

Space Weather Highlights
22 October - 28 October 2018

SWPC PRF 2252
29 October 2018

Solar activity was very low under a spotless solar disk. No Earth-directed coronal mass ejections (CMEs) were observed during the reporting period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels throughout the period with a maximum flux of 67 pfu observed at 26/2110 UTC.

Geomagnetic field activity was mostly quiet with an isolated unsettled period observed early on 22 Oct. Solar wind was at nominal levels through the period ranging from approximately 300-430 km/s with total field between 1 nT and 8 nT.

Space Weather Outlook
29 October - 24 November 2018

Solar activity is expected to be at very low levels for the forecast period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 04-09 Nov and again on 12-16 Nov due to recurrent coronal hole high speed stream (CH HSS) influence.

Geomagnetic field activity is expected to be at unsettled to active levels on 29-31 Oct, 03-07 Nov, and 09-11 Nov with G1 (Minor) geomagnetic storm levels likely on 03 Nov due to recurrent CH HSS effects.



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
22 October	71	0	0	A0.0	0	0	0	0	0	0	0	0
23 October	72	0	0	A0.0	0	0	0	0	0	0	0	0
24 October	70	0	0	A0.0	0	0	0	0	0	0	0	0
25 October	69	0	0	A0.0	0	0	0	0	0	0	0	0
26 October	69	0	0	A0.0	0	0	0	0	0	0	0	0
27 October	69	0	0	A0.0	0	0	0	0	0	0	0	0
28 October	68	0	0	A0.0	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
22 October		2.7e+05	1.7e+04	3.7e+03		1.0e+06
23 October		4.1e+05	1.6e+04	3.9e+03		1.7e+06
24 October		3.2e+05	1.6e+04	3.7e+03		1.8e+06
25 October		2.8e+05	1.6e+04	3.6e+03		1.7e+06
26 October		4.3e+05	1.7e+04	3.7e+03		1.8e+06
27 October		3.6e+05	1.6e+04	3.6e+03		6.1e+05
28 October		4.1e+05	1.6e+04	3.6e+03		8.4e+05

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
22 October	5	2-2-1-1-2-2-1-1	6	1-1-1-3-3-1-0-1	6	3-2-2-1-1-1-1-1
23 October	3	1-1-1-1-1-1-1-0	5	0-1-1-4-2-1-0-0	4	1-2-1-1-1-1-0-0
24 October	2	1-0-1-1-1-0-1-1	1	0-0-0-2-1-0-0-0	3	1-0-1-2-0-0-1-1
25 October	5	1-1-1-2-1-2-2-1	3	0-0-0-3-1-1-1-1	6	0-2-1-2-1-2-2-2
26 October	6	2-1-1-1-2-2-2-2	4	0-0-0-3-2-1-1-1	6	2-1-1-2-2-1-2-2
27 October	3	0-2-2-1-0-2-1-0	2	1-0-1-2-1-0-0-0	4	1-2-2-2-0-0-1-0
28 October	2	1-0-1-0-1-2-1-0	0	0-0-1-0-0-0-0-0	9	2-1-1-1-0-1-1-0

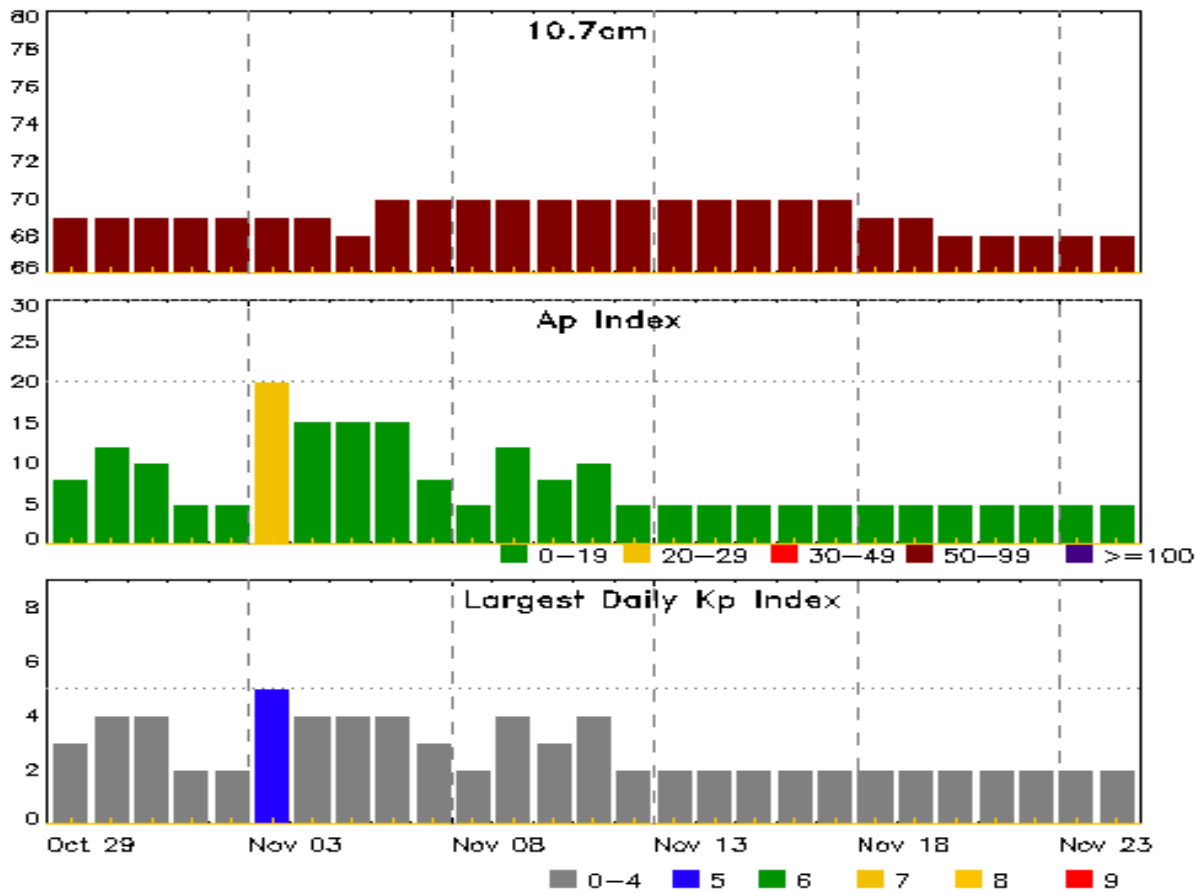


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
No Alerts or Warnings Issued		



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
29 Oct	69	8	3	12 Nov	70	5	2
30	69	12	4	13	70	5	2
31	69	10	4	14	70	5	2
01 Nov	69	5	2	15	70	5	2
02	69	5	2	16	70	5	2
03	69	20	5	17	70	5	2
04	69	15	4	18	69	5	2
05	68	15	4	19	69	5	2
06	70	15	4	20	68	5	2
07	70	8	3	21	68	5	2
08	70	5	2	22	68	5	2
09	70	12	4	23	68	5	2
10	70	8	3	24	68	5	2
11	70	10	4				

Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
No Flares Observed							

No Flares Observed



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 2724

12 Oct	S08E57	126	20	1	Hrx	1	A				1				
13 Oct	S08E40	130	10	2	Hsx	1	A				1				
14 Oct	S07E27	130	10	1	Axx	1	A								
15 Oct	S07E12	131	plage												
16 Oct	S07W00	128	0		Axx	1	A								
17 Oct	S07W13	130	plage												
18 Oct	S07W28	132	plage												
19 Oct	S07W41	132	plage												
20 Oct	S07W56	133	plage												
21 Oct	S07W69	133	plage												
22 Oct	S07W84	135	plage												
								0	0	0	2	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 128

Region 2725

13 Oct	S10E59	111	10	1	Axx	1	A								
14 Oct	S11E44	113	10	1	Axx	1	A								
15 Oct	S10E32	111	0	1	Axx	1	A								
16 Oct	S10E18	112	plage												
17 Oct	S11E05	112	0		Axx	1	A								
18 Oct	S11W09	113	plage												
19 Oct	S11W22	113	plage												
20 Oct	S11W36	113	plage												
21 Oct	S11W49	113	plage												
22 Oct	S11W63	114	plage												
23 Oct	S11W77	115	plage												
24 Oct	S11W91	116	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 112

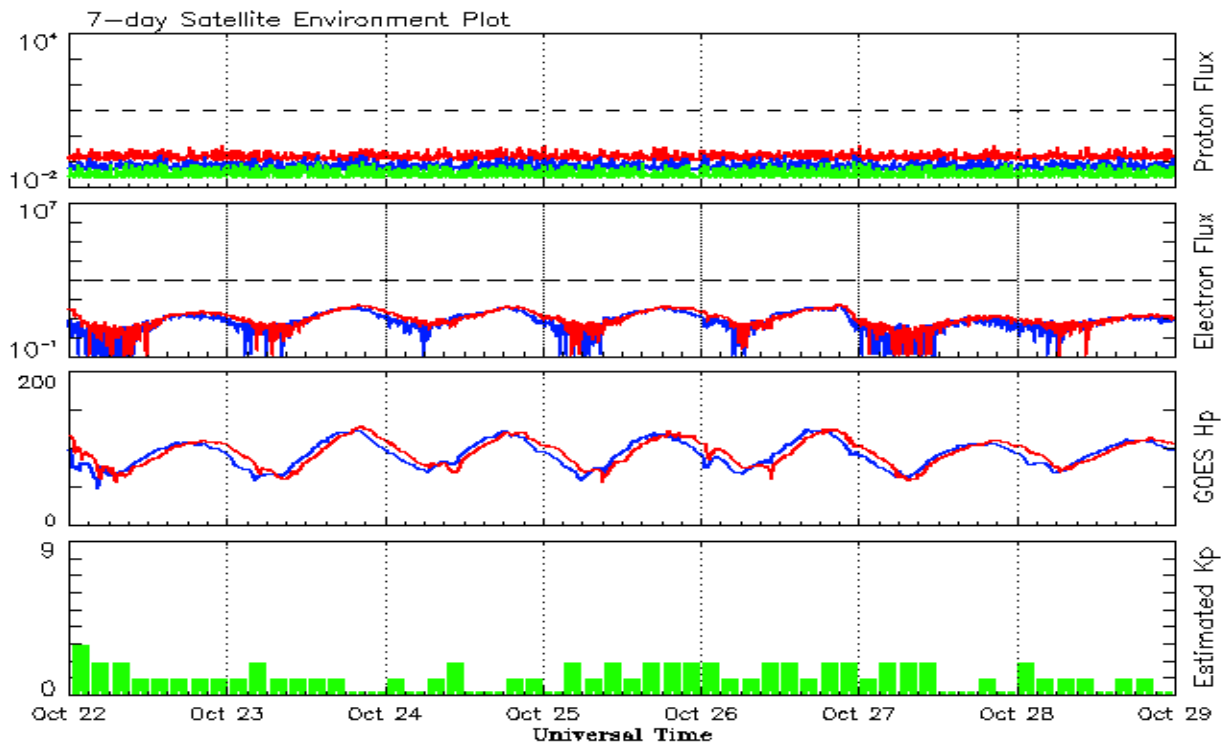


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
October	30.0	20.0	0.67	31.1	18.9	86.1	82.5	16	11.6
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			70.0		7	
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	

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 22 October 2018*

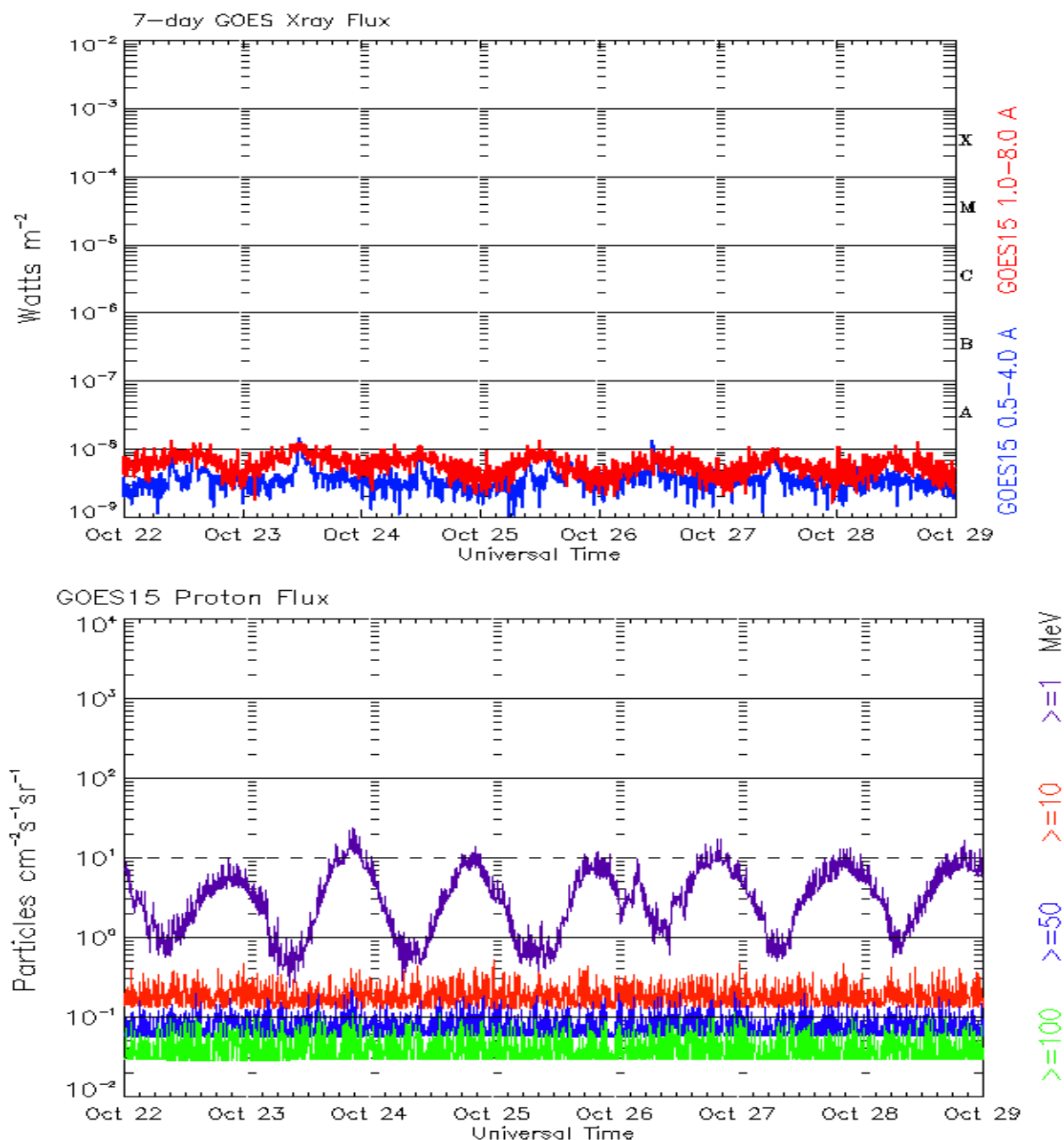
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 22 October 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.



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

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