

Solar activity was at very low levels throughout the period. Region 2723 (S08, L=356 class/area Dro/030 on 30 Sep) developed on 29 Sep, but was already showing signs of decay as of this report, and remained inactive. No Earth-directed CMEs were observed in available satellite imagery.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reach high levels on 24 - 28 Sep, then decreased to moderate levels on 29 - 30 Sep. A peak flux of 6,202 pfu was observed on 24/2020 UTC.

Geomagnetic field activity was at quiet to unsettled levels throughout the entire period, from 24 - 30 Sep, under very subtle CH HSS influence. Solar wind speeds averaged near 430 km/s through most of the period, but did see an increase to reach a peak of 505 km/s on 30/0158 UTC. Total field strength ranged between 1 nT to 7 nT, while the Bz component was variable between +/- 6 nT through the period.

### **Space Weather Outlook** **01 October - 27 October 2018**

Solar activity is expected to be at very low levels throughout the outlook period, with a slight chance for C-class flare activity.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate levels from 1 - 8 Oct, and again from 26 - 27 Oct. High levels are expected from 9 - 25 Oct following elevated solar wind speeds associated to recurrent CH HSS activity.

Geomagnetic field activity is expected to be at quiet to unsettled levels from 1 - 6 Oct, with isolated active levels likely on 1 Oct. Conditions are then expected to reach G1 (Minor) storm levels on 7 - 8 Oct, with G2 (Moderate) storm levels likely on 8 Oct, due to a positive polarity CH HSS. A brief return to unsettled levels is likely on 9 Oct, with G1 (Minor) storm levels likely returning on 10 Oct as CH HSS effects persist. Active levels are expected on 11 Oct as CH HSS effects taper off. Mostly quiet to unsettled levels are expected from 12 - 18 Oct, with isolated active periods likely on 14 and 18 Oct. G1 levels are likely again on 19 Oct as another CH HSS influences the magnetic field. Isolated active periods are expected early on 20 Oct before conditions decrease to be at mostly unsettled levels throughout the remainder of the outlook period (21 - 27 Oct) as CH HSS effects continue to wane.



### ***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
24 September	69	0	0	A0.0	0	0	0	0	0	0	0	0
25 September	68	0	0	A0.0	0	0	0	0	0	0	0	0
26 September	69	0	0	A0.0	0	0	0	0	0	0	0	0
27 September	67	0	0	A0.0	0	0	0	0	0	0	0	0
28 September	69	0	0	A0.0	0	0	0	0	0	0	0	0
29 September	69	13	10	A0.0	0	0	0	0	0	0	0	0
30 September	68	14	30	A0.0	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
24 September		6.8e+05	1.7e+04	3.5e+03		1.9e+08
25 September		8.4e+05	1.8e+04	4.0e+03		8.5e+07
26 September		7.8e+05	1.7e+04	3.6e+03		5.5e+07
27 September		1.1e+06	1.6e+04	3.7e+03		9.1e+07
28 September		1.7e+06	1.7e+04	3.8e+03		5.2e+07
29 September		9.5e+05	1.7e+04	3.8e+03		2.4e+07
30 September		7.1e+05	1.6e+04	3.5e+03		3.3e+07

### ***Daily Geomagnetic Data***

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
24 September	5	2-2-2-1-2-0-1-2	9	2-2-2-4-2-1-1-2	7	3-3-2-2-2-1-2-2
25 September	7	2-2-2-2-2-2-2-2	5	1-2-1-2-2-2-1-1	11	2-3-1-3-3-2-3-3
26 September	6	1-2-2-1-2-2-1-2	10	1-0-4-3-3-2-1-2	8	1-2-3-1-2-2-1-3
27 September	6	1-3-2-2-2-1-0-2	8	1-1-3-4-3-1-0-0	7	2-2-3-2-2-1-1-2
28 September	8	2-3-3-1-2-1-1-2	7	2-3-4-0-0-0-1-2	8	3-3-3-1-1-0-1-2
29 September	9	2-3-2-2-2-2-1-3	18	1-1-4-5-5-2-1-2	10	2-3-2-3-2-2-1-3
30 September	4	1-2-0-1-1-1-2-2	3	1-1-0-1-2-0-1-1	5	1-3-0-1-1-0-2-2

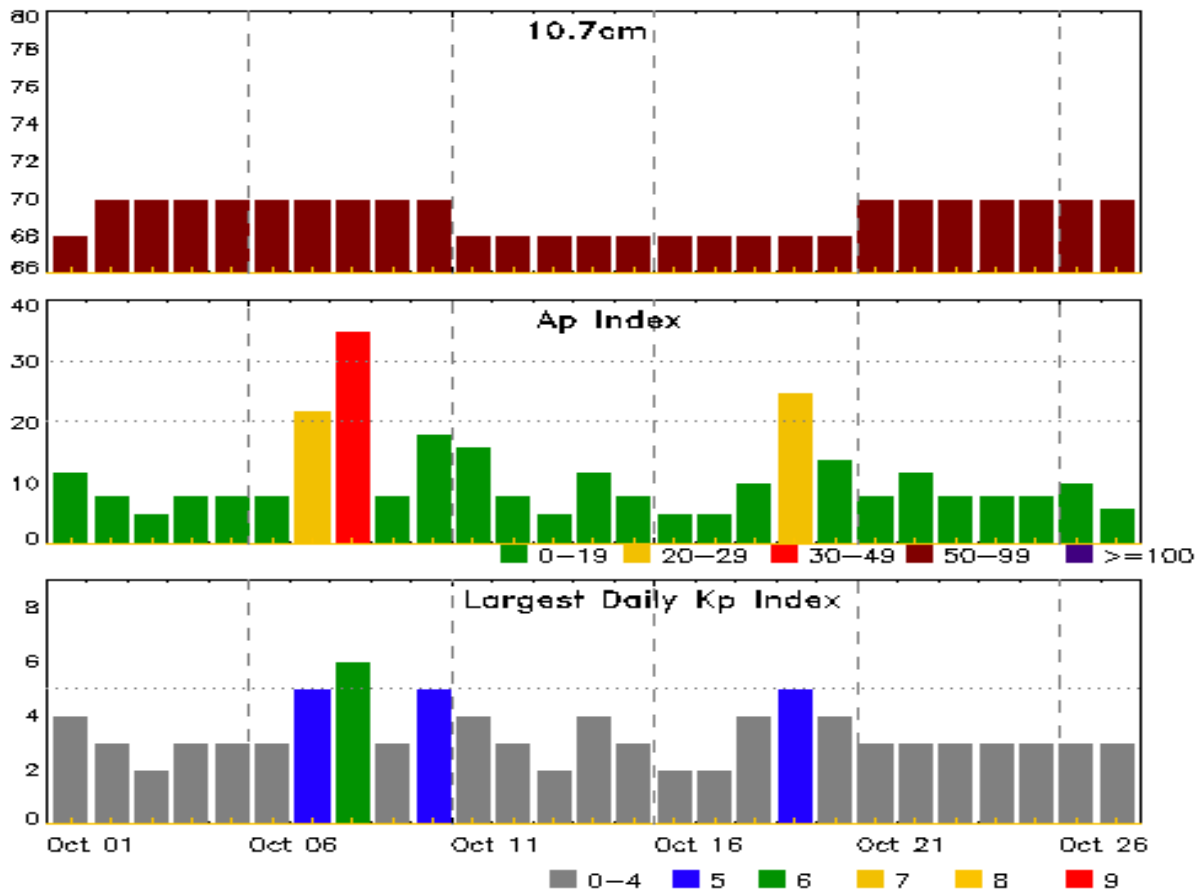


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
24 Sep 1316	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1730
25 Sep 1556	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1730
26 Sep 1456	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1730
27 Sep 1451	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1730
28 Sep 1820	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1730



## 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
01 Oct	68	12	4	15 Oct	68	8	3
02	70	8	3	16	68	5	2
03	70	5	2	17	68	5	2
04	70	8	3	18	68	10	4
05	70	8	3	19	68	25	5
06	70	8	3	20	68	14	4
07	70	22	5	21	70	8	3
08	70	35	6	22	70	12	3
09	70	8	3	23	70	8	3
10	70	18	5	24	70	8	3
11	68	16	4	25	70	8	3
12	68	8	3	26	70	10	3
13	68	5	2	27	70	6	3
14	68	12	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	Optical		
	Begin	Max	End		Class	Imp/ Brtns	Location Lat CMD Rgn #
26 Sep	1527	1529	1530		A1.8		



## ***Region Summary***

Location		Sunspot Characteristics						Flares							
Date	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	3	4
		<i>Region 2723</i>													
29 Sep	S08W01	355	10	1	Bxo	3	B								
30 Sep	S08W15	356	30	5	Dro	4	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 355

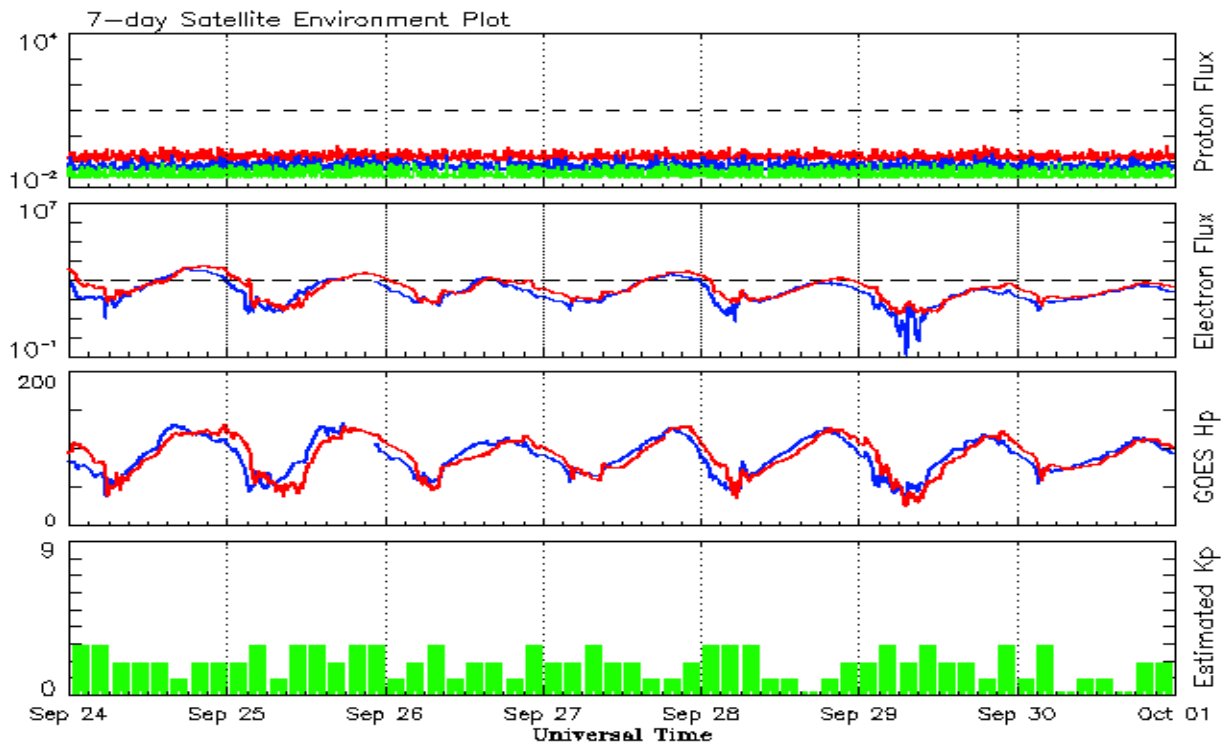


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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>2016</b>									
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
<b>2017</b>									
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
<b>2018</b>									
January	7.8	4.1	0.51	15.0	8.6	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		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	9.5	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					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 24 September 2018*

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.

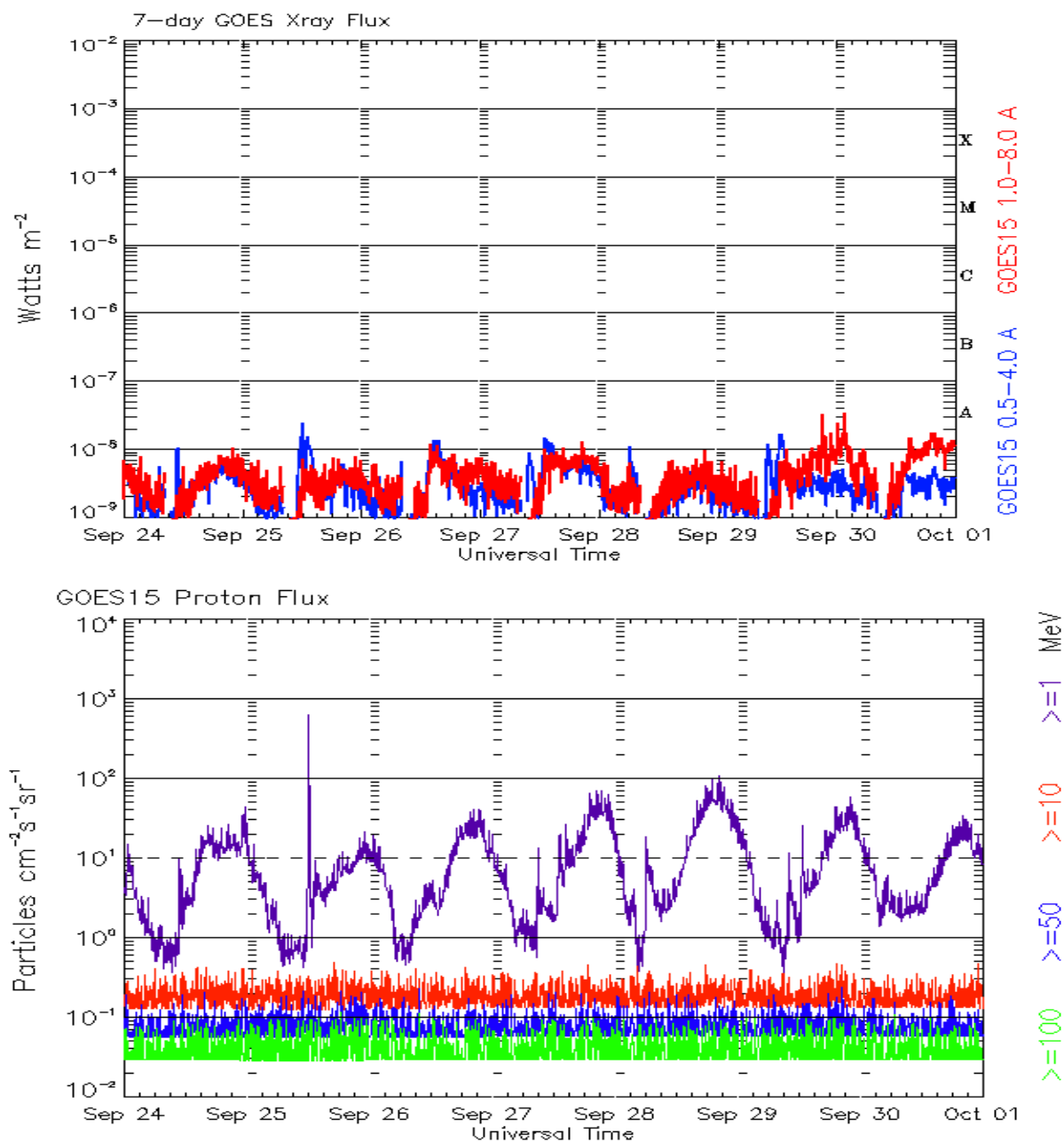
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 24 September 2018*

The x-ray plots contains five-minute averages x-ray flux ( $\text{Watt/m}^2$ ) 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 (pfu = protons/ $\text{cm}^2$  -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](mailto:SWPC.Webmaster@noaa.gov)

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

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