

Solar activity was low all week. On average, seven small and magnetically simple spotted regions were present at any given time during the period. Of these, Region 1363 (S22, Lo=108, class/area=Eki/430 on 04 December) was the most productive, with five C-class flares and 4 optical flares to its credit. It appeared on the disk on 29 November as a small Hsx-alpha group and ended the period as the largest and most magnetically complex (beta-gamma) group on the disk. Despite its size and complexity, Region 1363 did not produce the largest x-ray flare of the week. That honor belongs to Region 1362 (N08, Lo=131, class/area=Eso/220 on 03 December) which produced C4 04/1615Z. The second largest x-ray flare of the period, a C3 from Region 1364 (N18, Lo=105, class/area=Hsx/60 on 30 November) occurred on 30/2028Z. At least one CME was observed each day in coronagraph imagery, mostly attributed to filament eruptions. None of the CMEs had any significant geoeffective component.

The greater than 10 MeV protons at 10 pfu exceeded threshold during the period. The event began at 26/1125Z, reached a maximum flux of 80 pfu at 27/0125Z and ended at 28/0145Z. This event was associated with a filament eruption observed early on 26 November.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels 28 November - 01 December and at moderate levels on 27 November and 02 - 03 December.

The geomagnetic field on 27 November was at quiet to unsettled levels, with isolated high latitude active periods. The disturbed conditions were caused by a CIR in advance of a weak CH HSS. Most of 28 November was quiet. A 45 nT Sudden Impulse at the Boulder magnetometer at 28/2154Z signaled the arrival of a CME from 26 November. Unsettled to minor storm periods followed at all latitudes. Quiet to unsettled levels, with isolated high latitude active periods, returned by midday on 29 November and lasted until early on 03 December. The exception was the latter half of 30 November when a solar sector boundary crossing and prolonged southward IMF Bz triggered minor to major storm periods at high latitudes. Active to minor storm conditions were also observed at high latitudes between 03/0900-1500Z with the passage of a transient feature. The field returned to quiet to unsettled levels for the remainder.

Space Weather Outlook

07 December - 02 January 2012

Solar activity is expected to be at predominately low levels with a chance for isolated M-class activity through 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 normal to moderate levels the entire forecast period

The geomagnetic field is expected to be at mostly quiet to unsettled levels through most of the forecast period. Coronal hole high speed streams are expected to bring active conditions on 14 November and again on 26-29 December.



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
28 November	138	90	350	B5.3	7	0	0	5	1	0	0	0
29 November	141	106	510	B5.1	4	0	0	4	0	0	0	0
30 November	144	111	620	B5.1	5	0	0	4	0	0	0	0
01 December	155	89	540	B5.7	2	0	0	2	0	0	0	0
02 December	157	106	630	B5.8	3	0	0	0	0	0	0	0
03 December	160	138	870	B6.0	2	0	0	3	0	0	0	0
04 December	164	154	960	B5.4	3	0	0	1	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
	28 November	2.4e+07	4.3e+05	2.9e+03		2.8e+06
29 November	1.1e+07	6.4e+04	2.7e+03		1.0e+06	
30 November	1.8e+06	1.6e+04	2.9e+03		8.5e+05	
01 December	3.8e+05	1.7e+04	3.8e+03		1.8e+06	
02 December	2.8e+05	1.4e+04	3.5e+03		4.3e+06	
03 December	3.3e+05	1.2e+04	2.9e+03		3.9e+06	
04 December	2.7e+05	1.3e+04	3.1e+03		1.6e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	28 November	7	0-0-0-0-1-1-1-5	1	0-0-0-0-1-0-0-2	4
29 November	9	3-3-2-2-1-1-3-2	12	3-2-4-4-1-1-2-2	9	3-3-2-2-1-1-3-1
30 November	9	3-1-0-3-3-2-2-2	30	2-0-0-6-5-5-5-2	10	3-0-0-3-3-3-3-2
01 December	7	3-2-2-2-2-1-2-1	10	2-2-2-4-4-0-1-1	7	3-2-2-1-2-2-1-1
02 December	4	1-0-2-1-0-1-2-2	2	0-0-1-0-1-0-1-2	4	1-0-1-0-0-1-3-2
03 December	7	2-0-2-3-1-2-2-2	15	2-0-4-5-3-1-3-1	9	2-1-2-3-1-2-2-3
04 December	4	2-1-1-2-2-1-1-0	6	2-2-2-3-2-2-0-0	4	2-1-1-2-1-1-0-0

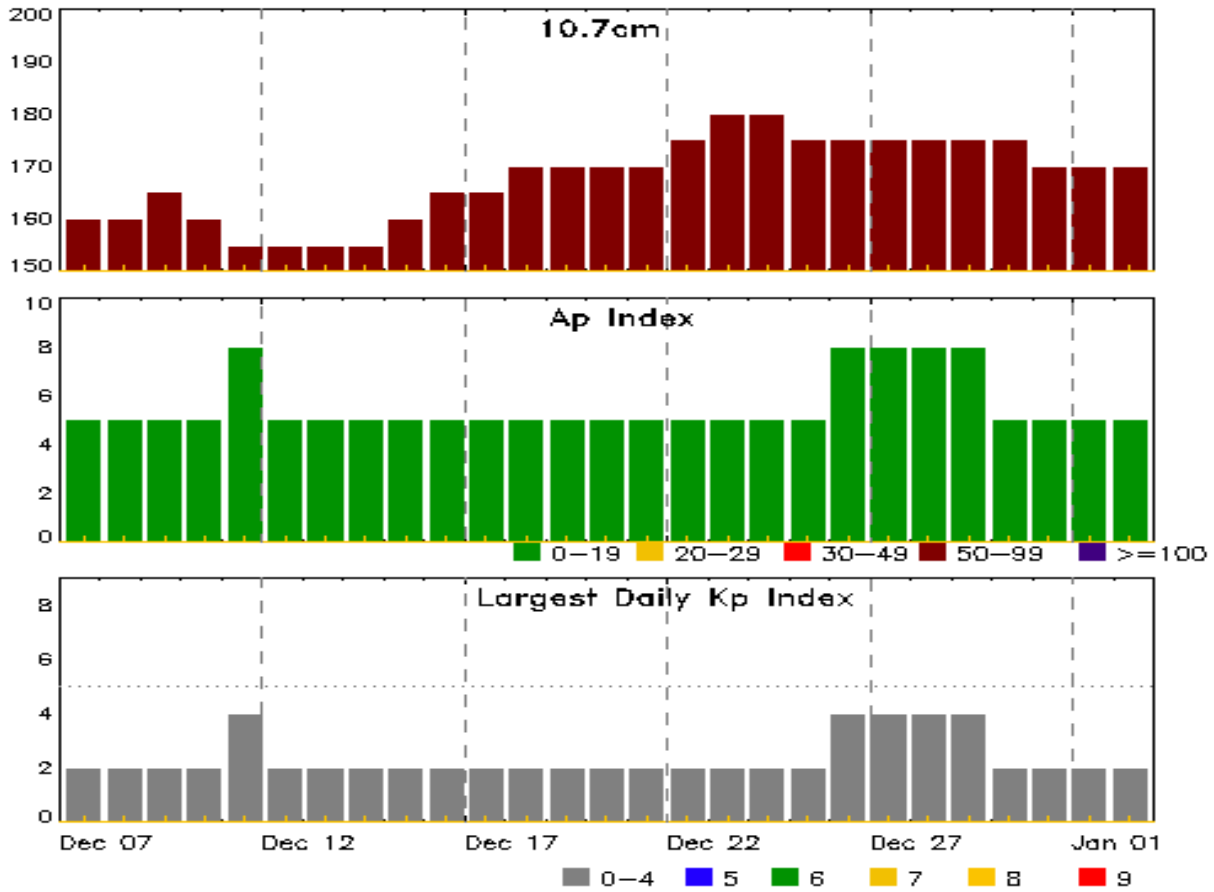


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
28 Nov 0158	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	26/1120 - 28/0400
28 Nov 0438	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	26/1125 - 28/0145
28 Nov 2131	WARNING: Geomagnetic Sudden Impulse expected	28/2150 - 2220
28 Nov 2156	WARNING: Geomagnetic K = 4	28/2156 - 29/0600
28 Nov 2158	ALERT: Geomagnetic K = 4	28/2157
28 Nov 2204	SUMMARY: Geomagnetic Sudden Impulse	28/2154
30 Nov 1104	WARNING: Geomagnetic K = 4	30/1100 - 1800
30 Nov 1330	ALERT: Geomagnetic K = 4	30/1327
30 Nov 1758	EXTENDED WARNING: Geomagnetic K = 4	30/1100 - 01/0000
03 Dec 0025	WARNING: Geomagnetic K = 4	03/0130 - 0600



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
07 Dec	160	5	2	21 Dec	170	5	2
08	160	5	2	22	175	5	2
09	165	5	2	23	180	5	2
10	160	5	2	24	180	5	2
11	155	8	4	25	175	5	2
12	155	5	2	26	175	8	4
13	155	5	2	27	175	8	4
14	155	5	2	28	175	8	4
15	160	5	2	29	175	8	4
16	165	5	2	30	175	5	2
17	165	5	2	31	170	5	2
18	170	5	2	01 Jan	170	5	2
19	170	5	2	02	170	5	2
20	170	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				
28 Nov	0005	0012	0018	C1.0			
28 Nov	0038	0038	0041		SF	N09E76	1362
28 Nov	0113	0117	0129	B8.7	1F	N09E75	1362
28 Nov	0304	0311	0318	C1.5			
28 Nov	1320	1326	1332	C2.2			
28 Nov	1412	1415	1418	B9.8			
28 Nov	1456	1500	1507	C1.2			
28 Nov	1822	1830	1839	C3.2	SF	N19E26	1361
28 Nov	2141	2147	2153	C1.2	SF	N20W25	1356
28 Nov	2256	2309	2322	C1.4	SF	N07E64	1362
28 Nov	2354	2356	0003		SF	N09E60	1362
29 Nov	0111	0115	0125	C1.1	SF	N19W44	1356
29 Nov	0325	0332	0341	C2.1	SN	N19E20	1361
29 Nov	0854	0900	0906	C2.5	SF	N08E54	1362
29 Nov	1542	1546	1548	B9.6			1362
29 Nov	1829	1830	1835		SF	N09E52	1362
29 Nov	2157	2200	2203	B8.0			1363
29 Nov	2222	2226	2229	C1.1			1363
30 Nov	0004	0011	0014	C2.0	SF	S23E66	1363
30 Nov	0154	0210	0218	C1.2			1362
30 Nov	0911	0917	0934	C1.1			1363
30 Nov	0958	1009	1012		SF	S18E64	1363
30 Nov	2020	2028	2039	C3.8	SF	N20E66	1364
30 Nov	2153	2232	2248	C3.6	SF	N13W62	1356
01 Dec	1038	1045	1117	C1.4			
01 Dec	1901	1902	1908		SF	N15W82	1356
01 Dec	2027	2032	2037	C1.1	SF	N17W17	1361
02 Dec	0401	0404	0406	B9.6			
02 Dec	0444	0453	0503	C1.2			
02 Dec	1006	1016	1020	C1.1			
02 Dec	2200	2205	2210	C1.7			



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
03 Dec	0548	0552	0557	C1.2	SF	S24E27		1363
03 Dec	1651	1651	1654		SF	S23E27		1363
03 Dec	2115	2119	2124	C1.3				1363
03 Dec	2308	2310	2313		SF	N20E03		1365
04 Dec	0311	0313	0317		SF	N20W64		1358
04 Dec	0830	0837	0845	C1.2				
04 Dec	1605	1615	1622	C4.8				1362
04 Dec	1937	1949	2003	C1.3				1367



Region Summary

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																				
21 Nov	N25W25	310	plage																				
22 Nov	N25W39	311	plage																				
23 Nov	N25W53	311	plage																				
24 Nov	N25W67	312	plage																				
25 Nov	N25W81	313	plage																				
													0	0	0	0	0	0	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 308

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																
21 Nov	S24W00	284	70	3	Cso	3	B						1										
22 Nov	S25W13	285	70	3	Cso	4	B																
23 Nov	S25W27	285	60	2	Hsx	1	A																
24 Nov	S26W39	284	70	3	Hsx	1	A																
25 Nov	S24W52	283	30	1	Hsx	1	A																
26 Nov	S23W65	283	40	1	Hsx	1	A																
27 Nov	S23W77	283	40		Hsx	1	A																
													1	0	0	3	0	0	0	0	0		

Died on Disk.
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 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											
21 Nov	N07E17	268	20	1	Cro	3	B											
22 Nov	N08E05	267	10	3	Axx	1	A											
23 Nov	N08W10	267	10	2	Axx	2	A											
24 Nov	N07W23	267	10	2	Axx	1	A											
25 Nov	N08W35	266	10	2	Hsx	1	A											
26 Nov	N08W49	267	20	2	Cro	2	B	1										
27 Nov	N08W62	267	10		Cro	3	B											
28 Nov	N08W76	269	plage															
29 Nov	N08W90	269	plage															
								2	0	0		2	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 267

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					
21 Nov	S16E17	268	80	8	Dso	7	BG	1										
22 Nov	S17E05	267	50	4	Cao	10	B	1				1						
23 Nov	S17W09	267	40	4	Cso	7	B											
24 Nov	S17W23	268	40	4	Dao	8	B											
25 Nov	S15W36	267	25	6	Cso	5	B											
26 Nov	S16W50	268	0		Axx	1	A	1										
27 Nov	S16W64	270	plage															
28 Nov	S16W78	271	plage															
								13	0	0		9	2	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 267



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 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										
21 Nov	N15E32	253	140	4	Cao	5	B										
22 Nov	N14E19	253	130	4	Dso	12	B										
23 Nov	N14E06	252	100	4	Cso	10	B										
24 Nov	N10W06	250	120	7	Cso	12	B										
25 Nov	N14W20	251	80	2	Hsx	2	A										
26 Nov	N14W34	252	80	2	Hsx	1	A										
27 Nov	N14W47	252	70	2	Hsx	3	A										
28 Nov	N14W60	252	50	2	Hsx	1	A										
29 Nov	N14W73	251	40	1	Hsx	1	A										
30 Nov	N15W87	252	60	2	Hsx	1	A										
								1	0	0	4	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 252

Region 1356																	
19 Nov	N14E81	229	60	5	Hsx	1	A										
20 Nov	N14E63	234	110	2	Hsx	1	A	1				1					
21 Nov	N15E55	230	400	11	Ehc	6	B	1				3					
22 Nov	N15E42	230	340	17	Fki	9	BG	7				10					
23 Nov	N15E28	230	300	13	Eao	11	BG	1				3					
24 Nov	N15E16	229	310	13	Ehi	16	BG										
25 Nov	N16E03	228	220	14	Esi	23	B	1									
26 Nov	N16W10	228	190	12	Eso	5	B										
27 Nov	N16W23	228	170	13	Eso	7	B	1				2					
28 Nov	N16W38	228	80	12	Eso	3	B	1				1					
29 Nov	N16W50	228	80	12	Eso	4	B	1				1					
30 Nov	N17W62	227	60	11	Eso	4	B	1				1					
01 Dec	N17W76	229	50	11	Cso	3	B					1					
								15	0	0	23	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 228



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 1357																
20 Nov	N17W18	316	20	5	Dro	5	B	1			1					
21 Nov	N17W30	315	20	7	Cro	4	B									
22 Nov	N17W41	313	40	6	Cao	10	B									
23 Nov	N18W55	313	40	6	Dso	8	B	1			2					
24 Nov	N17W68	313	60	7	Dai	7	B	1								
25 Nov	N18W83	314	60	7	Dso	6	B				1					
								3	0	0	4	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 316

Region 1358																
22 Nov	N20E80	192	50	1	Hsx	1	A									
23 Nov	N19E63	195	90	2	Hsx	1	A	1			1					
24 Nov	N19E53	192	120	8	Dsi	7	B									
25 Nov	N20E41	190	170	11	Eai	19	B				3					
26 Nov	N20E28	190	220	11	Eao	9	B	1			1					
27 Nov	N20E15	190	210	11	Eai	16	B	1			1					
28 Nov	N20W00	192	80	7	Dso	9	B									
29 Nov	N20W12	190	130	9	Dsi	12	B									
30 Nov	N22W24	189	120	10	Cso	8	B									
01 Dec	N21W38	190	90	11	Cso	3	B									
02 Dec	N20W54	193	90	5	Cso	3	B									
03 Dec	N19W68	194	50	3	Cso	3	B									
04 Dec	N20W82	195	40	1	Cso	3	B				1					
								3	0	0	7	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 192

Region 1359																
24 Nov	N16W52	297	20	4	Cao	7	B				1					
25 Nov	N16W65	296	50	6	Dao	7	B	2			1	1				
26 Nov	N17W79	297	10	7	Cao	2	B									
								2	0	0	2	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 297



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 1360																	
25 Nov	N17E17	213	50	2	Cao	6	B										
26 Nov	N17E03	215	20	4	Cro	4	B										
27 Nov	N17W10	215	10	5	Cro	3	B										
28 Nov	N17W32	215	30	3	Dso	3	B										
29 Nov	N17W45	223	plage														
30 Nov	N17W59	225	plage														
01 Dec	N17W73	226	plage														
02 Dec	N17W87	227	plage														
								0	0	0	0	0	0	0	0	0	0

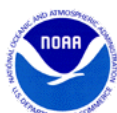
Crossed West Limb.
 Absolute heliographic longitude: 215

Region 1361																	
25 Nov	N19E59	172	5		Axx	1	A										
26 Nov	N19E46	172	10	3	Cao	2	B										
27 Nov	N19E34	171	30	2	Dao	7	B					1					
28 Nov	N18E21	171	40	4	Dso	5	B	1				1					
29 Nov	N18E07	171	80	5	Dso	9	BG	1				1					
30 Nov	N18W06	171	80	8	Dsi	17	B										
01 Dec	N19W18	170	60	8	Dsi	7	B	1				1					
02 Dec	N20W32	171	60	6	Dso	7	B										
03 Dec	N19W45	171	90	8	Dai	11	B										
04 Dec	N19W58	171	60	7	Dao	7	B										
								3	0	0	4	0	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 171

Region 1362																	
27 Nov	N08E76	130	90	2	Cso	3	B					2					
28 Nov	N07E60	132	70	8	Cao	9	B	1				3	1				
29 Nov	N08E49	129	110	8	Dso	8	B	1				2					
30 Nov	N07E36	129	130	7	Dsi	7	B	1									
01 Dec	N08E22	130	180	9	Dai	10	B										
02 Dec	N08E08	130	170	10	Dsi	12	B										
03 Dec	N08W06	131	220	11	Eso	16	B										
04 Dec	N08W18	131	180	11	Eso	17	B	1									
								4	0	0	7	1	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 131



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 1363																							
29 Nov	S18E67	111	40	2	Hsx	1	A	1															
30 Nov	S19E55	111	110	6	Dso	3	B	2				2											
01 Dec	S20E42	110	120	8	Dsi	5	B																
02 Dec	S20E29	110	250	11	Ehi	15	B																
03 Dec	S22E16	109	330	11	Ehi	29	BG	2				2											
04 Dec	S21E04	108	430	11	Eki	30	BGD																
								5	0	0		4	0	0	0	0	0	0	0	0	0		

Still on Disk.
Absolute heliographic longitude: 108

Region 1364																							
29 Nov	N17E73	106	30	2	Hsx	1	A																
30 Nov	N18E60	105	60	2	Hsx	1	A	1				1											
01 Dec	N18E48	104	40	2	Hsx	1	A																
02 Dec	N19E34	104	40	2	Cso	4	B																
03 Dec	N18E20	105	60	2	Cso	1	B																
04 Dec	N18E08	105	50	1	Hsx	1	A																
								1	0	0		1	0	0	0	0	0	0	0	0	0		

Still on Disk.
Absolute heliographic longitude: 105

Region 1365																							
02 Dec	N20E13	125	20	2	Cso	5	B																
03 Dec	N20E01	124	60	5	Dai	7	B					1											
04 Dec	N20W12	125	120	7	Dai	12	B																
								0	0	0		1	0	0	0	0	0	0	0	0	0		

Still on Disk.
Absolute heliographic longitude: 124

Region 1366																							
03 Dec	N17E65	60	60	2	Hsx	1	A																
04 Dec	N17E51	61	80	2	Hsx	1	A																
								0	0	0		0	0	0	0	0	0	0	0	0	0		

Still on Disk.
Absolute heliographic longitude: 61



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 1367

04 Dec	S18E36	77	0	Bxo	3	B	1	1	0	0	0	0	0	0	0	0
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Still on Disk.

Absolute heliographic longitude: 77

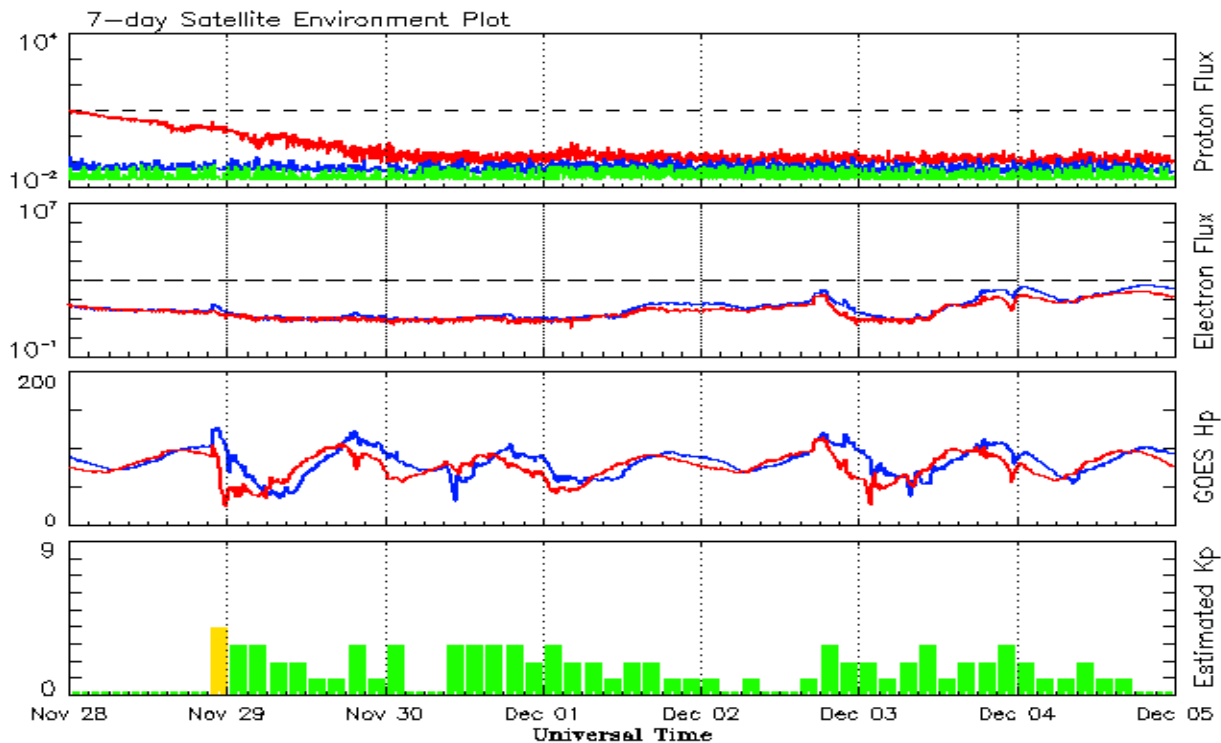


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
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	69.0	47.6	95.9	105.6	9	7.5
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	
November	133.1	96.7	0.73			153.1		4	

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 28 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.

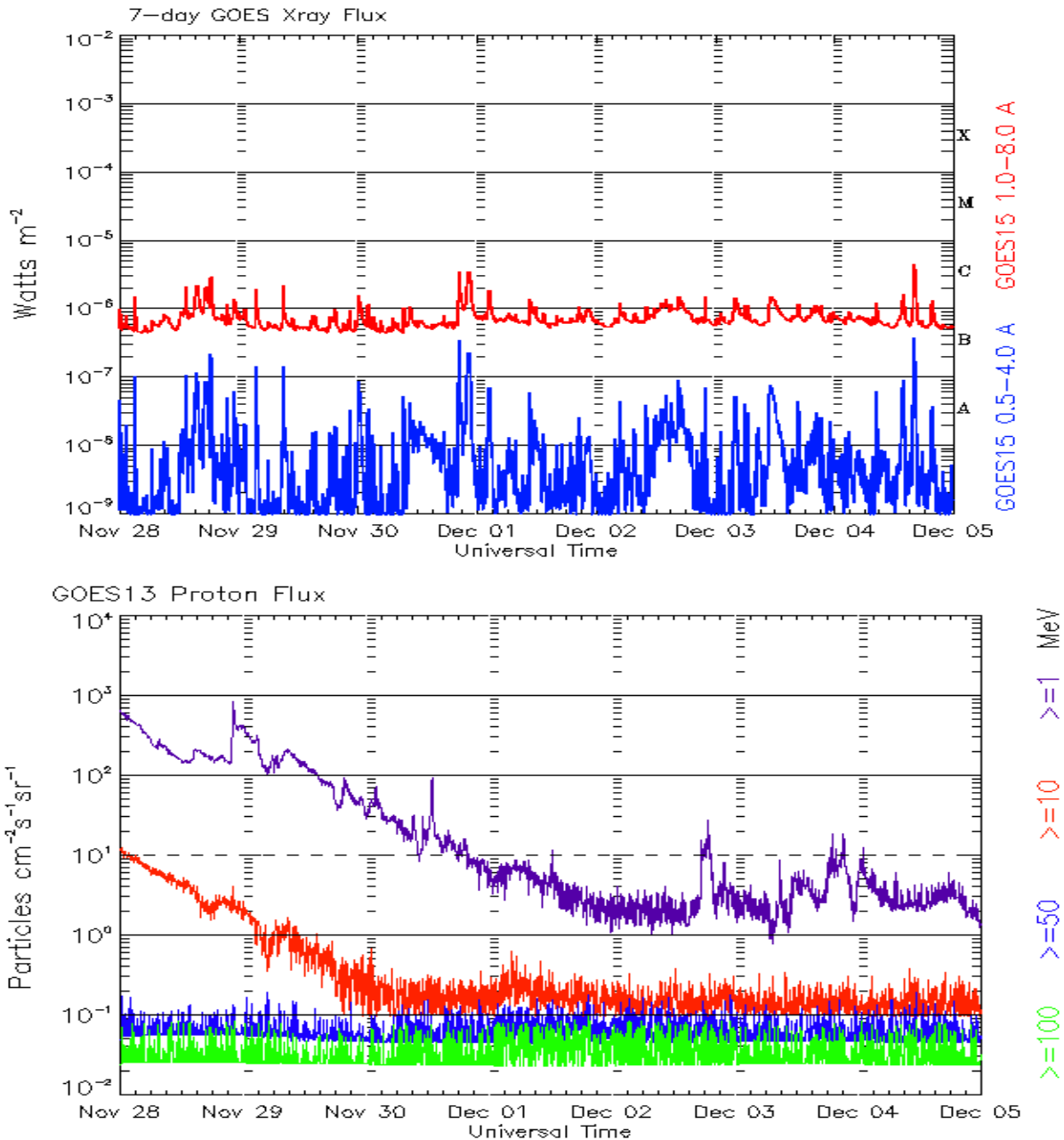
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 28 November 2011*

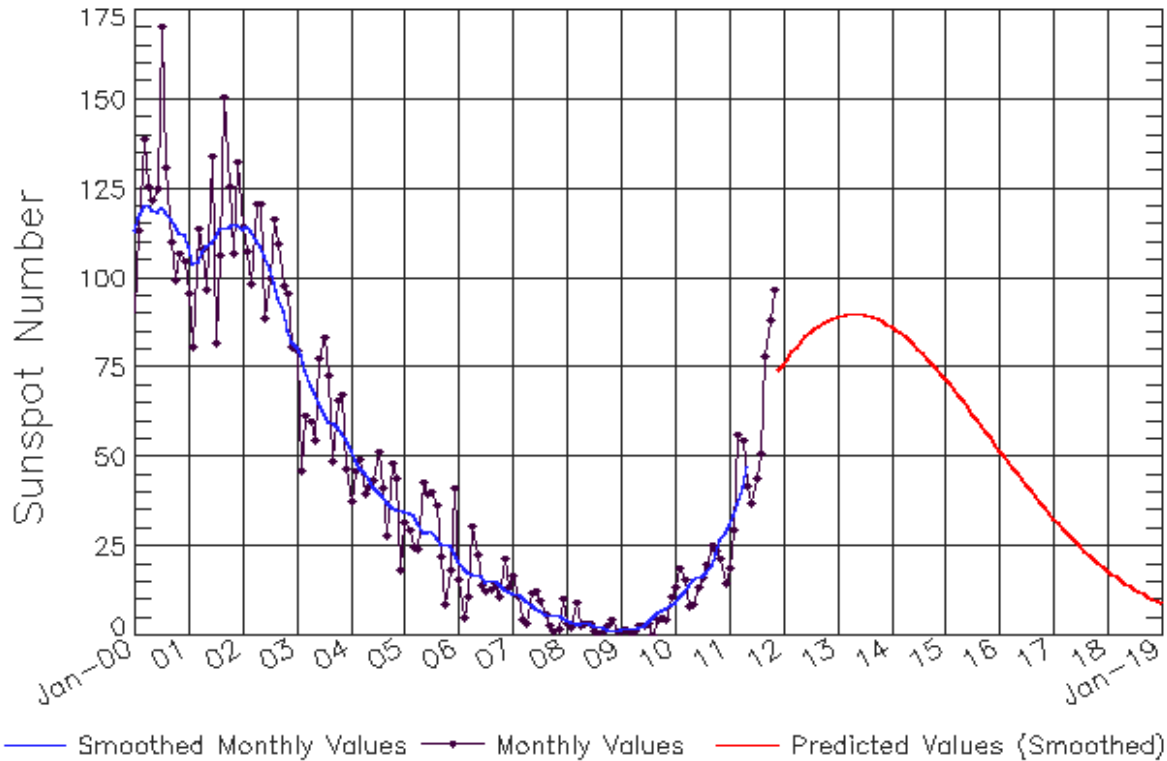
The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged 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.



ISES Solar Cycle Sunspot Number Progression

Observed data through Nov 2011



Updated 2011 Dec 6

NOAA/SWPC Boulder, CO USA

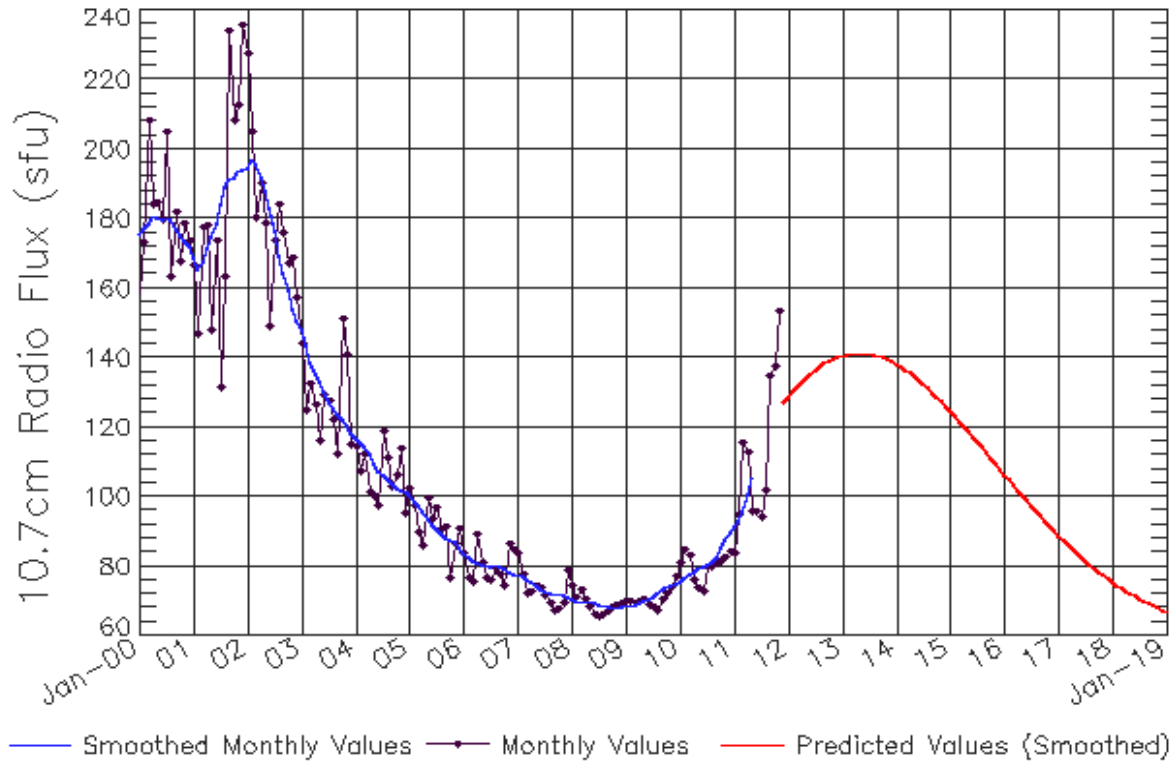
Smoothed Sunspot Number Prediction

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 (1)	58 (2)	63 (3)	65 (5)	68 (5)	70 (6)	74 (7)
2012	78 (7)	81 (8)	83 (9)	83 (9)	83 (10)	84 (10)	85 (10)	86 (10)	87 (10)	88 (10)	88 (10)	89 (10)
2013	89 (10)	90 (10)	90 (10)	90 (10)	90 (10)	90 (10)	90 (10)	89 (10)	89 (10)	89 (10)	88 (10)	87 (10)
2014	86 (10)	86 (10)	85 (10)	84 (10)	83 (10)	81 (10)	80 (10)	79 (10)	78 (10)	76 (10)	75 (10)	73 (10)
2015	72 (10)	70 (10)	69 (10)	67 (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 Nov 2011



Updated 2011 Dec 6

NOAA/SWPC Boulder, CO USA

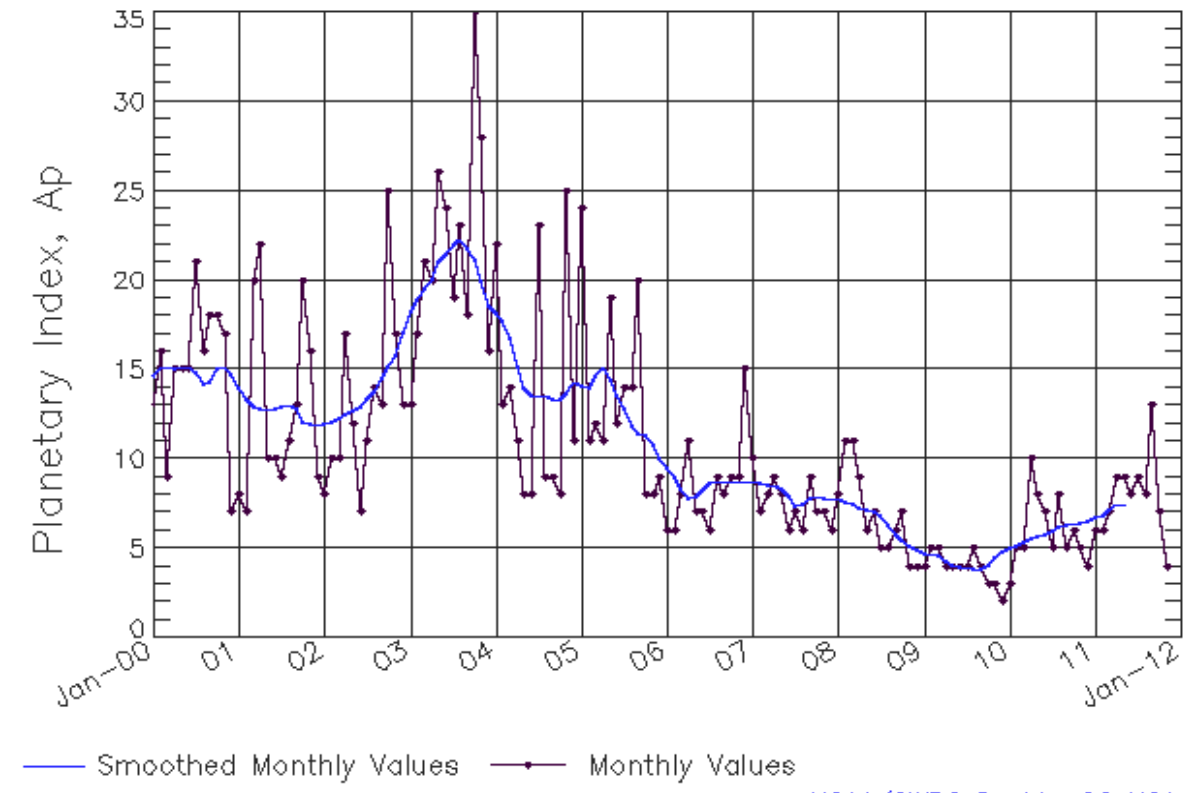
Smoothed F10.7cm Radio Flux Prediction

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 (***)	110 (1)	114 (1)	117 (2)	120 (3)	121 (4)	123 (4)	127 (5)
2012	130 (6)	133 (7)	135 (8)	135 (8)	135 (9)	135 (9)	136 (9)	137 (9)	138 (9)	139 (9)	140 (9)	140 (9)
2013	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	140 (9)	140 (9)	139 (9)	139 (9)
2014	138 (9)	137 (9)	136 (9)	136 (9)	135 (9)	134 (9)	132 (9)	131 (9)	130 (9)	129 (9)	127 (9)	126 (9)
2015	125 (9)	123 (9)	122 (9)	120 (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 Nov 2011



Updated 2011 Dec 6

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

The Weekly has been published continuously since 1951 and is available online since 1997.

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<http://spaceweather.gov/ftpmenu/> -- Some content as ascii text

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

<http://spaceweather.gov/contacts.html> -- Contact and Copyright information

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

