

Space Weather Highlights
19 October - 25 October 2020

SWPC PRF 2356
26 October 2020

Solar activity was very low with only B-class flare activity observed primarily from Region 2776 (S14, L=162, class/area Cso/100 on 18 Oct). 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 19-24 Oct. High levels were reached on 25 Oct due to coronal hole high speed stream (CH HSS) influence. The maximum flux was 5,670 pfu observed at 25/1845 UTC.

Geomagnetic field activity ranged from quiet to active levels. Solar wind parameters were at or near nominal levels on 19-22 Oct with solar wind speed ranging from 327-450 km/s and total field from 1-10 nT. The geomagnetic field was at quiet levels on 20 Oct, quiet to unsettled levels on 19 and 22 Oct, and isolated active levels were observed on 21 Oct. By 23 Oct, a positive polarity CH HSS became geoeffective. Solar wind speed increased to a maximum near 595 km/s while total field initially increased to 15 nT. The geomagnetic field responded with quiet to active levels on 23-25 Oct.

Space Weather Outlook
26 October - 21 November 2020

Solar activity is expected to be at very low levels with a slight chance for C-class flares on 26 Oct - 01 Nov as new Region 2778 (S19, L=088, class/area Cai/080 on 26 Oct) rotates across the visible disk. Very low levels are expected on 02-21 Nov.

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 on 02-20 Nov. High levels are expected on 26 Oct - 01 Nov and again on 21 Nov due to CH HSS influences.

Geomagnetic field activity is expected to be reach unsettled to active levels on 26-29 Oct, 01 Nov, and 17-21 Nov with G1 (Minor) geomagnetic storm levels likely on 26 Oct due to recurrent CH HSS effects.



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
19 October	75	12	80	A3.6	0	0	0	4	0	0	0	0
20 October	75	11	60	A2.8	0	0	0	4	0	0	0	0
21 October	74	11	70	A2.0	0	0	0	0	0	0	0	0
22 October	75	11	60	A2.1	0	0	0	0	0	0	0	0
23 October	72	11	60	A2.0	0	0	0	0	0	0	0	0
24 October	72	11	40	A0.0	0	0	0	1	0	0	0	0
25 October	74	11	40	A1.7	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	
	19 October	4.9e+05	4.5e+04	6.9e+06
20 October	5.6e+04	4.5e+04	1.8e+06	
21 October	3.3e+05	4.5e+04	4.5e+06	
22 October	9.6e+04	4.5e+04	1.9e+06	
23 October	8.6e+05	4.5e+04	1.0e+07	
24 October	1.6e+05	4.4e+04	1.7e+07	
25 October	1.0e+06	4.5e+04	1.5e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	19 October	5	0-1-1-2-2-2-2-1	14	0-0-2-5-5-1-1-1	6
20 October	3	2-1-1-1-1-1-1-0	1	1-0-1-1-0-0-0-0	4	2-2-1-1-0-0-1-1
21 October	7	1-1-4-2-1-1-1-1	12	0-1-4-5-3-0-0-1	10	3-2-4-3-1-1-1-1
22 October	3	2-1-0-0-2-1-1-1	2	1-0-0-0-1-1-0-1	6	3-1-1-0-1-1-1-2
23 October	10	1-1-1-0-2-2-4-4	5	1-0-1-1-1-1-2-3	12	1-1-1-1-2-3-4-4
24 October	16	3-4-4-3-2-3-3-2	28	3-5-5-5-4-4-2-2	17	4-4-4-3-2-3-3-2
25 October	9	3-1-2-2-3-2-3-1	28	2-1-4-5-6-4-3-3	15	3-2-3-3-4-3-4-2

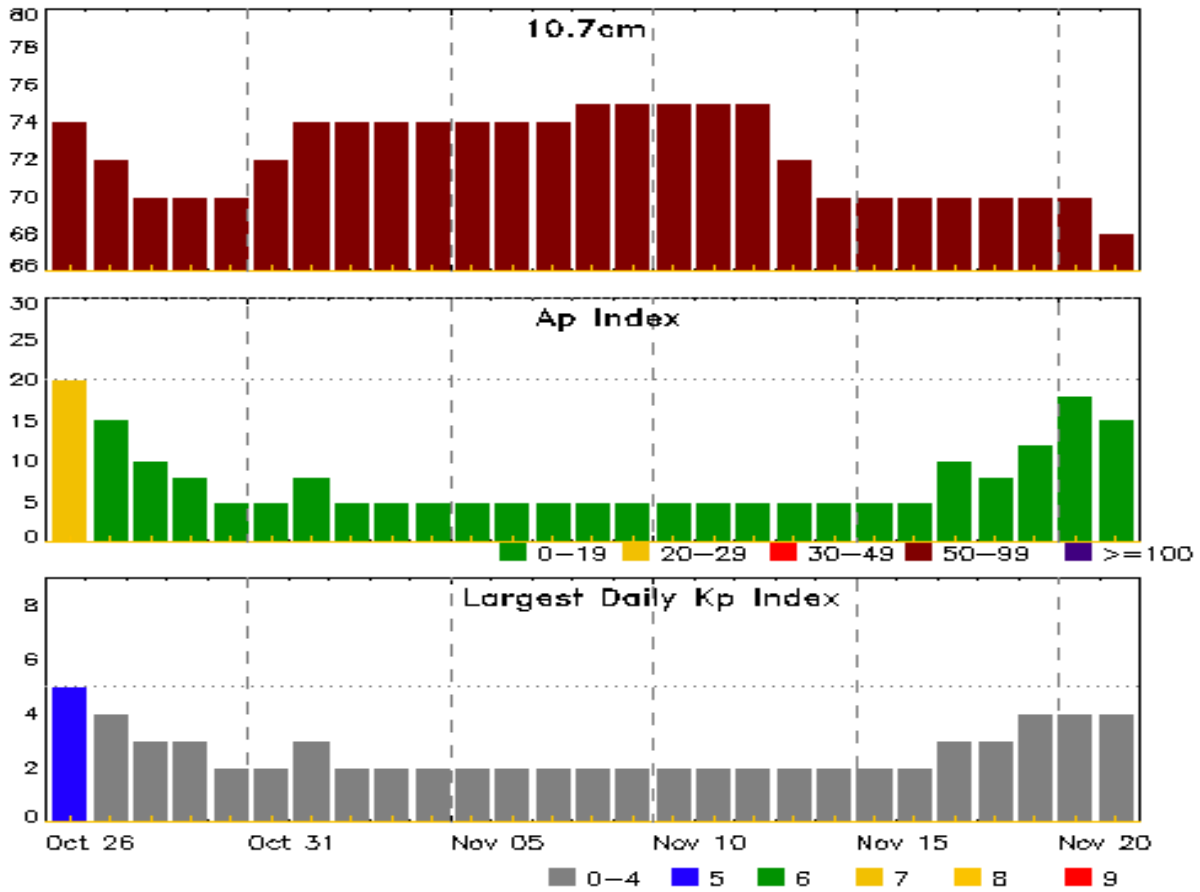


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
19 Oct 2103	WATCH: Geomagnetic Storm Category G1 predicted	
20 Oct 2119	WATCH: Geomagnetic Storm Category G1 predicted	
21 Oct 0746	WARNING: Geomagnetic K = 4	21/0746 - 1500
21 Oct 0809	ALERT: Geomagnetic K = 4	21/0808
23 Oct 1929	WARNING: Geomagnetic K = 4	23/1930 - 24/0900
23 Oct 2054	ALERT: Geomagnetic K = 4	23/2054
23 Oct 2055	WARNING: Geomagnetic K = 5	23/2055 - 24/0600
24 Oct 0845	EXTENDED WARNING: Geomagnetic K = 4	23/1930 - 24/1500
25 Oct 1305	WARNING: Geomagnetic K = 4	25/1305 - 26/0600
25 Oct 1326	ALERT: Geomagnetic K = 4	25/1325
25 Oct 1402	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	25/1320
25 Oct 1638	WATCH: Geomagnetic Storm Category G1 predicted	



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
26 Oct	74	20	5	09 Nov	75	5	2
27	72	15	4	10	75	5	2
28	70	10	3	11	75	5	2
29	70	8	3	12	75	5	2
30	70	5	2	13	72	5	2
31	72	5	2	14	70	5	2
01 Nov	74	8	3	15	70	5	2
02	74	5	2	16	70	5	2
03	74	5	2	17	70	10	3
04	74	5	2	18	70	8	3
05	74	5	2	19	70	12	4
06	74	5	2	20	70	18	4
07	74	5	2	21	68	15	4
08	75	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	2695	Intensity II

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD	Rgn #	
19 Oct	0439	0446	0452	B1.5				2776
19 Oct	0451	0459	0504	B2.8				2776
19 Oct	0647	0654	0658	B1.0				2776
19 Oct	0711	0721	0726	B2.7				
19 Oct	0718	0731	0745	B2.6	SF	S16E07		2776
19 Oct	B0729	U0730	A0745		SF	S16E07		2776
19 Oct	0746	0746	0749		SF	S16E07		2776
19 Oct	1020	1026	1044	B2.3	SF	S16E06		2776
20 Oct	1318	1329	1335	B3.6				2776
20 Oct	1625	1625	1636		SF	S67W67		
20 Oct	1652	1655	1657		SF	S67W67		
20 Oct	1732	1733	1740		SF	S30W68		
20 Oct	2258	2305	2309	B3.5	SF	N30W72		
24 Oct	2045	2054	2058	B2.3	SF	S18W65		2776
25 Oct	1118	1122	1126	B1.8				



Region Summary

Date	Location		Sunspot Characteristics				Flares											
	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			
Region 2776																		
14 Oct	S13E68	160	10	1	Axx	2	A											
15 Oct	S12E54	160	30	6	Cro	4	B											
16 Oct	S14E40	162	60	5	Cao	4	B											
17 Oct	S13E28	161	80	9	Cao	5	B											
18 Oct	S14E13	162	100	7	Cso	6	B					2						
19 Oct	S13W03	165	80	1	Cso	2	B					4						
20 Oct	S13W16	164	60	3	Hsx	1	A											
21 Oct	S14W31	166	70	2	Hsx	1	A											
22 Oct	S14W45	167	60	1	Hsx	1	A											
23 Oct	S14W57	167	60	1	Hsx	1	A											
24 Oct	S14W70	166	40	1	Hsx	1	A					1						
25 Oct	S14W83	166	40	1	Hsx	1	A											
								0	0	0	7	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 165

Region 2777																		
18 Oct	S24W77	252	10	2	Bxo	2	B					5						
19 Oct	S24W91	253	plage															
								0	0	0	5	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 252



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
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

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> --

Current

<ftp://ftp.swpc.noaa.gov/pub/warehouse> -- Online archive from 1997

<https://www.ngdc.noaa.gov/stp/satellite/goes-r.html> -- NCEI GOES data
textarchive

<https://www.swpc.noaa.gov/products/solar-cycle-progression> -- Solar Cycle
Progression web site

<https://www.swpc.noaa.gov/content/contact-us> -- Contact and Copyright
information

https://www.swpc.noaa.gov/sites/default/files/images/u2/Usr_guide.pdf -- User
Guide

