

Space Weather Highlights
14 November - 20 November 2011

SWPC PRF 1890
22 November 2011

Solar activity has been at low to moderate levels. On November 14 solar activity was at low levels with a C5/Sf flare observed at 14/0930 UTC from Region 1348 (N20, L=088, class/area Dso/120 on 15 November) with an associated Type II radio sweep (estimated shock velocity 610 km/s). Activity increased to moderate levels on November 15 with three M-class flares. Region 1348 produced an M1/Sf flare at 15/0912 UTC and an M1/1f flare at 15/2235 UTC, and Region 1346 (S18, L=339, class/area Dso/140 on 16 November) produced an M1/Sf flare at 15/1243 UTC. From November 16-20, activity returned to low levels with several Type II radio sweeps being reported. The first of these (estimated velocity of 529 km/s) was possibly associated with a C7 flare at 16/1505 UTC from Region 1348. Two Type II radio sweeps occurred on November 17, one (estimated velocity of 456 km/s) associated with a C2 flare at 0133 UTC from Region 1346 and the other (estimated velocity of 558 km/s) associated with a C6/Sf at 0727 UTC from Region 1346. The last Type II radio sweep of the summary period (estimated velocity of 542 km/s) was associated with a C1 flare at 19/0127 UTC from Region 1341 (N18, L=055, class/area Dso/210 on 09 November). Several coronal mass ejections (CMEs) were observed during the period but none were earthward directed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels the entire period.

The geomagnetic field was quiet to unsettled. The period began with quiet conditions. Activity levels increased to quiet to unsettled for a brief time on 15 November, but soon returned to quiet levels and remained there for the remainder of the period.

Space Weather Outlook
23 November - 19 December 2011

Solar activity is expected to be at predominately low levels through the period. There is a slight chance, however, for isolated M-class activity.

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 the entire period.

The geomagnetic field is expected to be generally quiet for most of the outlook period, with the exception of 28 - 29 November when quiet to unsettled levels are expected due to a small, recurrent coronal hole high speed stream.



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
14 November	161	176	900	B8.4	4	0	0	12	0	0	0	0
15 November	148	137	840	C1.0	6	3	0	5	1	0	0	0
16 November	142	126	1020	B9.5	11	0	0	3	1	0	0	0
17 November	148	122	760	B7.6	9	0	0	6	0	0	0	0
18 November	144	137	700	B6.9	5	0	0	9	0	0	0	0
19 November	140	149	690	B6.5	8	0	0	4	0	0	0	0
20 November	140	101	620	B6.0	11	0	0	4	2	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
	14 November	8.5e+05	1.3e+04	3.1e+03		1.0e+07
15 November	3.6e+05	1.2e+04	3.0e+03		6.7e+06	
16 November	1.5e+05	1.2e+04	2.8e+03		4.9e+06	
17 November	1.2e+05	1.2e+04	3.0e+03		7.3e+06	
18 November	1.2e+05	1.4e+04	3.3e+03		9.4e+06	
19 November	2.1e+05	1.3e+04	2.8e+03		1.2e+07	
20 November	2.1e+05	1.3e+04	3.3e+03		1.2e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	14 November	3	0-1-0-1-2-2-1-0	0	0-0-0-0-0-0-0-0	0
15 November	7	0-1-3-3-2-2-1-1	6	0-0-2-3-3-2-1-0	6	0-0-3-2-2-2-1-1
16 November	3	1-1-1-1-1-1-1-0	1	1-1-0-0-0-0-0-0	2	1-1-0-0-0-0-1-0
17 November	2	0-0-2-0-1-1-1-0	1	0-0-2-0-0-0-1-0	3	0-0-2-0-1-0-1-1
18 November	1	0-1-0-0-1-1-0-0	0	0-0-0-0-0-0-0-0	2	0-0-0-0-1-1-1-0
19 November	1	0-0-0-0-1-1-1-0	0	0-0-0-0-0-0-0-0	1	0-0-0-0-0-1-0-1
20 November	2	0-0-0-0-1-1-1-1	0	0-0-0-0-0-0-0-0	2	0-0-0-0-0-1-1-1

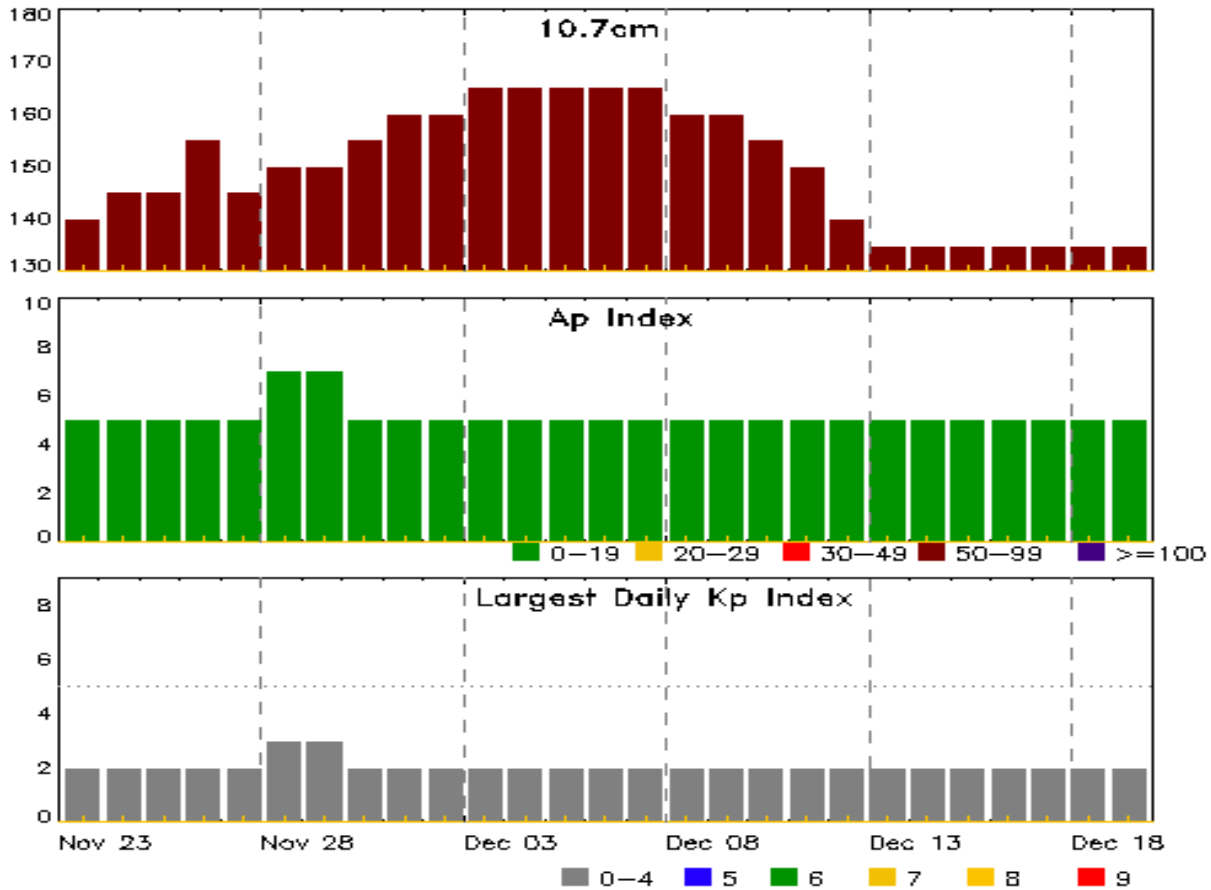


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
14 Nov 1323	ALERT: Type II Radio Emission	14/0923
15 Nov 0128	ALERT: Type II Radio Emission	15/0012
16 Nov 1733	ALERT: Type II Radio Emission	16/1507
17 Nov 0230	ALERT: Type II Radio Emission	17/0141
17 Nov 0842	ALERT: Type II Radio Emission	17/0727
19 Nov 0144	ALERT: Type II Radio Emission	19/0142



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
23 Nov	140	5	2	07 Dec	165	5	2
24	145	5	2	08	160	5	2
25	145	5	2	09	160	5	2
26	155	5	2	10	155	5	2
27	145	5	2	11	150	5	2
28	150	7	3	12	140	5	2
29	150	7	3	13	135	5	2
30	155	5	2	14	135	5	2
01 Dec	160	5	2	15	135	5	2
02	160	5	2	16	135	5	2
03	165	5	2	17	135	5	2
04	165	5	2	18	135	5	2
05	165	5	2	19	135	5	2
06	165	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 245	2695	Intensity II	IV
15 Nov	0903	0912	0923	M1.2	0.010	SF	N20W74	1348	190			
15 Nov	1230	1243	1250	M1.9	0.012	SF	S17E30	1346				
15 Nov	2227	2235	2242	M1.1	0.006	1F	N20W80	1348				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
14 Nov	0311	0316	0326		SF	N25E77	
14 Nov	0415	0419	0420		SF	N25E78	
14 Nov	0435	0435	0442		SF	N25E77	
14 Nov	0609	0612	0617	C1.2			1348
14 Nov	0909	0910	0914		SF	N24E74	
14 Nov	0918	0930	0940	C5.2	SF	N20W61	1348
14 Nov	1118	1123	1127	C2.1	SF	N08E35	1347
14 Nov	1626	1638	1705		SF	N20W41	1342
14 Nov	1831	1832	1840		SF	N15W74	1348
14 Nov	1842	1846	1906		SF	N15W75	1348
14 Nov	2119	2120	2123		SF	N17W75	1348
14 Nov	2132	2132	2136		SF	N17W74	1348
14 Nov	2244	2244	2253		SF	N17W72	1348
14 Nov	2342	2358	0007	C4.2			1347
15 Nov	0010	0011	0016		SF	N06E28	1347
15 Nov	0812	0816	0825	C1.6			
15 Nov	0859	0907	0933	M1.2	SF	N20W74	1348
15 Nov	1230	1243	1250	M1.9	SF	S17E30	1346
15 Nov	B1246	U1246	A1248		SF	S22E40	1351
15 Nov	1502	1505	1509	C2.2			
15 Nov	1627	1633	1639	C3.3			1348
15 Nov	1830	1834	1845	C1.7			
15 Nov	2023	2034	2044	C7.8	SF	N20W78	1348
15 Nov	2227	2235	2242	M1.1	1F	N20W80	1348
15 Nov	2339	2344	2348	C2.4			
16 Nov	0003	0007	0012	C1.7			1346
16 Nov	0255	0301	0309	C2.3			1348
16 Nov	0326	0343	0351	C3.0			1348



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
16 Nov	0446	0455	0502	C7.5			1348
16 Nov	0615	0625	0631	C4.0			1348
16 Nov	1328	1337	1344	C2.8	SF	S18E19	1346
16 Nov	1448	1505	1526	C7.9			1348
16 Nov	1849	1854	1900	C2.9	1F	S18E16	1346
16 Nov	1947	1953	1957	C5.2			
16 Nov	2137	2143	2149	C1.6	SF	S19E13	1346
16 Nov	2340	1340	A2350	C5.0	SF	S12E20	1346
17 Nov	0130	0133	0135	C2.6			1346
17 Nov	0510	0515	0522	C1.3			
17 Nov	0716	0727	0730	C6.0	SF	S19E08	1346
17 Nov	0942	0952	0959	C2.1			
17 Nov	1055	1059	1105	C1.1			
17 Nov	1147	1155	1200	C1.7			
17 Nov	1319	1329	1346	C2.4			
17 Nov	1353	1400	1428	C3.1	SF	S23E60	1352
17 Nov	1553	1559	1616	C2.0			
17 Nov	1654	1654	1700		SF	N12W34	
17 Nov	1927	1928	1934		SF	S23E52	1352
17 Nov	1946	1947	1959		SF	S17E74	1354
17 Nov	2312	2318	2333		SF	S18E71	1354
18 Nov	0000	0005	0011		SF	S17W14	1346
18 Nov	0115	0116	0119		SF	S17E70	1354
18 Nov	0236	0239	0243		SF	N09E72	1353
18 Nov	0338	0338	0343		SF	S15E69	1354
18 Nov	0646	0653	0704	C2.5			
18 Nov	1522	1524	1526		SF	N15E79	1355
18 Nov	1638	1643	1650	C1.1	SF	S16W10	1346
18 Nov	1707	1723	1756	C2.7	SF	S15E65	1354
18 Nov	1904	1906	1912	C2.0	SF	N08E63	1353
18 Nov	1943	1949	2005		SF	S16W11	1346
18 Nov	2353	0004	0010	C2.0			
19 Nov	0121	0127	0136	C1.0			
19 Nov	0446	0447	0451		SF	N15E71	1355
19 Nov	0753	0757	0802	C1.7	SF	N14E69	1355
19 Nov	1119	1125	1130	C1.4	SF	S13E53	1354
19 Nov	1141	1148	1159	C1.4			
19 Nov	1948	1955	2003	C3.9			1354



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
19 Nov	2047	2052	2056	C1.6			1354
19 Nov	2219	2228	2235	C4.5			
19 Nov	2302	2307	2312	C1.5			
19 Nov	2359	0003	0009		SF	N13E61	1355
20 Nov	0459	0509	0516	C1.7			
20 Nov	0605	0626	0650	C2.1			1354
20 Nov	0716	0722	0727	C1.8	SF	N18W08	1357
20 Nov	0734	0741	0747	C4.8	SF	S17E42	1354
20 Nov	1145	1155	1204	C3.0	1F	S14E41	1354
20 Nov	1328	1332	1335	C1.8	SF	N17E77	1356
20 Nov	1521	1527	1534	C1.2			
20 Nov	1611	1615	1619	C1.0	SF	S16E39	1354
20 Nov	1635	1647	1707	C6.1	1F	S15E38	1354
20 Nov	1754	1757	1800	C1.4			
20 Nov	2259	2305	2313	C2.1			1354



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

Region 1336

31 Oct	N14E55	145	10	1	Axx	1	A											
01 Nov	N13E39	148	40	4	Cso	6	B											
02 Nov	N13E25	150	plage															
03 Nov	N11E12	149	20	3	Cso	8	B					1						
04 Nov	N11W02	151	plage															
05 Nov	N11W16	152	plage															
06 Nov	N11W30	153	plage															
07 Nov	N11W43	152	plage															
08 Nov	N11W57	153	plage															
09 Nov	N14W69	151	1	2	Axx	2	A											
10 Nov	N14W83	153	plage															
										0	0	0	1	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 151

Region 1337

31 Oct	N17E66	134	40	3	Hsx	1	A											
01 Nov	N17E51	136	10	3	Bxo	2	B											
02 Nov	N17E38	136	10	2	Bxo	3	B											
03 Nov	N17E26	135	40	5	Dso	7	B											
04 Nov	N18E14	134	10	4	Bxo	3	B											
05 Nov	N18W00	135	0	4	Bxo	3	B											
06 Nov	N18W14	137	plage															
07 Nov	N18W28	137	plage															
08 Nov	N18W42	138	plage															
09 Nov	N17W57	139	1	1	Axx	1	A											
10 Nov	N17W71	141	plage															
11 Nov	N17W85	142	plage															
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 135



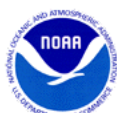
Region Summary - continued

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 1338																								
31 Oct	S12E83	118	plage										1											
01 Nov	S12E69	118	120	5	Dao	2	B						1											
02 Nov	S14E54	120	230	7	Dao	5	B																	
03 Nov	S14E40	121	375	11	Ehi	20	BG	1						2										
04 Nov	S14E28	120	240	9	Dso	10	B																	
05 Nov	S14E14	120	220	10	Dso	8	B																	
06 Nov	S14E02	120	240	10	Dso	9	B	4						5										
07 Nov	S12W11	120	240	11	Esi	16	BG																	
08 Nov	S14W25	121	180	13	Esi	15	B																	
09 Nov	S12W38	121	230	8	Dso	11	B							1										
10 Nov	S13W51	120	190	5	Cso	4	B																	
11 Nov	S13W68	123	140	5	Dao	2	B																	
12 Nov	S14W79	121	120	4	Dao	6	B																	
13 Nov	S13W91	120	30	3	Cro	2	B																	
													7	0	0	8	0	0	0	0	0			

Crossed West Limb.
Absolute heliographic longitude: 120

Region 1339																								
01 Nov	N22E71	117	180	9	Dao	2	B	2																
02 Nov	N18E63	111	560	8	Dkc	4	BG	6	1				8											
03 Nov	N18E57	104	1400	13	Ekc	25	BGD	11	2	1			7	1	1									
04 Nov	N19E45	102	1540	17	Fkc	33	BGD	3	1				4											
05 Nov	N19E31	103	1250	15	Ekc	31	BGD	4	3				1	2										
06 Nov	N20E20	102	1230	16	Fkc	42	BGD	2	2				3											
07 Nov	N19E05	103	1240	16	Fkc	45	BGD	3					2											
08 Nov	N19W08	104	940	15	Ekc	40	BG	2					2											
09 Nov	N21W19	102	1030	16	Fkc	50	BG	1																
10 Nov	N19W33	102	1020	16	Fkc	45	BG	1						1										
11 Nov	N18W48	103	590	15	Ekc	22	BG	2					1											
12 Nov	N18W62	104	650	9	Dac	26	BG	1					2											
13 Nov	N19W75	104	360	8	Dai	11	B																	
14 Nov	N19W89	106	240	8	Dso	3	B																	
													38	9	1	30	4	1	0	0				

Crossed West Limb.
Absolute heliographic longitude: 103



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 1340																	
05 Nov	S09E61	73	80	1	Hsx	1	A										
06 Nov	S09E49	73	80	2	Cao	1	B										
07 Nov	S09E36	72	90	2	Hsx	1	A										
08 Nov	S09E22	73	plage	2		1											
09 Nov	S09E09	74	90	2	Hsx	1	A										
10 Nov	S09W04	73	80	2	Hsx	1	A										
11 Nov	S09W17	72	80	2	Hsx	1	A										
12 Nov	S09W31	73	80	2	Hsx	1	A										
13 Nov	S08W44	73	80	1	Hsx	1	A										
14 Nov	S08W57	75	70	2	Hsx	1	A										
15 Nov	S08W70	74	70	2	Hsx	1	A										
16 Nov	S08W83	72	60	2	Hsx	1	A										
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 73

Region 1341																	
05 Nov	N10E78	58	100	3	Hsx	1	A										
06 Nov	N08E66	56	120	3	Hsx	1	A										
07 Nov	N10E55	53	180	10	Cao	3	B										
08 Nov	N11E41	55	110	8	Dao	5	B										
09 Nov	N18E28	55	210	6	Dso	8	B										
10 Nov	N08E14	55	110	6	Cso	3	B	1				1					
11 Nov	N08E02	53	90	8	Cso	7	B										
12 Nov	N11W14	56	80	4	Cso	4	B										
13 Nov	N10W22	51	80	12	Cso	7	B	1									
14 Nov	N09W35	52	70	10	Dso	7	B										
15 Nov	N09W49	53	120	10	Dso	7	B										
16 Nov	N09W64	54	130	9	Dso	5	B										
17 Nov	N09W76	53	80	9	Dso	3	B										
18 Nov	N08W91	55	10	1	Axx	1	A										
								2	0	0	1	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 53



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 1342																							
05 Nov	N18E76		60	110	10	Dso	8	B															
06 Nov	N18E62		60	120	8	Dao	6	B															
07 Nov	N17E47		61	170	11	Eao	5	B															
08 Nov	N18E34		61	130	11	Eso	14	B	1														
09 Nov	N17E22		61	310	13	Eho	18	B		1													
10 Nov	N15E15		54	180	5	Cso	5	B															
11 Nov	N16W10		65	100	2	Cso	2	B															
12 Nov	N15W22		64	140	2	Hsx	2	A															
13 Nov	N16W34		63	150	2	Hsx	1	A															
14 Nov	N17W48		65	110	2	Hsx	1	A					1										
15 Nov	N17W62		66	110	3	Hsx	1	A															
16 Nov	N15W73		63	170	3	Hsx	1	A															
17 Nov	N16W87		63	110	3	Hsx	1	A															
										1	1	0	1	0	0	0	0	0					

Crossed West Limb.
Absolute heliographic longitude: 65

Region 1343																							
06 Nov	N29E76		46	60	4	Hsx	1	A															
07 Nov	N27E62		46	140	2	Hsx	1	A															
08 Nov	N28E49		47	90	2	Hsx	1	A															
09 Nov	N27E37		46	110	2	Hsx	1	A															
10 Nov	N27E23		46	180	2	Hsx	1	A															
11 Nov	N26E12		44	120	2	Hsx	1	A															
12 Nov	N27W01		44	140	2	Hsx	1	A															
13 Nov	N28W14		43	120	2	Hsx	1	A															
14 Nov	N28W26		43	70	2	Hsx	1	A															
15 Nov	N28W39		43	70	2	Hsx	1	A															
16 Nov	N28W51		42	90	2	Hsx	1	A															
17 Nov	N27W64		41	50	2	Hsx	1	A															
18 Nov	N28W76		40	50	1	Hsx	1	A															
19 Nov	N27W87		38	40	2	Hsx	1	A															
										0	0	0	0	0	0	0	0	0					

Crossed West Limb.
Absolute heliographic longitude: 44



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 1344																	
07 Nov	S22E06	102	0	1	Axx	1	A										
08 Nov	S22W07	103	0	1	Axx	2	A										
09 Nov	S22W19	102	40	10	Dao	10	B										
10 Nov	S19W31	100	60	4	Cro	7	B										
11 Nov	S18W45	100	60	8	Dso	6	B	2				2					
12 Nov	S19W59	101	200	10	Dai	22	B	3				2					
13 Nov	S18W73	102	240	11	Esi	11	B	5				2					
14 Nov	S17W86	103	60	8	Cso	3	B										
								10	0	0		6	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 102

Region 1345																	
09 Nov	S25W01	84	80	4	Cso	6	B										
10 Nov	S25W16	85	90	7	Dro	6	B					2					
11 Nov	S26W29	85	60	8	Dso	6	B										
12 Nov	S26W41	84	70	9	Dso	2	B										
13 Nov	S25W54	83	30	8	Cro	3	B										
14 Nov	S24W71	89	10	2	Hsx	1	A										
15 Nov	S24W85	89	plage														
								0	0	0		2	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 84

Region 1346																	
12 Nov	S17E64	338	80	2	Hsx	1	A										
13 Nov	S21E57	331	110	12	Cso	2	B										
14 Nov	S18E40	337	110	8	Cso	3	B										
15 Nov	S18E27	337	120	4	Dso	5	B		1			1					
16 Nov	S18E10	339	140	5	Dso	6	B	5				3	1				
17 Nov	S18W03	339	60	4	Cso	3	B	2				1					
18 Nov	S17W17	341	80	5	Cso	7	B	1				3					
19 Nov	S18W29	340	60	5	Hsx	6	A										
20 Nov	S18W44	342	40	5	Cso	3	B										
								8	1	0		8	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 339



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares								
	Lat CMD	Lon	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			10 ⁻⁶	hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1347																
13 Nov	N07E53	346	30	4	Cro	3	B	2				1				
14 Nov	N08E28	349	30	4	Cro	3	B	2				1				
15 Nov	N08E14	350	30	4	Hax	2	A					1				
16 Nov	N09E04	347	10	1	Axx	1	A									
17 Nov	N08W10	346	20		Hsx	1	A									
18 Nov	N08W24	348	10	1	Axx	1	A									
19 Nov	N06W37	347	10	2	Axx	3	A									
20 Nov	N06W50	348	plage													
								4	0	0		3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 347

Region 1348

14 Nov	N20W70	87	60	10	Dso	12	B	2				5				
15 Nov	N20W84	88	120	8	Dso	5	B	2	2			2	1			
								4	2	0		7	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 87

Region 1349

14 Nov	N15W02	19	10	3	Bxo	3	B									
15 Nov	N15W16	20	20	4	Cro	8	B									
16 Nov	N17W29	19	10	5	Bxo	3	B									
17 Nov	N17W43	21	plage													
18 Nov	N17W57	21	plage													
19 Nov	N15W67	18	10	3	Bxo	2	B									
20 Nov	N15W81	19	plage													
								0	0	0		0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 19



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 1350																		
14 Nov	N26E67	310	40	7	Dso	3	B											
15 Nov	N26E53	311	170	8	Dso	5	B											
16 Nov	N26E42	308	140	7	Dso	4	B											
17 Nov	N26E29	307	80	7	Dso	2	B											
18 Nov	N26E16	308	70	8	Dso	7	B											
19 Nov	N25E03	308	40	7	Cso	4	B											
20 Nov	N25W11	309	plage															
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 308

Region 1351																		
14 Nov	S23E51	326	20	4	Bxo	5	B											
15 Nov	S24E37	327	10	4	Bxo	2	B						1					
16 Nov	S24E23	328	plage															
17 Nov	S24E09	329	plage															
18 Nov	S23W04	328	10	3	Axx	4	A											
19 Nov	S24W17	328	10	1	Hrx	2	A											
20 Nov	S24W31	329	plage															
									0	0	0	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 328

Region 1352																		
16 Nov	S23E65	285	150	7	Cso	1	B											
17 Nov	S24E53	283	140	12	Eso	3	B	1				2						
18 Nov	S23E41	283	170	11	Eso	4	B											
19 Nov	S24E26	285	110	12	Cso	6	B											
20 Nov	S25E15	282	120	9	Dso	7	B											
								1	0	0	2	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 282



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

Region 1353

17 Nov	N08E76	261	30	2	Hsx	1	A										
18 Nov	N07E57	266	30	1	Hrx	1	A	1				2					
19 Nov	N07E44	266	40	2	Hsx	1	A										
20 Nov	N07E32	265	20	3	Hsx	2	A										
								1	0	0	2	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 265

Region 1354

17 Nov	S15E73	265	130	10	Dao	6	B					2					
18 Nov	S15E56	267	210	8	Dso	8	B	1				3					
19 Nov	S17E44	267	220	10	Dsi	12	B	3				1					
20 Nov	S17E30	268	220	10	Dai	12	BG	6				2	2				
								10	0	0	8	2	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 268

Region 1355

18 Nov	N14E73	251	60	3	Cao	3	B					1					
19 Nov	N14E58	253	90	2	Hsx	1	A	1				3					
20 Nov	N14E44	254	90	2	Hsx	1	A										
								1	0	0	4	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 254

Region 1356

19 Nov	N14E81	229	60	5	Hsx	1	A										
20 Nov	N14E63	234	110	2	Hsx	1	A	1				1					
								1	0	0	1	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 234

Region 1357

20 Nov	N17W18	316	20	5	Dro	5	B	1				1					
								1	0	0	1	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 316

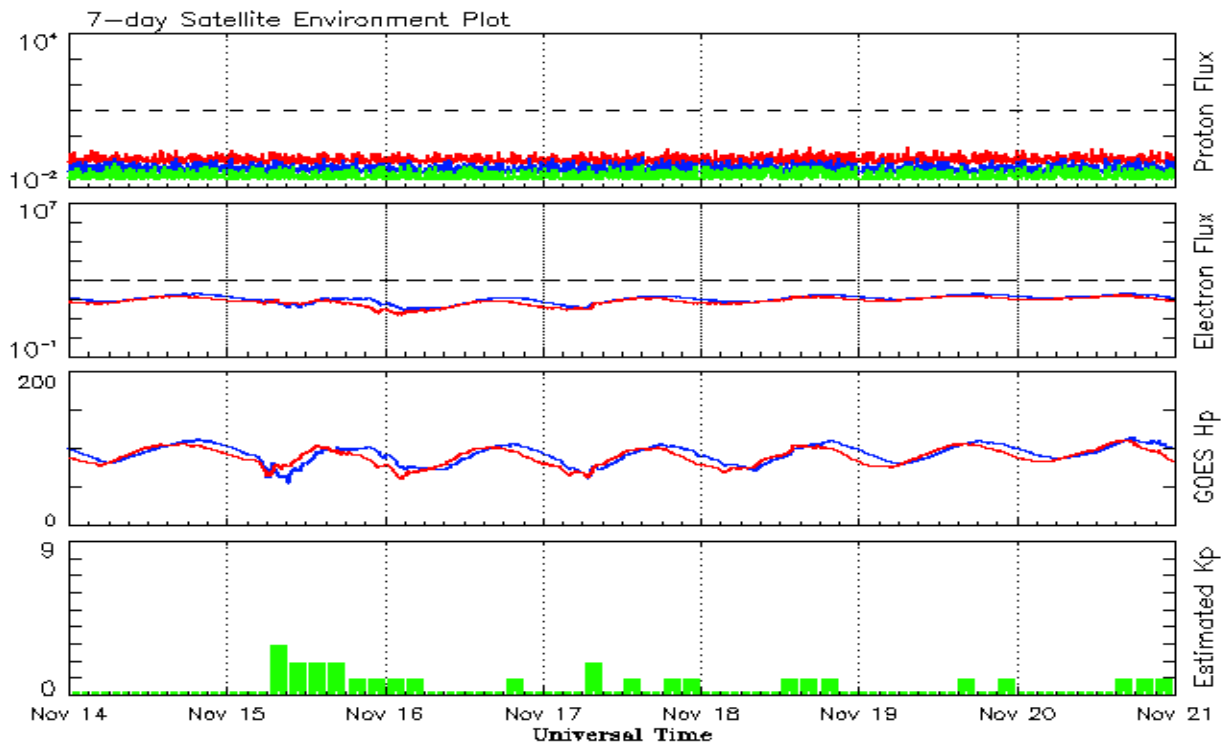


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2009									
November	7.7	4.1	0.55	12.4	7.6	73.6	74.5	3	4.5
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
2010									
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
April	11.2	8.0	0.71	21.4	14.0	75.9	78.3	10	5.5
May	19.9	8.7	0.44	23.8	15.5	73.8	79.0	8	5.7
June	17.9	13.6	0.75	25.2	16.4	72.6	79.7	7	5.8
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67	35.9	23.2	81.6	85.3	6	6.4
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	41.5	0.68			95.9		9	
June	55.5	37.0	0.67			95.8		8	
July	67.0	43.9	0.66			94.2		9	
August	66.1	50.6	0.77			101.7		8	
September	106.4	78.0	0.73			134.5		13	
October	116.8	88.0	0.75			137.2		7	

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 November 2011*

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.

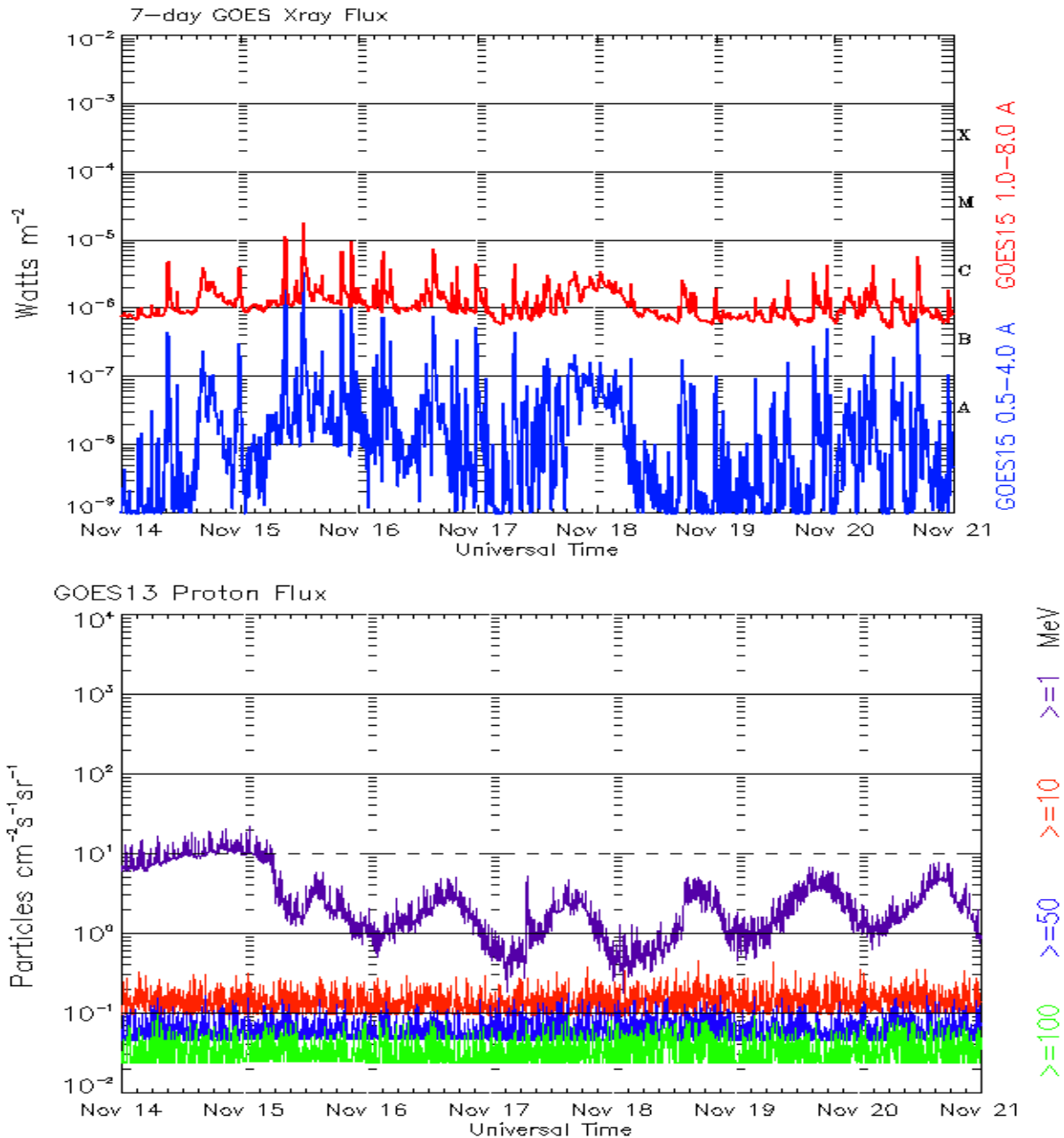
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

Kp plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

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 November 2011*

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 integral 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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