

Space Weather Highlights
09 March - 15 March 2020

SWPC PRF 2324
16 March 2020

Solar activity was very low. Region 2758 (S29, L=229, class/area Cro/020 on 08 Mar) was absent of significant flare activity and decayed to plage on 10 Mar. No Earth-directed 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 reached moderate levels throughout the period with a peak flux of 175 pfu observed at 10/2110 UTC.

Geomagnetic field activity reached unsettled levels on 12-13 Mar in response to weak CH HSS influence. Quiet conditions prevailed during the remainder of the period.

Space Weather Outlook
16 March - 11 April 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 reach high levels on 20-22 Mar in response to recurrent CH HSS influence.

Geomagnetic field activity is expected to reach active levels on 27 Mar and unsettled levels on 19-21, 27-28 Mar due to CH HSS effects. Quiet conditions are expected for the remainder of the outlook period.



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
09 March	71	12	10	A0.0	0	0	0	0	0	0	0	0
10 March	71	0	0	A0.0	0	0	0	0	0	0	0	0
11 March	71	0	0	A0.0	0	0	0	0	0	0	0	0
12 March	70	0	0	A0.0	0	0	0	0	0	0	0	0
13 March	69	0	0	A0.0	0	0	0	0	0	0	0	0
14 March	68	0	0	A0.0	0	0	0	0	0	0	0	0
15 March	70	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	>2MeV
	09 March	2.3e+05	4.6e+04
10 March	1.3e+05	4.6e+04	1.4e+06
11 March	1.3e+05	4.6e+04	1.5e+06
12 March	1.7e+05	4.6e+04	1.3e+06
13 March	1.3e+05	4.6e+04	1.2e+06
14 March	7.8e+04	4.7e+04	1.3e+06
15 March	4.5e+05	4.7e+04	1.4e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 March	5	1-1-2-1-1-2-2-1	4	1-0-2-3-1-1-0-0	5
10 March	3	1-0-2-1-1-2-1-0	3	1-0-2-2-0-1-0-0	4	2-1-2-1-1-1-0-1
11 March	0	1-1-0-0-1-1-0-0	1	0-0-0-1-1-0-0-0	3	1-1-1-1-1-0-0-1
12 March	7	1-1-2-1-2-3-2-2	8	0-0-3-1-4-2-2-1	7	1-2-2-1-2-2-3-1
13 March	6	2-2-2-2-2-2-1-1	13	1-1-2-6-2-1-1-0	7	2-3-2-2-1-1-1-1
14 March	2	0-0-0-1-1-1-1-1	1	0-0-0-2-1-0-0-0	3	0-0-1-1-1-1-1-1
15 March	3	0-0-0-2-1-2-2-1	3	0-0-1-2-2-0-1-0	2	0-1-1-2-2-1-2-2

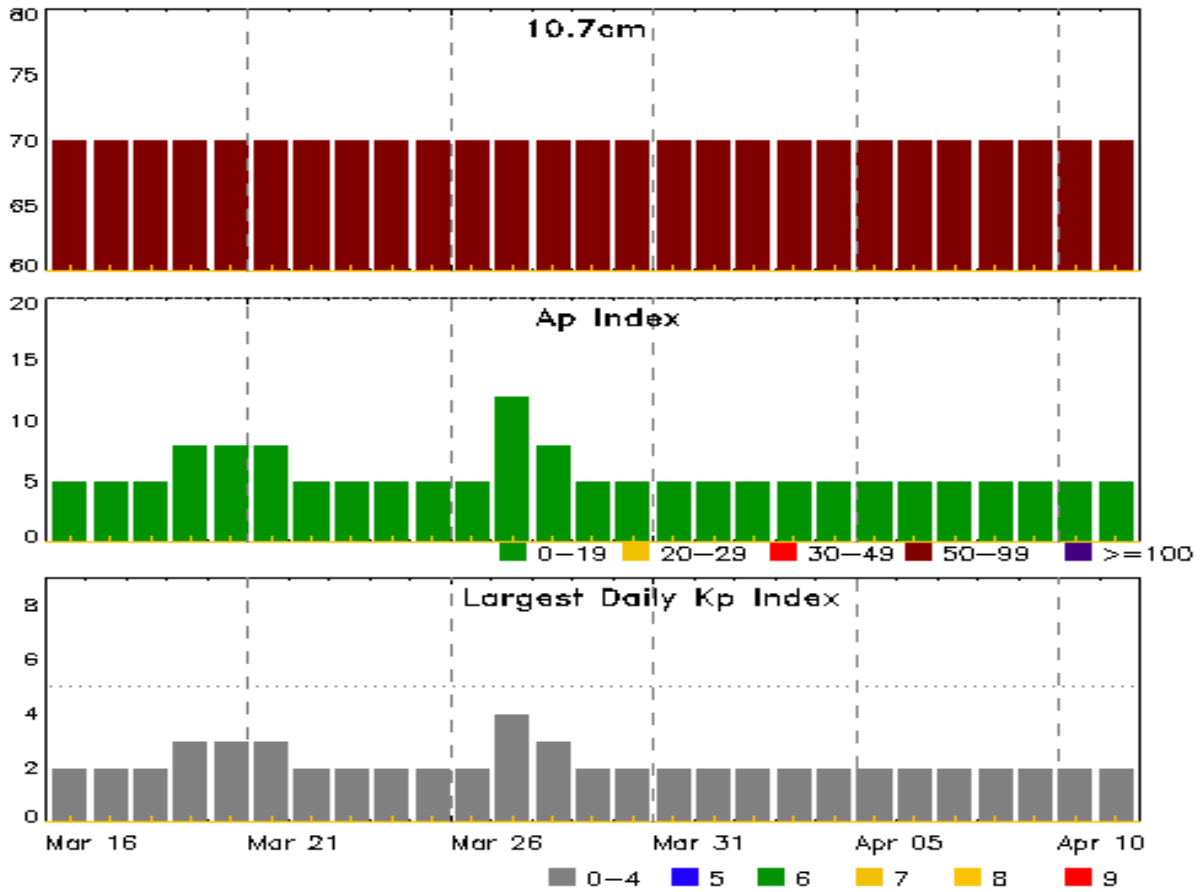


Alerts and Warnings Issued

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
16 Mar	70	5	2	30 Mar	70	5	2
17	70	5	2	31	70	5	2
18	70	5	2	01 Apr	70	5	2
19	70	8	3	02	70	5	2
20	70	8	3	03	70	5	2
21	70	8	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	12	4	10	70	5	2
28	70	8	3	11	70	5	2
29	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	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Optical			Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD		
11 Mar	0549	0556	0600	B2.3				



Region Summary

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	4		
<i>Region 2758</i>																		
08 Mar	S29E26	229	20		3	Cro	3	B										
09 Mar	S30E12	230	10		2	Hrx	2	A										
10 Mar	S30W01	230	plage															
11 Mar	S30W15	231	plage															
12 Mar	S30W29	232	plage															
13 Mar	S30W43	233	plage															
14 Mar	S30W57	233	plage															
15 Mar	S30W71	234	plage															
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 230



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	
2018										
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	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
2019										
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			68.1		10	
October		1.8	0.2	0.11			67.4		8	
November		1.1	0.3	0.27			70.2		4	
December		7.2	1.0	0.14			70.9		4	
2020										
January		9.2	3.8	0.41			72.3		5	
February		5.5	0.2	0.04			71.0		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
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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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