

Solar activity ranged from low to high levels during the period. Early on 07 March, activity levels increased rapidly from low to high levels. Regions 1164 (N24, L=164, class/area Ekc/760 on 07 March), 1165 (S20, L=184, class/area Fko/420 on 07 March) and 1166 (N09, L=092, class/area Ekc/750 on 10 March) produced a total of seven M-class events on the 07 March, the largest was an M3.7 X-ray event from Region 1164 observed at 07/2012Z. Associated with this event was a Type II Sweep (1133 km/s), a large 10cm Burst (23,000 sfu) and a full-halo CME with an estimated plane-of-sky velocity of 2180 km/s. Earlier on 07 March, Region 1166 produced an M1.9/Sf with associated Type II (1320 km/s) and Type IV Sweep signatures and a partial-halo CME with an estimated plane-of-sky velocity of 634 km/s. Activity levels remained high on 08 March due to an M5.3/1f flare observed from Region 1165 at 08/1044Z. High levels persisted on 09 March when Region 1166 produced a X1.5/2b flare at 09/2323Z. Activity decayed to moderate levels on 10 March due to a single M1.1 at 10/2241Z, most likely from Region 1166. By 11 March, levels decayed further to low levels as C-class activity was observed, all from Region 1166. Moderate levels returned on 12 March due to an M1.3/1n observed from Region 1166 at 12/0443Z with an associated Type II Sweep (454 km/s). Later on the 12th, Region 1166 produced a C9.6/1f flare with another Type II Sweep (954 km/s). On 13 March, levels decreased again to low levels with Region 1166 and Region 1169 (N20, L=060, class/area Cro/290 on 13 March) producing C-class events.

A greater than 10 MeV proton event, at geosynchronous orbit, was observed from 8-10 March due to the M3.7 event from 07/2012Z from Region 1164. The event began at 08/0105Z, reached a maximum flux of 50 pfu on 08/0800Z, and ended at 10/1210Z.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels from 07-09 March. Mostly moderate levels were observed until March 13, when a return to high levels was observed.

Geomagnetic field activity ranged from quiet to minor storm levels with isolated major to severe storm periods observed at high latitudes. From 07 March through early on 10 March, the geomagnetic field was at quiet to unsettled levels with isolated high latitude active periods. At about 10/0600Z, the ACE spacecraft observed a shock which was most likely the result of the arrival of the 07 March CME activity. Wind speeds increased from about 300 km/s to near 375 km/s while the Bz component of the IMF turned south to about -9 nT. The geomagnetic field responded with unsettled to active conditions, with major to severe storm levels observed at high latitudes. These conditions persisted through the remainder of the summary period. At about 11/1400Z, density, temperature, and wind speed began to rise while the Bz component indicated fluctuations between +/- 10 nT. These signatures were consistent with a co-rotating interaction



region (CIR) in advance of a recurrent coronal hole high speed stream (CH HSS). Solar wind velocities continued a gradual rise through the remainder of 11 March into 12 March and peaked near 600 km/s at 12/0858Z. On 13 March, a gradual decrease in solar wind velocity was observed with velocities holding steady near 550 km/s

Space Weather Outlook

16 March - 11 April 2011

Solar activity is expected to be at very low levels with a chance for C-class events from 16-24 March. An increase to low to moderate levels is expected for the remainder of the period with the return of old Regions 1165 and 1164 on 25 March and old Region 1169 on 31 March.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate levels from 16 - 19 March. Normal background levels are expected to prevail during 20 - 28 March. High levels are expected to return from 29 March - 05 April and then a decrease to normal background levels is expected for the remainder of the period.

Geomagnetic field activity is expected to be at mostly quiet levels from 16 - 27 March. An increase to active to minor storm levels is expected from 28 -31 March in response to a recurrent CH HSS. A return to mostly quiet levels is expected from 01 - 06 April. Quiet to unsettled conditions with a chance for an isolated active period from 07 - 10 April is expected in response to another recurrent CH HSS. A return to quiet levels is expected for the remainder of the period.



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
07 March	153	122	1650	C1.7	6	7	0	12	2	0	0	0
08 March	155	137	1540	C1.7	5	5	0	6	2	0	0	0
09 March	143	132	1250	C1.8	9	2	1	12	0	1	0	0
10 March	131	88	940	B9.1	7	1	0	5	0	0	0	0
11 March	123	105	950	B4.9	12	0	0	8	0	0	0	0
12 March	121	78	1050	B5.1	9	1	0	9	1	1	0	0
13 March	113	64	950	B3.8	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
	07 March	5.2e+05	2.1e+04	3.4e+03		2.1e+08
08 March	1.5e+07	3.0e+06	4.6e+03		5.8e+07	
09 March	1.8e+07	1.3e+06	4.5e+03		7.6e+07	
10 March	4.5e+07	7.9e+05	4.3e+03		1.0e+07	
11 March	1.4e+07	2.0e+05	3.6e+03		4.2e+06	
12 March	1.6e+06	2.7e+04	3.2e+03		1.8e+07	
13 March	1.1e+06	1.6e+04	3.2e+03		3.8e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	07 March	7	2-2-1-1-2-1-3-2	10	2-1-1-4-4-1-1-2	10
08 March	4	3-1-1-0-1-1-1-0	8	3-1-2-2-3-3-0-0	5	2-1-1-1-2-1-1-2
09 March	2	1-0-1-0-1-1-1-1	2	1-0-1-2-1-0-0-1	4	2-1-1-1-1-1-2-2
10 March	14	2-2-4-3-2-2-3-4	39	1-1-7-6-4-3-3-4	20	2-2-4-4-3-2-4-5
11 March	18	3-4-3-2-1-3-3-5	56	4-4-5-5-5-7-6-4	40	4-5-4-2-2-5-6-6
12 March	10	4-2-2-1-1-1-3-3	11	4-2-2-3-3-1-2-2	13	5-2-2-2-2-1-3-3
13 March	5	0-0-0-2-2-3-2-1	11	2-1-1-4-3-3-3-1	6	1-0-0-2-1-3-3-1



Alerts and Warnings Issued

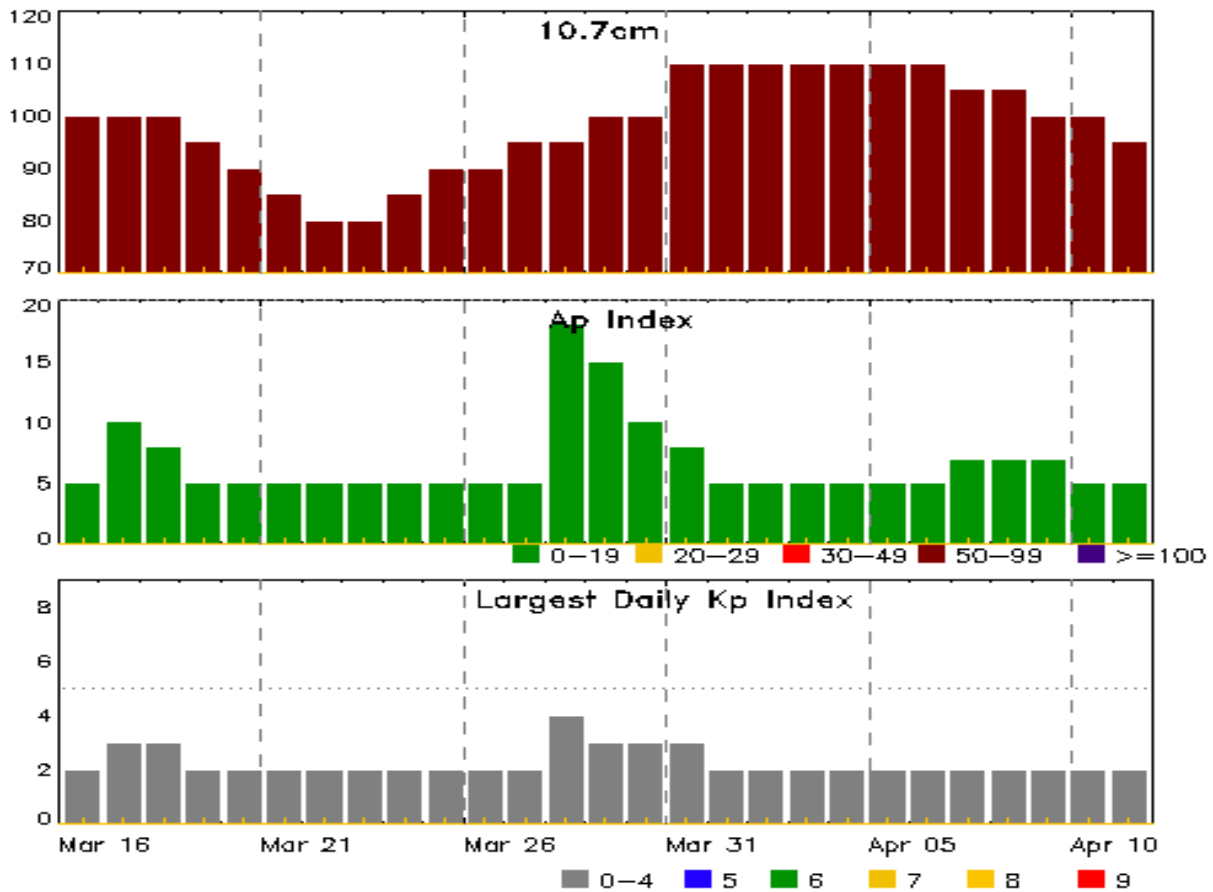
Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
07 Mar 0811	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	02/1405
07 Mar 1533	ALERT: Type II Radio Emission	07/1425
07 Mar 1625	ALERT: Type IV Radio Emission	07/1500
07 Mar 1703	ALERT: Type IV Radio Emission	07/1439
07 Mar 2022	ALERT: Type II Radio Emission	07/1954
07 Mar 2133	SUMMARY: 10cm Radio Burst	07/1953 - 2118
07 Mar 2137	ALERT: Type II Radio Emission	07/2059
07 Mar 2218	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	07/2230 - 08/2230
08 Mar 0121	ALERT: Proton Event 10MeV Integral Flux \geq 10pfu	08/0120
08 Mar 0159	ALERT: Type IV Radio Emission	08/0009
08 Mar 0415	ALERT: Type II Radio Emission	08/0350
08 Mar 0456	ALERT: Type IV Radio Emission	08/0345
08 Mar 0733	WATCH: Geomagnetic A \geq 20	08/
08 Mar 1043	ALERT: X-ray Flux exceeded M5	08/1043
08 Mar 1148	SUMMARY: X-ray Event exceeded M5	08/1035 - 1055
08 Mar 1346	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	02/1405
08 Mar 1934	WATCH: Geomagnetic A \geq 20	09/
08 Mar 1935	WATCH: Geomagnetic A \geq 20	10/
08 Mar 2213	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	07/2230 - 10/0000
09 Mar 1130	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	02/1405
09 Mar 2322	ALERT: X-ray Flux exceeded M5	09/2321
09 Mar 2354	SUMMARY: X-ray Event exceeded X1	09/2313 - 2329
09 Mar 2356	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	07/2230 - 10/2359
10 Mar 0623	WARNING: Geomagnetic Sudden Impulse expected	10/0645 - 0745
10 Mar 0627	WARNING: Geomagnetic K = 4	10/0640 - 1600
10 Mar 0634	WARNING: Geomagnetic K = 5	10/0640 - 1600



10 Mar 0841	ALERT: Geomagnetic K = 4	10/0840
10 Mar 1556	EXTENDED WARNING: Geomagnetic K = 4	10/0640 - 11/1600
10 Mar 1649	SUMMARY: Proton Event 10MeV Integral Flux \geq 10pfu	08/0105 - 10/1210
10 Mar 1711	CANCELLATION: Proton 10MeV Integral Flux $>$ 10pfu	
11 Mar 0647	WARNING: Geomagnetic K = 5	11/0648 - 1600
11 Mar 1531	EXTENDED WARNING: Geomagnetic K = 4	10/0640 - 12/1600
11 Mar 2341	WARNING: Geomagnetic K = 5	11/2340 - 12/0500
11 Mar 2350	ALERT: Geomagnetic K = 5	11/2343
12 Mar 0511	ALERT: Type II Radio Emission	12/0441
12 Mar 1619	ALERT: Type II Radio Emission	12/1526
13 Mar 1510	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	13/1455



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
16 Mar	100	5	2	30 Mar	100	10	3
17	100	10	3	31	110	8	3
18	100	8	3	01 Apr	110	5	2
19	95	5	2	02	110	5	2
20	90	5	2	03	110	5	2
21	85	5	2	04	110	5	2
22	80	5	2	05	110	5	2
23	80	5	2	06	110	5	2
24	85	5	2	07	105	7	2
25	90	5	2	08	105	7	2
26	90	5	2	09	100	7	2
27	95	5	2	10	100	5	2
28	95	18	4	11	95	5	2
29	100	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 #	245	2695	Intensity II	IV
07 Mar	0500	0513	0519	M1.2	0.008			1164				
07 Mar	0749	0754	0756	M1.5	0.004	SF	S20W78	1165	110			
07 Mar	0759	0807	0815	M1.4	0.010	1F	N25W47	1164	100	100		
07 Mar	0914	0920	0928	M1.8	0.009	SF	N23W50	1164		190		
07 Mar	1345	1430	1456	M1.9	0.062	SF	N10E18	1166			2	1
07 Mar	1943	2012	2058	M3.7	0.120			1164	5400	23000	3	
07 Mar	2145	2150	2155	M1.5	0.007			1165				
08 Mar	0224	0229	0232	M1.3	0.003	1N	S18W79	1165				
08 Mar	0337	0358	0420	M1.5	0.028			1171		130	2	1
08 Mar	1035	1044	1055	M5.3	0.034	1F	S17W86	1165				
08 Mar	1808	1828	1841	M4.4	0.057			1165				
08 Mar	1946	2016	2119	M1.4	0.067			1165				
09 Mar	1035	1107	1121	M1.7	0.026	SF	N08W03	1166	480			
09 Mar	1317	1402	1413	M1.7	0.023	SF	N09W06	1166				
09 Mar	2313	2323	2329	X1.5	0.067	2B	N08W09	1166				
10 Mar	2234	2241	2249	M1.1	0.006	SF	N30E56	1140				
12 Mar	0433	0443	0448	M1.3	0.008	2N	N05W36	1166			1	

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
07 Mar	0048	0052	0113		SF	S20W69	1165
07 Mar	0133	0137	0140		SF	S20W70	1165
07 Mar	0202	0228	0236	C3.0	SF	S20W71	1165
07 Mar	0344	0345	0350		SF	S20W72	1165
07 Mar	0352	0352	0358		SF	S20W72	1165
07 Mar	0417	0417	0424	C5.0	SF	S20W73	1165
07 Mar	0500	0513	0519	M1.2			1164
07 Mar	0503	0513	0525		1F	N24W48	1164
07 Mar	0503	0506	0511		SF	S20W70	1165
07 Mar	0711	0718	0730	C3.6			1165
07 Mar	0749	0754	0756	M1.5	SF	S20W78	1165
07 Mar	0759	0807	0815	M1.4	1F	N25W47	1164
07 Mar	0914	0920	0928	M1.8	SF	N23W50	1164
07 Mar	1016	1021	1027	C4.9			1164
07 Mar	B1220	U1221	A1223		SF	N10E19	1166



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
07 Mar	1345	1430	1456	M1.9	SF	N10E18		1166
07 Mar	1605	1609	1612	C5.1				1165
07 Mar	1818	1823	1841	C7.6				1165
07 Mar	1943	2012	2058	M3.7				1164
07 Mar	B1949	U1950	A2020		SF	S22W67		1165
07 Mar	2145	2150	2155	M1.5				1165
08 Mar	0014	0019	0025	C4.7	SF	S17W84		1165
08 Mar	0224	0229	0232	M1.3	1N	S18W79		1165
08 Mar	0337	0358	0420	M1.5				1171
08 Mar	0504	0508	0512	C5.5				1165
08 Mar	0605	0606	0609		SF	S27W58		
08 Mar	0932	0935	0939	C4.7				1170
08 Mar	1035	1044	1055	M5.3	1F	S17W86		1165
08 Mar	B1420	U1420	A1423		SF	S16W90		1165
08 Mar	1808	1828	1841	M4.4				1165
08 Mar	1905	1907	1912		SF	N09W02		1166
08 Mar	1946	2016	2119	M1.4				1165
08 Mar	2140	2140	2151		SF	N08E03		1166
08 Mar	2310	2314	2319	C7.7	SF	N09E02		1166
08 Mar	2332	2337	2340	C8.8				1165
09 Mar	0152	0159	0207	C5.6				1164
09 Mar	0218	0221	0225	C4.7				1171
09 Mar	0230	0233	0236	C6.4				1171
09 Mar	B0703	U0733	A0747		SF	N09W01		1166
09 Mar	0823	0855	0906	C9.4	SF	N07W04		1166
09 Mar	B0918	U0926	A0931		SF	N10W04		1166
09 Mar	1035	1107	1121	M1.7	SF	N08W03		1166
09 Mar	1159	1204	1210		SF	N20E27		1169
09 Mar	1317	1402	1413	M1.7	SF	N09W06		1166
09 Mar	B1429	U1443	A1540		SF	N09W04		1166
09 Mar	B1443	U1443	A1449		SF	N19E24		1169
09 Mar	1542	1548	1553	C2.6	SF	S27W75		1170
09 Mar	1642	1648	1653	C2.7				1169
09 Mar	2056	2107	2125	C5.0	SF	N21E22		1169
09 Mar	2135	2142	2145	C2.9	SF	S27W79		1170
09 Mar	2203	2212	2214	C9.4	SF	N08W04		1166
09 Mar	2313	2323	2329	X1.5	2B	N08W09		1166
10 Mar	0350	0358	0417	C2.9				1166



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
10 Mar	0703	0712	0715	C6.2			1166
10 Mar	0907	0913	0927	C2.4			1170
10 Mar	1225	1226	1232		SF	N12W18	1166
10 Mar	1319	1325	1334	C4.2	SF	N08W18	1166
10 Mar	1342	1346	1350	C4.7	SF	N11W19	1166
10 Mar	1421	1424	1428	C2.0	SF	N08W20	1166
10 Mar	1520	1526	1535		SF	N08W20	1166
10 Mar	1900	1907	1917	C4.0			
10 Mar	2234	2241	2249	M1.1			
11 Mar	0029	0033	0039	C1.4			
11 Mar	0146	0150	0157	C1.1			
11 Mar	0224	0229	0236	C2.8			1166
11 Mar	0415	0432	0439	C5.5	SF	N08W32	1166
11 Mar	0659	0703	0708	C3.0	SF	N12W28	1166
11 Mar	0722	0727	0732	C4.3	SF	N11W29	1166
11 Mar	0813	0818	0825	C1.1			
11 Mar	1110	1115	1122	C2.0	SF	N08W33	1166
11 Mar	1138	1138	1142		SF	N10W32	1166
11 Mar	1143	1147	1149	C3.6	SF	N08W32	1166
11 Mar	1419	1420	1431		SF	N17W07	1169
11 Mar	1433	1433	1450		SF	N08W35	1166
11 Mar	1604	1607	1610	C1.1			1166
11 Mar	2214	2220	2227	C1.0			1166
11 Mar	2238	2243	2250	C1.0			1166
12 Mar	0433	0443	0448	M1.3	2N	N05W36	1166
12 Mar	0904	0907	0909	B9.3	SF	N16W17	1169
12 Mar	1021	1027	1031	C2.2	SF	N16W17	1169
12 Mar	1059	1100	1106		SF	N05W39	1166
12 Mar	1222	1229	1237	C2.2	SF	N08W47	1166
12 Mar	1251	1259	1321	C7.0	SF	N08W47	1166
12 Mar	1519	1529	1534	C9.6	1F	N05W39	1166
12 Mar	1626	1637	1645	C1.6			1172
12 Mar	1631	1637	1700		SF	N09E69	1172
12 Mar	1732	1738	1744	C1.2			1169
12 Mar	1758	1801	1804	C1.0			1166
12 Mar	2142	2147	2151	B9.0			1166
12 Mar	2220	2223	2225	C1.4	SF	N16W23	1169
12 Mar	2242	2251	2257	C2.2	SF	N16W21	1169



Flare List

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	
12 Mar	2247	U2253	A2307		SF	N06W45	1166
13 Mar	0142	0149	0152	B7.5			1169
13 Mar	1325	1333	1340	C6.7			1166
13 Mar	1436	1442	1444	C6.4			1166
13 Mar	1940	1944	1948	B7.1			1166
13 Mar	2150	2159	2213	C1.7	SF	N18W36	1169



Region Summary

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
Region 1163																							
24 Feb	N18E72	176	200	1	Cro	2	B	2	1														
25 Feb	N17E60	177	120	8	Dai	10	BG	2															
26 Feb	N18E46	178	110	6	Dai	9	BG																
27 Feb	N18E32	179	10	1	Axx	1	A																
28 Feb	N18E19	178	10	1	Axx	1	A																
01 Mar	N17E05	179	10	3	Bxo	2	B																
02 Mar	N17W09	181	plage																				
03 Mar	N17W23	182	plage																				
04 Mar	N17W37	183	plage					1				1											
05 Mar	N17W51	184	plage					2															
06 Mar	N17W65	184	plage																				
07 Mar	N17W79	185	plage																				
09 Mar	S26W89	168	plage																				
								7	1	0	1	0	0	0	0	0	0	0	0	0			

Crossed West Limb.

Absolute heliographic longitude: 179

Region 1164

25 Feb	N28E76	162	250	4	Hkx	1	A	1												
26 Feb	N28E60	164	200	10	Dao	7	BG	1												
27 Feb	N27E46	165	170	14	Eso	12	BG	1				3								
28 Feb	N26E33	164	350	12	Ehc	19	BG	8	1			3								
01 Mar	N25E20	165	550	14	Ekc	31	BGD	6				2								
02 Mar	N25E08	165	400	15	Ekc	41	BGD	1				1								
03 Mar	N25W06	164	470	14	Ekc	21	BG	5				5	1							
04 Mar	N25W19	164	570	14	Ekc	27	BGD	1				1								
05 Mar	N24W34	165	770	17	Fkc	28	BGD	1				1								
06 Mar	N24W46	165	640	12	Ekc	25	BGD	11				7								
07 Mar	N24W59	164	760	13	Ekc	20	BGD	1	4			1	2							
08 Mar	N23W71	163	580	11	Ekc	23	BGD													
09 Mar	N23W84	164	350	10	Dai	9	BG	1												
								38	5	0	24	3	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 164



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 1165																		
26 Feb	S22E43	181	20	4	Bxo	3	B											
27 Feb	S21E29	181	10	1	Axx	1	A											
28 Feb	S21E14	183	20	3	Bxo	4	B											
01 Mar	S22E03	182	60	5	Cso	9	B											
02 Mar	S22W09	180	30	5	Bxo	11	B											
03 Mar	S19W26	184	10	6	Bxo	5	B											
04 Mar	S19W40	186	20	4	Bxo	6	B											
05 Mar	S21W52	183	160	10	Bxo	14	B	10				3						
06 Mar	S20W68	186	200	11	Eao	21	B	7				6						
07 Mar	S20W78	184	420	16	Fko	18	BGD	5	2			9						
08 Mar	S18W92	184	200	11	Eki	5	BGD	3	4			2	2					
								25	6	0		20	2	0	0	0		

Crossed West Limb.
 Absolute heliographic longitude: 182

Region 1166																		
02 Mar	N10E77	95	10	1	Hrx	1	A											
03 Mar	N09E65	93	140	6	Dso	3	B											
04 Mar	N09E55	90	490	11	Eac	15	B											
05 Mar	N10E41	90	610	12	Eki	16	BG											
06 Mar	N11E27	91	360	11	Ekc	16	BG	2										
07 Mar	N11E12	93	410	15	Ekc	25	BGD		1			2						
08 Mar	N11W01	93	550	16	Fkc	35	BGD	1				3						
09 Mar	N09W12	92	630	13	Ekc	55	BGD	2	2	1		7			1			
10 Mar	N09W26	92	750	13	Ekc	25	BG	5				5						
11 Mar	N09W39	92	690	13	Ekc	47	BGD	9				7						
12 Mar	N09W52	91	770	13	Ekc	29	BGD	4	1			4	1	1				
13 Mar	N10W65	92	640	11	Ekc	14	BG	2										
								25	4	1		28	1	2	0	0		

Still on Disk.
 Absolute heliographic longitude: 93



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
Region 1167																							
03 Mar	N14E31	126	10		2	Bxo	2	B															
04 Mar	N15E20	125	20		7	Bxo	5	B															
05 Mar	N14E05	126	20		5	Bxo	4	B															
06 Mar	N09W09	127	20		4	Bxo	2	B															
07 Mar	N15W18	124	10		3	Bxo	2	B															
08 Mar	N13W36	128	10		1	Axx	1	A															
09 Mar	N13W50	130	plage																				
10 Mar	N12W66	131	10		3	Bxo	2	B															
11 Mar	N12W80	133	plage																				
										0	0	0	0	0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 126

Region 1169																							
05 Mar	N22E70	62	plage							1													
06 Mar	N21E56	62	30		4	Bxo	4	B		1													
07 Mar	N20E44	61	50		5	Dsi	7	B															
08 Mar	N19E31	61	170		8	Dso	11	B															
09 Mar	N20E18	61	220		10	Esc	22	BG		2			3										
10 Mar	N20E04	62	160		12	Eai	15	BG															
11 Mar	N20W09	62	250		13	Eki	26	BG					1										
12 Mar	N19W22	61	260		13	Ekc	17	BG		4			4										
13 Mar	N20W34	60	290		13	Cro	17	B		1			1										
										9	0	0	9	0	0	0	0	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 62

Region 1170																							
08 Mar	S26W68	160	30		3	Bxo	2	B		1													
09 Mar	S25W80	160	50		5	Bxo	6	B		2			2										
10 Mar	S25W94	161	20		2	Hrx	6	A		1													
										4	0	0	2	0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 160



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
									C	M	X	S	1	2	3	4	
Region 1171																	
08 Mar	S19E69	36	plage							1							
09 Mar	S19E55	25	plage						2								
10 Mar	S19E41	26	plage														
11 Mar	S19E27	26	plage														
12 Mar	S19E13	27	plage														
13 Mar	S19W01	28	plage														
									2	1	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 28

Region 1172																	
11 Mar	N11E72	340	10	3	Bxo	2	B										
12 Mar	N12E58	345	20	4	Bxo	2	B	1				1					
13 Mar	N12E44	342	20	7	Bxo	3	B										
								1	0	0	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 342

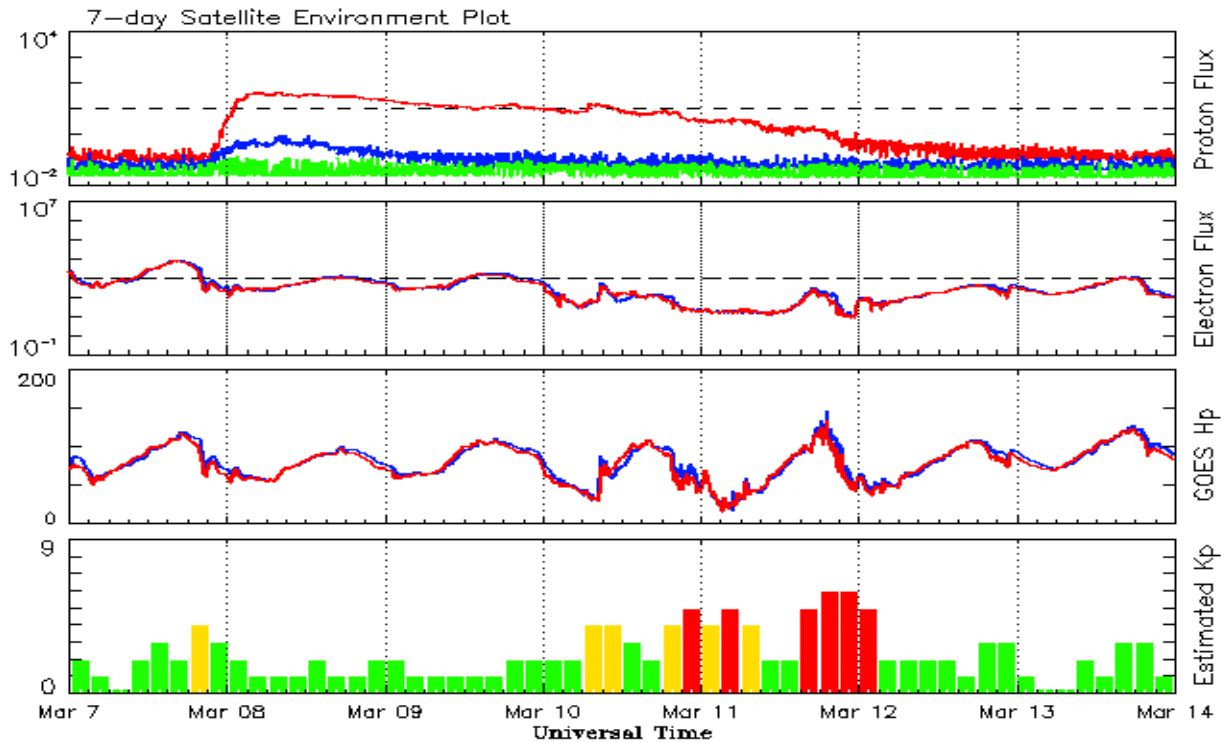


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2009									
March	0.7	0.7	1.00	3.4	2.0	69.2	69.0	5	4.6
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
2010									
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	16.8	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			81.1		5	
October	35.0	23.5	0.67			81.6		6	
November	36.1	21.6	0.60			82.5		5	
December	22.0	14.5	0.66			84.3		4	
2011									
January	32.1	19.0	0.59			83.7		6	
February	53.2	29.4	0.55			94.5		5	

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 07 March 2011*

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.

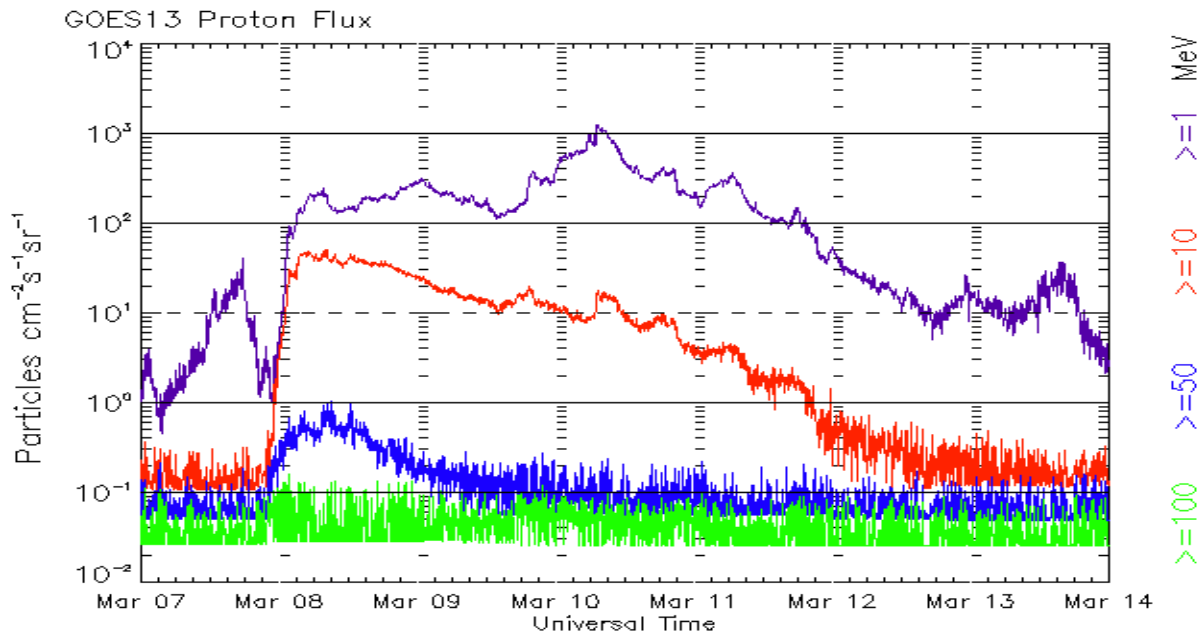
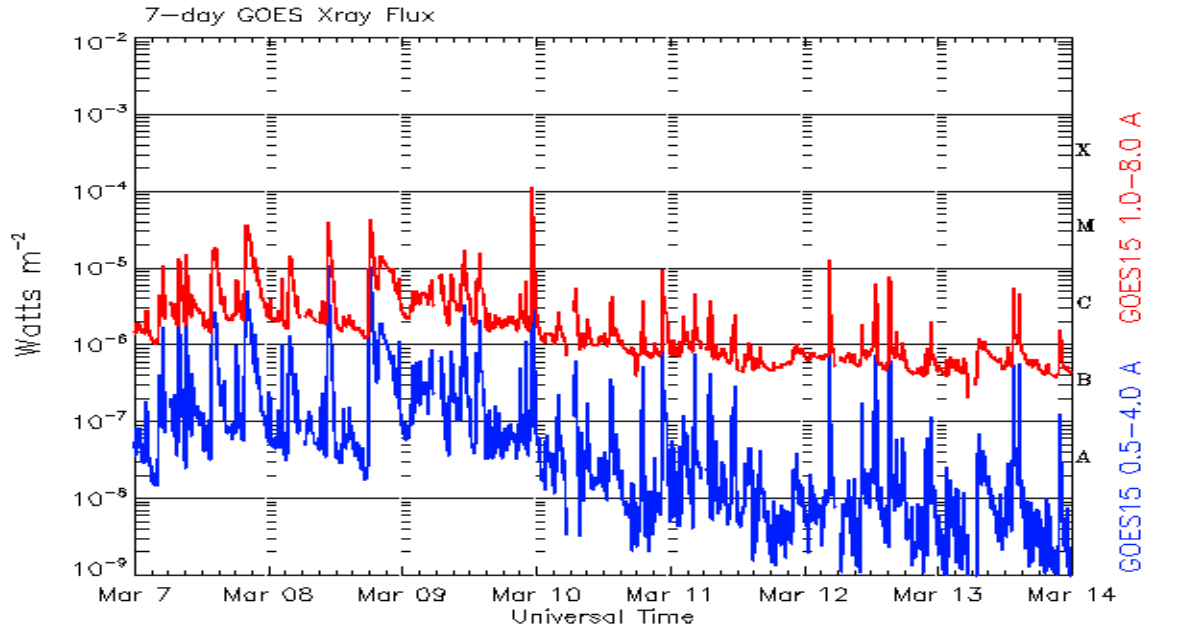
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

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 07 March 2011*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) 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/cm²-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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