

Solar activity began the week at low levels with a C1 x-ray event at 1352 UTC on 02 May from Region 1199 (N18, L=188, class/area Dso/210 on 01 May), after rotating around the west limb. Activity continued at low levels with another C1 x-ray event at 1052 UTC on 03 May from Region 1204 (N17, L=47, class/area Cao/130 on 03 May). Activity decreased to very low levels, with only isolated B-class events occurring throughout the remainder of the summary period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels during most of the summary period.

Geomagnetic field activity began the week ranging between unsettled to active conditions at mid latitudes, and minor to severe conditions at high latitudes on 02 May, due to a favorably positioned coronal hole. The high speed stream effects began prior to the summary period (29 April) and persisted through 02 May with solar wind speeds in excess of 640 km/s, and intermittent periods of negative Bz. Conditions began to subside on 03 May, settling to predominately quiet conditions with predominately positive Bz, before solar wind speeds decreased to background velocities near 400 km/s on 04 May. Conditions remained mostly quiet at all latitudes for the remainder of the summary period.

Space Weather Outlook **11 May - 06 June 2011**

Solar activity is expected to be very low to low. There is a chance for isolated periods of moderate levels due to the possible emergence of new regions, the return of old Region 1195 on 13 May, as well as Regions 1199 and 1202 on 14 May.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels 11-19 May due to multiple coronal hole high-speed streams. Normal to moderate levels are expected to be predominate from 20-27 May, before elevated wind speeds from another recurrent coronal hole should produce high levels from 28 May until 02 June. Moderate or lower conditions should persist from 03 June until the end of the outlook period.

Geomagnetic field activity is expected to be unsettled to active 11-13 May due to coronal hole high-speed stream effects. Conditions are expected to subside for a day or so before increasing back to mostly unsettled conditions 15-17 May with another coronal hole coming into a favorable position to impact Earth. Conditions are forecasted to be predominately quiet 18-26 May, bar any transient activity, before the next recurrent coronal hole is expected on or around 26 May. Active to minor storm conditions are possible 27-29 May due to the coronal hole, and lesser effects in the form of mostly unsettled to active conditions should persist 30-31 May. Mostly quiet conditions are expected 01-05 Jun before the currently geo-effective coronal hole returns to produce unsettled conditions on 06 June.



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
02 May	110	51	160	B2.9	1	0	0	4	0	0	0	0
03 May	107	77	300	B2.1	1	0	0	1	0	0	0	0
04 May	107	72	280	B2.0	0	0	0	0	0	0	0	0
05 May	105	95	285	B1.8	0	0	0	1	0	0	0	0
06 May	102	71	240	B1.8	0	0	0	0	0	0	0	0
07 May	102	38	200	B1.8	0	0	0	0	0	0	0	0
08 May	102	61	230	B1.8	0	0	0	1	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
	02 May	1.1e+06	1.2e+04	2.9e+03		2.2e+08
03 May	5.4e+05	1.3e+04	3.0e+03		4.2e+08	
04 May	3.2e+05	1.3e+04	3.2e+03		4.6e+08	
05 May	4.3e+05	1.3e+04	3.2e+03		6.4e+08	
06 May	4.0e+05	1.3e+04	3.2e+03		6.8e+08	
07 May	5.7e+05	1.3e+04	3.2e+03		5.4e+08	
08 May	3.4e+05	1.2e+04	3.2e+03		2.1e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	02 May	14	3-3-3-2-3-3-3-3	37	3-5-7-4-3-4-3-2	20
03 May	8	3-3-1-2-2-1-2-2	16	3-3-3-4-4-3-2-1	13	4-4-2-2-2-3-2-2
04 May	3	2-0-1-2-1-1-1-1	9	4-1-2-3-1-3-1-0	6	2-1-2-1-1-2-1-1
05 May	5	2-2-1-0-2-1-2-1	6	2-3-3-2-1-0-1-0	7	3-3-2-1-1-1-2-2
06 May	3	0-1-1-1-2-1-1-1	4	0-1-2-3-0-0-0-1	4	0-1-1-1-1-1-1-2
07 May	3	1-0-1-1-2-1-1-1	4	1-1-1-0-3-2-1-0	4	1-1-1-0-2-2-1-2
08 May	0	0-0-0-0-0-0-0-1	1	0-0-0-0-2-0-0-0	2	1-0-0-0-1-0-1-1

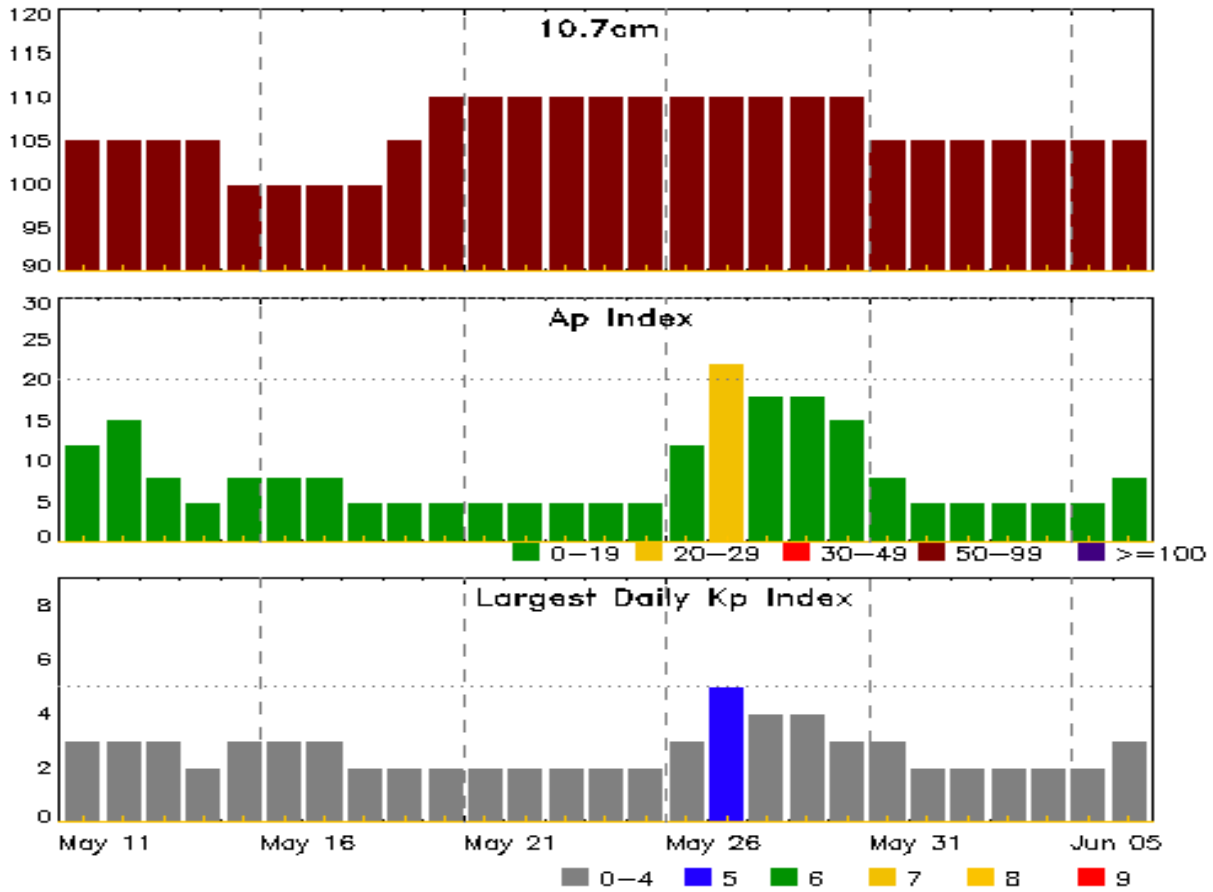


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
02 May 0415	WARNING: Geomagnetic K = 5	02/0414 - 0415
02 May 0417	EXTENDED WARNING: Geomagnetic K = 5	02/0414 - 0800
02 May 0507	EXTENDED WARNING: Geomagnetic K = 4	29/1950 - 02/1500
02 May 0602	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
02 May 0733	EXTENDED WARNING: Geomagnetic K = 5	02/0414 - 1200
02 May 2246	WARNING: Geomagnetic K = 4	02/2300 - 03/0600
03 May 0122	ALERT: Geomagnetic K = 4	03/0121
03 May 0506	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
03 May 0555	EXTENDED WARNING: Geomagnetic K = 4	02/2300 - 03/1500
04 May 0511	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
05 May 0500	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
06 May 0504	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
07 May 0503	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035
08 May 0504	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/0035



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
11 May	105	12	3	25 May	110	5	2
12	105	15	3	26	110	12	3
13	105	8	3	27	110	22	5
14	105	5	2	28	110	18	4
15	100	8	3	29	110	18	4
16	100	8	3	30	110	15	3
17	100	8	3	31	105	8	3
18	100	5	2	01 Jun	105	5	2
19	105	5	2	02	105	5	2
20	110	5	2	03	105	5	2
21	110	5	2	04	105	5	2
22	110	5	2	05	105	5	2
23	110	5	2	06	105	8	3
24	110	5	2				



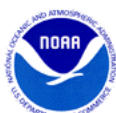
Energetic Events

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 #	
02 May	0713	0716	0722	B4.7				
02 May	0950	0957	1003	B5.8				1195
02 May	1349	1352	1355	B6.0				1195
02 May	1401	1405	1407	C1.2				1199
02 May	1454	1501	1508		SF	N16E47		1204
02 May	1607	1611	1626		SF	S16W31		1200
02 May	1717	1718	1727		SF	S17W32		1200
02 May	1847	1849	1902		SF	S17W34		1200
02 May	2200	2204	2211	B6.1				1200
03 May	0012	0016	0019	B7.0				
03 May	0354	0359	0408	B9.2				1200
03 May	0620	0625	0635	B6.3				1200
03 May	1047	1052	1056	C1.3				1204
03 May	1844	1848	1857	B4.1	SF	N16E32		1204
04 May	0144	0151	0200	B9.3				1204
04 May	1056	1104	1111	B4.5				1204
04 May	1655	1738	1825	B6.8				
05 May	0842	0845	0848	B3.0				
05 May	1742	1746	1750	B2.9				
05 May	1755	1801	1807		SF	N17E04		1204
05 May	2037	2043	2051	B4.2				1204
06 May	0308	0312	0315	B3.9				1206
06 May	0850	0853	0855	B2.9				
06 May	2219	2222	2226	B2.6				
07 May	1530	1538	1549	B3.3				1203
08 May	1001	1008	1013	B4.4	SF	N19W39		1203



Region Summary

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Helio Lon	Area 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
Region 1196																		
20 Apr	S27E69	175	80	10	Dao	4	B											
21 Apr	S26E63	169	40	8	Cso	4	B						1					
22 Apr	S25E52	167	50	10	Cro	6	B						1					
23 Apr	S26E40	166	10	7	Bxo	10	B											
24 Apr	S25E21	171	20	4	Cso	7	B						1					
25 Apr	S26E11	168	10	6	Bxo	4	B											
26 Apr	S28E02	164	5	1	Axx	1	A											
27 Apr	S28W12	165	plage										1					
28 Apr	S23W32	172	10	2	Bxo	2	B	1										
29 Apr	S30W45	172	10	1	Bxo	2	B											
30 Apr	S30W59	173	plage										1					
01 May	S30W73	173	plage										1					
02 May	S30W87	174	plage															
								1	0	0	6	0	0	0	0	0		

Crossed West Limb.
 Absolute heliographic longitude: 164

Region 1200																		
26 Apr	S17E42	124	10	4	Bxo	4	B											
27 Apr	S17E28	125	plage															
28 Apr	S17E14	126	plage															
29 Apr	S17E05	121	30	3	Bxo	4	B											
30 Apr	S18W09	121	20	3	Bxo	5	B											
01 May	S18W23	122	10	4	Bxo	8	B											
02 May	S17W37	123	10	1	Bxo	3	B						3					
03 May	S18W49	122	30	8	Cro	10	B											
04 May	S18W61	123	20	2	Bxo	2	B											
05 May	S18W75	123	20	2	Bxo	2	B											
06 May	S18W89	123	plage															
								0	0	0	3	0	0	0	0	0		

Crossed West Limb.
 Absolute heliographic longitude: 121



Region Summary - continued

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 1201																
27 Apr	N16E40	112	plage									1				
28 Apr	N16E26	114	plage													
29 Apr	N16E12	115	plage													
30 Apr	N16W02	116	plage													
01 May	N16W16	116	plage													
02 May	N14W29	115	plage	5			2									
03 May	N14W43	117	plage													
04 May	N14W57	118	plage													
05 May	N14W70	118	20	2	Bxo	3	B									
06 May	N14W84	118	10	2	Axx	3	A									
								1	0	0	0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 116

Region 1203																
28 Apr	N19E77	62	40	5	Hsx	1	A									
29 Apr	N18E64	62	50	1	Cso	2	B	1								
30 Apr	N18E51	61	120	4	Dao	4	B									
01 May	N19E38	61	160	6	Cso	3	B									
02 May	N18E28	58	100	7	Cso	4	B									
03 May	N17E11	63	120	3	Hsx	1	A									
04 May	N17W02	64	120	5	Cao	6	B									
05 May	N17W15	63	80	5	Hsx	2	A									
06 May	N17W28	62	100	5	Hsx	2	A									
07 May	N17W41	62	70	3	Hsx	4	A									
08 May	N18W55	62	100	2	Hsx	1	A					1				
								1	0	0	1	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 64



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Lon	Helio 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
Region 1204																		
02 May	N17E38		48	50	5	Cso	3	B					1					
03 May	N17E26		47	130	7	Cao	10	B	1				1					
04 May	N17E13		49	120	7	Cao	12	B										
05 May	N17W00		48	120	7	Cao	12	B					1					
06 May	N17W14		48	120	7	Dao	12	B										
07 May	N17W27		48	130	9	Dao	14	B										
08 May	N17W41		48	90	9	Dao	9	B										
									1	0	0	3	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 48

Region 1205																		
02 May	N14E52		34	0	1	Axx	1	A										
03 May	N14E37		36	10	3	Bxo	3	B										
04 May	N14E23		38	10	5	Axx	1	A										
05 May	N14E09		39	5	5	Axx	1	A										
06 May	N14W05		39	0	1	Axx	1	A										
07 May	N14W19		40	plage														
08 May	N14W33		41	plage														
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 39

Region 1206																		
03 May	N22W18		91	10	3	Bxo	3	B										
04 May	N22W32		93	10	3	Bxo	1	B										
05 May	N22W46		94	20	4	Cro	2	B										
06 May	N22W60		94	plage														
07 May	N22W74		95	plage														
08 May	N22W88		96	plage														
									0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 91



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 1207

05 May	N24E40	7	20	4	Bxo	3	B										
06 May	N24E26	8	10	4	Bxo	3	B										
07 May	N24E12	9	plage														
08 May	N24W02	10	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 10

Region 1208

08 May	N13E49	318	30	5	Cro	6	B										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 318

Region 1209

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 0

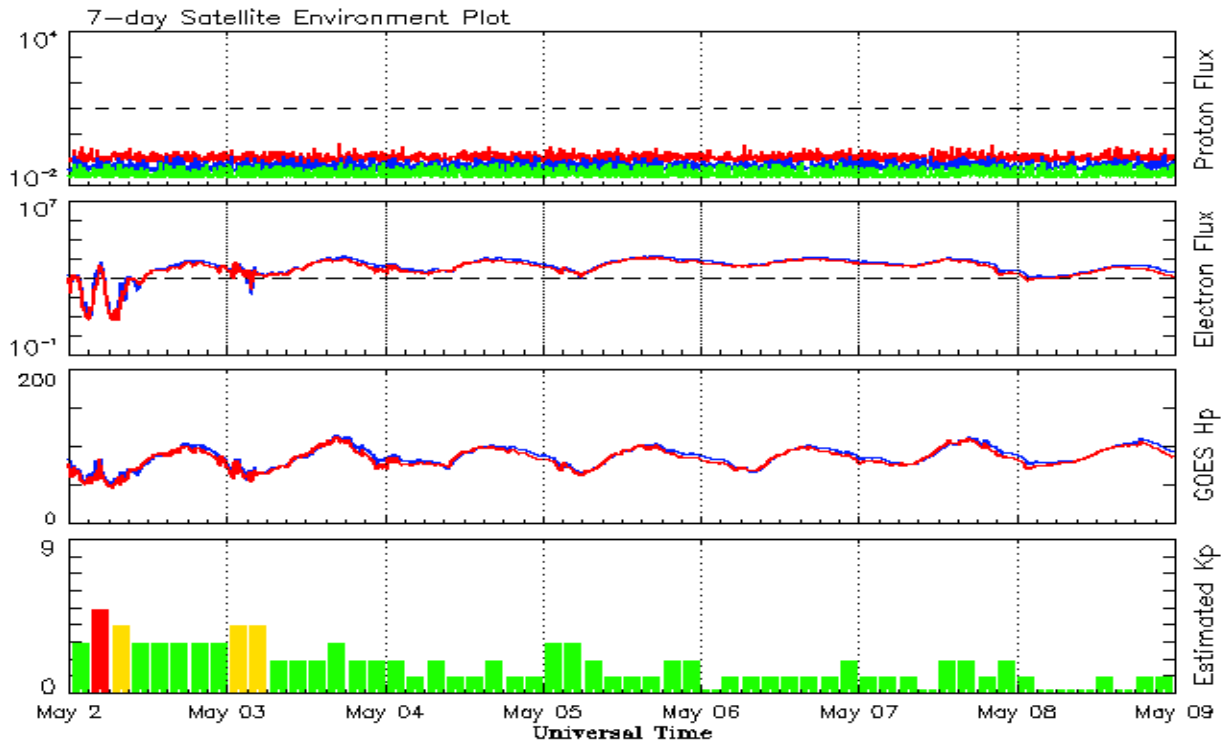


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2009									
May	3.9	2.9	0.74	3.8	2.3	70.5	69.7	4	4.1
June	6.6	2.9	0.39	4.4	2.7	68.6	70.2	4	4.0
July	5.0	3.2	0.70	5.8	3.6	68.2	71.0	4	3.9
August	0.3	0.0	0.00	7.7	4.8	67.4	72.1	5	3.8
September	6.6	4.3	0.64	9.9	6.2	70.5	73.3	4	3.8
October	7.0	4.8	0.66	11.3	7.1	72.3	74.1	3	4.1
November	7.7	4.1	0.55	12.4	7.6	73.6	74.5	3	4.5
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
2010									
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
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			82.5		5	
December	22.0	14.4	0.66			84.3		4	
2011									
January	32.1	19.0	0.59			83.7		6	
February	53.2	29.4	0.55			94.5		6	
March	81.0	56.2	0.69			115.3		7	
April	81.7	54.4	0.67			112.6		9	

Note: Values are final except for the most recent 6 months which are considered preliminary. Cycle 23 started in May 1996 with an RI=8.0. Cycle 23 maximum was April 2000 with an RI=120.8. Solar minimum for Cycle 23 was December 2008.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 02 May 2011*

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.

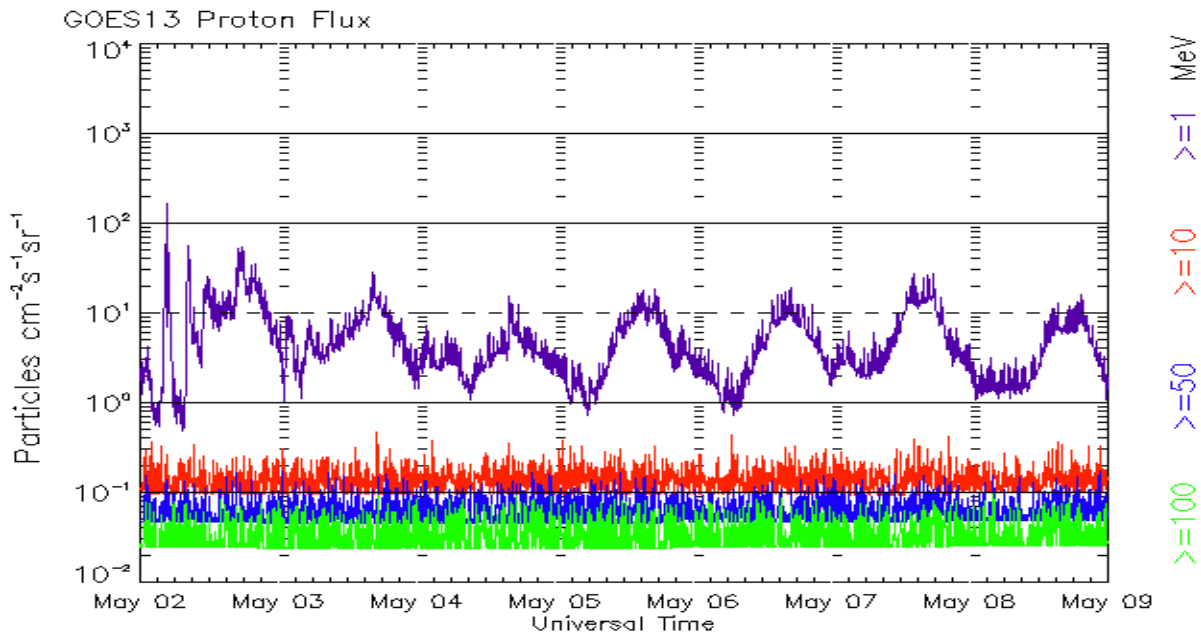
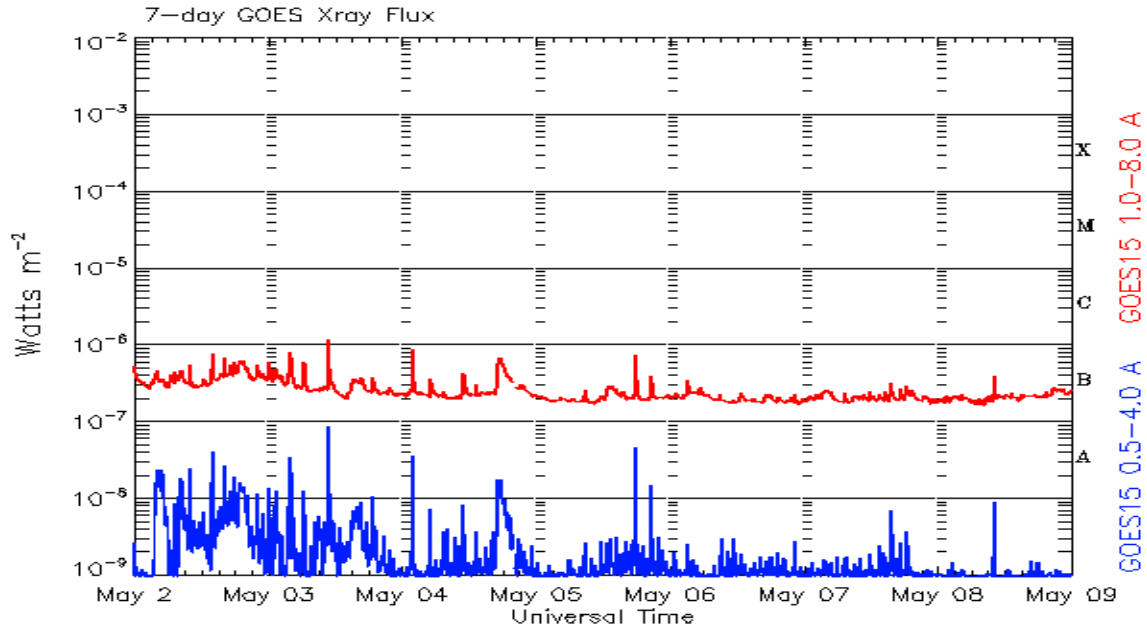
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

Kp plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

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 2011*

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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