

Solar activity was at very low levels. The solar disk remained spotless. However, spots emerged late on 11 Nov near N05E13, but remained unnumbered. No Earth-directed CMEs were observed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels on 05-09 Nov, normal to moderate levels on 10 Nov and normal to high levels on 11 Nov.

Geomagnetic field activity ranged from quiet to G2 (Moderate) storm levels during the period due to a pair of recurrent CH HSSs. The solar wind environment was enhanced on 05 Nov due to a positive polarity CH HSS. Wind speeds peaked at 610 km/s at 05/0506 UTC and the Bz component saw a maximum deflection of -8 nT at 05/0406 UTC. During this timeframe, unsettled to G2 (Moderate) geomagnetic conditions were observed. 06 Nov began a downward trend to a more nominal solar wind regime as CH HSS influence waned. Wind speeds decreased to a low of 400 km/s at 07/0611 UTC. Quiet to isolated active conditions were observed from 06-08 Nov. Mostly nominal conditions continued until early on 09 Nov with arrival of a SSBC/CIR ahead of a negative polarity CH HSS. Density reached a maximum of 18.17 particles per cubic cm at 09/1530 ahead of the CIR. Total field reached a maximum of 14 nT at 10/0600 UTC and the Bz component reached a maximum deflection of -8 nT at 10/0821 UTC. The negative polarity CH HSS arrived early on 10 Nov with wind speeds just over 600 km/s, which continued to be geoeffective through 11 Nov. Field conditions were at quiet to isolated active levels from 09-11 Nov.

Space Weather Outlook **12 November - 08 December 2018**

Solar activity is expected to be at very low levels through the forecast period (12 Nov-08 Dec).

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 12 Nov-16 Nov due to CH HSS influence. An extended period of normal levels is expected 18 Nov-01 Dec due to nominal solar wind environment conditions. Mostly high levels are likely 02-08 Dec with the return of a pair of recurrent CH HSSs.

Geomagnetic field activity is expected to be slightly enhanced 12 Nov-14 Nov, with a chance for isolated active levels possible, due to a geoeffect, negative polarity CH HSS. Quiet to unsettled conditions are expected 15 Nov-30 Nov under a nominal solar wind regime. Unsettled conditions are likely 01 Dec-08 Dec, with a chance of a few active periods, due to a pair of recurrent CH HSSs.



Daily Solar Data

Date	Radio	Sun	Sunspot	X-ray	Flares							
	Flux	spot	Area	Background	X-ray			Optical				
	10.7cm	No.	(10 ⁻⁶ hemi.)	Flux	C	M	X	S	1	2	3	4
05 November	68	0	0	A0.0	0	0	0	0	0	0	0	0
06 November	69	0	0	A1.2	0	0	0	0	0	0	0	0
07 November	69	0	0	A1.1	0	0	0	0	0	0	0	0
08 November	70	0	0	A1.1	0	0	0	0	0	0	0	0
09 November	69	0	0	A1.1	0	0	0	0	0	0	0	0
10 November	69	0	0	A0.0	0	0	0	0	0	0	0	0
11 November	69	0	0	A1.0	0	0	0	0	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
05 November		3.2e+06	1.6e+04	3.3e+03	5.5e+07	
06 November		1.3e+06	1.7e+04	3.7e+03	2.2e+08	
07 November		1.0e+06	1.7e+04	3.8e+03	2.9e+08	
08 November		2.6e+06	1.6e+04	3.5e+03	1.3e+08	
09 November		2.3e+06	1.7e+04	3.8e+03	1.3e+08	
10 November		4.5e+05	1.6e+04	3.5e+03	3.1e+06	
11 November		6.8e+05	1.7e+04	3.5e+03	4.2e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 November	22	4-5-4-4-3-2-3-2	44	3-5-6-6-5-5-4-2	35	4-6-5-5-3-3-4-3
06 November	9	2-4-2-2-2-1-1-2	15	1-2-4-5-4-1-1-1	10	2-4-2-2-2-1-1-3
07 November	8	2-3-3-1-2-1-2-2	12	2-2-5-1-3-2-1-1	10	3-3-3-1-1-1-2-3
08 November	12	3-4-2-4-2-1-1-1	13	0-1-2-6-2-2-1-0	11	3-4-2-3-1-1-2-1
09 November	6	1-0-1-2-1-2-2-3	15	1-1-1-4-4-3-3-4	10	1-1-1-2-1-3-3-4
10 November	10	2-2-1-3-2-2-3-3	18	2-1-2-6-3-2-2-3	13	2-2-2-4-2-1-3-4
11 November	5	2-1-2-1-1-1-2-2	7	3-2-2-3-2-0-1-1	15	3-2-2-1-1-1-2-2



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
05 Nov 0454	ALERT: Geomagnetic K = 5	05/0454
05 Nov 0502	WARNING: Geomagnetic K = 6	05/0500 - 1200
05 Nov 0502	EXTENDED WARNING: Geomagnetic K = 5	04/2056 - 05/1200
05 Nov 0502	EXTENDED WARNING: Geomagnetic K = 4	04/1906 - 05/1800
05 Nov 0517	ALERT: Geomagnetic K = 6	05/0517
05 Nov 0739	ALERT: Geomagnetic K = 5	05/0737
05 Nov 1046	EXTENDED WARNING: Geomagnetic K = 5	04/2056 - 05/1800
05 Nov 1046	ALERT: Geomagnetic K = 5	05/1045
05 Nov 1046	EXTENDED WARNING: Geomagnetic K = 4	04/1906 - 05/2359
05 Nov 1046	EXTENDED WARNING: Geomagnetic K = 6	05/0500 - 1500
05 Nov 1636	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1635
05 Nov 2334	EXTENDED WARNING: Geomagnetic K = 4	04/1906 - 06/0600
06 Nov 0548	EXTENDED WARNING: Geomagnetic K = 4	04/1906 - 06/1200
06 Nov 1220	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1635
06 Nov 2045	WATCH: Geomagnetic Storm Category G1 predicted	
07 Nov 0539	WARNING: Geomagnetic K = 4	07/0538 - 1200
07 Nov 0930	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1635
07 Nov 1810	WATCH: Geomagnetic Storm Category G1 predicted	
08 Nov 0348	WARNING: Geomagnetic K = 4	08/0346 - 0900
08 Nov 0418	ALERT: Geomagnetic K = 4	08/0418
08 Nov 0831	EXTENDED WARNING: Geomagnetic K = 4	08/0346 - 1200
08 Nov 1015	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1635
09 Nov 0920	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1635
09 Nov 1612	WARNING: Geomagnetic K = 4	09/1610 - 2300
09 Nov 2153	ALERT: Geomagnetic K = 4	09/2153
09 Nov 2248	EXTENDED WARNING: Geomagnetic K = 4	09/1610 - 10/1200
10 Nov 1131	EXTENDED WARNING: Geomagnetic K = 4	09/1610 - 10/1800

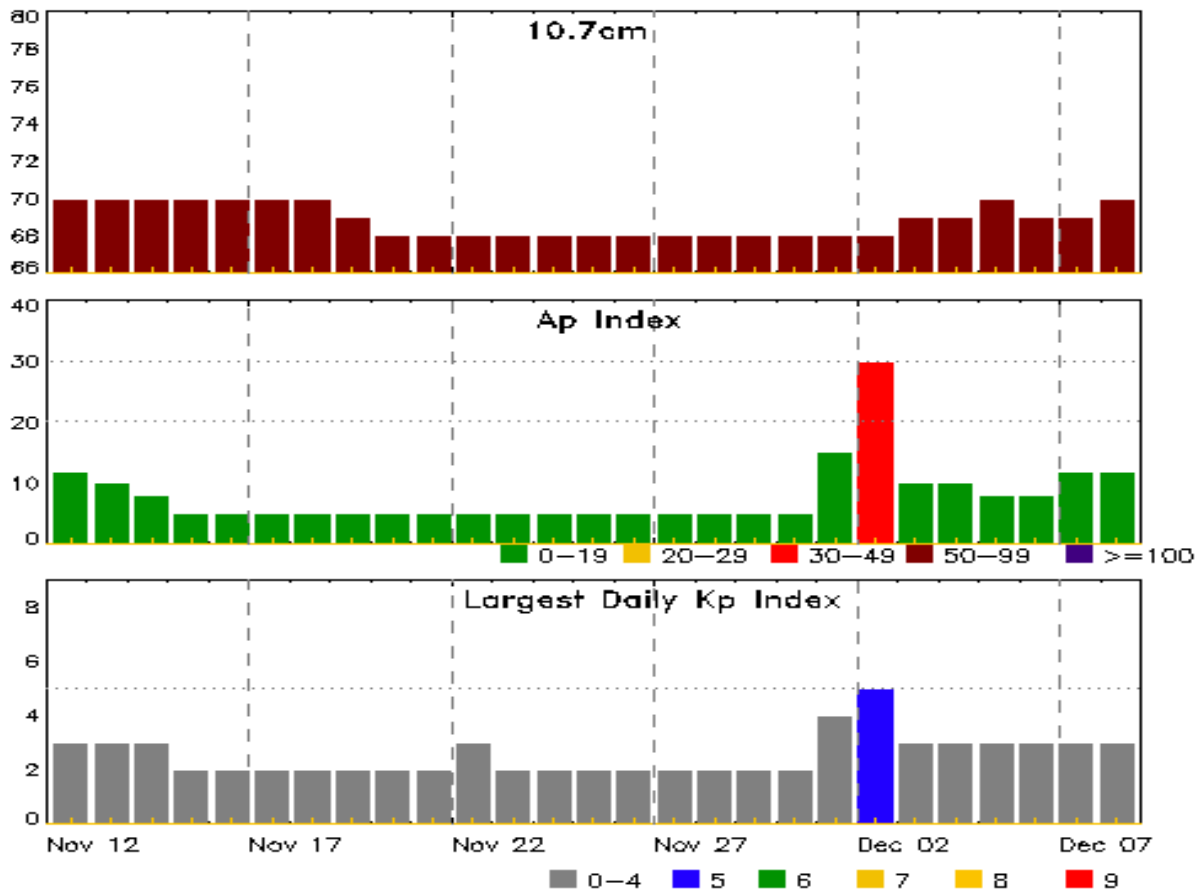


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
10 Nov 1945	WARNING: Geomagnetic K = 4	10/1940 - 11/0900
11 Nov 0003	ALERT: Geomagnetic K = 4	10/2359
11 Nov 1640	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	11/1625



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
12 Nov	70	12	3	26 Nov	68	5	2
13	70	10	3	27	68	5	2
14	70	8	3	28	68	5	2
15	70	5	2	29	68	5	2
16	70	5	2	30	68	5	2
17	70	5	2	01 Dec	68	15	4
18	70	5	2	02	68	30	5
19	69	5	2	03	69	10	3
20	68	5	2	04	69	10	3
21	68	5	2	05	70	8	3
22	68	5	3	06	69	8	3
23	68	5	2	07	69	12	3
24	68	5	2	08	70	12	3
25	68	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max			Brtns			245	2695	II	IV

No Events Observed

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
06 Nov	1827	1830	1831	A2.2			
08 Nov	1011	1012	1014	A2.9			
10 Nov	1141	1143	1144	A2.0			



Region Summary

Location		Sunspot Characteristics					Flares							
Date	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	

No Active Regions

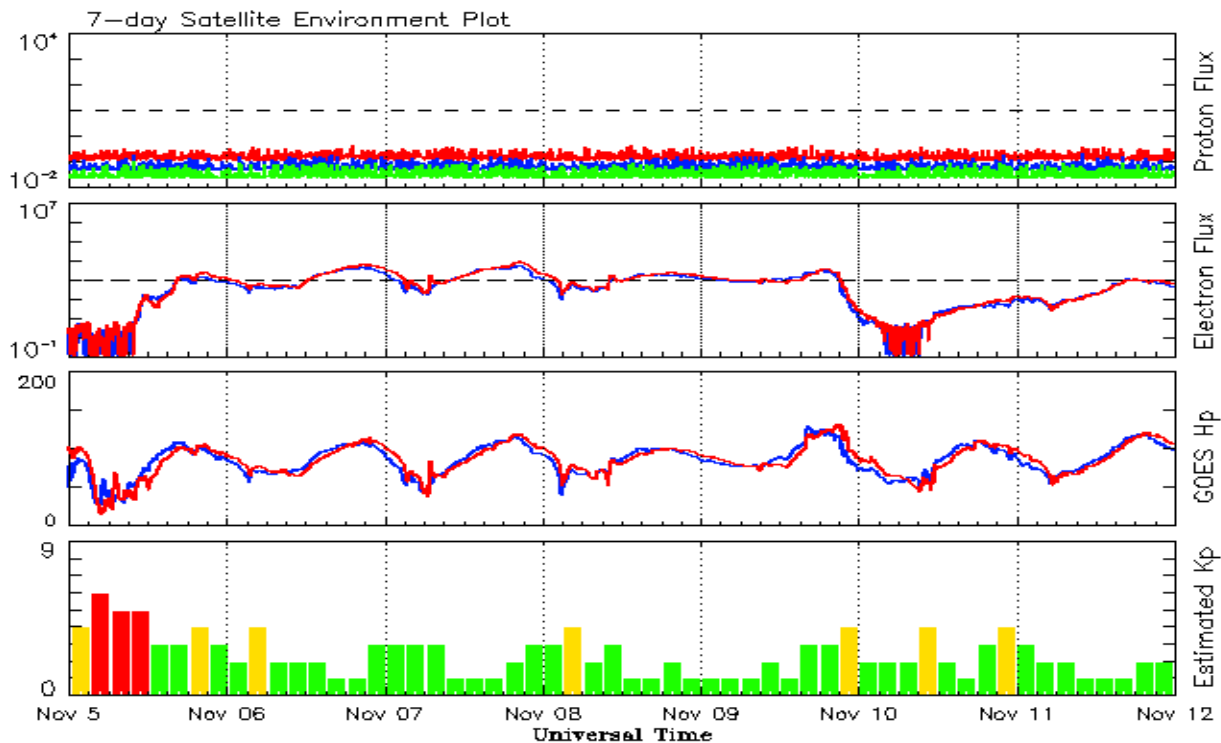


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2016									
November	22.4	12.8	0.57	29.4	17.9	78.7	81.1	10	11.6
December	17.6	11.1	0.64	28.1	17.1	75.1	80.0	10	11.4
2017									
January	28.1	15.7	0.55	27.3	16.7	77.4	79.4	10	11.3
February	22.0	15.8	0.71	25.5	15.9	76.9	78.7	10	11.3
March	25.4	10.6	0.42	24.6	15.4	74.6	78.6	15	11.5
April	30.4	19.4	0.64	24.3	14.9	80.9	78.4	13	11.5
May	18.1	11.3	0.62	23.1	14.0	73.5	77.7	9	11.3
June	18.0	11.5	0.64	22.0	13.3	74.8	77.3	7	11.3
July	18.8	10.7	0.59	20.8	12.6	77.7	76.8	9	11.0
August	25.0	19.6	0.80	19.7	11.8	77.9	76.3	12	10.7
September	42.2	26.2	0.62	18.6	11.0	92.0	75.9	19	10.3
October	16.0	7.9	0.49	16.8	10.0	76.4	75.1	11	9.8
November	7.7	3.4	0.44	15.7	9.2	72.1	74.6	11	9.5
December	7.6	4.9	0.64	15.7	9.1	71.5	74.4	8	9.4
2018									
January	7.8	4.1	0.51	15.0	8.5	70.0	74.0	6	9.3
February	16.0	6.4	0.40	13.7	7.6	72.0	73.3	7	9.1
March	6.0	1.5	0.25	11.5	5.9	68.4	71.9	8	8.6
April	7.0	5.3	0.76	9.6	4.7	70.0	70.6	7	8.0
May	15.0	7.9	0.53			70.9		8	
June	19.7	9.4	0.48			72.5		7	
July	1.3	1.0	0.77			69.7		6	
August	10.0	5.3	0.53			69.1		10	
September	5.7	2.0	0.35			68.3		9	
October	6.9	2.9	0.42			69.5		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 05 November 2018*

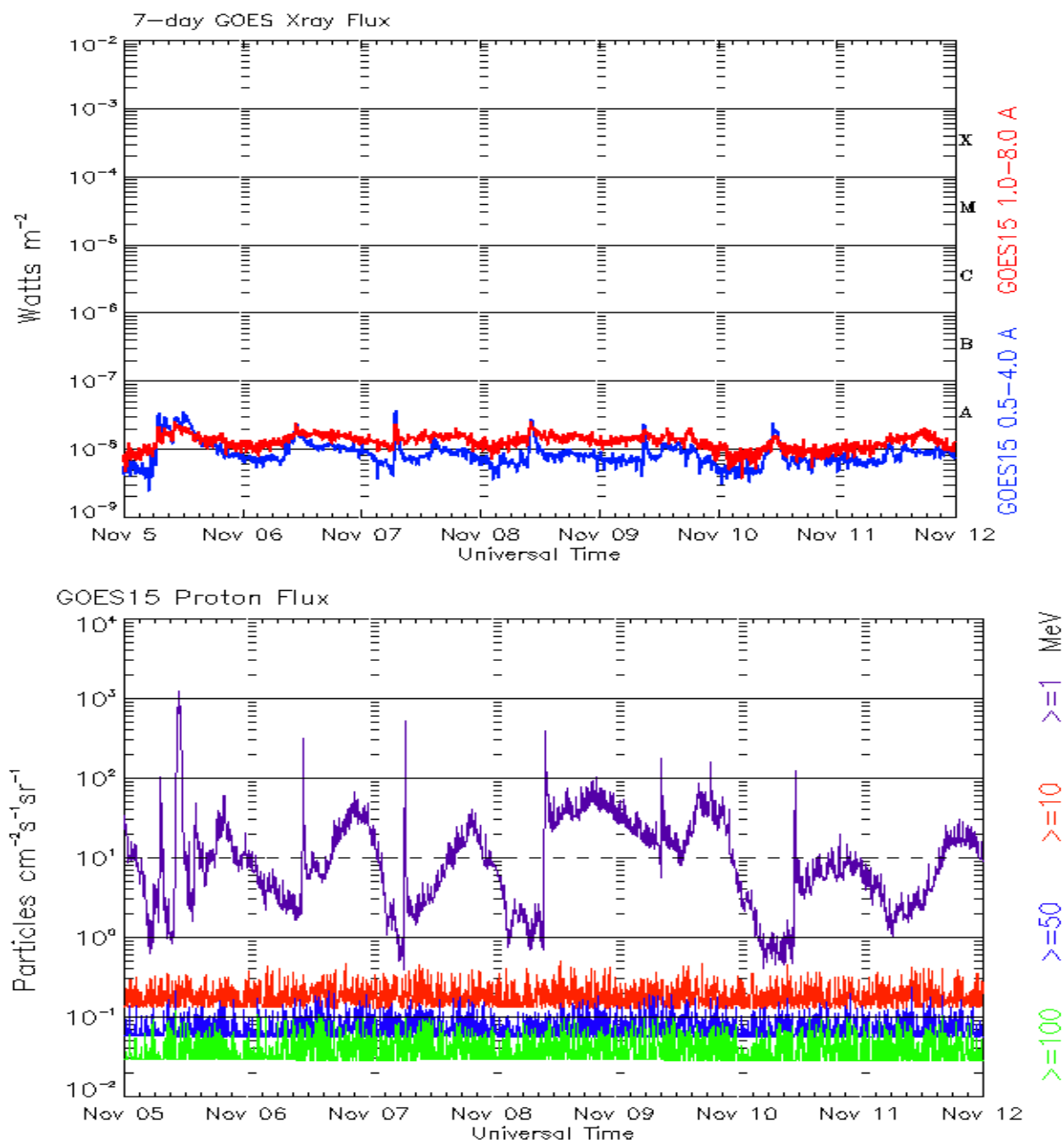
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 05 November 2018*

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 integral flux units ($\text{pfu} = \text{protons/cm}^2\text{-sec -sr}$) 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.

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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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