

Solar activity was at low to high levels during the period. Region 1429 (N17, L = 299, class/area Dkc/1270 on 07 March) produced the largest event of the period, an M7/1b x-ray flare at 13/1741 UTC. Associated with this event, were a 1400 sfu Tenflare, a Type II and a Type IV radio sweep, with an estimated shock velocity of 1366 km/s, and finally an asymmetric full-halo CME, visible in both LASCO C2 and C3 imagery. Plane-of-sky speed, as measured from LASCO imagery was 1375 km/s. The CME associated with this event was forecast to become geoeffective. As Region 1429 approached the west limb, finally rotating off on 16 March, Region 1432 (N14, L = 223, class/area Esi/100 on 15 March) became active and produced two M-class events. The largest was an M2/1n x-ray event at 14/1521 UTC. A faint CME, visible in LASCO C2 imagery, was observed with a plane-of-sky speed of 392 km/s. On 15 March, a second M-class event, an M1/1f x-ray event at 15/0752 UTC, was also observed. A Type II radio sweep with an estimated shock velocity of 468 km/s was associated with this event. Both CMEs associated with the solar flares from Region 1432 were expected to arrive at Earth, but with such slow speeds and a coronal hole high speed stream (CH HSS) preceding them, very little effects were forecast. Finally, Region 1434 (S22, L = 205, class/area on 11 March) produced an M1/Sf x-ray event at 17/2039 UTC. Another Type II radio sweep with an estimated shock velocity of 1140 km/s was associated with this event. However, the associated CME with this event was not expected to become geoeffective. Aside from the M-class x-ray events, multiple C-class events were observed during the period. Many of the solar regions remained active as they evolved around the disk, but Region 1435 (S25, L = 220, class/area Dao/150 on 18 March) showed rapid growth towards the end of the summary period.

Two separate greater than 10 MeV proton events were observed during the summary period. The period began with the greater than 10 MeV proton flux above the 10 pfu threshold. This event was associated with the X5/3b x-ray flare observed on 07/0024 UTC. This event began on 07/0510 UTC, reached a maximum flux of 6530 pfu on 08/1115 UTC, and dropped below the 10 pfu threshold at 12/2050 UTC. The second event, began on 13 March and was associated the M7/1b x-ray event, mentioned earlier, from old Region 1429 (N18, L = 299). This greater than 10 MeV proton event began at 13/1810 UTC, reached a maximum flux of 469 pfu on 13/2045 UTC, and dropped below the 10 pfu threshold on 15/0620 UTC. A greater than 100 MeV proton event was also associated with the M7/1b x-ray event. This event began at 13/1810 UTC, reached a maximum flux of 1 pfu at 13/1905 UTC, and dropped below the 1 pfu threshold at 13/2255 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels for the entire summary period.

The geomagnetic field ranged from quiet to major storm periods with isolated severe storm periods observed at high latitudes. The summary period began at quiet levels, however midday on 12 March, a shock was observed by the ACE spacecraft with a Sudden Impulse of 96 nT, later observed by the Boulder magnetometer. This activity was due to the arrival of a CME associated with the 10 March M8 x-ray event from Region 1429. Measurements by the ACE spacecraft



showed the solar wind speed increased from around 450 km/s to 775 km/s. The Interplanetary Magnetic Field (IMF) also increased from around 6 nT to 28 nT. As the effects of the CME continued, periods of major storms were observed with isolated severe storm levels at high latitudes from 12/0900-1500 UTC. From 13-14 March, quiet to active levels were recorded as effects from this CME event waned. On 15 March, another CME arrival was observed with another shock recorded by the ACE spacecraft, followed by a Sudden Impulse of 27 nT measured at the Boulder magnetometer. Solar wind measurements, as recorded by the ACE spacecraft, showed wind speeds around 800 km/s following the shock. Once again, quiet to major storms were observed at mid latitudes with isolated periods at severe storm levels at high latitudes. For the remainder of the summary period, 16-18 March, solar wind speeds remained elevated, well above 500 km/s, in response to a CH HSS behind the CME arrival on 15 March. The combined effects of the CME and CH HSS produced quiet to active levels at mid latitudes with continued minor to major storm periods observed at high latitudes.

Space Weather Outlook

19 March - 14 April 2012

Solar activity is expected to remain at low levels from 19 -26 March. On March 27, and then March 28, old Region 1430 (N22, L = 318) and Region 1429 (N18, L = 299) are expected to return, respectively. Even though these regions are on the far side of the solar disk, imagery supports that they are still active and producing CMEs. An increase to low to moderate levels is expected from 28 March - 11 April as both regions populate to front side of the solar disk. A return to predominantly low levels is expected to prevail for the remainder of the forecast period.

No proton events are forecast from 19 - 29 March. An increase to a slight chance for proton events is forecast from 30 March - 11 April as old Region 1429 populates the visible disk. A return to background proton flux levels is expected from 12 April - 14 April.

Electrons, greater than 2 MeV, are expected to be at high levels from 18-25 March. A decrease to normal to moderate levels is expected from 26 - 28 March. From 29 March - 03 April, a return to moderate to high levels is forecast. From 04 April, through the end of the forecast period, 14 April, a return to normal to moderate levels is expected.

The geomagnetic field is expected to be at quiet to active levels on 19-20 March, in response to the arrival and lingering effects of a CME. Predominantly quiet levels are expected to prevail from 21-27 March. On 28 - 31 March, a CH HSS is expected to become geoeffective with quiet to active conditions expected. Quiet conditions are expected from 01 - 02 April. From 03 - 04 April, quiet to unsettled conditions are expected as another CH HSS moves into a geoeffective position. Predominantly quiet levels are expected to continue from 05 - 12 April. From 13-14 April, a CH HSS is expected to become geoeffective.



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
12 March	115	89	650	B4.7	4	0	0	2	0	0	0	0
13 March	141	80	650	B4.4	2	1	0	1	1	0	0	0
14 March	119	75	530	B7.6	0	1	0	3	1	0	0	0
15 March	111	85	370	B4.7	2	1	0	2	1	0	0	0
16 March	99	104	330	B2.4	3	0	0	5	0	0	0	0
17 March	102	89	210	B2.0	1	1	0	1	0	0	0	0
18 March	102	54	260	B2.4	1	0	0	2	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
	12 March	6.1e+07	2.4e+06	2.5e+03		2.2e+07
13 March	2.2e+07	6.0e+06	3.0e+04		8.8e+07	
14 March	4.7e+07	7.4e+06	2.2e+04		5.9e+08	
15 March	2.0e+07	6.7e+05	4.8e+03		2.0e+08	
16 March	7.7e+06	1.2e+05	2.4e+03		2.2e+08	
17 March	1.2e+06	2.5e+04	3.0e+03		2.4e+08	
18 March	7.5e+05	1.5e+04	3.1e+03		5.5e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	12 March	28	1-2-2-6-6-3-3-3	55	3-1-2-7-8-3-3-2	28
13 March	10	3-3-3-2-2-2-2-1	15	3-3-3-4-4-2-2-1	10	3-3-2-2-2-2-3-2
14 March	6	2-2-1-1-2-3-1-1	16	3-2-2-4-4-4-2-2	8	3-2-1-1-2-2-2-2
15 March	24	3-3-2-3-5-4-3-5	58	3-2-3-5-7-7-6-3	30	3-2-2-2-5-6-5-4
16 March	17	4-3-3-3-3-3-3-3	53	3-3-6-7-5-6-4-3	20	4-3-3-3-3-4-3-3
17 March	15	3-3-3-2-2-3-3-4	31	3-4-6-5-4-4-2-3	20	4-3-4-3-2-3-4-4
18 March	11	3-3-2-3-2-1-2-3	18	3-4-4-5-2-2-1-2	10	4-3-2-3-2-1-2-2



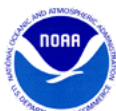
Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
12 Mar 0227	WATCH: Geomagnetic A \geq 50	13/
12 Mar 0603	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	07/0030 - 13/0000
12 Mar 0850	WARNING: Geomagnetic K = 4	12/0900 - 2359
12 Mar 0854	WARNING: Geomagnetic Sudden Impulse expected	12/0915 - 1015
12 Mar 0857	WARNING: Geomagnetic K = 5	12/0900 - 2359
12 Mar 0920	ALERT: Geomagnetic K = 4	12/0920
12 Mar 0927	SUMMARY: Geomagnetic Sudden Impulse	12/0921
12 Mar 0946	ALERT: Geomagnetic K = 5	12/0945
12 Mar 1020	WARNING: Geomagnetic K = 6	12/1020 - 1800
12 Mar 1154	ALERT: Geomagnetic K = 6	12/1155
12 Mar 1201	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
12 Mar 1236	ALERT: Geomagnetic K = 6	12/1235
12 Mar 2335	SUMMARY: Proton Event 10MeV Integral Flux \geq 10pfu	07/0510 - 12/2050
12 Mar 2346	EXTENDED WARNING: Geomagnetic K = 4	12/0900 - 13/0600
13 Mar 0558	EXTENDED WARNING: Geomagnetic K = 4	12/0900 - 13/1500
13 Mar 0800	WARNING: Proton 10MeV Integral Flux > 10pfu	13/0800 - 1800
13 Mar 0801	ALERT: Proton Event 10MeV Integral Flux \geq 10pfu	13/0745
13 Mar 1302	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
13 Mar 1328	CANCELLATION: Geomagnetic A \geq 50	
13 Mar 1726	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	13/0800 - 14/0600
13 Mar 1727	ALERT: X-ray Flux exceeded M5	13/1726
13 Mar 1746	ALERT: Type II Radio Emission	13/1715
13 Mar 1818	ALERT: Proton Event 100MeV Integral Flux > 1pfu	13/1817
13 Mar 1818	WARNING: Proton 100MeV Integral Flux > 1pfu	13/1817 - 14/0600
13 Mar 1836	SUMMARY: X-ray Event exceeded M5	13/1712 - 1825



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
13 Mar 1845	SUMMARY: 10cm Radio Burst	13/1711 - 1805
13 Mar 1845	ALERT: Type IV Radio Emission	13/1729
13 Mar 1906	ALERT: Proton Event 10MeV Integral Flux \geq 100pfu	13/1855
14 Mar 0501	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
14 Mar 0613	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	14/0600 - 2359
14 Mar 1139	SUMMARY: Proton Event 100MeV Integral Flux $>$ 1pfu	13/1810 - 2255
14 Mar 1442	SUMMARY: Proton Event 10MeV Integral Flux \geq 100pfu	13/1810 - 14/0955
14 Mar 2345	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	14/0600 - 15/2359
15 Mar 0141	WARNING: Geomagnetic K = 4	15/0150 - 0600
15 Mar 0508	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
15 Mar 0807	ALERT: Type II Radio Emission	15/0748
15 Mar 1250	WARNING: Geomagnetic Sudden Impulse expected	15/1300 - 1330
15 Mar 1254	WARNING: Geomagnetic K = 4	15/1300 - 2100
15 Mar 1314	SUMMARY: Geomagnetic Sudden Impulse	15/1309
15 Mar 1329	ALERT: Geomagnetic K = 4	15/1329
15 Mar 1425	WARNING: Geomagnetic K = 5	15/1426 - 2100
15 Mar 1445	SUMMARY: Proton Event 10MeV Integral Flux \geq 10pfu	13/1810 - 15/0620
15 Mar 1505	ALERT: Geomagnetic K = 5	15/1500
15 Mar 1704	WARNING: Geomagnetic K = 6	15/1705 - 2100
15 Mar 1724	ALERT: Geomagnetic K = 6	15/1724
15 Mar 2042	EXTENDED WARNING: Geomagnetic K = 4	15/1300 - 16/0600
15 Mar 2042	EXTENDED WARNING: Geomagnetic K = 5	15/1426 - 16/0300
16 Mar 0226	EXTENDED WARNING: Geomagnetic K = 5	15/1426 - 16/1300
16 Mar 0226	EXTENDED WARNING: Geomagnetic K = 4	15/1300 - 16/1600
16 Mar 1011	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410

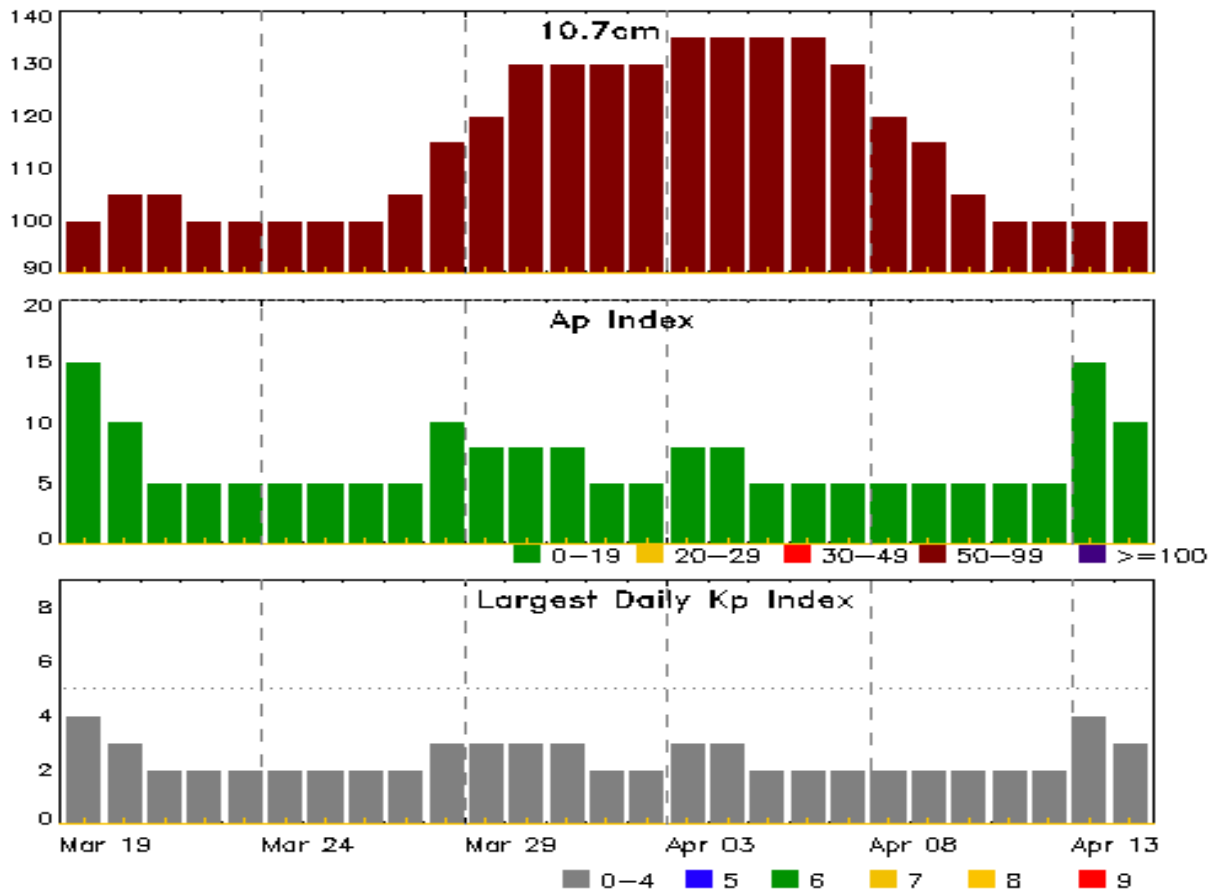


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
16 Mar 1544	EXTENDED WARNING: Geomagnetic K = 4	15/1300 - 17/0000
16 Mar 2134	WATCH: Geomagnetic A \geq 20	18/
16 Mar 2331	EXTENDED WARNING: Geomagnetic K = 4	15/1300 - 18/0100
17 Mar 0531	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
17 Mar 2106	ALERT: Type II Radio Emission	17/2038
17 Mar 2323	EXTENDED WARNING: Geomagnetic K = 4	15/1300 - 19/0100
18 Mar 0507	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	10/0410
18 Mar 2102	CANCELLATION: Geomagnetic A \geq 20	



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
19 Mar	100	15	4	02 Apr	130	5	2
20	105	10	3	03	135	8	3
21	105	5	2	04	135	8	3
22	100	5	2	05	135	5	2
23	100	5	2	06	135	5	2
24	100	5	2	07	130	5	2
25	100	5	2	08	120	5	2
26	100	5	2	09	115	5	2
27	105	5	2	10	105	5	2
28	115	10	3	11	100	5	2
29	120	8	3	12	100	5	2
30	130	8	3	13	100	15	4
31	130	8	3	14	100	10	3
01 Apr	130	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 245	Radio Flux 2695	Intensity II	Intensity IV
13 Mar	1712	1741	1825	M7.9	0.240			1429	1200			
14 Mar	1508	1521	1536	M2.8	0.029	1N	N14E05	1432	160	72		
15 Mar	0723	0752	0808	M1.8	0.022	1F	N14W03	1432			1	
17 Mar	2032	2039	2042	M1.3	0.004	SF	S20W25	1434	610	54		2

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
12 Mar	0007	0011	0014	C1.4			
12 Mar	0134	0155	0208	C2.3			1430
12 Mar	0850	U0851	A0914		SF	N16W41	1429
12 Mar	1050	1055	1101	B8.8			1433
12 Mar	1157	1209	1219	C1.6	SF	N15E35	1432
12 Mar	2220	0039	0056	C4.1			1429
13 Mar	0145	0150	0156	C1.2			1433
13 Mar	0655	0728	0835	C3.1			1429
13 Mar	1635	1724	2046		1B	N19W59	1429
13 Mar	1712	1741	1825	M7.9			1429
13 Mar	2053	2115	2125		SF	N17W61	1429
14 Mar	1245	1248	1254		SF	N13E08	1432
14 Mar	1508	1521	1536	M2.8	1N	N14E05	1432
14 Mar	1848	1849	1855		SF	N15E03	1432
14 Mar	2301	2318	2331		SF	N20W76	1429
15 Mar	0127	0134	0139	C1.1			1429
15 Mar	0352	0353	0359		SF	N14E02	1432
15 Mar	0723	0752	0808	M1.8	1F	N14W03	1432
15 Mar	0834	0838	0843		SF	N15W03	1432
15 Mar	1404	1410	1415	C1.1			1429
15 Mar	1851	1857	1900	B6.7			1429
16 Mar	0221	0231	0243	C1.2	SF	N13W18	1432
16 Mar	0303	0309	0317	B9.2	SF	N13E07	1433
16 Mar	0338	0338	0342		SF	N11E08	1433
16 Mar	0746	0750	0753	B5.5			1433
16 Mar	0824	0828	0833	B6.4			
16 Mar	1234	1240	1245	C1.1	SF	N13W20	1432



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
16 Mar	1314	1318	1321	B8.8			
16 Mar	1705	1738	1800	C1.8	SF	N13W22	1432
16 Mar	2051	2108	2121	B6.0			
17 Mar	0300	0312	0318	C1.0			1432
17 Mar	0833	1120	1159	B3.8			
17 Mar	1804	1814	1825	B6.0			
17 Mar	2032	2039	2042	M1.3	SF	S20W25	1434
17 Mar	2320	2341	2355	B8.1			
18 Mar	0228	0237	0244	C1.9	SN	S21W27	1434
18 Mar	0807	0818	0832	B8.6			1432
18 Mar	1939	1942	1947	B4.4			1432
18 Mar	2135	2138	2145	B2.9			
18 Mar	2225	2228	2232	B3.0			1434
18 Mar	2316	2317	2320		SF	S21W40	1434
18 Mar	2335	2340	2343	B3.4			1434



Region Summary

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 1428																							
03 Mar	S17E51	316	40	5	Cro	4	B																
04 Mar	S17E37	318	70	6	Dso	6	B																
05 Mar	S17E21	320	250	8	Dai	14	B																
06 Mar	S16E09	319	250	7	Dai	17	B																
07 Mar	S17W05	319	300	7	Dko	16	B																
08 Mar	S17W19	319	180	8	Dao	8	B	1				1											
09 Mar	S17W32	321	110	7	Dso	12	BG	1															
10 Mar	S17W46	322	60	6	Cro	14	B	1				2											
11 Mar	S15W60	323	30	3	Cao	3	B	1															
12 Mar	S15W72	321	30	1	Hsx	1	A																
13 Mar	S15W86	322	plage																				
								4	0	0	3	0	0	0	0	0							

Crossed West Limb.

Absolute heliographic longitude: 319

Region 1429

03 Mar	N18E68	299	290	6	Dkc	4	BG	3				1									
04 Mar	N18E55	300	700	8	Dkc	8	BGD	3	1			8	1								
05 Mar	N17E41	300	770	9	Dkc	20	BD	12	3	1		17	2	1							
06 Mar	N17E29	298	1120	9	Dkc	25	BGD	5	6			10	3								
07 Mar	N17E15	299	1270	10	Dkc	28	BGD	1		1		5								1	
08 Mar	N17E01	301	950	12	Ekc	28	BGD	1				3									
09 Mar	N18W13	302	900	13	Ekc	21	BGD		1			1									
10 Mar	N18W26	302	880	13	Ekc	22	BGD	2	1			1									
11 Mar	N18W38	301	840	13	Ekc	22	BGD	1				1									
12 Mar	N18W50	299	380	12	Ekc	14	BG	1				1									
13 Mar	N18W62	299	410	12	Ekc	12	BG	1	1			1	1								
14 Mar	N19W77	300	320	13	Eki	6	B					1									
15 Mar	N19W85	295	90	4	Dso	3	B	2													
								32	14	2	51	7	1	1	0						

Crossed West Limb.

Absolute heliographic longitude: 301



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 1430																
04 Mar	N19E40		315	20	3	Cro	3	B							2	
05 Mar	N20E25		316	90	5	Dao	14		1					4		
06 Mar	N19E13		315	110	5	Dao	11	B								
07 Mar	N21W00		315	200	6	Dai	16	B			1			6		
08 Mar	N21W13		315	180	7	Dao	8	B								
09 Mar	N20W28		317	120	5	Dao	9	B	1							
10 Mar	N21W42		318	100	5	Cao	9	B	1					1		
11 Mar	N20W54		317	100	4	Cao	6	B								
12 Mar	N22W67		316	30	1	Hsx	1	A	1							
13 Mar	N22W82		318	30	1	Hrx	1	A								
									4	0	1	13	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 315

Region 1432																
09 Mar	N18E69		220	90	3	Hsx	1	A	1							
10 Mar	N16E52		224	80	3	Hsx	4	B	2							
11 Mar	N16E40		223	50	4	Cao	5	B								
12 Mar	N13E26		222	80	8	Dso	9	B	1				1			
13 Mar	N14E15		221	70	8	Dsi	11	B								
14 Mar	N14E03		220	60	10	Dai	19	BG		1			2	1		
15 Mar	N14W13		223	100	11	Esi	16	BG		1			2	1		
16 Mar	N14W26		223	80	11	Esi	20	BG	3				3			
17 Mar	N14W39		223	30	11	Cro	4	B	1							
18 Mar	N14W53		223	plage												
									8	2	0	8	2	0	0	0

Still on Disk.

Absolute heliographic longitude: 220



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 1433																	
11 Mar	N12E63	200	150	5	Dso	3	B										
12 Mar	N11E50	199	80	3	Cso	2	B										
13 Mar	N12E37	199	90	5	Cso	4	B	1									
14 Mar	N13E23	200	110	4	Cso	9	B										
15 Mar	N12E09	201	120	6	Csi	11	B										
16 Mar	N13W04	201	100	6	Dso	11	B					2					
17 Mar	N13W17	201	60	3	Cso	6	B										
18 Mar	N08W29	199	60	2	Hsx	1	A										
								1	0	0		2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 201

Region 1434																	
11 Mar	S22E58	205	90	8	Dso	4	B										
12 Mar	S23E44	205	50	8	Cso	2	B										
13 Mar	S22E31	205	50	9	Dso	2	B										
14 Mar	S22E12	211	40	2	Hax	1	A										
15 Mar	S21W01	211	30	4	Cao	2	B										
16 Mar	S22W14	211	30	11	Eso	4	B										
17 Mar	S22W27	211	30	4	Cro	3	B		1			1					
18 Mar	S20W40	210	50	4	Dso	5	B	1				2					
								1	1	0		3	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 211

Region 1435																	
15 Mar	S25W11	221	30	7	Cro	3	B										
16 Mar	S25W24	221	20	6	Dso	5	B										
17 Mar	S26W37	221	60	6	Dso	11	B										
18 Mar	S25W50	220	150	6	Dao	7	B										
								0	0	0		0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 221



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

Region 1436

16 Mar	S12E62	135	10		Axx	1	A										
17 Mar	S14E50	134	10	5	Bxo	3	B										
18 Mar	S14E36	134	0	1	Bxo	1	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 134

Region 1437

17 Mar	S34E15	169	20	3	Cso	2	B										
18 Mar	S34E01	169	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 169

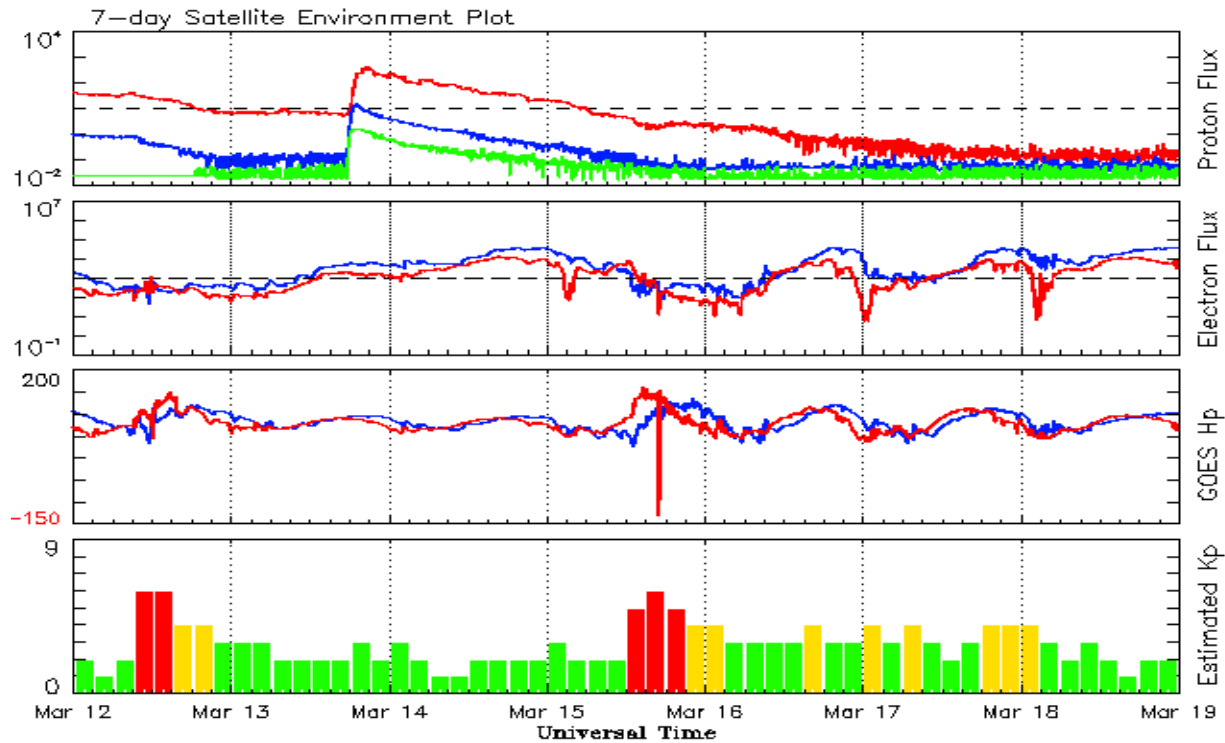


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2010									
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	16.7	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
2011									
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	57.3	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			134.5		13	
October	116.8	88.0	0.75			137.2		7	
November	133.1	96.7	0.73			153.1		3	
December	106.3	29.6	0.69		33.4	141.2		3	
2012									
January	91.3	58.3	0.64			133.1		6	
February	50.1	33.1	0.66			106.7		7	

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 12 March 2012*

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.

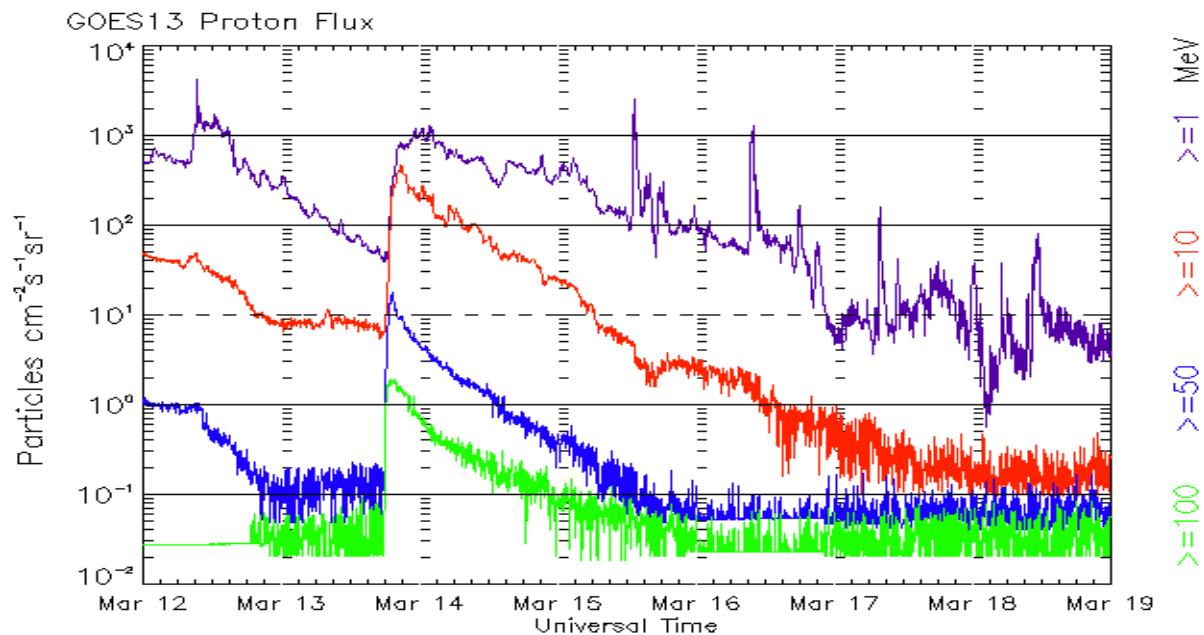
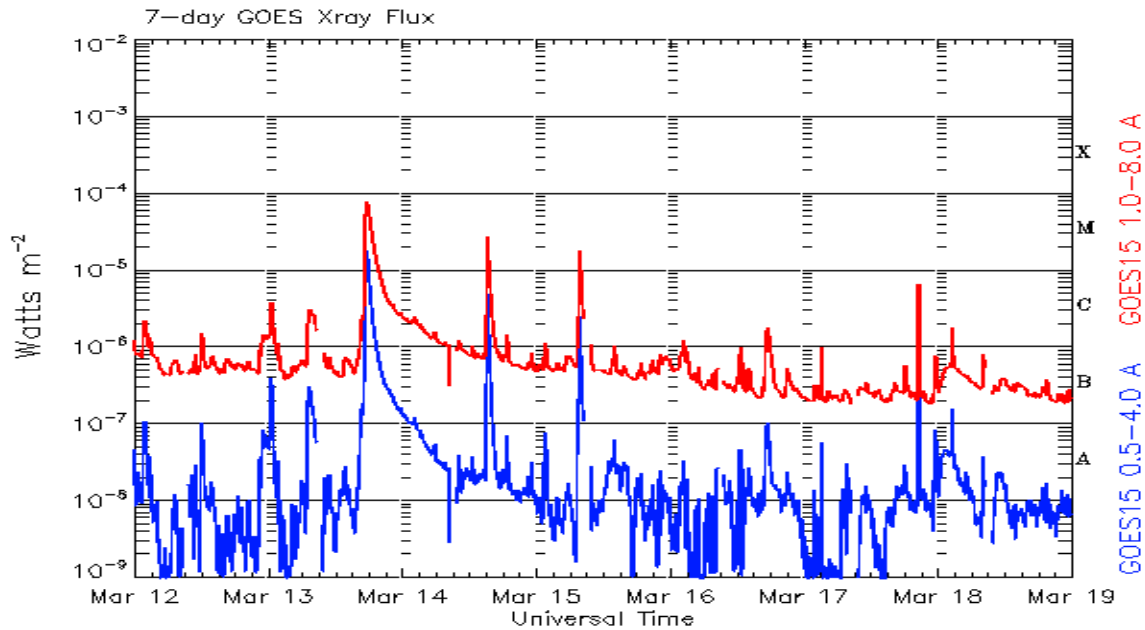
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 12 March 2012

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 intergral 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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