

Space Weather Highlights
11 May - 17 May 2015

SWPC PRF 2072
18 May 2015

Solar activity was low from 11-15 May. The largest event of the period was a C9/1n at 13/1838 UTC associated with a filament eruption near Region 2345 (N16, L=113, class/area Axx/020 on 13 May). Region 2339 (N13, L=129, class/area Fkc/900 on 08 May) was the most active region on the disk and produced 19 C-class events during the period. There were several filament eruptions observed during the period however, none of them turned out to be geoeffective. Solar activity decreased to very low levels for 16-17 May.

The greater than 10 MeV proton flux at geosynchronous orbit was enhanced on 12 May reaching a peak flux of 6 pfu at 12/0720 UTC but never crossed alert threshold.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels on 11-13 May before reaching high levels daily for the remainder of the period in response to effects from a negative polarity coronal hole high speed stream (CH HSS).

Geomagnetic field activity was at unsettled to active levels on 11 May and mostly unsettled levels on 12 May due to extended periods of negative Bz. On 13 May, geomagnetic field conditions increased to active to major storm levels due to the onset of a recurrent negative polarity CH HSS. Quiet to unsettled levels persisted on 14-15 May as effects from the HSS subsided. Quiet conditions prevailed for the remainder of the period.

Space Weather Outlook
18 May - 13 June 2015

Solar activity is expected to be at very low levels with a chance for C-class flares and a slight chance of M-class flares on 18 May before decreasing further to only a chance for C-class flares once Region 2339 rotates fully around the west limb on 19 May. The chance for M-class activity increases on 25 May with the return of old Region 2335 (S15, L=192) and remain elevated through the remainder of the forecast period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to high levels from 18-28 May due to residual effects from last weeks negative polarity CH HSS followed by effects from an anticipated positive polarity HSS due to become geoeffective on 18 May. Normal to moderate levels are expected to prevail with the exception of 31 May-01 Jun, 04-06 Jun, and 10-12 Jun following various recurrent CH high speed streams.

Geomagnetic field activity is expected to be quiet to active on 18-19 May due to effects from a positive polarity CH HSS. Mostly quiet conditions are expected from 20 May to 01 Jun. Quiet to unsettled conditions with a chance for active periods are expected on 02-03 Jun due to effects from a negative polarity HSS followed by quiet conditions through 06 Jun. Unsettled conditions are expected on 07 and 10 Jun as well as active to minor storm conditions on 08-09 Jun due to



the anticipated return of the recurrent negative polarity CH HSS that yielded major storm conditions this week. Mostly quiet conditions are 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
11 May	163	188	1130	B7.4	7	0	0	23	1	0	0	0
12 May	163	170	910	B7.0	4	0	0	11	1	0	0	0
13 May	157	135	590	B7.0	7	0	0	17	2	0	0	0
14 May	145	126	750	B6.5	7	0	0	8	1	0	0	0
15 May	137	113	640	B5.1	7	0	0	13	0	0	0	0
16 May	131	103	590	B5.0	0	0	0	2	0	0	0	0
17 May	120	75	510	B4.0	0	0	0	2	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day-sr)			Electron Fluence (electrons/cm ² -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	11 May	1.8e+05	1.0e+04	2.4e+03		8.6e+05
12 May	2.4e+06	2.4e+05	3.4e+03		4.2e+05	
13 May	2.5e+06	1.9e+04	2.4e+03		4.2e+06	
14 May	1.3e+06	1.0e+04	2.4e+03		1.6e+08	
15 May	7.4e+05	1.1e+04	2.6e+03		2.9e+08	
16 May	6.4e+05	1.1e+04	2.6e+03		4.0e+08	
17 May	5.9e+05	1.0e+04	2.6e+03		3.3e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	11 May	15	3-4-3-2-3-2-3-3	26	4-3-4-4-5-5-2-2	15
12 May	16	3-3-3-3-4-2-3-3	24	3-4-4-4-5-3-3-3	15	3-3-3-3-3-2-3-3
13 May	25	4-4-5-4-3-4-3-3	63	5-6-6-7-5-5-5-3	45	5-6-6-4-4-4-4-4
14 May	9	2-2-3-2-2-1-2-3	11	3-2-3-3-3-2-2-2	10	2-3-3-2-2-1-2-3
15 May	7	2-2-3-2-2-1-1-2	20	2-3-4-6-3-1-1-2	8	2-2-3-2-2-1-1-2
16 May	7	2-1-1-2-3-1-2-2	11	1-2-4-3-4-1-1-1	6	2-1-2-2-2-1-1-2
17 May	6	2-1-2-1-2-2-2-1	3	1-1-2-0-0-2-1-0	6	2-2-2-1-1-1-2-1



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
11 May 0211	WARNING: Geomagnetic K = 4	11/0211 - 1700
11 May 0225	ALERT: Geomagnetic K = 4	11/0225
11 May 1656	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 2300
11 May 2255	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 12/1300
12 May 0125	WARNING: Geomagnetic Sudden Impulse expected	12/0155 - 0255
12 May 0637	WARNING: Proton 10MeV Integral Flux > 10pfu	12/0637 - 1800
12 May 1129	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 13/0100
12 May 1129	CANCELLATION: Proton 10MeV Integral Flux > 10pfu	
12 May 1250	ALERT: Type II Radio Emission	12/1233
13 May 0039	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 13/1300
13 May 0113	WARNING: Geomagnetic K = 5	13/0113 - 0700
13 May 0144	ALERT: Geomagnetic K = 5	13/0144
13 May 0155	WARNING: Geomagnetic K = 6	13/0154 - 0700
13 May 0555	EXTENDED WARNING: Geomagnetic K = 6	13/0154 - 1300
13 May 0555	ALERT: Geomagnetic K = 6	13/0553
13 May 0555	EXTENDED WARNING: Geomagnetic K = 5	13/0113 - 1600
13 May 0555	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 13/2200
13 May 0903	ALERT: Geomagnetic K = 6	13/0859
13 May 1557	EXTENDED WARNING: Geomagnetic K = 5	13/0113 - 2300
13 May 1559	WATCH: Geomagnetic Storm Category G1 predicted	
13 May 1732	ALERT: Type II Radio Emission	13/1635
13 May 1830	ALERT: Type IV Radio Emission	13/1634
13 May 1853	ALERT: Type II Radio Emission	13/1821
13 May 2139	EXTENDED WARNING: Geomagnetic K = 4	11/0211 - 14/1300
13 May 2255	EXTENDED WARNING: Geomagnetic K = 5	13/0113 - 14/0700
14 May 0941	ALERT: Electron 2MeV Integral Flux >= 1000pfu	14/0920
14 May 2044	WATCH: Geomagnetic Storm Category G1 predicted	
15 May 0526	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	14/0920

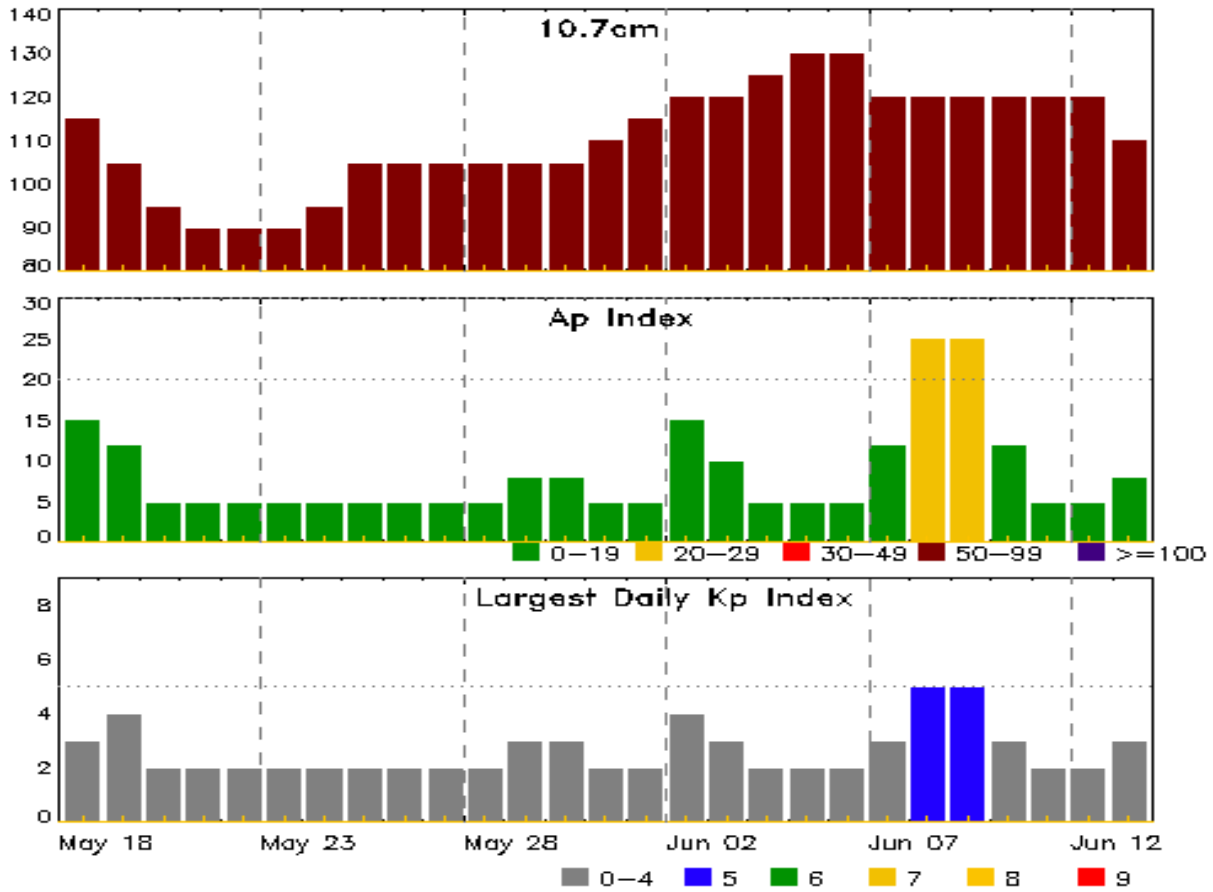


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
16 May 0500	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14/0920
17 May 0602	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14/0920



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
18 May	115	15	3	01 Jun	115	5	2
19	105	12	4	02	120	15	4
20	95	5	2	03	120	10	3
21	90	5	2	04	125	5	2
22	90	5	2	05	130	5	2
23	90	5	2	06	130	5	2
24	95	5	2	07	120	12	3
25	105	5	2	08	120	25	5
26	105	5	2	09	120	25	5
27	105	5	2	10	120	12	3
28	105	5	2	11	120	5	2
29	105	8	3	12	120	5	2
30	105	8	3	13	110	8	3
31	110	5	2				



Energetic Events

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
11 May	0000	0008	0011		SF	N13E10	2339
11 May	0003	0004	0007		SF	S15W57	2335
11 May	0021	0022	0024		SF	S16E03	2335
11 May	0021	0022	0025		SF	S15W57	2335
11 May	0041	0044	0046		SF	N12E06	2339
11 May	0143	0154	0208	C1.2			2335
11 May	0152	0152	0155		SF	S10E69	2344
11 May	0154	0155	0202		SF	S15W57	2335
11 May	0211	0215	0225		SF	S15W57	2335
11 May	0328	0330	0333		SF	S16W58	2335
11 May	0345	0409	0429	C2.5			
11 May	0642	0648	0657	C1.6	SF	N03W42	2338
11 May	1135	1137	1144		SF	N13E02	2339
11 May	1210	1213	1215	C1.2	SF	N14E04	2339
11 May	1259	1301	1303		1F	N07W70	2336
11 May	1302	1307	1315	C1.6	SF	S17W68	2335
11 May	1330	1330	1337		SF	N07W70	2336
11 May	1414	1420	1421		SF	N07W70	2336
11 May	1435	1437	1447		SF	N07W70	2336
11 May	1619	1620	1627		SF	N12E02	2339
11 May	1622	1648	1705		SF	N09W71	2336
11 May	1656	1656	1711		SF	N13E02	2339
11 May	B1720	1743	1751		SF	N09W71	2336
11 May	1729	1729	1735	C1.1	SF	N14E16	2345
11 May	1833	1842	1851	C2.0	SF	N11E01	2339
11 May	2348	2349	2352		SF	N17E38	2342
12 May	0144	0151	0154		SF	N13W01	2339
12 May	0215	0302	0342	C2.6			2339
12 May	0425	0431	0518	C2.2	SF	N11W04	2339
12 May	0648	0649	0659		SF	N11W12	2339
12 May	0926	0926	0939		SF	N14W00	2345



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
12 May	0940	0941	0953		SF	N12W07		2339
12 May	1040	1046	1050	C1.7	SN	N12W07		2339
12 May	1145	1151	1156	C3.0	1N	N06W05		2339
12 May	1204	1207	1227		SF	S18W60		2337
12 May	1341	1346	1351		SF	N10W14		2339
12 May	1509	1510	1527		SF	N08W07		2339
12 May	1623	1624	1633		SF	N11W13		2339
12 May	1653	1654	1712		SF	N12W11		2339
13 May	0251	0255	0259	C1.2	SF	N11W16		2339
13 May	0346	0351	0404	C1.7	SF	N11W17		2339
13 May	0409	0415	0448	C3.1	SF	N16E20		2342
13 May	0455	0456	0500		SF	N19E18		2342
13 May	0547	0559	0617	C3.5	SF	N16E23		2342
13 May	0624	0627	0632		SF	N19E22		2342
13 May	0625	0627	0629		SF	N12W11		2339
13 May	0650	0651	0654		SF	N09W34		2339
13 May	0713	0716	0720		SF	N11W18		2339
13 May	0940	0945	1004	C2.3	SN	N10W19		2339
13 May	1050	1054	1103		SF	N18E17		2342
13 May	1104	1111	1114	C3.2	1F	N07W35		2339
13 May	1116	1117	1129		SF	N19E16		2342
13 May	B1628	U1630	1632		SF	S24E03		2341
13 May	1807	1817	1939	C9.2	1N	N13W16		2345
13 May	1820	1836	1843		SF	N09E02		2343
13 May	2327	2328	2335		SF	N10W39		2339
13 May	2345	2345	2355		SF	N10W41		2339
13 May	2350	2351	2353		SF	N11W42		2339
14 May	0510	0510	0520	C1.3	SF	N11W47		2339
14 May	0652	0731	0736	C2.5	SF	N07W46		2339
14 May	0747	0749	0759		SF	N17E03		2342
14 May	0847	0848	0859		SF	S09E38		2346
14 May	1358	1408	1424	C2.8	SF	N18E02		2342
14 May	1523	1523	1525		SF	N08W37		2339
14 May	1617	1631	1641	C2.1	1F	N13W41		2339
14 May	1745	1753	1759	C4.8				2339
14 May	1859	1906	1915	C1.1	SF	N18W03		2342
14 May	2348	0011	0019	C2.6	SF	N18W04		2342
15 May	0102	0103	0110		SF	N08W43		2339



Flare List

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	
15 May	0142	0142	0146		SF	N18W07	2342
15 May	0158	0202	0204	C1.1	SF	N17W43	2339
15 May	0317	0321	0325	B9.5			2339
15 May	0453	0455	0502		SF	N16W43	2339
15 May	0522	0525	0528	C1.1	SF	N09W53	2339
15 May	0644	0650	0653	C1.8			
15 May	0656	0707	0717		SF	N13W43	2339
15 May	0756	0756	0759		SF	N08W49	2339
15 May	0838	0843	0848	C1.1	SF	N09W50	2339
15 May	0845	0845	0853		SF	S09E26	2346
15 May	0905	0912	0920	C1.2	SF	N10W53	2339
15 May	B1048	U1049	A1100		SF	N08W56	2339
15 May	2124	2124	2129		SF	N10W52	2339
15 May	2218	2230	2239	C2.0	SF	N18W15	2342
15 May	2322	2329	2333	C2.5			2339
16 May	0012	0014	0020		SF	N12W56	2339
16 May	1415	1416	1418		SF	N05W64	2339
16 May	1649	1700	1709	B8.6			2339
17 May	0208	0215	0224	B8.6			
17 May	0949	0950	0952		SF	N15W74	2339
17 May	1541	1543	1546		SF	S19E54	
17 May	1559	1602	1605	B9.1			2347
17 May	1939	1943	1947	B7.9			



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 2235																		
10 Dec	S07E63	265	140	4	Hsx	1	A											
11 Dec	S12E55	260	220	9	Dsc	3	B	1				1						
12 Dec	S08E35	267	90	3	Hsx	1	A	1				1						
13 Dec	S08E23	266	100	3	Hsx	1	A											
14 Dec	S08E09	267	130	3	Cso	4	B											
15 Dec	S07W03	264	160	5	Cao	5	B											
16 Dec	S07W17	265	160	3	Cao	6	B											
17 Dec	S07W29	264	90	3	Cao	4	B											
18 Dec	S07W44	265	60	1	Cao	4	B											
19 Dec	S07W56	266	60	2	Cao	4	B					2						
20 Dec	S08W70	266	70	2	Hax	1	A											
21 Dec	S08W83	267	60	2	Hax	1	A											
								2	0	0	4	0	0	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 264

Region 2237																		
12 Dec	S14E52	250	90	9	Dso	4	B											
13 Dec	S15E41	248	120	14	Eso	7	B	1				2						
14 Dec	S14E28	248	60	8	Cso	4	B	2				4	1					
15 Dec	S13E11	250	40	2	Hsx	1	A											
16 Dec	S13W02	250	80	2	Hsx	1	A											
17 Dec	S11W14	249	40	2	Hsx	1	A											
18 Dec	S13W27	249	30	1	Hax	2	A											
19 Dec	S13W41	251	20	1	Hrx	2	A											
20 Dec	S13W55	252	plage									1						
21 Dec	S13W69	253	plage									2						
22 Dec	S13W83	253	plage															
								3	0	0	9	1	0	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 250



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			Lon	10 ⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 2335																
30 Apr	S15E76	194	30	2	Hsx	3	A	1								
01 May	S15E63	194	70	6	Dao	3	B	1				1				
02 May	S15E52	192	220	8	Dai	15	B					6				
03 May	S16E37	194	170	10	Dac	20	B	5				12				
04 May	S15E24	192	310	11	Eac	30	BG	4				9	1			
05 May	S16E11	192	280	11	Ekc	25	BG	8	2			10	1	1		
06 May	S13W03	193	220	13	Eac	28	BG	2				8				
07 May	S16W17	195	180	13	Eac	27	B									
08 May	S16W31	195	120	13	Eai	15	B									
09 May	S16W42	193	40	11	Cao	8	B									
10 May	S15W59	197	30	5	Cro	4	B									
11 May	S16W71	195	40	5	Cso	4	B	2				7				
12 May	S14W85	196	10	3	Bxo	2	B									
								23	2	0	53	2	1	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 193

Region 2336																
03 May	N13E12	219	10	4	Bxo	3	B									
04 May	N13W00	216	30	5	Dro	9	B									
05 May	N13W14	218	40	5	Dso	10	B									
06 May	N10W28	218	30	5	Cro	7	B									
07 May	N11W44	222	10	2	Axx	3	A									
08 May	N13W57	221	10	1	Bxo	2	B									
09 May	N13W71	222	plage													
10 May	N13W85	223	plage													
								0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 216



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 2337																							
03 May	S16E56		175	10	2	Axx	2	A															
04 May	S16E42		173	10	2	Bxo	2	B															
05 May	S17E28		175	10	2	Bxo	2	B															
06 May	S15E15		175	10	3	Cso	3	B															
07 May	S18E03		175	30	4	Cao	5	B					2										
08 May	S18W11		175	10	4	Bxo	3	B															
09 May	S17W23		174	20	4	Cro	4	B					2										
10 May	S16W37		175	30	5	Cso	4	B															
11 May	S17W52		176	plage																			
12 May	S17W66		178	plage									1										
13 May	S17W80		178	plage																			
									0	0	0	5	0	0	0	0	0						

Crossed West Limb.

Absolute heliographic longitude: 175

Region 2338																							
03 May	N04E56		175	10	1	Axx	2	A															
04 May	N04E42		173	20	5	Bxo	4	B	1				2										
05 May	N03E29		173	70	7	Dso	7	B	1				1										
06 May	N04E15		174	90	8	Dao	7	B															
07 May	N03E02		176	40	8	Dao	4	B															
08 May	N04W11		175	50	8	Dso	7	B															
09 May	N05W24		175	20	8	Cro	4	B															
10 May	N05W39		177	plage																			
11 May	N05W54		179	plage					1				1										
12 May	N05W69		181	plage																			
13 May	N05W84		182	plage																			
									3	0	0	4	0	0	0	0	0						

Crossed West Limb.

Absolute heliographic longitude: 176



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 2339																							
05 May	N12E70	133	250	11	Ekc	5	BG	5	2	1	3												
06 May	N12E59	131	590	17	Fkc	15	BG	6	1		10	1											
07 May	N13E47	131	730	17	Fkc	20	BG	8			15	1											
08 May	N13E35	129	900	21	Fkc	32	BG	8			6	1											
09 May	N12E24	127	840	20	Fkc	40	BG	4			10												
10 May	N13E08	130	820	22	Fkc	35	BG	6			10												
11 May	N13W05	129	760	19	Fkc	60	BG	2			7												
12 May	N14W19	130	670	18	Fkc	51	BG	4			9	1											
13 May	N13W34	131	310	19	Fkc	37	BG	4			9	1											
14 May	N11W45	129	400	19	Fac	21	B	4			3	1											
15 May	N12W59	131	310	19	Fkc	26	BG	5			10												
16 May	N11W72	131	300	18	Fkc	20	BG				2												
17 May	N12W80	125	240	9	Dso	5	B				1												
								56	3	1	95	6	0	0	0	0							

Still on Disk.

Absolute heliographic longitude: 129

Region 2340

07 May	S06E65	113	30	1	Hrx	1	A															
08 May	S07E52	112	50	3	Cao	4	B															
09 May	S09E38	113	40	3	Cao	5	B															
10 May	S08E26	112	20	3	Cao	3	B															
11 May	S08E12	113	20	3	Hrx	5	A															
12 May	S07W00	111	10	1	Axx	1	A															
13 May	S08W13	110	0	2	Axx	2	A															
14 May	S08W27	112	plage																			
15 May	S08W41	113	plage																			
16 May	S08W54	113	plage																			
17 May	S08W68	113	plage																			
								0	0	0	0	0	0	0	0	0	0	0				

Still on Disk.

Absolute heliographic longitude: 111



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 2341																	
07 May	S19E73	105	60	1	Hsx	1	A										
08 May	S20E60	104	90	2	Hsx	1	A										
09 May	S20E47	104	70	2	Hsx	1	A										
10 May	S19E33	105	80	2	Hsx	1	A										
11 May	S19E20	104	100	2	Hsx	1	A										
12 May	S19E07	103	70	2	Hsx	1	A										
13 May	S19W05	102	80	2	Hsx	1	A					1					
14 May	S20W18	102	80	2	Hsx	1	A										
15 May	S20W31	103	70	2	Hsx	1	A										
16 May	S20W45	104	60	2	Hsx	2	A										
17 May	S19W58	103	60	2	Hsx	2	A										
								0	0	0	1	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 102

Region 2342																	
09 May	N18E63	88	30	4	Cro	4	B										
10 May	N18E48	90	30	4	Cro	4	B										
11 May	N18E35	88	50	7	Dai	5	BG					1					
12 May	N18E22	88	30	7	Cro	5	B										
13 May	N18E08	89	60	8	Cro	9	B	2				6					
14 May	N17W06	90	60	6	Cso	6	B	3				4					
15 May	N17W22	94	70	2	Hsx	3	A	1				2					
16 May	N17W35	94	60	2	Hsx	2	A										
17 May	N17W51	96	80	2	Hsx	1	A										
								6	0	0	13	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 90



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 2343																		
10 May	N10E39	99	20	2	Cro	2	B											
11 May	N10E25	98	20	4	Cro	6	B											
12 May	N11E12	98	10	4	Bxo	2	B											
13 May	N11W02	100	plage									1						
14 May	N09W13	97	10	2	Bxo	3	B											
15 May	N09W27	99	plage															
16 May	N09W40	99	plage															
17 May	N09W54	99	plage															
										0	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 100

Region 2344																		
10 May	S10E71	67	30	3	Hax	1	A	1				1						
11 May	S10E58	65	60	5	Cso	2	B					1						
12 May	S10E45	65	40	7	Cso	3	B											
13 May	S10E33	64	50	7	Cso	2	B											
14 May	S10E21	64	40	8	Cso	2	B											
15 May	S09E02	70	50	2	Hax	2	A											
16 May	S09W13	72	30	2	Hax	2	A											
17 May	S09W26	71	20	1	Hax	2	A											
										1	0	0	2	0	0	0	0	0

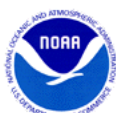
Still on Disk.

Absolute heliographic longitude: 70

Region 2345																		
11 May	N12E02	121	10	2	Axx	3	A	1				1						
12 May	N15W06	116	10	3	Bxo	3	B					1						
13 May	N16W16	113	20	1	Axx	2	A	1					1					
14 May	N16W30	115	plage															
15 May	N11W49	117	plage															
16 May	N11W62	111	plage															
17 May	N11W76	121	plage															
										2	0	0	2	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 121



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 2346																		
11 May	S12E69		54	50	1	Hsx	1	A										
12 May	S07E55		55	50	2	Hsx	1	A										
13 May	S06E42		55	60	2	Hsx	1	A										
14 May	S08E28		56	50	7	Cso	7	B				1						
15 May	S08E15		57	30	7	Cao	7	B				1						
16 May	S08W00		59	20	7	Cro	5	B										
17 May	S07W13		58	10	4	Bxo	4	B										
									0	0	0	2	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 59

Region 2347																		
11 May	N06E68		55	20	1	Hsx	1	A										
12 May	N05E54		56	10	1	Axx	1	A										
13 May	N05E39		59	10	1	Axx	1	A										
14 May	N05E26		58	10	1	Axx	1	A										
15 May	N05E13		59	0	1	Axx	1	A										
16 May	N04W01		59	10	1	Axx	1	A										
17 May	N04W16		61	plage														
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 59

Region 2348																		
14 May	S09E60		24	100	2	Hsx	5	A										
15 May	S10E48		24	110	3	Hsx	3	A										
16 May	S11E34		25	110	2	Hsx	1	A										
17 May	S10E21		24	100	2	Hsx	1	A										
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 24

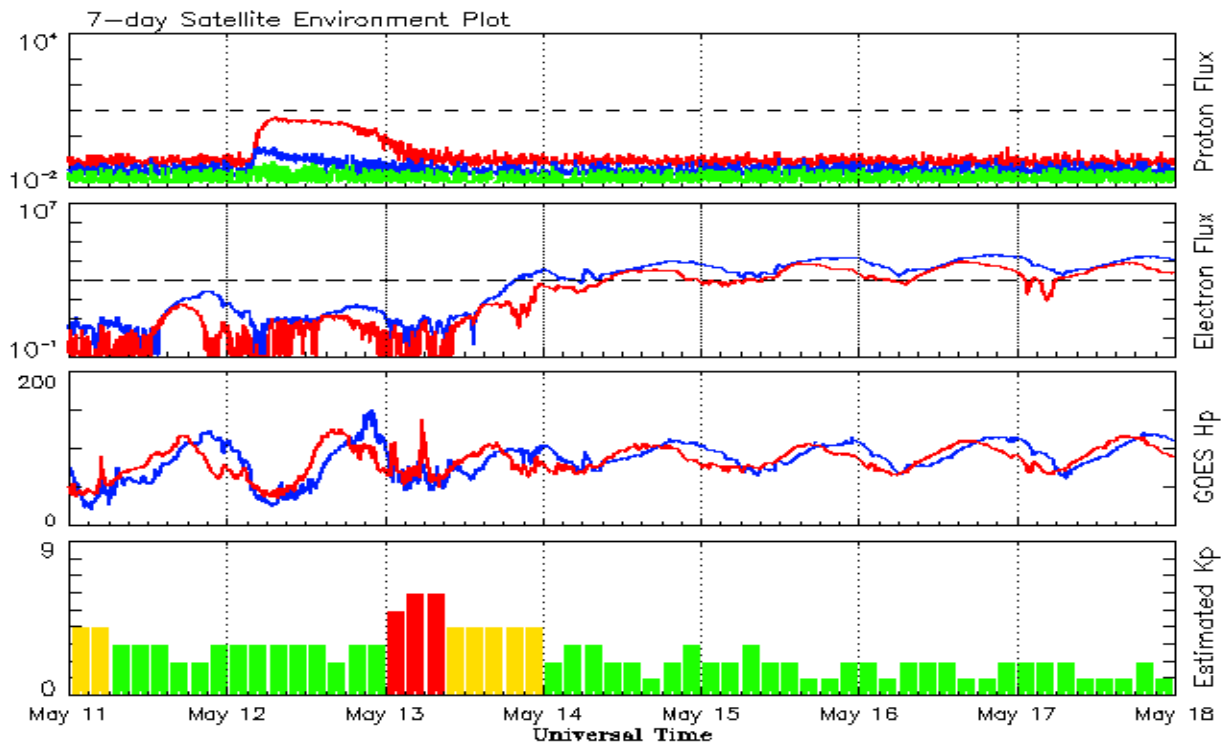


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2013									
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
2014									
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			155.3		10	
December	120.0	76.7	0.65			158.7		12	
2015									
January	101.2	67.0	0.66			141.7		10	
February	70.6	44.8	0.63			128.8		10	
March	61.7	38.4	0.62			126.0		17	
April	72.5	54.4	0.75			129.2		12	

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 11 May 2015*

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.

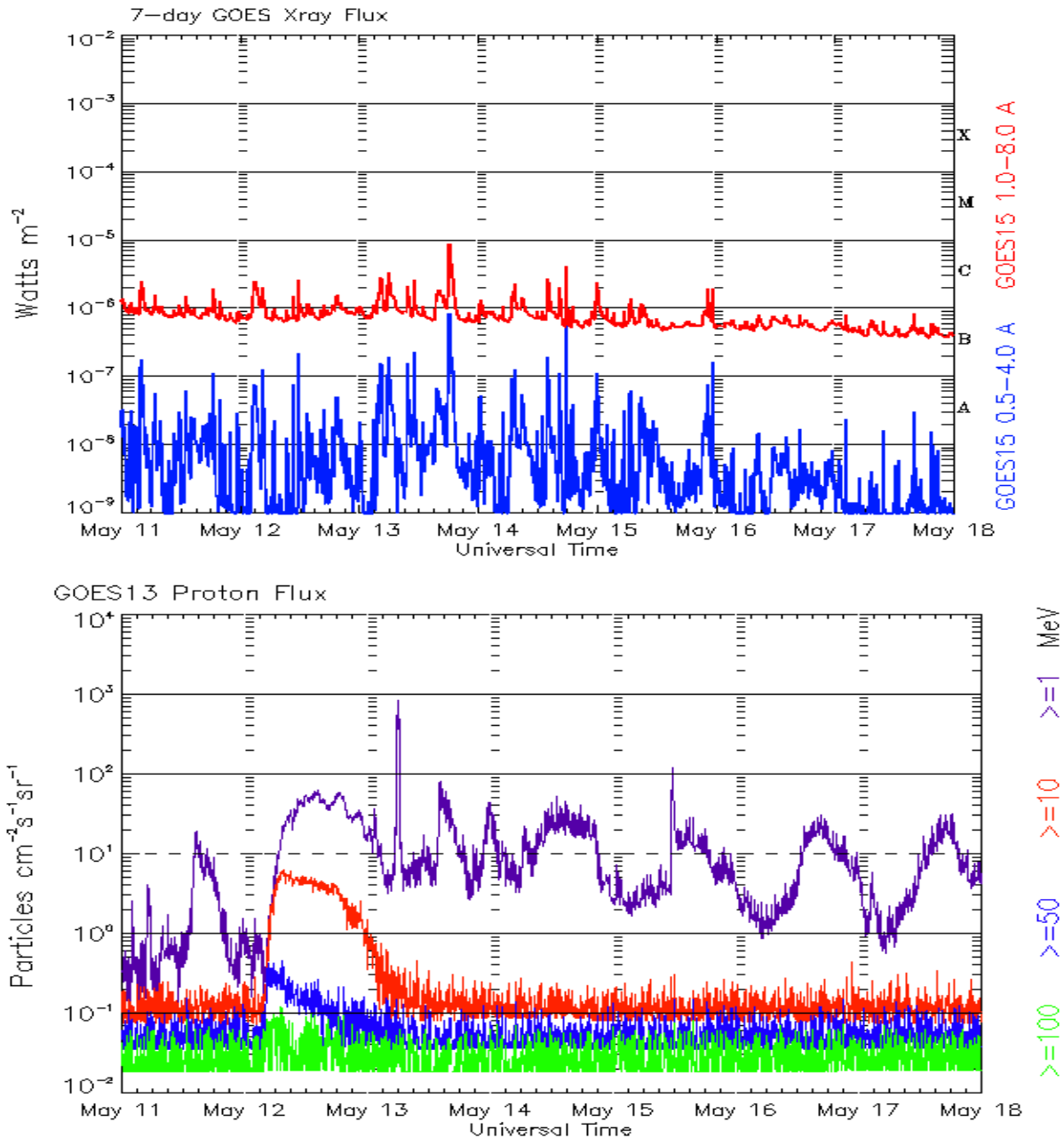
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 11 May 2015*

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.



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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