

Solar activity was at low to moderate levels throughout the period. Region 2320 (S12, L=211, class/area=Dac/180 on 07 Apr) produced an M1/1b flare at 1443 UTC on 08 April and Region 2321 (N13, L=094, class/area=Ekc/610 on 12 Apr) produced a long-duration M1/Sf flare at 0950 UTC on 12 April, which were the largest events of the period. In addition to the R1 (Minor) radio blackouts, Regions 2320 and 2321 produced numerous low to mid-level C-class flares throughout the week and were the most productive active regions of the period. A coronal mass ejection (CME) associated with the M1/Sf flare from Region 2321 was first observed in SOHO/LASCO C2 coronagraph imagery at 0948 UTC on 12 April, but was directed well east of the Sun-Earth line.

Region 2320 produced a C3/1f flare at 1906 UTC on 06 April, with associated Type-II and Type-IV radio emissions, which resulted in a CME that was visible in coronagraph imagery beginning at 1936 UTC on 06 April. This CME impacted Earth early on 10 April, causing periods of moderate geomagnetic storms. See "Geomag" portion below for further information.

Toward the end of the period, Region 2320 produced a C6/Sf flare at 2329 UTC on 12 April with associated Type-II radio emissions. A subsequent coronal mass ejection (CME) was first visible in SOHO/LASCO C2 coronagraph imagery at 12/2348 UTC but analysis is ongoing to determine if this event has an Earth-directed component.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached moderate levels on 06-09 April and at normal levels for the remainder of the period.

Geomagnetic field activity was at quiet to unsettled levels for 06-09 April under a nominal solar wind regime. The 06 April CME impacted Earth just after 0000 UTC on 10 April, enhancing the geomagnetic field. As the 06 April CME passed the Earth, 10 April began with periods of G1 (Minor) geomagnetic storm conditions between 0000-0300 UTC and 0600-0900 UTC and an isolated period of G2 (Moderate) geomagnetic storm period between 10/0300-0600 UTC. Active conditions were observed between 10/0900-1500 UTC with quiet to unsettled levels observed over the remainder of 10 April. Active conditions were observed once again for the first half of 11 April as residual CME effects continued to subside but the latter half of 11 April was quiet to unsettled. Quiet conditions were observed on 12 April.

## **Space Weather Outlook**

### **13 April - 09 May 2015**

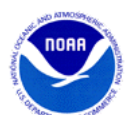
Solar activity is likely to be at moderate (R1-R2/Minor-Moderate) levels throughout the period, with the exception of 25-26 April, due to the flare potential of Regions 2320 (S12, L=211) and 2321 (N13, L=094).



No proton events are expected at geosynchronous orbit, barring any significant flare activity.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 21-24 April and 04-09 May, moderate levels on 17-20, 25-28 April, and 01-03 May, and normal levels for the remainder of the period.

Geomagnetic field activity is expected to be at G1 (Minor) geomagnetic storm levels on 17 and 30 April with active conditions expected for 16, 25, 29 April and 01 May, all due to coronal hole high speed stream effects. Quiet to unsettled field activity expected for the remainder of 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
06 April	126	78	220	B4.1	2	0	0	2	1	0	0	0
07 April	111	39	280	B3.3	1	0	0	6	0	0	0	0
08 April	106	40	170	B2.0	1	1	0	2	1	0	0	0
09 April	113	37	150	B2.5	5	0	0	13	3	0	0	0
10 April	115	34	140	B4.0	4	0	0	5	1	0	0	0
11 April	123	74	330	B6.3	4	0	0	10	0	0	0	0
12 April	134	64	720	B8.3	11	1	0	5	1	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
	06 April	3.5e+05	1.0e+04	2.4e+03		1.7e+07
07 April	4.0e+05	1.0e+04	2.4e+03		2.7e+07	
08 April	3.4e+05	1.0e+04	2.6e+03		2.3e+07	
09 April	3.9e+05	1.1e+04	2.7e+03		6.4e+06	
10 April	9.4e+04	9.6e+03	2.3e+03		5.2e+05	
11 April	1.0e+05	9.8e+03	2.3e+03		1.3e+05	
12 April	5.0e+04	1.0e+04	2.4e+03		4.4e+05	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	06 April	8	3-2-1-2-2-3-2-1	3	2-1-0-1-2-0-1-1	7
07 April	6	2-2-1-1-2-2-2-1	2	1-1-0-0-1-0-1-0	5	2-2-1-1-1-1-2-1
08 April	4	1-1-0-1-2-2-1-1	1	0-0-0-0-0-0-1-1	4	1-1-0-1-1-1-1-1
09 April	11	2-3-2-2-3-3-2-3	18	3-3-4-4-5-1-1-2	12	2-3-2-3-3-3-2-3
10 April	21	4-4-4-4-4-3-2-2	33	4-4-7-4-3-3-2-2	34	5-6-5-4-4-3-3-2
11 April	14	3-3-3-4-2-2-3-2	32	3-4-5-6-4-5-2-2	20	4-4-4-4-3-3-3-2
12 April	3	1-1-1-1-2-1-1-0	2	1-1-0-0-2-1-1-0	4	1-1-1-1-1-1-1-1

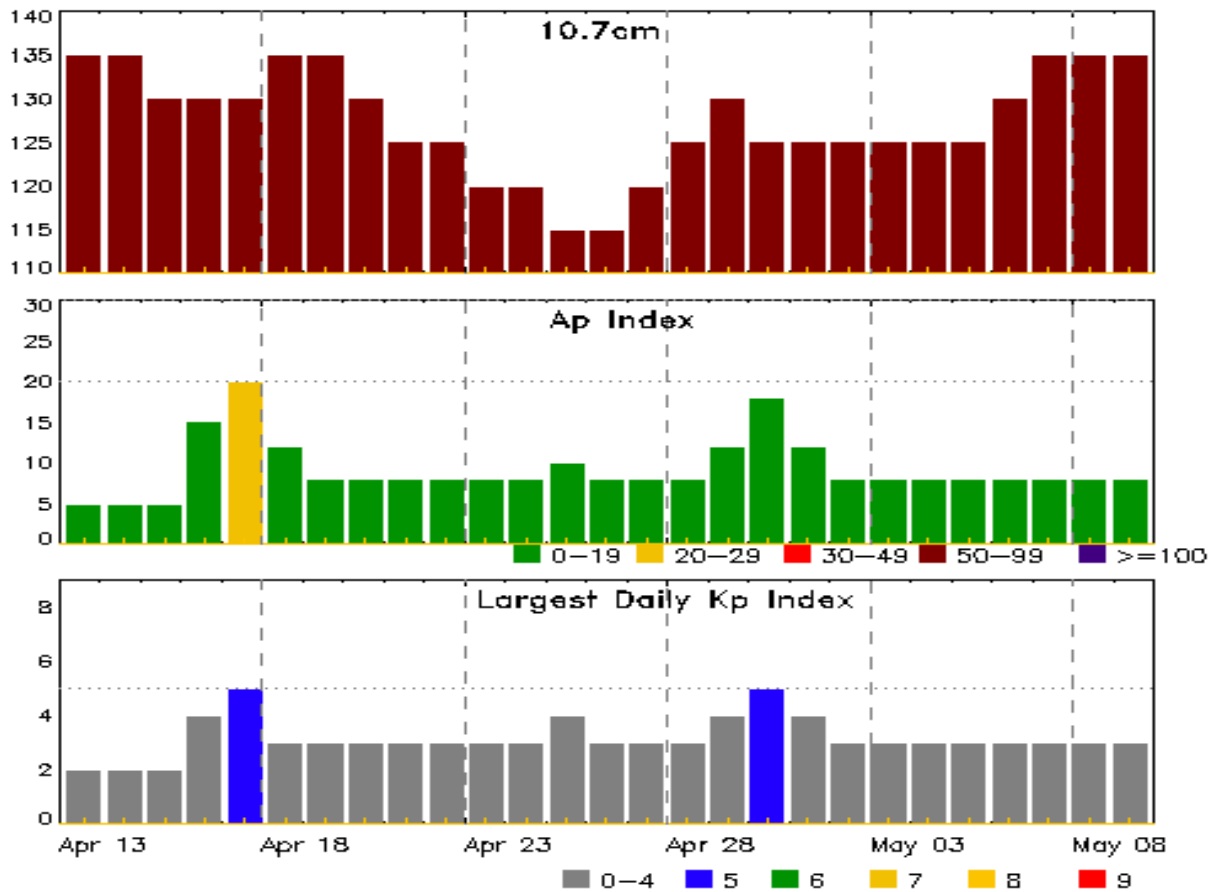


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
06 Apr 1940	ALERT: Type II Radio Emission	06/1855
06 Apr 1941	ALERT: Type IV Radio Emission	06/1855
07 Apr 0018	ALERT: Type IV Radio Emission	06/2250
07 Apr 2115	WATCH: Geomagnetic Storm Category G1 predicted	
08 Apr 2022	WATCH: Geomagnetic Storm Category G1 predicted	
09 Apr 0500	WARNING: Geomagnetic K = 4	09/0500 - 1000
09 Apr 0932	EXTENDED WARNING: Geomagnetic K = 4	09/0500 - 1600
09 Apr 1601	EXTENDED WARNING: Geomagnetic K = 4	09/0500 - 10/0400
10 Apr 0058	ALERT: Geomagnetic K = 4	10/0057
10 Apr 0106	WARNING: Geomagnetic K = 5	10/0105 - 0700
10 Apr 0106	EXTENDED WARNING: Geomagnetic K = 4	09/0500 - 10/1300
10 Apr 0143	ALERT: Geomagnetic K = 5	10/0143
10 Apr 0540	WARNING: Geomagnetic K = 6	10/0539 - 0700
10 Apr 0546	EXTENDED WARNING: Geomagnetic K = 5	10/0105 - 1300
10 Apr 0546	ALERT: Geomagnetic K = 6	10/0544
10 Apr 1236	EXTENDED WARNING: Geomagnetic K = 4	09/0500 - 10/2300
10 Apr 1316	WARNING: Geomagnetic K = 5	10/1315 - 2100
10 Apr 1524	WATCH: Geomagnetic Storm Category G1 predicted	
10 Apr 2255	EXTENDED WARNING: Geomagnetic K = 4	09/0500 - 11/1300
11 Apr 0424	WARNING: Geomagnetic K = 5	11/0424 - 1000
11 Apr 1509	WARNING: Geomagnetic K = 4	11/1510 - 2359
12 Apr 1015	SUMMARY: 10cm Radio Burst	12/0937 - 0945



## 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
13 Apr	135	5	2	27 Apr	120	8	3
14	135	5	2	28	125	8	3
15	130	5	2	29	130	12	4
16	130	15	4	30	125	18	5
17	130	20	5	01 May	125	12	4
18	135	12	3	02	125	8	3
19	135	8	3	03	125	8	3
20	130	8	3	04	125	8	3
21	125	8	3	05	125	8	3
22	125	8	3	06	130	8	3
23	120	8	3	07	135	8	3
24	120	8	3	08	135	8	3
25	115	10	4	09	135	8	3
26	115	8	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
08 Apr	1437	1443	1447	M1.4	0.004	1B	S14W04	2320		110		
12 Apr	0851	0950	1044	M1.1	0.043	SF	N13E62	2321		160		

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
06 Apr	0546	0550	0552	C1.2			2318
06 Apr	0608	0608	0617		SF	S13E28	2320
06 Apr	1305	1308	1310	B8.0			
06 Apr	1835	1906	1914	C3.0	1F	S14E14	2320
06 Apr	2009	2010	2019		SF	S15E23	2320
07 Apr	0226	0234	0255	B8.6			
07 Apr	0332	0337	0343	B8.2	SF	N06E29	2318
07 Apr	1439	1442	1448	B6.6	SF	S14E10	2320
07 Apr	1613	1614	1623		SF	S15E10	2320
07 Apr	1642	U1656	1659		SF	S14E02	2320
07 Apr	2127	2131	2135	C1.1	SF	S13W00	2320
07 Apr	2149	2149	2157		SF	S16W02	2320
08 Apr	0002	0007	0009	C1.0	SF	S14W01	2320
08 Apr	1437	1443	1447	M1.4	1B	S14W04	2320
08 Apr	2235	2243	2253		SF	S14W08	2320
09 Apr	0032	0042	0049	B5.7	SF	S14W10	2320
09 Apr	0451	0454	0456	B3.8			2320
09 Apr	0532	0535	0538		SF	S14W11	2320
09 Apr	0539	U0542	A0552		SF	S15W13	2320
09 Apr	0602	0607	0609	B9.0	SF	S15W10	2320
09 Apr	0625	0635	0643	C5.4	1N	S14W13	2320
09 Apr	0724	0727	0729	C1.6			2320
09 Apr	0835	0839	0841	B4.8	SF	S15W12	2320
09 Apr	0851	0852	0854		SF	S15W12	2320
09 Apr	0931	0934	0937	B4.7	SF	S15W12	2320
09 Apr	1057	1102	1105	B7.1	SF	S22E02	
09 Apr	1223	1223	1226		SF	S15W13	2320
09 Apr	1256	1301	1316	B5.1	SF	S14W16	2320
09 Apr	1413	1414	1417		SF	S15W13	2320



## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
09 Apr	1433	1444	1453	B6.7	SF	S14W17		2320
09 Apr	1713	1729	1738	C5.9	1N	S15W21		2320
09 Apr	1851	1901	1905	C6.2	1F	S15W21		2320
09 Apr	2015	2019	2022	B6.9				2320
09 Apr	2336	2345	2351	C3.3	SF	S15W21		2320
10 Apr	0008	0023	0040		SF	S13W26		2320
10 Apr	0405	0423	0426	B8.3	SF	S14W27		2320
10 Apr	0757	0803	0806	C7.9	1N	S14W30		2320
10 Apr	0811	0815	0818	C2.9				2320
10 Apr	0933	0952	1000	C2.8	SF	S15W29		2320
10 Apr	1834	1839	1852		SF	S14W34		2320
10 Apr	1919	1927	1936	C2.7	SF	S14W34		2320
11 Apr	0229	0241	0255	C4.7				2321
11 Apr	0531	0531	0534		SF	N12E77		2321
11 Apr	0539	0539	0546		SF	N12E77		2321
11 Apr	0941	0944	0946	B8.7	SF	N16E46		2322
11 Apr	1158	1158	1203		SF	N17E47		
11 Apr	1436	1436	1440		SF	N16E45		2321
11 Apr	1546	1550	1554	B9.4	SF	N13E71		2321
11 Apr	1618	1626	1637	C1.4				2321
11 Apr	1712	1741	1754	C2.1				2321
11 Apr	1804	1804	1813		SF	N13E43		2322
11 Apr	2014	2100	2150	C1.8				2321
11 Apr	2156	2210	2218		SF	N13E41		2322
11 Apr	2241	2241	2245		SF	N13E41		2322
11 Apr	2250	2250	2259		SF	N13E41		2322
12 Apr	0024	0029	0032	C3.9				2320
12 Apr	0113	0121	0127	C2.9				2321
12 Apr	B0811	U0815	0819	C2.9	SF	N14E64		2321
12 Apr	0851	0950	1044	M1.1	SF	N13E62		2321
12 Apr	1050	1051	1056		SF	S18W55		2320
12 Apr	1439	1445	1450	C1.7	SF	N14E60		2321
12 Apr	1511	1515	1520	C1.3	SF	N12E58		2321
12 Apr	1631	1718	1729	C2.2				2320
12 Apr	1758	1807	1810	C9.0				2321
12 Apr	1934	1938	1942	C2.3				2321
12 Apr	2120	2127	2140	C2.0				2120
12 Apr	2216	2226	2234	C2.9				2323



### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical	
	Begin	Max	End			Location Lat CMD	Rgn #
12 Apr	2318	2335	2359	C6.4	1F	S14W30	2320





## Region Summary

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

### Region 2314

26 Mar	S23E66	306	20	3	Cro	3	B										
27 Mar	S21E54	305	20	2	Cro	2	B										
28 Mar	S21E40	305	plage														
29 Mar	S21E27	306	plage														
30 Mar	S21E13	307	plage														
31 Mar	S21W01	307	plage														
01 Apr	S21W15	308	plage														
02 Apr	S21W29	309	plage														
03 Apr	S21W43	310	plage														
04 Apr	S21W57	311	plage														
05 Apr	S21W71	311	plage														
06 Apr	S21W85	312	plage														
										0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 307

### Region 2316

29 Mar	S21E44	289	20	6	Bxo	3	B										
30 Mar	S21E30	290	10	4	Bxo	3	B										
31 Mar	S21E16	290	10	1	Axx	1	A										
01 Apr	S21E06	287	0	1	Axx	2	A										
02 Apr	S21W08	288	plage														
03 Apr	S21W22	289	plage														
04 Apr	S21W36	290	plage														
05 Apr	S21W50	290	plage														
06 Apr	S21W64	291	plage														
07 Apr	S21W78	292	plage														
										0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 287



### *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 2317</b>																	
01 Apr	N10W32	325	30	3	Dro	6	B										
02 Apr	N09W45	324	60	5	Dsi	10	B										
03 Apr	N11W59	326	50	8	Dai	6	B										
04 Apr	N11W73	327	40	8	Cao	7	B										
05 Apr	N11W85	325	30	1	Hsx	1	A										
06 Apr	N09W90	317	30	3	Cao	2	B										
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.  
 Absolute heliographic longitude: 325

<b>Region 2318</b>																	
03 Apr	N09E69	198	20	4	Cro	3	B										
04 Apr	N09E57	197	40	7	Dao	6	B	1									
05 Apr	N10E41	199	50	8	Dao	9	B				1						
06 Apr	N09E28	199	40	8	Cai	10	B	1									
07 Apr	N07E17	196	100	8	Cao	4	B				1						
08 Apr	N08E02	198	30	8	Cao	4	B										
09 Apr	N08W08	195	10	5	Bxo	4	B										
10 Apr	N07W23	197	10	2	Axx	3	A										
11 Apr	N08W38	199	10	1	Axx	1	A										
12 Apr	N08W52	200	plage														
								2	0	0	2	0	0	0	0	0	

Still on Disk.  
 Absolute heliographic longitude: 198

<b>Region 2319</b>																	
04 Apr	S11E06	248	20	3	Cro	6	B										
05 Apr	S10W06	246	10	2	Axx	2	A										
06 Apr	S10W22	249	0	2	Axx	2	A										
07 Apr	S10W43	252	plage														
08 Apr	S10W57	252	plage														
09 Apr	S10W71	255	plage														
10 Apr	S10W83	257	plage														
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.  
 Absolute heliographic longitude: 248



### *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 2320</b>																								
04 Apr	S12E40		214	30	4	Dao	9	B	1															
05 Apr	S12E28		212	140	5	Dai	14	B	1															
06 Apr	S12E16		211	150	8	Dai	24	BG	1				2	1										
07 Apr	S12E02		211	180	9	Dac	15	BD	1				5											
08 Apr	S12W13		213	140	11	Eai	16	BD	1	1			2	1										
09 Apr	S12W25		212	140	11	Eac	13	BD	5				12	3										
10 Apr	S13W39		213	130	8	Dai	11	BD	4				5	1										
11 Apr	S14W50		211	90	7	Dai	12	BG																
12 Apr	S14W64		212	50	8	Dao	6	B	3				1	1										
									17	1	0	27	7	0	0	0	0							

Still on Disk.

Absolute heliographic longitude: 211

#### **Region 2321**

11 Apr	N12E68		93	200	11	Eac	5	BG	4				4										
12 Apr	N13E54		94	610	12	Ekc	11	BGD	6	1			4										
									10	1	0	8	0	0	0	0	0						

Still on Disk.

Absolute heliographic longitude: 94

#### **Region 2322**

11 Apr	N14E40		121	20	3	Cro	2	B					4										
12 Apr	N14E26		122	30	5	Dro	3	B															
									0	0	0	4	0	0	0	0	0						

Still on Disk.

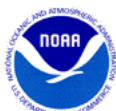
Absolute heliographic longitude: 122

#### **Region 2323**

11 Apr	S16W32		193	10	3	Dro	4	B															
12 Apr	S16W48		196	30	4	Dro	4	B	1														
									1	0	0	0	0	0	0	0	0						

Still on Disk.

Absolute heliographic longitude: 193

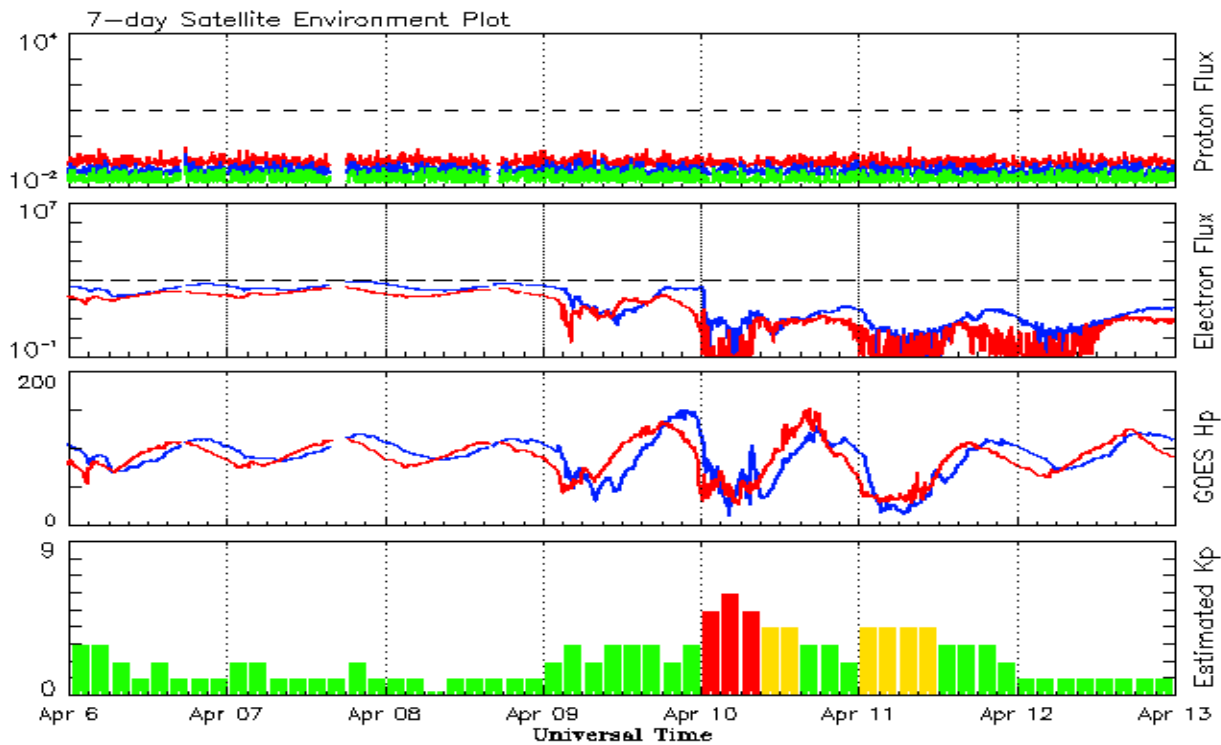


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2013</b>									
April	112.8	72.4	0.64	86.7	57.9	125.0	116.6	5	7.2
May	125.5	78.7	0.63	90.5	59.9	131.3	118.1	10	7.0
June	80.1	52.5	0.66	94.4	62.6	110.2	120.9	13	7.1
July	86.1	57.0	0.66	97.9	65.5	115.6	123.9	9	7.3
August	90.2	66.0	0.73	103.7	68.9	114.7	127.9	9	7.6
September	55.0	37.0	0.67	111.0	73.0	102.7	132.3	5	7.8
October	127.1	85.6	0.67	114.3	74.9	132.3	134.7	7	7.8
November	125.7	77.6	0.62	114.6	75.3	148.4	135.4	5	7.9
December	118.2	90.3	0.76	115.4	75.9	147.7	135.9	5	7.5
<b>2014</b>									
January	125.9	81.8	0.65	117.7	77.3	158.6	137.3	6	7.1
February	174.6	102.3	0.59	119.5	78.3	170.3	138.6	12	6.9
March	141.1	91.9	0.65	123.2	80.8	149.9	140.8	6	7.2
April	130.5	84.7	0.65	124.8	81.9	144.3	143.5	9	7.5
May	116.8	75.2	0.64	122.3	80.5	130.0	144.7	7	7.9
June	107.7	71.0	0.66	121.4	79.7	122.2	145.5	7	8.4
July	113.6	72.4	0.64	120.4	78.5	137.3	145.2	5	8.8
August	106.2	74.6	0.70	115.1	75.5	124.7	142.8	9	8.9
September	127.4	87.6	0.69	107.4	70.8	146.1	140.1	11	9.3
October	92.0	60.6	0.66			153.7		10	
November	101.8	70.2	0.69			155.3		10	
December	120.0	76.7	0.65			158.7		12	
<b>2015</b>									
January	101.2	67.0	0.66			141.7		10	
February	70.6	44.8	0.63			128.8		10	
March	61.7	38.4	0.62			126.0		17	

**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 06 April 2015*

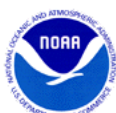
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

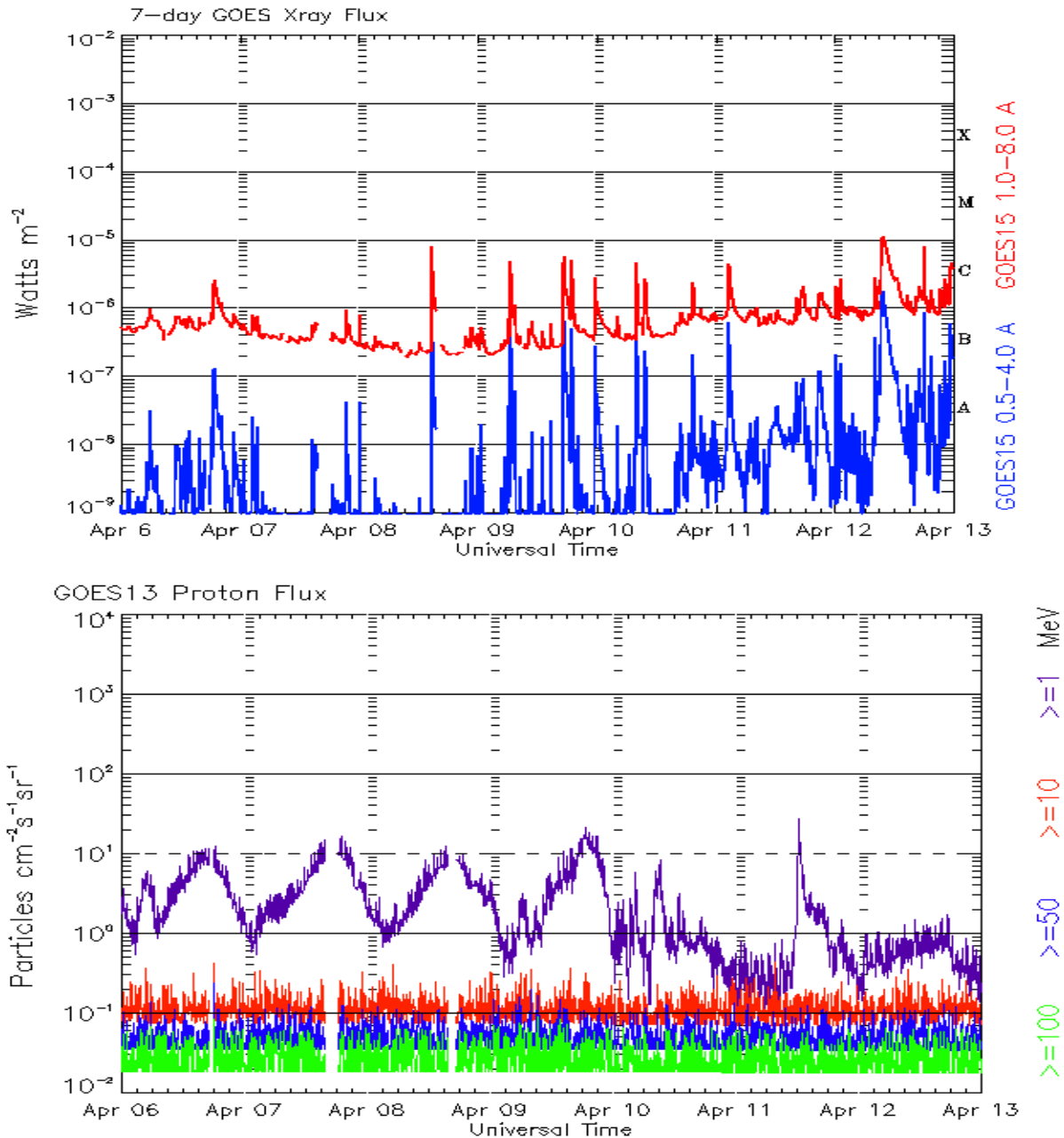
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 06 April 2015*

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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