Space Weather Highlights
18 January - 24 January 2021

SWPC PRF 2369
25 January 2021

Solar activity was at low and very levels for the highlight period. Other than 19-20 Jan, solar activity was very low with minimal B-level or below x-ray enhancements. Region 2797 (S17, L=335, class/area Cao/120 on 19 Jan) produced a C1 event on 19 Jan. Region 2798 (S16, L=331, class/area Cao/060 on 20 Jan) produced a C1.4/sf flare on 20 Jan. No Earth-directed CMEs were observed in available coronagraph imagery.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit remained at moderate levels throught the highlight period.

Geomagnetic field activity was quiet throught the period, except for 19-20 Jan. A single period of unsettled conditions was observed on both 19 and 20 Jan due to a solar sector boundary crossing (SSBC) as well as weak CH HSS activity.

Space Weather Outlook
25 January - 20 February 2021

Solar activity is expected to be at very low to low levels throughout the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate levels throughout the outlook period.

Geomagnetic field activity is expected to reach unsettled levels on 25-26 Jan, 1-2 Feb, 7-8 Feb, and 20 Feb, due to recurrent CH HSS activity. Quiet levels 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
18 January	75	13	120	A2.9	0	0	0	0	0	0	0	0
19 January	78	14	120	A4.1	1	0	0	0	0	0	0	0
20 January	77	25	110	A3.7	1	0	0	2	0	0	0	0
21 January	78	26	110	A5.7	0	0	0	4	0	0	0	0
22 January	78	39	100	A3.7	0	0	0	0	0	0	0	0
23 January	78	34	70	A2.9	0	0	0	0	0	0	0	0
24 January	78	23	60	A2.5	0	0	0	1	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
18 January	1.4e+05	4.4e+04	2.1e+06
19 January	1.3e+05	4.5e+04	1.4e+06
20 January	1.4e+05	4.5e+04	1.6e+06
21 January	8.5e+04	4.5e+04	1.2e+06
22 January	1.6e+05	4.5e+04	1.3e+06
23 January	1.9e+05	4.4e+04	1.6e+06
24 January	2.8e+05	4.4e+04	1.4e+06

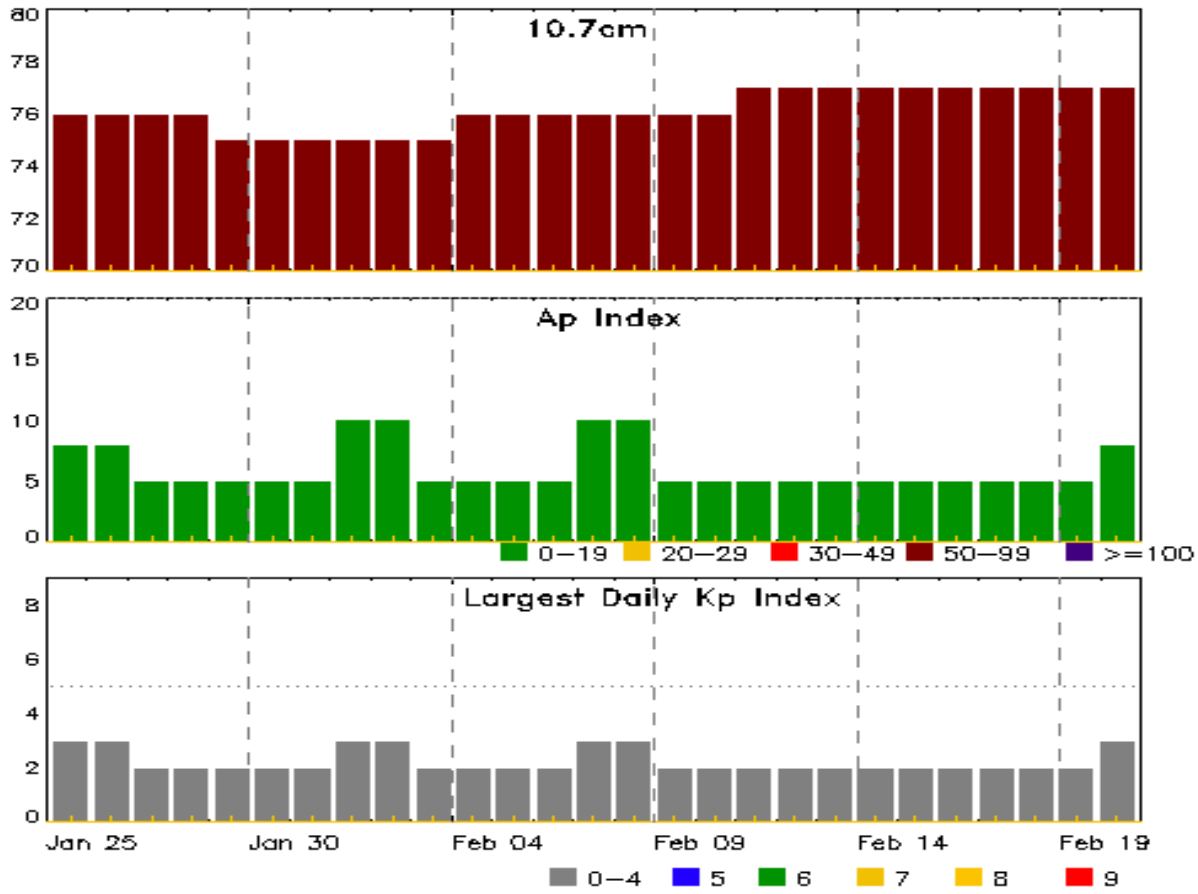
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
18 January	3	0-1-0-0-1-1-2-2	0	0-0-0-0-0-0-0-1	4	1-2-0-0-1-0-1-2
19 January	6	2-2-1-1-2-2-2-1	3	0-1-0-1-3-0-0-0	6	3-2-1-1-2-1-1-1
20 January	5	1-1-2-2-2-2-1-0	11	0-0-3-4-4-3-0-0	6	1-1-3-2-2-2-1-1
21 January	2	0-1-0-1-1-1-0-0	0	0-0-0-0-0-0-0-0	3	0-1-0-1-0-0-0-1
22 January	3	1-0-1-0-1-1-2-1	0	0-0-0-0-0-1-0-0	4	1-0-0-0-1-1-1-1
23 January	3	0-0-1-2-0-1-1-2	1	0-0-0-2-0-0-0-1	5	1-0-1-2-0-1-1-2
24 January	4	0-2-2-0-1-1-1-2	3	0-0-2-0-2-1-1-1	3	1-2-2-0-1-1-2-2

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
25 Jan	76	8	3	08 Feb	76	10	3
26	76	8	3	09	76	5	2
27	76	5	2	10	76	5	2
28	76	5	2	11	77	5	2
29	75	5	2	12	77	5	2
30	75	5	2	13	77	5	2
31	75	5	2	14	77	5	2
01 Feb	75	10	3	15	77	5	2
02	75	10	3	16	77	5	2
03	75	5	2	17	77	5	2
04	76	5	2	18	77	5	2
05	76	5	2	19	77	5	2
06	76	5	2	20	77	8	3
07	76	10	3				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV

No Events Observed

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
19 Jan	0839	0844	0848	B1.5			2798
19 Jan	1009	1015	1021	B1.1			2798
19 Jan	1052	1055	1100	B1.1			2798
19 Jan	1109	1114	1124	B1.1			2798
19 Jan	1746	1754	1759	C1.0			2798
19 Jan	1913	1919	1924	B1.3			2798
19 Jan	1926	1933	1941	B2.6			2798
19 Jan	2025	2041	2045	B4.1			2798
19 Jan	2243	2252	2258	B1.7			2798
20 Jan	0103	0113	0118	B7.0			2798
20 Jan	0608	0613	0621	B1.8			2798
20 Jan	0637	0656	0659	B1.7			2798
20 Jan	0949	0952	0958	B1.6			2798
20 Jan	1001	1011	1023	B7.0	SF	S17E56	2798
20 Jan	1235	1253	1259	C1.4	SF	S19E51	2798
20 Jan	1729	1733	1739	B3.1			2798
20 Jan	1825	1829	1834	B2.0			2798
20 Jan	1927	1936	1944	B1.1			2798
20 Jan	2354	0006	0016	B2.6			2798
21 Jan	0202	0228	0246	B3.9			2798
21 Jan	0327	0337	0354	B1.4			2798
21 Jan	0434	0440	0454	B1.5			2798
21 Jan	0521	0528	0535	B2.0			2798
21 Jan	0917	0924	0929	B1.1			2798
21 Jan	0947	0959	1005	B5.4	SF	S18E42	2798
21 Jan	1011	1014	1025		SF	S18E42	2798
21 Jan	1027	1030	1036	B3.3			2798
21 Jan	1234	1247	1250	B1.3			2798
21 Jan	1250	1253	1258	B3.1	SF	S18E41	2798
21 Jan	1313	1315	1318		SF	S18E40	2798
21 Jan	1459	1505	1512	B1.2			2798

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
21 Jan	2159	2212	2222	B2.3			2798
21 Jan	2242	2251	2309	B1.3			2798
22 Jan	0937	0942	0953	B1.5			2798
23 Jan	0005	0042	0130	B1.3			2798
23 Jan	2334	2353	0018	B3.0	SF	S17E09	2798

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 2796												
15 Jan	S21W07	89	20	3	Cro	3	B								
16 Jan	S21W20	89	10	4	Bxo	5	B								
17 Jan	S21W32	88	10	1	Axx	1	A								
18 Jan	S21W46	89	plage												
19 Jan	S21W60	90	plage												
20 Jan	S21W74	91	plage												
21 Jan	S21W88	92	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 89

			Region 2797												
17 Jan	S18E76	340	90	4	Hsx	2	A								
18 Jan	S17E67	336	120	7	Cao	3	B								
19 Jan	S17E55	335	120	12	Cao	4	B								
20 Jan	S18E37	340	50	3	Hsx	2	A								
21 Jan	S18E22	341	70	2	Hax	2	A								
22 Jan	S18E09	341	70	1	Hax	2	A								
23 Jan	S17W04	341	50	2	Hax	2	A								
24 Jan	S17W16	340	50	2	Hax	2	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 341

			Region 2798												
19 Jan	S17E65	326	plage					1							
20 Jan	S17E46	331	60	5	Cao	3	B	1			2				
21 Jan	S16E34	329	40	7	Cao	4	B				4				
22 Jan	S16E18	332	20	3	Cro	5	B								
23 Jan	S16E05	332	10	1	Axx	1	A								
24 Jan	S16W09	333	plage								1				
								2	0	0	7	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 332

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 2799													
22 Jan	N21W30	20	10	3	Bxo	2	B								
23 Jan	N22W45	22	10	1	Axx	1	A								
24 Jan	N23W59	23	10	1	Axx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 20

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