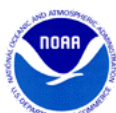


Solar activity ranged from very low to moderate levels. The summary period started out at low levels but changed on day two as Region 1618 (N08, L=135, class/area Ekc/450 millionths on 23 November) and Region 1612 (N09, L=228, class/area Hsx/100 millionths on 12 November) both produced M-class x-ray events. Region 1612 produced an M1 solar flare at 20/1241 UTC with multiple discrete radio frequency bursts. Around the same time, h-alpha imagery indicated multiple filament channel eruptions. LASCO C2/C3 imagery supported a partially Earth directed CME. Region 1618 followed this event with an M1/Sn solar flare at 20/1928 UTC. Associated with this flare were several discrete radio frequency bursts. LASCO C2/C3 imagery indicated a CME, however further analysis indicated that this would not be Earth directed. On 21 November, Region 1618 continued to produce M-class solar flares, with an M1/1n solar flare at 21/0656 UTC and an M3 x-ray event at 21/1530 UTC. Both of these events had Type II and Type IV radio sweeps associated with them. Imagery once again supported another Earth directed CME. Later on 21 November, a large filament erupted off the north-east limb. Location and imagery suggested this CME would not be Earth directed. Activity declined to very low levels on 22 November. Region 1618 remained a magnetically complex region during this time, however simplification in the leader spots was observed. Low levels prevailed throughout the summary period with Region 1618 producing the occasional C-class events. On 23 November, a large filament eruption was observed in the southwest quadrant of the solar disk. The associated CME was determined to have an Earth directed component. Towards the end of the summary period, Region 1620 (S13, L=92, class/area Hax/090 millionths on 23 November) started to evolve and produce C-class activity. At the end of the period, Region 1620 was magnetically classified as a beta-gamma.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was high levels on 19, 22 and 23 November. The remaining days were at normal to moderate levels.

Geomagnetic field activity was at quiet to active levels. The summary period began at quiet levels with solar wind speed, as measured by the ACE spacecraft, hovering around 400 km/s. On 20 November, an increase in solar wind speed to around 460 km/s was observed, with sustained periods of the negative Bz component of the (Interplanetary Magnetic Field) IMF. This observed change in the solar wind parameters help drive unsettled to active levels late on 20 November and early into 21 November. Predominantly quiet levels prevailed until late on 23 November when solar wind observations indicated the arrival of a CME. At the ACE spacecraft, solar wind speeds increased from 320km/s - 420 km/s with Bt of the IMF increasing to around 17 nT. As the CME arrived at Earth, an increase to active levels was observed. As CME effects continued on to 24 November, active to quiet levels were observed with isolated minor to major storm periods observed at high latitudes. As CME effects waned, quiet level prevailed from late on 24 November throughout the rest of the summary period. Initial analysis and data suggested this



was the CME from 20 November, however as the CME progressed, data suggested the incoming CMEs might have merged into this one event.

Space Weather Outlook 26 November - 22 December 2012

Solar activity is expected to be at low levels with a chance for M-class flares from 26 November - 01 December as Regions 1620 and 1618 evolve and rotate off the visible disk. A decrease to low levels is forecast from 02 - 04 December. An increase to low levels with a slight chance for M-class flares is expected for the remainder of the period as Regions 1612, 1618, and 1620 return.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels from 26 November - 05 December, 08- 11 December, and 19-22 December. High levels are expected at all other times due to coronal hole high speed stream activity.

Geomagnetic field activity is expected to be at quiet to active levels. The forecast period is expected to begin at predominantly quiet levels. On 27 - 29 November, an increase to quiet to active levels is expected as the CME from 23 November is expected to become geoeffective. From 30 November through 05 December, quiet to unsettled levels are expected in response to multiple coronal hole high speed streams. A return to quiet levels is expected from 06-10 December. Another increase to quiet to unsettled levels is expected on 11-15 December due to recurrent coronal hole high speed streams. 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
19 November	134	122	670	B4.1	3	0	0	2	0	0	0	0
20 November	141	119	560	B6.1	6	2	0	10	0	0	0	0
21 November	140	75	510	B6.0	5	2	0	5	1	0	0	0
22 November	128	93	650	B3.5	0	0	0	2	0	0	0	0
23 November	126	85	750	B3.1	8	0	0	0	0	0	0	0
24 November	118	87	540	B2.7	1	0	0	0	1	0	0	0
25 November	121	64	420	B2.7	2	0	0	5	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
	19 November	3.0e+05	1.1e+04	2.5e+03		7.6e+07
20 November	1.9e+05	1.1e+04	2.6e+03		2.1e+07	
21 November	3.8e+05	1.1e+04	2.6e+03		2.9e+07	
22 November	3.4e+05	1.1e+04	2.7e+03		6.4e+07	
23 November	3.1e+05	1.1e+04	2.8e+03		6.9e+07	
24 November	3.0e+05	1.1e+04	2.4e+03		2.7e+06	
25 November	9.7e+04	1.0e+04	2.4e+03		2.1e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	19 November	3	1-0-2-1-2-1-1-0	8	2-0-3-3-3-3-0-0	4
20 November	10	2-2-2-3-2-2-3-3	28	1-2-4-5-5-5-4-3	11	2-2-2-2-2-2-4-3
21 November	7	3-2-3-2-1-1-1-1	14	2-2-5-4-2-1-1-2	7	3-2-2-2-1-1-1-1
22 November	1	1-0-0-0-0-1-0-1	1	1-1-0-0-1-0-0-0	2	1-1-0-0-1-0-0-1
23 November	6	0-1-1-1-1-1-1-4	5	0-0-1-3-2-0-0-3	7	0-1-1-1-0-0-1-4
24 November	11	3-3-3-2-3-2-2-2	26	3-4-6-5-4-2-1-1	13	4-3-3-2-3-2-2-1
25 November	4	1-2-2-0-2-1-1-1	6	0-1-1-0-4-3-1-0	4	1-1-1-0-1-1-1-1

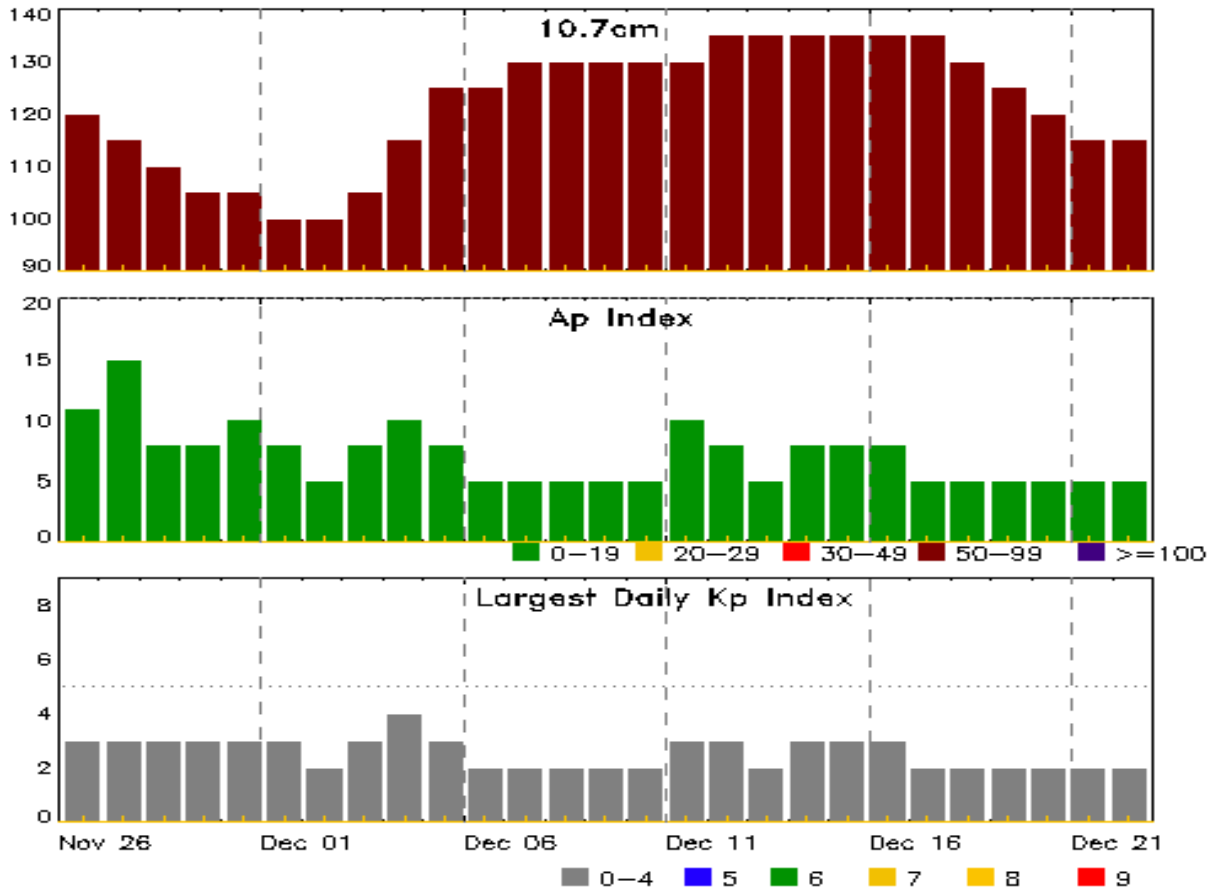


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
19 Nov 1312	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	16/0120
20 Nov 1953	WARNING: Geomagnetic K = 4	20/1953 - 21/0300
20 Nov 2004	ALERT: Geomagnetic K = 4	20/1958
21 Nov 0228	EXTENDED WARNING: Geomagnetic K = 4	20/1953 - 21/0600
21 Nov 0557	EXTENDED WARNING: Geomagnetic K = 4	20/1953 - 21/1200
21 Nov 0636	WATCH: Geomagnetic Storm Category G1 predicted	
21 Nov 0728	ALERT: Type II Radio Emission	21/0654
21 Nov 0729	ALERT: Type IV Radio Emission	21/0703
21 Nov 1604	ALERT: Type II Radio Emission	21/1533
21 Nov 1606	ALERT: Type IV Radio Emission	21/1531
21 Nov 1722	SUMMARY: 10cm Radio Burst	21/1521 - 1559
21 Nov 2207	WATCH: Geomagnetic Storm Category G2 predicted	
22 Nov 0638	WATCH: Geomagnetic Storm Category G2 predicted	
22 Nov 0647	CANCELLATION: Geomagnetic Storm Category G1 predicted	
22 Nov 1607	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	22/1545
23 Nov 1305	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	22/1545
23 Nov 2119	WARNING: Geomagnetic Sudden Impulse expected	23/2200 - 2230
23 Nov 2122	WARNING: Geomagnetic K = 4	23/2200 - 24/1200
23 Nov 2201	SUMMARY: Geomagnetic Sudden Impulse	23/2156
23 Nov 2230	ALERT: Geomagnetic K = 4	23/2215
23 Nov 2246	WARNING: Geomagnetic K = 5	23/2300 - 24/1100
24 Nov 1428	ALERT: Type II Radio Emission	24/1335
24 Nov 2126	WATCH: Geomagnetic Storm Category G1 predicted	
25 Nov 2125	CANCELLATION: Geomagnetic Storm Category G1 predicted	



Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
26 Nov	120	11	3	10 Dec	130	5	2
27	115	15	3	11	130	10	3
28	110	8	3	12	135	8	3
29	105	8	3	13	135	5	2
30	105	10	3	14	135	8	3
01 Dec	100	8	3	15	135	8	3
02	100	5	2	16	135	8	3
03	105	8	3	17	135	5	2
04	115	10	4	18	130	5	2
05	125	8	3	19	125	5	2
06	125	5	2	20	120	5	2
07	130	5	2	21	115	5	2
08	130	5	2	22	115	5	2
09	130	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location	Rgn #	245	2695	Intensity	II IV
20 Nov	1236	1241	1246	M1.7	0.006				40	64		
20 Nov	1921	1928	1932	M1.6	0.005	SN	N07E15	1618	130	90		
21 Nov	0645	0656	0708	M1.4	0.012	1N	N06E10	1618		58	2	1
21 Nov	1510	1530	1538	M3.5	0.026			1618			2	2

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location	Rgn #
	Begin	Max	End				
19 Nov	0002	0012	0025	C1.1			1619
19 Nov	0220	0228	0231	C7.0			1618
19 Nov	0901	0907	0918		SF	N07E34	1618
19 Nov	0950	0950	0954		SF	N07E33	1618
19 Nov	1055	1104	1115	C1.4			1610
20 Nov	0137	0207	0305	C3.0	SF	N08E27	1618
20 Nov	0328	0328	0328		SF	N08E27	1618
20 Nov	0404	0410	0427	C1.3	SF	N08E25	1618
20 Nov	0529	0529	0532		SF	N09E22	1618
20 Nov	0549	0554	0555		SF	N09E22	1618
20 Nov	0612	0613	0615		SF	N09E22	1618
20 Nov	0625	0633	0644	C3.9	SF	N09E22	1618
20 Nov	1236	1241	1246	M1.7			
20 Nov	1348	1351	1354	C1.6			1618
20 Nov	1518	1529	1541	C3.1	SF	N08E19	1618
20 Nov	1740	1743	1747	B9.9	SF	N10E22	1618
20 Nov	1921	1928	1932	M1.6	SN	N07E15	1618
20 Nov	2252	2307	2318	C3.9			
21 Nov	0411	0412	0417		SF	N07E11	1618
21 Nov	0519	0521	0541		SF	N07E10	1618
21 Nov	0645	0656	0708	M1.4	1N	N06E10	1618
21 Nov	0750	0753	0755		SF	N06E10	1618
21 Nov	0852	0857	0900	C1.2	SF	N06E10	1618
21 Nov	0917	0941	0943	C4.1	SF	N06E10	1618
21 Nov	1510	1530	1538	M3.5			1618
21 Nov	2039	2043	2050	C1.3			
21 Nov	2112	2116	2121	C2.5			1618



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
21 Nov	2309	2312	2314	C1.1			1618
22 Nov	0255	0255	0256		SF	N07W01	1618
22 Nov	0749	0753	0755	B6.3	SF	N07W01	1618
22 Nov	1535	1546	1557	B9.5			1618
23 Nov	1206	1212	1218	C1.2			1618
23 Nov	1829	1832	1836	B7.6			
23 Nov	1917	1921	1926	C1.2			1618
23 Nov	1927	1930	1932	C2.5			1618
23 Nov	1936	1942	1944	C1.2			1618
23 Nov	1944	1947	1949	C1.2			1618
23 Nov	1953	1956	1958	C1.7			1618
23 Nov	2001	2005	2007	C1.0			1618
23 Nov	2055	2100	2106	B8.1			
23 Nov	2336	2357	0013	C1.0			1618
24 Nov	1333	1340	1344	C3.3	1N	N06W28	1618
24 Nov	1531	1536	1545	B4.5			1621
25 Nov	B0508	0511	A0515		SF	N08W44	1618
25 Nov	0612	0617	0622	B9.5			1618
25 Nov	B0806	0808	0811		SF	N08W46	1618
25 Nov	1554	1620	1641		SF	S12W12	1620
25 Nov	2010	2014	2021	C1.7			
25 Nov	2119	2122	2126		SF	S12W15	1620
25 Nov	2213	2216	2244	C1.4	SF	S12W15	1620



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 1610																							
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	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 263

Region 1611																							
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																
19 Nov	N11W84	244	40	2	Hsx	1	A																
20 Nov	N11W95	244	30	2	Hsx	1	A																
									1	1	0	2	1	0	0	0	0	0	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 239



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 1612																		
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											
19 Nov	N06W71	230	30	1	Hrx	2	A											
20 Nov	N06W85	230	10	1	Axx	1	A											
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 234

Region 1613																		
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 Nov	S26W44	204	80	2	Cso	2	B											
20 Nov	S24W58	204	50	2	Hsx	1	A											
21 Nov	S24W69	203	40	2	Hsx	1	A											
22 Nov	S24W83	203	60	2	Hsx	1	A											
								19	5	0	7	0	0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 205



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 1614																	
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										
19 Nov	N14W34	194	60	7	Dao	5	B										
20 Nov	N14W48	194	plage														
21 Nov	N14W62	194	plage														
22 Nov	N14W76	194	plage														
23 Nov	N14W89	197	plage														
								7	1	0	1	1	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 195

Region 1615																	
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						1			
19 Nov	N07W48	208	plage														
20 Nov	N07W62	208	plage														
21 Nov	N07W76	208	plage														
								3	0	0	2	1	0	0	0		

Died on Disk.
Absolute heliographic longitude: 206



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 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													
19 Nov	N19W03	163	100	9	Cao	9	B													
20 Nov	N19W14	160	10	3	Bxo	3	B													
21 Nov	N19W28	160	plage																	
22 Nov	N19W42	160	30	10	Dro	4	B													
23 Nov	N19W55	163	30	10	Dao	4	B													
24 Nov	N19W69	164	20	8	Dao	5	B													
25 Nov	N19W83	164	plage																	
									0	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																	
19 Nov	S18W60	220	plage																	
20 Nov	S18W74	220	plage																	
21 Nov	S18W88	220	plage																	
									0	0	0	0	0	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 217



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 1618																		
17 Nov	N09E50		136	20	13	Eai	1	B	1									
18 Nov	N08E37		136	90	12	Eai	8	B	2									
19 Nov	N09E28		131	160	14	Fac	18	BG	1			2						
20 Nov	N08E14		132	270	13	Ekc	29	BG	5	1		10						
21 Nov	N09E01		132	300	13	Ekc	27	BGD	4	2		5	1					
22 Nov	N08W13		133	350	13	Ekc	30	BGD				2						
23 Nov	N08W27		135	450	12	Ekc	37	BGD	8									
24 Nov	N08W41		134	340	13	Ekc	22	BGD	1				1					
25 Nov	N08W55		136	270	12	Ekc	21	BGD				2						
									23	3	0	21	2	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 132

Region 1619

17 Nov	N10E16		171	90	5	Dao	9	B										
18 Nov	N10E03		171	160	6	Dai	19	B	1									
19 Nov	N10W11		170	200	8	Dsi	15	B	1									
20 Nov	N09W25		172	150	8	Dso	13	B										
21 Nov	N10W39		172	150	8	Hsx	6	A										
22 Nov	N11W51		171	150	10	Dao	7	B										
23 Nov	N13W64		172	180	10	Hsx	2	A										
24 Nov	N13W78		172	100	12	Eso	4	B										
									2	0	0	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 171

Region 1620

20 Nov	S08E59		87	40	6	Cso	1	B										
21 Nov	S08E44		89	20	2	Hsx	1	A										
22 Nov	S12E30		90	60	5	Hsx	1	A										
23 Nov	S13E16		92	90	8	Hax	2	A										
24 Nov	S12W00		94	20	9	Cso	5	B										
25 Nov	S13W14		95	50	10	Dai	12	BG	1			3						
									1	0	0	3	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 94



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 1621																		
24 Nov	N15E76		18	60	2	Hax	1	A										
25 Nov	N15E62		19	100	3	Hsx	1	A										
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 19

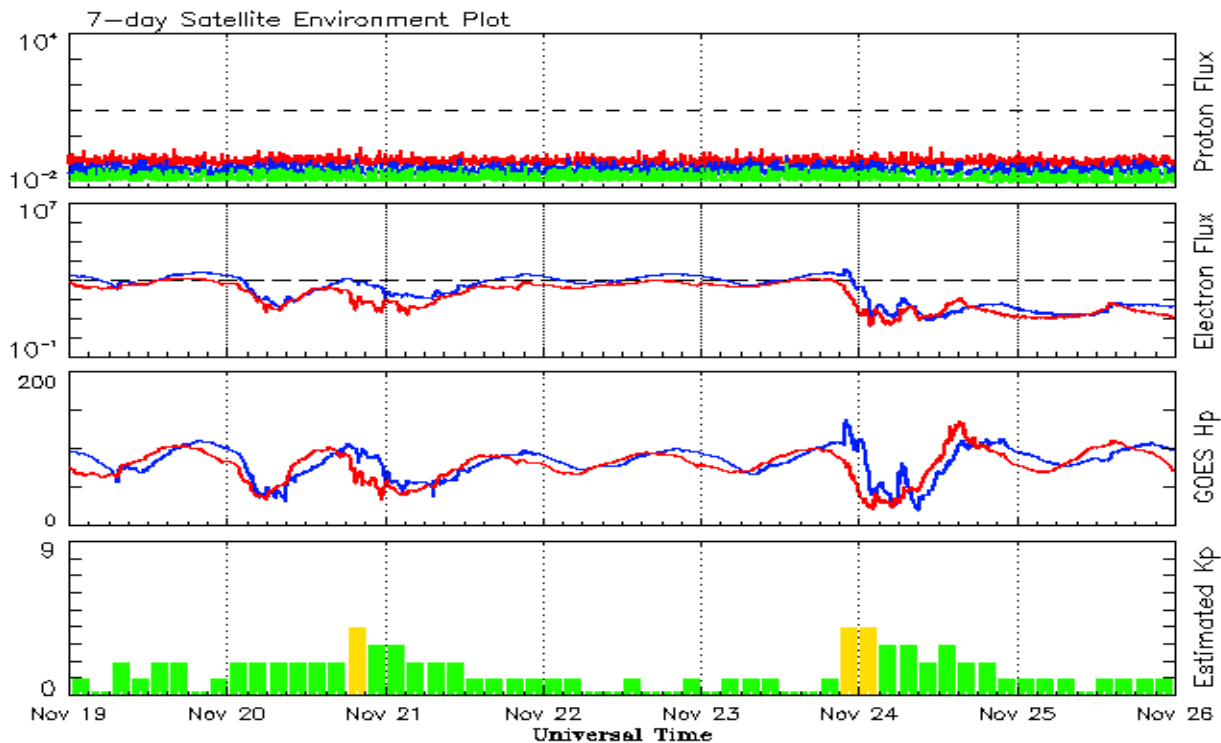


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
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	41.6	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			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 19 November 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.

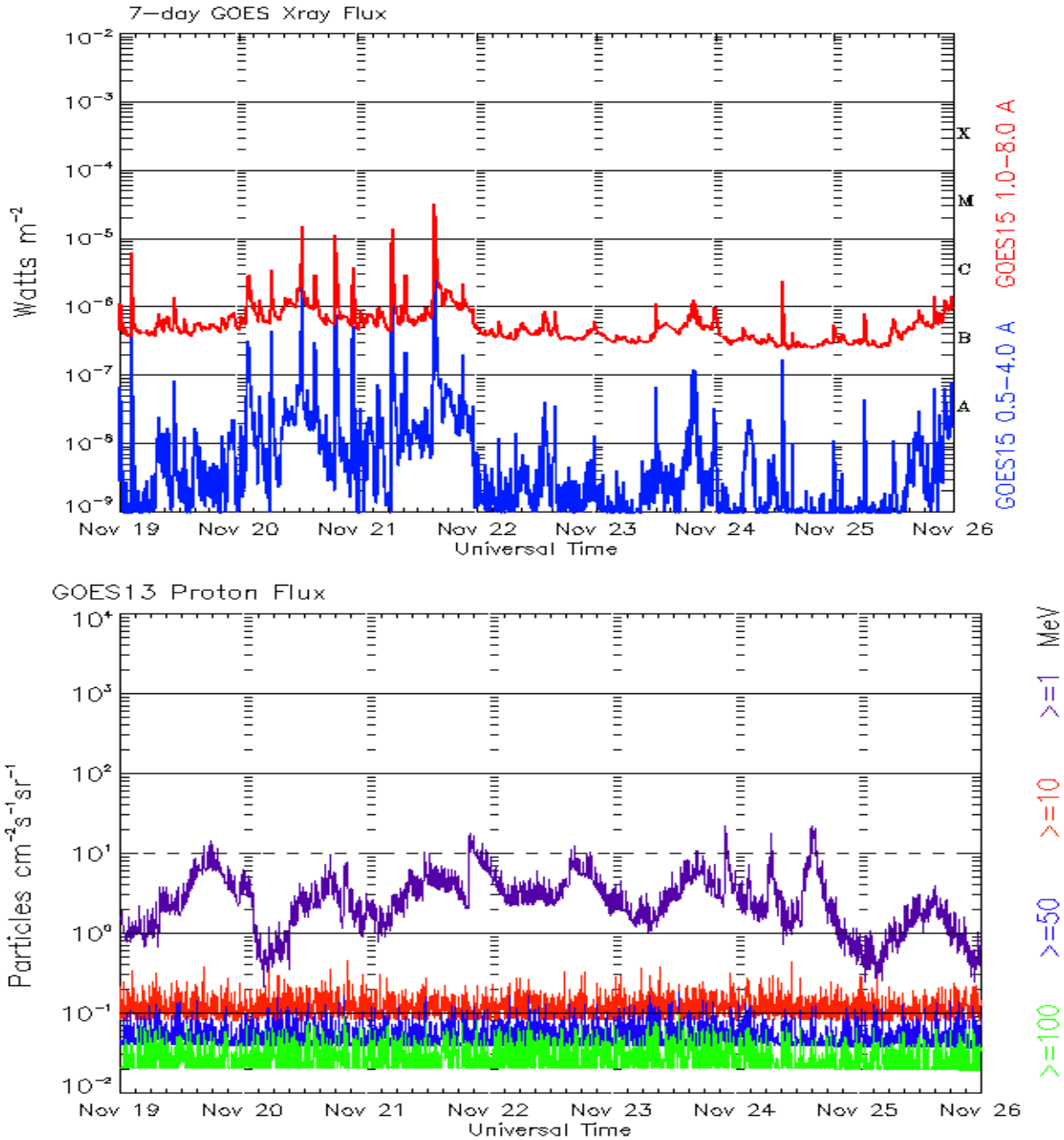
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 19 November 2012*

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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