

Solar activity was low from 14-16 Sep. Activity increased to moderate levels on 17 Sep when Region 2415 (S19, L=233, class/area Eac/240 on 19 Sep) produced an M1/Sf flare at 17/0940 UTC. A long duration C2/Sf flare observed at 18/0631 UTC was accompanied by Type II (850 km/s) and Type IV radio sweeps along with a coronal mass ejection (CME). Low levels were observed on 18-19 Sep but returned to moderate levels on 20 Sep. Region 2420 (N09, L=108, class/area Ekc/270 on 20 Sep) produced an M1 at 20/0503 UTC as it rotated onto the east limb. Region 2415 produced an M2/2n flare at 20/1803 UTC accompanied by a Type II (1358 km/s) radio sweep as well as a 320 sfu Tenflare. An associated CME was observed in SOHO LASCO C2 imagery beginning at 20/1812 UTC and a WSA-Enlil model run is in progress to determine geoeffectiveness.

No proton events were observed at geosynchronous orbit, however, an enhancement was observed in conjunction with the M2 flare from 20 Sep with a peak flux of 3 pfu at 20/2045 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels from 14-18 Sep due to a combination of effects from a CME and coronal hole high speed stream (CH HSS) influence. Normal to moderate levels were observed on 19-20 Sep.

Geomagnetic field activity was at quiet to minor storm levels on 14 Sep due to the onset of a recurrent, positive polarity CH HSS late in the day. Quiet to active levels persisted from 15-17 Sep as HSS influence continued. Quiet to unsettled conditions were observed on 18 Sep as CH HSS effects subsided. Predominately quiet to unsettled levels were observed on 19 Sep with the exception of isolated active and minor storm periods from 19/0300-0600 UTC and 19/0600-0900 UTC, respectively, in response to a solar sector boundary change and a prolonged period of negative Bz. A geomagnetic Sudden Impulse of 27 nT was observed at the Boulder magnetometer on 20 Sep at 0605 UTC indicating the arrival of the 18 Sep CME. Unsettled to severe storm conditions were subsequently observed and then were followed by the onset of a recurrent, positive polarity CH HSS.

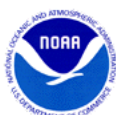
## **Space Weather Outlook**

### **21 September - 17 October 2015**

Solar activity is expected to be at low to moderate levels from 21 Sep - 02 Oct as Region 2420 makes its way across the visible disk. Low levels are anticipated from 03-05 Oct. Low to moderate levels are likely to return on 06 Oct when Region 2415 is expected to rotate back into view and remain elevated through the end of the forecast period (17 Oct).

No proton events are expected at geosynchronous orbit although a slight chance exists from 21-22 Sep when Region 2415 rotates off of the west limb and 06-17 Oct when it returns as it now has a history of producing protons.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to



high levels from 21-27 Sep due to influence from various CME and CH HSS activity. Normal to moderate levels are expected from 28 Sep to 01 Oct. Chances for high levels return from 02-11 Oct due to effects from a series of recurrent, positive polarity high speed streams. Predominately normal to moderate levels are expected for the remainder of the period.

Geomagnetic field activity is expected to reach minor storm levels early on 21 Sep due to waning effects of the 18 Sep CME and CH HSS influence. Quiet to unsettled conditions are expected from 22-24 Sep although analysis is ongoing to determine if and when the 20 Sep CME will affect field activity. Unsettled to active levels are expected from 25-26 Sep due to influence from a negative polarity CH HSS. Quiet to unsettled conditions are expected from 27-30 Sep. A series of recurrent positive polarity high speed streams are expected to increase field activity to a baseline of unsettled to active conditions from 01-09 Oct with minor storm levels likely on 01 Oct and 05-06 Oct and major storm levels likely on 04 and 08 Oct during peak influence as well as co-rotating interaction regions (CIRs) preceding the onset of the individual streams. Quiet to unsettled conditions are expected from 10-16 Oct with isolated active periods possible during periods of sustained negative Bz as HSS influence subsides. Unsettled to active levels are expected with a chance for minor storm periods on 17 Oct due to positive polarity CH HSS influence.



### *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
14 September	97	52	520	B2.0	0	0	0	5	0	0	0	0
15 September	101	66	530	B2.7	6	0	0	12	0	0	0	0
16 September	109	67	680	B3.4	10	0	0	8	0	0	0	0
17 September	107	72	540	B2.9	12	1	0	18	2	0	0	0
18 September	103	62	490	B3.4	4	0	0	11	0	0	0	0
19 September	106	61	520	B3.0	2	0	0	1	0	0	0	0
20 September	110	74	750	B3.4	2	2	0	2	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
	14 September	3.9e+05	1.1e+04	2.6e+03		1.6e+08
15 September	4.9e+05	1.1e+04	2.7e+03		1.6e+08	
16 September	3.4e+05	1.1e+04	2.6e+03		2.3e+08	
17 September	5.2e+05	1.2e+04	2.8e+03		2.4e+08	
18 September	2.4e+05	1.1e+04	2.7e+03		5.9e+07	
19 September	7.2e+05	1.2e+04	3.0e+03		1.6e+07	
20 September	1.1e+06	3.8e+04	2.8e+03		8.1e+06	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	14 September	10	2-2-2-3-3-3-2-2	24	1-1-2-5-4-6-3-2	14
15 September	17	4-4-3-3-2-3-3-3	36	2-2-5-6-6-5-2-2	18	4-4-3-3-3-3-3-3
16 September	9	2-2-2-2-3-2-2-3	14	3-3-4-3-3-3-2-1	12	2-3-2-2-3-3-2-4
17 September	12	4-2-2-3-3-1-1-3	24	3-2-6-6-2-1-0-1	12	4-3-3-3-2-1-0-3
18 September	11	2-2-3-3-3-2-2-3	32	2-2-3-7-5-4-2-2	13	2-2-3-3-3-2-3-3
19 September	12	3-3-3-3-3-2-1-2	21	2-2-5-6-3-0-1-2	16	3-4-5-3-2-0-1-3
20 September	32	3-4-6-6-3-3-2-3	73	2-3-8-7-6-6-2-3	43	3-5-7-5-4-5-3-3



### *Alerts and Warnings Issued*

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
14 Sep 0259	WATCH: Geomagnetic Storm Category G1 predicted	
14 Sep 1011	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1020
14 Sep 1528	WARNING: Geomagnetic K = 4	14/1530 - 1900
14 Sep 1539	ALERT: Geomagnetic K = 4	14/1540
14 Sep 1635	WARNING: Geomagnetic K = 5	14/1635 - 1900
14 Sep 1803	ALERT: Geomagnetic K = 5	14/1759
14 Sep 1834	EXTENDED WARNING: Geomagnetic K = 5	14/1635 - 15/0600
14 Sep 1834	EXTENDED WARNING: Geomagnetic K = 4	14/1530 - 15/0600
15 Sep 0555	EXTENDED WARNING: Geomagnetic K = 4	14/1530 - 15/1400
15 Sep 1031	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1020
16 Sep 1044	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1020
16 Sep 2359	WARNING: Geomagnetic K = 4	16/2359 - 17/0700
17 Sep 0006	ALERT: Geomagnetic K = 4	16/2359
17 Sep 0948	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1020
18 Sep 0451	ALERT: Type IV Radio Emission	18/0416
18 Sep 0457	ALERT: Type II Radio Emission	18/0411
18 Sep 0551	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1020
18 Sep 0800	WARNING: Geomagnetic K = 4	18/0800 - 1400
18 Sep 2236	WATCH: Geomagnetic Storm Category G1 predicted	
19 Sep 0400	WARNING: Geomagnetic K = 4	19/0400 - 1300
19 Sep 0411	ALERT: Geomagnetic K = 4	19/0410
19 Sep 0826	WARNING: Geomagnetic K = 5	19/0826 - 1300
19 Sep 0901	ALERT: Geomagnetic K = 5	19/0859
19 Sep 1257	EXTENDED WARNING: Geomagnetic K = 4	19/0400 - 2100
20 Sep 0042	WARNING: Geomagnetic K = 4	20/0042 - 1300
20 Sep 0356	ALERT: Geomagnetic K = 4	20/0355

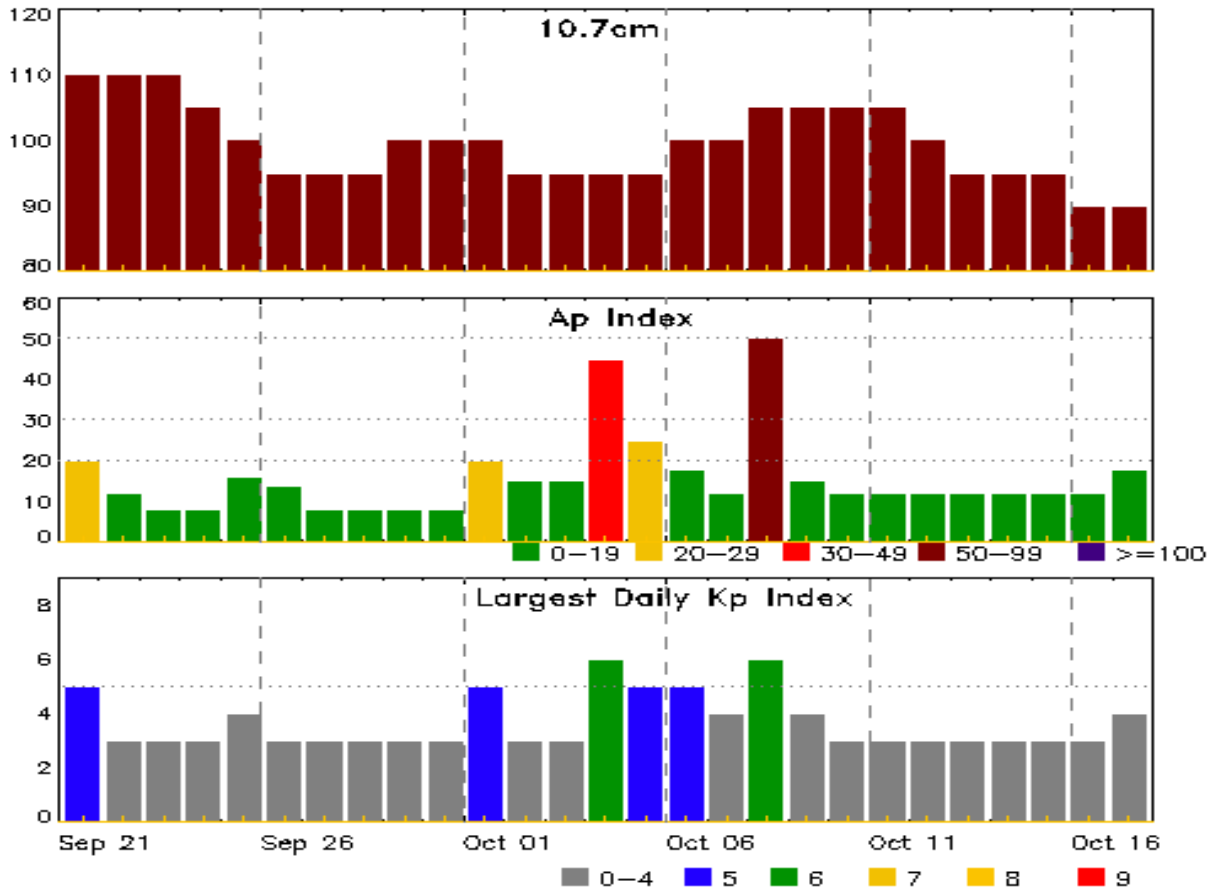


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
20 Sep 0532	WARNING: Geomagnetic K = 5	20/0531 - 1300
20 Sep 0538	WARNING: Geomagnetic Sudden Impulse expected	20/0545 - 0645
20 Sep 0541	WARNING: Geomagnetic K = 6	20/0540 - 1300
20 Sep 0602	ALERT: Geomagnetic K = 5	20/0559
20 Sep 0612	SUMMARY: Geomagnetic Sudden Impulse	20/0605
20 Sep 0705	ALERT: Geomagnetic K = 5	20/0705
20 Sep 0721	WARNING: Geomagnetic K $\geq$ 7	20/0720 - 1200
20 Sep 0721	ALERT: Geomagnetic K = 6	20/0720
20 Sep 0750	ALERT: Geomagnetic K = 7	20/0750
20 Sep 1001	ALERT: Geomagnetic K = 5	20/1000
20 Sep 1254	EXTENDED WARNING: Geomagnetic K = 5	20/0531 - 1800
20 Sep 1254	EXTENDED WARNING: Geomagnetic K = 4	20/0042 - 2300
20 Sep 1723	ALERT: Geomagnetic K = 5	20/1721
20 Sep 1755	EXTENDED WARNING: Geomagnetic K = 5	20/0531 - 2300
20 Sep 1842	ALERT: Type II Radio Emission	20/1817
20 Sep 1843	SUMMARY: 10cm Radio Burst	20/1754 - 1817



## 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
21 Sep	110	20	5	05 Oct	95	25	5
22	110	12	3	06	100	18	5
23	110	8	3	07	100	12	4
24	105	8	3	08	105	50	6
25	100	16	4	09	105	15	4
26	95	14	3	10	105	12	3
27	95	8	3	11	105	12	3
28	95	8	3	12	100	12	3
29	100	8	3	13	95	12	3
30	100	8	3	14	95	12	3
01 Oct	100	20	5	15	95	12	3
02	95	15	3	16	90	12	3
03	95	15	3	17	90	18	4
04	95	45	6				

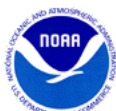


### *Energetic Events*

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
17 Sep	0934	0940	0945	M1.1	0.005	SF	S21W04	2415				
20 Sep	0455	0503	0517	M1.5	0.013			2420				
20 Sep	1732	1803	1829	M2.1	0.045	2N	S20W24	2415	140	320	1	

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical Location Lat CMD	Rgn #
	Begin	Max	End				
14 Sep	0037	0042	0045	B5.7			2415
14 Sep	0251	0254	0256	B3.5			2415
14 Sep	0742	0745	0747	B2.7			2415
14 Sep	1008	1013	1015		SF	S19E35	2415
14 Sep	1055	1056	1103		SF	S19E35	2415
14 Sep	1736	1741	1752	B9.6	SF	S19E34	2415
14 Sep	2214	2219	2222	B5.8	SF	S20E27	2415
14 Sep	2328	2337	2343		SF	S20E25	2415
15 Sep	0009	0017	0021	B8.7	SF	S20E25	2415
15 Sep	0024	0026	0042		SF	S20E25	2415
15 Sep	0116	0120	0123	B5.5			2415
15 Sep	0123	0127	0129	B7.9			
15 Sep	0155	0159	0203	B7.7			2415
15 Sep	0217	0220	0222	C1.0			2415
15 Sep	0246	0258	0300	C1.2			2415
15 Sep	0512	0519	0525	C1.3			2415
15 Sep	0556	0600	0603	B6.0			2415
15 Sep	0607	0611	0613	C1.2			2415
15 Sep	0707	0711	0715	C1.0	SF	S20E22	2415
15 Sep	0822	0825	0833		SF	S19E20	2415
15 Sep	0835	U0838	A0922		SF	S19E20	2415
15 Sep	B1021	1022	1029		SF	S19E20	2415
15 Sep	B1042	U1042	A1102		SF	S19E19	2415
15 Sep	1111	1114	1118		SF	S19E19	2415
15 Sep	1203	1206	1209	B5.6			
15 Sep	B1210	1212	1218		SF	S19E19	2415
15 Sep	1225	1226	1230		SF	S19E19	2415
15 Sep	1442	1451	1459	C1.0	SF	S20E18	2415



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
15 Sep	B1838	U1838	1854		SF	S20E20	2415
16 Sep	0131	0137	0142	B5.7			
16 Sep	0205	0224	0236	C3.0			2415
16 Sep	0420	0544	0558	C1.3			2414
16 Sep	0529	0544	0556	C1.3			2414
16 Sep	0701	0739	0800		SF	N15E47	2419
16 Sep	0821	0959	1015	C1.2			2415
16 Sep	0949	1007	1021		SF	S20E10	2415
16 Sep	1237	1247	1302	C1.4	SF	S20E07	2415
16 Sep	1338	1341	1351	B9.3	SF	S20E06	2415
16 Sep	1442	1443	1455		SF	N14E42	2419
16 Sep	1520	1528	1543	C3.0	SF	S20E05	2415
16 Sep	1846	1854	1901	C1.3			2415
16 Sep	1908	1920	1924	C7.8	SF	S20E01	2415
16 Sep	2030	2039	2042		SF	S20E01	2415
16 Sep	2215	2222	2234	C1.0			2415
16 Sep	2348	2357	0004	C6.0			2415
17 Sep	0121	0129	0140	C2.4			2415
17 Sep	0205	0209	0212	B8.5			
17 Sep	0252	0303	0309	C9.5	1F	S21W01	2415
17 Sep	0311	0314	0317	C4.9			2415
17 Sep	B0331	0333	0351		SF	S21W01	2415
17 Sep	0559	0611	0613	C2.9			2415
17 Sep	0600	0608	0632		SF	S21E01	2415
17 Sep	0613	U0808	A0837		SF	S20W04	2415
17 Sep	0634	0648	0709	C1.0	SF	S21E01	2415
17 Sep	0806	0811	0829		SF	S20W02	2415
17 Sep	0857	0906	0919	C1.3	1N	S20W04	2415
17 Sep	0912	0912	0915		SF	S21W03	2415
17 Sep	B0928	0934	A0934	M1.1	SF	S21W04	2415
17 Sep	1111	1115	1119	B6.5	SF	S20W06	2415
17 Sep	1222	1228	1244	B7.9	SF	S19W08	2415
17 Sep	1255	1303	1308		SF	S20W06	2415
17 Sep	1322	1335	1353		SF	S19W09	2415
17 Sep	1550	1555	1612	B8.5			2415
17 Sep	1716	1726	1752	C1.3	SF	S19W11	2415
17 Sep	1808	1818	1827	C3.2	SF	S20W10	2415
17 Sep	1839	1840	1858		SF	N13E28	2419





## *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
17 Sep	1910	1922	1929	C1.6				2415
17 Sep	1947	1954	1957	C3.3	SF	S19W12		2415
17 Sep	2107	2115	2119	C6.7	SN	S19W12		2415
17 Sep	2233	2237	2240	B8.0	SF	S17W15		2415
17 Sep	2256	2300	2305	C3.9	SN	S19W15		2415
18 Sep	0105	0112	0119	C1.3	SF	S21W11		2415
18 Sep	0224	0237	0238		SF	S19W09		2415
18 Sep	0400	0404	0417	C1.0				2415
18 Sep	0422	0631	0720	C2.6	SF	S21W10		2415
18 Sep	0550	0631	0823		SF	S21W12		2415
18 Sep	0634	0644	0739		SF	N13E19		2419
18 Sep	0705	0705	0731		SF	S15E19		2418
18 Sep	1006	1007	1010		SF	S20W25		2415
18 Sep	1116	1136	1147	C1.4	SF	S21W24		2415
18 Sep	1203	1203	1210		SF	S14E13		2418
18 Sep	1305	1313	1323	B9.1	SF	S21W26		2415
18 Sep	1434	1517	1542	B6.1				2415
18 Sep	1535	1537	1543		SF	N09E13		2419
18 Sep	2134	2204	2244	B8.2				2415
19 Sep	0550	0551	0609		SF	S20W24		2415
19 Sep	1114	1120	1132	B5.8				2415
19 Sep	1634	1712	1719	C1.5				2415
19 Sep	2108	2146	2155	C2.4				2419
20 Sep	0455	0503	0517	M1.5				2420
20 Sep	0932	0934	0936	C2.6				2415
20 Sep	1225	1228	1231	B5.7				2415
20 Sep	1349	1354	1358	B9.1				2420
20 Sep	1409	1414	1424	C1.4				2415
20 Sep	1518	1622	1642		SF	S20W24		2415
20 Sep	1730	1757	1959	M2.1	2N	S20W24		2415
20 Sep	2009	2009	2012		SF	N12W13		2419
20 Sep	2324	2328	2331	B8.2				2415



## 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 2411</b>																	
04 Sep	N14E64	326	10	2	Hsx	1	A										
05 Sep	N13E50	327	40	1	Hsx	1	A										
06 Sep	N14E38	326	30	3	Cso	2	B										
07 Sep	N14E24	327	30	2	Hsx	1	A										
08 Sep	N14E10	328	20	1	Hsx	1	A										
09 Sep	N14W02	326	30	1	Hsx	1	A										
10 Sep	N14W15	326	20	1	Hsx	2	A										
11 Sep	N15W28	326	20	1	Hax	1	A										
12 Sep	N14W41	326	10	1	Hsx	1	A										
13 Sep	N15W54	326	10	1	Axx	1	A										
14 Sep	N15W68	326	plage														
15 Sep	N15W82	327	plage														
									0	0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 326

<b>Region 2412</b>																	
06 Sep	S08E58	306	20	3	Cro	3	B										
07 Sep	S07E44	307	40	7	Dao	4	B										
08 Sep	S07E30	308	30	8	Cso	7	B										
09 Sep	S08E17	307	30	7	Cro	6	B										
10 Sep	S08E04	307	30	7	Cro	9	B										
11 Sep	S07W09	307	20	7	Cri	9	B										
12 Sep	S07W22	307	10	5	Bxo	4	B										
13 Sep	S07W35	307	10	2	Axx	3	A										
14 Sep	S07W50	308	plage														
15 Sep	S07W65	310	plage														
16 Sep	S07W80	312	plage														
									0	0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 307



### *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 2414</b>																							
09 Sep	S10E07	317	10	1	Axx	1	A																
10 Sep	S10W09	320	10	1	Axx	1	A																
11 Sep	S10W20	318	80	6	Dai	10	BG	1				10											
12 Sep	S11W34	319	180	9	Dai	12	BG																
13 Sep	S10W49	321	190	10	Dai	9	B					1											
14 Sep	S10W61	319	170	11	Eso	5	B																
15 Sep	S10W75	320	170	11	Eso	4	B																
16 Sep	S12W84	316	120	2	Hsx	1	A	2															
								3	0	0	11	0	0	0	0								

Crossed West Limb.  
 Absolute heliographic longitude: 317

<b>Region 2415</b>																							
11 Sep	S21E68	230	100	5	Dao	7	B																
12 Sep	S21E53	232	130	8	Dai	7	B					5											
13 Sep	S22E41	231	170	10	Dai	11	BG					1											
14 Sep	S22E28	230	150	9	Cai	16	BG					5											
15 Sep	S22E14	231	150	9	Cai	16	BG	6				12											
16 Sep	S20W02	234	190	10	Dac	20	BG	8				6											
17 Sep	S20W16	235	230	11	Eac	30	BG	11	1			17	2										
18 Sep	S19W29	235	190	12	Eac	19	BG	4				7											
19 Sep	S19W41	233	240	12	Eac	19	BG	1				1											
20 Sep	S19W56	235	240	13	Eac	12	BG	2	1			1		1									
								32	2	0	55	2	1	0	0								

Still on Disk.  
 Absolute heliographic longitude: 234

<b>Region 2416</b>																							
11 Sep	S13W36	334	10	2	Bxo	2	B																
12 Sep	S14W50	335	10	2	Bxo	2	B																
13 Sep	S14W64	336	plage																				
14 Sep	S14W78	336	plage																				
								0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Crossed West Limb.  
 Absolute heliographic longitude: 334



### *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

#### ***Region 2417***

12 Sep	N23W48	333	10	1	Hrx	1	A										
13 Sep	N25W62	334	plage														
14 Sep	N25W76	334	plage														
15 Sep	N25W90	335	plage														
									0	0	0	0	0	0	0	0	0

Crossed West Limb.  
Absolute heliographic longitude: 333

#### ***Region 2418***

13 Sep	S15E69	203	120	3	Hsx	1	A										
14 Sep	S15E56	202	200	3	Hsx	1	A										
15 Sep	S15E42	203	200	3	Hsx	1	A										
16 Sep	S16E30	202	250	3	Hhx	1	A										
17 Sep	S14E19	200	210	7	Cso	4	B										
18 Sep	S14E05	201	230	6	Cho	5	B				2						
19 Sep	S14W07	199	230	7	Cho	6	B										
20 Sep	S15W21	200	210	6	Cao	5	B										
									0	0	0	2	0	0	0	0	0

Still on Disk.  
Absolute heliographic longitude: 201

#### ***Region 2419***

15 Sep	N13E47	197	10	3	Bxo	5	B										
16 Sep	N12E35	197	120	5	Dao	5	B				2						
17 Sep	N12E21	198	100	6	Cao	8	B				1						
18 Sep	N12E08	198	70	6	Cai	8	B				2						
19 Sep	N13W04	196	50	7	Cai	6	B	1									
20 Sep	N12W19	198	30	8	Cao	5	B				1						
									1	0	0	6	0	0	0	0	0

Still on Disk.  
Absolute heliographic longitude: 196

#### ***Region 2420***

20 Sep	N09E71	108	270	12	Ekc	12	BG		1								
								0	1	0	0	0	0	0	0	0	0

Still on Disk.  
Absolute heliographic longitude: 108

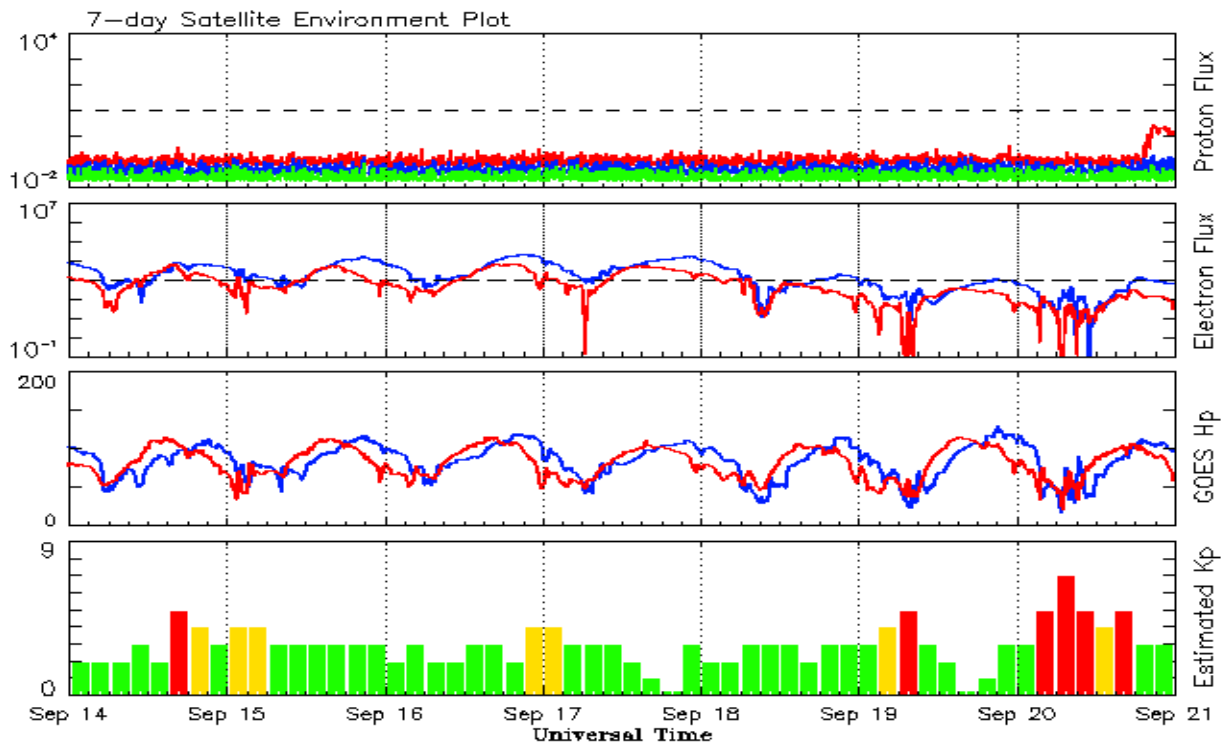


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2013</b>									
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	78.3	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	124.8	81.9	144.3	143.5	9	7.5
May	116.8	75.2	0.64	122.3	80.5	130.0	144.7	7	7.9
June	107.7	71.0	0.66	121.4	79.7	122.2	145.5	7	8.4
July	113.6	72.4	0.64	120.4	78.5	137.3	145.2	5	8.8
August	106.2	74.6	0.70	115.1	75.5	124.7	142.8	9	8.9
September	127.4	87.6	0.69	107.4	70.8	146.1	140.1	11	9.3
October	92.0	60.6	0.66	101.7	67.3	153.7	138.4	10	9.9
November	101.8	70.2	0.69	97.9	65.4	155.3	137.4	10	10.1
December	120.0	76.7	0.65	95.2	56.0	158.7	137.0	12	10.5
<b>2015</b>									
January	101.2	67.0	0.66	92.1	53.9	141.7	135.8	10	11.0
February	70.6	44.8	0.63	88.3	52.0	128.8	133.8	10	11.5
March	61.7	38.4	0.62			126.0		17	
April	72.5	54.4	0.75			129.2		12	
May	83.0	58.8	0.71			120.1		9	
June	77.3	41.0	0.53			123.2		14	
July	68.4	39.8	0.58			107.0		10	
August	61.6	38.8	0.63			106.2		16	

**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 14 September 2015*

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.

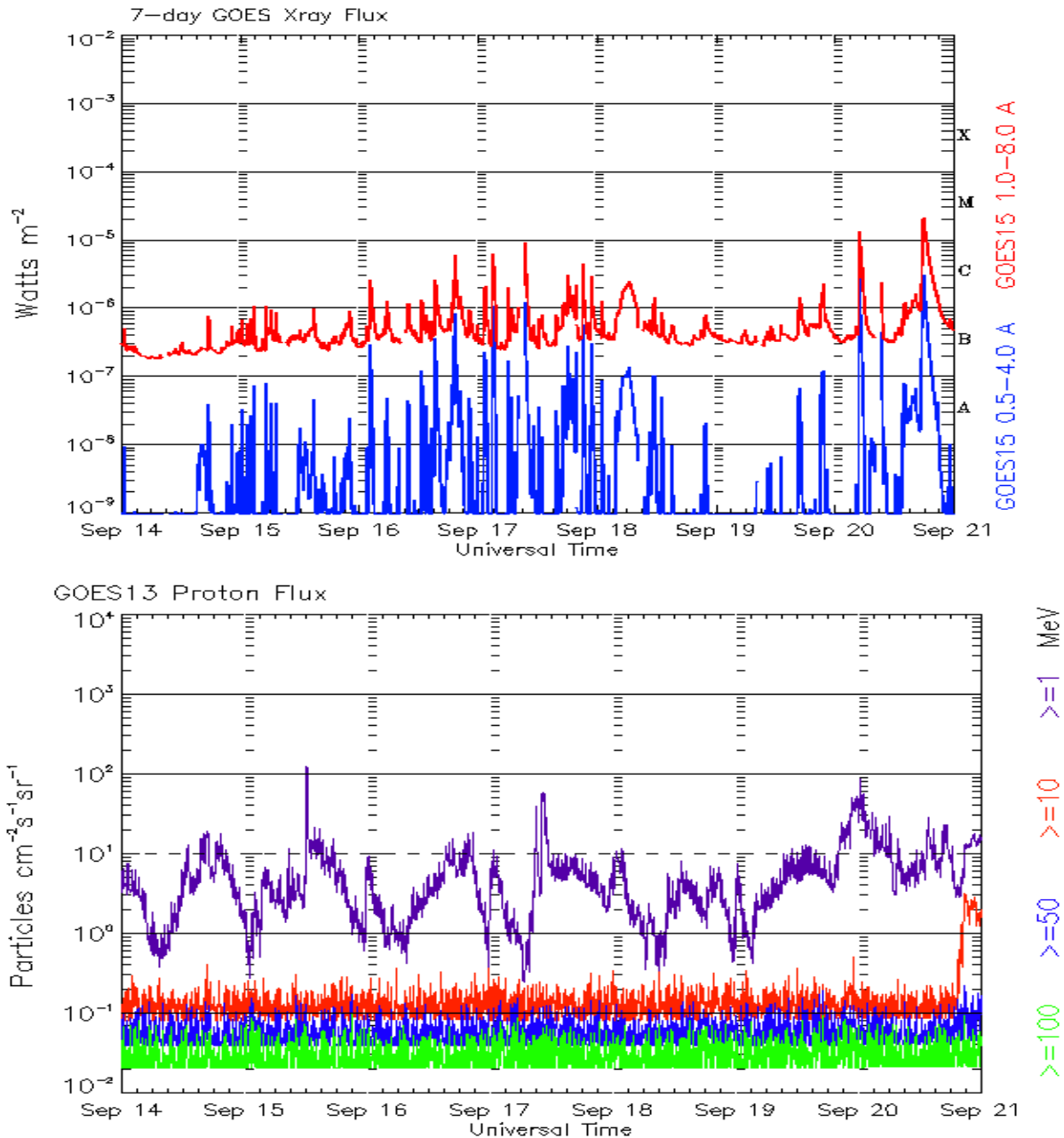
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

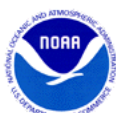




*Weekly GOES Satellite X-ray and Proton Plots  
Week Beginning 14 September 2015*

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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