

Space Weather Highlights
11 March - 17 March 2013

SWPC PRF 1959
18 March 2013

Solar activity was low to moderate. Low activity dominated the week with only low level C-class events observed on 11-14 and 16-17 March. A long duration C2/1f flare associated with a filament eruption near N20E05 occurred at around 12/1107 UTC. An associated asymmetric full halo was assessed to be Earth-directed with a velocity in the low 700 km/s range at departure. Activity increased to moderate levels on 15 March when Region 1692 (N09, L=077, class/area Hhx/250 on 09 March) produced an M1/1f long duration flare at 15/0658 UTC. This flare appeared in H-alpha imagery to erupt along a NE to SW oriented filament channel and partially through Region 1692 beginning at 15/0615 UTC. Associated with this flare were a 150 sfu Tenflare, a Type IV radio sweep, and an asymmetrical full-halo CME (estimated plane-of-sky speed of 1399 km/s). The CME first appeared in SOHO/LASCO C2 imagery at 15/0712 UTC.

A greater than 10 MeV proton event associated with the 15 March CME began at 16/1940 UTC, reached a maximum flux of 16 pfu at 17/0700 UTC, and ended at 17/0825 UTC.

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

Geomagnetic field activity was quiet from 11-14 March. Activity increased slightly to yield a few isolated unsettled periods on 15-16 March due to weak effects from the 12 March CME. The geomagnetic field began at quiet levels on 17 March. At 17/0601 UTC, a geomagnetic Sudden Impulse (41 nT on the Boulder magnetometer) was observed as the 15 March CME became geoeffective. Minor to major storm periods were subsequently observed with major to severe storm periods at high latitudes for the 17/0900-2100 UTC periods.

Space Weather Outlook
18 March - 13 April 2013

Solar activity is expected to be low throughout the period. A slight chance for M-class activity exists through 20 March while Regions 1696 (N04, L=095, class/area Eai/190 on 16 March) and 1698 (S19, L=118, class/area Eao/200 on 17 March) remain on the disk, and again from 01-13 April when the two regions are expected to 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 begin the period at moderate levels but rise to high levels from 19-24 March due to effects from the 15 March CME. A decrease to normal to moderate levels is then expected through 28 March. High levels are expected from 29 March-04 April due to effects from a recurrent coronal hole high speed stream (CH HSS). A return to normal to moderate levels is expected for the remainder of the period.

Geomagnetic field activity is expected to be at quiet to minor storm levels on 18 March due to continued effects from the 15 March CME. Quiet to unsettled levels are expected to prevail



throughout the remainder of the period with the exception of possible active periods on 28 March due to CH HSS effects.



Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
11 March	120	105	490	B2.5	1	0	0	1	0	0	0	0
12 March	123	95	610	B3.3	4	0	0	1	1	0	0	0
13 March	123	103	630	B4.7	2	0	0	2	0	0	0	0
14 March	123	133	740	B2.5	1	0	0	1	0	0	0	0
15 March	123	105	650	B4.0	2	1	0	3	2	0	0	0
16 March	126	90	890	B4.3	4	0	0	5	0	0	0	0
17 March	126	126	980	B3.6	3	0	0	1	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	>0.6 MeV	>2MeV	>4 MeV
11 March	5.4e+05	1.6e+04	2.7e+03		3.0e+06	
12 March	6.9e+05	1.6e+04	2.8e+03		4.1e+06	
13 March	4.6e+05	1.4e+04	2.7e+03		4.7e+06	
14 March	5.2e+05	1.3e+04	2.6e+03		7.8e+06	
15 March	4.7e+05	2.4e+04	2.6e+03		1.7e+06	
16 March	1.2e+07	5.4e+05	3.1e+03		3.6e+06	
17 March	1.1e+08	5.4e+05	2.4e+03		3.7e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
11 March	4	2-2-2-0-1-1-1-1	2	2-1-1-0-0-0-0-0	5	2-2-2-1-1-1-1-1
12 March	6	1-1-2-1-3-2-2-1	4	1-0-2-0-3-0-1-0	5	1-1-2-1-2-1-2-1
13 March	3	2-1-1-1-1-1-1-0	3	1-1-2-2-0-0-0-0	4	1-1-1-1-1-1-1-1
14 March	4	0-1-0-1-3-1-1-1	4	0-0-0-3-2-1-1-0	5	0-1-0-2-2-1-1-1
15 March	5	0-3-2-2-2-1-0-1	11	0-1-4-5-1-0-0-1	6	0-3-2-2-1-1-0-1
16 March	8	3-3-2-2-2-2-1-1	13	2-3-4-4-3-2-1-1	10	3-3-3-2-2-2-1-2
17 March	32	2-1-5-5-5-5-4-4	79	1-0-6-7-7-7-6-5	46	2-1-6-5-5-6-6-5



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
12 Mar 2041	WATCH: Geomagnetic Storm Category G1 predicted	
14 Mar 1939	WATCH: Geomagnetic Storm Category G1 predicted	
15 Mar 0505	WARNING: Geomagnetic Sudden Impulse expected	15/0530 - 0630
15 Mar 0531	WARNING: Geomagnetic K = 4	15/0530 - 1700
15 Mar 0535	SUMMARY: Geomagnetic Sudden Impulse	15/0526
15 Mar 0753	SUMMARY: 10cm Radio Burst	15/0631 - 0651
15 Mar 1220	ALERT: Type IV Radio Emission	15/0620
15 Mar 1712	WATCH: Geomagnetic Storm Category G2 predicted	
16 Mar 0415	WARNING: Geomagnetic K = 4	16/0430 - 0900
16 Mar 1647	WARNING: Proton 10MeV Integral Flux > 10pfu	16/1645 - 17/1200
16 Mar 1958	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	16/1940
17 Mar 0533	WARNING: Geomagnetic Sudden Impulse expected	17/0545 - 0645
17 Mar 0535	WARNING: Geomagnetic K = 4	17/0545 - 1800
17 Mar 0559	WARNING: Geomagnetic K = 5	17/0600 - 1200
17 Mar 0607	SUMMARY: Geomagnetic Sudden Impulse	17/0601
17 Mar 0608	ALERT: Geomagnetic K = 4	17/0603
17 Mar 0646	ALERT: Geomagnetic K = 5	17/0643
17 Mar 0811	WARNING: Geomagnetic K = 6	17/0815 - 1200
17 Mar 0904	ALERT: Geomagnetic K = 6	17/0842
17 Mar 0904	EXTENDED WARNING: Geomagnetic K = 5	17/0600 - 1500
17 Mar 1322	EXTENDED WARNING: Geomagnetic K = 5	17/0600 - 2100
17 Mar 1322	EXTENDED WARNING: Geomagnetic K = 4	17/0545 - 18/0200
17 Mar 1611	EXTENDED WARNING: Geomagnetic K = 4	17/0545 - 18/1800
17 Mar 1611	EXTENDED WARNING: Geomagnetic K = 5	17/0600 - 18/1200
17 Mar 1611	WARNING: Geomagnetic K = 6	17/1610 - 18/0200
17 Mar 1704	WATCH: Geomagnetic Storm Category G1 predicted	
17 Mar 1713	ALERT: Geomagnetic K = 6	17/1700
17 Mar 1900	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	16/1940 - 17/0825

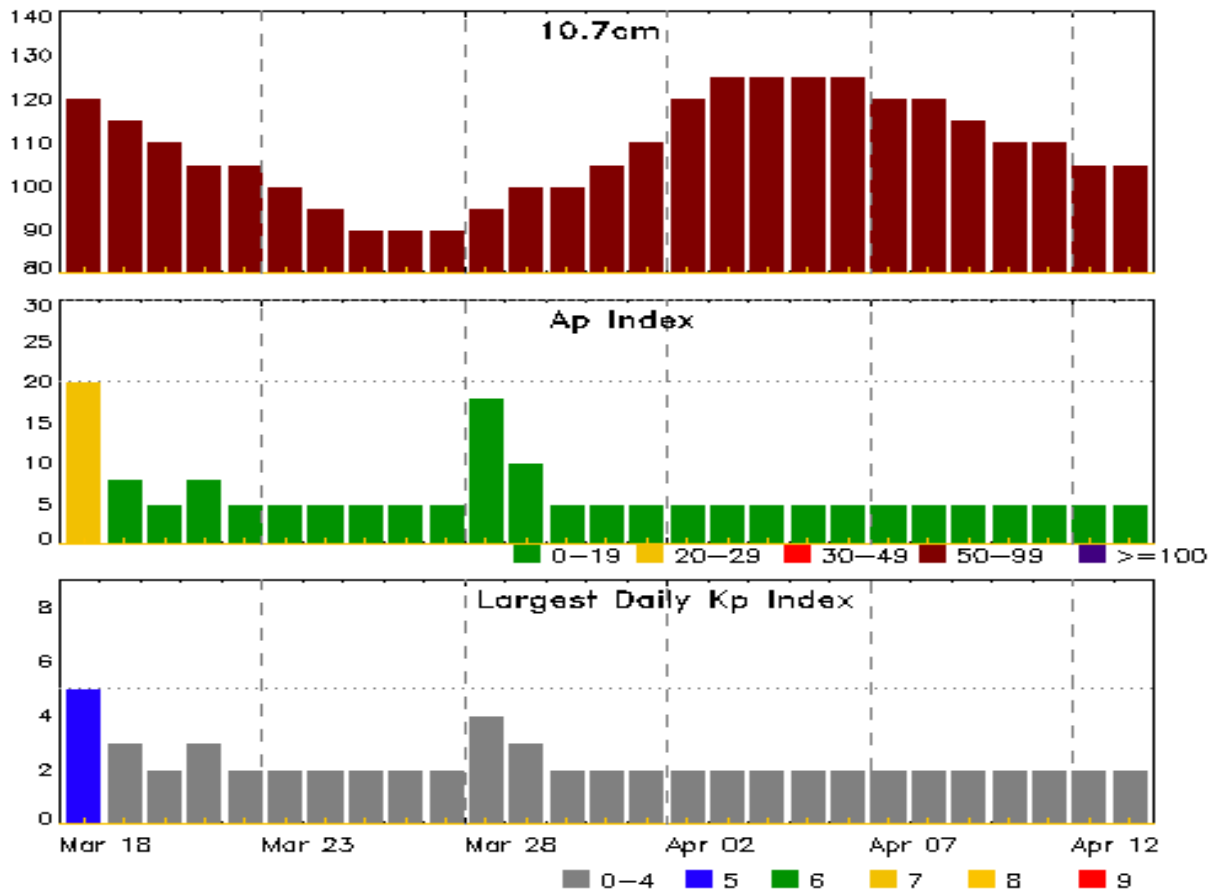


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
17 Mar 2106	ALERT: Geomagnetic K = 6	17/2059



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
18 Mar	120	20	5	01 Apr	110	5	2
19	115	8	3	02	120	5	2
20	110	5	2	03	125	5	2
21	105	8	3	04	125	5	2
22	105	5	2	05	125	5	2
23	100	5	2	06	125	5	2
24	95	5	2	07	120	5	2
25	90	5	2	08	120	5	2
26	90	5	2	09	115	5	2
27	90	5	2	10	110	5	2
28	95	18	4	11	110	5	2
29	100	10	3	12	105	5	2
30	100	5	2	13	105	5	2
31	105	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 #	Radio Flux		Intensity	
									245	2695	II	IV
15 Mar	0546	0658	0835	M1.1	0.073	1F	N11E12	1692	410	150		2

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
11 Mar	1032	1035	1037	B3.9			
11 Mar	1621	1625	1627	B9.9	SF	S20W24	1689
11 Mar	1640	1655	1707	C1.6			1695
11 Mar	1753	1757	1759	B6.8			
11 Mar	2349	2353	2355	B6.7			1689
12 Mar	1017	1107	1225	C2.0	1F	N25E01	1690
12 Mar	1410	1416	1424	C1.0			1695
12 Mar	2242	2246	2249	C3.6	SF	S21W41	1689
12 Mar	2316	0017	0127	C1.8			1692
13 Mar	0414	0434	0439	C1.1			1689
13 Mar	1615	1620	1625	C1.4	SF	N05E12	1696
13 Mar	1932	1941	1944	B6.5	SF	S19W47	1689
13 Mar	2333	2340	2350	B6.6			1691
14 Mar	0545	0554	0602	C2.1	SF	N13W27	1691
14 Mar	1026	1033	1045	B6.7			1691
14 Mar	1929	1944	1952	B6.8			1691
15 Mar	0429	0432	0435	B5.0			1691
15 Mar	0546	0658	0835	M1.1	1F	N11E12	1692
15 Mar	B0758	U0803	A0804		1F	N07E07	1692
15 Mar	1039	1044	1046	C2.2			1696
15 Mar	1509	1517	1522	C1.0	SF	N07W20	1696
15 Mar	1955	1955	2006		SF	N11W50	1691
15 Mar	2009	2016	2020	B9.2			
15 Mar	2140	2144	2148	B6.5	SF	N15W09	
16 Mar	0420	0428	0432	C2.6	SF	S20W48	1698
16 Mar	0452	0539	0625	C2.8			1698
16 Mar	0612	0614	0621		SF	S19W50	1698
16 Mar	0714	0718	0723	C2.0	SF	S19W50	1698
16 Mar	0830	0836	0839	C1.5	SF	S19W52	1698
16 Mar	1732	1733	1735		SF	S18W54	1698



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
16 Mar	1850	1853	1855	B8.0			1692
17 Mar	0051	0054	0102	B6.9			1696
17 Mar	0157	0204	0208	B7.3			1698
17 Mar	1019	1022	1025	B7.9			1698
17 Mar	1250	1253	1256	C1.0			1698
17 Mar	1440	1449	1456	C1.0	SF	N08W04	1695
17 Mar	2101	2104	2107	B7.4			
17 Mar	2123	2126	2128	C1.0			1698
17 Mar	2159	2203	2207	B8.8			



Region Summary

Date	Location		Sunspot Characteristics					Flares							
	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	4
<i>Region 1683</i>															
27 Feb	S17E79	203	90	2	Hsx	1	A								
28 Feb	S16E68	201	150	6	Dao	3	B					1			
01 Mar	S16E54	203	170	10	Dao	8	B					1			
02 Mar	S16E42	202	210	11	Eai	14	BG								
03 Mar	S16E30	200	200	12	Eai	14	B								
04 Mar	S16E17	199	100	10	Dai	15	B								
05 Mar	S15E01	202	80	7	Dao	11	B								
06 Mar	S15W09	199	10	3	Bxo	4	B								
07 Mar	S15W23	201	0	1	Axx	1	A								
08 Mar	S15W37	202	10	1	Axx	2	A								
09 Mar	S15W51	203	plage												
10 Mar	S15W65	203	plage												
11 Mar	S15W79	204	plage												
								0	0	0	2	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 202

Region 1685															
01 Mar	S13E72	185	20	3	Hrx	2	A								
02 Mar	S16E61	183	30	9	Cro	2	B								
03 Mar	S15E46	184	20	6	Dro	3	B								
04 Mar	S14E30	185	10	3	Bxo	2	B								
05 Mar	S14E16	187	10	4	Bxo	2	B								
06 Mar	S13E07	184	plage												
07 Mar	S13W07	185	plage												
08 Mar	S13W21	186	plage												
09 Mar	S13W35	187	plage												
10 Mar	S13W49	187	plage												
11 Mar	S13W63	188	plage												
12 Mar	S13W77	189	plage												
								0	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 184



Region Summary - continued

Date	Location	Sunspot Characteristics						Flares								
	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical					
		Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4	
Region 1687																
02 Mar	N06E77	167	plage					2								
03 Mar	N06E65	166	30	4	Cro	3	B									
04 Mar	N06E50	167	10	4	Bxo	3	B									
05 Mar	N10E46	164	10	3	Bxo	4	B									
06 Mar	N09E32	161	60	8	Cao	5	B									
07 Mar	N08E18	160	10	3	Bxo	3	B									
08 Mar	N08E05	160	plage													
09 Mar	N08W09	161	plage													
10 Mar	N08W23	161	plage													
11 Mar	N08W37	162	plage													
12 Mar	N08W51	163	plage													
13 Mar	N08W65	164	plage													
14 Mar	N08W79	165	plage													
								2	0	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 160

Region 1688															
03 Mar	S17E52	178	20	1	Hsx	1	A								
04 Mar	S15E37	179	20	2	Hsx	2	A								
05 Mar	S15E24	179	30	4	Cso	3	B								
06 Mar	S17E12	178	10	3	Bxo	3	B								
07 Mar	S17W02	180	10	2	Axx	2	A								
08 Mar	S17W16	181	plage												
09 Mar	S17W30	182	plage												
10 Mar	S17W44	182	plage												
11 Mar	S17W58	183	plage												
12 Mar	S17W72	184	plage												
13 Mar	S17W86	185	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 180



Region Summary - continued

Date	Location	Sunspot Characteristics						Flares								
	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	4	
Region 1689																
04 Mar	S17E63	153	10	2	Bxo	2	B									
05 Mar	S19E54	150	10	2	Bxo	3	B									
06 Mar	S20E41	149	150	10	Cso	8	B									
07 Mar	S20E28	150	150	12	Eao	8	B									
08 Mar	S19E15	150	100	10	Dao	12	B									
09 Mar	S19E02	150	110	8	Dao	13	B									
10 Mar	S19W11	149	140	12	Eai	16	B									
11 Mar	S19W24	148	130	11	Esi	12	B					1				
12 Mar	S19W36	147	100	12	Eai	12	B					1				
13 Mar	S18W53	150	30	11	Cso	6	B	1				1				
14 Mar	S18W69	155	30	8	Cro	4	B									
15 Mar	S18W83	155	plage													
								1	0	0		3	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 150

Region 1690

06 Mar	N23E69	122	20	1	Hsx	1	A								
07 Mar	N23E57	121	30	7	Hsx	1	A								
08 Mar	N23E42	123	30	2	Hsx	2	A								
09 Mar	N23E29	123	30	2	Hsx	2	A								
10 Mar	N24E17	121	20	1	Hrx	1	A								
11 Mar	N24E06	118	10	1	Axx	1	A								
12 Mar	N24W08	119	10	1	Bxo	1	B	1			1				
13 Mar	N25W21	119	10	1	Bxo	2	B								
14 Mar	N25W36	122	10	2	Bxo	2	B								
15 Mar	N25W50	122	plage												
16 Mar	N25W64	123	plage												
17 Mar	N25W78	124	plage												
								1	0	0	0	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 118



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
<i>Region 1691</i>																
08 Mar	N12E46		119	20	4	Cro	3	B								
09 Mar	N12E31		121	40	7	Cao	7	B								
10 Mar	N13E16		122	60	10	Cao	7	B								
11 Mar	N13W01		125	40	3	Cso	2	B								
12 Mar	N12W12		124	60	5	Dso	4	B								
13 Mar	N14W26		123	70	8	Dao	9	B								
14 Mar	N13W39		125	120	8	Dao	8	B	1			1				
15 Mar	N12W51		123	90	7	Cso	5	BG				1				
16 Mar	N12W64		123	120	8	Cso	7	B								
17 Mar	N12W78		124	120	7	Cso	2	B								
									1	0	0	2	0	0	0	

Still on Disk.

Absolute heliographic longitude: 125

Region 1692

09 Mar	N09E75	77	250	3	Hhx	1	A								
10 Mar	N09E60	77	220	4	Hsx	1	A								
11 Mar	N10E49	75	160	3	Hsx	1	A								
12 Mar	N09E35	76	190	3	Hsx	1	A	2							
13 Mar	N09E23	75	190	5	Cso	2	B								
14 Mar	N09E09	77	200	3	Hsx	2	A								
15 Mar	N09W03	75	180	3	Hsx	3	A		1			2			
16 Mar	N09W17	76	240	3	Hax	1	A								
17 Mar	N09W29	75	240	3	Cso	2	B								
								2	1	0	0	2	0	0	0

Still on Disk.

Absolute heliographic longitude: 75

Region 1693

10 Mar	N18W30	167	20	3	Cro	3	B								
11 Mar	N18W46	170	10	1	Axx	1	A								
12 Mar	N18W60	172	plage												
13 Mar	N18W74	173	plage												
14 Mar	N18W88	174	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 167



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

Region 1694

10 Mar	N15E66	71	30	1	Hsx	1	A								
11 Mar	N15E54	71	20	1	Hsx	1	A								
12 Mar	N16E38	73	20	1	Hsx	1	A								
13 Mar	N16E22	75	20	1	Hsx	1	A								
14 Mar	N15E11	75	20	1	Hrx	1	A								
15 Mar	N17W05	77	10	1	Hrx	1	A								
16 Mar	N17W19	78	plage												
17 Mar	N17W33	79	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 77

Region 1695

11 Mar	N09E70	54	80	2	Hsx	1	A	1							
12 Mar	N09E58	53	140	2	Hsx	1	A	1							
13 Mar	N09E44	53	160	2	Hsx	1	A								
14 Mar	N09E31	55	160	2	Hsx	1	A								
15 Mar	N10E18	54	110	3	Hax	2	A								
16 Mar	N10E05	54	180	3	Hax	1	A								
17 Mar	N10W09	55	180	3	Cso	3	B	1			1				
								3	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 54

Region 1696

11 Mar	N05E34	91	40	3	Cso	6	B								
12 Mar	N05E19	91	90	6	Dao	5	B								
13 Mar	N05E04	93	150	9	Dsi	12	B	1			1				
14 Mar	N05W09	95	150	12	Eai	15	BG								
15 Mar	N05W22	94	140	12	Eai	14	BG	2			1				
16 Mar	N04W36	95	190	13	Eai	10	BG								
17 Mar	N05W49	95	190	13	Eai	16	BG								
								3	0	0	2	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 93



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

Region 1697

14 Mar	N15W22	108	30	5	Cro	4	B								
15 Mar	N16W36	108	40	5	Dao	4	B								
16 Mar	N15W49	108	10	5	Bxo	3	B								
17 Mar	N15W63	109	10	5	Bxo	2	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 108

Region 1698

14 Mar	S20W29	115	20	3	Cro	6	B								
15 Mar	S19W42	114	80	6	Cso	6	B								
16 Mar	S19W57	116	150	9	Dao	8	B	4			5				
17 Mar	S19W72	118	200	11	Eao	16	B	2							
								6	0	0	5	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 115

Region 1699

17 Mar	S15W45	91	30	4	Cro	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 91

Region 1700

17 Mar	S13E54	352	10	3	Bxo	2	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 352

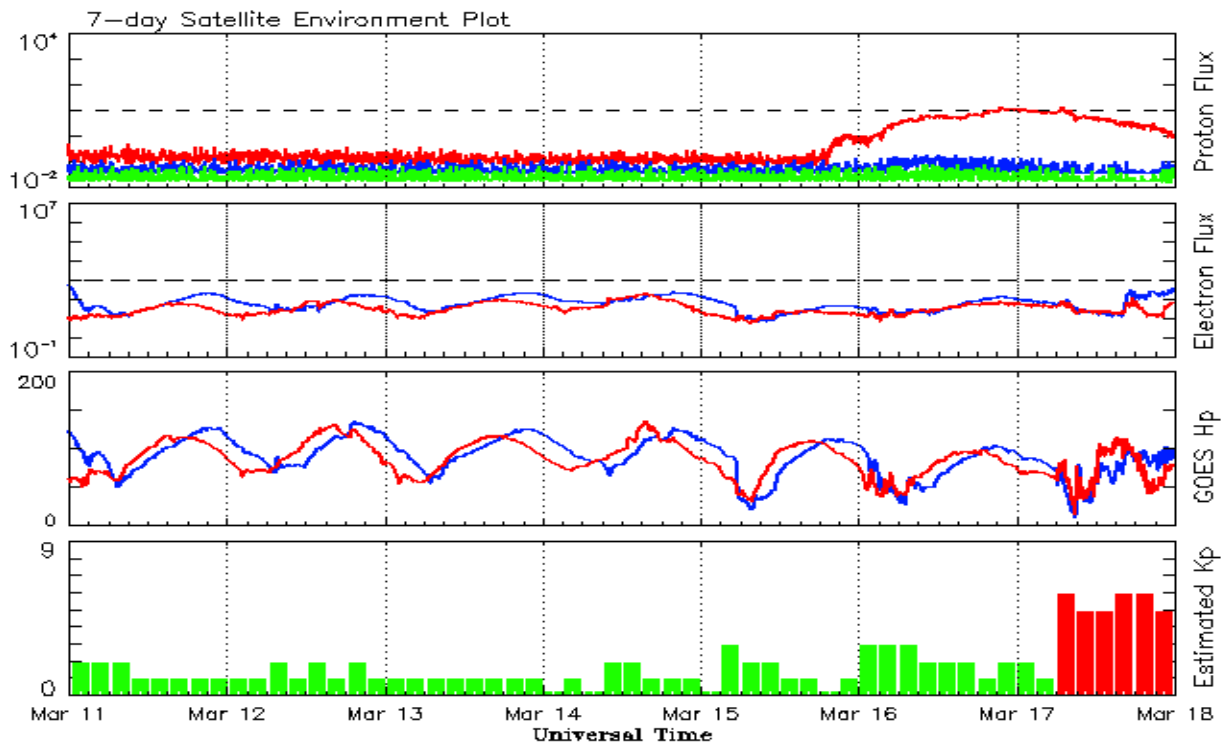


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2011									
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	41.6	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
2012									
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	57.7	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.1	115.7	119.2	7	8.1
September	84.0	61.4	0.73			123.2		8	
October	73.5	53.3	0.73			123.3		9	
November	89.2	61.4	0.69			120.9		6	
December	60.4	40.8	0.68			108.4		3	
2013									
January	99.8	62.9	0.63			127.1		4	
February	60.0	38.0	0.63			104.4		5	

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 11 March 2013*

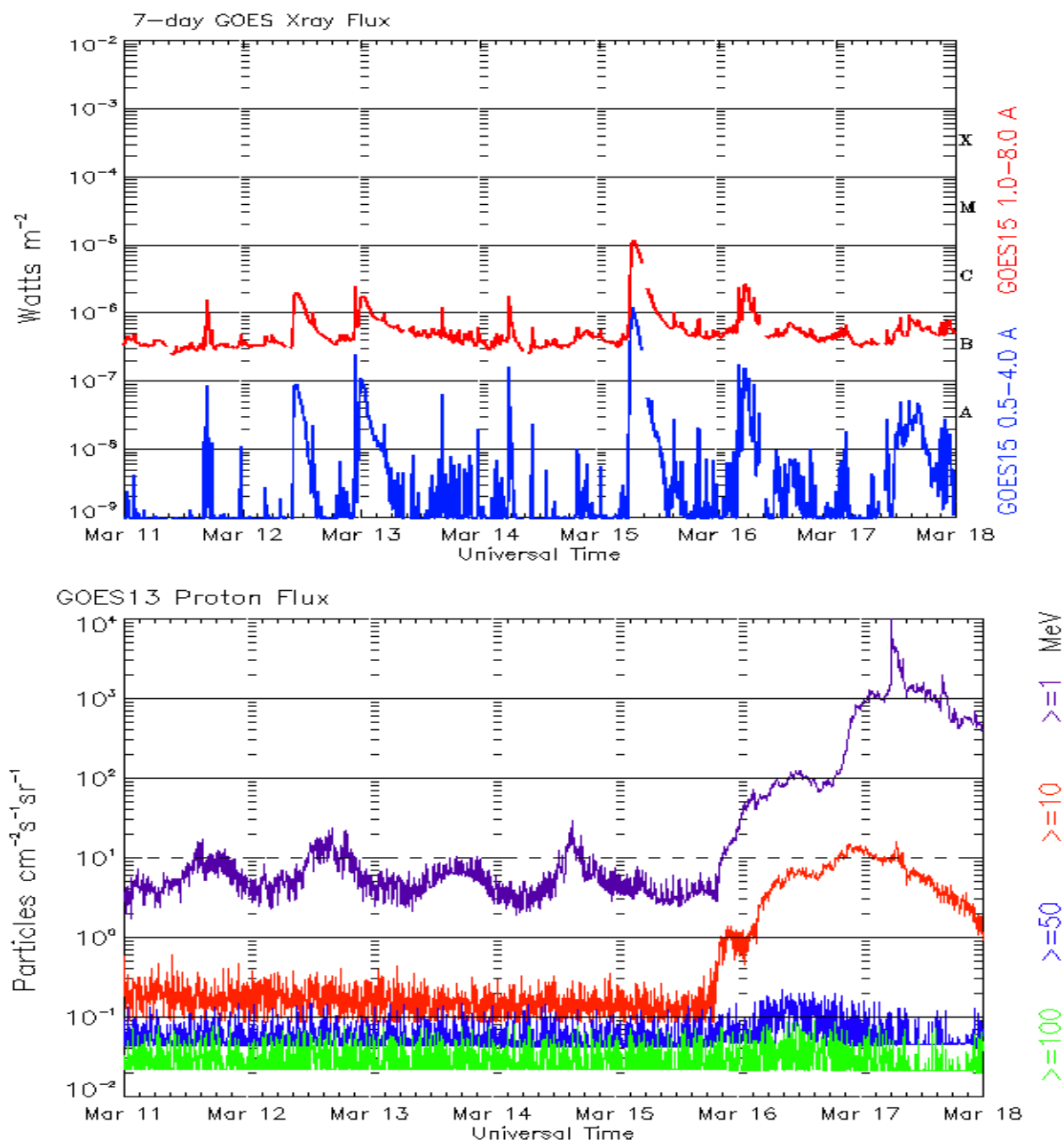
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-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 11 March 2013*

The x-ray plots contains five-minute averages x-ray flux (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/ 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.



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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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