

Solar activity was at moderate to high levels on 27 - 30 October before declining to low levels on 31 October - 02 November. Region 2192 (S12, L=248, class/area Fkc/2750 on 26 Oct) was the culprit for a majority of the activity through 30 October. Early on 27 October, the region produced an M7/3b flare at 27/0044 UTC. This was followed by an M6/2b flare at 27/1009 UTC. At 27/1447 UTC, Region 2192 produced the largest event of the summary period, an X2/2b. The region also produced a few weak M-class events on 27 October. 28 October saw three M-class events, the largest an M6 x-ray event at 28/0332 UTC. 29 - 30 October recorded a total of nine weak M-class and numerous C-class events as Region 2192 approached the west limb. Region 2192 was the largest observed sunspot region since 18 November 1990 and was responsible for a total of 73 C-class, 35 M-class and 6 X-class events. Remarkably, Region 2192 did not produce any radiation storms or any significant Earth-directed coronal mass ejections (CMEs) during its transit across the disk.

By the end of 30 October through 02 November, a majority of the activity originated from new Region 2201 (S05, L=086, class/area Cai/050 on 02 Nov). Numerous low to moderate level C-class events were observed from this region during that period, the largest a C7 x-ray event at 01/1646 UTC. Additional activity from Region 2201 included a C2/Sf flare at 30/1508 UTC with a Type II Sweep (1000 km/s), a C4/1n flare at 30 October with a Type II Sweep (691 km/s) and a C3 x-ray event at 02/1703 UTC with a Type II Sweep (1443 km/s). The period concluded with a C9 x-ray event from a location behind the NE limb.

Other activity included a large filament eruption between 01/0410-0600 UTC. A Hyder flare, associated with a large filament eruption centered near S28E54, was observed in SDO/AIA imagery. The eruption resulted in a C2 x-ray event at 01/0534 UTC with an associated large CME off the SE limb, first visible in SOHO/LASCO C2 coronagraph imagery at 01/0500 UTC. Subsequent analysis and WSA-Enlil model output suggested the CME was directed well south and east of the Sun-Earth line.

The greater than 10 MeV proton flux observed at geosynchronous orbit became enhanced after 01/1730 UTC and briefly reached the 10 pfu threshold a few times from 02/2210-2245 UTC, but never for a sustained period of time. At the time of the report, levels had fallen to the 5-6 pfu range. The proton enhancement is believed to be associated with the Hyder flare described above.

The greater than 2 MeV electron flux at geosynchronous orbit reached moderate levels on 27-28 October and 01-02 November. High levels were exceeded on 29-31 October.

Geomagnetic field activity ranged from quiet to active levels. The period began under the influence of a small, positive polarity coronal hole high speed stream (CH HSS). The ACE satellite observed weak to modest solar wind speeds that ranged from about 325 - 450 km/s through 30 October. IMF Bt measurements recorded a steady field that generally ranged between 3-8 nT while the Bz component varied between +/- 7 nT. The phi angle reflected a mostly



positive (away) orientation through 30/0737 UTC. From 27 - 30 October, geomagnetic activity was generally at quiet to unsettled levels with isolated active periods early on 27 and 28 October.

A change in the phi angle orientation from a positive to a negative (towards) sector was observed at 30/0738 UTC. A steady negative orientation was maintained through 02/0151 UTC when phi varied between negative and positive sectors through the remainder of the period. With this sector change early on 30 October, Bt measurements indicated an overall increase in the field ranging from about 3 nT to a peak of 15 nT at 01/0630 UTC. Thereafter, total field gradually declined to end the period at about 6 nT while Bz generally ranged from +14 nT to -7 nT. Early on 31 October, wind speeds steadily increased from 325 km/s to a peak of near 550 km/s at about 01/0900 UTC and ended the period at about 490 km/s. From 31 October to 02 November, geomagnetic activity was generally at quiet levels with isolated unsettled periods.

Space Weather Outlook 03 November - 29 November 2014

Solar activity is expected to be at predominately low levels with isolated moderate activity through 10 November. The return of old Region 2192 (S12, L-248) on or about 11 November is expected to see an increase in activity to predominately low to moderate levels with isolated high level activity. This is expected to persist through about 23 November when old Reion 2192 exits the visible disk.

A chance for a greater than 10 MeV proton event exists from 11 - 23 November due to potential significant flare activity after the return of old Region 2192.

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

Geomagnetic field activity is expected to be



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
27 October	188	120	2530	C2.6	6	5	1	1	1	2	1	0
28 October	167	109	2790	C2.4	3	3	0	25	2	0	0	0
29 October	150	84	1630	C2.4	7	6	0	9	1	0	0	0
30 October	140	121	560	C1.3	7	3	0	5	2	0	0	0
31 October	121	71	170	B8.5	3	0	0	3	1	0	0	0
01 November	120	82	180	B4.9	6	0	0	9	1	0	0	0
02 November	124	91	310	B4.2	3	0	0	10	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
	27 October	1.7e+05	1.0e+04	2.4e+03		2.4e+07
28 October	2.0e+05	1.0e+04	2.2e+03		3.0e+07	
29 October	1.4e+05	1.1e+04	2.7e+03		6.2e+07	
30 October	2.5e+05	1.2e+04	2.8e+03		6.7e+07	
31 October	3.6e+05	1.1e+04	2.5e+03		5.1e+07	
01 November	1.1e+06	8.5e+04	2.7e+03		2.2e+07	
02 November	1.5e+07	4.2e+05	2.8e+03		2.4e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	27 October	15	3-2-3-2-3-3-3-4	17	1-2-4-5-3-3-2-3	14
28 October	11	4-2-2-3-3-2-2-1	26	3-2-4-5-5-5-2-2	14	4-3-3-3-3-3-2-1
29 October	7	3-2-2-2-2-2-2-0	8	2-1-3-3-2-3-1-0	9	4-2-2-2-2-2-2-1
30 October	5	1-1-1-2-2-1-1-2	7	0-0-3-4-1-1-2-1	5	1-1-2-2-1-1-1-2
31 October	5	1-2-2-1-2-1-2-1	5	0-1-2-2-2-0-2-2	6	1-2-2-1-2-1-2-2
01 November	5	0-1-2-1-3-1-1-1	5	0-0-2-2-3-2-1-0	6	1-1-2-2-3-2-1-1
02 November	6	1-1-0-1-3-3-2-1	9	1-1-0-0-5-2-2-0	9	2-1-1-1-3-3-3-1

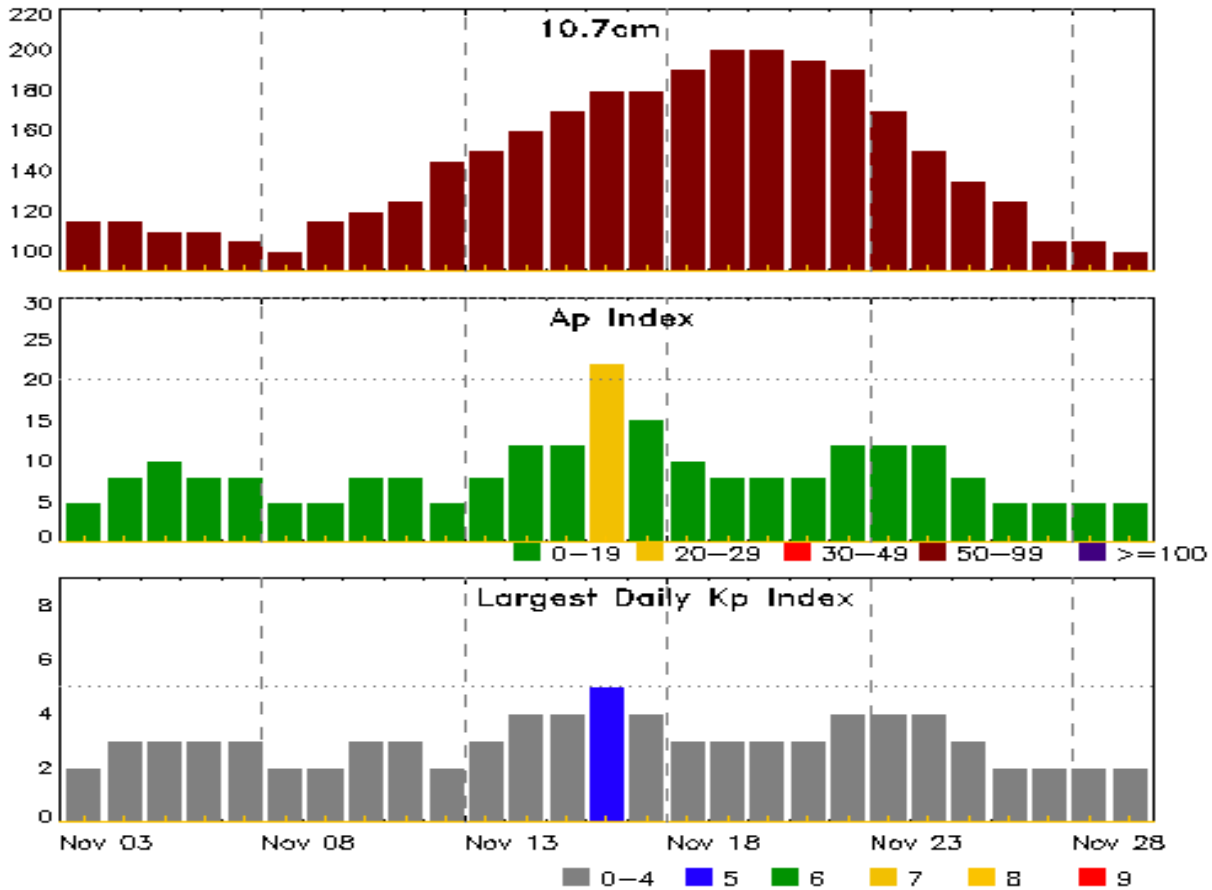


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
27 Oct 0022	ALERT: X-ray Flux exceeded M5	27/0020
27 Oct 0050	SUMMARY: X-ray Event exceeded M5	27/0006 - 0044
27 Oct 1003	ALERT: X-ray Flux exceeded M5	27/1002
27 Oct 1031	SUMMARY: X-ray Event exceeded M5	27/0959 - 1026
27 Oct 1425	ALERT: X-ray Flux exceeded M5	27/1423
27 Oct 1521	SUMMARY: X-ray Event exceeded X1	27/1412 - 1509
27 Oct 2146	WARNING: Geomagnetic K = 4	27/2146 - 28/0700
27 Oct 2217	ALERT: Geomagnetic K = 4	27/2217
27 Oct 2237	WARNING: Geomagnetic K = 5	27/2236 - 28/0400
28 Oct 0330	ALERT: X-ray Flux exceeded M5	28/0328
28 Oct 0346	SUMMARY: X-ray Event exceeded M5	28/0323 - 0341
28 Oct 0654	EXTENDED WARNING: Geomagnetic K = 4	27/2146 - 28/1400
29 Oct 0214	WARNING: Geomagnetic K = 4	29/0215 - 0700
29 Oct 0256	ALERT: Geomagnetic K = 4	29/0250
29 Oct 1407	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	29/1345
30 Oct 1346	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	29/1345
30 Oct 1500	ALERT: Type II Radio Emission	30/1308
30 Oct 1555	ALERT: Type II Radio Emission	30/1514
30 Oct 2322	ALERT: Type II Radio Emission	30/2258
31 Oct 1240	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	29/1345
02 Nov 1019	ALERT: Type II Radio Emission	02/0941
02 Nov 1741	ALERT: Type II Radio Emission	02/1703
02 Nov 2050	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	02/2050 - 03/2050



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
03 Nov	115	5	2	17 Nov	180	15	4
04	115	8	3	18	190	10	3
05	110	10	3	19	200	8	3
06	110	8	3	20	200	8	3
07	105	8	3	21	195	8	3
08	100	5	2	22	190	12	4
09	115	5	2	23	170	12	4
10	120	8	3	24	150	12	4
11	125	8	3	25	135	8	3
12	145	5	2	26	125	5	2
13	150	8	3	27	105	5	2
14	160	12	4	28	105	5	2
15	170	12	4	29	100	5	2
16	180	22	5				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
27 Oct	0006	0034	0044	M7.1	0.100	3B	S14W44	2192				
27 Oct	0144	0202	0211	M1.0	0.013			2192				
27 Oct	0335	0341	0348	M1.3	0.007			2192				
27 Oct	0959	1009	1026	M6.7	0.093	2B	S18W48	2192				
27 Oct	1412	1447	1509	X2.0	0.450	2B	S17W52	2192		110		
27 Oct	1733	1740	1747	M1.4	0.009			2192				
28 Oct	0215	0242	0308	M3.4	0.076	1B	S14W61	2192				
28 Oct	0323	0332	0341	M6.6	0.052			2192				
28 Oct	1354	1406	1423	M1.6	0.020	SF	S18W72	2192		29		
29 Oct	0603	0820	0852	M1.0	0.076			2192				
29 Oct	0954	1001	1006	M1.2	0.005			2192				
29 Oct	1424	1433	1451	M1.4	0.019	SF	S16W81	2192				
29 Oct	1606	1620	1633	M1.0	0.012			2192				
29 Oct	1847	1850	1852	M1.3	0.002			2192				
29 Oct	2118	2122	2125	M2.3	0.005			2192				
30 Oct	0034	0037	0040	M1.3	0.003			2192				
30 Oct	0119	0135	0156	M3.5	0.047			2192				
30 Oct	0417	0428	0436	M1.2	0.009	SF	S16E62	2192				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
27 Oct	0001	0025	A1022	M7.1	3B	S14W44	2192
27 Oct	0144	0202	0211	M1.0			2192
27 Oct	0335	0341	0348	M1.3			2192
27 Oct	0501	0504	0511	C3.4			2192
27 Oct	0521	0538	0547	C4.9			2192
27 Oct	B0552	U1003	1348		2B	S18W48	2192
27 Oct	0656	0701	0707	C9.6			2192
27 Oct	0711	0715	0720	C9.6			2192
27 Oct	0959	1009	1026	M6.7			2192
27 Oct	1404	1423	A1531	X2.0	2B	S17W52	2192
27 Oct	B1524	1708	0009		1F	S19W56	2192
27 Oct	1733	1740	1747	M1.4			2192
27 Oct	2116	2123	2130	C5.4			



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical	
	Begin	Max	End			Location Lat CMD	Rgn #
27 Oct	2259	2304	2316	C4.6	SF	S12W53	2192
28 Oct	0215	0242	0308	M3.4	1B	S14W61	2192
28 Oct	0323	0332	0341	M6.6			2192
28 Oct	0435	0436	0446		SF	S14W61	2192
28 Oct	0449	0451	0453		SF	S14W62	2192
28 Oct	0525	0526	0527		SF	S13W64	2192
28 Oct	0534	0538	0545		SF	S15W63	2192
28 Oct	0546	0601	0618	C4.2	SF	S15W63	2192
28 Oct	0633	0641	0652		SF	S15W62	2192
28 Oct	0640	0640	0646		SF	S18W59	2192
28 Oct	0702	0705	0709		SF	S17W56	2192
28 Oct	0820	0824	0828	C6.5	SF	S22W63	2192
28 Oct	0847	0847	0856		SF	S19W61	2192
28 Oct	B0938	0942	0945		SF	S14W61	2192
28 Oct	1024	1024	1047		SF	S17W61	2192
28 Oct	1102	1105	1116	C5.3	1F	S17W62	2192
28 Oct	1131	1134	1148		SF	S17W60	2192
28 Oct	1218	1221	1234		SF	N10E03	2195
28 Oct	1246	1247	1321		SF	S18W63	2192
28 Oct	B1330	U1335	A1339		SF	S17W63	2192
28 Oct	1354	1406	1423	M1.6	SF	S18W72	2192
28 Oct	1546	1547	1554		SF	S17W64	2192
28 Oct	1613	1616	1619		SF	S16W67	2192
28 Oct	1711	1720	1736		SF	S16W67	2192
28 Oct	1815	1816	1820		SF	S21W67	2192
28 Oct	1913	1915	1917		SF	S16W68	2192
28 Oct	2034	2038	2045		SF	S15W68	2192
28 Oct	2049	2049	2053		SF	S16W68	2192
28 Oct	2249	2252	2259		SF	S16W69	2192
29 Oct	0114	0114	0116		SN	S14W61	2192
29 Oct	0310	0314	0317	C3.3			
29 Oct	0329	0358	0419	C8.4	1F	S13W72	2192
29 Oct	0454	0454	0456		SF	S15E13	2197
29 Oct	0603	0820	0852	M1.0			2192
29 Oct	0756	0757	0801		SF	S17E70	
29 Oct	0808	0809	0812		SF	S13W75	2192
29 Oct	0816	0820	0834		SF	S14W74	2192
29 Oct	0954	1001	1006	M1.2			2192



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
29 Oct	1355	1400	1403	C5.5			
29 Oct	1419	1500	1507	M1.4	SF	S16W81	2192
29 Oct	1606	1620	1633	M1.0			2192
29 Oct	1847	1850	1852	M1.3			2192
29 Oct	1904	1904	1909		SF	S14W84	2192
29 Oct	1922	1923	1927		SF	S14W84	2192
29 Oct	1931	1938	1946	C6.8			2192
29 Oct	2114	2115	2117		SF	N00E00	2192
29 Oct	2118	2122	2125	M2.3			2192
29 Oct	2300	2303	2308	C2.7			2192
29 Oct	2319	2325	2333	C3.6			2192
29 Oct	2354	0011	0024	C7.1			2192
30 Oct	0034	0037	0040	M1.3			2192
30 Oct	0119	0135	0156	M3.5			2192
30 Oct	0417	0428	0436	M1.2	SF	S16E62	2192
30 Oct	0542	0546	0549	C3.5			
30 Oct	0627	0630	0632		SF	N11E84	2192
30 Oct	1237	1244	1252	C2.9			2192
30 Oct	1304	1312	1317	C6.9			2201
30 Oct	1358	1401	1411		SF	S14E57	2200
30 Oct	1506	1509	1514	C2.3	SF	S04E71	2201
30 Oct	1521	1542	1555	C9.7			2192
30 Oct	1753	1758	1801	C3.4	1N	S05E70	2201
30 Oct	2045	2048	2055		SF	S15W44	2198
30 Oct	2254	2301	2305	C4.8	1N	S06E66	2201
31 Oct	0032	0101	0141	C8.2			
31 Oct	0821	0825	0829	C2.3	SF	S05E59	2201
31 Oct	0919	0923	0927	C2.0	1F	S05E57	2201
31 Oct	2031	2033	2035		SF	S03E53	2201
31 Oct	2239	2240	2241		SF	N05E69	
01 Nov	0444	0534	0705	C2.7			
01 Nov	B0507	0507	0512		SF	S28E54	
01 Nov	0534	0534	0539		SF	S08E50	2201
01 Nov	0748	0751	0754		SF	S03E47	2201
01 Nov	0920	0938	1005	C4.5			2192
01 Nov	0939	0940	0944		SF	S05E47	2201
01 Nov	0954	1002	1020		SF	S05E47	2201
01 Nov	1020	1023	1052	C4.1	SN	S05E47	2201



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
01 Nov	1230	1231	1232		SF	S05E46	2201
01 Nov	1334	1349	1416	C2.6	1F	S05E45	2201
01 Nov	1637	1646	1656	C7.2			2201
01 Nov	1805	1807	1808		SF	S04E40	2201
01 Nov	1814	1820	1823	C2.3	SF	S04E41	2201
02 Nov	0159	0159	0202		SF	S05E36	2201
02 Nov	0305	0308	0311	B6.6	SF	S05E36	2201
02 Nov	0329	0336	0346		SF	S05E36	2201
02 Nov	0355	0400	0436		SF	S05E36	2201
02 Nov	0356	0356	0359		SF	N13E07	2203
02 Nov	0357	0401	0404	B8.4			2201
02 Nov	0439	0446	0506		SF	S05E35	2201
02 Nov	0541	0548	0550		SF	S05E34	2201
02 Nov	1304	1309	1313	B7.5			
02 Nov	B1419	U1421	A1427		SF	S04E30	2201
02 Nov	1433	1435	1438		SF	N12E00	2203
02 Nov	1658	1703	1706	C3.5			2201
02 Nov	2044	2105	2125	C9.4			
02 Nov	2338	2340	2341	C1.9	SF	S03E25	2201



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 2192																							
14 Oct	S14E0*	253	plage																				
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								
27 Oct	S12W59	247	2380	20	Fkc	51	BGD	5	5	1			1	1	2	1							
28 Oct	S13W71	246	2680	20	Fkc	36	BGD	3	3				24	2									
29 Oct	S12W84	246	1500	16	Fkc	10	BGD	5	6				7	1									
30 Oct	S15W94	243	390	8	Dkc	4	BG	2	3				1										
								73	35	6	114	13	5	4	0								

Crossed West Limb.

Absolute heliographic longitude: 248

Region 2193

19 Oct	N05E10	284	30	5	Cro	6	B																
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							

Crossed West Limb.

Absolute heliographic longitude: 284



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 2194																	
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										
27 Oct	S12W23	211	40	1	Hax	2	A										
28 Oct	S11W36	211	30	1	Hax	1	A										
29 Oct	S11W49	211	30	1	Hax	2	A										
30 Oct	S13W62	211	20	1	Hax	1	A										
31 Oct	S12W74	209	20	1	Hrx	1	A										
01 Nov	S12W88	210	plage														
								0	0	0		2	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 209

Region 2195																	
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										
27 Oct	N07E04	184	80	12	Csi	9	B										
28 Oct	N08W07	182	50	8	Cso	5	B					1					
29 Oct	N08W21	182	50	5	Cso	3	B										
30 Oct	N08W35	184	50	2	Hax	1	A										
31 Oct	N07W50	185	40	1	Hax	1	A										
01 Nov	N07W63	185	30	1	Hax	1	A										
02 Nov	N07W76	185	20	1	Hrx	1	A										
								0	0	0		4	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 184



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Lon	Helio 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
Region 2196																		
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											
27 Oct	S04E26	162	10	1	Hax	1	A											
28 Oct	S03E12	162	10	1	Axx	1	A											
29 Oct	S03W00	161	10	1	Axx	1	A											
30 Oct	S04W12	161	10	1	Axx	1	A											
31 Oct	S05W24	159	10	5	Axx	1	A											
01 Nov	S05W37	159	plage															
02 Nov	S05W52	161	plage															
								0	0	0	1	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 161

Region 2197																		
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											
27 Oct	S13E25	163	20	7	Cri	7	B											
28 Oct	S12E10	164	10	8	Bxo	5	B											
29 Oct	S13E01	161	30	6	Cso	4	B						1					
30 Oct	S12W16	165	10	1	Axx	1	A											
31 Oct	S12W24	159	plage															
01 Nov	S12W38	161	plage															
02 Nov	S12W52	161	plage															
								0	0	0	3	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 161

Region 2198																		
28 Oct	S14W18	193	10	1	Axx	1	A											
29 Oct	S13W33	194	10	5	Axx	4	A											
30 Oct	S13W45	194	0	1	Axx	1	A						1					
31 Oct	S13W59	195	plage															
01 Nov	S13W73	196	plage															
02 Nov	S13W87	196	plage															
								0	0	0	1	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 193



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

Region 2199

30 Oct	S17E23	126	20	3	Cro	4	B										
31 Oct	S17E09	127	plage														
01 Nov	S17W05	128	plage														
02 Nov	S17W19	128	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 128

Region 2200

30 Oct	S16E48	101	20	2	Cao	5	B				1						
31 Oct	S16E33	103	20	2	Hrx	2	A										
01 Nov	S16E20	102	10	2	Hrx	1	A										
02 Nov	S16E06	103	10	1	Axx	2	A										
									0	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 103

Region 2201

30 Oct	S05E65	84	30	1	Hax	1	A	4			1	2					
31 Oct	S05E51	85	50	1	Cao	3	B	2			2	1					
01 Nov	S05E37	85	50	2	Cai	5	B	4			8	1					
02 Nov	S05E23	86	50	4	Cai	7	B	2			8						
								12	0	0	19	4	0	0	0	0	0

Still on Disk.

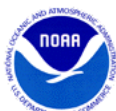
Absolute heliographic longitude: 86

Region 2202

30 Oct	N13E15	134	10	3	Bxo	2	B										
31 Oct	N12E01	134	30	4	Cro	3	B										
01 Nov	N12W11	133	40	6	Cao	6	B										
02 Nov	N12W23	132	50	4	Cao	7	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 134



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares								
	Lat CMD	Lon	Heli 10 ⁻⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical			
									C	M	X	S	1	2	3

Region 2203

01 Nov	N12E08	114	30	3	Cao	4	B								
02 Nov	N12W05	114	150	6	Dao	9	B				2				
								0	0	0	2	0	0	0	0

Still on Disk.

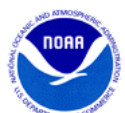
Absolute heliographic longitude: 114

Region 2204

01 Nov	N06E51	71	20	3	Cro	5	B								
02 Nov	N05E39	70	30	4	Cro	5	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 70

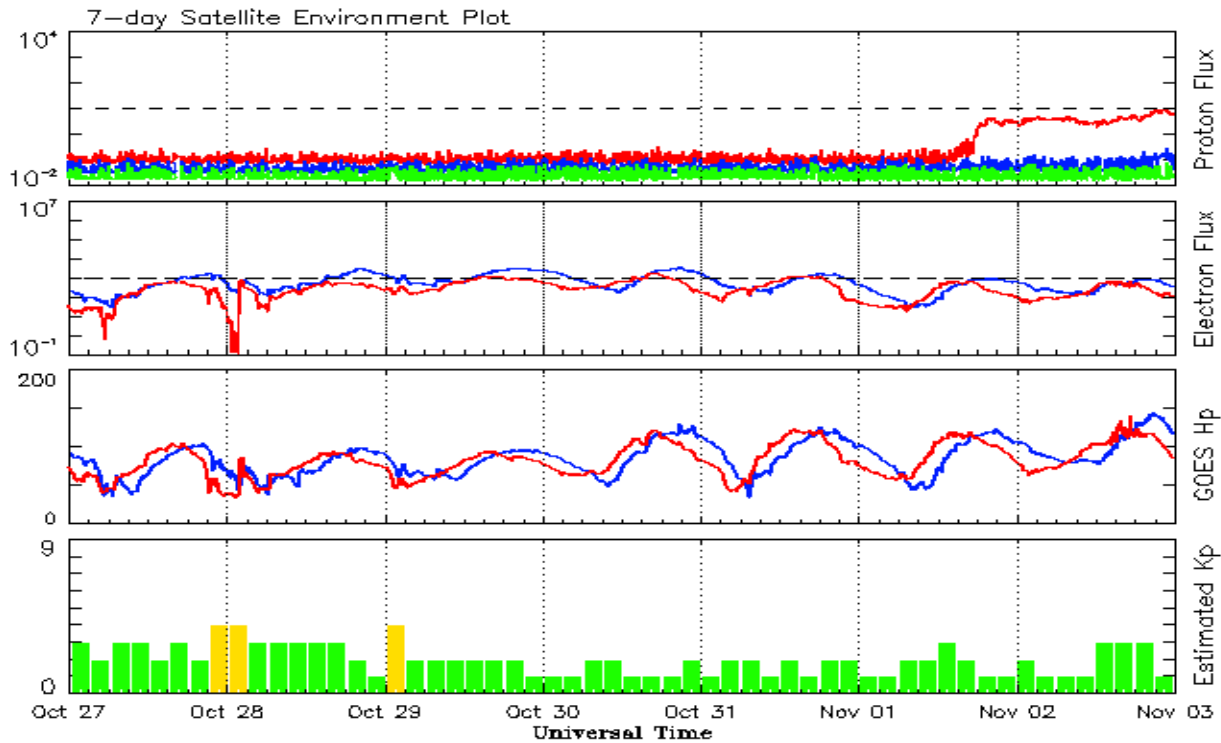


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2012									
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
2013									
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
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	78.4	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	124.8	81.9	144.3	143.5	9	7.5
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	
October	92.0	60.6	0.66			153.7		10	

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 27 October 2014*

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.

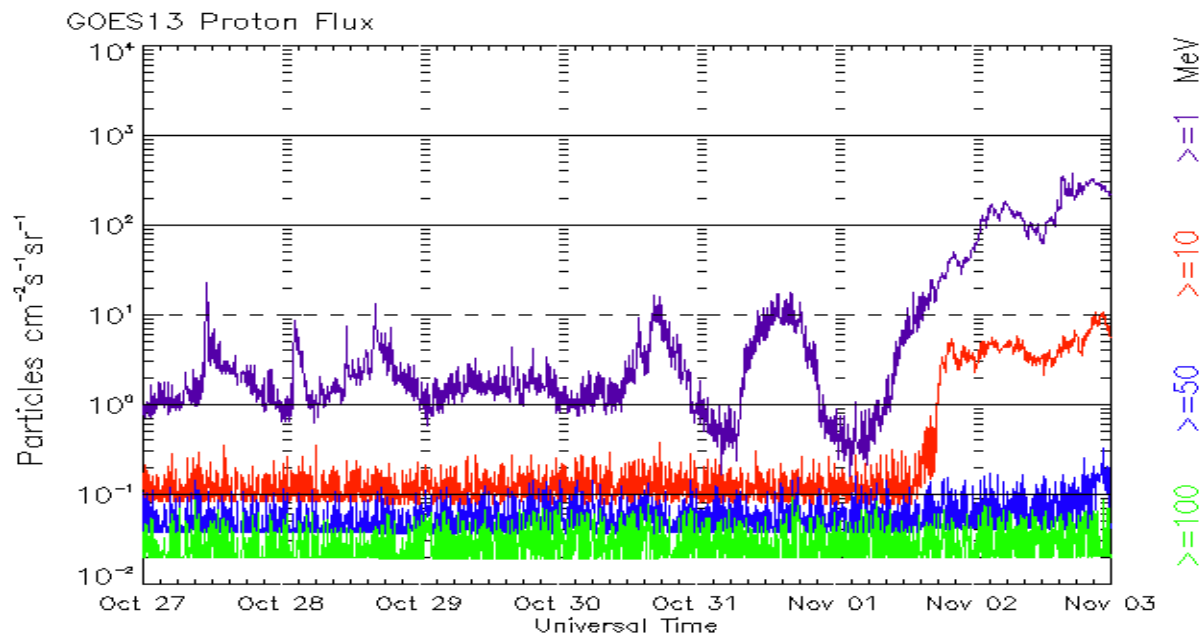
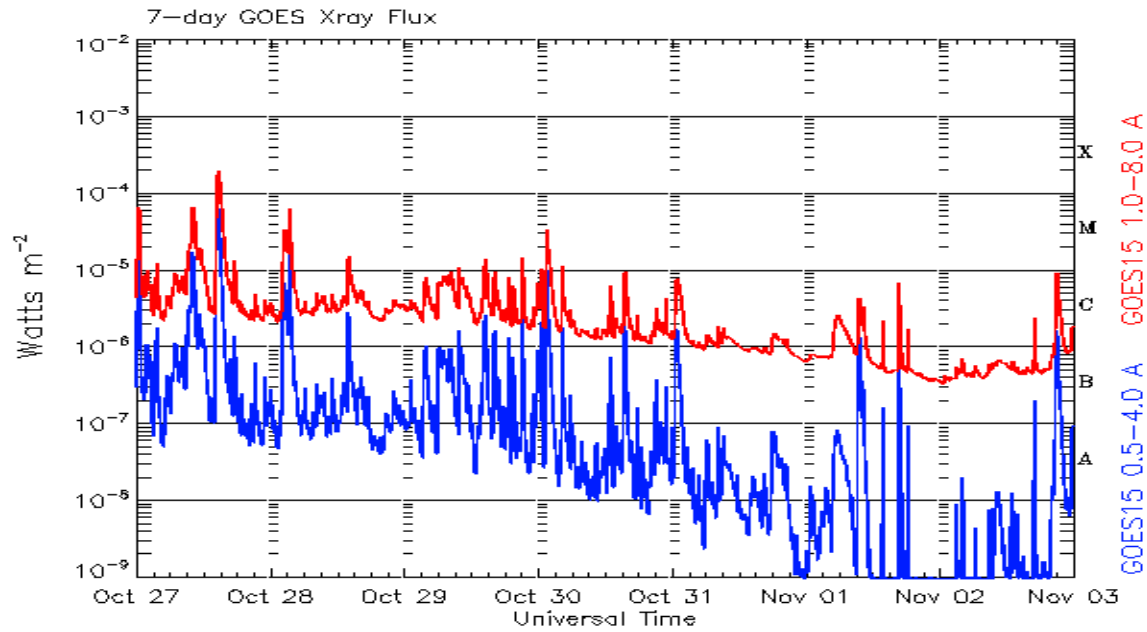
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 27 October 2014

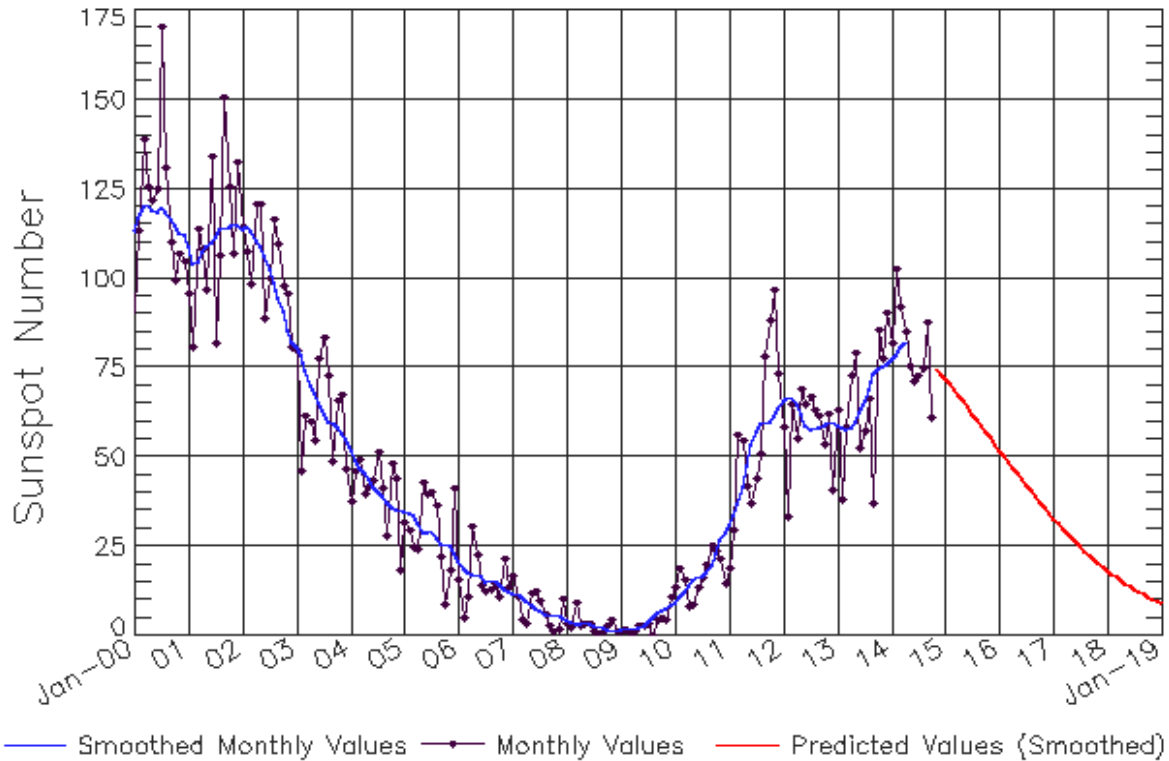
The x-ray plots contains five-minute averages x-ray flux (Watt/ m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pflu = protons/ cm^2 -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 pflu at greater than 10 MeV.



ISES Solar Cycle Sunspot Number Progression

Observed data through Oct 2014



Updated 2014 Nov 3

NOAA/SWPC Boulder, CO USA

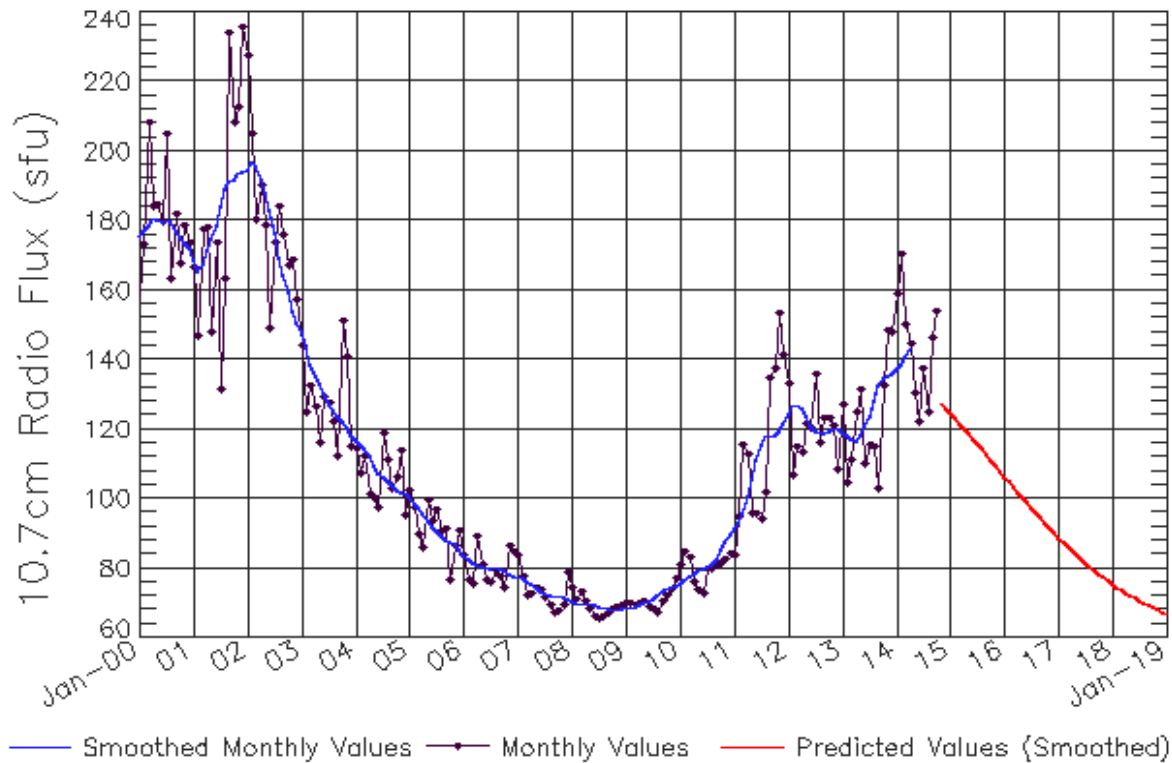
Smoothed Sunspot Number Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	9 (***)	11 (***)	12 (***)	14 (***)	16 (***)	16 (***)	17 (***)	17 (***)	20 (***)	23 (***)	27 (***)	29 (***)
2011	31 (***)	33 (***)	37 (***)	42 (***)	48 (***)	53 (***)	57 (***)	59 (***)	60 (***)	60 (***)	61 (***)	63 (***)
2012	66 (***)	67 (***)	67 (***)	65 (***)	62 (***)	59 (***)	58 (***)	58 (***)	58 (***)	59 (***)	60 (***)	60 (***)
2013	59 (***)	58 (***)	58 (***)	58 (***)	60 (***)	63 (***)	66 (***)	69 (***)	73 (***)	75 (***)	75 (***)	76 (***)
2014	77 (***)	78 (***)	81 (***)	82 (***)	81 (1)	80 (2)	79 (3)	77 (5)	75 (5)	73 (6)	72 (7)	71 (7)
2015	70 (8)	69 (9)	68 (9)	66 (10)	65 (10)	64 (10)	62 (10)	60 (10)	59 (10)	57 (10)	55 (10)	54 (10)
2016	52 (10)	50 (10)	49 (10)	47 (10)	45 (10)	44 (10)	42 (10)	40 (10)	39 (10)	37 (10)	36 (10)	34 (10)
2017	33 (10)	31 (10)	30 (10)	29 (10)	27 (10)	26 (10)	25 (10)	24 (10)	23 (10)	21 (10)	20 (10)	19 (10)
2018	18 (10)	17 (10)	16 (10)	15 (10)	15 (10)	14 (10)	13 (10)	12 (10)	12 (10)	11 (10)	10 (10)	10 (10)
2019	9 (10)	8 (10)	8 (10)	7 (10)	7 (10)	6 (10)	6 (10)	6 (10)	5 (10)	5 (10)	4 (10)	4 (10)



ISES Solar Cycle F10.7cm Radio Flux Progression

Observed data through Oct 2014



Updated 2014 Nov 3

NOAA/SWPC Boulder, CO USA

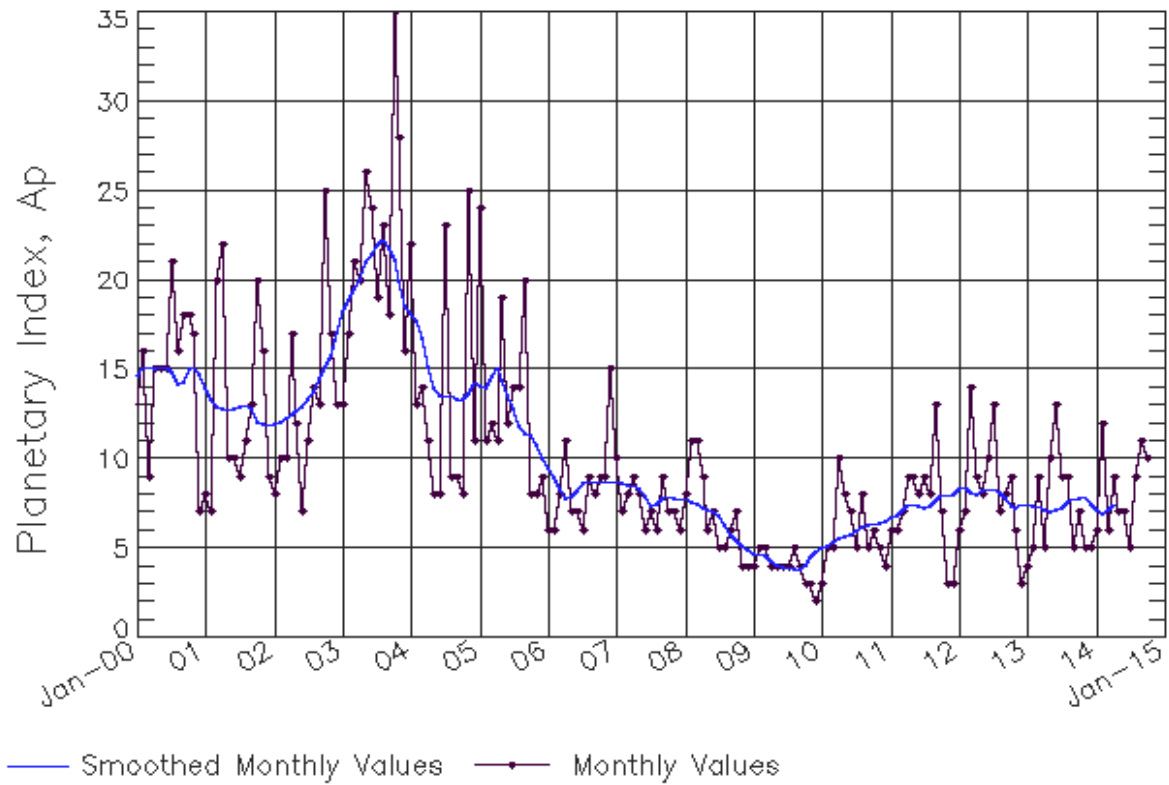
Smoothed F10.7cm Radio Flux Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	76 (**)	77 (**)	78 (**)	78 (**)	79 (**)	80 (**)	80 (**)	81 (**)	82 (**)	85 (**)	88 (**)	90 (**)
2011	91 (**)	93 (**)	96 (**)	100 (**)	106 (**)	111 (**)	115 (**)	118 (**)	118 (**)	118 (**)	120 (**)	122 (**)
2012	124 (**)	127 (**)	127 (**)	126 (**)	124 (**)	121 (**)	120 (**)	119 (**)	119 (**)	119 (**)	120 (**)	120 (**)
2013	119 (**)	118 (**)	117 (**)	117 (**)	118 (**)	121 (**)	124 (**)	128 (**)	132 (**)	135 (**)	135 (**)	136 (**)
2014	137 (**)	139 (**)	141 (**)	144 (**)	144 (1)	142 (1)	140 (2)	136 (3)	133 (4)	131 (4)	129 (5)	129 (6)
2015	128 (7)	126 (8)	124 (8)	121 (9)	119 (9)	117 (9)	116 (9)	114 (9)	113 (9)	111 (9)	110 (9)	108 (9)
2016	106 (9)	105 (9)	103 (9)	102 (9)	100 (9)	99 (9)	97 (9)	96 (9)	94 (9)	93 (9)	92 (9)	90 (9)
2017	89 (9)	88 (9)	86 (9)	85 (9)	84 (9)	83 (9)	82 (9)	80 (9)	79 (9)	78 (9)	77 (9)	76 (9)
2018	75 (9)	75 (9)	74 (9)	73 (9)	72 (9)	71 (9)	71 (9)	70 (9)	69 (9)	69 (9)	68 (9)	67 (9)
2019	67 (9)	66 (9)	66 (9)	65 (9)	65 (9)	65 (9)	64 (9)	64 (9)	63 (9)	63 (9)	63 (9)	63 (9)



ISES Solar Cycle Ap Progression

Observed data through Oct 2014



Updated 2014 Nov 3

NOAA/SWPC Boulder, CO USA

Solar Cycle Comparison charts are temporarily unavailable.



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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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<http://spaceweather.gov/SolarCycle/> -- Solar Cycle Progression web site

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http://spaceweather.gov/weekly/Usr_guide.pdf -- User Guide

