

Solar activity was very low over the period under a spotless solar disk. 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 on 24-25 Feb, 27 Feb, and again on 29 Feb-01 Mar. High levels occurred on 26 and 28 Feb with a peak flux of 2,170 pfu observed at 26/1950 UTC.

Geomagnetic field activity ranged from quiet to active levels over the period. Solar wind parameters were at nominal levels from 24 Feb through early on 28 Feb. At 28/0650 UTC total field began to increase to around 8 nT while the Bz component became variable between +/-7 nT. Solar wind speed initially increased to 503 at 29/0248 UTC before increasing a second time to 573 km/s at 29/1942 UTC. This increase in solar wind parameters was due to a connection to a negative polarity southern crown coronal hole high speed stream (CH HSS) followed by a connection with an isolated negative polarity CH HSS. The geomagnetic field responded with quiet levels on 24-28 Feb and quiet to active levels on 29 Feb-01 Mar.

Space Weather Outlook

02 March - 28 March 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 moderate levels on 02-03, 10-18, 22-28 Mar. High levels are expected on 04-09 and 19-21 Mar due to CH HSS influence.

Geomagnetic field activity is expected to increase to unsettled levels on 02-07, 18-20, 27-28 Mar with active periods likely on 02, 19, 27-28 Mar due to CH HSS activity.



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	
24 February	70	0	0	A0.0	0	0	0	0	0	0	0	0	0
25 February	71	0	0	A0.0	0	0	0	0	0	0	0	0	0
26 February	70	0	0	A0.0	0	0	0	0	0	0	0	0	0
27 February	71	0	0	A0.0	0	0	0	0	0	0	0	0	0
28 February	71	0	0	A0.0	0	0	0	0	0	0	0	0	0
29 February	70	0	0	A0.0	0	0	0	0	0	0	0	0	0
01 March	69	0	0	A0.0	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	
	24 February	5.5e+04	4.7e+04	3.1e+07
25 February	5.4e+04	4.6e+04	3.8e+07	
26 February	9.3e+04	4.6e+04	5.9e+07	
27 February	6.8e+04	4.6e+04	2.0e+07	
28 February	1.3e+05	4.6e+04	3.2e+07	
29 February	3.2e+05	4.6e+04	5.9e+06	
01 March	5.7e+04	4.6e+04	8.5e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	24 February	3	1-1-0-0-1-2-1-1	1	1-1-0-0-0-0-0-0	4
25 February	3	2-0-0-0-1-2-1-0	1	0-0-0-1-1-0-0-0	3	2-0-1-0-1-0-0-0
26 February	3	0-1-1-0-1-2-2-1	1	0-0-1-0-0-0-1-0	4	1-1-1-0-1-1-2-1
27 February	2	1-0-0-2-1-1-1-0	3	1-0-1-3-0-0-0-0	4	2-1-1-1-1-0-1-1
28 February	4	1-1-1-1-1-2-1-2	3	0-0-0-2-1-1-1-2	6	2-2-1-1-1-1-1-2
29 February	8	1-1-2-2-3-2-2-3	17	1-0-3-5-4-4-2-2	11	2-2-2-2-2-3-2-4
01 March	6	3-1-2-2-1-2-1-1	8	3-1-1-4-3-0-0-0	22	4-1-2-2-1-1-1-2

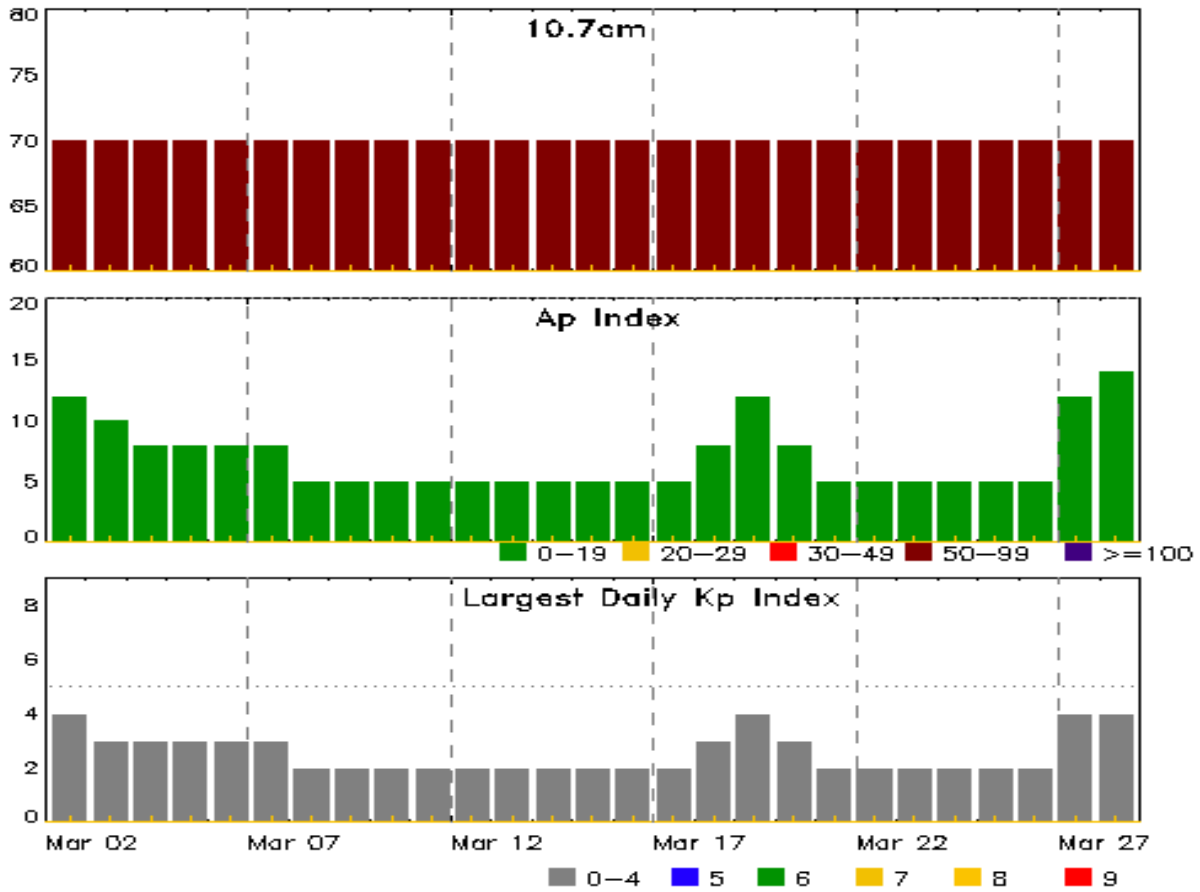


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
26 Feb 1335	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	26/1330
28 Feb 1621	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/1605
29 Feb 2223	WARNING: Geomagnetic K = 4	29/2221 - 01/0600
29 Feb 2225	ALERT: Geomagnetic K = 4	29/2223



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
02 Mar	70	12	4	16 Mar	70	5	2
03	70	10	3	17	70	5	2
04	70	8	3	18	70	8	3
05	70	8	3	19	70	12	4
06	70	8	3	20	70	8	3
07	70	8	3	21	70	5	2
08	70	5	2	22	70	5	2
09	70	5	2	23	70	5	2
10	70	5	2	24	70	5	2
11	70	5	2	25	70	5	2
12	70	5	2	26	70	5	2
13	70	5	2	27	70	12	4
14	70	5	2	28	70	14	4
15	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 #
26 Feb	1857	1903	1905	A9.5			



Region Summary

Location		Sunspot Characteristics					Flares							
Date	Lat CMD	Lon	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot 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	
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.



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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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