

Solar activity was at moderate levels on 21 and 23 October with high levels the rest of the period due in large part to flare activity associated with Region 2192 (S12, L=248, class/area Fkc/2750 on 26 October). Region 2192 began producing M-class flare activity before it rotated onto the visible disk late on 16 October. By the time the region was fully apparent on 18 October, it was already classified as an Fkc spot group with an area of 1240 millionths. The region continued to grow and spread as it transited across the disk culminating in an area near 2570 millionths by 26 October (the fourth largest region since March of 1989), all the while maintaining a complex beta-gamma-delta magnetic configuration. This region managed to produce a total of 58 C-class flares, 18 M-class flares, and 5 X-class flares as of the end of the reporting period. The largest of these flares were an X1/2b at 22/1428 UTC, a long duration X3/3b at 24/2141 UTC, a long duration X1/3b at 25/1708 UTC, and an X2/2b at 26/1056 UTC. Although these were significant flares in the X-ray trace, there were no Type II or Type IV radio sweeps associated or Earth-directed coronal mass ejections.

No proton events were observed at geosynchronous orbit.

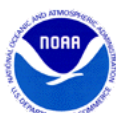
The greater than 2 MeV electron flux at geosynchronous orbit was at moderate levels on 20 October and reached high levels for the rest of the reporting period. The highest reported value was 11,815 pfu at 22/1735 UTC.

Geomagnetic field activity ranged from quiet to minor storm levels with major storm levels reported at high latitudes. The period began under the onset of a positive polarity coronal hole high speed stream (CH HSS). Solar wind speeds increased from approximately 430 km/s to around 660 km/s by mid-day on 21 October before beginning a slow decline. Total field was initially elevated near 10 nT on 20 October before slightly decreasing while the Bz component fluctuated between +/- 8 nT. From late on 22 October through the end of the period, solar wind speeds slowly decreased from the upper 400 km/s range back to nominal solar wind conditions. The geomagnetic field responded with unsettled to minor storm levels on 20 October with major storm levels observed at high latitudes. From 21-24 October, quiet to unsettled conditions with isolated active periods prevailed. By 25-26 October, geomagnetic field activity had decreased to quiet to unsettled levels.

### **Space Weather Outlook** **27 October - 22 November 2014**

Solar activity is likely to continue at high levels (R3-Strong or greater) from 27-30 October as Region 2192 transits off the visible disk. Very low to low levels are expected from 31 October through 10 November. By 11 November through the end of the reporting period, solar activity is expected to increase to moderate (R1-R2, Minor-Moderate) to high levels once again as Region 2192 returns on the visible disk.

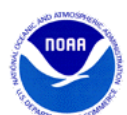
A chance for a greater than 10 MeV proton event (S1-Minor or greater) exists from 27-31



October and again from 15-22 November due to potential significant flare activity from Region 2192.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels from 27- 29 October and again from 18-22 November due to CH HSS activity.

Geomagnetic field activity is expected to be at quiet to unsettled levels with isolated active periods possible on 27-29 October, 04-07 November, 10-11 November, and again from 13-22 November due to combinations of recurrent southward Bz, solar sector boundary crossings, and CH HSS. Minor storm periods are possible on 16 November due to the onset of a recurrent positive polarity 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
20 October	185	93	2430	C1.3	10	5	0	14	4	1	0	0
21 October	199	120	2790	C1.5	9	1	0	19	2	0	0	0
22 October	216	123	3120	C1.5	4	3	1	9	0	1	0	0
23 October	227	126	3090	C1.3	5	1	0	9	2	0	0	0
24 October	218	147	2820	C1.6	5	1	1	10	0	0	1	0
25 October	219	115	2810	C1.8	7	0	1	7	1	0	1	0
26 October	217	138	3020	C1.8	10	4	1	9	0	1	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
	20 October	8.3e+05	1.8e+04	2.5e+03		7.3e+06
21 October	8.4e+05	1.6e+04	2.5e+03		5.0e+07	
22 October	8.1e+05	1.4e+04	2.6e+03		3.2e+08	
23 October	7.1e+05	1.4e+04	2.7e+03		2.1e+08	
24 October	4.6e+05	1.2e+04	2.4e+03		1.6e+08	
25 October	3.1e+05	1.2e+04	2.6e+03		5.8e+07	
26 October	2.2e+05	1.1e+04	2.5e+03		4.4e+07	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	20 October	17	3-2-3-3-3-4-4-3	48	1-3-6-6-6-6-4-3	26
21 October	11	2-2-3-2-3-3-3-2	28	3-2-3-5-5-5-4-3	15	3-2-3-3-4-3-4-3
22 October	10	3-2-3-2-3-2-2-2	23	3-3-3-5-5-4-2-2	14	4-3-3-2-3-3-3-2
23 October	8	2-2-2-2-2-2-3-2	19	1-1-3-5-5-3-3-2	11	2-2-2-2-3-2-4-2
24 October	9	2-1-1-3-3-3-2-1	18	2-1-3-4-4-5-2-2	11	3-1-2-2-2-4-2-2
25 October	9	3-2-2-2-2-3-2-1	16	2-2-2-4-5-3-2-2	10	3-2-2-2-2-3-2-1
26 October	11	3-2-3-3-3-2-2-1	20	1-2-3-4-5-5-2-1	12	3-3-3-3-3-2-2-1



## *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
20 Oct 1337	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 20/2300
20 Oct 1627	SUMMARY: 10cm Radio Burst	20/1609 - 1610
20 Oct 1640	WARNING: Geomagnetic K = 5	20/1639 - 2000
20 Oct 1744	ALERT: Geomagnetic K = 5	20/1743
20 Oct 1829	WATCH: Geomagnetic Storm Category G1 predicted	
20 Oct 1947	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 21/0700
20 Oct 1947	EXTENDED WARNING: Geomagnetic K = 5	20/1639 - 21/0400
21 Oct 0653	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 21/1400
21 Oct 1344	ALERT: Type II Radio Emission	21/1249
21 Oct 1355	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 21/1900
21 Oct 1404	SUMMARY: 10cm Radio Burst	21/1337 - 1342
21 Oct 1406	ALERT: Type II Radio Emission	21/1342
21 Oct 1540	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525
21 Oct 1855	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 22/0200
22 Oct 0146	ALERT: X-ray Flux exceeded M5	22/0144
22 Oct 0155	EXTENDED WARNING: Geomagnetic K = 4	18/0121 - 22/1400
22 Oct 0157	SUMMARY: 10cm Radio Burst	22/0138 - 0139
22 Oct 0234	SUMMARY: X-ray Event exceeded M5	22/0116 - 0228
22 Oct 0236	ALERT: Type IV Radio Emission	22/0215
22 Oct 0521	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525
22 Oct 1410	ALERT: X-ray Flux exceeded M5	22/1409
22 Oct 1435	SUMMARY: 10cm Radio Burst	22/1405 - 1409
22 Oct 1454	SUMMARY: X-ray Event exceeded X1	22/1402 - 1450
22 Oct 1809	ALERT: Type II Radio Emission	22/1558
23 Oct 0737	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525
23 Oct 2050	WARNING: Geomagnetic K = 4	23/2048 - 24/0200
23 Oct 2102	ALERT: Geomagnetic K = 4	23/2059
24 Oct 0156	EXTENDED WARNING: Geomagnetic K = 4	23/2048 - 24/0900

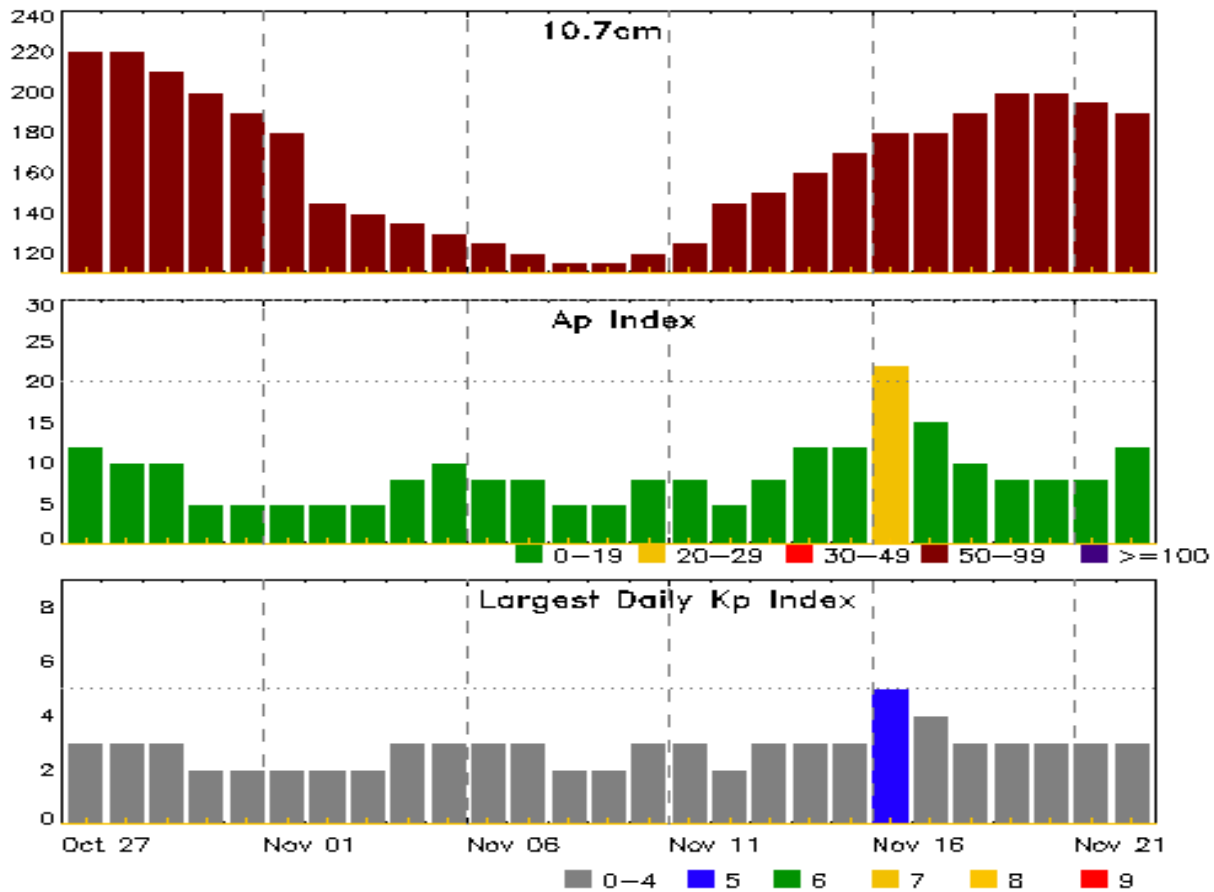


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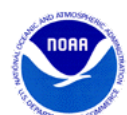
<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
24 Oct 0833	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525
24 Oct 0835	EXTENDED WARNING: Geomagnetic K = 4	23/2048 - 24/1400
24 Oct 0838	ALERT: Type II Radio Emission	24/0755
24 Oct 0838	ALERT: Type IV Radio Emission	24/0759
24 Oct 1401	EXTENDED WARNING: Geomagnetic K = 4	23/2048 - 25/0400
24 Oct 2114	ALERT: X-ray Flux exceeded M5	24/2113
24 Oct 2204	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	24/2300 - 25/1100
24 Oct 2236	SUMMARY: X-ray Event exceeded X1	24/2107 - 2213
25 Oct 0357	EXTENDED WARNING: Geomagnetic K = 4	23/2048 - 25/1400
25 Oct 0411	CANCELLATION: Proton 10MeV Integral Flux $>$ 10pfu	
25 Oct 1057	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525
25 Oct 1659	ALERT: X-ray Flux exceeded M5	25/1659
25 Oct 1825	SUMMARY: X-ray Event exceeded X1	25/1655 - 1811
26 Oct 1045	ALERT: X-ray Flux exceeded M5	26/1043
26 Oct 1125	SUMMARY: X-ray Event exceeded X1	26/1004 - 1118
26 Oct 1256	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	21/1525



## 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
27 Oct	220	12	3	10 Nov	120	8	3
28	220	10	3	11	125	8	3
29	210	10	3	12	145	5	2
30	200	5	2	13	150	8	3
31	190	5	2	14	160	12	3
01 Nov	180	5	2	15	170	12	3
02	145	5	2	16	180	22	5
03	140	5	2	17	180	15	4
04	135	8	3	18	190	10	3
05	130	10	3	19	200	8	3
06	125	8	3	20	200	8	3
07	120	8	3	21	195	8	3
08	115	5	2	22	190	12	3
09	115	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 245	Flux 2695	Intensity II	Intensity IV
20 Oct	0900	0911	0920	M3.9	0.028	1N	S14E42	2192		47		
20 Oct	1600	1637	1655	M4.5	0.099	2N	S14E37	2192		190		
20 Oct	1855	1902	1904	M1.4	0.005			2192	14000	120		
20 Oct	1953	2004	2013	M1.7	0.015			2192				
20 Oct	2243	2255	2313	M1.2	0.017	1N	S14E36	2192				
21 Oct	1335	1338	1340	M1.2	0.001			2192	42000	510	2	
22 Oct	0116	0159	0228	M8.7	0.210			2192		580		1
22 Oct	0511	0517	0521	M2.7	0.010			2192				
22 Oct	1402	1428	1450	X1.6	0.340	2B	S14E13	2192		200		
22 Oct	1551	1557	1603	M1.4	0.007						1	
23 Oct	0944	0950	0956	M1.1	0.005	1F	S16E03	2192				
24 Oct	0737	0748	0753	M4.0	0.023			2192	1200	150	1	1
24 Oct	2107	2141	2213	X3.1	0.860	3B	S16W21	2192		210		
25 Oct	1655	1708	1811	X1.0	0.390	3B	S16W31	2192		160		
26 Oct	1004	1056	1118	X2.0	0.340	2B	S18W40	2192		200		
26 Oct	1708	1717	1730	M1.0	0.010			2192		110		
26 Oct	1807	1815	1820	M4.2	0.023			2192				
26 Oct	1843	1849	1856	M1.9	0.010			2192				
26 Oct	1959	2021	2045	M2.4	0.052			2192	400			

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical	
	Begin	Max	End			Location Lat CMD	Rgn #
20 Oct	0049	0053	0056	C2.5	SF	S13E50	2192
20 Oct	0158	0201	0204	C2.8	SF	S20E38	2192
20 Oct	0225	0228	0232	C3.2	SF	S17E46	2192
20 Oct	0332	0357	0405	C5.4	SF	S17E46	2192
20 Oct	0505	0505	0508		SF	S12E47	2192
20 Oct	0537	0602	0609	C9.0	1F	S17E50	2192
20 Oct	0638	0643	0707		SF	S11E47	2192
20 Oct	0745	0746	0749		SF	S18E33	2192
20 Oct	0811	0824	0834		SF	S16E42	2192
20 Oct	0854	0906	1003		1N	S17E40	2192
20 Oct	0900	0911	0920	M3.9	1N	S14E42	2192
20 Oct	1050	1050	1056		SF	S14E43	2192



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
20 Oct	1117	1122	1139	C2.8	SF	S11E45	2192
20 Oct	1358	1401	1412	C2.7	SF	S11E44	2192
20 Oct	1416	1418	1423		SF	S10E45	2192
20 Oct	1440	1443	1447	C3.1	SF	S15E38	2192
20 Oct	1458	U1500	A1535	C8.6	SF	S10E43	2192
20 Oct	1600	1637	1655	M4.5	2N	S14E37	2192
20 Oct	1843	1847	1851	C6.2			2192
20 Oct	1855	1902	1904	M1.4			2192
20 Oct	1953	2004	2013	M1.7			2192
20 Oct	2211	2246	0007	M1.2	1N	S14E36	2192
21 Oct	0037	0043	0049		SF	S13E34	2192
21 Oct	0049	0053	0055		SF	S13E34	2192
21 Oct	0108	0110	0112		SF	S13E34	2192
21 Oct	0208	0216	0257		SF	S08E33	2192
21 Oct	0212	0220	0230	C4.2			
21 Oct	0306	0306	0309		SF	S08E33	2192
21 Oct	0311	0312	0314		SF	S09E32	2192
21 Oct	0316	0316	0319		SF	S11E33	2192
21 Oct	0403	0404	0407		SF	S09E30	2192
21 Oct	0408	0408	0410		SF	S09E30	2192
21 Oct	0442	0443	0446		SF	S08E31	2192
21 Oct	0512	0513	0520		SF	S09E29	2192
21 Oct	0525	0532	0535		SF	S09E29	2192
21 Oct	0605	0614	0621	C5.7	SF	S11E31	2192
21 Oct	0653	0657	0702	C2.9	SF	S14E29	2192
21 Oct	0808	0810	0812	C3.1	1F	S08E28	2192
21 Oct	1046	1058	1113	C6.3			
21 Oct	1225	1228	1230	C4.4			
21 Oct	1335	1338	1340	M1.2			2192
21 Oct	1638	1638	1654		SF	S15E24	2192
21 Oct	1707	1709	1718		SF	S19E33	2192
21 Oct	1729	1731	1751		SF	S14E24	2192
21 Oct	1756	1756	1806		SF	S14E24	2192
21 Oct	1903	1910	1916	C4.0			2192
21 Oct	2005	2022	2041	C6.5	1F	S16E25	2192
21 Oct	2041	2041	2050		SF	S16E25	2192
21 Oct	2154	2204	2214	C3.4			2192
22 Oct	0116	0159	0228	M8.7			2192





## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
22 Oct	B0401	0402	A0447		SF	S16E14	2192
22 Oct	0511	0517	0521	M2.7			2192
22 Oct	B0647	0652	0653		SF	S12E19	2192
22 Oct	B0818	U0841	A0852		SF	N03W22	2193
22 Oct	B0818	U0823	A0853		SF	S15E17	2192
22 Oct	B0841	U0841	A0848		SF	S11W61	2187
22 Oct	0906	0912	0919	C4.6			
22 Oct	1200	1205	1215	C3.2			
22 Oct	1402	1406	2230	X1.6	2B	S14E13	2192
22 Oct	1524	1525	1531		SF	N05W26	2193
22 Oct	1551	1557	1603	M1.4			
22 Oct	1652	1659	1703	C5.7			
22 Oct	2037	2038	2042		SF	N04W31	2193
22 Oct	2102	2116	2123	C6.5			
22 Oct	2233	2233	2252		SF	S10E09	2192
22 Oct	2259	2310	A2356		SF	S10E09	2192
23 Oct	0004	0005	0006		SF	S10E09	2192
23 Oct	0419	0430	0442	C3.7			2192
23 Oct	0501	0501	0501		SF	S12E05	2192
23 Oct	0508	0512	0515		SF	S13E10	2192
23 Oct	0702	0705	0711	C1.8			
23 Oct	0944	0950	0956	M1.1	1F	S16E03	2192
23 Oct	1425	1426	1448		SF	S11E03	2192
23 Oct	1502	1503	1506		SF	N03W40	2193
23 Oct	1520	1539	1609	C4.6	SF	S09E02	2192
23 Oct	1739	1752	1903	C5.9	1F	S09E02	2192
23 Oct	1911	1915	1918	C3.3	SN	S21E05	2192
23 Oct	1953	1955	1958		SF	S21E05	2192
23 Oct	1959	2000	2004		SF	S15W01	2192
24 Oct	0108	0108	0119		SF	S13W03	2192
24 Oct	0235	0243	0248	C4.2	SF	S20W02	2192
24 Oct	0254	0259	0305	C3.4	SF	S20W02	2192
24 Oct	0356	0400	0402	C3.6	SF	S22W00	2192
24 Oct	0737	0748	0753	M4.0			2192
24 Oct	0958	1001	1004	C3.6			2192
24 Oct	1334	1450	1829		SF	S15W13	2192
24 Oct	1407	1411	1414		SF	N07E52	2195
24 Oct	1413	1416	1419		SF	S13E69	2197



## Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
24 Oct	1431	1506	1554	C5.1			2192
24 Oct	1838	1839	1842		SF	S09W18	2192
24 Oct	2034	2035	2040		SF	S15W15	2192
24 Oct	2050	2115	0014	X3.1	3B	S16W21	2192
24 Oct	2340	2340	2344		SF	S12E22	2194
25 Oct	0237	U0237	0247		SF	N06E42	2195
25 Oct	0406	0413	0417	C4.4	SF	S07W24	2192
25 Oct	0517	0519	0528		SF	S11W23	2192
25 Oct	0626	0749	0935	C9.2	1F	S14W23	2192
25 Oct	0821	0823	0827		SF	N08E49	2195
25 Oct	0944	0949	0955	C4.6			2192
25 Oct	1213	1220	1225	C3.2			2192
25 Oct	1338	1706	A0007		3B	S16W31	2192
25 Oct	1500	1504	1508	C5.1			2192
25 Oct	1544	1552	1615	C9.7			2192
25 Oct	1655	1708	1811	X1.0			2192
25 Oct	1806	1807	1808		SF	S03E58	2196
25 Oct	2145	2147	2156		SF	S14E51	2197
25 Oct	2148	2150	2156		SF	S11E10	2194
25 Oct	2320	2326	2336	C8.4			2192
26 Oct	0108	0113	0127	C3.1			2192
26 Oct	0509	0513	0519	C2.8	SF	S14W30	2192
26 Oct	0545	0550	0555	C4.0	SF	S14W30	2192
26 Oct	0613	0619	0657	C9.5	SF	S15W36	2192
26 Oct	0657	0659	0705		SF	S15W36	2192
26 Oct	0729	0732	0744		SF	S15W31	2192
26 Oct	0918	0928	0942		SF	S18W35	2192
26 Oct	1004	1056	1118	X2.0	2B	S18W40	2192
26 Oct	1303	1307	1502	C9.2	SN	S18W40	2192
26 Oct	1510	1516	A1535	C5.2	SF	S17W40	2192
26 Oct	1552	1556	1600	C3.5			
26 Oct	1612	1617	1622	C5.3	SN	N02W79	2193
26 Oct	1708	1717	1730	M1.0			2192
26 Oct	1755	1759	1805	C7.8			2192
26 Oct	1807	1815	1820	M4.2			2192
26 Oct	1843	1849	1856	M1.9			2192
26 Oct	1959	2021	2045	M2.4			2192
26 Oct	2147	2159	2213	C8.3			2192



## Region Summary

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 2186</b>																							
07 Oct	S19E73		19	80	3	Hkx	1	A															
08 Oct	S19E60		19	150	5	Cso	2	B															
09 Oct	S22E45		20	200	4	Cso	3	B															
10 Oct	S20E34		19	200	3	Cso	2	B															
11 Oct	S20E19		21	170	4	Cso	3	B															
12 Oct	S21E07		19	200	5	Cao	5	B															
13 Oct	S21W06		19	180	5	Cso	5	B															
14 Oct	S21W19		19	180	4	Cso	3	B															
15 Oct	S21W32		19	150	3	Hsx	4	A															
16 Oct	S20W44		17	170	4	Cso	3	B															
17 Oct	S20W57		17	160	3	Hsx	2	A					1										
18 Oct	S20W70		17	110	2	Hsx	1	A															
19 Oct	S20W84		18	100	1	Hsx	1	A															
													0	0	0	1	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 19

<b>Region 2187</b>																							
11 Oct	S08E79		320	100	2	Hsx	1	A	1														
12 Oct	S09E65		321	120	4	Cso	3	B	2														
13 Oct	S10E54		319	210	14	Eso	3	B															
14 Oct	S09E44		316	210	12	Cso	5	B															
15 Oct	S10E29		318	190	12	Cao	3	B															
16 Oct	S10E16		317	220	13	Cso	6	B															
17 Oct	S09W00		320	200	3	Hsx	1	A															
18 Oct	S09W12		319	210	10	Cso	10	B															
19 Oct	S09W27		321	160	9	Cso	7	B					1										
20 Oct	S08W41		321	160	4	Hsx	1	A															
21 Oct	S08W53		320	170	4	Cso	3	B															
22 Oct	S10W67		321	110	5	Cso	2	B					1										
23 Oct	S09W81		321	110	3	Hsx	1	A															
24 Oct	S08W93		321	70	2	Hax	1	A															
													3	0	0	2	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 320



### *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 2189</b>																							
14 Oct	N21E18	342	10	3	Bxo	5	B																
15 Oct	N21E05	342	20	3	Cro	5	B																
16 Oct	N23W07	340	10	1	Axx	1	A																
17 Oct	N23W21	341	plage																				
18 Oct	N23W35	342	plage																				
19 Oct	N23W49	343	plage																				
20 Oct	N23W63	344	plage																				
21 Oct	N23W77	345	plage																				

Died on Disk.

Absolute heliographic longitude: 342

<b>Region 2190</b>																							
15 Oct	N23E46	301	10	5	Bxo	3	B																
16 Oct	N22E33	300	10	6	Bxo	4	B																
17 Oct	N22E19	301	plage																				
18 Oct	N22E05	302	plage																				
19 Oct	N22W09	303	plage																				
20 Oct	N22W23	304	plage																				
21 Oct	N22W37	305	plage																				
22 Oct	N22W51	305	plage																				
23 Oct	N22W65	306	plage																				
24 Oct	N22W79	307	plage																				

Crossed West Limb.

Absolute heliographic longitude: 302



### *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 2191</b>																							
15 Oct	S13E41	306	10	5	Bxo	2	B																
16 Oct	S14E30	303	10	1	Axx	2	A																
17 Oct	S14E16	304	plage																				
18 Oct	S14E02	305	plage																				
19 Oct	S14W12	306	plage																				
20 Oct	S11W24	304	10	4	Bxo	2	B																
21 Oct	S11W38	304	plage																				
22 Oct	S11W52	306	plage																				
23 Oct	S11W66	307	plage																				
24 Oct	S11W79	307	plage																				
								0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Crossed West Limb.  
Absolute heliographic longitude: 305

<b>Region 2192</b>																							
14 Oct	S14E0*	253	plage									2											
16 Oct	S16E80	253	plage									4	1										
17 Oct	S13E68	252	260	10	Dki	6	BG	5						3									
18 Oct	S13E56	251	1240	17	Fkc	19	BG	5	1			7											
19 Oct	S13E43	251	1560	22	Fkc	32	BGD	4		1		8									1		
20 Oct	S13E30	249	2180	20	Fkc	43	BGD	10	5			14	4	1									
21 Oct	S14E19	248	2410	20	Fkc	66	BGD	6	1			19	2										
22 Oct	S12E06	248	2700	20	Fkc	55	BGD		2	1		5		1									
23 Oct	S14W06	247	2740	21	Fkc	58	BGD	4	1			8	2										
24 Oct	S12W21	249	2510	20	Fkc	62	BGD	5	1	1		7									1		
25 Oct	S12W34	249	2570	18	Fkc	44	BGD	7		1		2	1								1		
26 Oct	S12W46	248	2750	17	Fkc	60	BGD	8	4	1		8		1									
								58	18	5		81	9	3	3	0							

Still on Disk.  
Absolute heliographic longitude: 248



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Helio Lon 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 2193</b>																	
19 Oct	N05E10	284	30	5	Cro	6	B					1					
20 Oct	N04W04	284	80	6	Dao	7	B										
21 Oct	N04W18	284	80	6	Dao	9	B										
22 Oct	N05W31	285	120	6	Dao	11	BG					3					
23 Oct	N06W45	285	100	7	Dao	8	BG					1					
24 Oct	N07W59	287	70	6	Cao	3	B										
25 Oct	N06W74	288	70	2	Hax	1	A										
26 Oct	N06W87	289	60	2	Hax	1	A	1				1					
								1	0	0		6	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 284

<b>Region 2194</b>																	
21 Oct	S13E58	208	130	6	Cso	2	B										
22 Oct	S11E47	207	130	5	Cso	2	B										
23 Oct	S12E32	208	70	6	Cso	2	B										
24 Oct	S12E19	208	70	5	Cao	3	B					1					
25 Oct	S12E05	209	50	2	Hax	1	A					1					
26 Oct	S12W09	211	60	2	Hax	2	A										
								0	0	0		2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 209

<b>Region 2195</b>																	
22 Oct	N08E70	184	60	4	Dso	3	B										
23 Oct	N07E59	181	70	10	Dso	7	B										
24 Oct	N08E47	180	70	10	Cso	6	B					1					
25 Oct	N08E33	182	90	10	Dai	7	B					2					
26 Oct	N08E21	181	100	11	Esi	10	B										
								0	0	0		3	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 181

<b>Region 2196</b>																	
24 Oct	S03E66	161	20	1	Hsx	1	A										
25 Oct	S04E53	161	20	1	Hax	1	A					1					
26 Oct	S03E40	162	20	1	Hax	1	A										
								0	0	0		1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 162



***Region Summary - continued***

Date	Location		Sunspot Characteristics				Flares														
	Lat CMD	Lon	Heli 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><i>Region 2197</i></b>																					
24 Oct	S12E62	164	10			Axx	1	A					1								
25 Oct	S12E48	167	10	1		Axx	1	A					1								
26 Oct	S12E38	164	30	5		Dro	4	B													
									0	0	0	2	0	0	0	0	0				

Still on Disk.

Absolute heliographic longitude: 164



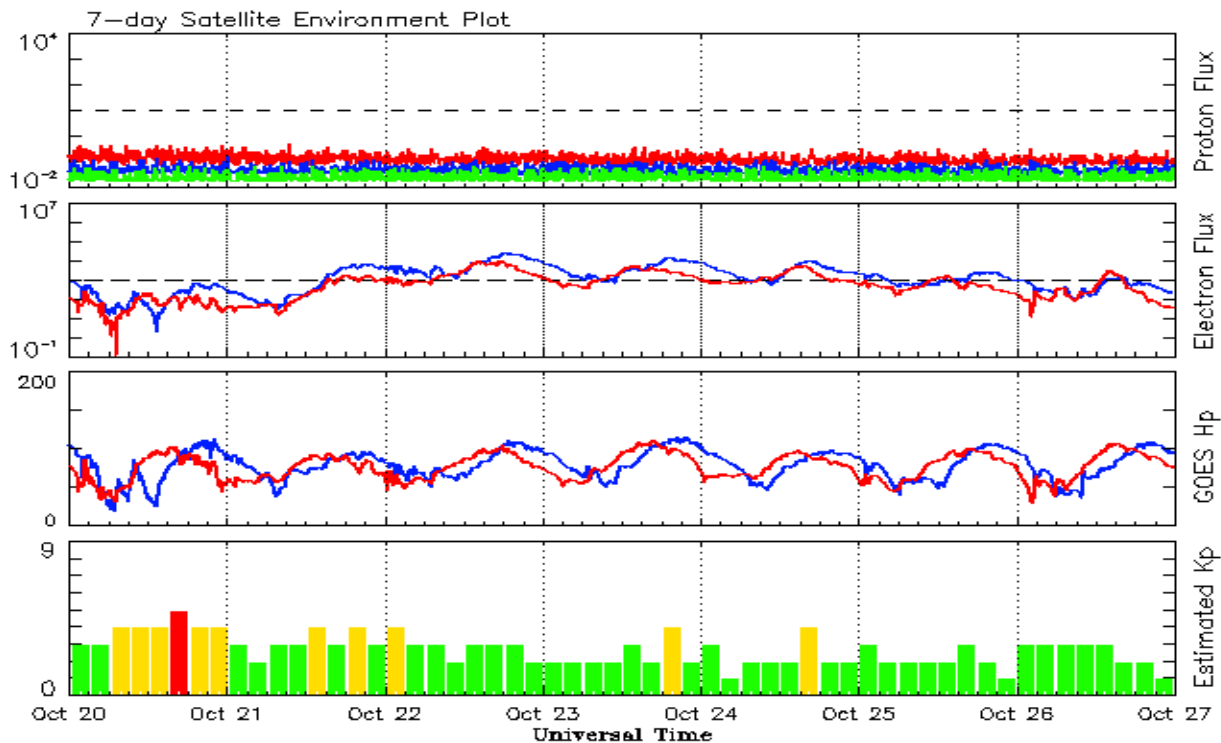
**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2012</b>									
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
November	89.2	61.8	0.69	87.3	59.7	120.9	120.1	6	7.3
December	60.4	40.8	0.68	88.0	59.6	108.4	120.1	3	7.5
<b>2013</b>									
January	99.8	62.9	0.63	87.1	58.7	127.1	118.9	4	7.5
February	60.0	38.1	0.63	86.7	58.4	104.4	118.0	5	7.4
March	81.0	57.9	0.71	85.7	57.6	111.2	117.1	9	7.4
April	112.8	72.4	0.64	86.7	57.9	125.0	116.6	5	7.2
May	125.5	78.7	0.63	90.5	59.9	131.3	118.1	10	7.0
June	80.1	52.5	0.66	94.4	62.6	110.2	120.9	13	7.1
July	86.1	57.0	0.66	97.9	65.5	115.6	123.9	9	7.3
August	90.2	66.0	0.73	103.7	68.9	114.7	127.9	9	7.6
September	55.0	37.0	0.67	111.0	73.0	102.7	132.3	5	7.8
October	127.1	85.6	0.67	114.3	74.9	132.3	134.7	7	7.8
November	125.7	77.6	0.62	114.6	75.3	148.4	135.4	5	7.9
December	118.2	90.3	0.76	115.4	75.9	147.7	135.9	5	7.5
<b>2014</b>									
January	125.9	81.8	0.65	117.7	77.3	158.6	137.3	6	7.1
February	174.6	102.3	0.59	119.5	78.4	170.3	138.6	12	6.9
March	141.1	91.9	0.65	123.2	80.8	149.9	140.8	6	7.2
April	130.5	84.7	0.65			144.3		9	
May	116.8	75.2	0.64			130.0		7	
June	107.7	71.0	0.66			122.2		7	
July	113.6	72.5	0.64			137.3		5	
August	106.2	74.7	0.70			124.7		9	
September	127.4	87.6	0.69			146.1		11	

**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 20 October 2014*

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.

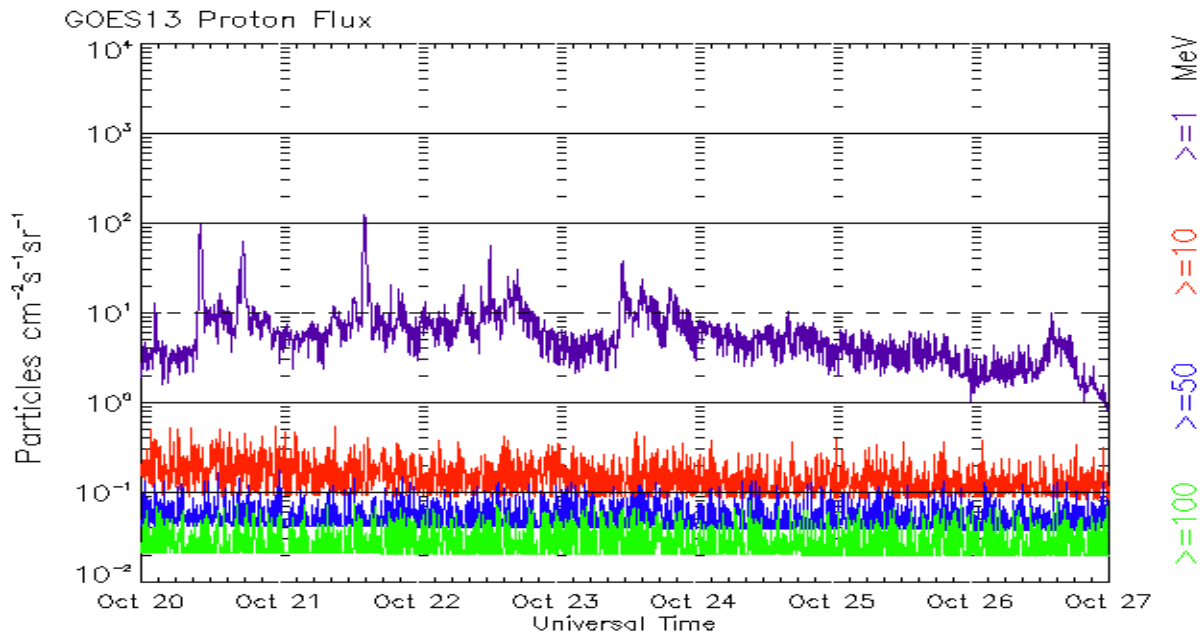
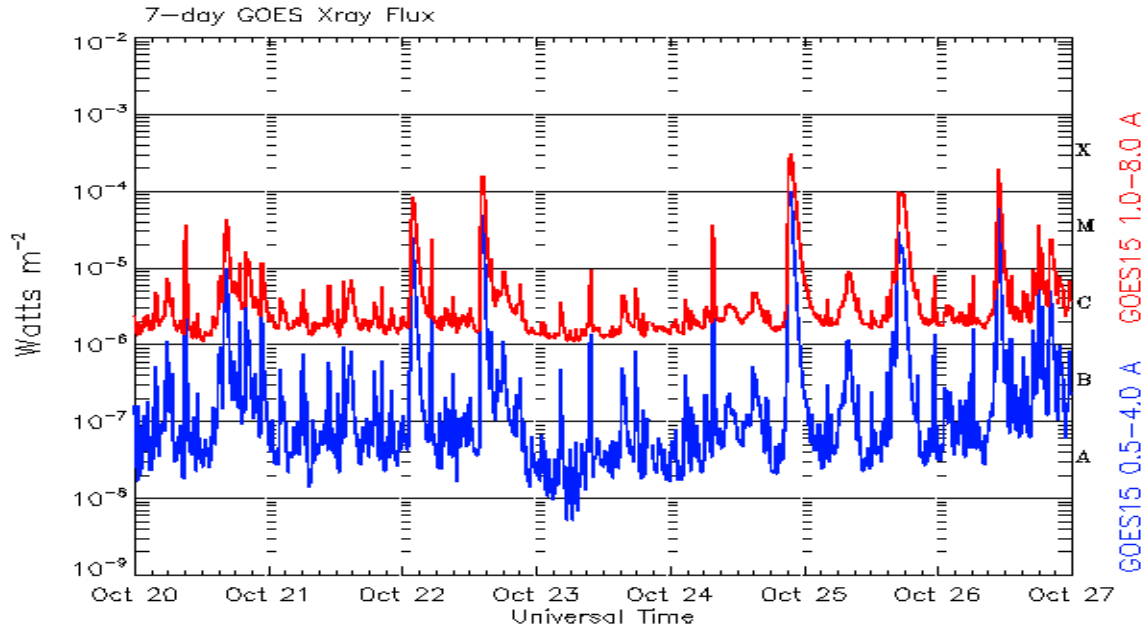
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 20 October 2014*

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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