

Space Weather Highlights
25 May - 31 May 2020

SWPC PRF 2335
01 June 2020

Solar activity reached moderate levels on 29 May due to an M1.1 flare at 0724 UTC from an unnumbered region beyond the northeast limb. This region also produced a C9.3 flare at 29/1046 UTC. Both flares were believed to cause CMEs off the eastern limb. However, no Earth-directed CMEs were observed in LASCO coronagraph imagery. Very low activity was observed for the remainder of the summary period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal background levels.

Geomagnetic field activity was quiet to unsettled for the period. There was possible CME influence on 30 May. The IMF was enhanced to a peak of 14 nT near 30/0500 UTC, while the Bz component reached a maximum southward deflection of -13 nT at 30/0520 UTC. However, the geomagnetic field only managed unsettled levels.

Space Weather Outlook
01 June - 27 June 2020

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

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 forecast period.

Geomagnetic field activity is expected to be at mostly quiet levels for the 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
25 May	70	0	0	A0.0	0	0	0	0	0	0	0	0
26 May	70	0	0	A0.0	0	0	0	0	0	0	0	0
27 May	68	0	0	A0.0	0	0	0	0	0	0	0	0
28 May	68	0	0	A1.2	0	0	0	0	0	0	0	0
29 May	70	0	0	A2.0	2	1	0	0	0	0	0	0
30 May	70	0	0	A1.0	0	0	0	0	0	0	0	0
31 May	71	0	0	A1.3	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
	25 May	5.4e+04	4.6e+04
26 May	5.5e+04	4.6e+04	1.4e+06
27 May	6.1e+04	4.6e+04	1.2e+06
28 May	6.5e+04	4.6e+04	1.5e+06
29 May	6.7e+04	4.6e+04	1.4e+06
30 May	6.5e+04	4.6e+04	1.3e+06
31 May	5.4e+04	4.6e+04	1.2e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	25 May	7	2-2-2-1-3-1-2-2	3	1-1-1-2-1-0-1-1	5
26 May	3	1-1-1-1-2-0-1-1	2	0-1-1-2-0-0-0-0	4	2-1-1-1-1-0-0-2
27 May	6	1-1-1-1-2-3-2-1	2	1-1-0-1-1-0-1-0	3	1-0-0-1-1-1-1-0
28 May	2	0-0-1-1-2-0-1-1	0	0-0-0-0-1-0-0-0	4	1-1-1-1-1-1-1-1
29 May	4	0-0-1-1-3-0-1-2	0	0-1-0-0-0-0-0-0	3	1-0-1-0-1-0-0-2
30 May	13	2-2-3-3-4-2-3-2	17	2-3-3-5-4-2-2-2	14	2-3-3-3-3-2-3-3
31 May	4	2-1-1-1-2-1-1-1	4	2-2-1-1-2-1-0-0	6	2-1-1-1-1-1-1-1

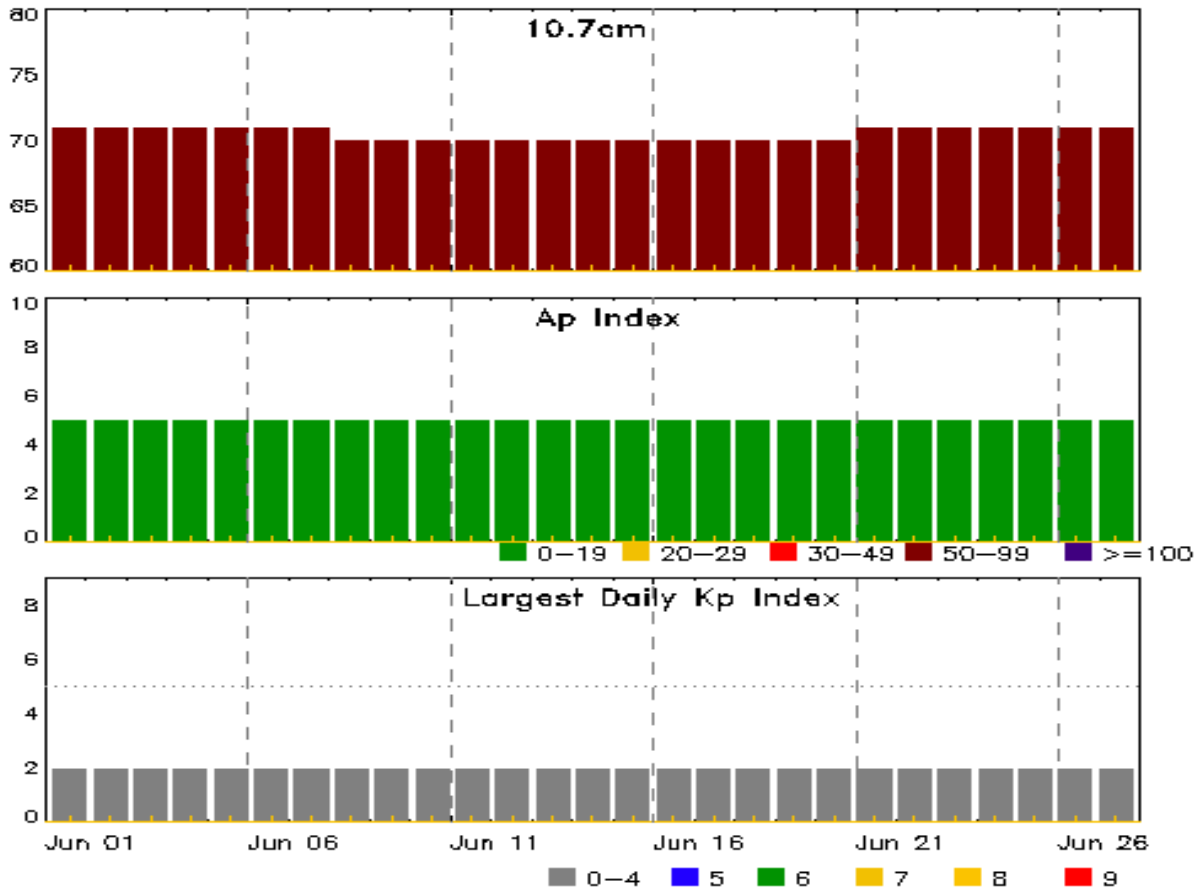


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
30 May 0502	WARNING: Geomagnetic K = 4	30/0502 - 1200



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 Jun	71	5	2	15 Jun	70	5	2
02	71	5	2	16	70	5	2
03	71	5	2	17	70	5	2
04	71	5	2	18	70	5	2
05	71	5	2	19	70	5	2
06	71	5	2	20	70	5	2
07	71	5	2	21	71	5	2
08	70	5	2	22	71	5	2
09	70	5	2	23	71	5	2
10	70	5	2	24	71	5	2
11	70	5	2	25	71	5	2
12	70	5	2	26	71	5	2
13	70	5	2	27	71	5	2
14	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 #	Radio Flux 245	Radio Flux 2695	Intensity II	Intensity IV
29 May	0713	0724	0728	M1.1	0.003				2764	220		

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
27 May	0184	1835	1818	B1.4			2764
28 May	0931	0940	0103	B1.1			2764
28 May	1013	1036	1027	B2.9			2764
28 May	2327	2334	2340	B1.4			2764
29 May	0121	0129	0135	B1.2			2764
29 May	0241	0244	0256	B1.6			2764
29 May	0339	0348	0040	B1.1			2764
29 May	0435	0442	0448	B1.0			2764
29 May	0649	0659	0075	B1.4			2764
29 May	0713	0724	0728	M1.1			2764
29 May	0829	0835	0841	B3.1			2764
29 May	0938	0946	0952	B4.2			2764
29 May	1041	1046	1050	C9.3			2764
29 May	0111	0116	1111	B2.5			2764
29 May	1118	1121	1125	B2.9			2764
29 May	1322	1345	1336	B2.6			2764
29 May	1418	1422	1427	C1.0			2764
29 May	1540	1547	1553	B2.4			2764
29 May	1637	1648	1655	B8.7			2764



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										
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	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	5.3		70.2	69.3	4	6.0
December		7.2	0.9	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	
March		3.0	0.9	0.30			70.1		6	
April		8.5	3.2	0.38			69.5		6	
May		0.0					69.2		4	

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)

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Space Weather Prediction Center
325 Broadway, Boulder CO 80305

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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