

Solar activity was low. There were only five C-class events observed all week, the largest of which was a C6 from Region 1800 (S08, L=159, class/area=Dao/170 on 29 July) at 29/2318 UTC. This same region also produced a C2 flare earlier that day at 29/1651 UTC. Neither of these flares had corresponding optical flares. Region 1809 (N13, L=342, class/area=Cao/150 on 02 August) also had two flares to its credit, a C3 at 30/2219 UTC and a C1 at 31/0518 UTC. The final C-class x-ray flare, a C1/Sf, came from Region 1801 (N19, L=83, class/area=Hsx/80 on 29 July) at 30/0115 UTC. There was one potentially Earth-directed CME during the week. A 13 degree filament eruption at 02/1240 UTC was observed near S23W25. The subsequent CME appeared in STEREO-A COR2 imagery at 02/1509 UTC. A glancing blow from this event was expected on 05 August.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on July 29th and August 1st and was at normal to moderate levels for the remainder.

Geomagnetic field activity was at quiet levels until the last day of the period when a solar sector boundary crossing, followed by a co-rotating interaction region, arrived in advance of a CH HSS. At about 04/0513 UTC, Phi angle became positive (away) and total field, temperature and wind speed began to rise. Wind speed rose from 350 km/s to a maximum of 586 km/s at 04/2300 UTC. Total field rose from 4 nT to reach 16 nT by 04/1635 UTC. The Bz component turned mostly southward for several hours and reached -13 nT by 04/2025 UTC. This sequence of events brought unsettled levels of activity and a single period of minor storm conditions between 15-18 UTC. During the same period, major storm levels were observed at high latitudes.

Space Weather Outlook **05 August - 31 August 2013**

Solar activity is expected to be at low levels with a chance for M-class (R1 minor on NOAA Scales) flares through the period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 05-09 August and again from 14-27 August in response to coronal hole high speed stream activity.

Geomagnetic field activity is expected to be at mostly quiet levels in the absence of any transient solar wind features. Recurrent coronal hole high speed streams are expected to bring unsettled to active conditions on 5, 6 and 8 August, 18-19 August, 21-23 August and 31 August. There is a slight chance for minor storm conditions on 5 August and again on 31 August.



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
29 July	112	97	500	B4.1	2	0	0	8	0	0	0	0
30 July	113	105	490	B4.7	2	0	0	2	0	0	0	0
31 July	109	94	450	B3.4	1	0	0	1	0	0	0	0
01 August	112	88	380	B3.0	0	0	0	3	0	0	0	0
02 August	113	112	450	B2.7	0	0	0	5	0	0	0	0
03 August	107	104	390	B2.2	0	0	0	1	0	0	0	0
04 August	105	75	330	B2.2	0	0	0	0	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
29 July	9.9e+04	1.0e+04	2.5e+03		4.4e+07	
30 July	5.2e+04	1.1e+04	2.4e+03		3.2e+07	
31 July	5.5e+04	1.1e+04	2.5e+03		3.6e+07	
01 August	8.1e+04	1.0e+04	2.6e+03		4.6e+07	
02 August	9.1e+04	1.1e+04	2.5e+03		3.3e+07	
03 August	1.1e+05	1.0e+04	2.5e+03		3.7e+07	
04 August	1.9e+05	1.0e+04	2.4e+03		3.1e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
29 July	7	2-2-2-1-3-2-1-1	8	2-2-1-2-4-2-0-1	6	2-2-2-1-2-2-1-1
30 July	6	0-2-1-2-3-1-2-2	7	1-1-2-3-3-1-1-1	6	1-2-1-1-2-2-2-2
31 July	5	2-1-0-1-2-2-2-1	5	2-1-0-2-3-1-1-1	5	2-1-1-1-2-1-2-1
01 August	4	1-2-1-1-2-1-1-1	4	2-2-1-1-2-1-0-0	5	1-2-1-1-2-2-1-1
02 August	3	0-1-0-1-2-1-2-0	2	1-1-1-1-0-0-1-0	4	1-1-0-1-1-1-1-1
03 August	6	1-0-1-1-3-2-2-2	2	1-0-0-1-0-0-1-1	5	1-1-1-1-2-1-1-2
04 August	11	1-1-3-3-2-3-3-3	23	1-2-3-3-1-6-5-3	16	1-2-3-2-2-5-3-4

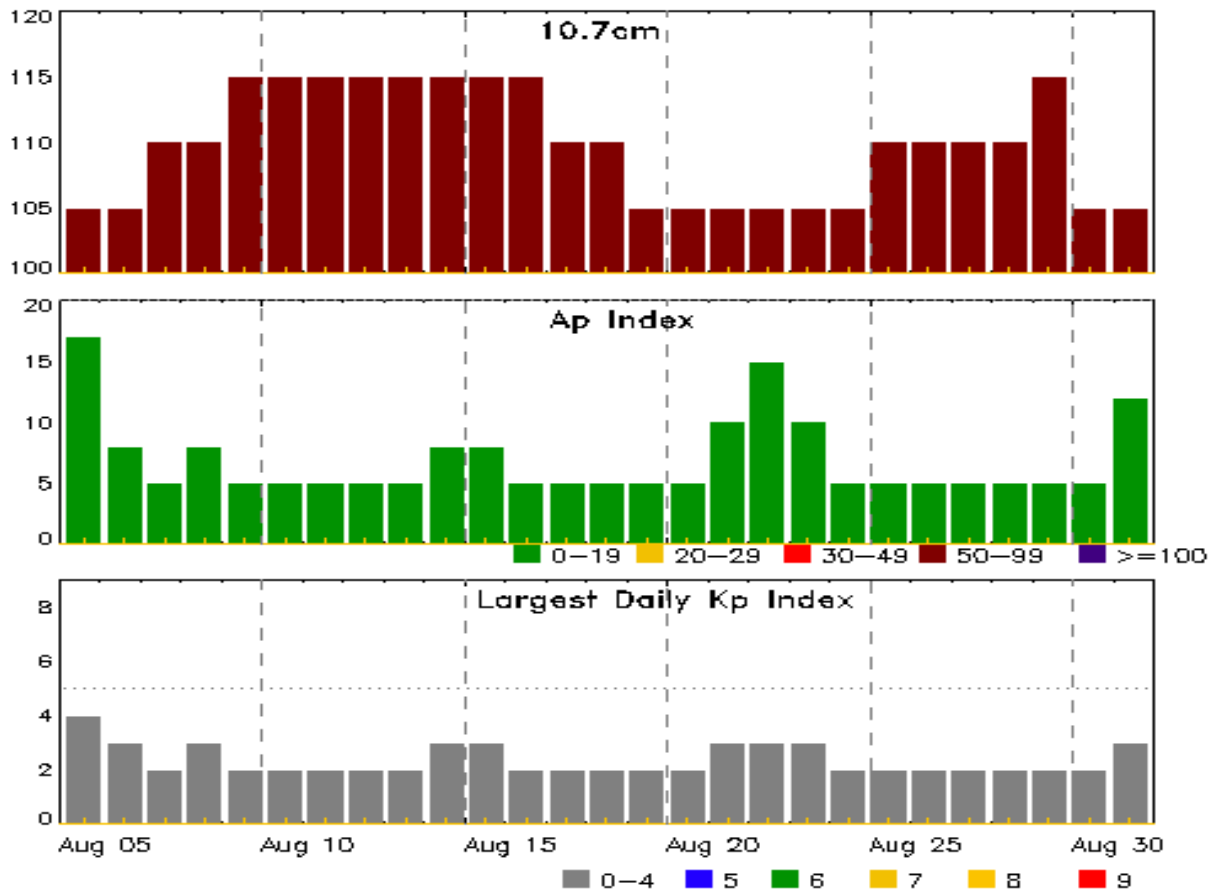


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
29 Jul 1705	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	29/1650
01 Aug 1453	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/1435
04 Aug 1620	WARNING: Geomagnetic K = 4	04/1620 - 05/0100
04 Aug 1635	ALERT: Geomagnetic K = 4	04/1630
04 Aug 1709	WARNING: Geomagnetic K = 5	04/1709 - 05/0100
04 Aug 1735	ALERT: Geomagnetic K = 5	04/1735



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
05 Aug	105	17	4	19 Aug	105	5	2
06	105	8	3	20	105	5	2
07	110	5	2	21	105	10	3
08	110	8	3	22	105	15	3
09	115	5	2	23	105	10	3
10	115	5	2	24	105	5	2
11	115	5	2	25	110	5	2
12	115	5	2	26	110	5	2
13	115	5	2	27	110	5	2
14	115	8	3	28	110	5	2
15	115	8	3	29	115	5	2
16	115	5	2	30	105	5	2
17	110	5	2	31	105	12	3
18	110	5	2				

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

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
29 Jul	0212	0213	0214			SF	S09W71	1800
29 Jul	0404	0406	0409			SF	S08W74	1800
29 Jul	0501	0502	0507			SF	S12W74	1800
29 Jul	0740	0744	0749			SF	S09W48	1805
29 Jul	0803	0805	0807			SF	S09W77	1800
29 Jul	1055	1055	1108			SF	N17E64	
29 Jul	1116	1117	1133			SF	N17E63	
29 Jul	1321	1325	1331	B7.4				1800
29 Jul	1524	1526	1534		SF	N16E61		1808
29 Jul	1611	1651	1706	C2.9				1800
29 Jul	2307	2318	2329	C6.3				1800
30 Jul	0110	0115	0120	C1.1	SF	N20W12		1801
30 Jul	1448	1452	1454	B7.8				1809
30 Jul	1505	1508	1513	B6.6				1809
30 Jul	1546	1553	1602	B7.4				1800
30 Jul	2059	2104	2113	B8.7	SF	N14E44		1808
30 Jul	2203	2219	2233	C3.1				1809
31 Jul	0426	0518	0544	C1.5				1809
31 Jul	1015	1016	1019		SF	S10W76		1803
01 Aug	1408	1444	1548		SF	S15E03		1806
01 Aug	2100	2104	2110		SF	N14E60		1809
01 Aug	2253	2257	2300	B8.4	SF	N14E58		1809
02 Aug	0557	0559	0602		SF	N16E53		1809
02 Aug	0723	0727	0730	B4.3	SF	N16E54		1809
02 Aug	0757	0800	0802	B5.7	SF	N25W63		1807
02 Aug	1108	1115	1124	B9.7	SF	S16W11		1806
02 Aug	1448	1452	1504	B5.0				
02 Aug	2041	2047	2101	B7.2	SF	N11E49		1809
03 Aug	0348	0352	0356	B3.7				1810
03 Aug	0548	0551	0553	B3.6	SF	S26E40		1810



Region Summary

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 1799															
18 Jul	S18E58	161	10	1	Axx	1	A								
19 Jul	S17E48	159	0	1	Axx	1	A								
20 Jul	S17E34	160	plage												
21 Jul	S17E20	160	plage												
22 Jul	S15E08	158	10	1	Axx	1	A								
23 Jul	S16W04	157	10	1	Axx	1	A								
24 Jul	S16W18	159	plage												
25 Jul	S16W32	159	plage												
26 Jul	S16W46	160	plage												
27 Jul	S16W60	161	plage												
28 Jul	S16W74	162	plage												
29 Jul	S16W88	163	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 157

<i>Region 1800</i>															
18 Jul	S10E63	156	30		Hax	1	A	2							
19 Jul	S10E51	156	20	1	Hrx	1	A								
20 Jul	S09E37	157	20	3	Cro	2	B	1							
21 Jul	S08E22	158	80	5	Dao	11	B	2			4	1			
22 Jul	S08E08	158	60	6	Dao	8	B								
23 Jul	S07W03	156	50	7	Dso	9	BG								
24 Jul	S09W18	158	120	7	Dso	18	BG	2			1				
25 Jul	S09W32	159	120	7	Dao	14	BG	2			4				
26 Jul	S08W46	160	160	8	Dai	12	BG	2			3				
27 Jul	S08W60	161	210	7	Dao	17	BG	1			2				
28 Jul	S08W74	162	220	9	Dao	14	BG	6			11				
29 Jul	S08W84	159	170	6	Dao	5	BG	2			4				
30 Jul	S07W95	156	30	3	Hsx	1	A								
								20	0	0	29	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 156



Region Summary - continued

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 1801															
23 Jul	N20E66	86	60	2	Hsx	1	A								
24 Jul	N21E57	83	90	2	Hsx	1	A								
25 Jul	N20E44	83	70	2	Hsx	1	A								
26 Jul	N20E30	84	80	2	Hsx	1	A								
27 Jul	N20E16	85	90	2	Hsx	1	A								
28 Jul	N19E04	84	90	2	Hsx	1	A								
29 Jul	N19W09	83	80	2	Hsx	1	A								
30 Jul	N19W23	83	60	1	Hsx	1	A	1				1			
31 Jul	N19W36	84	60	1	Hsx	1	A								
01 Aug	N20W50	85	60	2	Hsx	1	A								
02 Aug	N20W64	86	60	2	Hsx	1	A								
03 Aug	N19W76	84	60	2	Hsx	1	A								
04 Aug	N21W88	83	60	2	Hsx	1	A								
								1	0	0	1	0	0	0	0

Still on Disk.

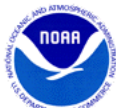
Absolute heliographic longitude: 84

Region 1803

23 Jul	S09E11	143	10	6	Bxo	6	B								
24 Jul	S09W03	144	plage												
25 Jul	S09W17	144	plage												
26 Jul	S09W31	145	plage												
27 Jul	S09W45	146	plage												
28 Jul	S09W59	147	plage												
29 Jul	S09W73	148	plage												
30 Jul	S09W87	148	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 144



Region Summary - continued

	Location	Sunspot Characteristics						Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1805															
25 Jul	S07W01	128	20	4	Cso	3	B								
26 Jul	S07W16	130	20	5	Cso	3	B								
27 Jul	S06W30	131	30	5	Cso	4	B								
28 Jul	S07W44	132	120	7	Dao	9	B	1			2				
29 Jul	S06W58	133	130	7	Dao	10	B				1				
30 Jul	S07W71	131	150	7	Dao	9	BG								
31 Jul	S07W86	134	120	7	Dao	3	B								
								1	0	0	3	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 128

Region 1806															
27 Jul	S16E57	44	10	1	Axx	2	A								
28 Jul	S15E47	41	40	8	Dso	4	B				1				
29 Jul	S15E32	43	80	9	Dso	10	B								
30 Jul	S15E20	40	60	9	Cao	11	B								
31 Jul	S15E09	38	50	7	Dao	7	B								
01 Aug	S15W05	40	30	8	Dao	7	B				1				
02 Aug	S14W19	41	80	8	Dai	12	B				1				
03 Aug	S14W32	40	100	10	Dao	11	B								
04 Aug	S15W46	41	100	8	Dao	7	B								
								0	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 40

Region 1807															
29 Jul	N28W18	92	30	4	Dao	8	B								
30 Jul	N28W31	92	50	6	Cao	6	B								
31 Jul	N28W43	91	10	6	Bxo	5	B								
01 Aug	N28W56	91	20	7	Cro	3	B								
02 Aug	N30W70	92	10	4	Bxo	3	B				1				
03 Aug	N30W84	92	plage												
								0	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 92



Region Summary - continued

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
<i>Region 1808</i>															
29 Jul	N15E54	21	10	2	Bxo	3	B				1				
30 Jul	N15E41	19	80	5	Dso	6	B				1				
31 Jul	N15E28	20	60	3	Cso	3	B								
01 Aug	N15E14	21	60	2	Hsx	1	A								
02 Aug	N15W00	22	70	2	Hsx	2	A								
03 Aug	N14W12	20	60	3	Cso	6	B								
04 Aug	N14W26	21	60	3	Cso	5	B								
								0	0	0	2	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 22

<i>Region 1809</i>															
30 Jul	N14E79	342	60	4	Hsx	1	A	1							
31 Jul	N12E65	343	120	3	Cso	4	B	1							
01 Aug	N12E52	343	160	5	Dso	3	B				2				
02 Aug	N13E40	342	160	5	Cao	8	B				3				
03 Aug	N13E27	341	110	9	Cao	13	B								
04 Aug	N12E14	341	80	7	Cao	10	B								
								2	0	0	5	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 341

<i>Region 1810</i>															
31 Jul	S26E74	334	30	2	Hax	1	A								
01 Aug	S26E59	336	40	2	Hsx	1	A								
02 Aug	S26E45	337	40	2	Hsx	1	A								
03 Aug	S25E32	336	40	2	Hsx	1	A				1				
04 Aug	S26E20	335	30	2	Hsx	2	A								
								0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 335



Region Summary - continued

Location			Sunspot Characteristics					Flares								
Date	Helio		Area	Extent	Spot	Spot	Mag	X-ray			Optical					
	Lat	CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4

Region 1811

01 Aug	N06E27	8	10	1	Cro	2	B								
02 Aug	N07E08	10	10	5	Cro	3	B								
03 Aug	N07W01	9	10	1	Axx	1	A								
04 Aug	N07W16	11	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 9

Region 1812

02 Aug	S12W62	84	20	3	Cro	2	B								
03 Aug	S12W77	85	10	1	Axx	1	A								
								0	0	0	0	0	0	0	0

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Absolute heliographic longitude: 84

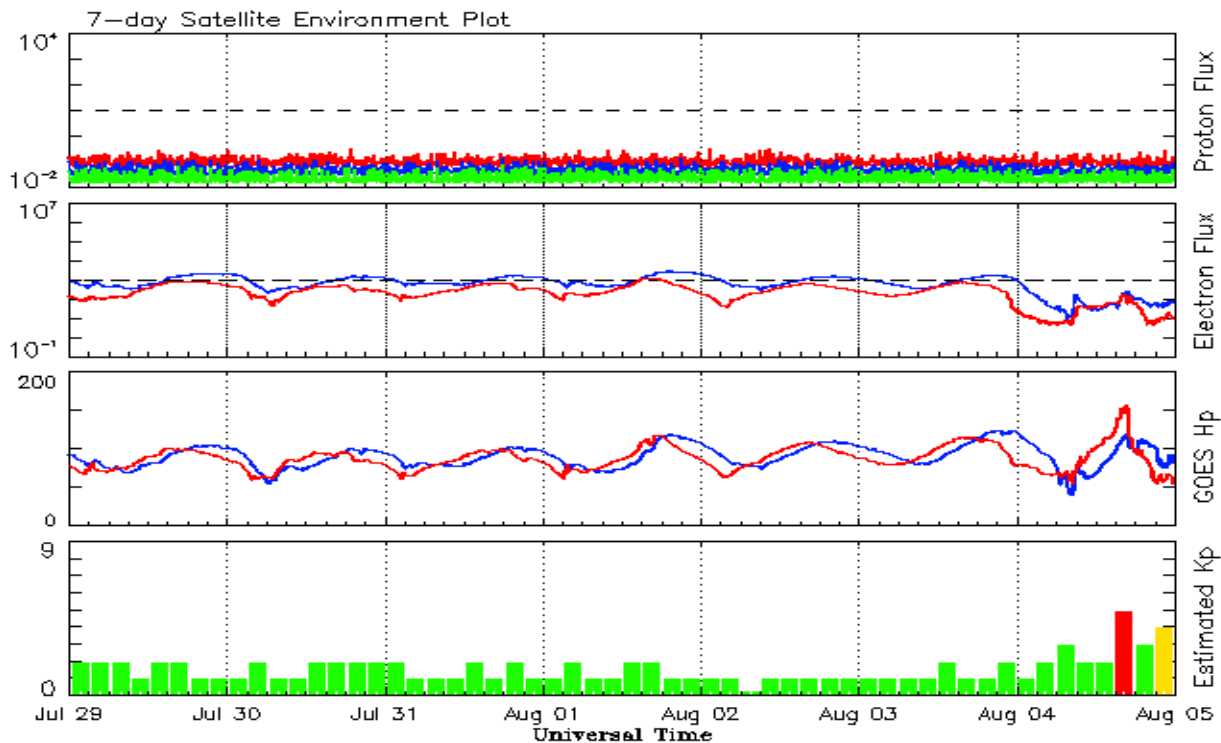


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2011									
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	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
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			104.4		5	
March	81.0	57.9	0.71			111.2		9	
April	112.8	72.4	0.64			125.0		5	
May	125.5	78.7	0.63			131.3		10	
June	80.1	52.5	0.66			110.2		13	
July	86.1	57.0	0.66			115.6		9	

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 29 July 2013*

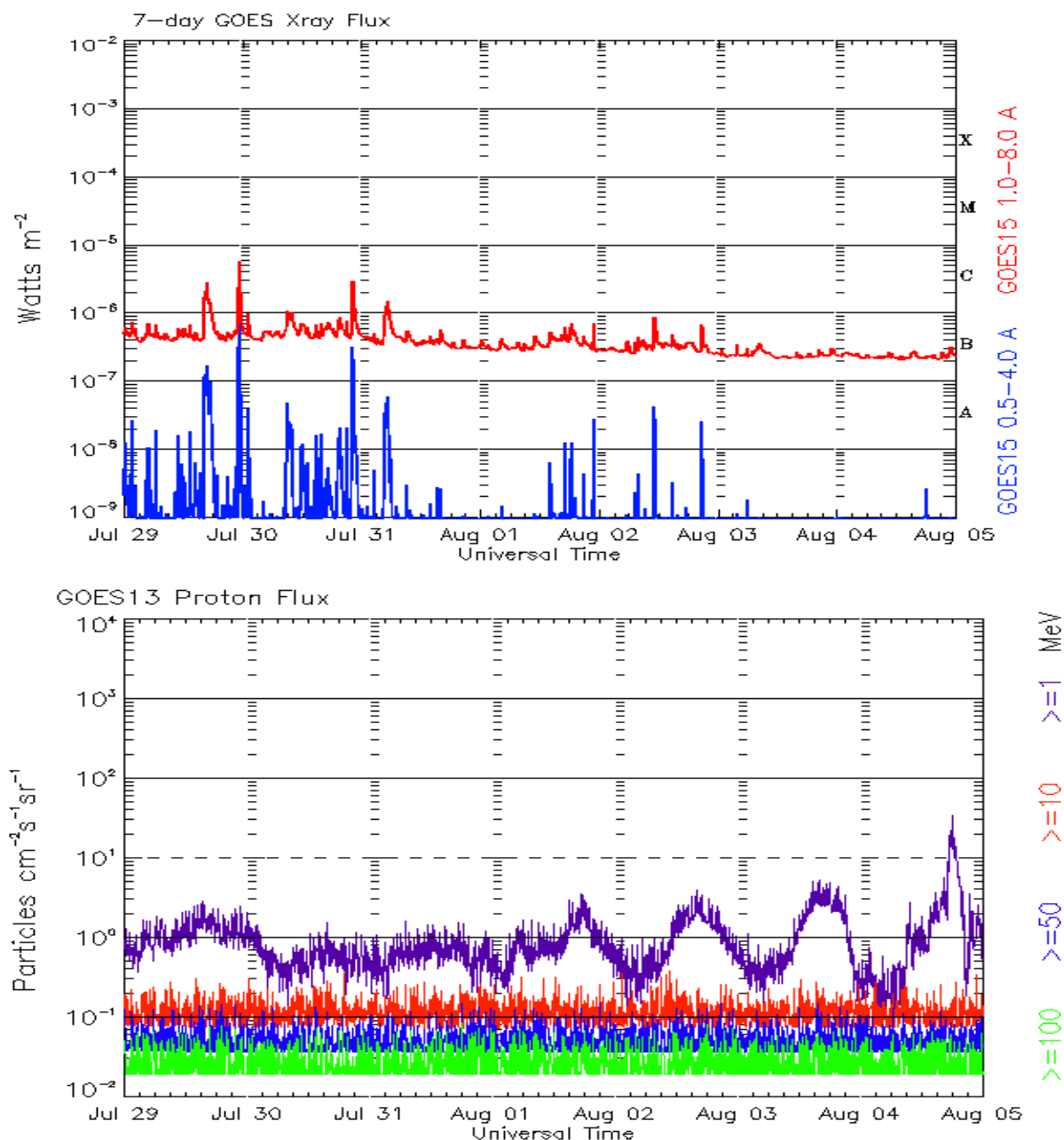
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.

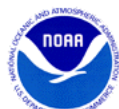
The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. Hp 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 29 July 2013*

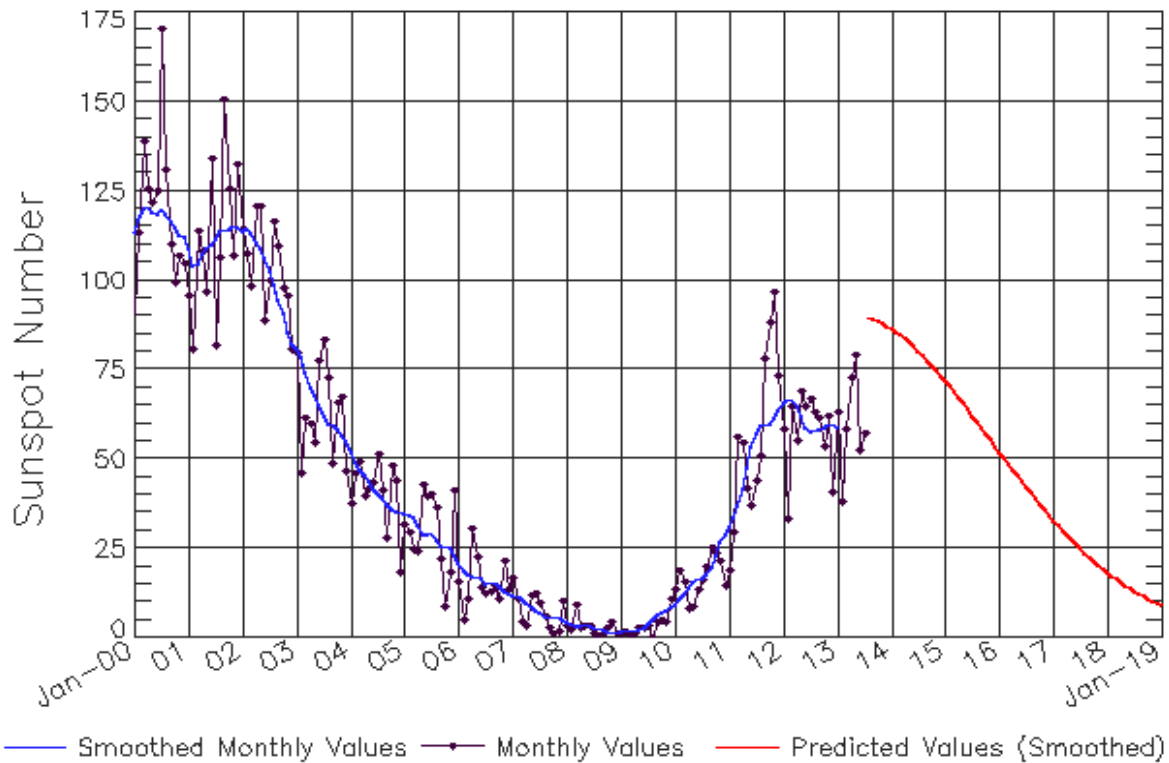
The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged integral 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 Jul 2013



Updated 2013 Aug 5

NOAA/SWPC Boulder, CO USA

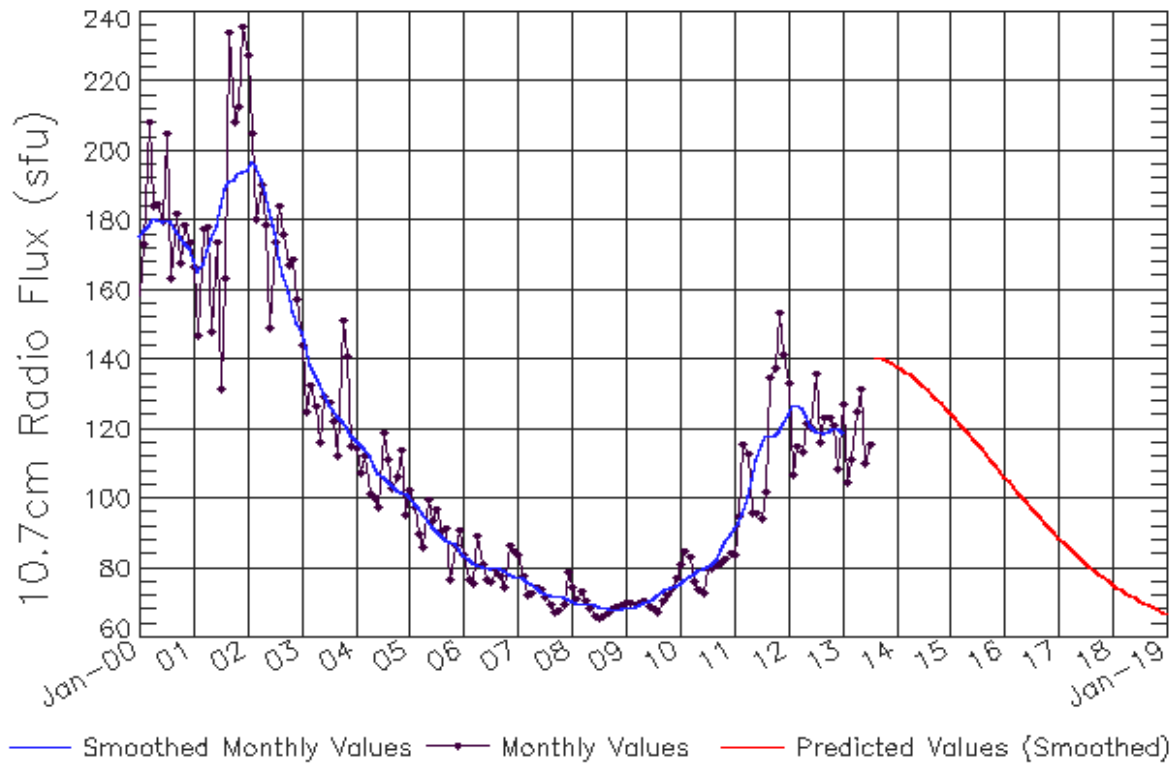
Smoothed Sunspot Number Prediction

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 (***)	59 (1)	62 (2)	64 (3)	67 (5)	70 (5)	73 (6)	76 (7)	79 (7)	80 (8)	81 (9)	82 (9)
2014	85 (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 Jul 2013



Updated 2013 Aug 5

NOAA/SWPC Boulder, CO USA

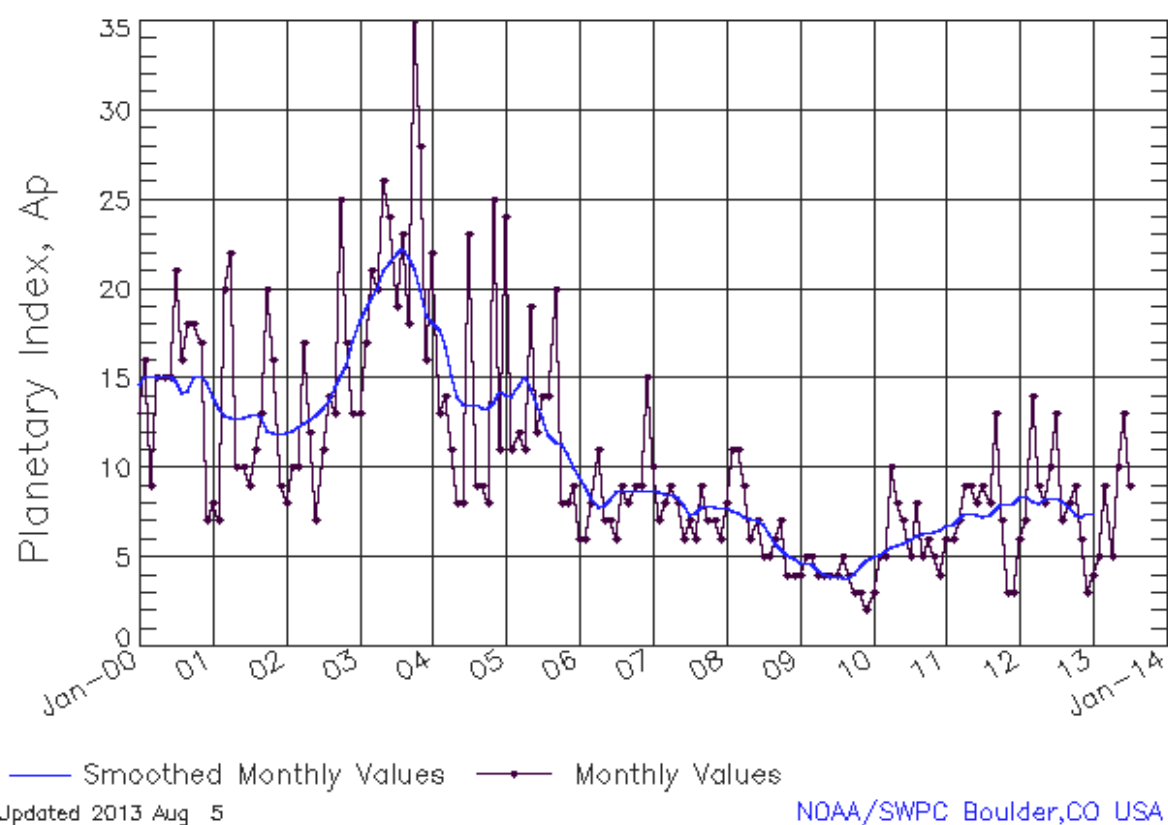
Smoothed F10.7cm Radio Flux Prediction

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 (***)	119 (1)	121 (1)	122 (2)	124 (3)	126 (4)	128 (4)	129 (5)	132 (6)	133 (7)	134 (8)	135 (8)
2014	137 (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 Jul 2013



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/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

