

Solar activity was low, with the only C-class activity observed on the first two days of the week. Region 2009 (S08, L=221, class/area=Hhx/300 on 14 July) produced C1 flares on 14 July at 1246 UTC and 15 July at 0305 UTC as it rotated around the west limb. The remainder of the week was characterized by only B-level activity, with Region 2113 (N07, L=167, class/area=Dao/40 on 14 July) producing a B5 on 16 July at 2300 UTC and a B2 on 18 July at 1756 UTC.

On 18 July, a 17-degree filament eruption centered near N26E09 was observed lifting off the visible disk in SDO/AIA 304 imagery beginning at approximately 0200 UTC. Another filament eruption centered near S24E22 was observed in SDO/AIA 304 imagery beginning at approximately 0748 UTC. Available coronagraph imagery from SOHO and STEREO did not conclusively suggest any Earth-directed coronal mass ejections (CME) accompanied these events. Later in the week, an prominence erupted from the east limb beginning at approximately 20/0200 UTC. A CME was subsequently observed off the east limb in SOHO/LASCO C2 imagery at 20/0312 UTC. Neither this, nor other CMEs observed during the week were judged to be particularly geoeffective.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels.

Geomagnetic field activity reached unsettled levels from 12-21 UTC on 14 July then declined to quiet levels for the remainder of the week.

On 14 July, a corotating interaction region and negative polarity coronal hole high speed solar wind stream arrived in a geoeffective position. The CIR arrived at the ACE spacecraft around 14/1300 UTC accompanied by a solar sector boundary change from a positive to a negative sector and followed by increasing wind speed and temperature. Remnants of a 09 July CME glancing blow may have been intermingled with the high speed stream. Wind speed at ACE rose to about 500 km/s between 11-12 UTC on 15 July. It declined afterward; falling to 274 km/s by the end of the week.

Following the CIR arrival at ACE, a geomagnetic sudden impulse of 10 nT was observed at the Boulder magnetometer at 14/1443 UTC. Unsettled conditions were observed for three synoptic periods: 12-15, 15-18 and 18-21 UTC, before returning to quiet levels which persisted through the 20th.

### **Space Weather Outlook** **21 July - 16 August 2014**

Solar activity is expected to begin the forecast period at low to very low levels. By 23 July several large active regions are expected to begin returning to the visible solar disk. These are



expected to bring activity to low levels with a chance for moderate level flares (R1 radio blackouts). The threat of moderate or greater activity is expected to persist through 09 August, after which a return to low or very low levels is anticipated.

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 throughout the forecast period.

Geomagnetic field activity is expected to be at mostly quiet levels for the majority of the forecast period in the absence of transient features. Unsettled to active conditions are possible associated with high speed solar wind streams on 21-22 July, 25-26 July, 05-06 August and 10-11 August.



### *Daily Solar Data*

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
14 July	109	70	370	B4.0	1	0	0	1	0	0	0	0
15 July	101	25	20	B2.7	1	0	0	0	0	0	0	0
16 July	92	11	10	B1.7	0	0	0	0	0	0	0	0
17 July	89	0	0	B1.3	0	0	0	0	0	0	0	0
18 July	89	26	30	B1.2	0	0	0	0	0	0	0	0
19 July	86	27	30	B1.1	0	0	0	0	0	0	0	0
20 July	87	17	40	B1.5	0	0	0	0	0	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)			Electron Fluence (electrons/cm <sup>2</sup> -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	14 July	2.6e+05	1.0e+04	2.4e+03		4.7e+05
15 July	8.7e+04	9.3e+03	2.3e+03		1.1e+05	
16 July	7.2e+04	1.0e+04	2.4e+03		3.8e+05	
17 July	7.7e+04	9.9e+03	2.4e+03		5.0e+05	
18 July	6.3e+04	1.0e+04	2.5e+03		4.3e+05	
19 July	9.1e+04	1.0e+04	2.5e+03		5.9e+05	
20 July	1.7e+05	1.0e+04	2.6e+03		8.0e+05	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	14 July	10	2-1-2-2-2-3-3-3	4	1-0-1-1-2-2-2-1	9
15 July	10	2-2-3-3-3-2-2-2	7	2-2-2-3-3-1-0-1	7	2-2-2-2-2-2-1-1
16 July	5	1-1-2-2-2-2-1-1	4	1-1-2-1-2-1-1-1	5	1-1-2-1-1-1-1-1
17 July	6	1-1-1-1-3-2-2-2	2	1-1-1-0-0-0-0-1	5	1-1-1-1-1-1-1-2
18 July	4	1-0-1-1-2-2-2-1	1	1-1-0-1-0-0-0-0	3	1-1-1-1-1-0-0-1
19 July	3	0-0-0-1-2-2-1-1	1	0-0-0-2-0-0-0-0	3	0-1-1-1-1-0-0-0
20 July	4	1-0-1-1-3-1-1-1	1	0-0-1-0-0-0-0-1	3	1-1-1-0-1-1-0-1

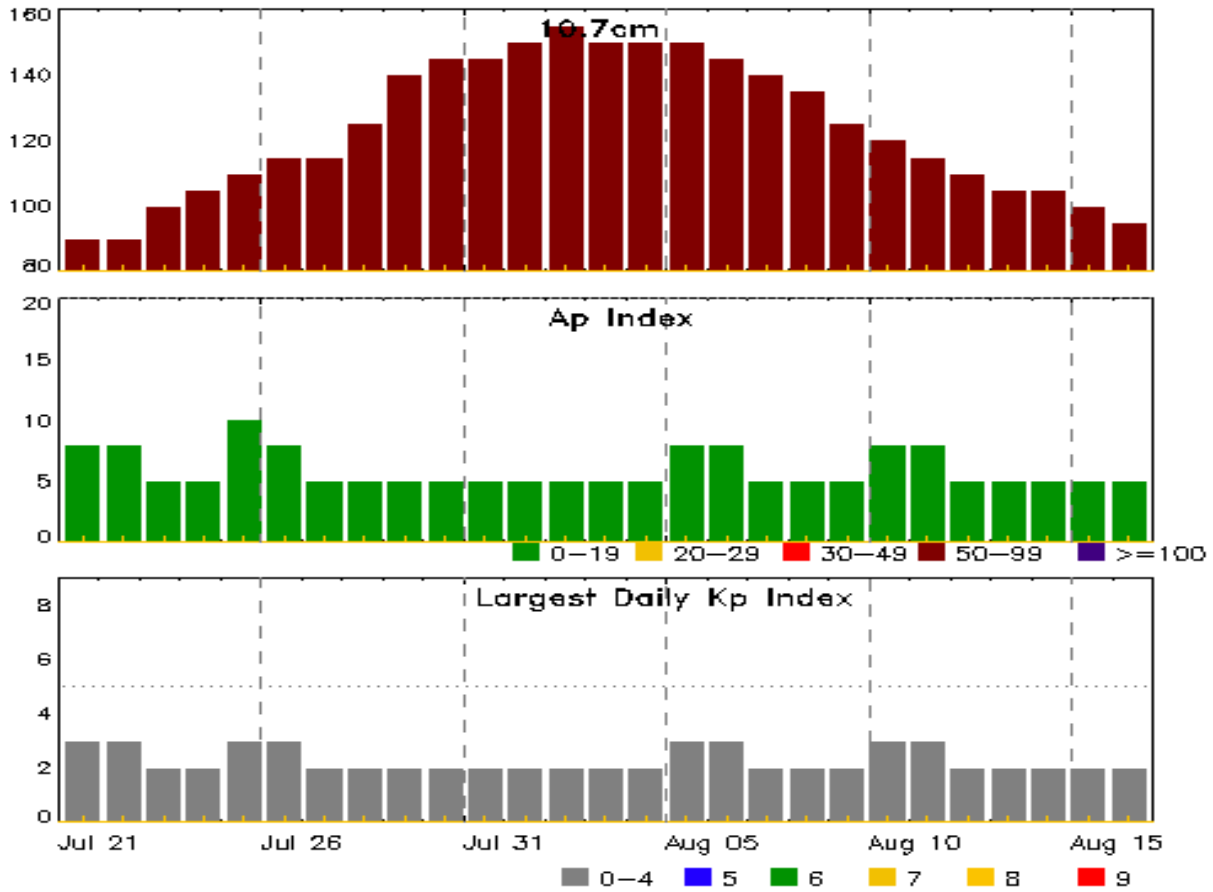


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
14 Jul 1502	SUMMARY: Geomagnetic Sudden Impulse	14/1443



## 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
21 Jul	90	8	3	04 Aug	150	5	2
22	90	8	3	05	150	8	3
23	100	5	2	06	145	8	3
24	105	5	2	07	140	5	2
25	110	10	3	08	135	5	2
26	115	8	3	09	125	5	2
27	115	5	2	10	120	8	3
28	125	5	2	11	115	8	3
29	140	5	2	12	110	5	2
30	145	5	2	13	105	5	2
31	145	5	2	14	105	5	2
01 Aug	150	5	2	15	100	5	2
02	155	5	2	16	95	5	2
03	150	5	2				



### *Energetic Events*

Date	Time			X-ray	Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux 245	Radio Flux 2695	Intensity II

**No Events Observed**

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Optical Location Lat CMD	Rgn #
	Begin	Max	End				
14 Jul	0610	0611	0613		SF	S08W75	2109
14 Jul	1242	1246	1248	C1.0			2109
14 Jul	1713	1717	1720	B6.7			2109
15 Jul	0259	0305	0310	C1.2			2109
16 Jul	2224	2300	2324	B5.1			2113
17 Jul	0806	0809	0813	B2.0			
18 Jul	1752	1756	1758	B2.8			2113
19 Jul	2243	2342	0038	B3.8			



## Region Summary

Date	Location		Sunspot Characteristics					Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			Lon	10 <sup>6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
<b>Region 2108</b>																
01 Jul	S08E68	239	30	6	Dao	5	B	1								
02 Jul	S09E53	241	90	5	Dao	6	B					6				
03 Jul	S09E40	241	90	6	Dao	7	B					2				
04 Jul	S08E28	240	120	9	Dai	16	BG	1				11	1			
05 Jul	S08E16	239	350	9	Dki	27	BG	1				5				
06 Jul	S08E02	239	620	12	Eki	36	BGD	2				5				
07 Jul	S08W12	240	720	11	Ekc	29	BGD	2								
08 Jul	S07W25	239	890	11	Ekc	26	BGD					2				
09 Jul	S07W39	241	830	12	Ekc	22	BGD					3				
10 Jul	S07W52	240	690	12	Ekc	14	BG	1				1				
11 Jul	S07W64	239	560	13	Ekc	15	BG					2				
12 Jul	S07W77	239	600	13	Ekc	15	BG	1				14				
13 Jul	S07W89	238	200	11	Eai	9	BG	2				1				
								11	0	0	0	52	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 239

### Region 2109

02 Jul	S08E74	220	150	6	Hsx	1	A									
03 Jul	S08E61	220	410	10	Dkc	15	B					8				
04 Jul	S08E49	219	630	11	Ekc	20	BG	1				8				
05 Jul	S08E36	219	830	13	Ekc	23	BG					1				
06 Jul	S08E21	220	800	13	Ekc	47	BGD	2				6				
07 Jul	S10E09	219	620	11	Ekc	22	BGD	1				5				
08 Jul	S08W04	218	710	10	Dkc	22	BGD					2				
09 Jul	S08W17	219	620	11	Eki	27	BD	1				6	1			
10 Jul	S07W32	220	600	8	Dkc	17	B					3				
11 Jul	S08W47	222	530	7	Dkc	12	B	1				7				
12 Jul	S08W60	222	540	6	Dhc	19	B	2				5				
13 Jul	S08W72	221	310	6	Dho	9	B	2					1			
14 Jul	S08W86	221	300	6	Hhx	1	A	1				1				
								11	0	0	0	52	2	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 218



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 2110</b>																							
03 Jul	S16E48	233	10		5	Bxo	2	B															
04 Jul	S17E35	233	10		6	Bxo	5	B															
05 Jul	S16E22	233	10		6	Dro	6	B															
06 Jul	S16E07	234	10		8	Bxo	6	B					1										
07 Jul	S18W06	234	10		5	Bxo	4	B					2										
08 Jul	S15W21	235	10		5	Bxo	4	B															
09 Jul	S15W33	235	plage										1										
10 Jul	S15W47	235	plage																				
11 Jul	S15W61	236	plage																				
12 Jul	S15W75	237	plage																				
13 Jul	S15W89	238	plage																				
													0	0	0	4	0	0	0	0			

Crossed West Limb.  
 Absolute heliographic longitude: 234

<b>Region 2111</b>																							
04 Jul	N05E65	203	70		5	Cao	4	B															
05 Jul	N06E54	201	70		9	Dao	4	B															
06 Jul	N06E39	202	70		9	Cao	4	B															
07 Jul	N06E24	203	60		2	Hsx	4	A															
08 Jul	N07E09	204	40		2	Hsx	2	A															
09 Jul	N06W02	203	70		4	Dso	5	B					1										
10 Jul	N05W16	204	80		5	Dsi	8	B															
11 Jul	N06W30	205	50		5	Cao	9	B															
12 Jul	N06W45	207	50		5	Dao	9	B															
13 Jul	N06W57	206	20		6	Cao	5	B															
14 Jul	N06W71	207	10		1	Axx	1	A															
15 Jul	N06W85	207	plage																				
													0	0	0	1	0	0	0	0			

Crossed West Limb.  
 Absolute heliographic longitude: 203





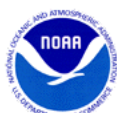
### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 2113</b>																							
06 Jul	N12E80	161	50	2	Hax	1	A																
07 Jul	N07E62	165	80	3	Cao	2	B																
08 Jul	N10E48	166	60	6	Csi	12	BG	2	1			10	1	1									
09 Jul	N09E35	167	60	8	Dai	17	BG	2	1			8	1										
10 Jul	N09E20	168	40	8	Cao	6	B	1				2											
11 Jul	N07E12	163	30	15	Cro	10	B	1				3											
12 Jul	N07W04	166	60	10	Cso	8	B					1											
13 Jul	N07W18	167	70	11	Eao	9	B	1				2											
14 Jul	N07W32	167	40	9	Dao	11	B																
15 Jul	N08W46	168	10	8	Bxo	4	B																
16 Jul	N12W59	168	10		Axx	1	A																
17 Jul	N12W73	169	plage																				
18 Jul	N12W87	169	plage																				
								7	2	0	26	2	1	0	0								

Crossed West Limb.  
 Absolute heliographic longitude: 166

<b>Region 2114</b>																							
08 Jul	S19E62	151	80	5	Dai	7	B	1															
09 Jul	S20E52	150	140	4	Dai	6	B	1				2											
10 Jul	S20E39	149	70	3	Dao	4	B					1											
11 Jul	S21E26	149	80	4	Dao	7	B																
12 Jul	S20E13	149	70	5	Csi	8	B					1											
13 Jul	S20W00	149	50	6	Cao	8	B																
14 Jul	S20W14	149	10	6	Bxo	5	B																
15 Jul	S19W28	150	10	1	Axx	1	A																
16 Jul	S19W42	151	plage																				
17 Jul	S19W56	152	plage																				
18 Jul	S19W70	152	plage																				
19 Jul	S19W84	153	plage																				
								2	0	0	4	0	0	0	0	0							

Crossed West Limb.  
 Absolute heliographic longitude: 149



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
									C	M	X	S	1	2	3	4	
<b>Region 2116</b>																	
10 Jul	S28E43	145	20		6	Bxo	3	B									
11 Jul	S29E29	146	10		1	Axx	1	A									
12 Jul	S28E18	144	0		1	Axx	1	A									
13 Jul	S28E04	145	plage														
14 Jul	S28W10	145	plage														
15 Jul	S28W24	146	plage														
16 Jul	S28W38	147	plage														
17 Jul	S28W52	148	plage														
18 Jul	S28W66	148	plage														
19 Jul	S28W80	149	plage														
									0	0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 145

<b>Region 2117</b>																	
11 Jul	N10E17	158	20		4	Cao	7	B	1								
12 Jul	N09E05	157	10		2	Cao	4	B									
13 Jul	N08W09	158	10		4	Bxo	2	B									
14 Jul	N09W23	158	10		2	Axx	2	A									
15 Jul	N09W37	159	plage														
16 Jul	N09W51	160	plage														
17 Jul	N09W65	161	plage														
18 Jul	N09W79	161	plage														
									1	0	0	0	0	0	0	0	0

Crossed West Limb.  
 Absolute heliographic longitude: 157

<b>Region 2118</b>																	
18 Jul	N07W31	114	20		3	Bxo	4	B									
19 Jul	N06W44	113	10		2	Hrx	2	A									
20 Jul	N07W56	112	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.  
 Absolute heliographic longitude: 114



### *Region Summary - continued*

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

#### *Region 2119*

18 Jul	S23E16	67	10	3	Bxo	2	B										
19 Jul	S21W00	69	20	3	Cro	5	B										
20 Jul	S22W13	69	40	6	Dao	7	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 69

#### *Region 2120*

20 Jul	N17W30	86	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 86

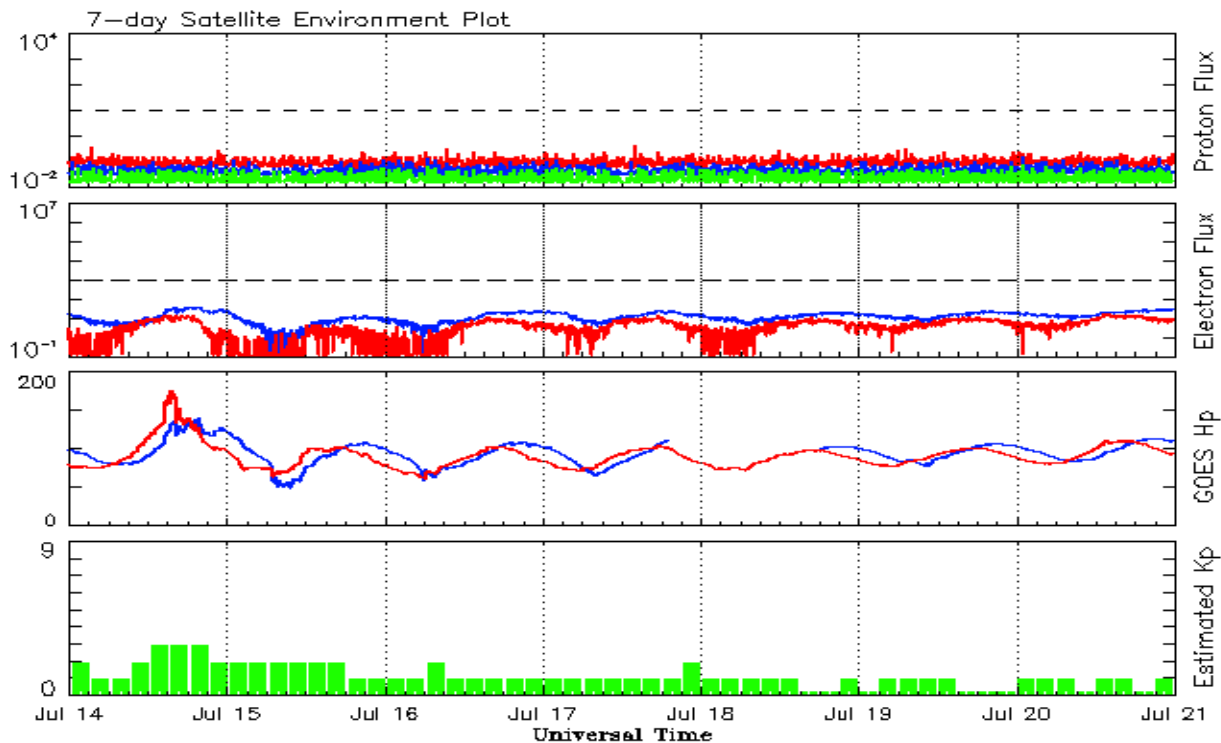


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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
<b>2012</b>									
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
<b>2013</b>									
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
<b>2014</b>									
January	125.9	81.8	0.65			158.6		6	
February	174.6	102.3	0.59			170.3		12	
March	141.1	91.9	0.65			149.9		6	
April	130.5	84.7	0.65			144.3		9	
May	116.8	75.2	0.64			130.0		7	
June	107.7	71.0	0.66			122.2		7	

**Note:** Values are final except for the most recent 6 months which are considered preliminary.  
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary  
Week Beginning 14 July 2014*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-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.

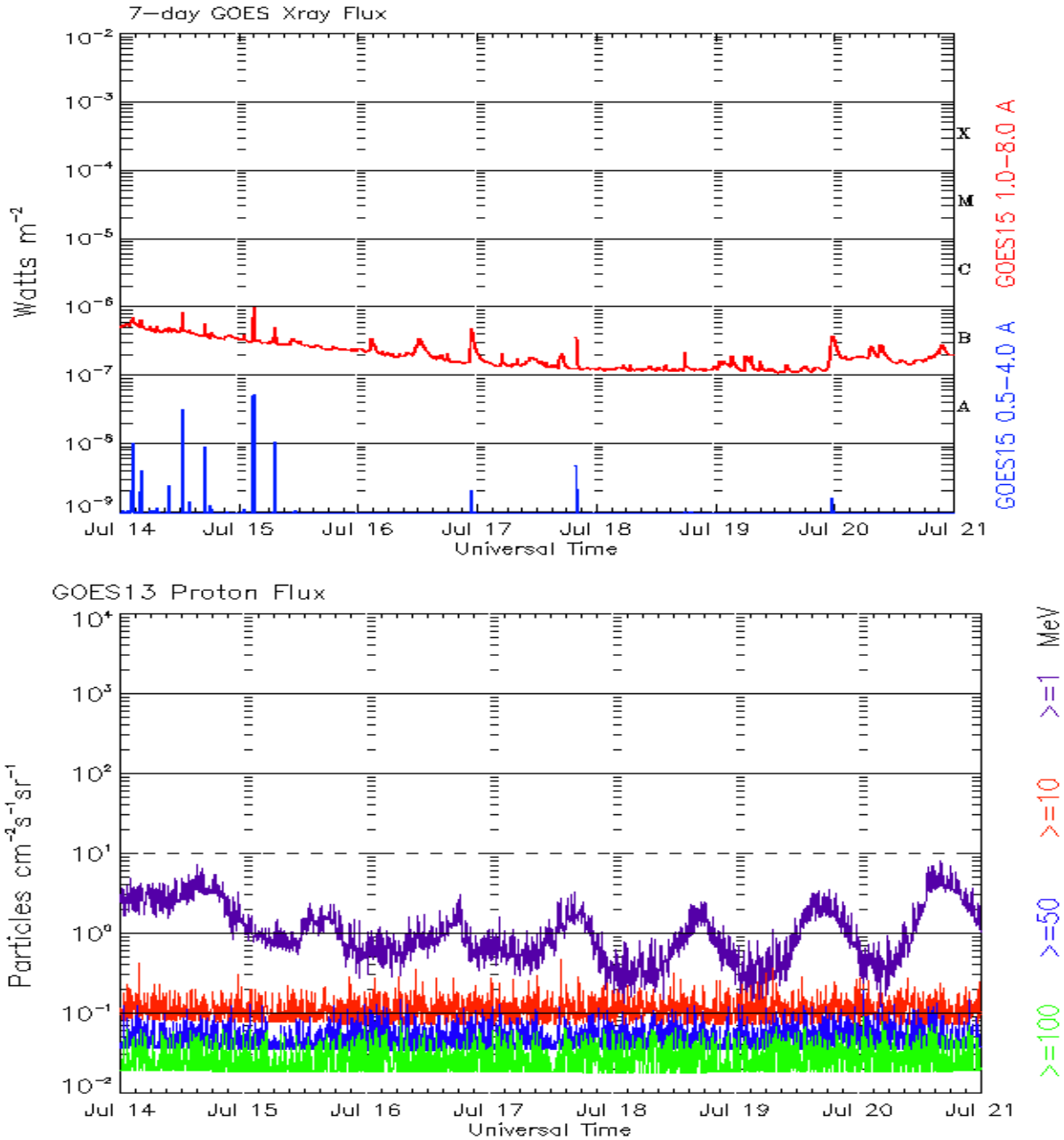
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 14 July 2014*

The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) 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<sup>2</sup> -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.



## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

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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](mailto: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](http://spaceweather.gov/weekly/Usr_guide.pdf) -- User Guide

