

Solar activity was predominately low with very low levels observed on 30 May. Region 2065 (S19, L=150, class/area Dai/180 on 25 May) produced a majority of the activity including the period's largest event, a C4 X-ray event at 27/1415 UTC. Regions 2071 (S12, L=080, class/area Dac/150 on 21 May), 2076 (S19, L=051, class/area Dao/050 on 28 May) and 2077 (S06, L=300, class/area Dai/110 on 01 Jun) all produced low-level C-class activity through the period. On 01 Jun at 0137 UTC, Region 2079 (N12, L=282, class/area Hsx/120 on 01 Jun) produced a C2/Sf X-ray event near the NE limb with a pair of closely spaced Type II radio sweeps associated with the event. Estimated shock velocities were recorded at 1015 and 892 km/s. No Earth-directed CMEs were observed during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate levels on 26 and 27 May and at normal levels the remainder of the period.

Geomagnetic field activity was predominately quiet through the period. Isolated unsettled periods were observed midday on 29 May and isolated active periods late on 30 May, both instances due to prolonged periods of southward Bz.

Solar wind speeds, measured at the ACE spacecraft, began the period at about 400 km/s and gradually declined to near 325 km/s by 29 May. Wind speeds remained steady between 325 to 340 km/s through midday on 31 May where a further decline to end-of-period speeds of about 290 km/s were observed. Bt generally ranged from 2 to 5 nT with a period of 6 to 11 nT observed from midday on 30 May to early on 01 Jun. The Bz component followed a similar pattern with weak variability between +/- 3 nT through a majority of the period. However, from about 29/0830 UTC to about 01/0100 UTC, Bz varied between +9 to -10 nT. The phi component was in a mostly positive (away) sector through the summary period. A negative (towards) orientation was observed from 26/0000 UTC - 28/0100 UTC and again from 29/0600 UTC - 30/1300 UTC.

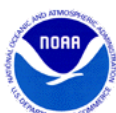
### **Space Weather Outlook** **02 June - 28 June 2014**

Solar activity is expected to be at low levels with a slight chance for moderate activity after 08 Jun with the return of old Region 2065 (S19, L=151).

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal levels for most of the period with moderate conditions possible from 08 - 12 Jun and again from 21 - 23 Jun.

Geomagnetic field activity is expected to be at quiet to unsettled levels on 03 - 04 Jun, 06 - 08



Jun (with isolated active intervals on 07 Jun), 18 - 19 Jun, 25 - 26 Jun and finally on 28 Jun, all due to recurrent coronal hole high speed streams. Quiet conditions are expected for the remaining days of the forecast period.



### *Daily Solar Data*

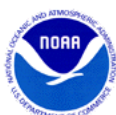
Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
26 May	108	110	510	B3.8	5	0	0	0	0	0	0	0
27 May	106	96	210	B3.2	2	0	0	5	0	0	0	0
28 May	99	72	150	B2.5	1	0	0	1	0	0	0	0
29 May	103	55	100	B2.4	1	0	0	1	0	0	0	0
30 May	102	56	110	B2.4	0	0	0	1	0	0	0	0
31 May	104	55	130	B2.5	2	0	0	2	0	0	0	0
01 June	103	68	260	B2.5	2	0	0	3	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
	26 May	1.8e+05	1.1e+04	2.7e+03		7.7e+06
27 May	6.5e+05	1.0e+04	2.5e+03		1.4e+07	
28 May	5.0e+05	1.0e+04	2.3e+03		2.3e+06	
29 May	1.0e+05	1.0e+04	2.4e+03		6.1e+05	
30 May	1.5e+05	1.0e+04	2.5e+03		1.2e+05	
31 May	2.6e+05	1.0e+04	2.4e+03		2.1e+05	
01 June	2.6e+05	1.0e+04	2.5e+03		1.8e+05	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	26 May	0	0-0-0-0-0-0-0-0	2	1-1-2-1-1-0-0-0	4
27 May	0	4-0-0-0-2-2-1-0	2	0-0-1-1-1-0-1-0	4	1-1-1-1-1-1-1-2
28 May	5	0-0-0-0-2-1-2-1	4	2-2-1-1-1-0-1-1	4	2-1-1-1-1-1-1-2
29 May	8	1-0-1-3-3-3-2-2	10	1-1-1-4-4-2-2-1	7	1-1-1-3-2-2-2-1
30 May	8	0-2-2-3-2-2-3-2	12	1-1-3-3-4-3-3-1	9	0-2-2-2-2-2-4-2
31 May	4	1-2-1-1-1-2-1-1	2	1-1-1-1-1-0-0-0	4	1-2-1-1-1-1-1-1
01 June	5	1-1-2-2-2-2-1-1	1	0-0-1-1-1-0-0-0	5	1-1-1-2-1-1-1-1

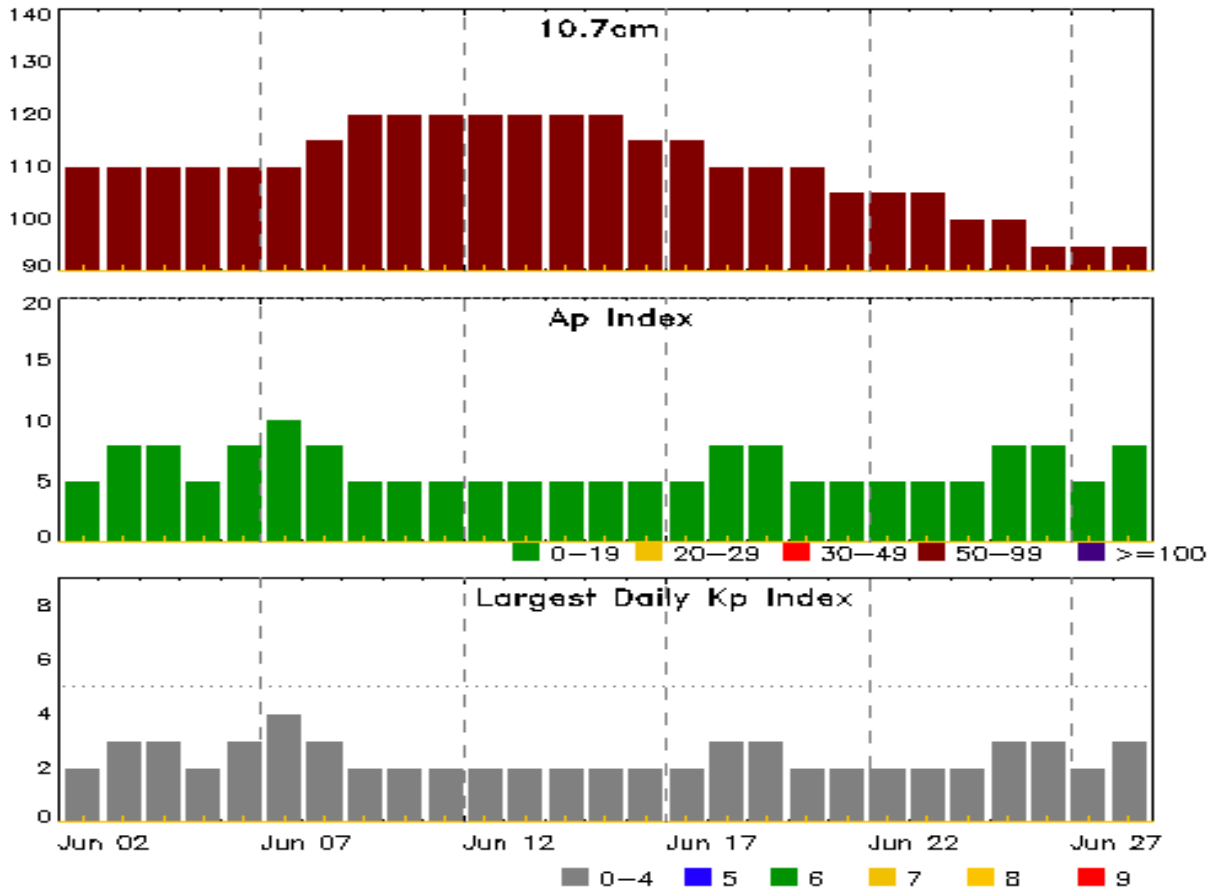


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
27 May 1528	ALERT: Type II Radio Emission	27/1435
27 May 1530	ALERT: Type IV Radio Emission	27/1441
29 May 0924	ALERT: Type II Radio Emission	29/0851
30 May 1906	WARNING: Geomagnetic K = 4	30/1905 - 31/1300
30 May 1913	ALERT: Geomagnetic K = 4	30/1912
01 Jun 0219	ALERT: Type II Radio Emission	01/0141
01 Jun 0220	ALERT: Type II Radio Emission	01/0149



## 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
02 Jun	110	5	2	16 Jun	115	5	2
03	110	8	3	17	115	5	2
04	110	8	3	18	110	8	3
05	110	5	2	19	110	8	3
06	110	8	3	20	110	5	2
07	110	10	4	21	105	5	2
08	115	8	3	22	105	5	2
09	120	5	2	23	105	5	2
10	120	5	2	24	100	5	2
11	120	5	2	25	100	8	3
12	120	5	2	26	95	8	3
13	120	5	2	27	95	5	2
14	120	5	2	28	95	8	3
15	120	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	Optical			Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #	
26 May	0443	0448	0454	B8.5			2065	
26 May	1236	1241	1249	C1.0			2065	
26 May	1552	1607	1639	C2.1			2065	
26 May	2002	2012	2020	C1.6			2065	
26 May	2103	2108	2116	C1.0			2065	
26 May	2249	2311	2343	C1.1			2065	
27 May	0407	0407	0420		SF	S10W19	2071	
27 May	1112	1112	1115		SF	S12W02	2073	
27 May	1325	1329	1331		SF	S13W03	2073	
27 May	1407	1415	1423	C4.9			2065	
27 May	1423	1424	1436		SF	S13W04	2073	
27 May	1840	1851	1917	C1.1	SF	S14W27	2071	
28 May	0207	0221	0233	C1.7			2065	
28 May	0331	0337	0357	B7.4	SF	S20W01	2076	
28 May	0638	0641	0650	B6.3			2069	
29 May	0421	0430	0440	C1.4	SF	S09W50	2071	
29 May	0842	0857	0912	B3.4				
29 May	1752	1819	1830	B4.6			2073	
30 May	0238	0238	0249		SF	S13W41	2073	
30 May	1758	1806	1809	B4.4			2075	
31 May	0657	0705	0716	C1.1			2079	
31 May	1320	1323	1326	B6.0	SF	S21W57	2076	
31 May	1454	1518	1538	B9.2				
31 May	1545	1556	1603	C1.3	SF	S20W47	2076	
01 Jun	0127	0137	0149	C2.4	SF	N09E72	2079	
01 Jun	0346	0355	0406	B8.0	SF	S12W71	2073	
01 Jun	1141	1153	1200	C1.2	SF	S03E55	2077	
01 Jun	1449	1454	1500	B4.9			2077	



## Region Summary

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 2065</b>																							
15 May	S19E67	142	10			Axx	1	A															
16 May	S19E53	143	10	1		Cro	3	B															
17 May	S18E38	145	10	3		Bxo	4	B															
18 May	S18E24	145	10	3		Bxo	6	B															
19 May	S18E12	143	10	3		Axx	3	A															
20 May	S20E01	141	10	10		Bxo	2	B															
21 May	S18W14	144	10	3		Axx	3	A															
22 May	S18W28	145	plage																				
23 May	S18W46	149	10	6		Dao	9	B	1				5										
24 May	S18W59	149	60	7		Dai	16	BG	8	1			8	2									
25 May	S19W73	150	180	9		Dai	14	BGD	5				6										
26 May	S19W87	151	180	9		Dao	9	BG	5														
									19	1	0		19	2	0	0	0	0					

Crossed West Limb.  
Absolute heliographic longitude: 141

<b>Region 2068</b>																							
17 May	S17E26	157	20	4		Cro	4	B															
18 May	S18E13	156	10	6		Bxo	3	B															
19 May	S17W04	159	plage																				
20 May	S15W16	159	10	3		Bxo	3	B															
21 May	S15W30	160	plage																				
22 May	S15W44	161	plage																				
23 May	S15W58	161	plage									1											
24 May	S15W72	162	plage																				
25 May	S15W86	163	plage																				
									1	0	0		0	0	0	0	0	0					

Crossed West Limb.  
Absolute heliographic longitude: 159



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares																
	Lat	CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 2069</b>																							
18 May	S18E52		117	10	1	Axx	1	A															
19 May	S19E39		116	10	1	Axx	1	A															
20 May	S21E26		117	0		Axx	1	A															
21 May	S17E12		117	20	1	Cso	5	B					1										
22 May	S19W01		118	plage																			
23 May	S19W15		118	plage																			
24 May	S19W29		119	plage																			
25 May	S19W43		120	plage																			
26 May	S19W57		121	plage																			
27 May	S17W69		119	20	1	Hax	1	A															
28 May	S17W83		120	10	1	Axx	1	A															
										0	0	0	1	0	0	0	0	0					

Crossed West Limb.  
 Absolute heliographic longitude: 118

<b>Region 2071</b>																							
19 May	S11E80		76	10	8	Bxo	3	B	1														
20 May	S12E64		79	30	5	Cro	4	B	1				1										
21 May	S12E48		80	150	7	Dac	10	B	1				6										
22 May	S12E35		82	100	7	Dai	9	BG	1				1										
23 May	S12E21		82	120	9	Dao	17	BG															
24 May	S12E08		82	140	10	Dao	19	B															
25 May	S11W04		81	70	10	Dao	13	B															
26 May	S11W18		82	50	10	Cso	9	B															
27 May	S09W33		83	30	7	Cso	8	B	1				2										
28 May	S09W47		84	10	1	Axx	1	A															
29 May	S10W61		85	10	1	Axx	1	A	1				1										
30 May	S10W75		86	plage																			
31 May	S10W89		87	plage																			
										6	0	0	11	0	0	0	0	0					

Crossed West Limb.  
 Absolute heliographic longitude: 81





### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares															
	Lat	CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 2072</b>																							
20 May	S20E07		136	10	1	Axx	2	A					3										
21 May	S18W05		134	20	4	Csi	7	B															
22 May	S18W19		136	10	6	Bxo	5	B	1				2										
23 May	S14W34		137	0	2	Axx	1	A															
24 May	S19W44		134	0	3	Bxo	3	B															
25 May	S19W58		135	0	3	Cro	8	B															
26 May	S19W72		136	20	5	Cro	4	B															
27 May	S19W86		137	20	1	Hrx	2	A															
									1	0	0		5	0	0	0	0	0					

Crossed West Limb.  
Absolute heliographic longitude: 134

<b>Region 2073</b>																							
21 May	S11E62		66	50	1	Hsx	1	A					1										
22 May	S11E49		68	50	2	Hsx	1	A					1										
23 May	S12E39		64	70	8	Dso	5	BG															
24 May	S12E26		64	120	10	Dsi	17	BG															
25 May	S10E13		64	100	10	Dai	26	BG					1										
26 May	S11W01		65	90	10	Dai	18	B															
27 May	S13W15		65	20	11	Bxi	21	B					3										
28 May	S13W29		66	20	12	Cri	11	B															
29 May	S13W43		67	30	10	Cri	9	B															
30 May	S14W53		64	30	6	Dro	7	B					1										
31 May	S13W66		63	10	7	Bxo	3	B															
01 Jun	S12W80		65	0	1	Axx	1	A					1										
									0	0	0		8	0	0	0	0	0					

Still on Disk.  
Absolute heliographic longitude: 65

<b>Region 2074</b>																							
23 May	S14W33		136	30	4	Dro	8	B															
24 May	S14W46		136	60	8	Dai	14	B					1										
25 May	S16W60		137	120	8	Dai	11	BG					2										
26 May	S16W74		138	90	8	Dai	9	B															
27 May	S15W88		139	50	6	Dao	3	B															
									0	0	0		3	0	0	0	0	0					

Crossed West Limb.  
Absolute heliographic longitude: 136



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares										
	Lat	CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
									C	M	X	S	1	2	3	4	
<b>Region 2075</b>																	
23 May	S11E78		25	30	2	Hax	1	A									
24 May	S11E64		26	60	3	Hax	1	A									
25 May	S08E50		27	90	1	Hax	1	A									
26 May	S08E36		28	80	2	Hax	1	A									
27 May	S09E24		26	70	2	Hax	1	A									
28 May	S09E10		27	60	2	Hsx	2	A									
29 May	S09W04		28	40	2	Hsx	2	A									
30 May	S09W14		25	40	6	Cso	4	B									
31 May	S10W28		25	20	4	Cao	7	B									
01 Jun	S09W41		26	10	1	Axx	3	A									
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 28																	
<b>Region 2076</b>																	
28 May	S19W14		51	50	5	Dao	7	B									
29 May	S19W28		52	20	6	Cro	3	B									
30 May	S19W44		54	10	1	Axx	1	A									
31 May	S20W59		56	10		Axx	1	A	1				2				
01 Jun	S20W73		58	plage													
									1	0	0	2	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 51																	
<b>Region 2077</b>																	
30 May	S05E74		297	30	1	Cao	4	B									
31 May	S05E57		300	90	2	Cao	4	B									
01 Jun	S06E45		300	110	4	Dai	8	BG	1				1				
									1	0	0	1	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 300																	
<b>Region 2078</b>																	
01 Jun	S19E15		330	20	4	Cro	5	B									
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 330																	



### *Region Summary - continued*

Location		Sunspot Characteristics					Flares								
Date	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 2079</b>															
31 May	N12E77	282	plage												
01 Jun	N12E63	282	120	2	Hsx	1	A								
								1							
								1			1				
								2	0	0	1	0	0	0	0

Still on Disk.

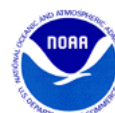
Absolute heliographic longitude: 282

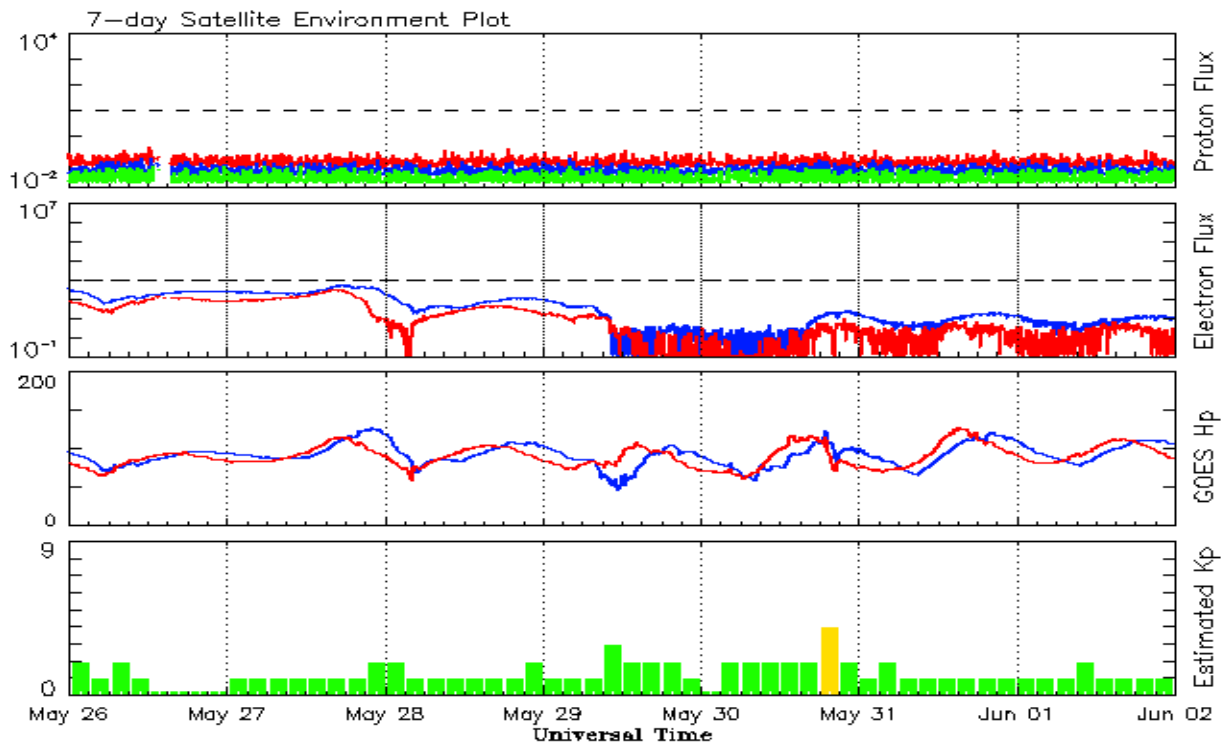


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>									
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
<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	69.0	114.7	127.9	9	7.6
September	55.0	37.0	0.67	111.0	73.1	102.7	132.3	5	7.8
October	127.1	85.6	0.67	114.3	75.0	132.3	134.7	7	7.8
November	125.7	77.6	0.62	114.6	75.4	148.4	135.4	5	7.9
December	118.2	90.3	0.76			147.7		5	
<b>2014</b>									
January	125.9	82.0	0.65			158.6		6	
February	174.6	102.8	0.59			170.3		12	
March	141.1	92.2	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	

**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 26 May 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.

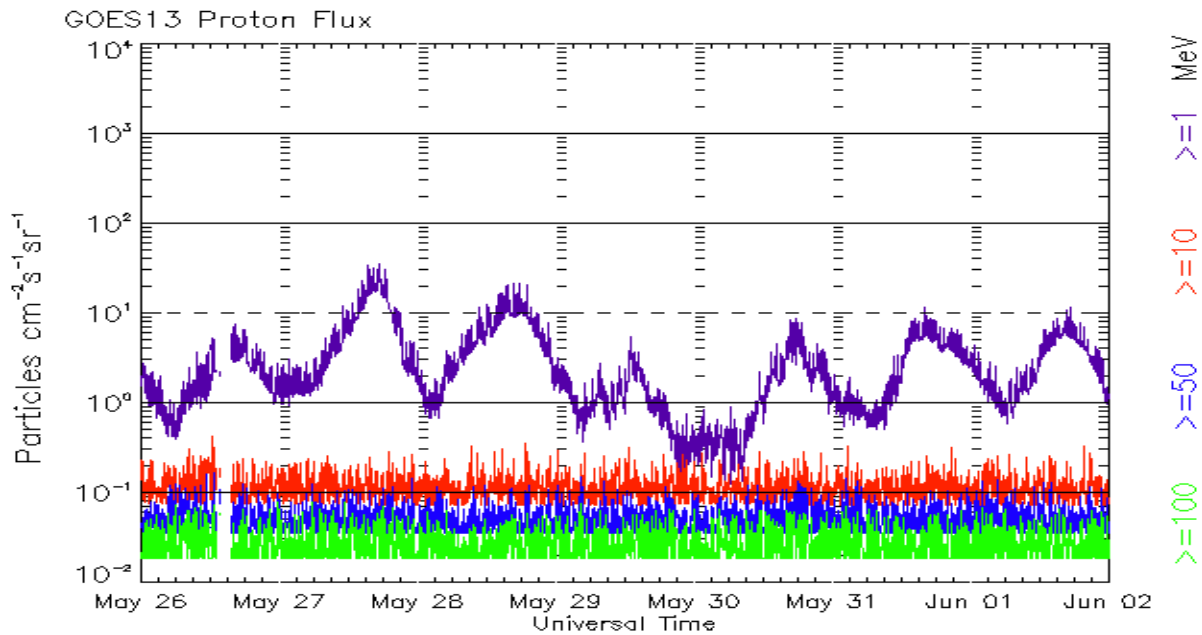
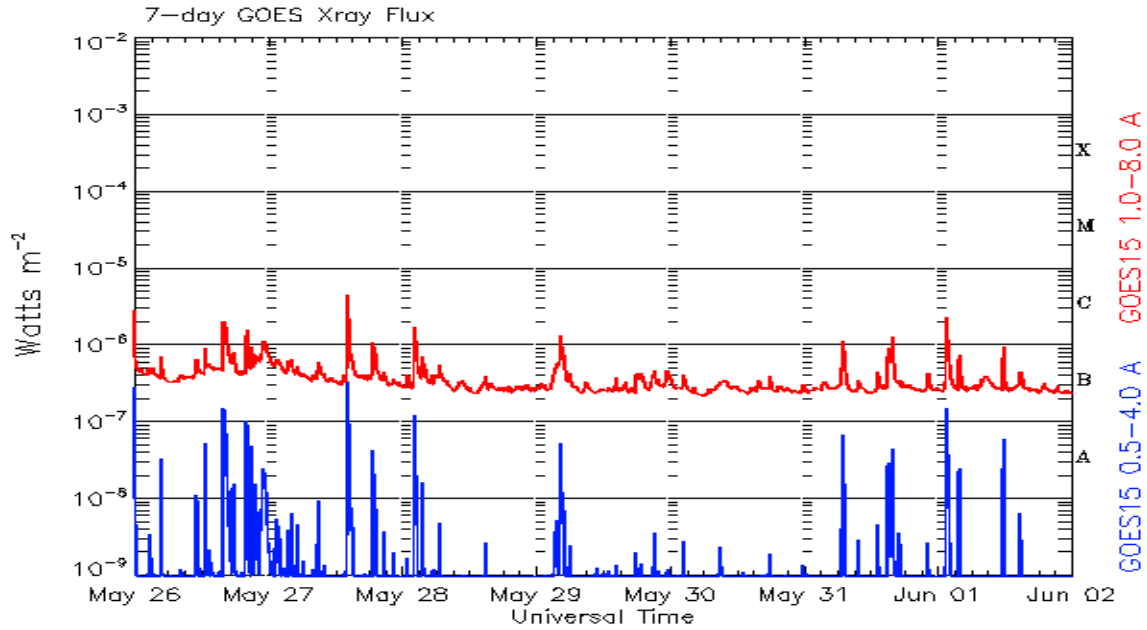
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The H<sub>p</sub> plot contains the five minute averaged H<sub>p</sub> magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The H<sub>p</sub> 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 K<sub>p</sub>-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 K<sub>p</sub> are 'global' parameters that are applicable to a first order approximation over large areas. H<sub>p</sub> 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 26 May 2014*

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

The proton plot contains the five-minute averaged intergral flux units (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.



## ***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

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