

Solar activity was at very low to low levels. Low levels were observed on 09 April and 15 April. Region 1450 (N16, L=324, class/area Esi/180 on 06 April) produced a C2 flare at 09/0122 UTC while Region 1451 (N17, L=306, class/area Cro/020 on 30 March) produced a C3 flare at 09/1244 UTC. Associated with the C3 flare was a Type II Radio Sweep (478 km/s) and a CME first observed in SOHO/LASCO C2 imagery at 09/1325 UTC off the west limb with an estimated plane of sky speed of 767 km/s. Solar activity was at very low levels until 15 April when two low level C-class flares were observed just around the north east limb at 15/0140 UTC and 15/0234 UTC respectively. A faint partial halo CME was also observed beginning at 15/1000 UTC in SOHO/LASCO C2 imagery with the majority of the ejecta directed off the northeast limb. The CME was associated with a B9/Sf flare that occurred at 15/0908 UTC from Region 1459 (S16, L=96, class/area Dai/80 on 15 April). None of the CMEs are expected to be geoeffective.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels on 12 April. Moderate levels were reached on 09, 10 & 11 April and again on 13 April. High levels were reached on 14 & 15 April.

Geomagnetic field activity was at quiet to minor storm conditions with a period of major storming observed at high latitudes. The summary period started with mostly quiet conditions until 12 April. At approximately 12/0300 UTC, solar wind speed began to show a slow rise while the total field (Bt) component of the interplanetary magnetic field (IMF) increased to around 10 nT as a coronal hole high speed stream was moving into a geoeffective position. Solar wind speeds gradually increased to approximately 655 km/s by 13/0848 UTC. The geomagnetic field responded with quiet to active periods on 12 April and active to minor storm periods with an isolated major storm period through mid-day 13 April. By noon on 13 April, solar wind speeds were elevated still around 616 km/s, however the total field had decreased to around 3 nT. Solar wind speed slowly decreased to around 430 km/s by the end of the period. The geomagnetic field was at mostly quiet levels with isolated unsettled to active periods from late on 13 April through the end of the summary period.

Space Weather Outlook **16 April - 12 May 2012**

Solar activity is expected to be very low to low levels with the slight chance for M-class flares during the period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to begin the period at high levels, and remain so through 18 April. Conditions are forecast to decrease to normal to moderate levels through 10 May, before increasing to high levels again on 11 and 12 May.

Geomagnetic field activity is expected to begin the period at mostly quiet levels and remain so



through 19 April. Quiet to unsettled conditions are forecast due to a solar sector boundary crossing (SSBC) anticipated on 20 April, before returning to mostly quiet conditions on 21 and 22 April. Unsettled to active levels are forecast on 23 and 24 April from an expected recurrent coronal hole (CH). Mostly quiet levels are expected to return 25 April through 01 May. Should see unsettled to active conditions on 02, 03, & 04 May as the ambient background solar winds speeds should increase along with more possible southward Bz. Quiet conditions should return 5-8 May, before the return of high speed solar wind from a large negative polarity CH on 9, 10, 11 May, which is forecast to produce unsettled to active conditions and a possible isolated minor storm in the night sector. 12 May should see a return to mostly quiet levels to round out the period.



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
09 April	95	24	130	B1.1	2	0	0	0	0	0	0	0
10 April	93	24	15	B1.1	0	0	0	0	0	0	0	0
11 April	93	28	50	B1.1	0	0	0	2	0	0	0	0
12 April	95	50	100	B1.2	0	0	0	1	0	0	0	0
13 April	98	50	140	B1.5	0	0	0	0	0	0	0	0
14 April	98	65	220	B1.5	0	0	0	0	0	0	0	0
15 April	102	77	270	B2.4	2	0	0	2	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
	09 April	5.0e+05	1.2e+04	2.7e+03		1.6e+07
10 April	4.8e+05	1.3e+04	2.9e+03		5.0e+06	
11 April	1.4e+06	1.2e+04	3.1e+03		6.8e+06	
12 April	3.9e+05	1.3e+04	3.1e+03		1.5e+06	
13 April	3.9e+05	1.2e+04	3.0e+03		8.4e+06	
14 April	2.9e+05	1.3e+04	3.1e+03		1.7e+08	
15 April	8.2e+05	1.2e+04	3.2e+03		3.1e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 April	7	0-0-0-0-0-0-2-2	1	0-0-0-0-0-0-2-1	4
10 April	6	3-2-2-0-1-1-1-2	2	2-0-1-0-0-0-1-1	8	3-2-2-1-1-1-1-3
11 April	5	1-1-2-2-2-1-1-2	3	1-1-1-3-0-0-0-0	5	2-1-2-2-1-1-1-2
12 April	11	1-4-2-2-2-2-3-3	16	1-3-3-4-2-3-4-3	13	1-3-2-2-2-3-4-4
13 April	13	3-4-3-3-2-2-2-2	26	3-4-5-6-3-3-2-1	19	5-5-4-4-2-2-2-2
14 April	7	3-3-0-2-2-1-2-1	8	3-2-0-3-2-2-2-1	9	4-3-1-1-2-2-2-1
15 April	5	1-2-1-1-2-1-2-1	6	1-1-3-3-2-1-1-0	5	1-2-2-2-1-1-2-1

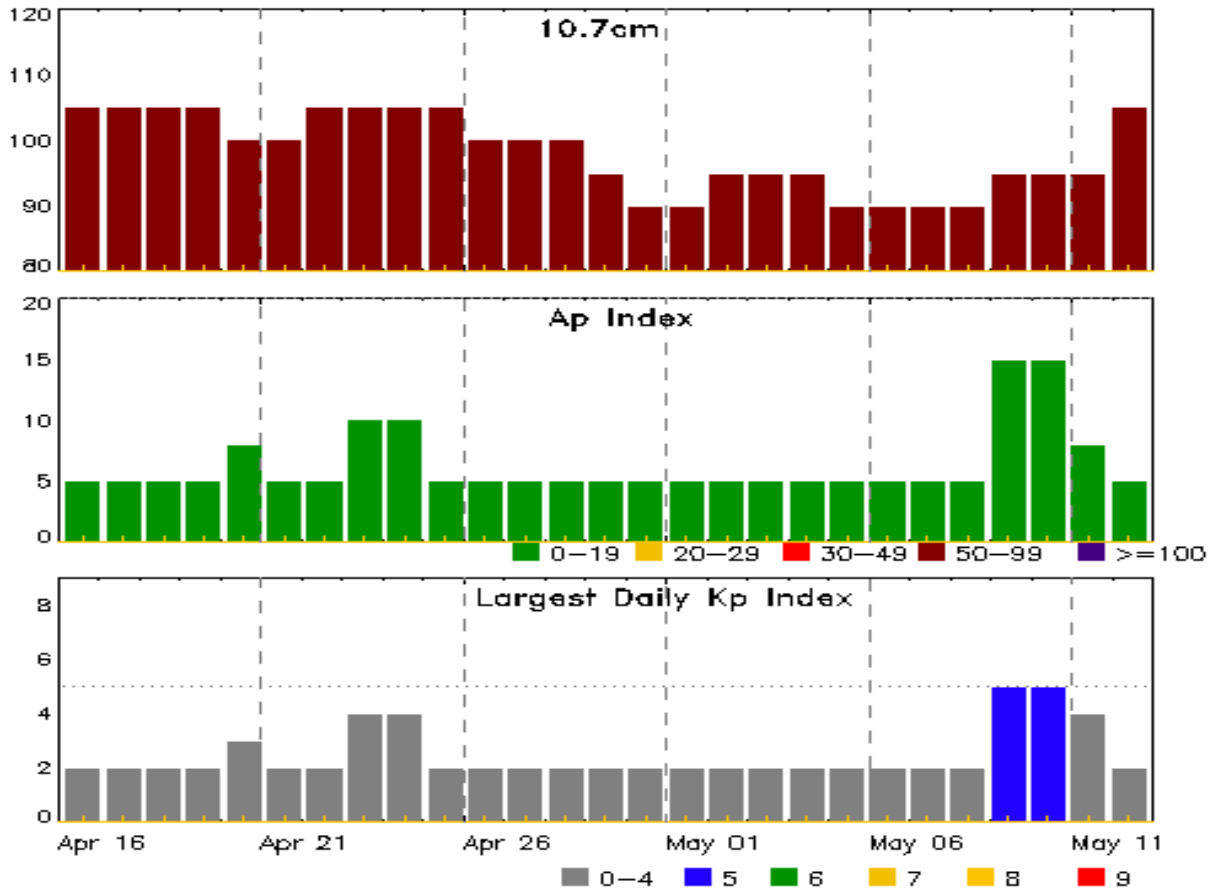


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
09 Apr 1324	ALERT: Type II Radio Emission	09/1228
12 Apr 1730	WARNING: Geomagnetic K = 4	12/1730 - 13/0300
12 Apr 1909	ALERT: Geomagnetic K = 4	12/1906
12 Apr 1946	WARNING: Geomagnetic K = 5	12/1945 - 13/0000
12 Apr 2359	EXTENDED WARNING: Geomagnetic K = 5	12/1945 - 13/0300
13 Apr 0156	EXTENDED WARNING: Geomagnetic K = 4	12/1730 - 13/0900
13 Apr 0234	ALERT: Geomagnetic K = 5	13/0207
13 Apr 0236	EXTENDED WARNING: Geomagnetic K = 5	12/1945 - 13/0900
13 Apr 0841	EXTENDED WARNING: Geomagnetic K = 4	12/1730 - 13/1900
14 Apr 0240	WARNING: Geomagnetic K = 4	14/0240 - 1200
14 Apr 0304	ALERT: Geomagnetic K = 4	14/0256
14 Apr 0315	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14/0300
14 Apr 1008	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14/0300
15 Apr 0601	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14/0300



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
16 Apr	105	5	2	30 Apr	90	5	2
17	105	5	2	01 May	90	5	2
18	105	5	2	02	95	5	2
19	105	5	2	03	95	5	2
20	100	8	3	04	95	5	2
21	100	5	2	05	90	5	2
22	105	5	2	06	90	5	2
23	105	10	4	07	90	5	2
24	105	10	4	08	90	5	2
25	105	5	2	09	95	15	5
26	100	5	2	10	95	15	5
27	100	5	2	11	95	8	4
28	100	5	2	12	105	5	2
29	95	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		Intensity
									245	2695	II IV

No Events Observed

Flare List

Date	Time			X-ray Class	Optical			Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #	
09 Apr	0111	0122	0131	C2.6			1450	
09 Apr	0620	0624	0641	B2.8				
09 Apr	0825	0828	0833	B2.2				
09 Apr	1212	1244	1308	C3.9			1451	
10 Apr	0344	0349	0354	B2.4				
10 Apr	1119	1122	1124	B2.1				
10 Apr	1133	1137	1140	B6.5				
11 Apr	1023	1030	1039	B2.7			1455	
11 Apr	1651	1651	1655		SF	N06E13	1455	
11 Apr	1656	1656	1659		SF	N06E14	1455	
12 Apr	0535	0535	0538		SF	N07E06	1455	
12 Apr	0809	0848	0917	B5.1			1455	
12 Apr	0929	0932	0934	B4.7			1455	
12 Apr	2324	2328	2330	B3.2				
13 Apr	0411	0421	0439	B4.7				
13 Apr	0502	0507	0512	B5.6			1455	
13 Apr	1434	1438	1447	B3.1			1455	
13 Apr	2330	2333	2339	B3.3				
14 Apr	0035	0047	0102	B9.8			1455	
14 Apr	0805	0811	0818	B5.1			1455	
14 Apr	2210	2218	2306	B7.6			1459	
15 Apr	0057	0140	0205	C2.7				
15 Apr	0216	0234	0245	C1.7				
15 Apr	0407	0423	0436	B8.2			1459	
15 Apr	0905	0908	0910	B9.6	SF	S18E82	1459	
15 Apr	1136	1136	1147		SF	S19E77	1459	
15 Apr	2238	2241	2246	B3.7				



Region Summary

Date	Location		Sunspot Characteristics					Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			Lon	10 ⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1442																
22 Mar	N13E49		67	10	1	Axx	1	A								
23 Mar	N13E36		67	plage												
24 Mar	N13E22		69	plage												
25 Mar	N13E08		70	plage												
26 Mar	N12W01		65	30	2	Cso	3	B	2			4				
27 Mar	N12W13		64	50	5	Dai	9	B	1			1				
28 Mar	N12W25		63	70	6	Dao	8	B								
29 Mar	N13W41		66	50	6	Dso	7	B				1				
30 Mar	N12W54		66	70	6	Dao	5	B								
31 Mar	N12W66		65	50	4	Dso	4	B								
01 Apr	N12W80		66	plage												
									3	0	0	6	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 65

Region 1450																
31 Mar	N15E38		321	20	5	Cro	5	B								
01 Apr	N17E22		324	20	2	Bxo	4	B				1				
02 Apr	N16E07		324	40	6	Dso	7	B				1				
03 Apr	N16W04		322	60	9	Dsi	13	B				1				
04 Apr	N17W19		324	80	10	Dsi	11	B	1			1				
05 Apr	N15W31		323	130	12	Esi	14	BG	3			3	1			
06 Apr	N16W45		324	180	13	Esi	15	BG				1				
07 Apr	N15W59		326	100	14	Csi	14	BG								
08 Apr	N15W75		328	120	4	Hsx	1	A				2				
09 Apr	N15W90		329	120	2	Hsx	1	A	1							
									5	0	0	10	1	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 322



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 1451																							
29 Mar	N17E82	306	plage							4													
30 Mar	N17E67	306	20	4	Cro	4	B	1				1											
31 Mar	N17E53	306	20	2	Cro	4	B																
01 Apr	N17E39	307	plage																				
02 Apr	N17E25	308	plage																				
03 Apr	N17E11	308	plage																				
04 Apr	N17W03	309	plage																				
05 Apr	N17W17	310	plage																				
06 Apr	N17W31	311	plage																				
07 Apr	N17W45	312	plage																				
08 Apr	N17W59	312	plage										4										
09 Apr	N17W73	313	plage					1															
10 Apr	N17W87	314	plage																				
								6	0	0	5	0	0	0	0	0							

Crossed West Limb.
 Absolute heliographic longitude: 309

Region 1452																							
02 Apr	N19E47	285	30	3	Dso	2	B																
03 Apr	N18E33	285	30	5	Dso	3	B																
04 Apr	N18E19	285	40	6	Dsi	6	B																
05 Apr	N18E05	287	30	7	Dro	5	B																
06 Apr	N18W08	288	30	6	Cro	4	B																
07 Apr	N17W23	289	10	4	Bxo	4	B	1															
08 Apr	N17W37	290	10	4	Bxo	4	B					1											
09 Apr	N18W51	291	10	2	Bxo	3	B																
10 Apr	N18W65	291	5	1	Axx	2	A																
11 Apr	N18W79	293	plage																				
								1	0	0	1	0	0	0	0	0							

Crossed West Limb.
 Absolute heliographic longitude: 287



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

Region 1453

02 Apr	S17E02	330	20	4	Cso	4	B										
03 Apr	S17W11	330	20	5	Bxo	5	B										
04 Apr	S17W28	333	10	1	Axx	2	A										
05 Apr	S17W42	335	plage														
06 Apr	S17W56	336	plage														
07 Apr	S17W70	337	plage														
08 Apr	S17W84	337	plage														
									0	0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 330

Region 1454

10 Apr	S13E70	157	10	2	Cro	2	B										
11 Apr	S13E56	158	20	2	Cro	2	B										
12 Apr	S12E43	158	20	3	Cro	3	B										
13 Apr	S12E26	160	0	1	Axx	1	A										
14 Apr	S12E13	160	plage														
15 Apr	S12W00	160	0	1	Axx	1	A										
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 160

Region 1455

11 Apr	N07E08	204	30	3	Cao	6	B				2						
12 Apr	N06W05	205	70	6	Dai	13	B				1						
13 Apr	N07W19	206	130	7	Dai	15	BG										
14 Apr	N06W34	207	150	8	Dai	18	B										
15 Apr	N05W46	207	170	10	Dsi	19	B										
									0	0	0	3	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 205



Region Summary - continued

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

Region 1456

12 Apr	S20W19	219	10		Bxo	4	B										
13 Apr	S20W33	220	plage														
14 Apr	S20W47	221	plage														
15 Apr	S20W61	222	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 219

Region 1457

13 Apr	N22E41	145	10	7	Bxo	4	B										
14 Apr	N21E28	145	30	4	Cro	4	B										
15 Apr	N21E14	147	10	2	Axx	2	A										
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 147

Region 1458

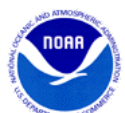
14 Apr	N07E70	104	10	5	Bxo	2	B										
15 Apr	N06E55	106	10	8	Bxo	2	B										
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 106

Region 1459

14 Apr	S15E79	95	30	1	Hrx	1	A										
15 Apr	S16E64	96	80	8	Dai	3	B				2						
									0	0	0	2	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 96

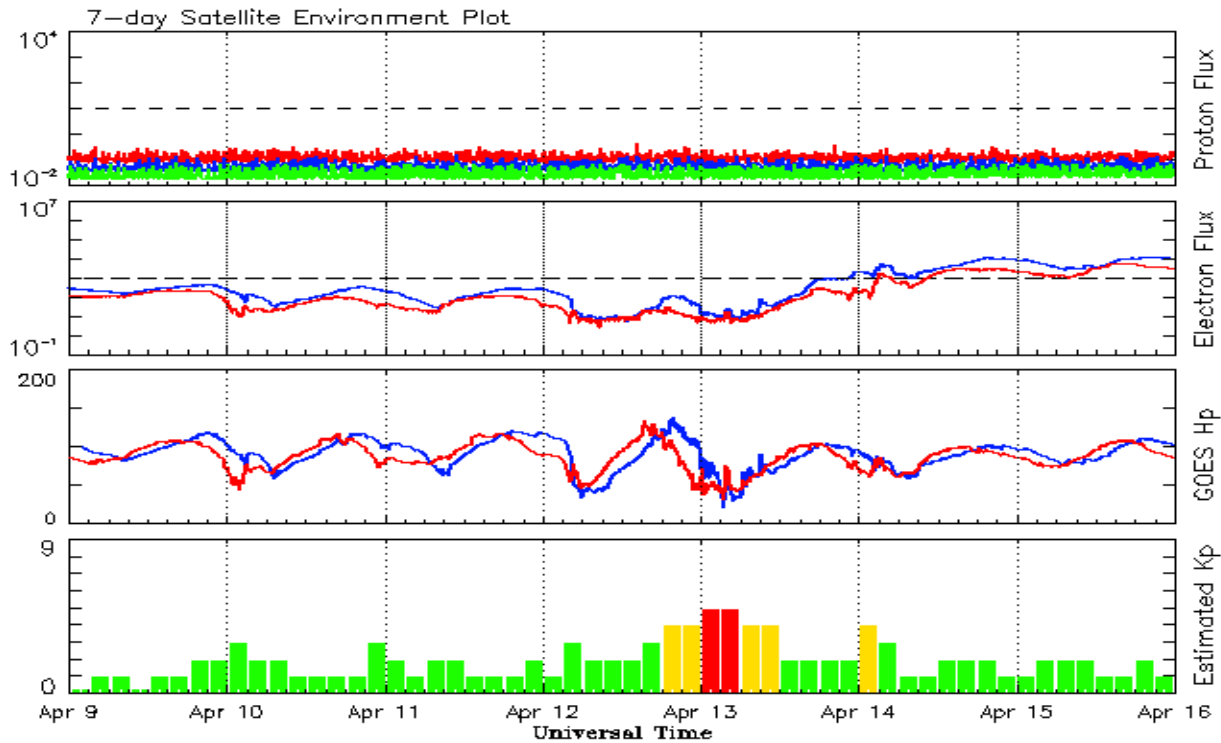


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
April	11.2	8.0	0.71	21.4	14.0	75.9	78.3	10	5.5
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
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			137.2		7	
November	133.1	96.7	0.73			153.1		3	
December	106.3	73.0	0.69			141.2		3	
2012									
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	

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 09 April 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.

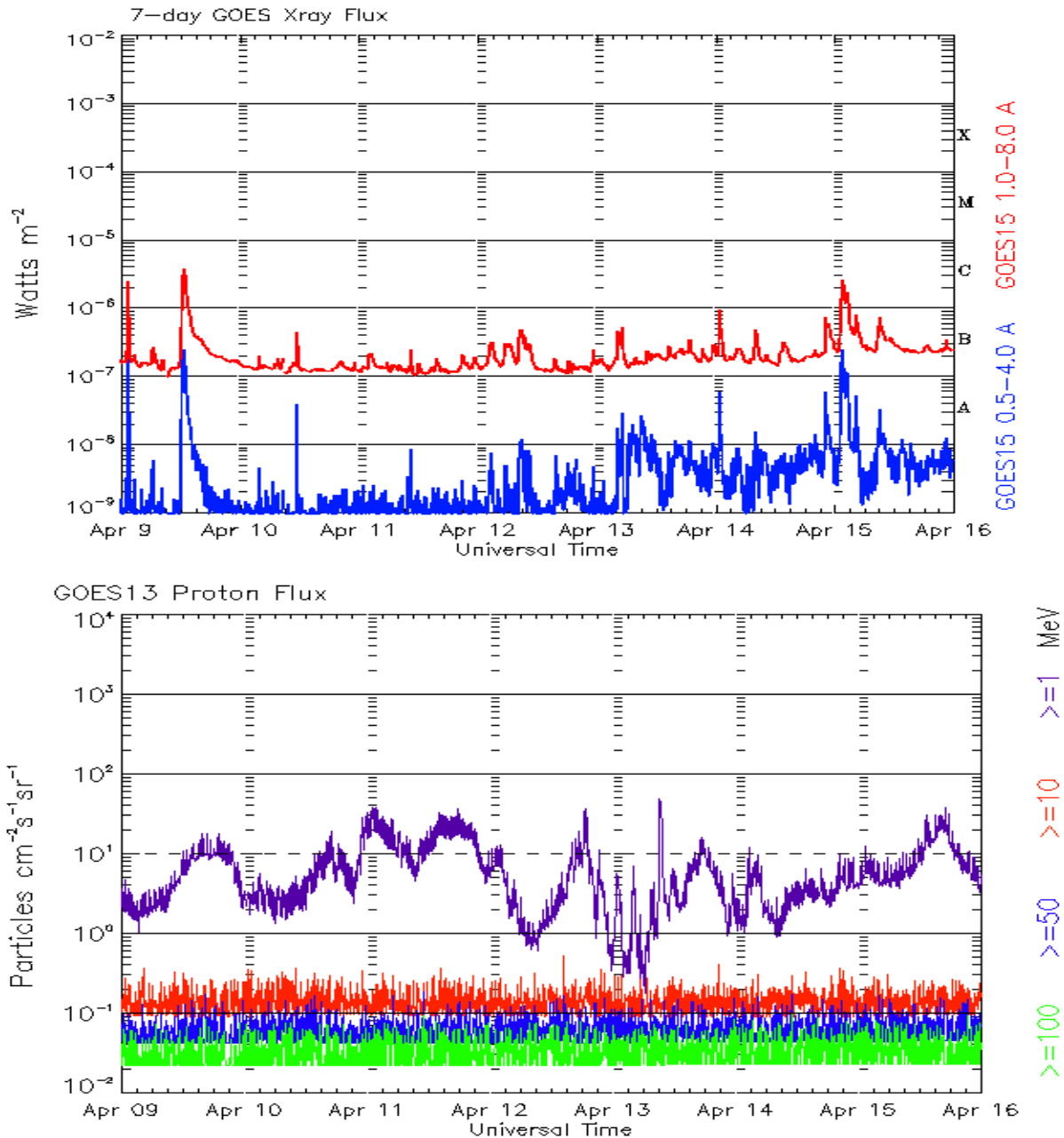
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 09 April 2012*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) 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/cm² -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

The Weekly has been published continuously since 1951 and is available online since 1997.

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