

Space Weather Highlights
28 December - 03 January 2021

SWPC PRF 2366
04 January 2021

Solar activity was very low throughout the period. Regions 2794 (S16, L=346, class/area=Hsx/180 on 28 Dec) and 2795 (S19, L=317, class/area=Cao/beta on 29 Dec) produced only B-class flare activity throughout the week.

Multiple filament eruptions were observed between S30-50, near center disk, on 01-02 Jan. Two CME signatures with likely earth-directed components were detected in LASCO C2 imagery at 01/2312 UTC and 02/1136 UTC. CME analysis and model outputs suggests arrival of these CMEs late on 05 Jan/early on 06 Jan.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels throughout the period.

Geomagnetic field activity was quiet to unsettled on 29-30 Dec, and quiet throughout the remainder of the period.

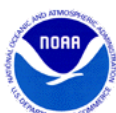
Space Weather Outlook
04 January - 30 January 2021

Solar activity is expected to be very low, with a slight chance for C-class flare activity, 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 reach high levels on 09-12 and 20-22 Jan. Normal and normal-to-moderate flux levels are expected to prevail throughout the remainder of the outlook period.

Geomagnetic field activity is expected to reach active levels on 05 Jan, and G1 (Minor) geomagnetic storm levels on 06 Jan, due to the anticipated arrival of a pair of CMEs from 01-02 Jan. Active conditions are expected on 17-20 Jan due to the influence of a positive polarity CH HSS. Quiet and quiet-to-unsettled conditions are expected to prevail throughout 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	
28 December	87	26	300	A7.2	0	0	0	0	0	0	0	0	0
29 December	84	26	310	A5.6	0	0	0	1	0	0	0	0	0
30 December	83	26	210	A5.7	0	0	0	0	0	0	0	0	0
31 December	81	25	210	A4.5	0	0	0	0	0	0	0	0	0
01 January	80	23	190	A4.7	0	0	0	0	0	0	0	0	0
02 January	82	22	120	A4.8	0	0	0	0	0	0	0	0	0
03 January	80	0	0	A4.6	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	
	28 December	2.5e+05	4.6e+04	1.5e+07
29 December	2.9e+05	4.5e+04	2.1e+07	
30 December	1.3e+05	4.5e+04	1.3e+07	
31 December	8.6e+04	4.5e+04	2.0e+07	
01 January	1.0e+05	4.5e+04	2.1e+07	
02 January	1.1e+05	4.6e+04	2.1e+07	
03 January	1.8e+05	4.6e+04	2.1e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	28 December	6	2-2-2-2-2-2-1-1	7	1-2-3-3-2-2-0-0	7
29 December	5	2-2-1-1-1-2-1-2	3	1-1-1-1-1-1-1-1	7	3-2-1-1-1-2-1-3
30 December	6	2-2-2-2-2-1-1-2	3	1-1-2-0-2-0-0-1	9	3-3-2-2-2-1-1-3
31 December	2	1-0-0-2-1-1-1-0	1	1-0-0-2-0-0-0-0	3	2-1-0-1-0-0-1-1
01 January	3	0-0-1-0-1-2-2-1	1	0-0-1-0-0-1-0-0	4	0-0-1-1-0-1-1-1
02 January	0	0-0-0-0-0-0-0-0	0	0-0-0-0-0-0-0-0	2	1-0-0-1-0-0-1-1
03 January	1	0-0-0-0-1-1-0-0	0	0-0-0-0-0-0-0-0	2	0-1-0-0-0-1-0-1

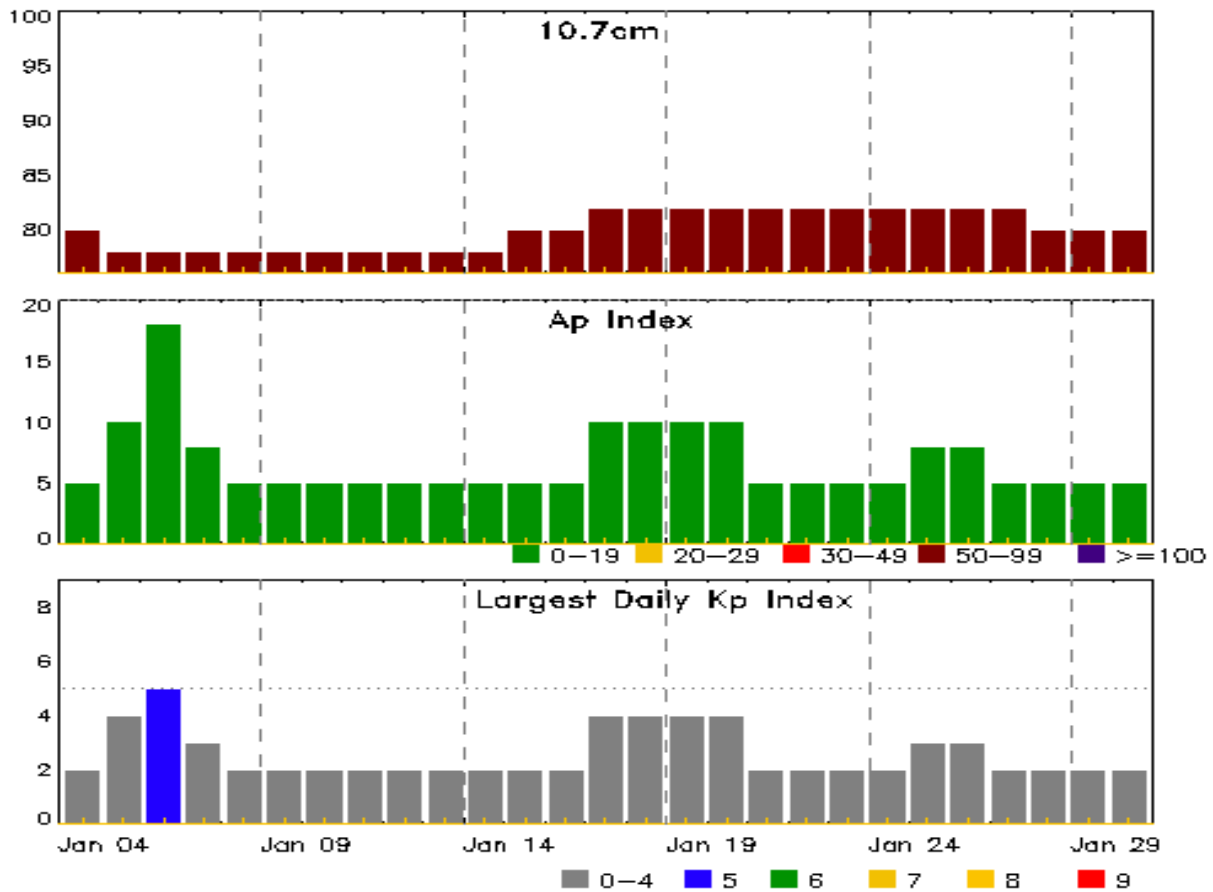


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
03 Jan 2044	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
04 Jan	80	5	2	18 Jan	82	10	4
05	78	10	4	19	82	10	4
06	78	18	5	20	82	10	4
07	78	8	3	21	82	5	2
08	78	5	2	22	82	5	2
09	78	5	2	23	82	5	2
10	78	5	2	24	82	5	2
11	78	5	2	25	82	8	3
12	78	5	2	26	82	8	3
13	78	5	2	27	82	5	2
14	78	5	2	28	80	5	2
15	80	5	2	29	80	5	2
16	80	5	2	30	80	5	2
17	82	10	4				



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 #	
28 Dec	0849	0901	0908	B1.7				2795
28 Dec	1709	1716	1720	B1.1				2795
29 Dec	2052	2104	2108	B6.6	SF	S16W05		2795
30 Dec	0233	0239	0243	B1.8				2795
30 Dec	0415	0421	0425	B1.1				2795
30 Dec	0727	0735	0748	B1.8				2795
30 Dec	0907	0913	0917	B1.1				
30 Dec	1002	1015	1023	B2.4				2794
30 Dec	1036	1043	1050	B2.8				
30 Dec	1627	1631	1635	B1.5				2795
30 Dec	2105	2112	2119	B1.3				2795
01 Jan	0146	0154	0158	B3.1				2795
01 Jan	0435	0442	0446	B2.1				2795
01 Jan	1459	1504	1508	B1.9				2795



Region Summary

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Helio 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 2794																	
20 Dec	S17E78	347	120	2	Hsx	1	A										
21 Dec	S16E68	344	170	2	Hsx	1	A										
22 Dec	S17E53	346	170	3	Hsx	1	A										
23 Dec	S16E40	346	180	3	Hsx	1	A										
24 Dec	S17E26	346	150	2	Hsx	1	A										
25 Dec	S16E14	345	220	3	Hsx	1	A										
26 Dec	S16E01	345	210	3	Hsx	1	A										
27 Dec	S16W12	345	210	3	Hsx	1	A										
28 Dec	S16W26	346	180	3	Hsx	1	A										
29 Dec	S17W39	346	180	2	Hsx	1	A										
30 Dec	S15W54	347	170	2	Hsx	1	A										
31 Dec	S16W68	344	180	2	Hsx	1	A										
01 Jan	S16W80	347	180	2	Hsx	1	A										
02 Jan	S16W93	347	120	2	Hsx	1	A										

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 345

Region 2795																	
23 Dec	S17E67	319	40	9	Cro	6	B										
24 Dec	S18E54	318	200	9	Dao	4	B										
25 Dec	S17E41	318	180	10	Dao	9	B										
26 Dec	S17E29	317	180	9	Dao	10	B										
27 Dec	S17E15	318	150	9	Dso	5	B										
28 Dec	S17E02	318	120	9	Dao	5	B										
29 Dec	S19W10	317	130	10	Cao	5	B				1						
30 Dec	S18W25	318	40	10	Cro	5	B										
31 Dec	S18W38	316	30	10	Bxo	4	B										
01 Jan	S17W51	318	10	7	Bxo	2	B										
02 Jan	S18W68	321	0		Axx	1	A										
03 Jan	S18W81	321	plage														

0 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 318



Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

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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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