

Solar activity ranged from low to high. On 12 November, moderate levels were observed due to a M2 X-ray flare from Region 1613 (S22, L=210, class/area Dso/170 on 12 November) and associated Type II radio sweep (645 km/s) at 12/2328 UTC. Solar activity increased to high levels on 13 November due to a M6 X-ray flare, also from Region 1613, and associated Type II radio sweep (1193 km/s) at 13/0204 UTC. This region also produced two M2 X-ray flares and an associated 10 cm burst of 220 sfu at 13/2052 UTC, but showed signs it was decreasing in areal coverage. Region 1613 continued its M-class flare activity into 14 November, producing a M1 X-ray flare, but continued to slowly decrease in area. A return to low levels was observed from 15 to 18 November. A C8 flare from Region 1618 (N08, L=136, class/area Eai/90 on 18 November) occurred at 16/1539 UTC with an associated Type II radio sweep (511 km/s) and a non-earth directed coronal mass ejections (CME). A long duration C1 flare from Region 1613 also occurred on 16 November with an associated 24 degree filament eruption centered near S39E22. Another filament eruption was observed from the East limb, as seen in SDO/AIA 304 imagery, but analysis of SOHO/LASCO C2 suggested these eruptions would not be geoeffective. While there were many new CMEs observed over the 7 day period, none were determined to be earth-directed and have had little to no observable impacts.

No greater than 10 MeV proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal background levels on 12 and 13 November, but reached moderate levels on 14, 15, and 16 November. The week ended with high levels for 17 and 18 November with the maximum value reaching 3160 pfu.

Geomagnetic field activity ranged from quiet to major storm levels. The week started off at quiet to unsettled levels, but by late 12 November to early 13 November, the effects from the two CMEs from 09 and 10 November were being felt. ACE data indicated a shock arrival at 12/2216 UTC and a sudden impulse was observed on earth at 12/2316 UTC (16 nT, as measured by the Boulder USGS magnetometer). The maximum southward component of Bz reached -19.5 nT at 12/2338 UTC, the total IMF reached 22.8 nT at 13/0053 UTC. The solar wind speed, as measured by the ACE spacecraft, reached a peak speed of 504 km/s at 13/0111 UTC. The geomagnetic field responded with unsettled to active levels throughout the day on 13 November, but increased to major storm levels early on 14 November. The increase in activity was caused by prolonged period of negative Bz attributed to a combination of lingering CME effects and a solar sector boundary crossing that occurred at approximately 14/0245 UTC, followed by a negative polarity coronal hole high speed stream (CH HSS). Activity returned to quiet to unsettled levels for the remainder of the week (15 - 18 November).

## **Space Weather Outlook**

### **19 November - 15 December 2012**

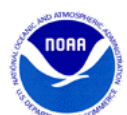
Solar activity is expected to be low with a chance for M-class flares through 27 November when Region 1618 is due to rotate off the west limb. Very low to low conditions are expected from 28 November through 05 December. From 06 December to the end of the period, low conditions are expected with a chance for M-class activity with the return of Region 1613.



No greater than 10 MeV proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to remain at moderate to high levels through 24 November. Normal levels are expected to return from 25 November through 03 December. Moderate to high levels are expected from 04-06 December due to coronal hole high speed stream (CH HSS) activity. Normal levels are again expected to return from 07 December through 13 December. From 14 December to the end of the period, expect moderate to high levels to return with CH HSS activity once again.

Geomagnetic field activity is expected to be mostly quiet through 02 December. Unsettled levels are likely on 03 and 04 December due to a possible solar sector boundary crossing (SSBC) followed by a CH HSS. Mostly quiet levels return from 05 December through the end of the period, except for a chance for unsettled activity on 11 December due to a possible SSBC/CH HSS.



### *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
12 November	144	188	1600	B5.9	7	1	0	2	0	0	0	0
13 November	146	108	850	B5.1	8	3	0	3	0	0	0	0
14 November	142	126	930	B4.3	6	1	0	2	1	0	0	0
15 November	141	132	910	B4.2	5	0	0	2	0	0	0	0
16 November	138	141	800	B4.0	4	0	0	2	0	0	0	0
17 November	135	163	650	B3.9	4	0	0	1	0	0	0	0
18 November	141	136	560	B4.2	6	0	0	0	1	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)			Electron Fluence (electrons/cm <sup>2</sup> -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	12 November	7.9e+05	1.6e+04	2.8e+03		1.9e+06
13 November	7.2e+05	1.1e+04	2.4e+03		6.4e+05	
14 November	5.0e+05	1.1e+04	2.5e+03		7.1e+06	
15 November	1.6e+05	1.1e+04	2.6e+03		1.4e+07	
16 November	1.1e+05	1.1e+04	2.8e+03		3.0e+07	
17 November	5.7e+05	1.2e+04	2.9e+03		1.2e+08	
18 November	1.9e+05	1.1e+04	2.7e+03		7.3e+07	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	12 November	4	1-0-0-0-1-1-2-3	1	0-0-0-0-0-0-1-2	5
13 November	10	3-3-2-2-2-3-2-2	13	3-2-2-2-4-4-2-2	15	4-3-2-3-3-4-3-3
14 November	21	5-5-4-3-3-2-1-2	44	3-5-7-5-6-3-1-1	33	6-6-5-4-4-2-1-1
15 November	3	1-1-0-1-1-1-1-1	1	0-0-0-2-0-0-0-0	3	1-1-0-1-0-0-1-1
16 November	5	1-2-1-1-2-1-2-1	3	0-0-1-2-2-1-1-1	5	1-2-1-1-1-2-2-1
17 November	7	1-3-1-2-2-1-2-2	5	1-1-1-1-3-2-2-0	7	1-2-1-2-2-2-3-1
18 November	4	1-2-1-2-1-1-1-1	5	1-2-1-3-2-1-0-0	5	1-2-2-2-1-1-0-1

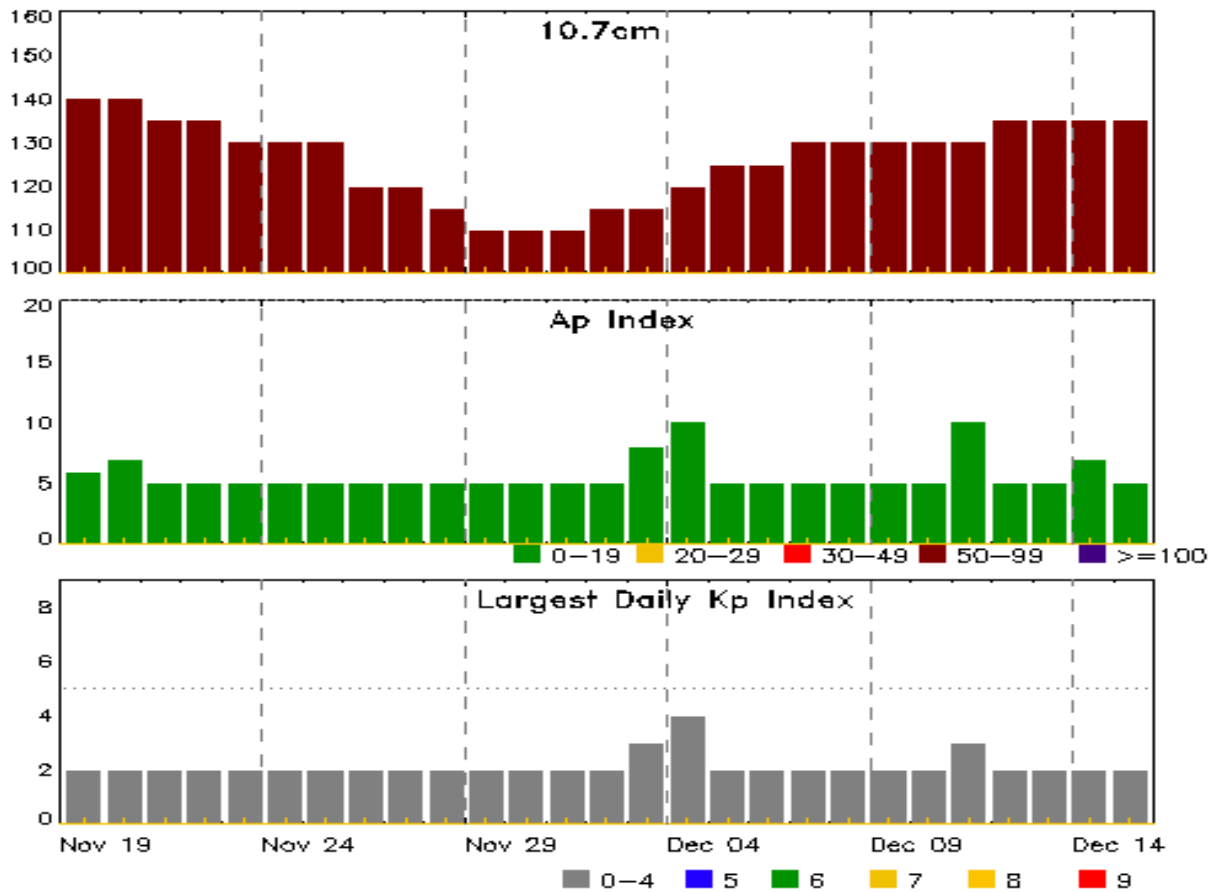


### *Alerts and Warnings Issued*

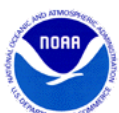
Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
12 Nov 2224	WARNING: Geomagnetic Sudden Impulse expected	12/2315 - 2345
12 Nov 2226	WARNING: Geomagnetic K = 4	13/0000 - 0600
12 Nov 2339	SUMMARY: Geomagnetic Sudden Impulse	12/2316
13 Nov 0004	ALERT: Type II Radio Emission	12/2328
13 Nov 0121	ALERT: Geomagnetic K = 4	13/0103
13 Nov 0206	ALERT: X-ray Flux exceeded M5	13/0204
13 Nov 0231	ALERT: Type II Radio Emission	13/0204
13 Nov 1147	SUMMARY: X-ray Event exceeded M5	13/0158 - 0206
13 Nov 1533	WARNING: Geomagnetic K = 4	13/1533 - 2100
13 Nov 1803	ALERT: Geomagnetic K = 4	13/1800
13 Nov 2059	EXTENDED WARNING: Geomagnetic K = 4	13/1533 - 14/0600
13 Nov 2141	SUMMARY: 10cm Radio Burst	13/2052 - 2054
14 Nov 0055	WARNING: Geomagnetic K = 5	14/0100 - 0600
14 Nov 0205	ALERT: Geomagnetic K = 5	14/0148
14 Nov 0243	WARNING: Geomagnetic K = 6	15/0300 - 0600
14 Nov 0306	ALERT: Geomagnetic K = 6	14/0304
14 Nov 0315	CANCELLATION: Geomagnetic K = 6	
14 Nov 0316	WARNING: Geomagnetic K = 6	14/0300 - 0600
14 Nov 0548	EXTENDED WARNING: Geomagnetic K = 6	14/0300 - 1200
14 Nov 0548	EXTENDED WARNING: Geomagnetic K = 5	14/0100 - 1500
14 Nov 0548	EXTENDED WARNING: Geomagnetic K = 4	13/1533 - 14/1800
14 Nov 0600	ALERT: Geomagnetic K = 6	14/0600
16 Nov 1605	ALERT: Type II Radio Emission	16/1540
17 Nov 0152	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	16/0120
17 Nov 0654	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	16/0120
18 Nov 1154	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	16/0120



## 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 Nov	140	6	2	03 Dec	115	8	3
20	140	7	2	04	120	10	4
21	135	5	2	05	125	5	2
22	135	5	2	06	125	5	2
23	130	5	2	07	130	5	2
24	130	5	2	08	130	5	2
25	130	5	2	09	130	5	2
26	120	5	2	10	130	5	2
27	120	5	2	11	130	10	3
28	115	5	2	12	135	5	2
29	110	5	2	13	135	5	2
30	110	5	2	14	135	7	2
01 Dec	110	5	2	15	135	5	2
02	115	5	2				



### *Energetic Events*

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
12 Nov	2313	2328	2333	M2.0	0.010			1613				2
13 Nov	0158	0204	0206	M6.0	0.014			1613	610			
13 Nov	0542	0550	0554	M2.5	0.009			1613	110			
13 Nov	2050	2054	2057	M2.8	0.006	SN	S22E33	1613	1100	220		
14 Nov	0359	0404	0407	M1.1	0.003			1613	220			

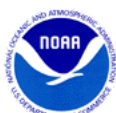
### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Location	Rgn #
	Begin	Max	End				
12 Nov	0806	0810	0812	C1.1			1610
12 Nov	1017	1022	1025	C2.9			1610
12 Nov	1149	1214	1223	C2.1			1610
12 Nov	1427	1433	1441	C1.0			1614
12 Nov	1843	1851	1859	C2.0	SF	S21E47	1613
12 Nov	2133	2139	2141	C2.5	SF	S22E48	1613
12 Nov	2236	2241	2246	C1.2			1613
12 Nov	2313	2328	2333	M2.0			1613
13 Nov	0017	0022	0025	C4.3			1613
13 Nov	0112	0118	0126	C3.5			1613
13 Nov	0158	0204	0206	M6.0			1613
13 Nov	0431	0434	0440	C1.0			1613
13 Nov	0542	0550	0554	M2.5			1613
13 Nov	0651	0656	0702	C3.4			1613
13 Nov	0802	0806	0810	C2.2			1614
13 Nov	1005	1012	1015	C3.1			1613
13 Nov	1053	1057	1100	B9.5			
13 Nov	1734	1743	1748	C1.8	SF	S24E36	1613
13 Nov	1954	2000	2004	C1.1			
13 Nov	2012	2015	2019		SF	N15E01	1611
13 Nov	2050	2054	2057	M2.8	SN	S22E33	1613
14 Nov	0214	0225	0243	C1.6			1614
14 Nov	0311	0316	0319	C1.7			1613
14 Nov	0359	0404	0407	M1.1			1613
14 Nov	0456	0502	0507	C1.0			1613
14 Nov	1322	1327	1333	C1.3	1F	N18E37	1614



## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
14 Nov	1335	1345	1401	C4.3	SF	N11W06		1611
14 Nov	1658	1704	1710	B9.5				1614
14 Nov	1821	1829	1845	B9.0				1610
14 Nov	2333	2341	2348	C1.3	SF	S23E18		1613
15 Nov	0330	0334	0344	B8.2				1610
15 Nov	0422	0437	0451	C6.3				1610
15 Nov	0756	0802	0806	C2.8				1613
15 Nov	1240	1254	1310	C3.2				1615
15 Nov	1423	1430	1435	C2.1				1613
15 Nov	1437	1437	1447		SF	S25E10		1613
15 Nov	2014	2021	2025	C1.0	SF	S24E09		1613
15 Nov	2200	2214	2247	B8.3				1611
16 Nov	0641	0751	1021	C1.4				1613
16 Nov	1444	1447	1503	B6.8				1614
16 Nov	1534	1539	1542	C8.4				1618
16 Nov	1949	1955	2001	C1.0				1610
16 Nov	2135	2135	2142		SF	N10W04		1615
16 Nov	2155	2204	2219	C1.4	SF	N18E05		1614
17 Nov	0259	0308	0323	C1.7	SF	N08W07		1615
17 Nov	0402	0408	0423	C1.2				1613
17 Nov	0455	0522	0544	B9.1				1610
17 Nov	1558	1606	1615	C1.3				1618
17 Nov	1802	1810	1814	C2.8				1613
18 Nov	0355	0407	0415	C5.7	1F	N08W07		1615
18 Nov	0811	0815	0818	C1.0				1613
18 Nov	1103	1107	1112	B7.6				1619
18 Nov	1303	1307	1309	C4.3				1619
18 Nov	1528	1532	1537	C1.3				1618
18 Nov	1921	1926	1937	C1.1				
18 Nov	2116	2123	2130	C1.0				1618



## Region Summary

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
									C	M	X	S	1	2	3	4		
<b>Region 1604</b>																		
03 Nov	N08E48	322	10		5	Bxo	2	B										
04 Nov	N07E33	324	plage															
05 Nov	N07E19	327	plage															
06 Nov	N07E05	327	plage															
07 Nov	N07W09	330	plage															
08 Nov	N07W24	329	plage															
09 Nov	N07W39	331	plage						1									
10 Nov	N07W54	333	plage															
11 Nov	N07W69	335	plage															
12 Nov	N07W84	337	plage															
									1	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 327

<b>Region 1605</b>																		
04 Nov	N17E24	333	10		4	Bxo	2	B										
05 Nov	N17E10	336	10		1	Axx	2	A										
06 Nov	N18W04	339	10		1	Axx	1	A										
07 Nov	N18W18	340	10		1	Axx	1	A										
08 Nov	N18W32	337	plage															
09 Nov	N18W46	338	plage															
10 Nov	N18W60	339	plage															
11 Nov	N18W74	340	plage															
12 Nov	N16W82	340	10		7	Bxo	4	B										
13 Nov	N16W96	336	plage															
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 339





**Region Summary - continued**

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

**Region 1606**

04 Nov	S16E45	310	20	2	Cro	2	B										
05 Nov	S16E31	313	10	1	Axx	1	A										
06 Nov	S15E18	316	10	1	Axx	1	A										
07 Nov	S15E04	318	10	4	Bxo	3	B										
08 Nov	S15W10	315	plage														
09 Nov	S15W24	316	plage														
10 Nov	S15W38	317	plage														
11 Nov	S15W52	318	plage														
12 Nov	S15W66	319	plage														
13 Nov	S15W80	320	plage														
										0	0	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 318

**Region 1608**

05 Nov	S20E62	283	10	1	Hrx	1	A										
06 Nov	S20E48	286	20	1	Hrx	1	A										
07 Nov	S20E35	287	10	1	Axx	1	A										
08 Nov	S20E23	282	10	1	Hrx	1	A										
09 Nov	S21E10	282	10	1	Hrx	2	A										
10 Nov	S20W03	282	10	1	Hrx	1	A	1									
11 Nov	S20W17	283	plage														
12 Nov	S20W31	284	plage														
13 Nov	S20W45	285	plage														
14 Nov	S20W59	285	plage														
15 Nov	S20W73	286	plage														
16 Nov	S20W87	287	plage														
										1	0	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 282



**Region Summary - continued**

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
<b>Region 1609</b>																		
06 Nov	S14E71	260	30	1	Hrx	1	A											
07 Nov	S14E58	263	150	7	Cso	5	B											
08 Nov	S15E45	260	40	7	Cso	4	B											
09 Nov	S15E32	260	10	6	Cro	2	B											
10 Nov	S15E16	263	10	1	Hax	1	A											
11 Nov	S15E01	264	10	1	Hrx	1	A											
12 Nov	S14W10	263	10	4	Hrx	3	A											
13 Nov	S14W24	264	plage															
14 Nov	S14W38	264	plage															
15 Nov	S14W52	265	plage															
16 Nov	S14W66	266	plage															
17 Nov	S14W80	267	plage															
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 264

<b>Region 1610</b>																		
07 Nov	S22E55	267	10	6	Bxo	2	B											
08 Nov	S24E36	269	0	1	Axx	1	A											
09 Nov	S23E32	260	20	5	Dai	2	B											
10 Nov	S23E15	264	90	6	Dai	6	B											
11 Nov	S25E02	263	150	9	Dai	18	B				1							
12 Nov	S22W10	263	550	11	Eki	51	BG				3							
13 Nov	S24W23	262	210	12	Eai	18	B											
14 Nov	S23W36	262	210	11	Eai	14	BG											
15 Nov	S21W50	263	200	13	Esi	12	BG				1							
16 Nov	S22W63	263	160	13	Cso	10	BG				1							
17 Nov	S23W76	263	60	3	Cso	2	B											
18 Nov	S23W90	264	plage															
									6	0	0	0	0	0	0	0	0	0

Still on Disk.  
 Absolute heliographic longitude: 263



**Region Summary - continued**

Date	Location		Sunspot Characteristics				Flares										
	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	
<b>Region 1611</b>																	
08 Nov	N12E66		239	200	8	Dso	2	B			1			1			
09 Nov	N13E52		240	270	10	Eso	8	BG									
10 Nov	N12E41		238	170	11	Eso	9	B	1								
11 Nov	N12E27		238	210	10	Dso	9	BG									
12 Nov	N15E13		240	250	12	Eho	12	BG									
13 Nov	N12W00		239	190	10	Dso	8	B					1				
14 Nov	N13W14		239	160	8	Dso	10	BG					1				
15 Nov	N15W27		240	140	9	Dso	10	B									
16 Nov	N12W43		243	130	2	Hsx	1	A									
17 Nov	N12W57		244	120	2	Hsx	1	A									
18 Nov	N12W71		245	120	2	Hsx	1	A									
										1	1	0	2	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 239

<b>Region 1612</b>																	
08 Nov	N06E71		234	70	1	Hsx	1	A									
09 Nov	N07E59		233	100	2	Hsx	1	A									
10 Nov	N08E50		228	70	2	Hsx	1	A									
11 Nov	N05E36		229	60	2	Hsx	1	A									
12 Nov	N09E25		228	100	5	Hsx	1	A									
13 Nov	N10E04		234	50	2	Hsx	1	A									
14 Nov	N08W05		230	50	1	Hsx	1	A									
15 Nov	N08W17		230	30	2	Hax	1	A									
16 Nov	N08W32		232	30	1	Hrx	1	A									
17 Nov	N09W43		230	30	4	Cro	3	B									
18 Nov	N10W57		231	30	6	Hrx	3	A									
										0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 234



### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 1613</b>																							
11 Nov	S21E57	207	70	2	Hsx	1	A																
12 Nov	S22E43	210	170	10	Dso	10	B	3	1			2											
13 Nov	S23E31	208	160	6	Dso	6	BGD	6	3			2											
14 Nov	S23E18	207	120	6	Dso	8	B	3	1			1											
15 Nov	S24E08	205	100	6	Dso	9	B	3				2											
16 Nov	S23W05	205	100	5	Cso	4	B	1															
17 Nov	S24W19	206	100	6	Cso	10	BG	2															
18 Nov	S23W33	207	100	6	Hsx	4	A	1															
								19	5	0	7	0	0	0	0								

Still on Disk.

Absolute heliographic longitude: 205

<b>Region 1614</b>																							
11 Nov	N15E72	193	110	8	Dso	3	B	1	1														
12 Nov	N16E58	195	350	17	Fho	19	B	1															
13 Nov	N16E45	193	220	7	Dai	13	B	1															
14 Nov	N16E31	194	240	7	Dai	13	B	3				1											
15 Nov	N17E18	195	290	10	Dki	23	B																
16 Nov	N15E05	195	240	9	Dai	24	B	1				1											
17 Nov	N15W07	194	160	10	Dai	31	B																
18 Nov	N15W21	195	20	6	Cri	8	B																
								7	1	0	1	1	0	0	0								

Still on Disk.

Absolute heliographic longitude: 195

<b>Region 1615</b>																							
11 Nov	N09E61	205	10	5	Bxo	3	B																
12 Nov	N10E48	205	160	10	Cao	8	B																
13 Nov	N09E31	207	20	3	Cao	2	B																
14 Nov	N09E19	206	80	6	Dso	8	B																
15 Nov	N10E08	205	50	6	Dao	3	B	1															
16 Nov	N07W06	206	20	7	Cro	6	B					1											
17 Nov	N08W21	208	10	5	Bxo	4	B	1				1											
18 Nov	N07W34	208	10	3	Bxo	3	B	1															
								3	0	0	2	1	0	0	0								

Still on Disk.

Absolute heliographic longitude: 206



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares								
	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

#### ***Region 1616***

14 Nov	N21E61	164	70	4	Dro	2	B										
15 Nov	N21E50	163	100	9	Dso	4	B										
16 Nov	N19E37	163	110	9	Dso	13	B										
17 Nov	N19E23	164	60	10	Cso	12	B										
18 Nov	N19E11	163	30	10	Cro	10	B										
								0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 163

#### ***Region 1617***

16 Nov	S18W18	217	10	1	Bxo	2	B										
17 Nov	S18W32	219	plage														
18 Nov	S18W46	220	plage														
								0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 217

#### ***Region 1618***

17 Nov	N09E50	136	20	13	Eai	1	B	1									
18 Nov	N08E37	136	90	12	Eai	8	B	2									
								4	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 136

#### ***Region 1619***

17 Nov	N10E16	171	90	5	Dao	9	B										
18 Nov	N10E03	171	160	6	Dai	19	B	1									
								1	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 171

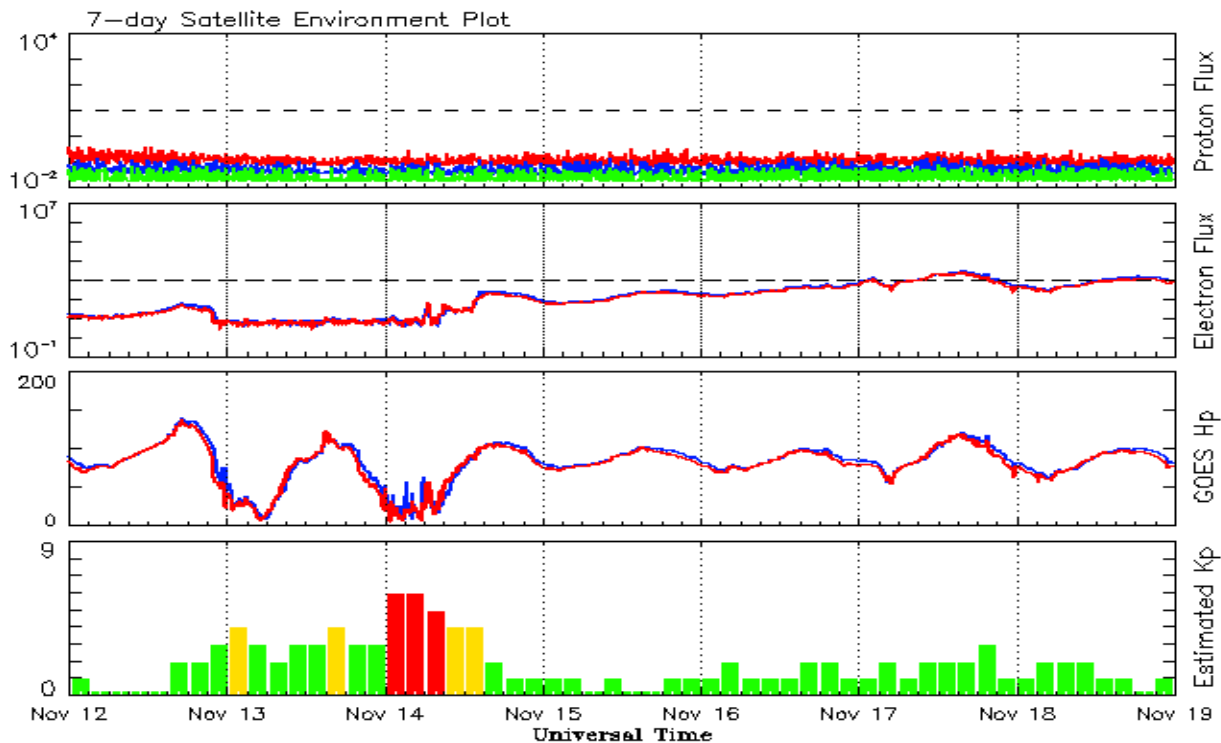


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2010</b>									
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
<b>2011</b>									
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	41.6	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			121.5		8	
June	88.6	64.5	0.73			120.5		10	
July	99.6	66.5	0.67			135.6		13	
August	85.8	63.1	0.74			115.7		7	
September	84.0	61.5	0.73			123.2		8	
October	73.5	53.3	0.73			123.3		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 12 November 2012*

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.

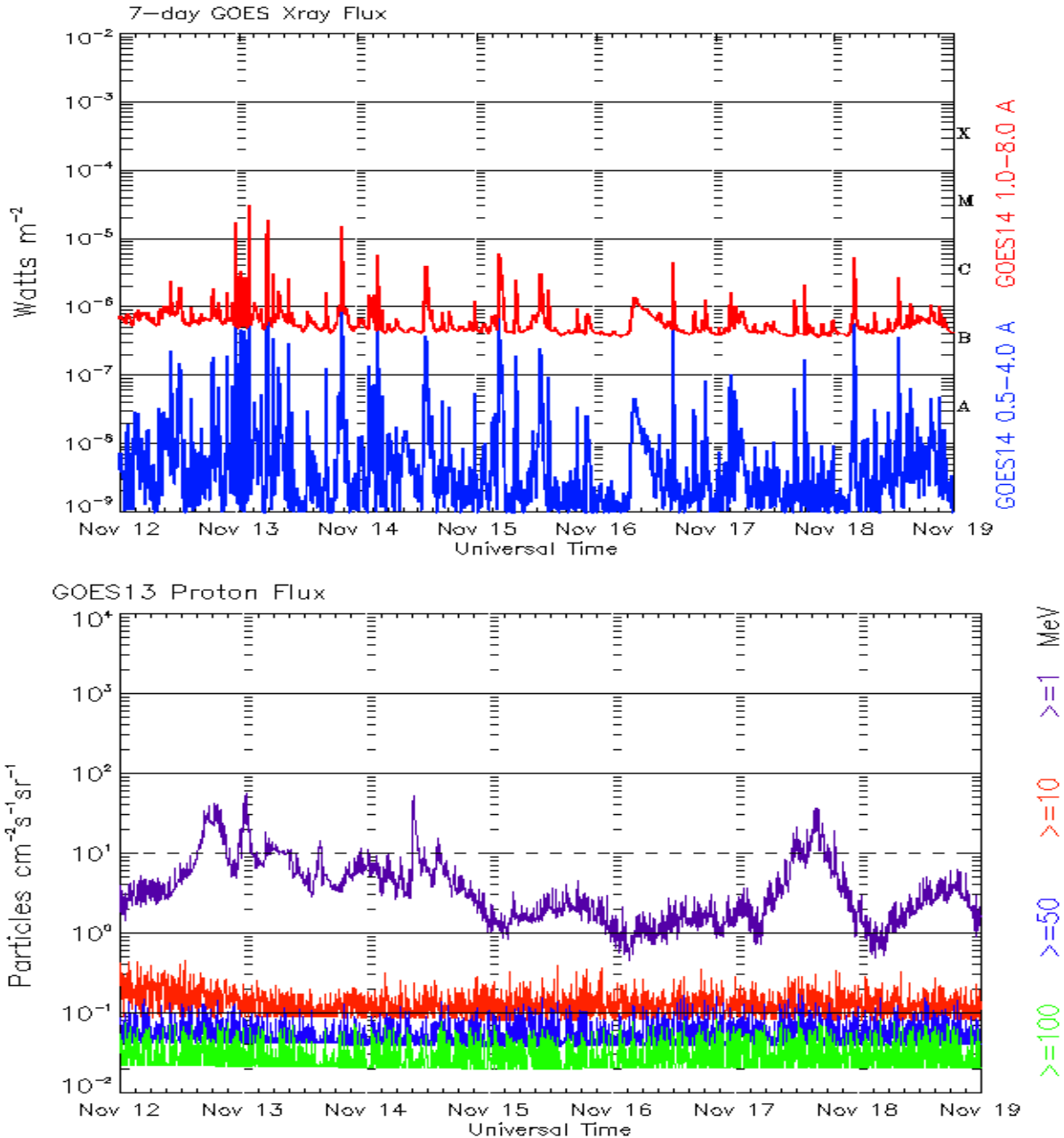
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 12 November 2012*

The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm<sup>2</sup> -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.





## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

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**Notice:** The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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