

**Space Weather Highlights**  
**11 May - 17 May 2020**

**SWPC PRF 2333**  
**18 May 2020**

Solar activity was very low. The solar disk was spotless. Beginning on 15 May, a rise in x-ray flux background was observed as two plage regions emerged on the ENE and ESE limbs, possibly the return of old Regions 2762 (N23, L=338) and 2761 (S18, L=332). 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 normal to moderate levels with a peak flux of 203 pfu observed at 16/0220 UTC.

Geomagnetic field activity was mostly quiet with an isolated unsettled period observed late on 12 May. Solar wind parameters were at nominal levels with solar wind speed ranging from 282-354 km/s while total field was between 1-8 nT.

**Space Weather Outlook**  
**18 May - 13 June 2020**

Solar activity is expected to continue at very low levels.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels for the outlook period (18 May- 13 Jun).

Geomagnetic field activity is expected to reach unsettled levels on 19-20 May due to weak coronal hole high speed stream activity (CH HSS). Mostly quiet conditions are expected for the rest of the period.



### *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
11 May	66	0	0	A0.0	0	0	0	0	0	0	0	0
12 May	69	0	0	A0.0	0	0	0	0	0	0	0	0
13 May	69	0	0	A0.0	0	0	0	0	0	0	0	0
14 May	68	0	0	A0.0	0	0	0	0	0	0	0	0
15 May	68	0	0	A0.0	0	0	0	0	0	0	0	0
16 May	69	0	0	A1.9	0	0	0	0	0	0	0	0
17 May	70	0	0	A1.6	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	>2MeV
	11 May	6.3e+04	4.6e+04
12 May	7.6e+04	4.6e+04	1.3e+06
13 May	7.7e+04	4.6e+04	1.5e+06
14 May	8.3e+04	4.6e+04	1.3e+06
15 May	9.2e+04	4.7e+04	1.3e+06
16 May	1.0e+05	4.7e+04	1.2e+06
17 May	1.1e+05	4.6e+04	1.3e+06

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	11 May	7	2-2-2-2-3-1-1-1	3	1-2-2-2-0-0-0-0	5
12 May	5	1-0-1-1-3-1-1-2	0	0-0-0-0-0-0-0-1	4	1-1-1-0-1-1-1-3
13 May	4	2-1-1-0-2-1-1-1	4	1-1-0-3-1-2-1-0	4	2-1-1-1-1-1-0-1
14 May	3	0-1-1-1-2-2-1-0	0	0-0-0-0-0-0-0-0	3	1-1-1-1-1-1-0-1
15 May	4	1-1-2-2-1-1-1-1	1	0-1-1-1-0-0-0-0	4	1-2-2-1-1-1-0-1
16 May	4	1-0-1-2-3-0-1-1	1	0-0-1-0-1-0-0-0	4	1-1-1-1-2-1-0-1
17 May	3	0-0-0-1-2-1-1-2	0	0-0-0-1-0-0-0-0	2	0-1-1-1-1-1-1-1



*Alerts and Warnings Issued*

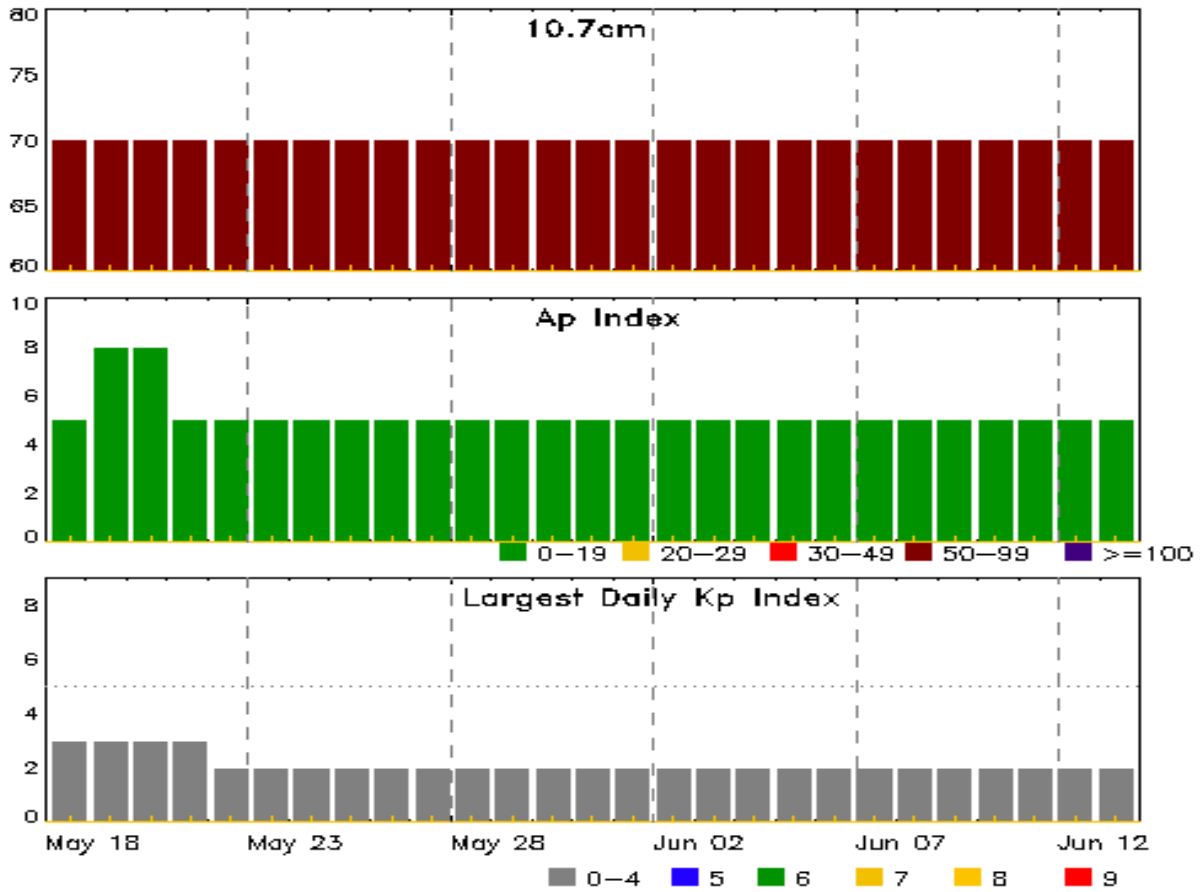
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<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
No Alerts or Warnings Issued		

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## 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
18 May	70	5	3	01 Jun	70	5	2
19	70	8	3	02	70	5	2
20	70	8	3	03	70	5	2
21	70	5	3	04	70	5	2
22	70	5	2	05	70	5	2
23	70	5	2	06	70	5	2
24	70	5	2	07	70	5	2
25	70	5	2	08	70	5	2
26	70	5	2	09	70	5	2
27	70	5	2	10	70	5	2
28	70	5	2	11	70	5	2
29	70	5	2	12	70	5	2
30	70	5	2	13	70	5	2
31	70	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 #	245	2695	II

**No Events Observed**

### ***Flare List***

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
15 May	2004	2022	2038	A7.9			



## *Region Summary*

Location		Sunspot Characteristics					Flares							
Date	Lat CMD	Helio Lon	Area 10 <sup>-6</sup>	Extent hemi.	Spot (helio) Class	Spot Count	Mag Class	X-ray			Optical			
							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	
<b>2018</b>										
May	15.0	7.9	0.53	9.2	4.5	70.9	70.2	8	7.6	
June	19.7	9.4	0.48	9.1	4.3	72.5	70.0	7	7.4	
July	1.3	1.0	0.77	9.4	4.2	69.7	70.0	6	7.3	
August	10.0	5.2	0.53	9.0	4.0	69.1	70.0	10	7.3	
September	5.7	2.0	0.35	8.7	3.9	68.3	70.1	9	7.3	
October	6.9	2.9	0.42	9.2	4.1	69.5	70.3	7	7.1	
November	7.3	2.9	0.48	9.5	4.0	68.9	70.4	6	7.0	
December	5.6	1.9	0.34	9.3	3.6	70.0	70.3	7	6.9	
<b>2019</b>										
January	16.0	4.6	0.29	9.0	3.2	71.6	70.0	6	6.8	
February		0.5		8.7	3.0	70.6	69.8	7	6.7	
March	14.8	5.6	0.39	8.3	2.8	71.5	69.7	6	6.6	
April	11.5	5.5	0.48	7.9	2.6	72.4	69.6	6	6.7	
May	18.1	5.9	0.34	7.4	2.3	71.3	69.6	7	6.7	
June	11.6	0.7	0.06	7.3	2.2	68.1	69.6	5	6.5	
July	1.6	0.5	0.31	7.0	2.1	67.1	69.7	6	6.3	
August	2.5	0.3	0.16	7.0	2.1	67.0	69.8	7	6.2	
September	2.6	0.7	0.27	6.8	1.9	68.1	69.7	10	6.2	
October	1.8	0.2	0.11	6.2	1.6	67.4	69.5	8	6.2	
November	1.1	0.3	0.27			70.2		4		
December	7.2	0.9	0.14			70.9		4		
<b>2020</b>										
January	9.2	3.8	0.41			72.3		5		
February	5.5	0.2	0.04			71.0		6		
March	3.0	0.9	0.30			70.1		6		
April	8.5	3.2	0.38			69.5		6		

**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.



## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

Published every Monday by the Space Weather Prediction Center.

U.S. Department of Commerce  
NOAA / National Weather Service  
Space Weather Prediction Center  
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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.

<https://www.swpc.noaa.gov/products/weekly-highlights-and-27-day-forecast> --

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