

**Space Weather Highlights**  
**18 April - 24 April 2011**

**SWPC PRF 1860**  
**26 April 2011**

Solar activity ranged from low to moderate levels. Region 1195 (S16, L=129, class/area Ekc/340 on 22 April) produced the majority of the flares observed during the period. Solar activity from 17-21 April was limited to C-class or lower x-ray flares. Activity increased to moderate for a day on 22 April as Region 1195 produced two M-class flares, an M1.8/SN at 0457Z and an M1.2/1N at 1553Z. Neither significant radio emissions nor coronal mass ejections (CMEs) were associated with these flares. Activity returned to low levels, with only C-class or lower flares observed for the remainder of the week.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit began the period at moderate levels and fluctuated between normal and moderate levels each day during the week.

Geomagnetic field activity ranged from quiet to minor storm levels during the week. The week began with a 24 nT sudden impulse at 18/0634Z followed by unsettled to occasionally active levels at mid latitudes, and minor storm periods at high latitudes. The disturbance was attributed to the passage of a CME. Activity decreased to quiet to unsettled levels on 19 April. Minor storm levels returned on 20 April, briefly reaching major storm levels at high latitudes with the onset of a coronal hole high speed stream (CH HSS). Solar wind speed at the ACE spacecraft peaked over 540 km/s mid-day on the 20th, then gradually decreased through 23 April. Quiet to unsettled levels prevailed on 21-24 April as the CH HSS effects subsided.

**Space Weather Outlook**  
**27 April - 23 May 2011**

Solar activity is expected to be at low levels through the period with a chance for isolated M-class flares until Region 1195 rotates off the visible disk on 01 May.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during most of the period. However, an increase to moderate to high flux levels is possible from 02 - 05 May, 11 - 13 May and 19 - 22 May in response to coronal hole high speed streams.

Geomagnetic field activity is expected to be unsettled to active on 30 April - 02 May, 08 - 10 May, and 18 - 19 May in response to geoeffective recurrent coronal hole high speed streams. The remainder of the period is expected to be quiet.



### *Daily Solar Data*

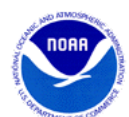
Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
18 April	111	67	680	B3.8	4	0	0	6	0	0	0	0
19 April	111	76	680	B4.2	1	0	0	7	0	0	0	0
20 April	117	90	555	B4.1	3	0	0	6	0	0	0	0
21 April	113	100	610	B4.5	4	0	0	11	2	0	0	0
22 April	115	103	600	B8.4	15	2	0	25	3	0	0	0
23 April	119	80	590	B3.7	6	0	0	8	0	0	0	0
24 April	117	78	520	B3.8	1	0	0	2	0	0	0	1

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)			Electron Fluence (electrons/cm <sup>2</sup> -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	18 April	3.3e+05	1.3e+04	3.1e+03		9.6e+06
19 April	6.8e+04	1.3e+04	3.2e+03		1.9e+06	
20 April	1.6e+05	1.3e+04	3.1e+03		4.4e+06	
21 April	1.6e+05	1.3e+04	3.0e+03		5.5e+06	
22 April	7.7e+04	1.2e+04	3.1e+03		4.7e+06	
23 April	1.0e+05	1.3e+04	3.2e+03		4.8e+06	
24 April	1.2e+05	1.3e+04	3.2e+03		5.0e+06	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	18 April	8	0-1-3-3-3-2-1-1	15	0-0-2-5-5-3-0-1	10
19 April	4	0-2-1-1-1-1-0-3	3	1-1-1-2-1-1-0-1	6	1-2-1-1-2-2-1-3
20 April	11	3-4-3-2-3-1-1-1	27	3-5-6-5-3-1-1-0	16	3-5-4-3-3-3-2-1
21 April	4	1-2-1-0-0-1-2-2	2	1-1-1-1-0-0-1-1	5	1-2-1-1-1-2-1-2
22 April	3	2-1-0-1-1-1-1-0	10	5-2-1-3-1-1-0-0	6	3-2-0-2-2-2-2-1
23 April	4	2-0-0-3-1-1-1-0	5	2-0-1-4-1-1-0-0	6	2-1-0-3-1-2-1-1
24 April	6	1-1-0-1-2-2-2-3	6	1-0-0-1-1-4-2-2	6	1-1-0-1-1-2-1-3

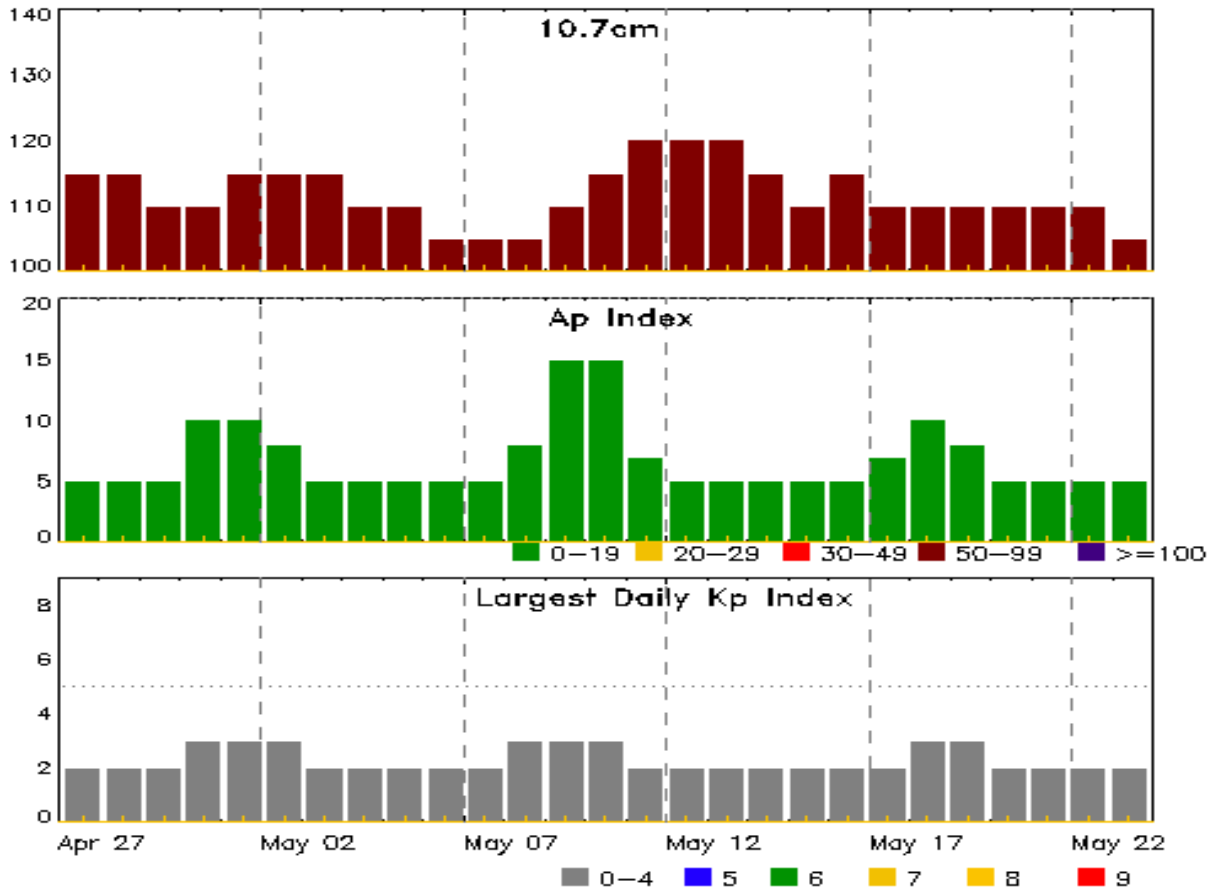


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
18 Apr 0705	SUMMARY: Geomagnetic Sudden Impulse	18/0654
18 Apr 0739	WARNING: Geomagnetic K = 4	18/0740 - 1600
20 Apr 0430	WARNING: Geomagnetic K = 4	20/0430 - 1600
20 Apr 0430	ALERT: Geomagnetic K = 4	20/0427
23 Apr 0412	SUMMARY: Geomagnetic Sudden Impulse	23/0203
23 Apr 0457	CANCELLATION: Geomagnetic Sudden Impulse	
23 Apr 1057	WARNING: Geomagnetic K = 4	23/1100 - 1200
23 Apr 1103	ALERT: Geomagnetic K = 4	23/1100



## Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
27 Apr	115	5	2	11 May	120	7	2
28	115	5	2	12	120	5	2
29	110	5	2	13	120	5	2
30	110	10	3	14	115	5	2
01 May	115	10	3	15	110	5	2
02	115	8	3	16	115	5	2
03	115	5	2	17	110	7	2
04	110	5	2	18	110	10	3
05	110	5	2	19	110	8	3
06	105	5	2	20	110	5	2
07	105	5	2	21	110	5	2
08	105	8	3	22	110	5	2
09	110	15	3	23	105	5	2
10	115	15	3				



### *Energetic Events*

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux 245	Radio Flux 2695	Intensity II	Intensity IV
22 Apr	0435	0457	0514	M1.8	0.029	SN	S18E43	1195				
22 Apr	1547	1553	1611	M1.2	0.011	1N	S18E35	1195				

### *Flare List*

Date	Time			X-ray Class	Optical			Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #	
18 Apr	0235	0243	0247	C1.8				1193
18 Apr	B0250	U0252	0305		SN	N27E03		1193
18 Apr	0332	0348	0416	C1.8				
18 Apr	1052	1056	1102	B6.6				
18 Apr	1556	1602	1606	B9.7	SF	N15E13		1193
18 Apr	1714	1716	1725		SF	N15E14		1193
18 Apr	1855	1902	1908	C1.5	SF	N16E12		1193
18 Apr	1917	1924	1931	C1.0				1195
18 Apr	2312	2315	2319	B7.6	SF	N13W66		1190
18 Apr	2342	2343	2350		SF	N16E07		1193
19 Apr	0234	0237	0240	B7.8				
19 Apr	0456	0458	0507		SF	S18E77		1195
19 Apr	0508	0512	0517	C1.0	SF	S17E76		1195
19 Apr	0622	0627	0638		SF	S17E75		
19 Apr	0909	0910	0912		SF	S18E71		1195
19 Apr	1102	1102	1104		SF	S18E80		1195
19 Apr	1116	1120	1124	B9.0	SF	N16E01		1193
19 Apr	1835	1840	1846		SF	S16E77		1195
20 Apr	0346	0431	0449	C1.0				1195
20 Apr	0924	0928	0932	B6.7	SF	N18W20		1193
20 Apr	0957	0958	1000		SF	S16E61		1195
20 Apr	1109	1111	1116		SF	S16E61		1195
20 Apr	1307	1311	1313	B8.5	SF	S21E62		1195
20 Apr	1537	1541	1551		SF	S25E81		
20 Apr	1738	1836	1906	C1.5				
20 Apr	1930	1939	1949	C4.0	SF	S21E58		1195
20 Apr	2302	2316	2321	B8.9				1195
21 Apr	0624	0639	0644	B8.3	SF	S19E51		1195
21 Apr	0831	0838	0850	C1.0	SF	S16E51		1195
21 Apr	0853	U0901	0914		SF	S19E49		1195



## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
21 Apr	0928	0945	A1336	C8.5	1N	S15E50		1195
21 Apr	1332	1334	1337		SF	S26E71		1196
21 Apr	1349	1350	1354		SF	N17W27		1193
21 Apr	1437	1451	1500	C4.9	SF	S16E48		1195
21 Apr	1711	1717	1720		SF	S16E48		1195
21 Apr	1728	1734	1742		SF	S16E48		1195
21 Apr	1801	1802	1804		SF	S16E48		1195
21 Apr	1937	1956	2011		SF	S16E46		1195
21 Apr	2012	0018	A0041		1F	S03E05		1195
21 Apr	2151	2207	2239	C4.5	SF	S17E42		1195
22 Apr	0013	0020	0026	C1.5	SF	S17E43		1195
22 Apr	0126	0133	0150		SF	S18E44		1195
22 Apr	0156	0158	0208		SF	S16E41		1195
22 Apr	0435	0457	0514	M1.8	SN	S18E43		1195
22 Apr	0455	0456	0504		SF	N16W37		1193
22 Apr	0524	0526	0535		SF	S19E39		1195
22 Apr	0617	U0632	0648		SF	S19E38		1195
22 Apr	0617	0618	0626		SF	N14W37		1193
22 Apr	0625	0627	0629		SF	S17E40		1195
22 Apr	0708	0732	0735	C1.8	SF	S17E40		1195
22 Apr	0756	0756	0813	C2.5	SF	S18E41		1195
22 Apr	0822	0826	0828		SF	S19E37		1195
22 Apr	0829	0829	0838		SF	S19E37		1195
22 Apr	0940	0946	0959	C2.6	SF	S16E37		1195
22 Apr	1042	1047	1049		SF	S16E37		1195
22 Apr	1107	1125	1137	C7.7	1N	S16E36		1195
22 Apr	1204	1204	1211		SF	S16E35		1195
22 Apr	1229	1236	1239	C3.0	SF	S16E35		1195
22 Apr	1317	1706	2006		1F	S16E34		1195
22 Apr	1351	1356	1435	C1.3	SF	S17E34		1195
22 Apr	1442	1447	1449	C1.3	SF	S17E33		1195
22 Apr	1455	1459	1502	C1.4				1195
22 Apr	1521	1523	1532		SF	S19E33		1195
22 Apr	1547	1553	1611	M1.2	1N	S18E35		1195
22 Apr	1656	1707	1714	C5.5				1195
22 Apr	1741	1754	1807	C4.2				1195
22 Apr	1930	1935	1940	C3.6				1195
22 Apr	2007	2057	2111	B9.5	SF	S16E32		1195



## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
22 Apr	2147	2159	2209	C2.7	SF	S16E31		1195
22 Apr	2239	2246	2254	C2.4	SF	S16E30		1195
22 Apr	2255	2300	2305	C2.9				1195
22 Apr	2317	2317	2322		SF	S24E53		1196
22 Apr	2355	0004	0012		SF	S17E30		1195
23 Apr	0022	0024	0033		SF	S17E29		1195
23 Apr	0035	0037	0041		SF	S17E29		1195
23 Apr	0152	0200	0207	C1.3	SF	S18E28		1195
23 Apr	0243	0247	0250	B8.6				1195
23 Apr	0309	0313	0324	B6.1				1195
23 Apr	0339	0353	0400	C1.9				1195
23 Apr	0414	0419	0421	C1.1	SF	S17E25		1195
23 Apr	0451	0459	0504	C1.2				1195
23 Apr	0730	0734	0738	C2.4	SF	S16E24		1195
23 Apr	1028	1032	1036	B5.5	SF	S16E25		1195
23 Apr	1243	1252	1307	B8.1	SF	N14W55		1193
23 Apr	1409	1422	1432	C1.0	SF	S16E21		1195
23 Apr	1604	1607	1611	B6.2				1193
23 Apr	1858	1903	1908	B6.7				1193
24 Apr	1233	1233	1237		SF	S28E33		1196
24 Apr	1913	1926	1937	C2.4				
24 Apr	2239	2240	A2255		SF	S25W75		1198



## Region Summary

Date	Location		Sunspot Characteristics				Flares													
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical								
									C	M	X	S	1	2	3	4				
<b>Region 1187</b>																				
07 Apr	S19E62	354	10			Axx	1	A												
08 Apr	S18E50	353	30	4		Cso	4	B												
09 Apr	S18E38	352	40	4		Cso	4	B												
10 Apr	S18E23	354	20	2		Bxo	3	B												
11 Apr	S19E11	353	20	4		Bxo	5	B												
12 Apr	S20W01	352	20	6		Bxo	5	B												
13 Apr	S22W15	352	10	3		Bxo	2	B												
14 Apr	S22W29	354	plage																	
15 Apr	S22W43	355	plage																	
16 Apr	S22W57	356	plage																	
17 Apr	S22W71	356	plage																	
18 Apr	S22W85	357	plage																	
									0	0	0	0	0	0	0	0	0	0	0	

Crossed West Limb.  
Absolute heliographic longitude: 352

<b>Region 1190</b>																				
11 Apr	N12E25	339	40	3		Cri	6	B	3			5								
12 Apr	N15E12	339	110	9		Dai	20	BG	2			6	1							
13 Apr	N12W00	338	150	11		Eac	34	BG	1			3								
14 Apr	N13W14	338	240	12		Eki	37	B	7			13								
15 Apr	N13W26	338	430	11		Ehc	32	B	7	1		16	1							
16 Apr	N14W40	338	440	13		Eki	24	BG	4			8								
17 Apr	N14W53	337	310	8		Dko	11	BG				1								
18 Apr	N13W68	339	260	5		Dko	8	B				1								
19 Apr	N12W82	339	260	5		Dko	4	B												
20 Apr	N14W94	339	60	2		Cao	2	B												
									24	1	0	53	2	0	0	0	0			

Crossed West Limb.  
Absolute heliographic longitude: 338





### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 1191</b>																							
12 Apr	N09E71	280	60	2	Hsx	1	A	1				3											
13 Apr	N08E56	281	140	2	Hsx	1	A	2				1											
14 Apr	N08E45	278	100	9	Cao	3	B																
15 Apr	N08E31	280	100	7	Hax	2	A																
16 Apr	N08E15	283	90	2	Hax	1	A																
17 Apr	N08E07	278	70	9	Cso	5	B																
18 Apr	N08W07	279	70	9	Cso	7	B																
19 Apr	N08W24	280	50	7	Cso	5	B																
20 Apr	N07W39	284	15	2	Hrx	1	A																
21 Apr	N08W52	283	10	1	Hrx	1	A																
22 Apr	N08W66	284	10	2	Axx	3	A																
23 Apr	N08W80	286	plage																				
								3	0	0		4	0	0	0	0	0						

Crossed West Limb.  
Absolute heliographic longitude: 278

<b>Region 1192</b>																							
12 Apr	N11W01	352	20	3	Bxo	2	B																
13 Apr	N10W15	352	20	4	Bxo	3	B																
14 Apr	N10W28	352	10	3	Bxo	2	B																
15 Apr	N10W44	355	10		Axx	1	A																
16 Apr	N10W59	357	10	1	Axx	1	A																
17 Apr	N10W73	358	plage																				
18 Apr	N10W87	359	plage																				
								0	0	0		0	0	0	0	0	0						

Crossed West Limb.  
Absolute heliographic longitude: 352



**Region Summary - continued**

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
								C	M	X	S	1	2	3	4		
<b>Region 1193</b>																	
13 Apr	N17E71	266	220	9	Dao	6	B	1			5						
14 Apr	N16E58	266	260	10	Dao	9	B	3			14						
15 Apr	N17E44	267	340	12	Eko	14	B	1			4						
16 Apr	N16E32	265	360	13	Eki	19	BG	1			2						
17 Apr	N16E19	266	430	12	Eai	21	BG										
18 Apr	N17E05	266	350	13	Esc	22	B	2			5						
19 Apr	N17W08	265	350	14	Eki	26	BG				1						
20 Apr	N16W20	265	300	13	Ehi	26	B				1						
21 Apr	N16W32	264	300	13	Ehi	20	B				1						
22 Apr	N17W45	264	190	13	Esi	16	B				2						
23 Apr	N17W57	262	270	9	Eki	18	BG				1						
24 Apr	N18W73	265	200	7	Cao	18	B										
								8	0	0	36	0	0	0	0		

Still on Disk.  
Absolute heliographic longitude: 266

<b>Region 1195</b>																	
18 Apr	S16E82	189	plage					1									
19 Apr	S16E68	189	20	1	Dao	1	B	1			5						
20 Apr	S17E55	189	100	6	Dai	7	B	2			4						
21 Apr	S17E43	189	240	9	Dai	10	B	4			9	2					
22 Apr	S18E28	190	340	11	Ekc	25	BG	15	2		22	3					
23 Apr	S16E14	191	310	8	Ekc	22	BG	6			7						
24 Apr	S15W00	192	300	11	Dho	23	B										
								29	2	0	47	5	0	0	0	0	

Still on Disk.  
Absolute heliographic longitude: 192

<b>Region 1196</b>																	
20 Apr	S27E69	175	80	10	Dao	4	B										
21 Apr	S26E63	169	40	8	Cso	4	B				1						
22 Apr	S25E52	167	50	10	Cro	6	B				1						
23 Apr	S26E40	166	10	7	Bxo	10	B										
24 Apr	S25E21	171	20	4	Cso	7	B				1						
								0	0	0	3	0	0	0	0	0	

Still on Disk.  
Absolute heliographic longitude: 171



### *Region Summary - continued*

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

#### *Region 1197*

21 Apr	S16E57	175	10		Axx	1	A										
22 Apr	S16E43	176	plage														
23 Apr	S16E29	177	plage														
24 Apr	S16E15	178	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 178

#### *Region 1198*

21 Apr	S26W38	270	10	3	Bxo	4	A										
22 Apr	S25W53	272	10	3	Bxo	3	B										
23 Apr	S25W67	273	plage														
24 Apr	S25W81	274	plage									1					
									0	0	0	1	0	0	0	0	0

Still on Disk.

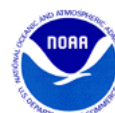
Absolute heliographic longitude: 270

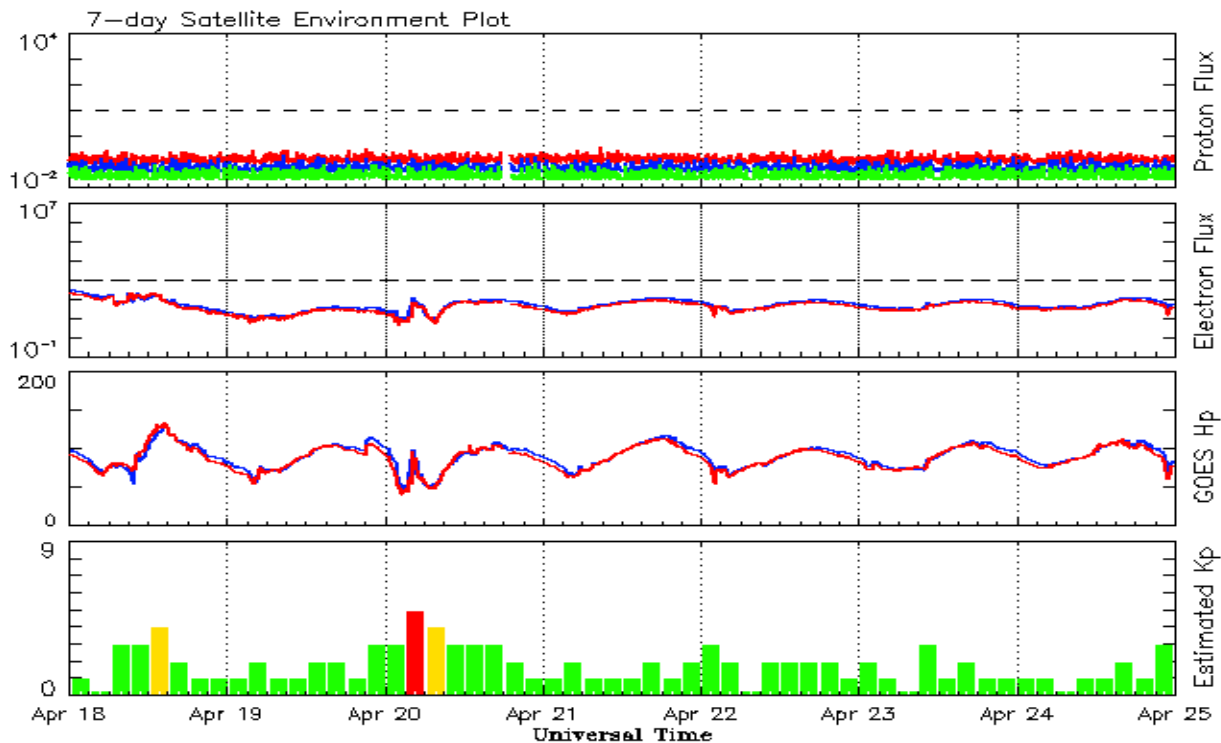


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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
<b>2009</b>									
April	1.2	0.8	1.00	3.7	2.2	69.7	69.3	4	4.3
May	3.9	2.9	0.74	3.8	2.3	70.5	69.7	4	4.1
June	6.6	2.9	0.39	4.4	2.7	68.6	70.2	4	4.0
July	5.0	3.2	0.70	5.8	3.6	68.2	71.0	4	3.9
August	0.3	0.0	0.00	7.7	4.8	67.4	72.1	5	3.8
September	6.6	4.3	0.64	9.9	6.2	70.5	73.3	4	3.8
October	7.0	4.8	0.66	11.3	7.1	72.3	74.1	3	4.1
November	7.7	4.1	0.55	12.4	7.6	73.6	74.5	3	4.5
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
<b>2010</b>									
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
April	11.2	8.0	0.71	21.4	14.0	75.9	78.3	10	5.5
May	19.9	8.7	0.44	23.8	15.5	73.8	79.0	8	5.7
June	17.9	13.6	0.75	25.2	16.4	72.6	79.7	7	5.8
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67			81.6		6	
November	36.1	21.5	0.60			82.5		5	
December	22.0	14.4	0.66			84.3		4	
<b>2011</b>									
January	32.1	19.0	0.59			83.7		6	
February	53.2	29.4	0.55			94.5		6	
March	81.0	56.2	0.69			115.3		7	

**Note:** Values are final except for the most recent 6 months which are considered preliminary. Cycle 23 started in May 1996 with an RI=8.0. Cycle 23 maximum was April 2000 with an RI=120.8. Solar minimum for Cycle 23 was December 2008.





*Weekly Geosynchronous Satellite Environment Summary  
Week Beginning 18 April 2011*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

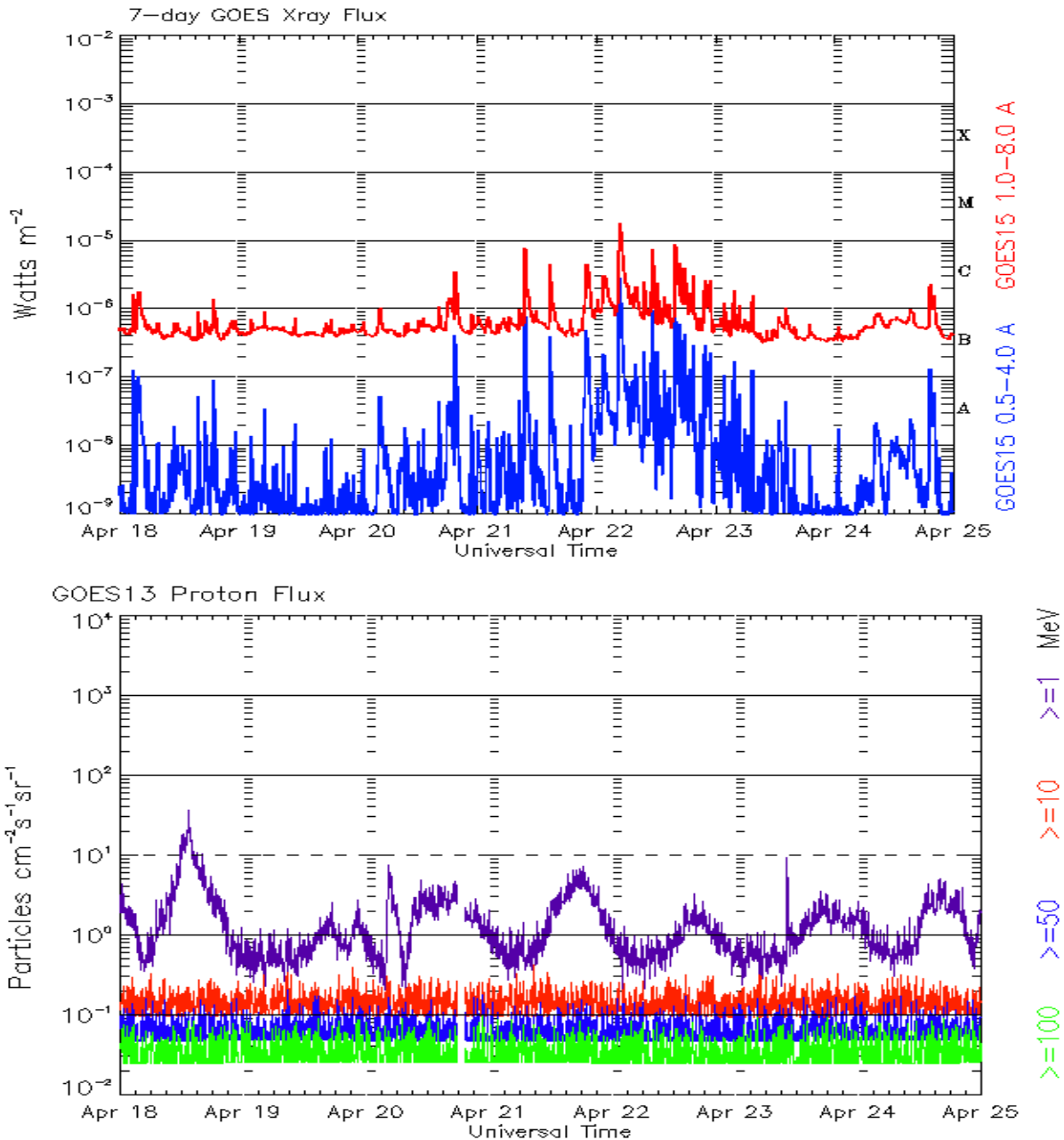
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

Kp 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 Kp values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWPC 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 Kp 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  
Week Beginning 18 April 2011*

The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm<sup>2</sup>-sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

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**Notice:** The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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