

Space Weather Highlights
27 August - 02 September 2012

SWPC PRF 1931
03 September 2012

Solar activity was very low 27 and 28 August. Moderate activity was observed on 30 August as Region 1563 (S25, L=078, class/area Dso/70 on 01 September) produced the largest flare of the period, an M1 at 30/1211 UTC. Solar activity was at low levels for the remainder of the period. A C8/2f flare associated with a filament eruption in the southeast quadrant of the solar disk occurred at 31/2043 UTC. An associated CME was observed on SOHO/LASCO and STEREO A/B coronagraphs with a possible Earth-directed trajectory. Two other CMEs were observed on 02 September in STEREO A COR2 imagery beginning at 02/0409 UTC and 02/1109 UTC with potential Earth-directed components.

A greater than 10 MeV proton event (category S1-Minor) associated with the filament eruption on 31 August, began at 01/1335 UTC, reached a maximum of 60 pfu at 02/0850 UTC, and is currently above threshold.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate levels on 27 August. Levels increased to high from 28 through 31 August. Moderate levels were observed for the remainder of the period.

Geomagnetic field activity was mostly quiet from 27 August through 01 September. Activity increased on 02 September with unsettled to active conditions observed due to an extended period of negative Bz.

Space Weather Outlook
03 September - 29 September 2012

Solar activity is expected to be at very low to low levels with a slight chance for M-class activity through the forecast period.

The greater than 10 MeV proton event currently in progress is expected to remain above the 10 pfu threshold 03-04 September with a additional enhancements possible with CME arrivals.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate or lower levels from 03-16 September, 21-23 September, and 27-29 September. High levels are forecast 17-20 September and 24-26 September due to coronal hole (CH) effects.

Geomagnetic field activity is expected to be as high as minor storm (G1) conditions on 03 September with anticipated effects from the 31 August CME. Residual elevated conditions ranging from unsettled to minor storm levels are expected to persist from 03-06 September due to continued transient activity in conjunction with possible CH effects. Mostly quiet conditions are expected from 08 September through 29 September with the exception of two CH periods; 14-16 September and 20-23 September, which should see unsettled to active periods.



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 August	112	85	580	B2.3	0	0	0	2	0	0	0	0
28 August	111	73	340	B2.2	0	0	0	3	0	0	0	0
29 August	118	95	360	B3.4	3	0	0	4	0	0	0	0
30 August	128	118	370	B6.7	11	1	0	20	0	0	0	0
31 August	131	144	730	B7.8	8	0	0	14	0	1	0	0
01 September	146	120	740	B9.8	5	0	0	24	1	0	0	0
02 September	142	108	640	B8.2	5	0	0	17	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 August	6.0e+05	1.1e+04	2.6e+03		4.5e+07
28 August	3.6e+05	1.2e+04	2.9e+03		5.3e+07	
29 August	8.0e+05	1.1e+04	2.5e+03		6.3e+07	
30 August	1.3e+06	1.1e+04	2.7e+03		6.7e+07	
31 August	1.6e+06	1.1e+04	2.8e+03		7.2e+07	
01 September	2.2e+07	1.1e+06	3.0e+03		2.0e+07	
02 September	9.9e+07	2.3e+06	3.0e+03		1.3e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	27 August	7	1-3-2-1-2-2-1-2	4	2-2-2-2-0-0-1-1	7
28 August	3	1-0-0-2-2-1-1-0	1	1-0-0-1-1-0-0-0	4	1-1-0-1-1-1-1-1
29 August	5	0-2-1-2-3-0-1-1	1	0-1-0-1-0-1-0-0	4	1-2-1-1-1-1-1-1
30 August	4	0-0-1-1-3-1-1-1	1	0-0-0-0-0-0-1-1	4	1-1-1-1-1-1-1-1
31 August	3	0-0-1-1-2-1-2-0	0	0-0-0-0-1-0-0-0	3	0-0-1-1-1-1-1-1
01 September	8	1-2-3-2-3-2-2-1	7	0-0-2-0-0-1-3-1	7	1-2-2-2-2-2-1-2
02 September	14	3-2-3-3-3-2-2-4	48	2-5-6-5-5-6-5-4	12	2-3-3-2-2-3-3-4

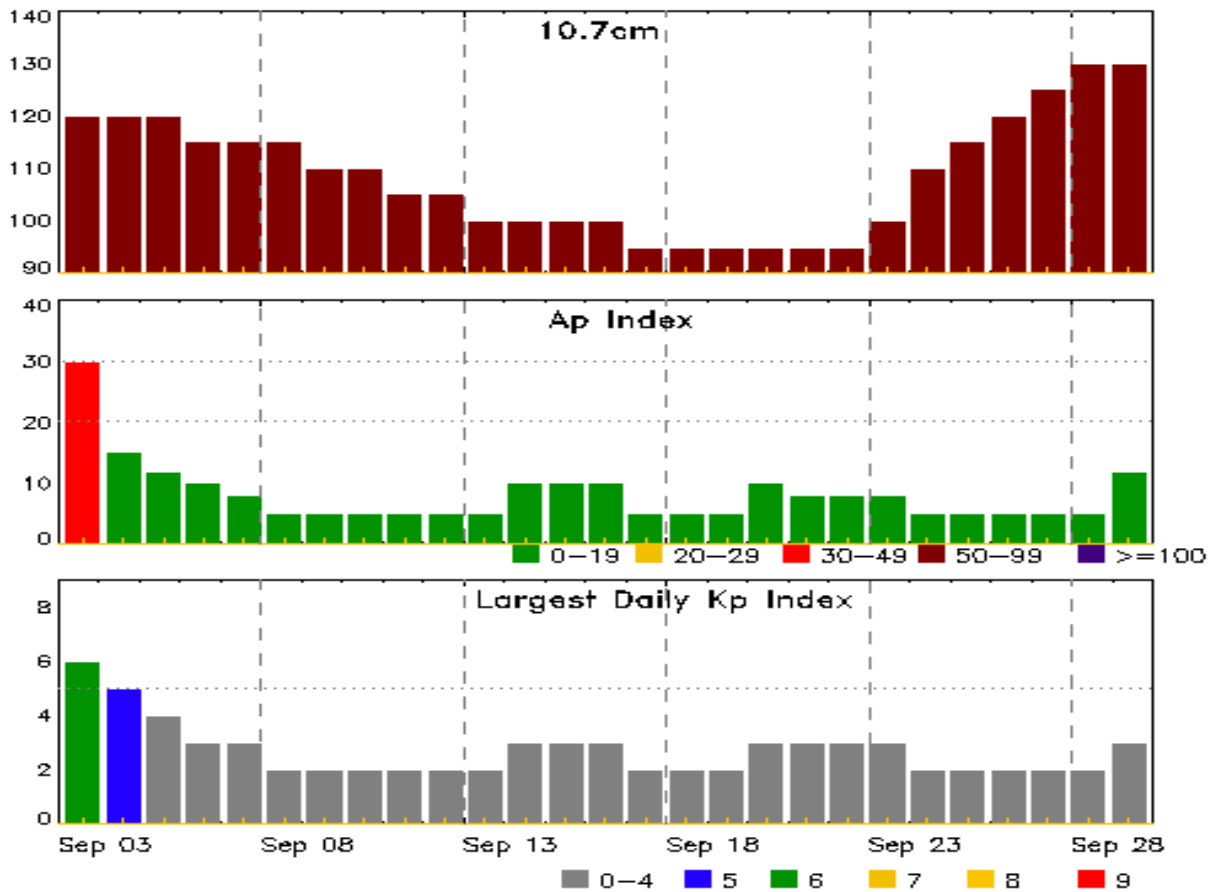


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
27 Aug 0855	EXTENDED WARNING: Geomagnetic K = 4	26/1158 - 27/1900
27 Aug 1443	WARNING: Geomagnetic K \geq 7	27/1443 - 1500
27 Aug 1445	CANCELLATION: Geomagnetic K \geq 7	
28 Aug 1550	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/1535
29 Aug 1401	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/1535
30 Aug 1307	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/1535
31 Aug 1351	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/1535
31 Aug 2101	ALERT: Type II Radio Emission	31/1947
31 Aug 2102	ALERT: Type IV Radio Emission	31/1947
01 Sep 1151	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	01/1152 - 02/0300
01 Sep 1349	ALERT: Proton Event 10MeV Integral Flux \geq 10pfu	01/1335
01 Sep 1536	WATCH: Geomagnetic Storm Category G2 predicted	
02 Sep 0255	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	01/1152 - 02/1800
02 Sep 0824	ALERT: Type IV Radio Emission	02/0435
02 Sep 1755	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	01/1152 - 03/1800
02 Sep 1933	WARNING: Geomagnetic K = 4	02/1935 - 03/0300
02 Sep 2306	ALERT: Geomagnetic K = 4	02/2305



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 Sep	120	30	6	17 Sep	95	5	2
04	120	15	5	18	95	5	2
05	120	12	4	19	95	5	2
06	115	10	3	20	95	10	3
07	115	8	3	21	95	8	3
08	115	5	2	22	95	8	3
09	110	5	2	23	100	8	3
10	110	5	2	24	110	5	2
11	105	5	2	25	115	5	2
12	105	5	2	26	120	5	2
13	100	5	2	27	125	5	2
14	100	10	3	28	130	5	2
15	100	10	3	29	130	12	3
16	100	10	3				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
30 Aug	1202	1211	1214	M1.3	0.004			1563				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical Location Lat CMD	Rgn #
	Begin	Max	End				
27 Aug	0005	0018	0021	B5.5			1558
27 Aug	0055	0102	0108	B9.1			
27 Aug	0509	0509	0515		SF	N11E65	
27 Aug	0605	0612	0622	B7.8	SF	N17W17	1554
27 Aug	0816	0821	0824	B9.8			1558
27 Aug	0954	1018	1038	B7.5			1556
27 Aug	1519	1522	1525	B4.1			1558
27 Aug	1613	1617	1619	B5.6			1558
27 Aug	1752	1756	1802	B4.8			1558
27 Aug	1911	1915	1917	B3.7			1555
28 Aug	0011	0016	0018	B3.9			
28 Aug	0303	0307	0309	B6.3	SF	N12E73	1558
28 Aug	0315	0319	0321	B4.8			1558
28 Aug	0541	0544	0549		SF	N15E75	
28 Aug	1810	1814	1818	B5.4			1554
28 Aug	1955	1958	2009	B3.9			1555
28 Aug	2104	2110	2116	B9.5	SF	N08E34	1555
28 Aug	2204	2207	2216	B4.3			
28 Aug	2243	2248	2305	B6.4			1555
28 Aug	2350	2354	2358	B8.3			1555
29 Aug	0919	0944	0952	B8.2			1554
29 Aug	1152	1205	1213	B6.6			
29 Aug	1342	1354	1401	C1.0			
29 Aug	B1630	1635	1639		SF	N14W48	1554
29 Aug	1923	1930	1937	B7.9	SF	N10E19	1555
29 Aug	1949	1958	2003	C4.0			1563
29 Aug	2146	2147	2152		SF	N15W51	1554
29 Aug	2334	2334	2339		SF	N15W52	1554
29 Aug	2340	2344	2347	C1.1			1553
30 Aug	0137	0152	0158	C3.4			1554



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
30 Aug	0216	0234	0245	C4.0			
30 Aug	0326	0327	0336		SF	N16W55	1554
30 Aug	0347	0404	0421		SF	N16W55	1554
30 Aug	0431	0432	0449	B9.8	SF	N16W55	1554
30 Aug	0448	0453	0459	C1.5			1563
30 Aug	0505	0507	0512		SF	N16W56	1554
30 Aug	0514	0518	0523		SF	N16W56	1554
30 Aug	0530	0531	0533		SF	N16W56	1554
30 Aug	0603	0610	0636	C1.3	SF	S25E67	
30 Aug	0702	0702	0706		SF	N16W57	1554
30 Aug	0812	0823	0830	C1.6	SF	S23E81	1563
30 Aug	0831	0912	0916	C7.6	SF	N14W58	1554
30 Aug	0909	0910	0914		SF	S24E84	1554
30 Aug	1202	1211	1214	M1.3			1563
30 Aug	1314	1315	1318		SF	S25E72	
30 Aug	1359	1400	1406		SF	N12W60	1554
30 Aug	1424	1424	1429		SF	S23E77	
30 Aug	1546	1549	1559		SF	N12E09	1555
30 Aug	1749	1749	1751		SF	S25E77	
30 Aug	1859	1903	1906	C1.6	SF	S26E78	
30 Aug	1914	1920	1927	C2.0			
30 Aug	1943	1945	1946		SF	S26E77	
30 Aug	1949	1958	2011	C2.6			
30 Aug	2035	2039	2045	C1.6			
30 Aug	2130	2131	2146	C3.8	SF	S25E74	1563
30 Aug	2314	2314	2317		SF	N03E25	1560
31 Aug	0027	0029	0033		SF	N15W69	1554
31 Aug	0035	0038	0046		SF	N15W69	1554
31 Aug	0055	0057	0101		SF	N15W66	1554
31 Aug	0310	0312	0315		SF	N15W70	1554
31 Aug	0408	0412	0416	C1.5	SF	N03E20	1560
31 Aug	0432	0433	0444		SF	S26E67	1563
31 Aug	0446	0451	0455	C1.7	SF	S26E67	1563
31 Aug	0507	0513	0519		SF	S22E66	1563
31 Aug	0541	0544	0549		SF	N15W72	1554
31 Aug	0713	0721	0727	C2.9	SN	N05E22	1560
31 Aug	0904	1004	1019	C1.9	SF	N05E21	1560
31 Aug	1123	1127	1136	C1.3	SF	S21E63	1563



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
31 Aug	1211	1212	1220		SF	N06E19	1560
31 Aug	1406	1414	1423	C2.2			1564
31 Aug	1605	1612	1622	C2.1			1564
31 Aug	1945	2043	2151	C8.4	2F	S19E42	1562
31 Aug	2059	2059	2103		SF	N03E15	1560
01 Sep	0028	0039	0049	C3.4	SF	N15W82	1554
01 Sep	0051	0051	0100		SF	N03E09	1560
01 Sep	0339	0339	0343		SF	S13E71	
01 Sep	0403	0403	0410		SF	N03E08	1560
01 Sep	0507	0509	0514		SF	S16E67	
01 Sep	0515	0516	0524		SF	N03E07	1560
01 Sep	0621	0621	0624		SF	S16E66	
01 Sep	0706	0707	0715		SF	S16E66	
01 Sep	0722	0723	0724		SF	S16E65	
01 Sep	0914	0914	0919		SF	N07W03	1560
01 Sep	1039	1040	1042		SF	S23W47	1553
01 Sep	1107	1108	1109		SF	S23W47	1553
01 Sep	1115	1116	1126		SF	S12E64	
01 Sep	1132	1135	1203		SF	N04E02	1560
01 Sep	1223	1230	1241		SF	N11W02	1558
01 Sep	1244	1244	1247		SF	S23W48	1553
01 Sep	1316	1318	1320		SF	S22W49	1553
01 Sep	1337	1338	1344		SF	S23W49	1553
01 Sep	1424	1441	1518		SF	N03W01	1560
01 Sep	1611	1612	1614		SF	S22W52	1553
01 Sep	1733	1737	1748	C1.5	SF	S21W52	1553
01 Sep	1823	1828	1834	C2.9			1554
01 Sep	1854	1902	1912	C2.2	SF	S13E59	1564
01 Sep	1923	1931	1942	C1.9	SF	S21W54	1553
01 Sep	1943	1945	1947		SF	S21W54	1553
01 Sep	2343	2349	0021		1F	N03W04	1560
02 Sep	0150	0158	0210	C2.9	SF	N03W05	1560
02 Sep	0245	0245	0248		SF	S21W58	1553
02 Sep	0337	0338	0343		SF	N03W06	1560
02 Sep	0543	0550	0557		SF	S21W59	1553
02 Sep	0728	0730	0736		SF	N03W08	1560
02 Sep	0830	0831	0832		SF	S14E53	1564
02 Sep	0839	0841	0843		SF	S17E52	1564



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
02 Sep	0847	0903	0908		SF	S17E52	1564
02 Sep	0920	0920	0924		SF	S21W61	1553
02 Sep	1004	1007	1009		SF	S14E53	1564
02 Sep	1015	1021	1026	C3.1			1553
02 Sep	1337	1342	1348	C1.1	SF	S21W65	1553
02 Sep	1350	1350	1403		SF	N05W14	1560
02 Sep	1405	1407	1414		SF	N05W14	1560
02 Sep	1513	1514	1516		SF	S16E50	1564
02 Sep	1800	1810	1815	C5.5	SN	N07W16	1560
02 Sep	2025	2025	2031		SF	N04W16	1560
02 Sep	2219	2230	2244	C2.1	SF	S14E44	1564



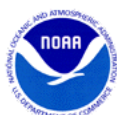
Region Summary

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			
<i>Region 1546</i>																		
16 Aug	N16E69	265	50	1	Hsx	1	A											
17 Aug	N16E56	264	50	3	Hsx	1	A											
18 Aug	N16E42	266	50	3	Hsx	1	A											
19 Aug	N16E28	266	50	2	Hsx	1	A											
20 Aug	N17E16	265	40	2	Hsx	2	A											
21 Aug	N16E05	263	40	2	Hsx	1	A											
22 Aug	N16W08	263	20	1	Hrx	1	A											
23 Aug	N16W21	263	20	1	Hsx	1	A											
24 Aug	N16W35	263	10	1	Axx	1	A											
25 Aug	N17W47	261	10	1	Axx	1	A											
26 Aug	N17W59	260	10	1	Axx	1	A											
27 Aug	N17W72	261	plage															
28 Aug	N17W86	262	plage															
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 263

<i>Region 1548</i>																		
18 Aug	N20E47	234	120	5	Cao	8	B	10	5		23	1						
19 Aug	N18E57	236	plage	10		9		2			10							
20 Aug	N20E47	234	30	2	Cso	3	B				1							
21 Aug	N18E32	236	40	8	Cso	2	B											
22 Aug	N18E18	237	40	10	Cso	6	B				1							
23 Aug	N18E04	238	30	10	Cso	6	B											
24 Aug	N18W09	236	20	3	Cso	5	B											
25 Aug	N18W23	238	plage															
26 Aug	N18W37	239	plage															
27 Aug	N18W50	239	plage															
28 Aug	N18W64	240	plage															
29 Aug	N18W78	240	plage															
								12	7	0	35	1	0	0	0	0		

Crossed West Limb.
Absolute heliographic longitude: 238



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 1551																	
21 Aug	N13W14	282	10	7	Bxo	8	B										
22 Aug	N12W28	283	10	6	Bxo	5	B										
23 Aug	N13W41	283	plage														
24 Aug	N13W54	283	plage														
25 Aug	N13W68	283	plage														
26 Aug	N13W82	284	plage														
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 282

Region 1552																	
21 Aug	S18E54	214	40	1	Hsx	1	A										
22 Aug	S18E41	214	30	2	Hsx	1	A										
23 Aug	S18E27	215	30	2	Hsx	1	A										
24 Aug	S17E18	212	20	1	Hsx	1	A										
25 Aug	S17E05	209	30	1	Hsx	1	A										
26 Aug	S17W07	209	20	3	Hsx	3	A										
27 Aug	S17W21	210	plage														
28 Aug	S17W35	211	plage														
29 Aug	S17W49	211	plage														
30 Aug	S17W63	212	plage														
31 Aug	S17W77	213	plage														
								0	0	0	0	0	0	0	0	0	

Died on Disk.
 Absolute heliographic longitude: 209



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 1553																		
23 Aug	S23E50	192	150	2	Hsx	1	A											
24 Aug	S22E46	182	90	2	Hsx	1	A											
25 Aug	S21E33	181	150	3	Cso	3	B											
26 Aug	S21E18	183	110	5	Cso	6	B											
27 Aug	S18E05	184	120	9	Dso	4	B											
28 Aug	S21W07	183	110	5	Cso	3	B											
29 Aug	S21W20	182	130	6	Cso	5	B	1										
30 Aug	S21W30	179	150	5	Dso	7	B											
31 Aug	S21W47	182	180	5	Dao	9	B											
01 Sep	S22W57	179	150	5	Dai	8	B	2				9						
02 Sep	S22W69	179	140	7	Dai	5	B	2				4						
								5	0	0		13	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 184

Region 1554

24 Aug	N16E12	215	60	5	Dai	11	B					1						
25 Aug	N16W00	215	170	6	Dsi	9	B	1				1						
26 Aug	N16W15	216	140	8	Dao	11	B											
27 Aug	N16W27	216	110	7	Dao	6	B					1						
28 Aug	N17W40	216	30	5	Cso	5	B											
29 Aug	N17W54	216	50	5	Dso	6	B					3						
30 Aug	N16W65	213	90	5	Dao	5	B	2				10						
31 Aug	N15W79	214	160	7	Dao	9	B					5						
01 Sep	N15W94	216	160	9	Dao	4	B	2				1						
								5	0	0		22	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 215



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 1555																	
25 Aug	N09E69	145	160	6	Dao	6	B										
26 Aug	N08E56	146	310	7	Dko	7	B					1					
27 Aug	N08E43	146	320	7	Dho	10	B										
28 Aug	N08E29	147	180	7	Dai	13	B					1					
29 Aug	N08E15	147	100	8	Dsi	15	B					1					
30 Aug	N08E01	146	30	6	Cso	11	B					1					
31 Aug	N08W12	147	30	6	Cso	4	B										
01 Sep	N08W26	149	plage														
02 Sep	N08W40	149	plage														
								0	0	0	4	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 146

Region 1556

27 Aug	S12W79	267	10	1	Axx	1	A										
								0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 267

Region 1557

27 Aug	N17E38	150	10	3	Bxo	2	B										
28 Aug	N17E24	152	plage														
29 Aug	N17E10	152	plage														
30 Aug	N17W04	153	plage														
31 Aug	N17W18	154	plage														
01 Sep	N17W32	155	plage														
02 Sep	N17W46	155	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 153



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 1558																							
27 Aug	N18E78	110	10	3	Bxo	2	B																
28 Aug	N13E65	111	10	1	Axx	1	A						1										
29 Aug	N13E51	111	10	1	Axx	1	A																
30 Aug	N13E37	112	plage																				
31 Aug	N13E24	112	plage																				
01 Sep	N13E10	113	plage										1										
02 Sep	N13W04	113	plage																				
													0	0	0	2	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 113

Region 1559																							
28 Aug	N18E63	113	10	1	Axx	1	A																
29 Aug	N17E49	113	30	2	Hrx	2	A																
30 Aug	N17E37	111	10	2	Axx	2	A																
31 Aug	N17E24	111	10	2	Axx	1	A																
01 Sep	N17E10	113	plage																				
02 Sep	N17W04	113	plage																				
													0	0	0	0	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 113

Region 1560																							
29 Aug	N04E36	126	40	4	Dao	6	B																
30 Aug	N03E22	125	50	5	Dao	8	B						1										
31 Aug	N04E09	125	180	6	Dai	15	BG	3					5										
01 Sep	N03W05	127	220	8	Dai	19	BG						6	1									
02 Sep	N03W17	126	260	11	Ehi	21	BG	2					7										
								5	0	0	19	1	0	0	0	0							

Still on Disk.

Absolute heliographic longitude: 127



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 1561

29 Aug	S12E29	132	plage															
30 Aug	S12E15	132	20	2	Cao	3	B											
31 Aug	S11E03	132	40	6	Dso	7	B											
01 Sep	S12W10	132	30	5	Dao	2	B											
02 Sep	S12W23	131	20	6	Cao	2	B											
								0	0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 132

Region 1562

30 Aug	S16E56	92	10	1	Axx	1	A											
31 Aug	S15E40	95	30	5	Cri	2	B	1						1				
01 Sep	S16E25	96	20	6	Dao	4	B											
02 Sep	S17E10	99	20	5	Cso	3	B											
								1	0	0	0	0	1	0	0			

Still on Disk.

Absolute heliographic longitude: 99

Region 1563

29 Aug	S25E85	78	plage					1										
30 Aug	S25E71	78	10	1	Axx	1	A	3	1			1						
31 Aug	S24E58	77	40	8	Dso	4	B	2				4						
01 Sep	S25E43	78	70	7	Dso	4	B											
02 Sep	S26E29	81	50	7	Dao	4	B											
								6	1	0	5	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 81

Region 1564

31 Aug	S13E70	65	60	5	Dao	3	B	2										
01 Sep	S14E56	66	90	8	Dao	9	B	1				1						
02 Sep	S15E41	68	150	10	Dao	13	B	1				6						
								4	0	0	7	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 68

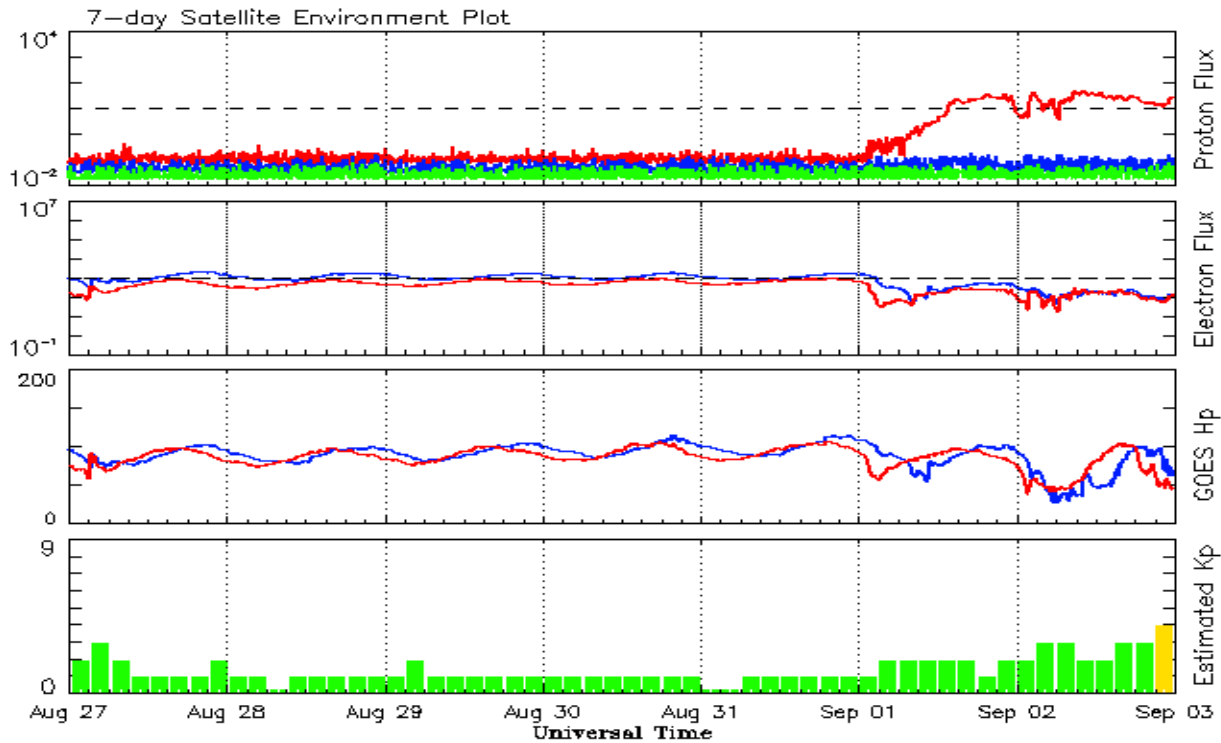


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2010									
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	76.5	53.2	95.8	110.9	8	7.4
July	67.0	43.8	0.66	82.5	57.2	94.2	115.4	9	7.3
August	66.1	50.6	0.77	84.9	59.0	101.7	117.9	8	7.4
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
2012									
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82			115.1		14	
April	84.4	55.2	0.65			113.1		9	
May	99.5	69.0	0.69			121.5		8	
June	88.6	64.5	0.73			120.5		10	
July	99.6	66.5	0.67			135.6		13	
August	85.8	63.1	0.74			115.7		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 27 August 2012*

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.

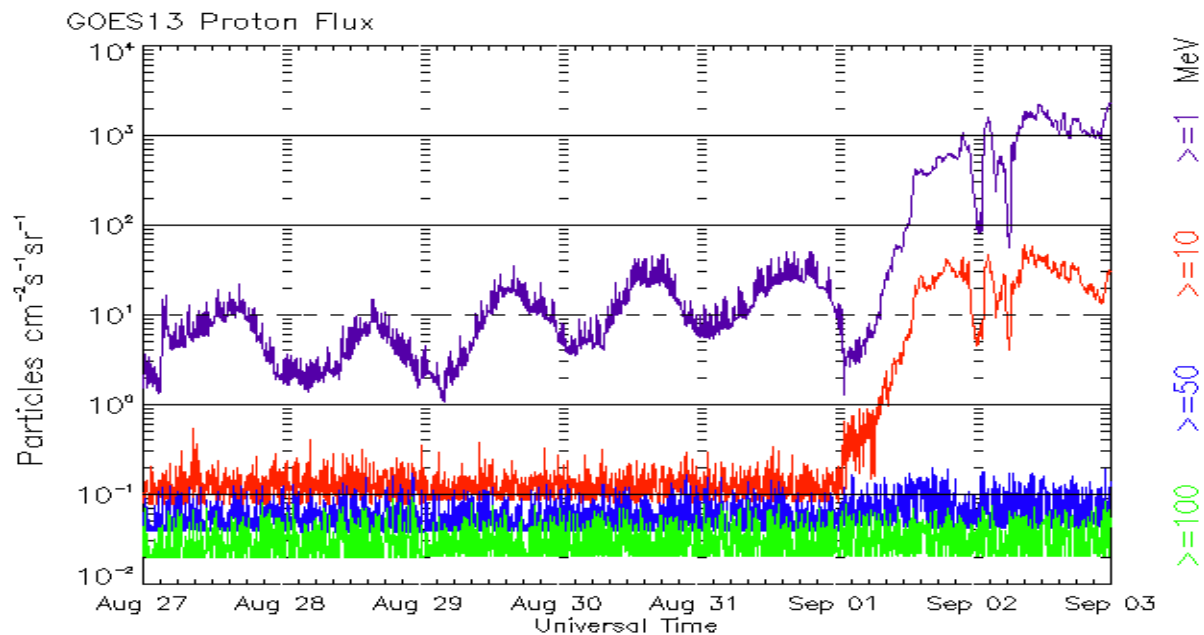
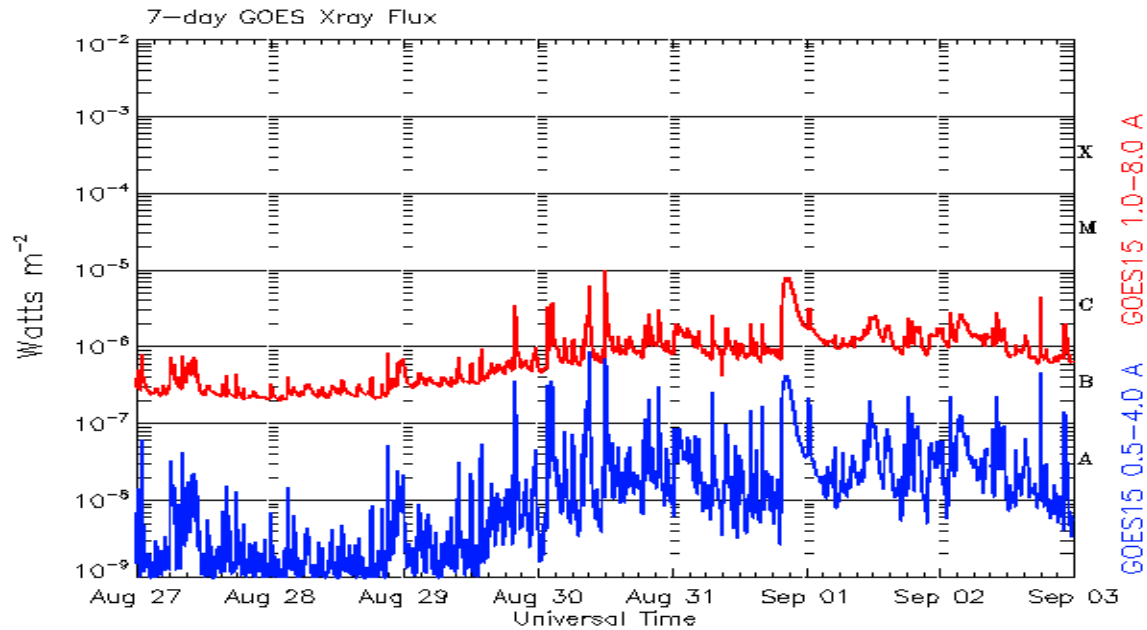
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 August 2012*

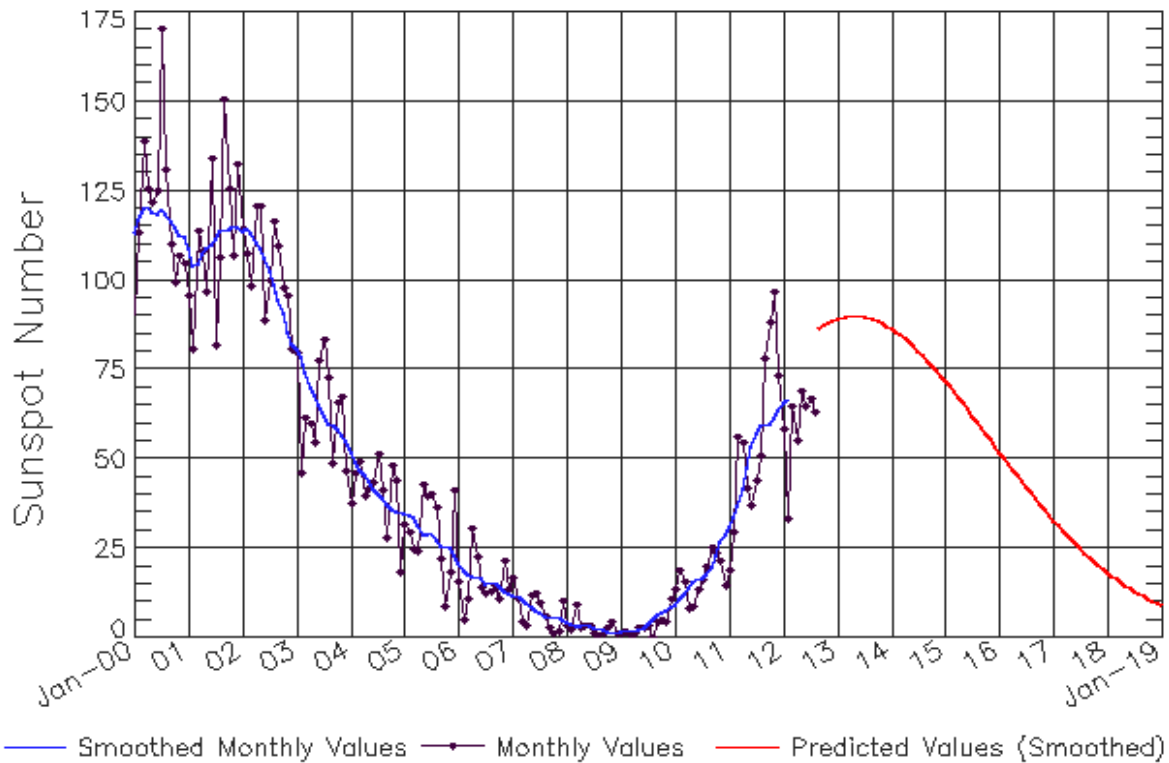
The x-ray plots contains five-minute averages x-ray flux (Watt/ m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = 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 pfu at greater than 10 MeV.



ISES Solar Cycle Sunspot Number Progression

Observed data through Aug 2012



Updated 2012 Sep 6

NOAA/SWPC Boulder, CO USA

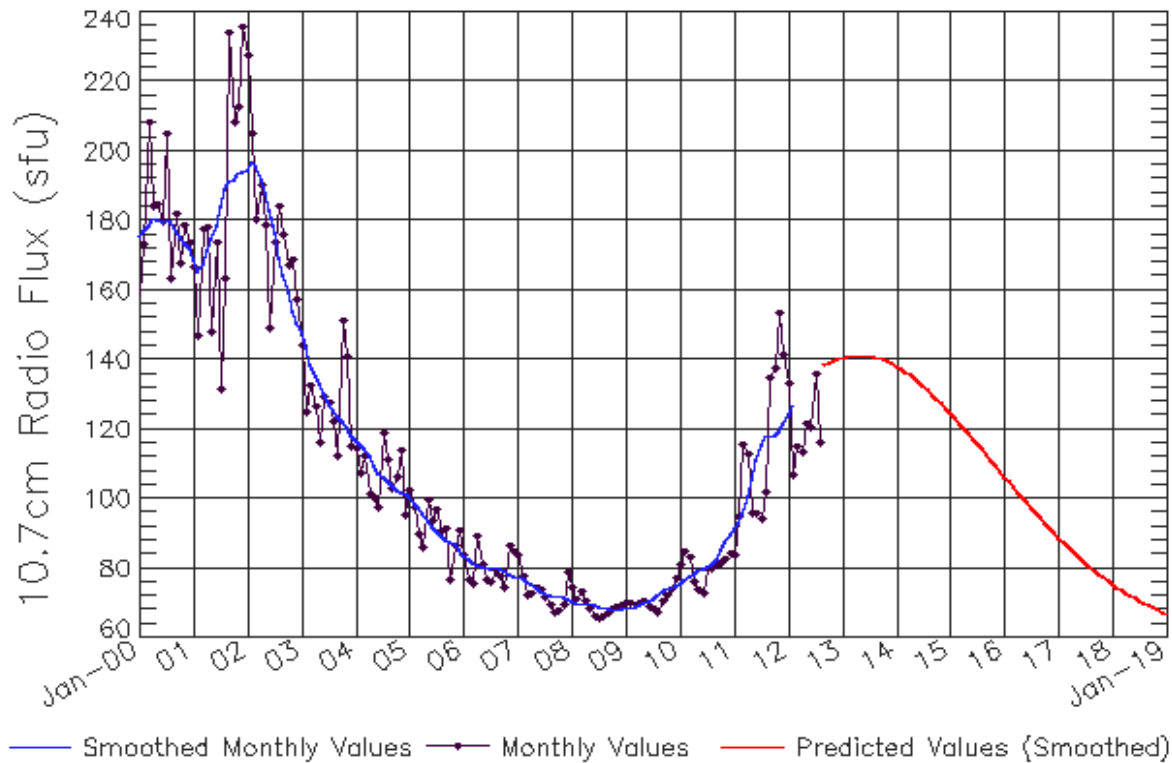
Smoothed Sunspot Number Prediction

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 (***)	57 (***)	59 (***)	60 (***)	60 (***)	61 (***)	63 (***)
2012	66 (***)	67 (***)	68 (1)	68 (2)	68 (3)	68 (5)	70 (5)	74 (6)	77 (7)	80 (7)	82 (8)	84 (9)
2013	86 (9)	88 (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 Aug 2012



Updated 2012 Sep 6

NOAA/SWPC Boulder, CO USA

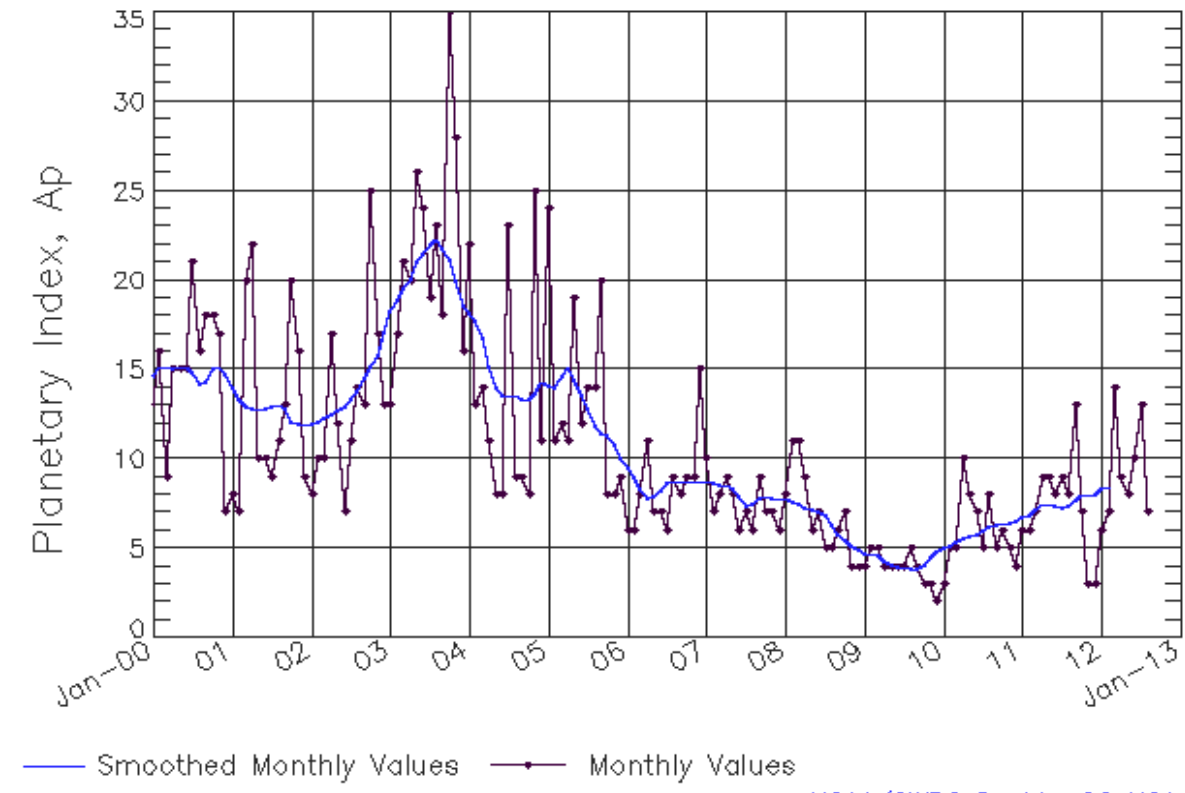
Smoothed F10.7cm Radio Flux Prediction

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 (***)	111 (***)	115 (***)	118 (***)	118 (***)	118 (***)	120 (***)	122 (***)
2012	124 (***)	127 (***)	127 (1)	128 (1)	127 (2)	127 (3)	127 (4)	129 (4)	131 (5)	133 (6)	135 (7)	137 (8)
2013	138 (8)	139 (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 Aug 2012



Updated 2012 Sep 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.

<http://spaceweather.gov/weekly/> -- Current and previous year

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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

