

Solar activity ranged from very low to moderate levels. Region 1476 (N09, L=180, class/area Fkc/1050 on 09 May) continued to be the major contributor of x-ray flare activity throughout the week. It produced 13 C-class flares and an M-flare. Region 1476 began the week as an Fko type group with a beta-gamma configuration. As it rotated off the west limb on 17 May, the region produced an M5/1f flare at 17/0147 UTC. This event was accompanied by a 22 minute 10cm Radio Burst (600 sfu) at 17/0142 UTC, Type II (645 km/s) and Type IV radio sweeps, and a partial halo CME. The CME was first observed by the SOHO/LASCO C3 spacecraft beginning at 17/0206 UTC with an estimated plane-of-sky speed of approximately 1200 km/s. The majority of the ejecta was directed off the west limb. Region 1476 continued to produce C-class flares as it rotated off the visible disk on 18 May. A filament eruption produced a CME that was observed in STEREO A COR 2 imagery (plane-of-sky speed approximately 482 km/s) beginning at 18/0709 UTC on 18 May. The ejecta was slightly north of the ecliptic plane, however a glancing blow is possible from that event.

A greater than 10 MeV and greater than 100 MeV proton event at geosynchronous orbit was observed associated with the 17 May M5 flare. The greater than 10 MeV proton event began at 17/0210 UTC and reached a peak flux of 255 pfu at 17/0430 UTC, ended at 18/1620UTC. The greater than 10 MeV proton event crossed the 100 pfu threshold (S2) at 17/0245 UTC and fell below 100 pfu at 17/0945 UTC. The greater than 100 MeV proton event began at 17/0200 UTC and reached a maximum of 20 pfu at 17/0230 UTC, ended at 17/1725 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels from 14 through 16 May. Moderate levels were observed from 17 through 20 May.

Geomagnetic field activity ranged from quiet to active levels. Quiet levels were observed on 15, 17, and 19 May. Quiet to unsettled levels were observed on 14 and 18 May. Quiet to unsettled levels with isolated active periods were observed on 16 and 20 May. On 16 May, an extended period of the southward Bz component of the interplanetary magnetic field caused an isolated active level during the 16/2100 - 2400 UTC period. At approximately 20/0136 UTC, the ACE satellite observed an interplanetary shock passage with a corresponding weak sudden impulse observed in the Boulder magnetometer (15 nT) at 20/0215 UTC. The shock passage was likely associated with the 17 May CME. The geomagnetic field responded with an isolated active period during the 20/0300 - 0600 UTC period.

### **Space Weather Outlook** **21 May - 16 June 2012**

Solar activity is expected to be at very low to low levels with a slight chance for M-class flares through 31 May and again from 14 June through the end of the forecast period. Low to moderate levels are expected from 31 May through 13 June due to the return of old Region 1476.

A chance for a greater than 10 MeV proton event at geosynchronous orbit exists from 31 May through 13 June due to the return of old Region 1476.



The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal levels on 21 - 23 May, 30 May - 05 June, and again on 13 - 16 June. High levels are expected on 24 - 29 May and again on 06 - 12 June. High levels are in response to recurrent coronal hole high speed wind streams.

Geomagnetic field activity is expected to be quiet to active on 22 - 23 May as the arrival of the 18 May CME as well as a coronal hole high speed stream become geoeffective. Quiet to active conditions are also expected on 06 - 09 June as another recurrent coronal hole high speed stream moves into geoeffective position. Mostly quiet to unsettled conditions are expected for the remainder 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
14 May	130	156	850	B4.3	7	0	0	6	0	0	0	0
15 May	129	125	550	B4.9	3	0	0	10	0	0	0	0
16 May	131	122	630	B4.5	3	0	0	3	0	0	0	0
17 May	136	114	720	B6.5	5	1	0	0	1	0	0	0
18 May	132	118	770	B4.5	7	0	0	3	0	0	0	0
19 May	131	110	840	B3.5	2	0	0	2	0	0	0	0
20 May	131	124	880	B3.4	0	0	0	2	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 May	1.8e+05	1.2e+04	3.0e+03		2.3e+08
15 May	2.1e+05	1.2e+04	3.0e+03		1.5e+08	
16 May	2.3e+05	1.2e+04	2.8e+03		1.4e+08	
17 May	2.4e+07	6.6e+06	3.2e+05		1.5e+07	
18 May	4.0e+07	1.2e+06	1.3e+04		1.9e+07	
19 May	9.3e+06	2.6e+05	3.5e+03		1.1e+07	
20 May	2.5e+06	5.3e+04	2.7e+03		1.1e+07	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	14 May	7	3-2-1-1-2-2-2-1	3	2-2-1-0-0-0-0-2	6
15 May	5	2-2-2-1-2-0-1-2	5	2-3-2-0-0-0-0-2	5	2-2-2-1-1-1-0-2
16 May	8	2-1-1-1-3-1-3-3	10	2-1-1-1-4-3-2-3	9	2-2-1-1-2-2-3-4
17 May	5	2-1-1-2-2-1-1-2	3	2-2-1-1-1-0-0-1	6	2-2-2-1-1-1-1-1
18 May	8	3-2-1-2-2-2-2-2	8	2-2-1-3-3-2-1-2	8	3-2-2-2-2-2-2-2
19 May	5	2-2-1-1-2-1-1-1	5	2-2-1-2-2-1-1-1	5	2-2-1-1-1-1-1-1
20 May	12	3-4-3-2-3-2-1-1	13	2-4-3-3-4-2-1-1	13	3-4-3-2-3-2-2-2



### *Alerts and Warnings Issued*

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
14 May 0530	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1415
15 May 0936	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1415
15 May 0959	SUMMARY: 10cm Radio Burst	15/0938 - 0939
16 May 0651	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	10/1415
16 May 2311	WARNING: Geomagnetic K = 4	16/2310 - 17/0600
16 May 2314	ALERT: Geomagnetic K = 4	16/2313
17 May 0253	ALERT: Proton Event 100MeV Integral Flux $>$ 1pfu	17/0252
17 May 0255	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	17/0255 - 2359
17 May 0256	WARNING: Proton 100MeV Integral Flux $>$ 1pfu	17/0255 - 2359
17 May 0256	ALERT: Proton Event 10MeV Integral Flux $\geq$ 10pfu	17/0255
17 May 0257	ALERT: X-ray Flux exceeded M5	17/0143
17 May 0258	SUMMARY: X-ray Event exceeded M5	17/0125 - 0214
17 May 0327	ALERT: Type IV Radio Emission	17/0132
17 May 0327	ALERT: Type II Radio Emission	17/0131
17 May 0329	SUMMARY: 10cm Radio Burst	17/0129 - 0151
17 May 1815	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 100pfu	17/0245 - 0945
17 May 2330	SUMMARY: Proton Event 100MeV Integral Flux $>$ 1pfu	17/0200 - 1725
17 May 2330	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	17/0255 - 18/1300
19 May 0031	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	17/0210 - 18/1620
20 May 0153	WARNING: Geomagnetic Sudden Impulse expected	20/0215 - 0245
20 May 0231	SUMMARY: Geomagnetic Sudden Impulse	20/0215
20 May 0241	WARNING: Geomagnetic K = 4	20/0245 - 1200
20 May 0516	ALERT: Geomagnetic K = 4	20/0511
20 May 0529	CANCELLATION: Geomagnetic K = 4	



### *Alerts and Warnings Issued*

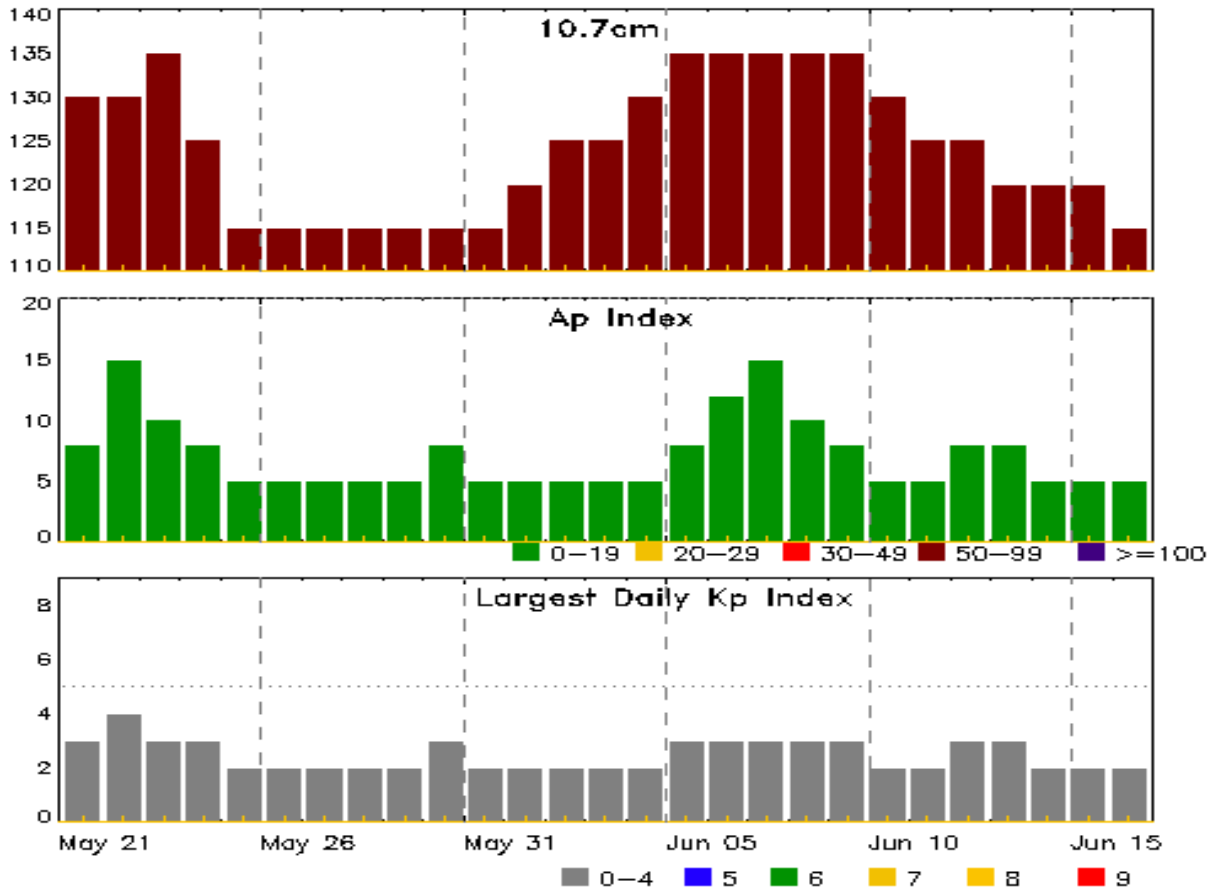
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<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
20 May 0530	ALERT: Geomagnetic K = 4	20/0514

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## 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 May	130	8	3	04 Jun	130	5	2
22	130	15	4	05	135	8	3
23	135	10	3	06	135	12	3
24	125	8	3	07	135	15	3
25	115	5	2	08	135	10	3
26	115	5	2	09	135	8	3
27	115	5	2	10	130	5	2
28	115	5	2	11	125	5	2
29	115	5	2	12	125	8	3
30	115	8	3	13	120	8	3
31	115	5	2	14	120	5	2
01 Jun	120	5	2	15	120	5	2
02	125	5	2	16	115	5	2
03	125	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
17 May	0125	0147	0214	M5.1	0.099	1F	N11W76	1476	1400	540	3	2

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
14 May	0038	0045	0052	C1.0			1476
14 May	0058	0058	0102		SF	N11W35	1476
14 May	0424	0429	0435	B8.0			1476
14 May	0714	0738	0743	C4.1	SF	N11W38	1476
14 May	0935	0939	0946	C2.5			1476
14 May	1025	1028	1031	B8.2			
14 May	1333	1338	1342	C1.0			1483
14 May	1542	1548	1552	B7.0			1476
14 May	1609	1615	1620	C3.2			1476
14 May	1835	1845	1856	B9.2	SF	N09W44	1476
14 May	1922	1926	1931	C1.7	SF	S28E44	1483
14 May	2020	2023	2028	B8.1			1484
14 May	2204	2209	2219	B9.6	SF	N09W44	1476
14 May	2351	0003	0013	C1.5	SF	N07W46	1476
15 May	0052	0119	0131		SF	N09W48	1476
15 May	0937	0945	1004	C1.7			1476
15 May	1146	1150	1155	B8.2			
15 May	1258	1335	1402		SF	N14E29	1482
15 May	1410	1417	1458		SF	N14E29	1482
15 May	1741	1747	1757		SF	N14E27	1482
15 May	1941	1945	1947	B9.0	SF	N14E26	1482
15 May	1954	1957	2000	C1.0	SF	N12W58	1476
15 May	2127	2129	2133		SF	S19E67	1485
15 May	2211	2216	2218	C3.0	SF	N13W61	1476
15 May	2256	2308	2311		SF	S18E67	1485
15 May	2335	2337	2342		SF	N10E53	1484
16 May	0014	0018	0021	C1.7	SF	N10E54	1484
16 May	0910	0921	0933	C2.5	SF	N11W63	1476
16 May	1221	1226	1230	C1.0			1476
16 May	2231	2231	2239		SF	N07E40	1484



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
17 May	0125	0147	0214	M5.1	1F	N11W76	1476
17 May	1150	1154	1200	C1.1			
17 May	1852	1902	1937	C1.3			1476
17 May	1947	1958	2017	C1.4			
17 May	2117	2132	2144	C1.3			1476
17 May	2245	2303	2325	C1.3			1476
18 May	0049	0050	A0134		SF	N16W09	1479
18 May	0445	0451	0455	B7.7			1482
18 May	0753	0823	0839	C3.6			1476
18 May	1252	1315	1334	C2.0			
18 May	1336	1347	1355	C2.1			
18 May	1447	1457	1511	C1.3			
18 May	1544	1556	1614	C1.9			
18 May	1755	1755	1759		SF	N11E16	1484
18 May	1830	1859	1921	C1.9			
18 May	1941	1942	1946		SF	N10E15	1484
18 May	2341	2359	0022	C2.2			1476
19 May	0115	0123	0131	C1.1	SF	N15W24	1479
19 May	1204	1218	1231	C1.0	SF	N10W30	1479
20 May	1319	1329	1337		SF	N10E15	1484
20 May	1800	1800	1808		SF	N10W12	1484





## 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 1474</b>																
02 May	N14E71		230	10	1	Hsx	1	A								
03 May	N16E52		230	20	1	Hrx	1	A								
04 May	N14E40		229	20	1	Hrx	1	A	1			1				
05 May	N13E30		226	10	1	Axx	1	A	1				1			
06 May	N13E17		226	10	1	Hrx	3	A								
07 May	N13E03		227	0	1	Axx	1	A								
08 May	N14W13		229	10		Axx	1	A				1				
09 May	N16W23		232	10	1	Axx	1	A								
10 May	N16W38		230	plage												
11 May	N16W52		229	plage												
12 May	N16W66		230	plage												
13 May	N16W80		231	plage												
									2	0	0	2	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 227

<b>Region 1475</b>																
03 May	N05E61		221	40		Hsx	1	A	2			2				
04 May	N06E49		220	20	1	Cao	2	B								
05 May	N04E39		217	10		Axx	1	A								
06 May	N05E25		217	5	1	Axx	1	A								
07 May	N05E10		220	plage												
08 May	N05W05		222	plage												
09 May	N05W20		224	plage												
10 May	N05W34		225	plage												
11 May	N05W49		226	plage												
12 May	N05W64		228	plage												
13 May	N05W79		230	plage												
									2	0	0	2	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 222



### *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 1476</b>																							
05 May	N09E67	188	360	7	Dko	3	B	8	2		6												
06 May	N10E63	188	760	16	Fhi	25	BG	11	2		9	1											
07 May	N10E48	182	810	16	Fkc	25	BG	8			2												
08 May	N11E35	181	940	17	Fkc	33	BGD	3	1		1	1											
09 May	N10E22	180	1050	19	Fkc	35	BGD	4	3		9	2											
10 May	N12E08	180	1040	20	Fkc	50	BGD	15	2		15	1	1										
11 May	N11W05	182	1040	20	Fkc	47	BGD	16			18												
12 May	N11W18	181	960	20	Fkc	40	BGD	6			16												
13 May	N09W33	183	810	19	Fki	44	BGD	3			3	1											
14 May	N09W46	182	600	21	Fko	53	BG	5			5												
15 May	N10W56	180	260	17	Fho	12	B	3			3												
16 May	N13W73	183	230	15	Cao	3	B	2			1												
17 May	N12W86	184	150	12	Cao	2	B	3	1			1											
								87	11	0	88	7	1	0	0								

Crossed West Limb.

Absolute heliographic longitude: 182

### **Region 1477**

08 May	S22E73	144	60	3	Hsx	1	A															
09 May	S24E62	140	150	11	Dso	2	B				2											
10 May	S22E47	144	100	2	Hsx	1	A															
11 May	S22E31	145	80	2	Hsx	1	A															
12 May	S21E19	143	40	1	Hsx	1	A															
13 May	S23E07	142	50	2	Hsx	1	A															
14 May	S22W05	142	40	6	Hsx	4	A															
15 May	S22W19	143	30	1	Hsx	1	A															
16 May	S21W32	143	10	2	Axx	1	A															
17 May	S20W45	143	20	1	Hrx	1	A															
18 May	S21W59	144	20	1	Hrx	1	A															
19 May	S22W72	144	20	1	Hrx	1	A															
20 May	S17W85	143	30	2	Hsx	1	A															
								0	0	0	2	0	0	0	0	0						

Still on Disk.

Absolute heliographic longitude: 142



**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

**Region 1478**

10 May	S24E55	135	90	3	Hsx	1	A										
11 May	S24E42	135	60	2	Hsx	1	A										
12 May	S24E30	133	60	2	Hsx	1	A										
13 May	S24E16	134	60	2	Hsx	1	A										
14 May	S24E04	133	70	6	Hsx	4	A										
15 May	S24W10	134	80	2	Hsx	1	A										
16 May	S22W23	134	60	2	Hsx	1	A										
17 May	S22W36	134	60	2	Hsx	1	A										
18 May	S22W50	135	50	2	Hsx	1	A										
19 May	S23W62	134	50	2	Hsx	1	A										
20 May	S24W75	133	60	3	Hsx	1	A										
											0	0	0	0	0	0	0

Still on Disk.  
Absolute heliographic longitude: 133

**Region 1479**

11 May	N15E65	111	90	4	Hsx	1	A											
12 May	N15E57	105	130	10	Dso	3	B											
13 May	N15E40	109	40	3	Hsx	1	A											
14 May	N14E26	110	50	2	Hsx	1	A											
15 May	N13E13	111	50	1	Hsx	1	A											
16 May	N10E01	110	50	3	Cso	3	B											
17 May	N14W12	110	50	2	Hsx	1	A											
18 May	N15W26	111	70	4	Cso	4	B					1						
19 May	N15W39	111	50	1	Hsx	1	A	2				2						
20 May	N14W53	111	50	2	Hsx	2	A											
											2	0	0	3	0	0	0	0

Still on Disk.  
Absolute heliographic longitude: 110

**Region 1480**

11 May	S16W10	187	10	2	Axx	2	A										
12 May	S16W24	188	plage														
13 May	S16W38	189	plage														
											0	0	0	0	0	0	0

Died on Disk.  
Absolute heliographic longitude: 187



**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 1481</b>																		
13 May	S10E61		88	40	2	Hsx	1	A										
14 May	S11E47		89	20	1	Hsx	1	A										
15 May	S10E33		90	30	1	Hsx	1	A										
16 May	S10E19		91	10	1	Axx	1	A										
17 May	S10E06		92	10	1	Axx	1	A										
18 May	S10W08		93	plage														
19 May	S10W22		94	plage														
20 May	S10W36		94	plage														
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 92

<b>Region 1482</b>																		
13 May	N14E51		100	80	5	Dso	2	B										
14 May	N14E35		101	50	4	Cso	4	B										
15 May	N14E20		103	70	3	Dai	4	B				4						
16 May	N13E10		101	130	6	Cao	9	B										
17 May	N14W03		101	190	7	Dai	10	B										
18 May	N15W17		102	230	8	Dai	18	B										
19 May	N15W30		102	280	8	Dki	14	B										
20 May	N14W44		102	260	7	Dho	8	B										
										0	0	0	4	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 101

<b>Region 1483</b>																		
13 May	S27E51		100	10	1	Bxo	7	B										
14 May	S27E37		101	10	1	Bxo	7	B	2			1						
15 May	S27E23		102	10	1	Axx	7	A										
16 May	S26E13		99	10		Axx	1	A										
17 May	S26W01		99	plage														
18 May	S26W15		100	plage														
19 May	S24W29		101	10	3	Bxo	4	B										
20 May	S25W43		101	50	6	Dso	6	B										
										2	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 99



### *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 1484</b>																		
13 May	N10E75		75	20	1	Hsx	1	A										
14 May	N10E65		73	10	7	Bxo	2	B										
15 May	N10E50		73	10	8	Bxo	6	B					1					
16 May	N09E38		72	120	8	Dao	9	B	1				2					
17 May	N09E24		74	230	9	Dai	15	B										
18 May	N10E11		74	200	9	Dsi	19	B					2					
19 May	N10W03		75	230	10	Dac	16	B										
20 May	N10W17		75	280	9	Dkc	17	B					2					
									1	0	0	7	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 75

<b>Region 1485</b>																		
15 May	S19E65		59	10	4	Axx	2	A					2					
16 May	S20E51		60	10	4	Bxo	4	B										
17 May	S19E37		61	10	5	Bxo	3	B										
18 May	S20E27		58	10	3	Axx	3	A										
19 May	S20E13		59	plage														
20 May	S20W01		59	plage														
									0	0	0	2	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 59

<b>Region 1486</b>																		
18 May	N15E67		17	190	8	Dao	2	B										
19 May	N16E54		18	200	8	Cso	3	B										
20 May	N16E40		18	140	8	Cso	4	B										
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 18

<b>Region 1487</b>																		
20 May	N19W05		63	10	3	Bxo	5	B										
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 63

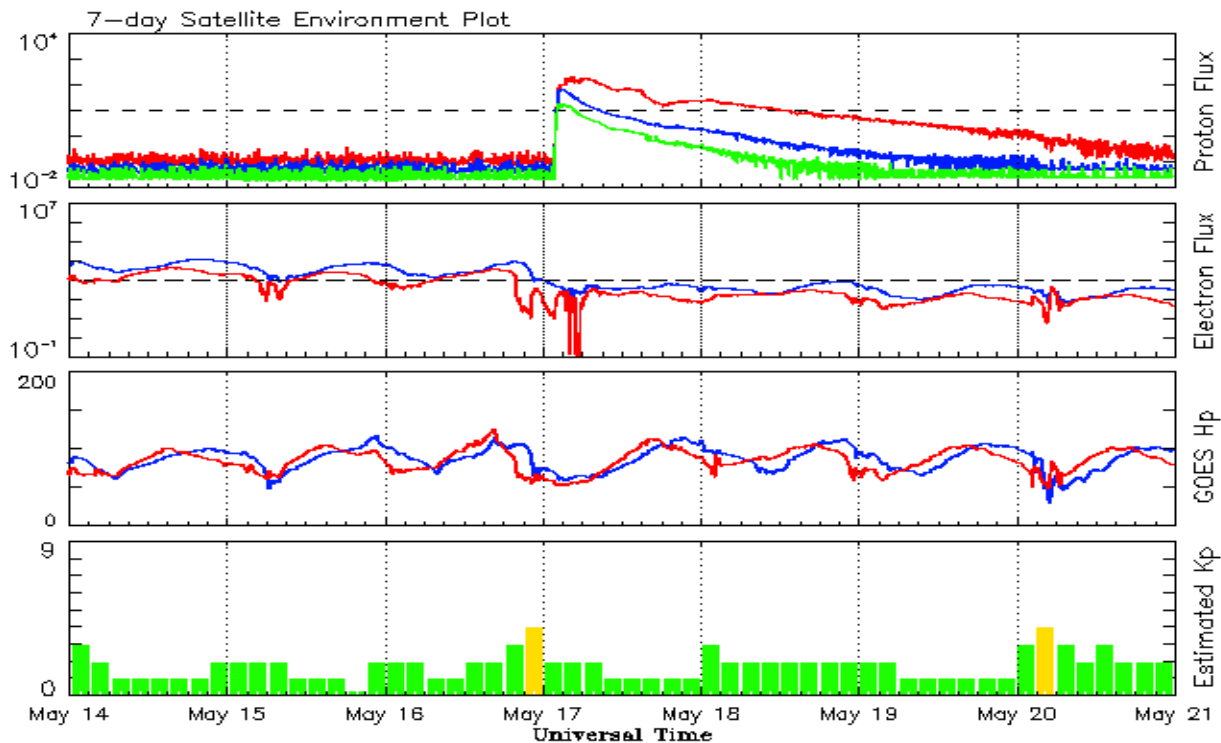


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2010</b>									
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
<b>2011</b>									
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			153.1		3	
December	106.3	73.0	0.69			141.2		3	
<b>2012</b>									
January	91.3	58.3	0.64			133.1		6	
February	50.1	33.1	0.66			106.7		7	
March	77.9	64.2	0.82			115.1		14	
April	84.4	55.2	0.65			113.1		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 14 May 2012*

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.

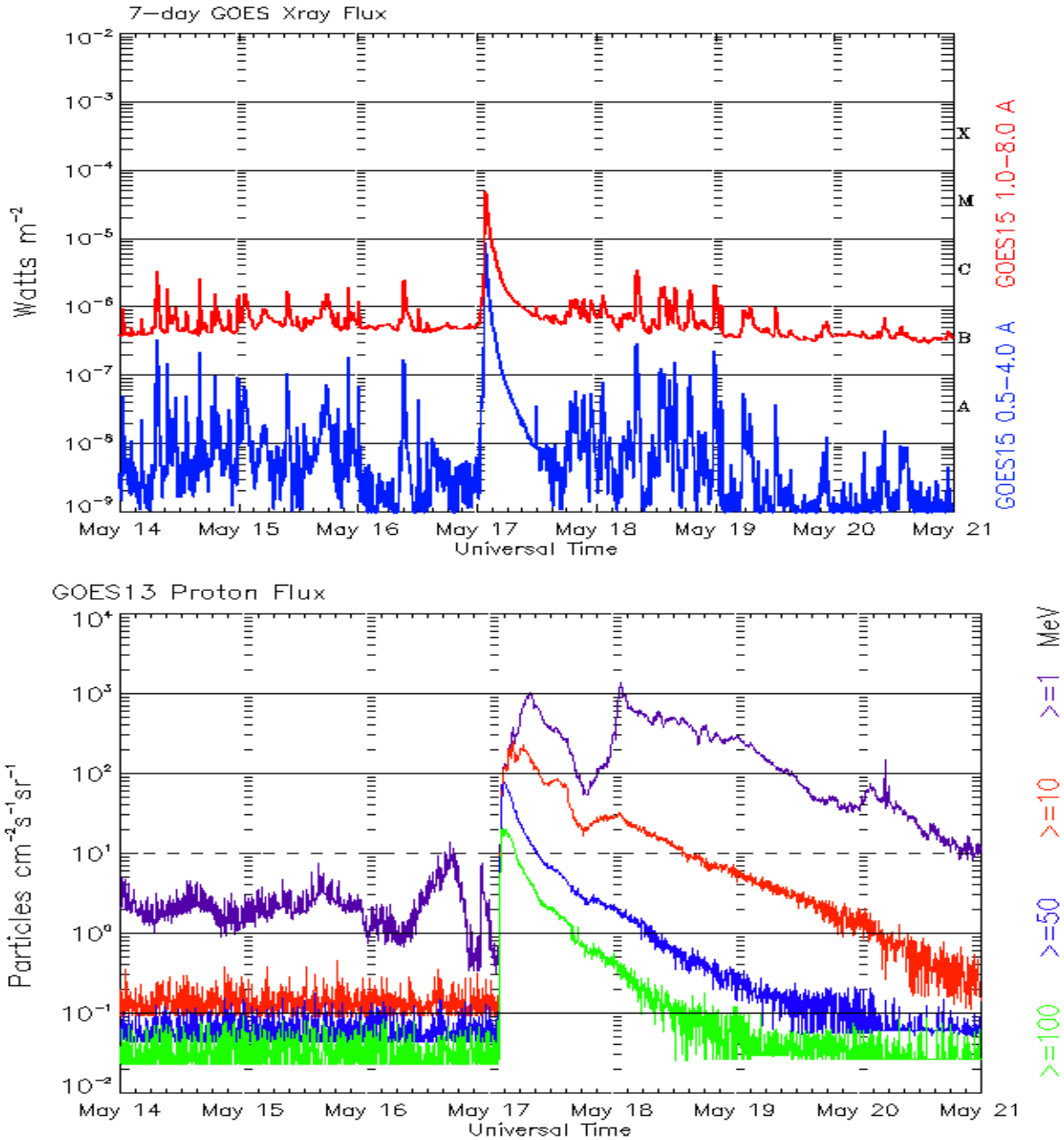
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 May 2012*

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)***

Published every Monday by the Space Weather Prediction Center.

U.S. Department of Commerce  
NOAA / National Weather Service  
Space Weather Prediction Center  
325 Broadway, Boulder CO 80305

**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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