

Solar activity was low and only C-class flare activity was observed. Region 2540 (N21, L=068, class/area=Hrx/20 on 01 May) produced a C3 flare at 02/0842 UTC which was the largest event of the period. Region 2535 (N05, L=124, class/area=Hax/60 on 24 Apr) produced a C1 flare at 04/1531 UTC that had an associated Type II radio sweep (est. shock speed 560 km/s) and coronal mass ejection (CME). This CME was first observed in LASCO/C2 coronagraph imagery beginning 04/1412 UTC and likely arrived at Earth early on 08 May (see geomag section below for additional information). A pair of filament eruptions centered near N22E39 and N31E42 were observed in GONG imagery beginning at around 07/1515 UTC. The associated CME was first observed in LASCO/C2 imagery at 07/1648 UTC but analysis indicated that this CME was not Earth-directed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 03-06 May and moderate levels on 02, 07-08 May.

Geomagnetic field activity was at unsettled to G1 (Minor) geomagnetic storm levels on 02 May with quiet to active levels on 03 May due to the influence of a negative polarity coronal hole high speed stream (CH HSS). Quiet levels were observed on 04 May and quiet to unsettled levels were observed on 05 May under a nominal solar wind regime. The onset of a positive polarity CH HSS caused quiet to G1 (Minor) storm levels on 06 May and quiet to active levels on 07 May. On 08 May G1-G3 (Minor-Strong) geomagnetic storms were observed and analysis suggested that a CME (likely from 04 May as mentioned in solar activity section) was embedded in a CIR preceding a negative polarity CH HSS.

### **Space Weather Outlook** **09 May - 04 June 2016**

Solar activity is expected to be at very low (B-class flares) to low (C-class flares) levels throughout the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach very high levels on 10-13 May and high levels on 09, 14, and 30 May-02 Jun. Moderate flux levels are expected for the remainder of the period.

Geomagnetic field activity is expected to be reach G3 (Strong) geomagnetic storm levels on 09 May and G1 (Minor) storm levels on 10 May due to the influence of a negative polarity coronal hole high speed stream (CH HSS). G1 (Minor) storm levels are likely on 20 May due to the influence of a positive polarity CH HSS as well as on 29 May and 04 Jun due to the influence of



negative polarity CH HSSs.



### *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		
02 May	90	75	210	B1.3	1	0	0	1	0	0	0	0	
03 May	90	57	160	B2.4	0	0	0	1	0	0	0	0	
04 May	90	67	370	B2.6	2	0	0	3	1	0	0	0	
05 May	87	55	190	B2.5	0	0	0	1	0	0	0	0	
06 May	90	56	180	B2.2	0	0	0	2	0	0	0	0	
07 May	88	51	200	B2.1	1	0	0	3	1	0	0	0	
08 May	84	42	110	B2.1	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
	02 May	4.1e+05	1.3e+04	3.0e+03	1.1e+07	
03 May	3.7e+05	1.3e+04	3.0e+03	1.3e+08		
04 May	1.9e+05	1.3e+04	3.0e+03	2.3e+08		
05 May	2.7e+05	1.3e+04	3.2e+03	2.0e+08		
06 May	2.8e+05	1.3e+04	3.0e+03	5.7e+07		
07 May	1.3e+05	1.3e+04	3.1e+03	4.1e+06		
08 May	8.3e+05	1.2e+04	2.9e+03	3.9e+06		

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	02 May	26	5-5-1-3-4-3-4-4	44	4-5-5-5-5-6-4-4	31
03 May	11	3-4-3-2-2-1-1-2	20	4-4-5-4-3-1-1-2	11	3-4-3-2-2-1-1-2
04 May	4	2-1-0-2-2-1-1-1	4	2-2-0-2-2-1-0-0	5	2-2-0-2-1-1-1-1
05 May	7	0-2-1-3-3-1-2-1	15	0-1-2-5-5-2-0-1	8	0-2-1-3-3-2-2-2
06 May	12	2-2-2-2-3-2-4-3	21	2-3-2-4-5-4-4-2	15	2-2-2-2-3-3-5-3
07 May	9	3-1-1-2-2-3-2-3	11	2-2-2-3-4-3-1-2	10	4-2-1-2-2-2-1-3
08 May	32	4-4-5-4-4-4-4-5	117	5-7-6-6-6-9-6-4	67	6-7-6-5-5-5-5-6



### *Alerts and Warnings Issued*

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
02 May 0037	ALERT: Geomagnetic K = 5	02/0035
02 May 0100	WARNING: Geomagnetic K = 6	02/0100 - 0400
02 May 0334	ALERT: Geomagnetic K = 5	02/0330
02 May 0355	EXTENDED WARNING: Geomagnetic K = 6	02/0100 - 0700
02 May 0523	ALERT: Geomagnetic K = 6	02/0520
02 May 0644	EXTENDED WARNING: Geomagnetic K = 4	01/1419 - 02/1800
02 May 0958	ALERT: Type II Radio Emission	02/0841
02 May 1756	EXTENDED WARNING: Geomagnetic K = 4	01/1419 - 02/2359
02 May 1959	WARNING: Geomagnetic K = 5	02/1959 - 2359
02 May 2352	EXTENDED WARNING: Geomagnetic K = 4	01/1419 - 03/0900
03 May 0000	ALERT: Geomagnetic K = 5	02/2359
03 May 1058	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1040
04 May 0556	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1040
04 May 1437	ALERT: Type II Radio Emission	04/1353
05 May 0501	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1040
06 May 1146	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1040
06 May 1349	WARNING: Geomagnetic K = 4	06/1349 - 07/0600
06 May 1904	ALERT: Geomagnetic K = 4	06/1904
06 May 1908	WATCH: Geomagnetic Storm Category G1 predicted	
06 May 1937	WARNING: Geomagnetic K = 5	06/1937 - 07/0300
06 May 2101	ALERT: Geomagnetic K = 5	06/2059
07 May 0556	EXTENDED WARNING: Geomagnetic K = 4	06/1349 - 07/1800
07 May 1716	WATCH: Geomagnetic Storm Category G1 predicted	
07 May 2340	WARNING: Geomagnetic K = 4	07/2340 - 08/0600
08 May 0136	EXTENDED WARNING: Geomagnetic K = 4	07/2340 - 08/0900
08 May 0136	WARNING: Geomagnetic K = 5	08/0135 - 0600
08 May 0154	ALERT: Geomagnetic K = 4	08/0153

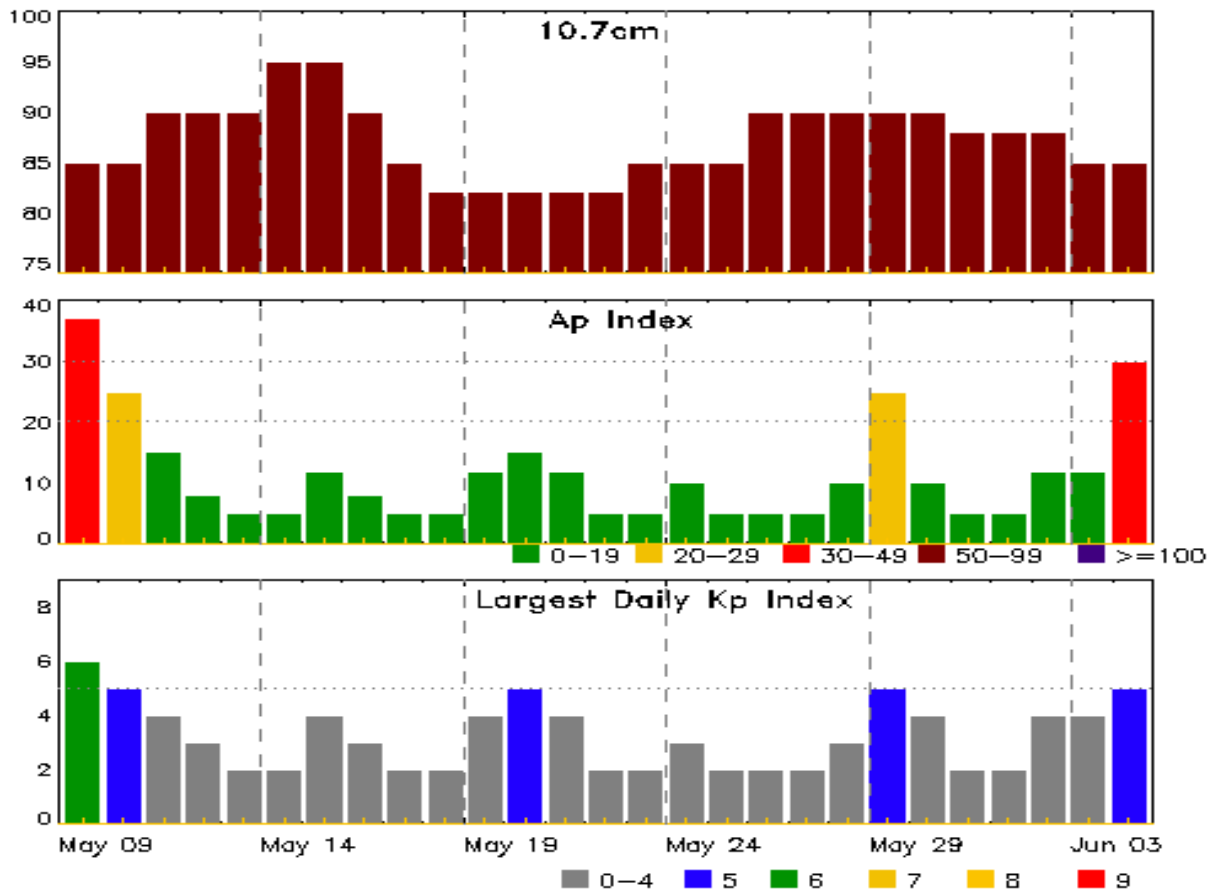


### *Alerts and Warnings Issued*

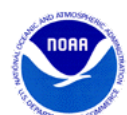
<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
08 May 0228	ALERT: Geomagnetic K = 5	08/0225
08 May 0233	WARNING: Geomagnetic K = 6	08/0230 - 0600
08 May 0303	ALERT: Geomagnetic K = 6	08/0259
08 May 0430	ALERT: Geomagnetic K = 5	08/0425
08 May 0516	ALERT: Geomagnetic K = 6	08/0515
08 May 0518	WARNING: Geomagnetic K >= 7	08/0515 - 0900
08 May 0558	ALERT: Geomagnetic K = 7	08/0559
08 May 0558	EXTENDED WARNING: Geomagnetic K = 6	08/0230 - 1200
08 May 0558	EXTENDED WARNING: Geomagnetic K = 5	08/0135 - 1500
08 May 0558	EXTENDED WARNING: Geomagnetic K = 4	07/2340 - 08/1800
08 May 0659	ALERT: Geomagnetic K = 5	08/0655
08 May 0809	ALERT: Geomagnetic K = 6	08/0807
08 May 1132	ALERT: Geomagnetic K = 5	08/1130
08 May 1429	EXTENDED WARNING: Geomagnetic K = 5	08/0135 - 09/0600
08 May 1445	ALERT: Geomagnetic K = 5	08/1444
08 May 1505	EXTENDED WARNING: Geomagnetic K = 4	07/2340 - 09/0600
08 May 1548	WARNING: Geomagnetic K = 6	08/1550 - 2359
08 May 1553	ALERT: Geomagnetic K = 5	08/1550
08 May 2000	ALERT: Geomagnetic K = 5	08/1959
08 May 2122	EXTENDED WARNING: Geomagnetic K = 6	08/1550 - 09/0600
08 May 2213	ALERT: Geomagnetic K = 5	08/2210
08 May 2327	ALERT: Geomagnetic K = 6	08/2325
08 May 2359	WARNING: Geomagnetic K >= 7	08/2355 - 09/0400



## 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
09 May	85	37	6	23 May	85	5	2
10	85	25	5	24	85	10	3
11	90	15	4	25	85	5	2
12	90	8	3	26	90	5	2
13	90	5	2	27	90	5	2
14	95	5	2	28	90	10	3
15	95	12	4	29	90	25	5
16	90	8	3	30	90	10	4
17	85	5	2	31	88	5	2
18	82	5	2	01 Jun	88	5	2
19	82	12	4	02	88	12	4
20	82	15	5	03	85	12	4
21	82	12	4	04	85	30	5
22	82	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	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
02 May	0301	0310	0313	B3.1			2535
02 May	0712	0720	0735	B4.5			2539
02 May	0832	0842	0847	C3.5			2540
02 May	1848	1849	1856		SF	N18E17	2539
03 May	0054	0100	0105	B6.4	SF	N18E09	2539
03 May	0810	0817	0844	B6.2			2541
03 May	1624	1627	1630	B3.2			
03 May	2310	2313	2315	B3.1			2539
03 May	2355	0001	0004	B7.5			
04 May	0103	0122	0135	B6.9	SF	S00E54	2541
04 May	1341	1351	1407	C1.3	SF	N08W61	2535
04 May	1821	1824	1828	B3.2	SF	N20W11	2539
04 May	1959	2003	2006	B3.0			
04 May	2243	2248	2251	C1.7	1N	N10E72	2542
05 May	0721	0726	0733	B4.1			2536
05 May	1333	1337	1338		SF	N15E64	2542
05 May	2209	2214	2227	B4.1			2539
06 May	1004	1010	1024	B4.4			2541
06 May	1228	1231	1244	B5.3	SF	N04E23	2541
06 May	1404	1405	1428		SF	N04E20	2541
07 May	0635	0640	0647	B5.4	SF	N04E11	2541
07 May	1248	1301	1343	B5.8	SF	N13W88	2536
07 May	1457	1504	1513		SF	N04E08	2541
07 May	1704	1713	1724	C1.9	1F	N04E06	2541
08 May	0225	0230	0238	B5.3			2541



## 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 2533</b>																							
20 Apr	S02E68	184	60	2	Hsx	1	A																
21 Apr	S02E54	184	60	2	Hsx	1	A																
22 Apr	S02E43	182	60	1	Hsx	1	A																
23 Apr	S02E30	180	80	1	Hsx	1	A																
24 Apr	S02E15	182	100	2	Hsx	1	A																
25 Apr	S02E01	185	100	2	Hsx	1	A																
26 Apr	S02W10	182	100	2	Hsx	1	A																
27 Apr	S03W24	183	110	3	Hsx	1	A																
28 Apr	S02W37	183	90	2	Hsx	1	A																
29 Apr	S02W50	183	80	2	Hsx	1	A																
30 Apr	S03W64	183	80	2	Hsx	1	A																
01 May	S03W78	184	70	2	Hsx	1	A																

Crossed West Limb.  
Absolute heliographic longitude: 185

<b>Region 2534</b>																							
24 Apr	N06E48	149	10	1	Axx	1	A																
25 Apr	N11E35	151	plage																				
26 Apr	N11E21	151	plage																				
27 Apr	N11E07	152	plage																				
28 Apr	N11W07	153	plage																				
29 Apr	N11W21	154	plage																				
30 Apr	N11W35	154	plage																				
01 May	N11W49	155	plage																				
02 May	N11W63	156	plage																				
03 May	N11W77	157	plage																				

Died on Disk.  
Absolute heliographic longitude: 152





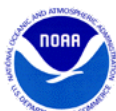
**Region Summary - continued**

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 2535</b>																		
24 Apr	N05E74	124	60	1	Hax	1	A											
25 Apr	N05E59	127	30	1	Hax	2	A											
26 Apr	N06E45	127	30	1	Hax	1	A											
27 Apr	N06E30	129	20	1	Hsx	2	A											
28 Apr	N07E16	130	30	4	Cao	5	B	4				4						
29 Apr	N06E02	131	30	3	Cao	5	B					1						
30 Apr	N06W12	131	30	3	Cao	3	B											
01 May	N06W27	133	40	2	Hax	3	A											
02 May	N07W42	135	30	2	Cao	3	B											
03 May	N07W55	135	20	1	Hax	1	A											
04 May	N07W68	135	20	1	Hax	1	A	1				1						
05 May	N07W83	136	plage															
								5	0	0	6	0	0	0	0	0		

Crossed West Limb.  
 Absolute heliographic longitude: 131

<b>Region 2536</b>																		
26 Apr	N15E55	117	40	3	Dao	5	B					7						
27 Apr	N15E41	118	80	4	Dao	9	B					5						
28 Apr	N16E28	118	70	6	Dai	7	B											
29 Apr	N16E16	117	90	6	Dai	8	B											
30 Apr	N16E02	117	100	5	Dai	9	B					1						
01 May	N16W11	117	150	5	Dai	11	B											
02 May	N16W26	119	90	6	Dao	9	B											
03 May	N15W38	118	70	6	Dao	5	B											
04 May	N15W51	118	70	6	Dao	8	B											
05 May	N14W66	119	20	1	Hsx	2	A											
06 May	N15W78	117	10	1	Hsx	1	A											
07 May	N15W92	119	10	1	Hsx	1	A					1						
								0	0	0	14	0	0	0	0	0		

Crossed West Limb.  
 Absolute heliographic longitude: 117





### *Region Summary - continued*

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

#### **Region 2540**

30 Apr	N21E51	68	20	2	Hrx	2	A											
01 May	N21E38	68	20	2	Hrx	3	A											
02 May	N22E24	69	10	3	Bxo	3	B	1										
03 May	N22E10	70	plage															
04 May	N22W03	70	plage															
05 May	N22W17	70	plage															
06 May	N22W31	71	plage															
07 May	N22W45	72	plage															
08 May	N22W59	73	plage															
									1	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 70

#### **Region 2541**

02 May	N04E64	29	10	1	Bxo	3	B											
03 May	N04E52	28	20	4	Cro	4	B											
04 May	N04E39	28	20	4	Cro	3	B				1							
05 May	N04E28	25	30	4	Dro	6	B											
06 May	N04E14	25	10	7	Bxi	10	B					2						
07 May	N04W00	27	20	5	Cro	5	B	1				2	1					
08 May	N04W14	28	0	1	Axx	1	A											
									1	0	0	5	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 27

#### **Region 2542**

04 May	N09E70	356	250	3	Cko	2	B	1					1					
05 May	N10E56	357	120	3	Cso	3	B					1						
06 May	N10E42	357	150	4	Cso	3	B											
07 May	N11E28	359	170	5	Hax	4	A											
08 May	N12E16	358	100	5	Cao	8	B											
									1	0	0	1	1	0	0	0	0	0

Still on Disk.

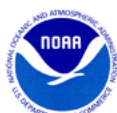
Absolute heliographic longitude: 358

#### **Region 2543**

08 May	S06E12	2	10	4	Bxo	3	B											
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 2

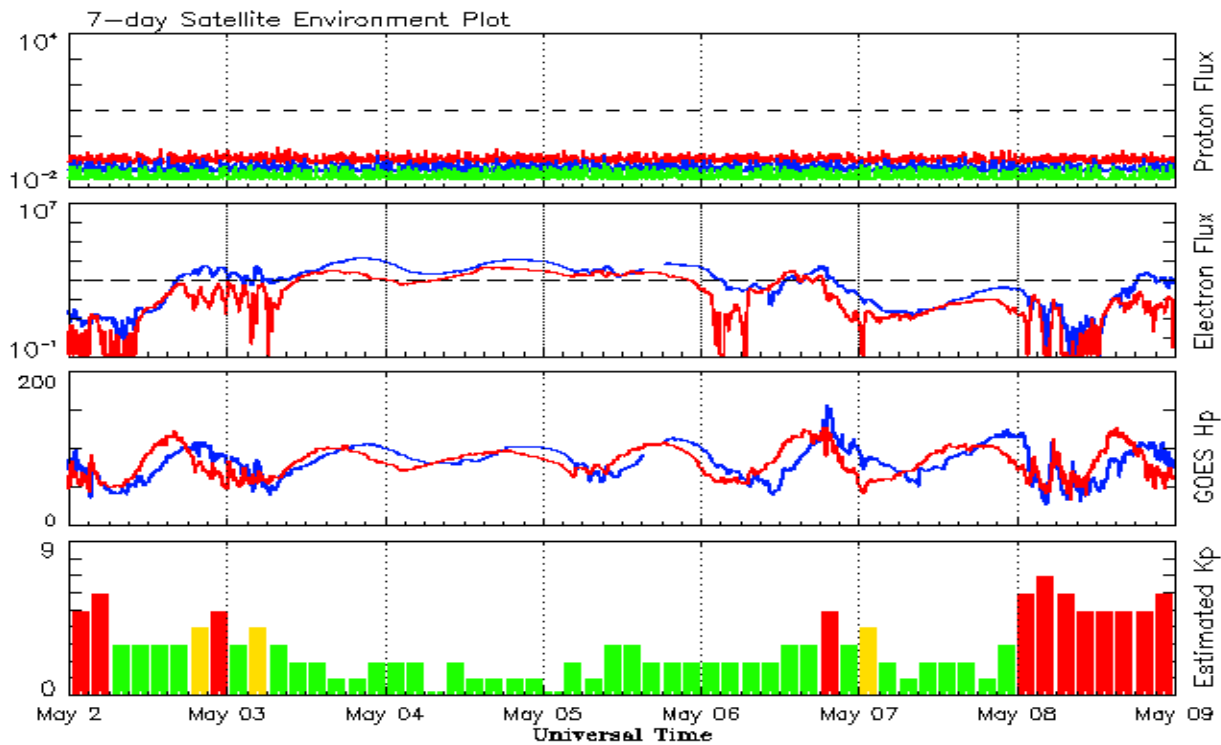


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2014</b>									
May	116.8	67.5	0.64	122.3	69.0	130.0	144.7	7	7.9
June	107.7	61.7	0.66	121.4	68.5	122.2	145.5	7	8.4
July	113.6	60.1	0.64	120.4	67.6	137.3	145.2	5	8.8
August	106.2	64.1	0.70	115.1	65.0	124.7	142.8	9	8.9
September	127.4	78.0	0.69	107.4	61.1	146.1	140.1	11	9.3
October	92.0	54.0	0.66	101.7	58.4	153.7	138.4	10	9.9
November	101.8	62.2	0.69	97.9	56.8	155.3	137.4	10	10.1
December	120.0	67.7	0.65	95.2	55.3	158.7	137.0	12	10.5
<b>2015</b>									
January	101.2	55.8	0.66	92.1	53.6	141.7	135.8	10	11.0
February	70.6	40.0	0.63	88.3	51.7	128.8	133.8	10	11.5
March	61.7	32.7	0.62	84.2	49.3	126.0	131.2	17	12.0
April	72.5	45.2	0.75	80.5	47.3	129.2	127.3	12	12.4
May	83.0	53.3	0.71	77.5	45.7	120.1	123.3	9	12.7
June	77.3	39.9	0.53	73.1	43.3	123.2	119.5	14	13.0
July	68.4	39.5	0.58	68.2	41.0	107.0	116.0	10	13.1
August	61.6	38.6	0.63	65.5	39.8	106.2	113.3	16	13.1
September	72.5	47.2	0.65	64.0	39.6	102.1	110.8	16	12.8
October	59.5	38.2	0.62	61.8	38.6	104.1	107.9	15	12.5
November	61.8	37.3	0.61			109.6		13	
December	54.1	34.8	0.64			112.8		15	
<b>2016</b>									
January	50.4	34.0	0.67			103.5		10	
February	56.0	34.3	0.61			103.5		10	
March	40.9	32.9	0.80			91.6		11	
April	39.2	22.8	0.58			93.4		10	

**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 02 May 2016*

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.

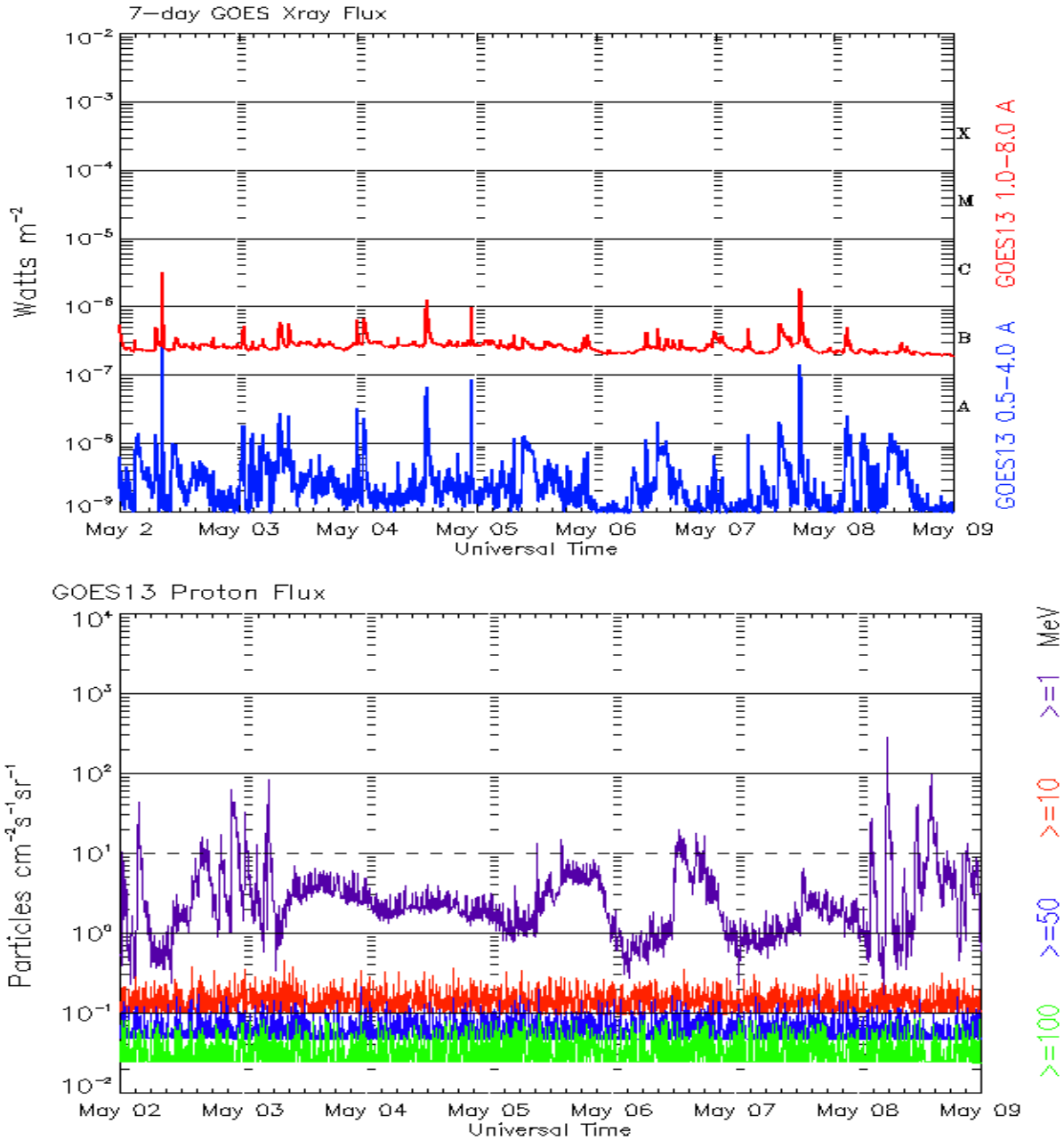
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 02 May 2016*

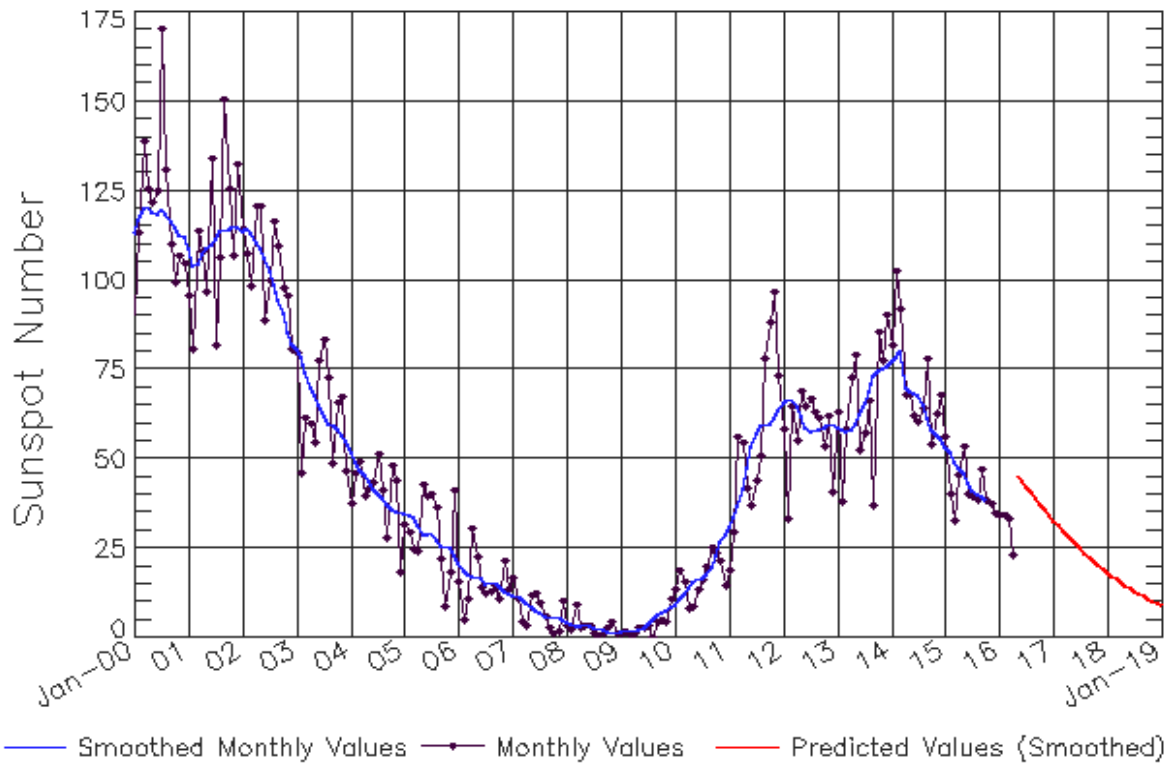
The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

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.



# ISES Solar Cycle Sunspot Number Progression

Observed data through Apr 2016



Updated 2016 May 9

NOAA/SWPC Boulder, CO USA

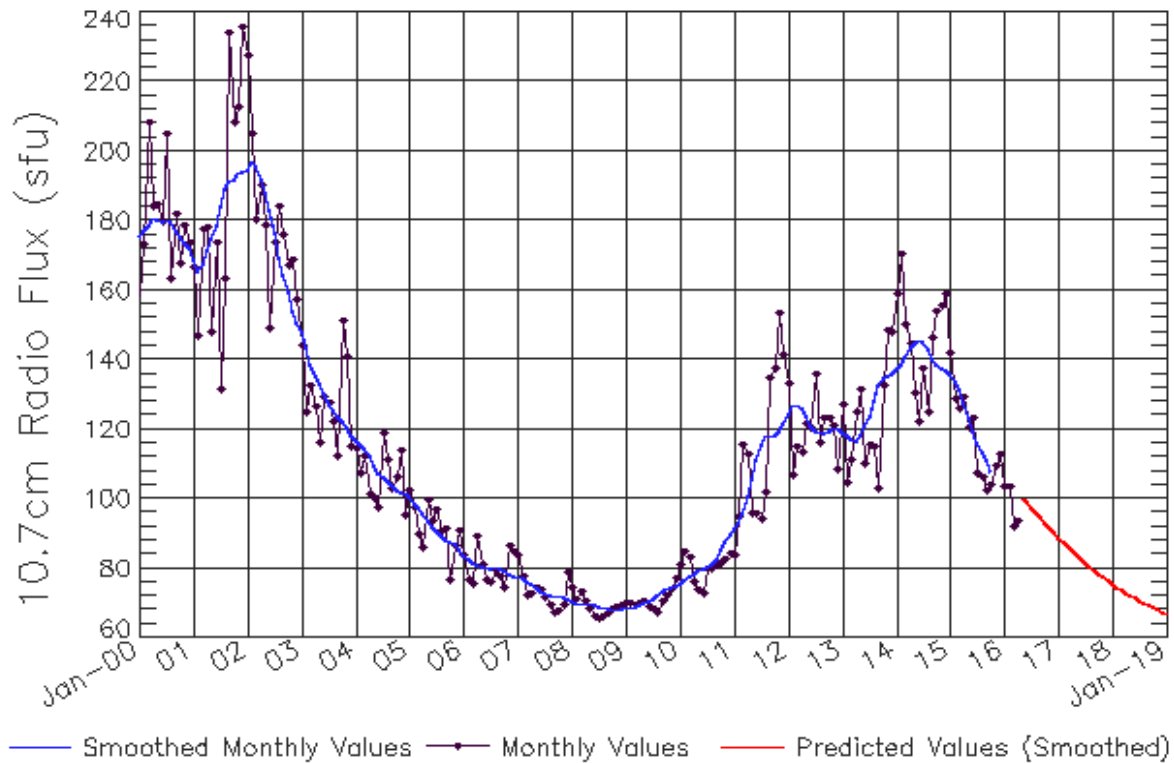
## Smoothed Sunspot Number Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	9 (1)	10 (2)	11 (3)	13 (5)	15 (5)	16 (6)	17 (7)	17 (7)	20 (8)	23 (9)	27 (9)	29 (10)
2011	19 (10)	30 (10)	56 (10)	54 (10)	42 (10)	37 (10)	44 (10)	51 (10)	78 (10)	88 (10)	97 (10)	73 (10)
2012	58 (10)	33 (10)	64 (10)	55 (10)	69 (10)	65 (10)	67 (10)	63 (10)	61 (10)	53 (10)	62 (10)	41 (10)
2013	63 (10)	38 (10)	58 (10)	72 (10)	79 (10)	53 (10)	57 (10)	66 (10)	37 (10)	86 (10)	78 (10)	90 (10)
2014	82 (10)	102 (10)	92 (10)	68 (10)	68 (10)	62 (10)	60 (10)	64 (10)	78 (10)	54 (10)	62 (10)	68 (10)
2015	56 (10)	40 (10)	33 (10)	45 (10)	53 (10)	40 (10)	40 (10)	39 (10)	47 (10)	38 (10)	37 (10)	35 (10)
2016	34 (10)	34 (10)	33 (10)	23 (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 Apr 2016



Updated 2016 May 9

NOAA/SWPC Boulder, CO USA

### *Smoothed F10.7cm Radio Flux Prediction*

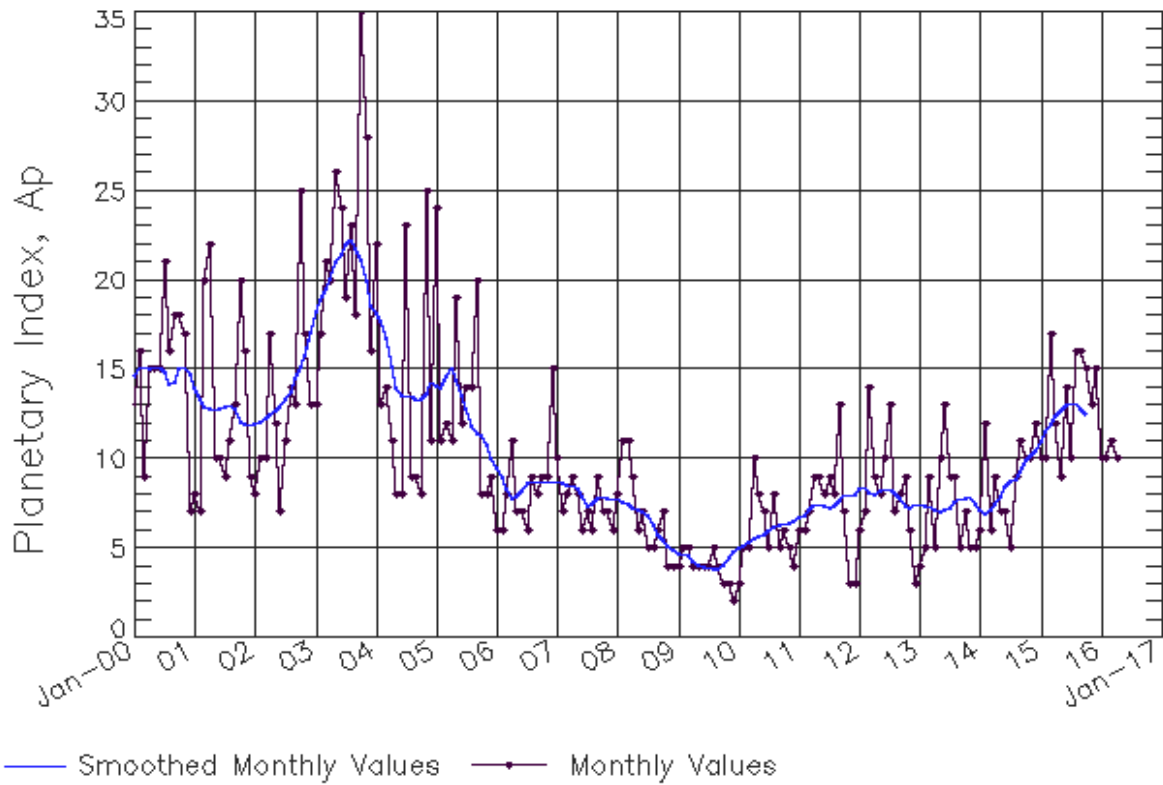
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	76 (***)	77 (***)	78 (***)	78 (***)	79 (***)	80 (***)	80 (***)	81 (***)	82 (***)	85 (***)	88 (***)	90 (***)
2011	91 (***)	93 (***)	96 (***)	100 (***)	106 (***)	111 (***)	115 (***)	118 (***)	118 (***)	118 (***)	120 (***)	122 (***)
2012	124 (***)	127 (***)	127 (***)	126 (***)	124 (***)	121 (***)	120 (***)	119 (***)	119 (***)	119 (***)	120 (***)	120 (***)
2013	119 (***)	118 (***)	117 (***)	117 (***)	118 (***)	121 (***)	124 (***)	128 (***)	132 (***)	135 (***)	135 (***)	136 (***)
2014	137 (***)	139 (***)	141 (***)	144 (***)	145 (***)	146 (***)	145 (***)	143 (***)	140 (***)	138 (***)	137 (***)	137 (***)
2015	136 (***)	134 (***)	131 (***)	127 (***)	123 (***)	120 (***)	116 (***)	113 (***)	111 (***)	108 (***)	106 (1)	104 (1)
2016	102 (2)	102 (3)	101 (4)	100 (4)	99 (5)	97 (6)	96 (7)	94 (8)	93 (8)	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 Apr 2016



Updated 2016 May 9

NOAA/SWPC Boulder, CO USA

*Solar Cycle Comparison charts are temporarily unavailable.*



## ***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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