-2-2-1-1	8	1-2-2-3-3-3-1-0	6	2-2-1-1-2-2-3-1
08 July	2	0-0-1-0-0-1-1-1	1	0-1-1-0-0-0-0-0	3	1-0-2-0-1-1-1-2
09 July	5	0-0-0-1-0-1-1-4	1	1-0-0-0-0-0-0-2	5	1-0-0-0-0-1-1-4

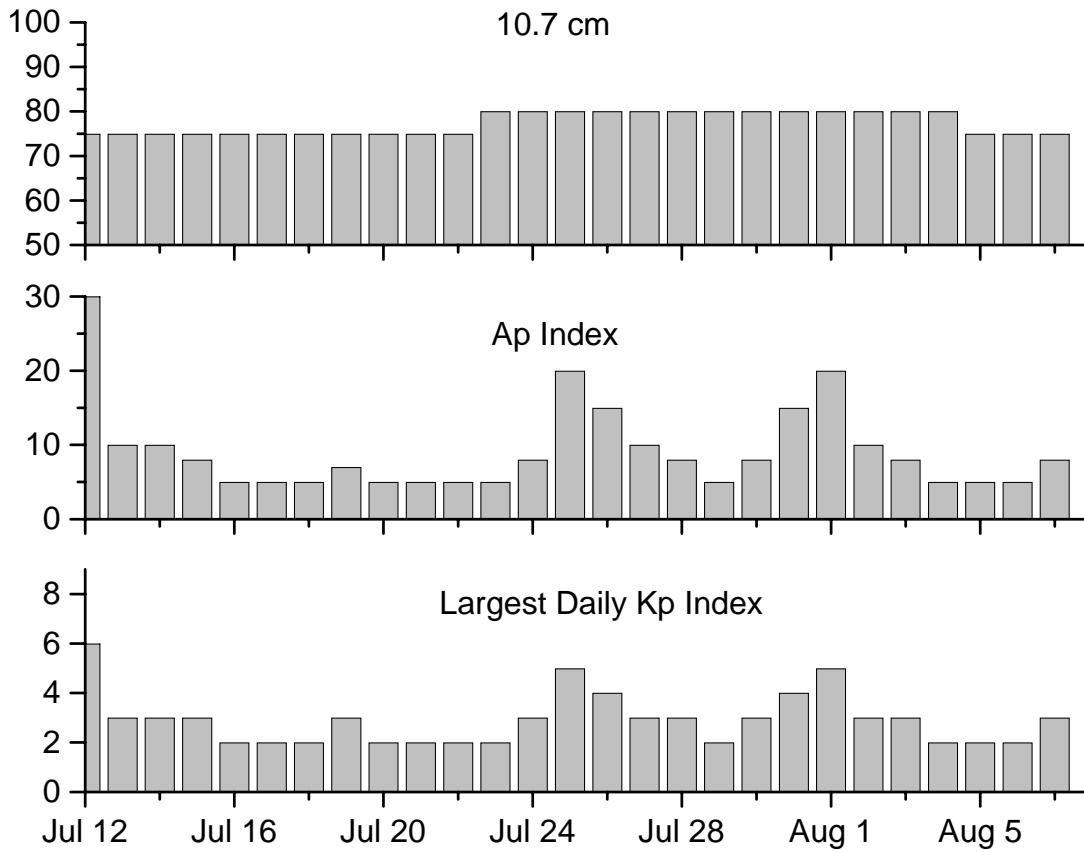


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UTC</u>
04 July 1253	ALERT: Geomagnetic K=4	04 July 1252
04 July 1658	WARNING: Geomagnetic K=4	04 July 1700 - 05 July 1600
04 July 2242	ALERT: Geomagnetic K=4	04 July 2240
05 July 0616	WARNING: Geomagnetic K=5	05 July 0617 - 1600
05 July 0621	ALERT: Geomagnetic K=5	05 July 0618
05 July 2241	WARNING: Geomagnetic K=4	05 July 2245 - 06 July 1600
06 July 0204	ALERT: Geomagnetic K=4	06 July 0200
06 July 0905	ALERT: Type II Radio Emission	06 July 0823
06 July 0906	ALERT: Type IV Radio Emission	06 July 0823
06 July 0909	SUMMARY: 10cm Radio Burst	06 July 0823
06 July 1017	ALERT: Electron 2MeV Integral Flux >1000pfu	06 July 0955
06 July 2031	WATCH: Geomagnetic A-index of >20	09 July
07 July 0503	ALERT: Electron 2MeV Integral Flux >1000pfu	07 July 0500
08 July 0521	ALERT: Electron 2MeV Integral Flux >1000pfu	08 July 0500
09 July 0501	ALERT: Electron 2MeV Integral Flux >1000pfu	09 July 0500
09 July 2142	ALERT: Geomagnetic K=4	09 July 2140



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
12 July	75	30	6	26 July	80	15	4
13	75	10	3	27	80	10	3
14	75	10	3	28	80	8	3
15	75	8	3	29	80	5	2
16	75	5	2	30	80	8	3
17	75	5	2	31	80	15	4
18	75	5	2	01 Aug	80	20	5
19	75	7	3	02	80	10	3
20	75	5	2	03	80	8	3
21	75	5	2	04	80	5	2
22	75	5	2	05	75	5	2
23	80	5	2	06	75	5	2
24	80	8	3	07	75	8	3
25	80	20	5				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	½ Max	Class	Flux	Imp/ Brtns	Location		Radio Flux		Intensity	
							Lat	CMD	245	2695	II	IV
06 Jul 06	0813	0836	0851	M2.5	.033	2f	S11W32	898			1	1

Flare List

Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
03 July	1305	1309	1312	B1.1			
	1902	1908	1913	B1.2			
	2209	2304	2337	C1.2			898
04 July	0739	0745	0752	B1.7			
	1103	1110	1119	B3.0			
	1152	1239	1304	B6.0			
	1628	1633	1636	B2.1			
	1817	1820	1822	B1.0			
	1906	2029	2141	C1.4			
	2309	2315	2326	B5.5			
05 July	0143	0157	0207	B7.0			
	0324	0328	0331	B3.5			898
	0518	0522	0525	B3.1			
06 July	0842	0858	0913	C1.2			898
	0001	0040	0111	B5.2			
	0611	0614	0616	B1.5			
	0819	0823	0918	M2.5	2f	S11W32	898
	1536	1540	1545	B3.9			898
	2337	2340	2342	B1.2			



Flare List - Continued

Date	Time			Optical	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End	X-ray Class.			
07 July	0013	0019	0021	C2.6			898
	0220	0223	0225	B1.5			
	0349	0352	0355	B1.3			
	0450	0457	0459	B2.2			
	0756	0759	0802	B1.4			
	0903	0906	0908	B3.3			898
	1159	1204	1206	C5.2			898
	1226	1230	1232	B4.9			898
	1427	1430	1432	B1.5			
	1458	1501	1503	B1.4			
	1553	1608	1610	B5.2			898
	1637	1640	1643	B2.2			898
	1809	1814	1817	B1.4			898
	2142	2147	2149	C2.3			898
	2156	2206	2210	B1.9			899
2352	0000	0014	B2.1				
08 July	0018	0022	0024	B2.3			898
	0050	0055	0058	B1.2			
08 July	0137	0141	0146	B1.5			
	0149	0154	0200	B2.6			898
	0225	0228	0230	B1.8			
	0257	0300	0302	B1.3			
	0407	0414	0417	B1.6			898
	0636	0639	0641	B1.0			
	1404	1432	1458	B1.7			898
	1555	1607	1610	B2.8			898
09 July	1639	1642	1645	B2.6			898
	1108	1112	1114	B5.0			898
	1523	1527	1529	B2.4			898



Region Summary

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

Region 897

25 Jun	N06E75	358	0060	07	Bxo	003	B								
26 Jun	N06E57	003	0080	06	Dao	004	B								
27 Jun	N06E44	003	0070	08	Cai	023	Bg								
28 Jun	N05E29	005	0110	09	Drc	017	Bg								
29 Jun	N06E15	006	0070	11	Ero	012	Bg								
30 Jun	N07E02	006	0040	10	Dro	010	B								
01 Jul	N06W12	006	0030	09	Bxo	006	B								
02 Jul	N06W23	004	0020	01	Bxo	001	A								
03 Jul	N07W37	004	0020	05	Cso	004	B								
04 Jul	N06W49	003	0010	03	Bxo	002	B								
05 Jul	N06W62	003													
06 Jul	N06W75	003													
07 Jul	N06W88	003													
											0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 006

Region 898

28 Jun	S06E66	328	0150	03	Hsx	001	A								
29 Jun	S05E54	327	0260	05	Dso	003	B								
30 Jun	S06E40	328	0350	06	Dso	008	B								
01 Jul	S06E26	328	0210	06	Cho	010	B								
02 Jul	S06E14	327	0290	05	Cho	013	B								
03 Jul	S07W01	328	0360	06	Dki	014	B			1					
04 Jul	S07W14	328	0360	06	Dki	018	B								
05 Jul	S08W28	329	0430	06	Cki	006	B			1					
06 Jul	S08W41	328	0420	06	Cki	008	Bgd			1				1	
07 Jul	S06W55	329	0400	05	Dkc	008	Bgd			3					
08 Jul	S06W69	330	0360	05	Dkc	009	Bgd								
09 Jul	S06W83	331	0260	07	Hkx	007	A								
											5	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 328



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			Optical			
		Lon							C	M	X	S	1	2	3

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											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 233

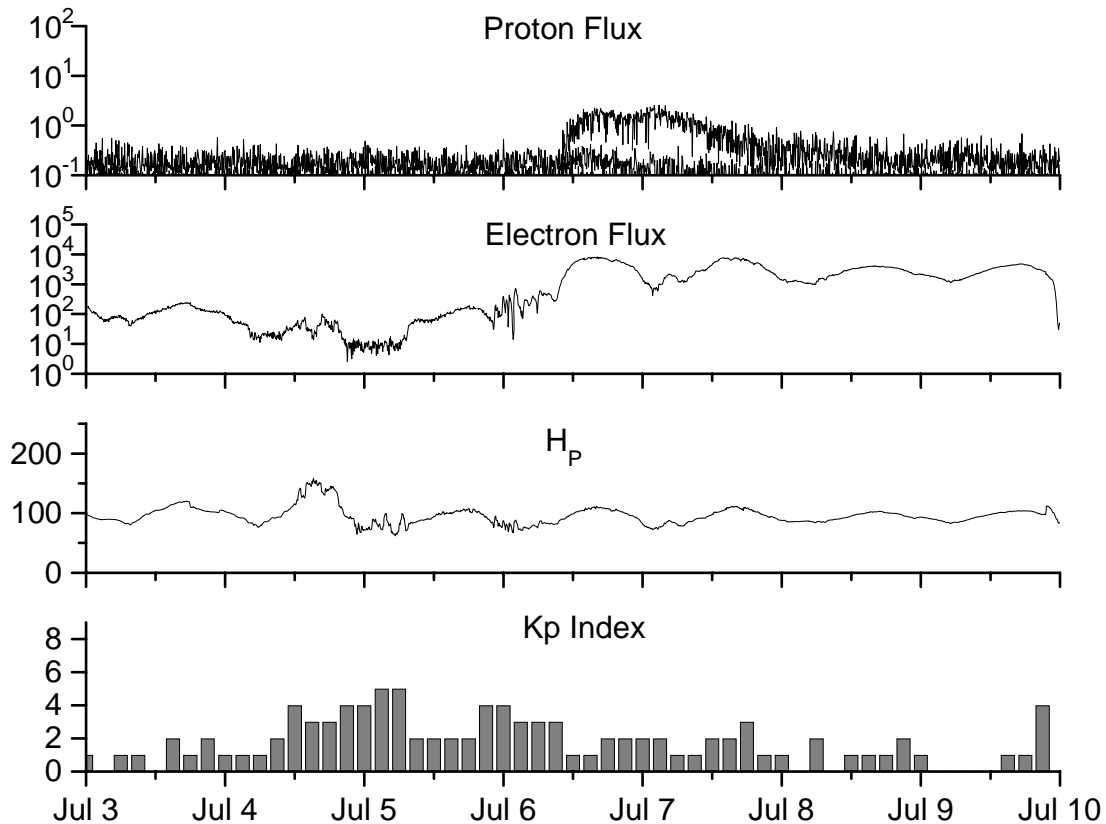


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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 03 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.

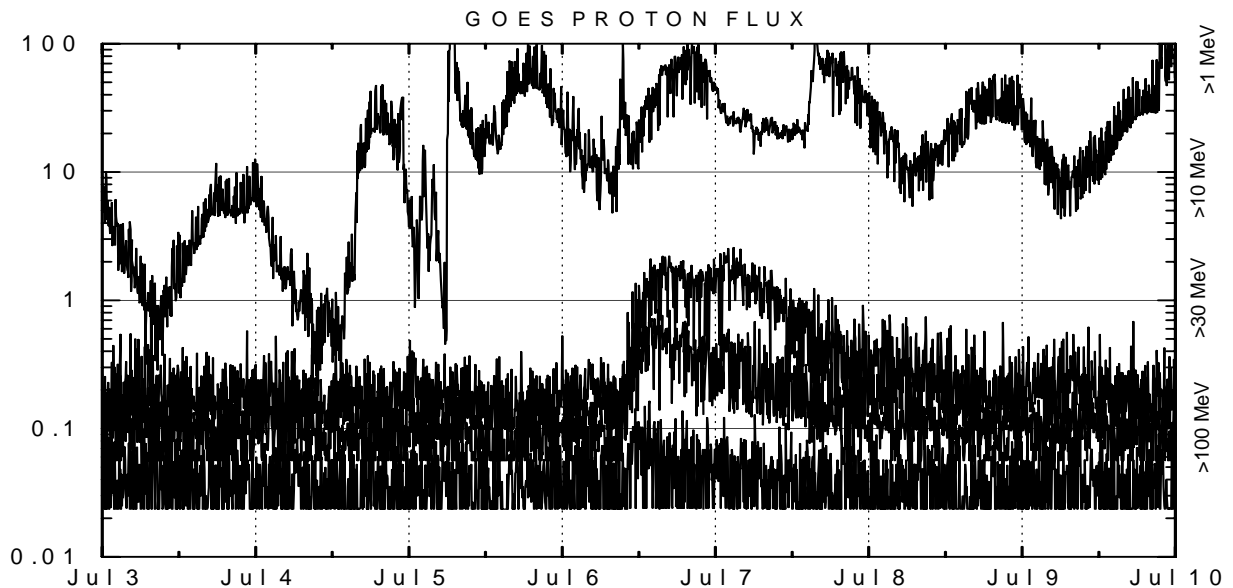
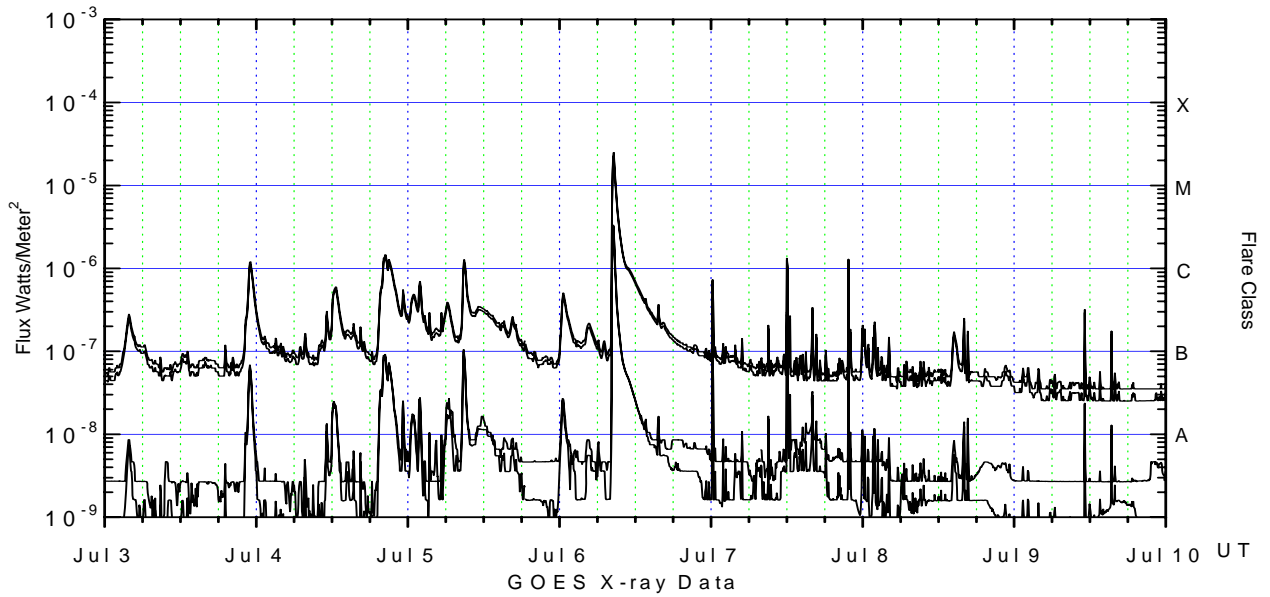
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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 (W75) and GOES 10 (W133) 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.

