

**Space Weather Highlights**  
**16 April - 22 April 2012**

**SWPC PRF 1912**  
**23 April 2012**

Solar activity was at low to moderate levels. Moderate levels were reached on 16 April with an M1.7 flare from Region 1461 (N13, L=070, class/area Hsx/090 on 18 April) that occurred at 1745 UTC. Low levels were observed from 17-22 April. On 18 April, Region 1463 (S26, L=160, class/area Cso/100 on 20 April) produced a C8.9/Sf flare at 1239 UTC with an associated coronal mass ejection (CME) and a C5.3 flare with an associated Type II (est. 621 km/s) and Type IV radio sweeps. On 19 April, a C7.0 flare occurred at 1126 UTC with an associated Type II and Type IV radio sweeps and a non-geoeffective CME off the west limb. This event was likely from old Region 1455 (N06, L=206, class/area Fsi/200 on 16 April). Region 1462 (S25, L=141, class/area Dho/410 on 20 April) produced a C1.8 flare at 1515 UTC with an associated CME on 19 April as well. Only low level C-class flares were observed for the rest of the summary period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 16 and 17 April. Moderate levels were observed on 18,19, and 21 April while normal levels were observed on 20 and 22 April.

Geomagnetic field activity was mostly quiet, with brief intermittent periods of unsettled and active levels on several days due to nighttime effects and southward Bz. A solar sector boundary crossing was observed on 20 April, and a weak glancing blow CME occurred on 21 April, again producing unsettled to active periods briefly.

**Space Weather Outlook**  
**23 April - 19 May 2012**

Solar activity is expected to be at very low to low levels with the slight chance for M-class flares during the period.

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 from the beginning of the period on 23 April, and persist through 10 May. Flux values are forecast to increase to high levels from 11-14 May due to a coronal hole (CH) high speed stream. From 15 May through the end of the period on the 19th, values are expected to return to moderate or lower levels.

Geomagnetic field activity is expected to begin the period at unsettled and active levels, as the result of a few weak CMEs along with effects from a negative polarity CH. Conditions should settle to mostly quiet levels from 26 April through 08 May, before increasing to active levels with the chance for a minor storm on 09-11 May. Mostly active conditions are expected 14-15 May. The increases in activity are expected from a pair of negative polarity coronal holes. Mostly quiet levels are expected in between the two features on 12 and 13 May, and again from 16-19 May to close out the period.



### *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
16 April	108	86	500	B2.7	1	1	0	2	0	0	0	0
17 April	114	78	300	B2.9	1	0	0	2	0	0	0	0
18 April	122	96	590	B4.0	7	0	0	7	1	0	0	0
19 April	138	122	520	B5.2	5	0	0	4	0	0	0	0
20 April	142	162	1590	B3.8	7	0	0	12	1	0	0	0
21 April	149	147	1630	B5.4	3	0	0	7	1	0	0	0
22 April	148	118	1490	B6.4	8	0	0	10	0	0	0	0

### *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
	16 April	6.8e+05	1.2e+04	3.1e+03		3.6e+08
17 April	2.9e+05	1.3e+04	3.1e+03		1.1e+08	
18 April	1.3e+05	1.4e+04	3.1e+03		7.5e+06	
19 April	1.4e+05	1.2e+04	3.2e+03		1.1e+07	
20 April	3.2e+05	1.4e+04	3.1e+03		2.6e+06	
21 April	4.1e+05	1.3e+04	2.8e+03		6.4e+06	
22 April	3.7e+05	1.2e+04	2.8e+03		8.0e+05	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	16 April	5	2-2-0-0-2-1-2-2	3	2-1-0-1-2-1-1-0	5
17 April	8	2-0-3-2-2-2-3-2	12	0-0-3-4-3-2-4-2	8	1-0-2-2-2-2-3-2
18 April	7	3-2-2-2-2-1-1-1	10	3-3-3-2-3-2-1-1	8	3-3-2-1-2-1-1-2
19 April	5	1-1-1-1-2-1-2-2	3	1-1-2-1-0-0-1-2	5	1-1-1-1-1-1-2-2
20 April	7	1-3-2-2-2-2-2-0	10	1-4-3-4-2-1-0-0	7	1-3-3-2-2-2-1-1
21 April	6	2-0-0-2-2-1-3-2	3	1-0-0-0-0-1-2-2	6	2-1-1-1-1-1-3-3
22 April	7	3-2-2-2-2-1-1-1	14	3-3-3-4-3-3-2-1	7	3-2-2-2-2-1-1-1

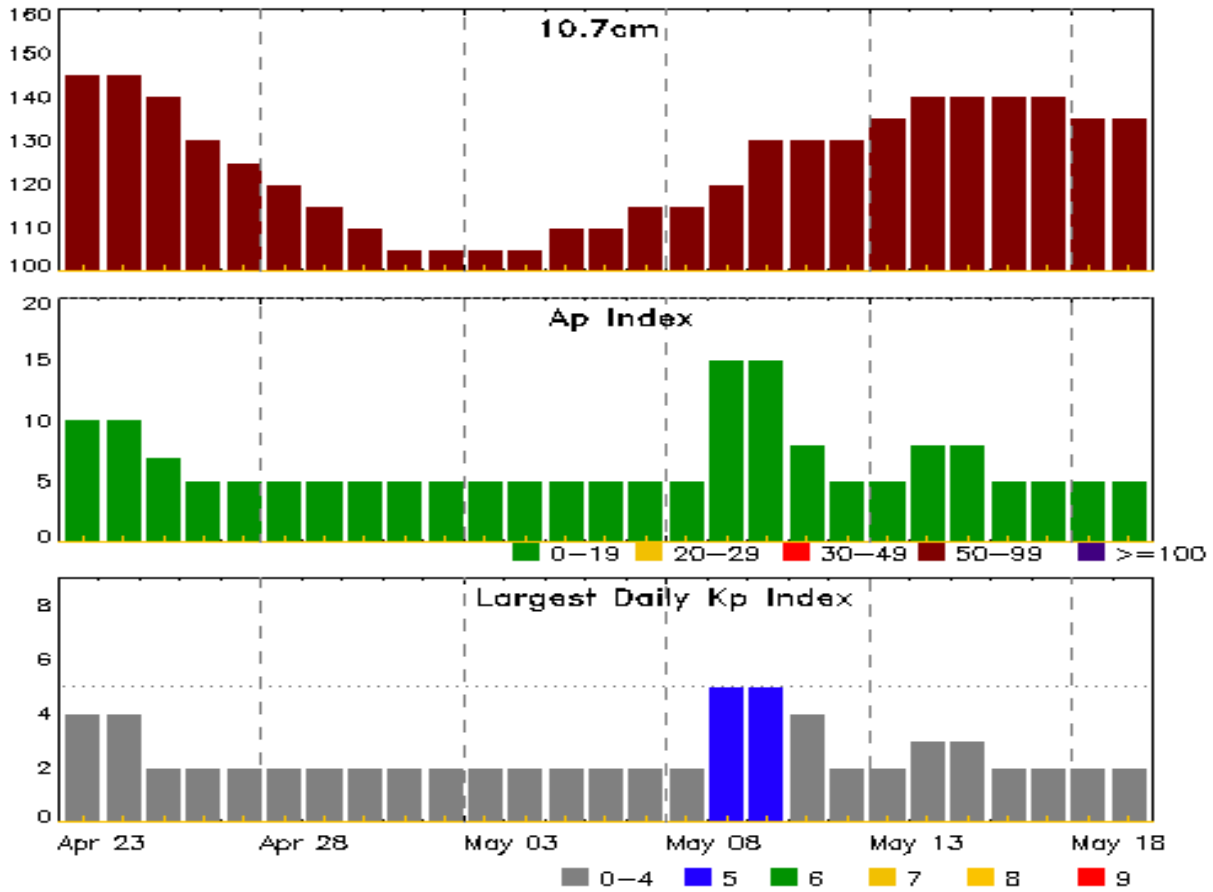


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
16 Apr 0548	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	14/0300
17 Apr 0501	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	14/0300
18 Apr 1745	ALERT: Type II Radio Emission	18/1716
18 Apr 1817	ALERT: Type IV Radio Emission	18/1732
19 Apr 1155	ALERT: Type IV Radio Emission	19/1117
19 Apr 1155	ALERT: Type II Radio Emission	19/1110



## 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
23 Apr	145	10	4	07 May	115	5	2
24	145	10	4	08	115	5	2
25	140	7	2	09	120	15	5
26	130	5	2	10	130	15	5
27	125	5	2	11	130	8	4
28	120	5	2	12	130	5	2
29	115	5	2	13	135	5	2
30	110	5	2	14	140	8	3
01 May	105	5	2	15	140	8	3
02	105	5	2	16	140	5	2
03	105	5	2	17	140	5	2
04	105	5	2	18	135	5	2
05	110	5	2	19	135	5	2
06	110	5	2				



### *Energetic Events*

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
16 Apr	1724	1745	1800	M1.7	0.025			1461				

### *Flare List*

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
16 Apr	0024	0046	0108	C1.8			
16 Apr	1435	1441	1445	B4.9			
16 Apr	1521	1522	1526		SF	S17E62	1459
16 Apr	1724	1745	1800	M1.7			1461
16 Apr	2034	2034	2041		SF	N08W61	1455
17 Apr	0306	0313	0323	B5.3			
17 Apr	0408	0409	0413		SF	N15E37	
17 Apr	0606	0809	0852	C1.1			1461
17 Apr	1115	1129	1150	B7.6			1455
17 Apr	1619	1623	1628		SF	S19E48	1459
17 Apr	2025	2030	2032	B7.0			1459
17 Apr	2207	2225	2238	B9.7			1455
18 Apr	0259	0307	0310	C3.1	SF	S27W24	1463
18 Apr	0526	0530	0533	C1.1			
18 Apr	0640	0643	0645	B9.0			
18 Apr	0752	0801	0836	B7.7			1463
18 Apr	0938	0943	0951	B8.9			1462
18 Apr	1128	1144	1154	C1.5	SF	S27W28	1463
18 Apr	1232	1239	1250	C8.9	SF	S27W27	1463
18 Apr	1416	1421	1425	B9.7	SF	S26W31	1463
18 Apr	1451	1513	1518	C5.9	1N	S26W31	1463
18 Apr	1458	1516	1531		SF	S18E36	1459
18 Apr	1530	U1541	A1558		SF	S27W30	1463
18 Apr	1641	1648	1659		SF	S18E36	1459
18 Apr	1654	1706	1718	C5.3			1463
18 Apr	1812	1815	1820	C1.3			
18 Apr	2257	2301	2304	B9.6			
19 Apr	0000	0011	0018	C1.4	SF	N15E14	1460
19 Apr	0254	0301	0305	C2.9	SF	S29W35	1463
19 Apr	0322	0324	0329		SF	N15E12	1460



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
19 Apr	0501	0506	0516	C1.1			
19 Apr	1105	1126	1144	C7.0			
19 Apr	1349	1353	1417		SF	S22W28	1462
19 Apr	1442	1515	1526	C1.8			
20 Apr	0155	0202	0209	B9.0			1463
20 Apr	0315	0322	0328	C1.1			1462
20 Apr	B1155	U1155	A1202		SF	S27W38	1462
20 Apr	1349	1355	1356		SF	S19E46	
20 Apr	1358	1401	1404		SF	S18E45	
20 Apr	1412	1501	1708		1F	S19E44	1465
20 Apr	1449	1501	1532	C1.6			1465
20 Apr	1544	1551	1604		SF	S18E08	1459
20 Apr	1646	1647	1649	C3.3			1465
20 Apr	1717	1724	1731	C1.6	SF	S19E44	1465
20 Apr	1723	1741	1751		SF	S16E06	1459
20 Apr	1735	1743	1747		SF	S19E44	1465
20 Apr	1804	1815	1830		SF	S19E44	1465
20 Apr	1811	1814	1818		SF	S27E00	
20 Apr	1906	1906	1910		SF	S18E43	1465
20 Apr	2000	2007	2010	C1.0			1465
20 Apr	2044	2048	2051	C1.6	SF	S18E42	1465
20 Apr	2225	2235	2244	C1.4	SF	S18E42	1465
21 Apr	0127	0132	0134	C2.4	SF	N16W13	1460
21 Apr	1100	1114	1124	C1.0			1462
21 Apr	1211	1215	1222	B9.2			1465
21 Apr	1437	1437	1443		SF	N14E22	1461
21 Apr	1457	1457	1503		1F	S18E32	1465
21 Apr	B1526	1531	1541		SF	S18E32	1465
21 Apr	1941	1946	1947		SF	S20W57	1462
21 Apr	1943	1946	1953		SF	N16W25	1460
21 Apr	2007	2012	2027	C1.8	SF	S14W10	1459
21 Apr	2126	2127	2135		SF	S24W59	1462
22 Apr	0012	0018	0028		SF	S25W57	1462
22 Apr	0705	0708	0710	C1.3			1465
22 Apr	0911	0915	0922	B9.9			1461
22 Apr	0926	0928	0930	C1.0			1461
22 Apr	1359	1405	1413	C1.8			1463
22 Apr	1606	1606	1618		SF	N16W36	1460



## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
22 Apr	1632	1639	1648	C1.2	SF	S15W21		1459
22 Apr	1642	1642	1643		SF	S19E21		1465
22 Apr	1748	1754	1800	C1.7	SF	S19E20		1465
22 Apr	2013	2038	2047		SF	S20E18		1465
22 Apr	2052	2056	2100	C1.9	SF	S14W24		1459
22 Apr	2105	2110	2117	C1.7	SF	N16W38		1460
22 Apr	2107	2110	2116		SF	S14W24		1459
22 Apr	2140	2146	2225	C2.4	SF	S20E18		1465



### Region Summary

Date	Location		Sunspot Characteristics				Flares											
	Lat	CMD	Helio Lon	Area 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 1454</b>																		
10 Apr	S13E70		157	10	2	Cro	2	B										
11 Apr	S13E56		158	20	2	Cro	2	B										
12 Apr	S12E43		158	20	3	Cro	3	B										
13 Apr	S12E26		160	0	1	Axx	1	A										
14 Apr	S12E13		160	plage														
15 Apr	S12W00		160	0	1	Axx	1	A										
16 Apr	S12W14		162	plage														
17 Apr	S12W28		163	plage														
18 Apr	S12W42		163	plage														
19 Apr	S12W56		164	plage														
20 Apr	S12W70		165	plage														
21 Apr	S12W84		166	plage														
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 160

<b>Region 1455</b>																		
11 Apr	N07E08		204	30	3	Cao	6	B					2					
12 Apr	N06W05		205	70	6	Dai	13	B					1					
13 Apr	N07W19		206	130	7	Dai	15	BG										
14 Apr	N06W34		207	150	8	Dai	18	B										
15 Apr	N05W46		207	170	10	Dsi	19	B										
16 Apr	N06W59		206	200	17	Fsi	16	B					1					
17 Apr	N05W78		212	30	5	Cao	3	B										
									0	0	0	4	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 205

<b>Region 1456</b>																		
12 Apr	S20W19		219	10		Bxo	4	B										
13 Apr	S20W33		220	plage														
14 Apr	S20W47		221	plage														
15 Apr	S20W61		222	plage														
16 Apr	S20W75		223	plage														
17 Apr	S20W89		224	plage														
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 219





### *Region Summary - continued*

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

#### ***Region 1457***

13 Apr	N22E41	145	10	7	Bxo	4	B										
14 Apr	N21E28	145	30	4	Cro	4	B										
15 Apr	N21E14	147	10	2	Axx	2	A										
16 Apr	N20E03	144	10	2	Axx	1	A										
17 Apr	N20W11	146	plage														
18 Apr	N20W25	146	plage														
19 Apr	N20W39	147	plage														
20 Apr	N20W53	148	plage														
21 Apr	N20W67	149	plage														
22 Apr	N20W81	150	plage														
										0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 144

#### ***Region 1458***

14 Apr	N07E70	104	10	5	Bxo	2	B										
15 Apr	N06E55	106	10	8	Bxo	2	B										
16 Apr	N06E41	106	10	9	Bxo	2	B										
17 Apr	N06E26	109	plage														
18 Apr	N06E11	110	plage														
19 Apr	N06W04	112	plage														
20 Apr	N06W19	114	plage														
21 Apr	N06W34	116	plage														
22 Apr	N06W49	118	plage														
										0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 112



### *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 1459</b>																		
14 Apr	S15E79	95	30	1	Hrx	1	A											
15 Apr	S16E64	96	80	8	Dai	3	B						2					
16 Apr	S15E56	91	260	18	Fhi	12	B						1					
17 Apr	S15E40	94	150	9	Dao	11	B						1					
18 Apr	S16E28	93	260	11	Ekc	20	B						2					
19 Apr	S15E12	95	180	10	Dai	27	B											
20 Apr	S16E01	94	400	10	Dai	40	B						2					
21 Apr	S15W13	95	450	11	Eac	39	B	1					1					
22 Apr	S15W25	93	430	9	Dki	24	B	2					3					
								3	0	0		12	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 94

#### **Region 1460**

16 Apr	N15E40	107	20	2	Cro	5												
17 Apr	N16E26	108	50	4	Dso	6	B											
18 Apr	N16E12	108	170	7	Dsi	13	B											
19 Apr	N16W01	108	180	8	Dsi	14	B	1					2					
20 Apr	N15W15	109	450	9	Dkc	19	B											
21 Apr	N16W27	109	490	10	Dkc	21	B	1					2					
22 Apr	N16W40	108	300	10	Dko	13	B	1					2					
								3	0	0		6	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 108

#### **Region 1461**

16 Apr	N13E80	68	plage										1					
17 Apr	N13E66	68	40	1	Hsx	1	A	1										
18 Apr	N13E50	70	90	2	Hsx	1	A											
19 Apr	N14E37	70	30	2	Cso	2	B											
20 Apr	N12E24	70	10	1	Bxo	2	B											
21 Apr	N12E08	74	10	2	Bxo	2	B						1					
22 Apr	N12W06	75	plage					1										
								2	1	0		1	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 75



**Region Summary - continued**

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Helio Lon	Area 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 1462</b>																		
17 Apr	S23W07	9	30	4	Cao	7	B											
18 Apr	S24W18	139	30	6	Cao	7	B											
19 Apr	S24W31	138	50	8	Dso	8	B					1						
20 Apr	S25W46	141	410	9	Dho	14	B	1				1						
21 Apr	S24W59	141	400	9	Dho	9	B	1				2						
22 Apr	S24W72	140	400	9	Dho	4	B					1						
								2	0	0		5	0	0	0	0	0	

Still on Disk.  
 Absolute heliographic longitude: 9

<b>Region 1463</b>																		
18 Apr	S26W36	158	40	6	Dso	5	B	5				4	1					
19 Apr	S26W49	156	70	6	Cso	9	B	1				1						
20 Apr	S26W65	160	100	7	Cso	9	B											
21 Apr	S26W79	160	50	3	Cso	3	B											
								6	0	0		5	1	0	0	0	0	

Crossed West Limb.  
 Absolute heliographic longitude: 158

<b>Region 1464</b>																		
19 Apr	N23E01	107	10	3	Bxo	2	B											
20 Apr	N23W13	108	10	3	Bxo	2	B											
21 Apr	N23W27	109	plage															
22 Apr	N23W41	110	plage															
								0	0	0		0	0	0	0	0	0	0

Still on Disk.  
 Absolute heliographic longitude: 107

<b>Region 1465</b>																		
20 Apr	S17E39	54	210	5	Dao	6	B	6				6	1					
21 Apr	S17E27	55	230	6	Dso	13	B					1	1					
22 Apr	S18E14	53	300	6	Dai	16	B	3				4						
								9	0	0		11	2	0	0	0	0	

Still on Disk.  
 Absolute heliographic longitude: 53



**Region Summary - continued**

Date	Location		Sunspot Characteristics				Flares									
	Lat CMD	Lon	Heli 10 <sup>-6</sup>	Area hemi.	Extent (heli)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
									C	M	X	S	1	2	3	4
<b>Region 1466</b>																
22 Apr	N12E29	39	60	6	Cso	11	B	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 39

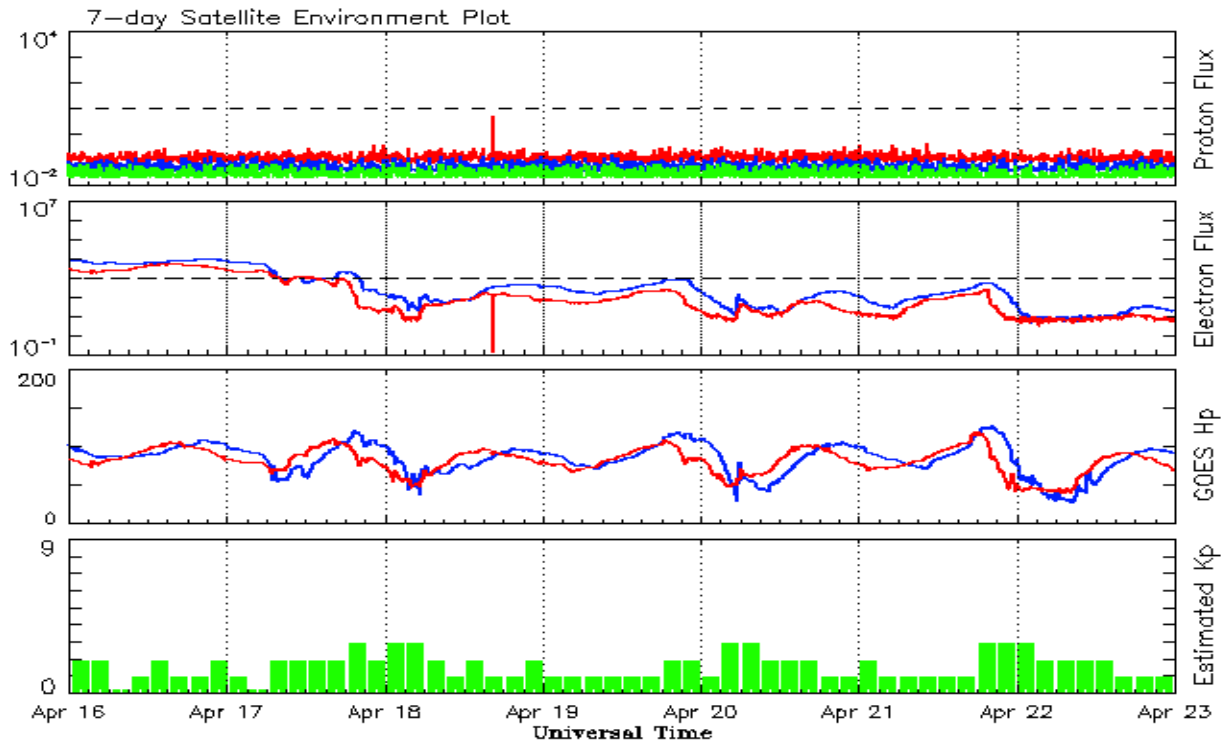


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2010</b>									
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	35.9	23.2	81.6	85.3	6	6.4
November	36.1	21.5	0.60	40.5	26.5	82.5	87.7	5	6.4
December	22.0	14.4	0.66	43.8	28.8	84.3	89.6	4	6.5
<b>2011</b>									
January	32.1	18.8	0.59	47.2	30.9	83.7	91.2	6	6.7
February	53.2	29.6	0.55	50.6	33.4	94.5	92.7	6	6.8
March	81.0	55.8	0.69	55.2	36.9	115.3	95.8	7	7.2
April	81.7	54.4	0.67	61.5	41.8	112.6	100.4	9	7.5
May	61.4	41.5	0.68	69.0	47.6	95.9	105.6	9	7.5
June	55.5	37.0	0.67	76.5	53.2	95.8	110.9	8	7.4
July	67.0	43.8	0.66	82.5	57.2	94.2	115.4	9	7.3
August	66.1	50.6	0.77	84.9	59.0	101.7	117.9	8	7.4
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75			137.2		7	
November	133.1	96.7	0.73			153.1		3	
December	106.3	73.0	0.69			141.2		3	
<b>2012</b>									
January	91.3	58.3	0.64			133.1		6	
February	50.1	33.1	0.66			106.7		7	
March	77.9	64.2	0.82			115.1		14	

**Note:** Values are final except for the most recent 6 months which are considered preliminary.  
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary  
Week Beginning 16 April 2012*

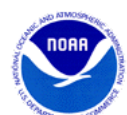
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

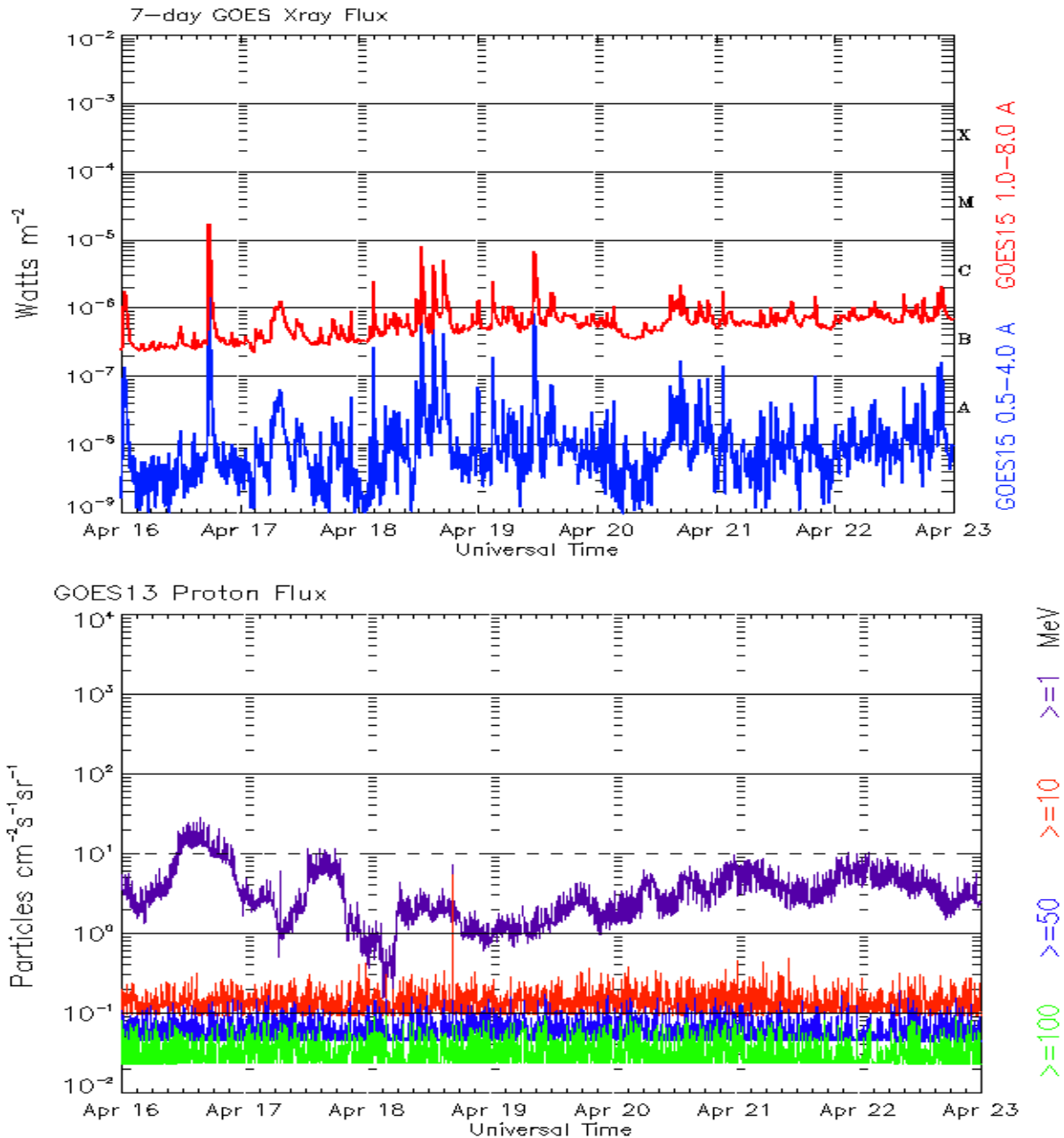
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

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 16 April 2012*

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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