

Solar activity was at very low to high levels during the period. The period began at low levels that persisted until early on 11 April. At 11/0716 UTC, solar activity reached high levels as Region 1719 (N11, L=077, class/area Eki/290 on 12 April) produced an M6/3b flare with Type II (estimated speed 1370 km/s) and Type IV radio sweeps, a Tenflare (470 sfu), and an associated asymmetric full halo coronal mass ejection (CME) with an estimated plane-of-sky speed of 1142 km/s. On 12 April, solar activity reached moderate levels as Region 1718 (N21, L=109, class/area Dkc/510) produced an M3 flare at 12/2038 UTC. Solar activity decreased to low levels on 13 April with a further decrease to very low levels on 14 April as the majority of the regions on the visible disk decreased in either area or complexity.

Greater than 10 MeV and greater than 100 MeV proton events were observed during the period associated with the 11 April M6/3b flare. The greater than 10 MeV proton event began at 11/1055 UTC, reached a peak flux of 114 pfu at 11/1645 UTC, and ended at 12/2210 UTC. The greater than 100 MeV proton event began at 11/0940 UTC, reached a peak flux of 2 pfu at 11/1400 UTC, and ended at 11/1955 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was normal to moderate levels through the period.

Geomagnetic field activity was at quiet levels until late on 13 April when a geomagnetic shock was observed in ACE/SWEPAM data associated with the 11 April CME. At 13/2215 UTC, the total field (Bt) increased from 4 nT to 10 - 13 nT, while the solar wind speed increased from approximately 365 km/s to 480 km/s. An associated geomagnetic sudden impulse was observed in the Boulder magnetometer (29 nT) at 13/2255 UTC. This produced an unsettled period to end the UTC day on 13 April. By 14 April, the geomagnetic field continued to be under the influence of the 11 April CME. Total field was variable between 4 and 14 nT while the Bz component of the interplanetary magnetic field was mostly positive between 1 - 12 nT with brief southward deflections to a maximum of -7 nT. Solar wind speed reached a maximum of 558 km/s at 14/0443 UTC before slowly decreasing to end the period near 460 km/s. The geomagnetic field responded with quiet to unsettled conditions on 14 April with a brief period of active to minor storm conditions mid-day at high latitudes.

## **Space Weather Outlook**

### **15 April - 11 May 2013**

Solar activity is expected to be at very low to low levels with a chance for an M-class flare from 15 April to 18 April when Regions 1718 and 1719 depart the visible disk. Very low to low levels are expected from 19 April to 28 April. From 29 April to 11 May, solar activity is expected to be at very low to low levels with a chance for M-class flaring as Regions 1718 and 1719 return to the visible disk.

No proton events are expected at geosynchronous orbit.



The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to high levels on 16 - 18 April due to CME effects. Moderate to high levels are expected again on 25 April - 02 May due to coronal hole high speed stream (CH HSS) effects. Normal to moderate levels are expected for the rest of the period.

Geomagnetic field activity is expected to be quiet to unsettled on 15 April due to residual effects from the 11 April CME. Mostly quiet conditions are expected from 16 - 22 April. On 23 April, a recurrent CH HSS is expected to move into geoeffective position causing unsettled to active conditions with continuing quiet to unsettled conditions on 24 April. From 25 - 26 April, another recurrent CH HSS is expected to become geoeffective causing unsettled to active conditions. From 27 April until the end of the forecast period, mostly quiet conditions are expected to prevail.



### ***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
08 April	139	162	1140	B4.0	2	0	0	3	0	0	0	0
09 April	147	116	960	B6.4	8	0	0	8	0	0	0	0
10 April	148	163	1080	B7.0	8	0	0	10	0	0	0	0
11 April	137	121	960	B6.5	7	1	0	14	0	0	1	0
12 April	138	128	1220	B5.9	4	1	0	10	0	0	0	0
13 April	125	148	790	B3.7	4	0	0	5	0	0	0	0
14 April	117	111	710	B3.4	0	0	0	1	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
08 April	1.8e+05	1.1e+04	2.7e+03		1.4e+07	
09 April	1.6e+05	1.1e+04	2.9e+03		1.8e+07	
10 April	4.4e+05	1.1e+04	2.7e+03		2.3e+07	
11 April	1.1e+07	3.2e+06	7.0e+04		1.6e+07	
12 April	2.1e+07	1.9e+06	1.6e+04		1.5e+07	
13 April	1.0e+07	4.5e+05	3.3e+03		1.5e+07	
14 April	3.1e+06	1.2e+05	2.8e+03		2.5e+06	

### ***Daily Geomagnetic Data***

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
08 April	4	0-0-1-0-2-3-1-1	0	0-0-1-0-0-0-0-0	3	0-0-1-1-1-1-1-1
09 April	4	1-1-0-2-2-1-1-1	1	1-1-0-0-0-0-1-0	4	1-1-1-2-1-1-1-1
10 April	5	1-1-1-1-2-2-1-2	3	0-1-1-2-1-0-1-1	5	1-1-1-1-1-1-1-2
11 April	4	0-1-1-1-2-1-1-2	4	0-0-0-3-2-1-1-2	5	1-1-1-1-1-2-1-2
12 April	4	1-1-1-1-2-2-1-0	3	1-2-1-1-1-0-1-1	5	2-2-1-1-1-1-1-1
13 April	6	2-2-1-1-2-1-1-3	4	2-2-0-2-1-0-0-2	6	2-2-1-1-1-1-0-3
14 April	10	2-3-2-3-2-3-2-2	14	2-1-5-4-3-2-1-1	10	2-3-3-3-2-3-2-2

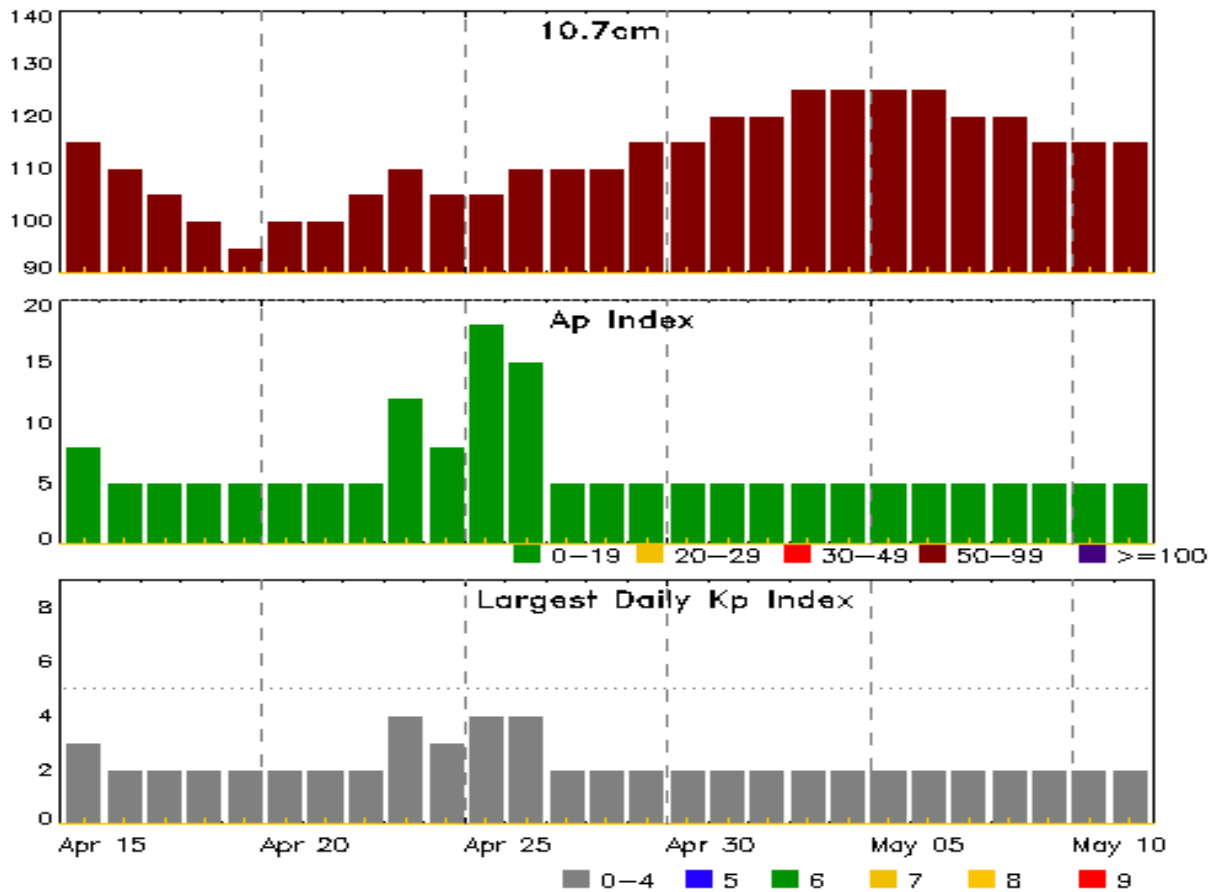


### *Alerts and Warnings Issued*

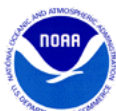
<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
11 Apr 0711	ALERT: X-ray Flux exceeded M5	11/0711
11 Apr 0735	SUMMARY: X-ray Event exceeded M5	11/0655 - 0729
11 Apr 0735	ALERT: Type II Radio Emission	11/0702
11 Apr 0735	ALERT: Type IV Radio Emission	11/0702
11 Apr 0857	WARNING: Proton 10MeV Integral Flux > 10pfu	11/0915 - 1500
11 Apr 0932	WARNING: Proton 100MeV Integral Flux > 1pfu	11/0935 - 1500
11 Apr 0937	SUMMARY: 10cm Radio Burst	11/0658 - 0718
11 Apr 1003	ALERT: Proton Event 100MeV Integral Flux > 1pfu	11/0940
11 Apr 1114	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	11/1055
11 Apr 1403	WATCH: Geomagnetic Storm Category G2 predicted	
11 Apr 1403	EXTENDED WARNING: Proton 100MeV Integral Flux > 1pfu	11/0935 - 2100
11 Apr 1403	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	11/0915 - 12/0600
11 Apr 1649	ALERT: Proton Event 10MeV Integral Flux >= 100pfu	11/1630
11 Apr 1649	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	11/0915 - 12/1100
11 Apr 2115	WATCH: Geomagnetic Storm Category G2 predicted	
12 Apr 0019	SUMMARY: Proton Event 10MeV Integral Flux >= 100pfu	11/1630 - 1705
12 Apr 0019	SUMMARY: Proton Event 100MeV Integral Flux > 1pfu	11/0940 - 1955
12 Apr 0019	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	11/0915 - 12/2200
13 Apr 1546	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	11/1055 - 12/2210
13 Apr 2227	WARNING: Geomagnetic Sudden Impulse expected	13/2245 - 2359
13 Apr 2230	WARNING: Geomagnetic K = 4	13/2245 - 14/1900
13 Apr 2303	SUMMARY: Geomagnetic Sudden Impulse	13/2255
14 Apr 1318	WATCH: Geomagnetic Storm Category G1 predicted	
14 Apr 1333	CANCELLATION: Geomagnetic Storm Category G2 predicted	



## 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
15 Apr	115	8	3	29 Apr	115	5	2
16	110	5	2	30	115	5	2
17	105	5	2	01 May	120	5	2
18	100	5	2	02	120	5	2
19	95	5	2	03	125	5	2
20	100	5	2	04	125	5	2
21	100	5	2	05	125	5	2
22	105	5	2	06	125	5	2
23	110	12	4	07	120	5	2
24	105	8	3	08	120	5	2
25	105	18	4	09	115	5	2
26	110	15	4	10	115	5	2
27	110	5	2	11	115	5	2
28	110	5	2				



### ***Energetic Events***

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
11 Apr	0655	0716	0729	M6.5	0.074	3B	N09E12	1719	2700	470	3	3
12 Apr	1952	2038	2046	M3.3	0.024			1718				

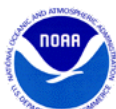
### ***Flare List***

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
08 Apr	0356	0402	0425	B9.1				1713
08 Apr	1143	1143	1145		SF	N22E13		1718
08 Apr	1439	1442	1445	B8.9	SF	N22E13		1718
08 Apr	1542	1550	1617	C1.6	SF	N15W06		1714
08 Apr	1713	1716	1718	B8.1				1713
08 Apr	1756	1800	1812	B9.9				1714
08 Apr	2345	2348	2351	C1.5				1713
09 Apr	0014	0021	0030	C2.2	SF	N09W62		1713
09 Apr	0702	0702	0705		SF	S19E67		
09 Apr	0717	0724	0728	C2.2	SF	S18E64		1718
09 Apr	0830	0859	0917	C2.9				1718
09 Apr	0857	0859	A0903		SF	N08W67		1713
09 Apr	0859	0859	A0903		SF	N20E03		1718
09 Apr	1132	1141	1158	C1.6	SF	N23E01		1718
09 Apr	1242	1245	1300		SF	N10E37		1719
09 Apr	1327	U1332	A1343	C1.5	SF	N20E00		1718
09 Apr	1446	1450	1454	C1.0				
09 Apr	1951	2003	2012	C1.5				
09 Apr	2034	2038	2040	C1.1				1718
10 Apr	0007	0010	0013	B9.2				
10 Apr	0150	0216	0225	C1.8	SF	N20W06		1718
10 Apr	0825	0826	0829		SF	S11E08		1717
10 Apr	0844	0941	0959	C1.2	SF	N22W12		1718
10 Apr	1047	U1047	1051		SF	N00E00		1713
10 Apr	1112	1112	1127		SF	N22W13		1718
10 Apr	1153	1156	1158	C1.0	SF	N07W84		1713
10 Apr	1225	1227	1314		SF	N21W13		1718
10 Apr	1254	1258	1304	C1.2	SF	S17E53		1721
10 Apr	B1502	U1507	1514		SF	N09W42		1720



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
10 Apr	1647	1651	1654	C1.1			1719
10 Apr	1756	1801	1804	C3.4	SF	N23W13	1718
10 Apr	1902	1919	1941	C4.2			1713
10 Apr	2330	2338	2348	C3.9			1713
11 Apr	0019	0028	0035	C1.4			1711
11 Apr	0532	0607	0720		SF	N20W21	1718
11 Apr	0603	0605	0608		SF	S16E28	1721
11 Apr	0655	0716	0729	M6.5	3B	N09E12	1719
11 Apr	0743	0744	0804		SF	N19W24	1718
11 Apr	0744	0747	0752		SF	S16E28	1721
11 Apr	1003	1003	1006		SF	S16E26	1721
11 Apr	1009	1013	1015	C4.2	SF	S16E26	1721
11 Apr	1028	1046	1116	C6.2			
11 Apr	1241	1247	1253	C2.2	SF	N20W26	1718
11 Apr	1351	1400	1420		SF	N19W27	1718
11 Apr	1421	1432	1436		SF	N19W27	1718
11 Apr	1455	1455	1459		SF	N19W27	1718
11 Apr	1502	1502	1505		SF	N10E05	1719
11 Apr	1603	1611	1625	C1.0			
11 Apr	1648	1653	1707	C1.0	SF	N21W27	1718
11 Apr	1722	1744	1748		SF	N21W28	1718
11 Apr	2041	2041	2046		SF	N21W28	1718
11 Apr	2249	2302	2324	C4.0			
12 Apr	0402	0414	0422	C2.2			1718
12 Apr	B0623	U0632	A0641		SF	S16E16	1721
12 Apr	0650	0653	0714		SF	S17E17	1721
12 Apr	B0822	U0826	A0838		SF	S19E25	1722
12 Apr	1011	1012	1021		SF	N10W05	1719
12 Apr	1046	1046	1049		SF	N19W37	1718
12 Apr	1142	1143	1148		SF	N19W38	1718
12 Apr	1156	1156	1203		SF	N19W38	1718
12 Apr	B1224	U1225	A1236		SF	N19W38	1718
12 Apr	B1246	U1246	A1325		SF	N19W38	1718
12 Apr	1418	1419	1420		SF	N10W01	1719
12 Apr	1703	1724	1751	C1.4			1718
12 Apr	1800	1815	1824	C1.1			1719
12 Apr	1840	1848	1901	C2.1			1718
12 Apr	1952	2038	2046	M3.3			1718



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
13 Apr	0046	0047	0053		SF	N24W43	1718
13 Apr	0124	0142	0158	C1.5	SF	N09W14	1719
13 Apr	0329	0334	0336	C1.9			1718
13 Apr	0607	0608	0611		SF	N16W50	1718
13 Apr	0921	0928	0934	C1.5			1724
13 Apr	1236	1237	1239		SF	N20W51	1718
13 Apr	1946	1953	2001	C1.4	SF	N20W57	1718
13 Apr	2048	2101	2108	B9.4			1724
13 Apr	2158	2202	2207	B6.6			
14 Apr	0212	0217	0220		SF	N20W59	1718
14 Apr	0520	0524	0527	B6.8			1718
14 Apr	2057	2101	2106	B7.0			1718





## ***Region Summary***

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 1708															
28 Mar	N12E71	190	50	4	Cso	2	B								
29 Mar	N11E58	190	90	6	Dao	4	B								
30 Mar	N11E45	190	90	6	Cso	4	B								
31 Mar	N11E30	191	50	5	Cso	4	B								
01 Apr	N11E16	191	40	1	Hax	2	A								
02 Apr	N10E03	191	20	3	Cso	4	B					1			
03 Apr	N10W11	193	20	3	Dro	4	B	2							
04 Apr	N13W25	193	10	1	Axx	1	A								
05 Apr	N13W39	194	10		Axx	1	A								
06 Apr	N13W53	195	plage												
07 Apr	N13W67	196	plage												
08 Apr	N13W81	197	plage												
								2	0	0	1	0	0	0	0

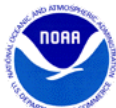
Crossed West Limb.

Absolute heliographic longitude: 191

<b><i>Region 1710</i></b>															
29 Mar	S22E49	199	40	4	Cao	5	B								
30 Mar	S21E34	201	70	7	Cao	7	B								
31 Mar	S22E20	201	50	8	Cao	6	B								
01 Apr	S22E07	200	10	6	Bxo	7	B								
02 Apr	S21W06	200	10	4	Bxo	5	B								
03 Apr	S22W18	199	120	4	Dao	9	B								
04 Apr	S22W30	198	60	4	Dao	7	B								
05 Apr	S21W44	199	50	6	Dao	6	B								
06 Apr	S23W55	197	plage												
07 Apr	S23W69	198	plage												
08 Apr	S23W83	199	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 200



### *Region Summary - continued*

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 1711															
30 Mar	S17E77	158	210	4	Cai	4	B								
31 Mar	S17E62	159	420	5	Cki	4	B								
01 Apr	S20E52	156	480	11	Cki	6	B								
02 Apr	S17E36	157	460	5	Dko	7	B								
03 Apr	S17E24	157	560	6	Cko	15	B	1				2			
04 Apr	S19E10	158	580	6	Cko	19	B								
05 Apr	S15W02	158	530	5	Cko	6	B					1			
06 Apr	S17W16	158	440	5	Dho	5	B								
07 Apr	S19W28	157	400	12	Cko	7	B								
08 Apr	S16W42	156	400	4	Cko	5	B								
09 Apr	S17W55	157	350	4	Hhx	2	A								
10 Apr	S17W67	156	360	5	Cko	2	B								
11 Apr	S16W82	158	230	4	Hax	2	A	1							
12 Apr	S16W95	158	100	4	Hax	1	A								
								2	0	0	3	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 158

<b>Region 1712</b>															
31 Mar	N01E38	183	10	3	Cro	2	B								
01 Apr	N02E23	184	10		Axx	1	A								
02 Apr	N02E08	187	plage												
03 Apr	N02W07	189	plage												
04 Apr	N02W22	191	plage												
05 Apr	N02W35	191	plage												
06 Apr	N02W50	192	plage												
07 Apr	N02W64	193	plage												
08 Apr	N02W79	195	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 189



### *Region Summary - continued*

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1713															
02 Apr	N08E22	171	60	4	Cao	8	B				2				
03 Apr	N10E08	173	30	4	Cro	6	B				1				
04 Apr	N09W06	174	30	7	Cro	17	B	1							
05 Apr	N10W19	174	70	9	Dai	19	B								
06 Apr	N10W33	175	130	9	Dai	16	BG								
07 Apr	N11W47	176	120	8	Dai	13	BG	1			1				
08 Apr	N09W61	175	190	8	Cso	16	B	1							
09 Apr	N09W74	176	180	10	Dao	16	B	1			2				
10 Apr	N08W88	177	180	10	Dai	7	B	3			2				
								7	0	0	8	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 174

### **Region 1714**

02 Apr	N12E65	129	60	1	Hsx	1	A								
03 Apr	N13E52	129	60	1	Hsx	1	A								
04 Apr	N12E39	129	100	1	Hsx	1	A								
05 Apr	N12E27	129	50	2	Hsx	1	A								
06 Apr	N13E14	128	80	6	Cso	6	B								
07 Apr	N12E02	127	60	6	Cso	6	B								
08 Apr	N14W12	126	60	3	Cso	3	B	1			1				
09 Apr	N12W26	128	60	3	Cso	3	B								
10 Apr	N13W38	127	20	2	Hsx	2	A								
11 Apr	N13W52	128	50	1	Hsx	1	A								
12 Apr	N13W66	129	70	1	Hsx	1	A								
13 Apr	N14W79	129	40	1	Hsx	1	A								
								1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 127

### **Region 1715**

04 Apr	N18W15	183	10	4	Bxo	2	B								
05 Apr	N17W28	183	30	6	Cao	5	B								
06 Apr	N18W39	181	10	2	Bxo	4	B	1			1				
07 Apr	N18W53	182	0	1	Axx	1	A								
08 Apr	N18W67	183	plage												
09 Apr	N18W81	184	plage												
								1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 183



### *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

#### *Region 1716*

05 Apr	S19E32	123	10	1	Axx	2	A								
06 Apr	S19E18	124	plage												
07 Apr	S20E04	125	10	2	Bxo	2	B								
08 Apr	S20W09	124	10	1	Axx	1	A								
09 Apr	S20W23	126	plage												
10 Apr	S20W37	127	10	1	Axx	1	A								
11 Apr	S20W51	127	plage												
12 Apr	S20W65	128	plage												
13 Apr	S20W79	129	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 125

#### *Region 1717*

05 Apr	S10E66	89	10	2	Axx	3	A								
06 Apr	S12E51	91	10	2	Bxo	2	B	1							
07 Apr	S13E37	92	10	1	Axx	1	A								
08 Apr	S12E22	92	10	2	Bxo	2	B								
09 Apr	S11E11	91	20	5	Cso	3	B								
10 Apr	S10W01	90	10	3	Bxo	3	B				1				
11 Apr	S12W15	91	plage												
12 Apr	S12W29	92	plage												
13 Apr	S12W43	93	plage												
14 Apr	S12W57	94	plage												
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 90



### *Region Summary - continued*

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 1718															
05 Apr	N23E45	110	10	2	Axx	2	A								
06 Apr	N22E33	109	130	7	Dsi	10	BG	5				7			
07 Apr	N20E20	109	140	7	Dai	14	BG	1				4			
08 Apr	N22E07	108	220	8	Dao	34	B					2			
09 Apr	N21W06	108	190	7	Dac	21	BG	5				3			
10 Apr	N22W19	108	280	9	Dkc	34	BG	3				5			
11 Apr	N22W32	108	340	8	Dkc	24	BG	2				9			
12 Apr	N21W46	109	510	9	Dkc	23	BG	3	1			5			
13 Apr	N21W58	108	350	10	Dkc	25	BG	2				4			
14 Apr	N20W70	107	260	9	Dkc	12	BG					1			
								21	1	0	40	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 108

### **Region 1719**

05 Apr	N08E78	77	90	2	Hsx	1	A	1	1						
06 Apr	N08E66	76	80	2	Cso	4	B	1			2				
07 Apr	N08E53	76	150	6	Dsi	6	BG	1			1				
08 Apr	N07E39	75	240	9	Cao	16	BG								
09 Apr	N10E26	76	160	9	Dai	11	BG				1				
10 Apr	N10E13	76	190	8	Dai	17	BG	1							
11 Apr	N10W00	76	180	11	Eai	20	BGD		1		1			1	
12 Apr	N11W14	77	290	11	Eki	22	BG	1			2				
13 Apr	N10W28	78	140	10	Dsi	26	BG	1			1				
14 Apr	N10W41	78	120	10	Dao	11	BG								
								6	2	0	8	0	0	1	0

Still on Disk.

Absolute heliographic longitude: 76



### *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

#### **Region 1720**

07 Apr	N11W08	137	20	3	Cso	4	B								
08 Apr	N10W21	135	10	4	Cro	5	B								
09 Apr	N10W35	138	plage												
10 Apr	N10W48	138	plage								1				
11 Apr	N10W62	138	plage												
12 Apr	N10W76	139	plage												
13 Apr	N10W90	140	plage												
								0	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 137

#### **Region 1721**

10 Apr	S18E35	54	10	4	Bxo	4	B	1			1				
11 Apr	S19E20	56	80	7	Dao	10	BG	1			4				
12 Apr	S18E06	57	220	8	Dai	17	BG				2				
13 Apr	S18W07	57	190	9	Dsi	18	B								
14 Apr	S19W21	58	180	9	Dso	13	B								
								2	0	0	7	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 57

#### **Region 1722**

10 Apr	S20E44	45	20	4	Cso	3	B								
11 Apr	S21E30	46	80	7	Dao	4	B								
12 Apr	S21E17	46	30	6	Dro	4	B				1				
13 Apr	S21E03	47	20	6	Cro	4	B								
14 Apr	S22W11	48	20	6	Cro	4	B								
								0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 47

#### **Region 1723**

13 Apr	S18E49	1	10	2	Bxo	2	B								
14 Apr	S18E36	1	80	5	Dac	8	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 1



### ***Region Summary - continued***

Location		Sunspot Characteristics						Flares							
Date	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	4
		<i>Region 1724</i>													
13 Apr	S27E70	340	40	2	Hax	2	A	1							
14 Apr	S27E58	339	50	2	Hax	3	A								
								1	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 339



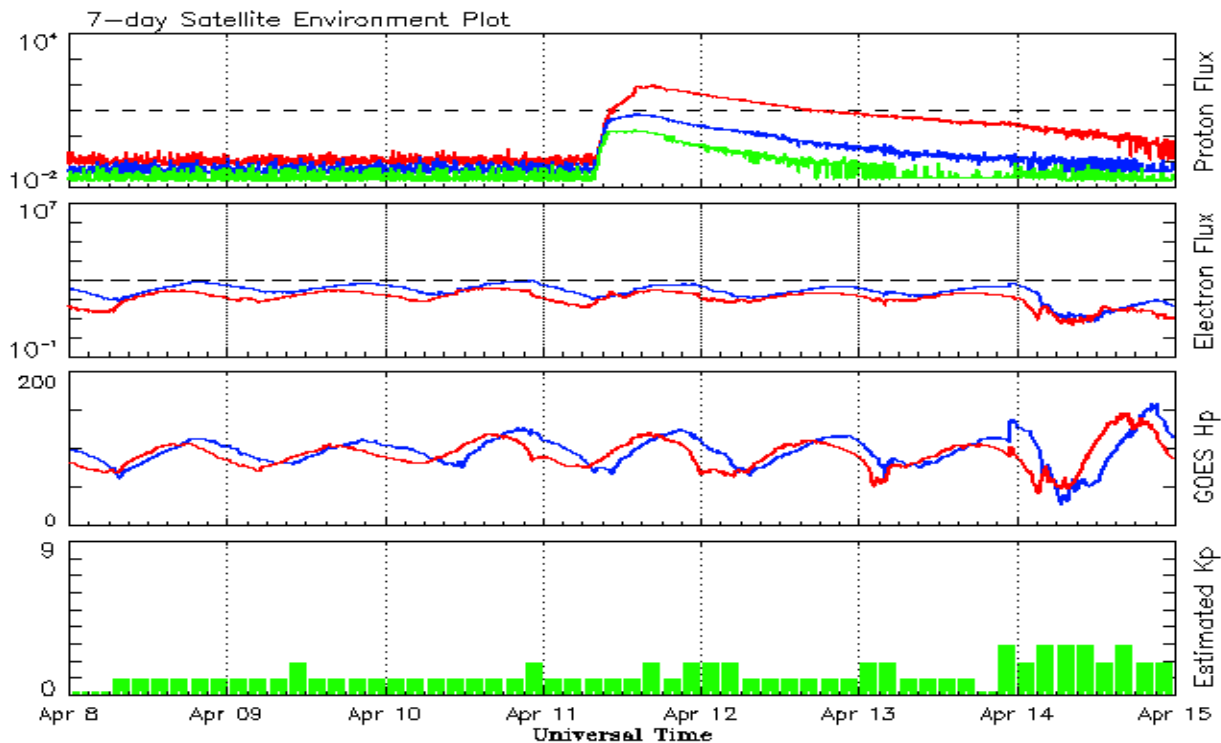
**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2011</b>									
April	81.7	54.4	0.67	61.5	41.8	112.6	100.4	9	7.5
May	61.4	41.6	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	57.3	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	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
<b>2012</b>									
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73			123.3		9	
November	89.2	61.8	0.69			120.9		6	
December	60.4	40.8	0.68			108.4		3	
<b>2013</b>									
January	99.8	62.9	0.63			127.1		4	
February	60.0	38.0	0.63			104.4		5	
March	81.0	57.9	0.71			111.2		9	

**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 08 April 2013*

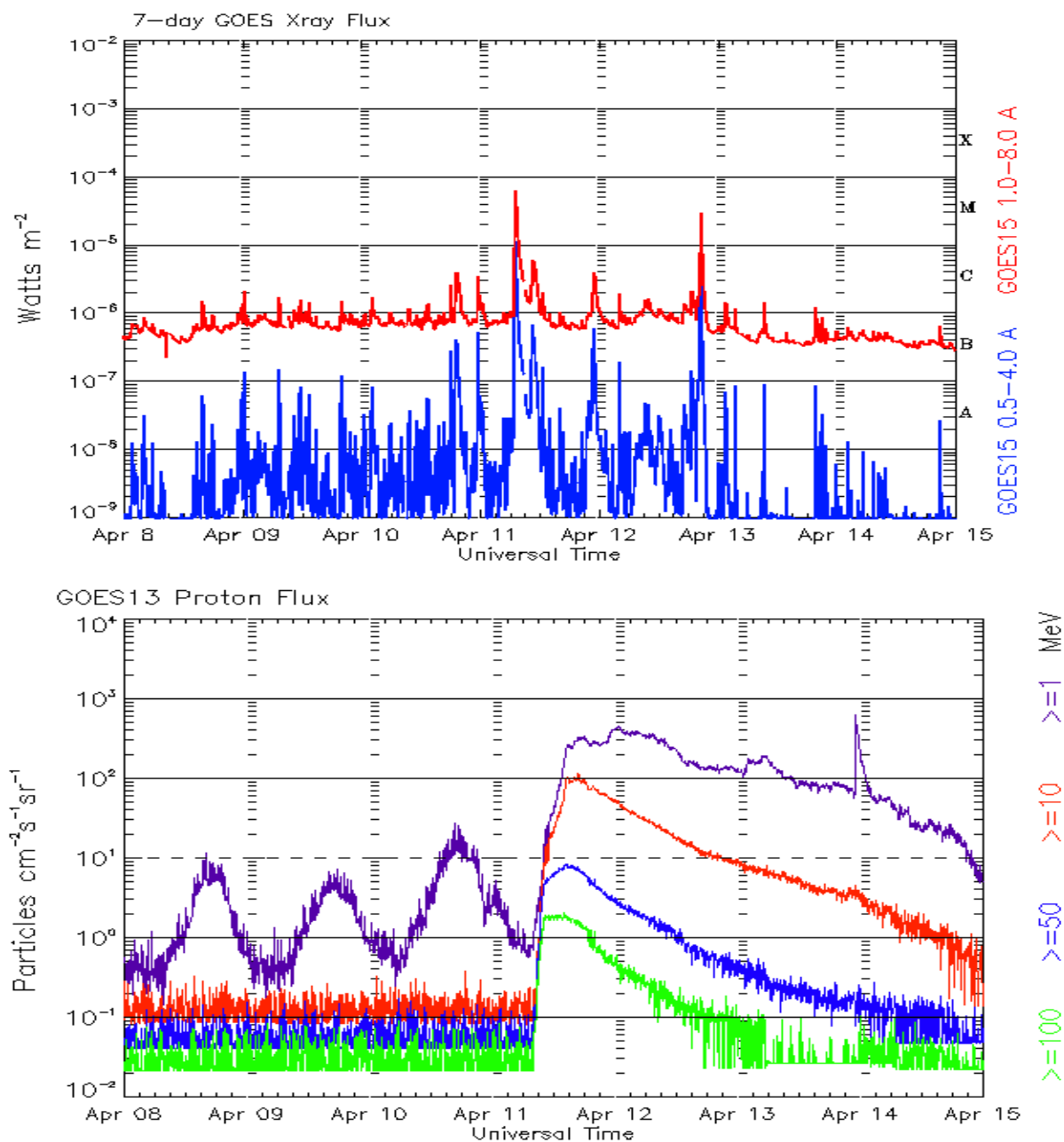
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 08 April 2013*

The x-ray plots contains five-minute averages x-ray flux ( $\text{Watt/m}^2$ ) 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 integral flux units (pfu = protons/ $\text{cm}^2$  -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](mailto:SWPC.Webmaster@noaa.gov)

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