Space Weather Highlights **SWPC PRF 2362**
30 November - 06 December 2020 **07 December 2020**

Solar activity reached low levels this week due to C-class flare activity. A total of ten C-class flares were observed this period. Region 2786 (S17, L=343, class/area=Cko/1000 on 25 Nov) produced three C1 flares, Region 2787 (N30, L=303, class/area=Axx/10 on 30 Nov) produced one C1 flare, and Region 2790 (S22, L=252, class/area=Hsx/110 on 03 Dec) produced six C-class flares. The largest event of the period was a C3/Sf from Region 2790 at 01/0427 UTC.

Multiple CMEs associated with flare activity and filament eruptions, predominately off the east limb, were observed this week, however, none were Earth-directed.

No proton events were observed at geosynchronous orbit. The greater than 10 MeV proton flux became enhanced on 30 Nov following a CME off the NE limb on 26 Nov, and remained enhanced through 05 Dec. The greater than 10 Mev proton flux reached a peak of 6.5 pfu at 01/0655 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 02-03 Dec, with normal to moderate flux levels observed throughout the remainder of the summary period.

Geomagnetic field activity was quiet to unsettled on 30 Nov, and quiet on 01-06 Dec, under a nominal solar wind regime.

Space Weather Outlook
07 December - 02 January 2021

Solar activity is expected to be very low to low 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 20-26 and 29-30 Dec. Normal to moderate levels are expected to prevail throughout the remainder of the period.

Geomagnetic field activity is anticipated to reach G1 (Minor) geomagnetic storm levels on 19 Dec, with active levels likely on 18 and 24 Dec, due to recurrent CH HSS influences. Quiet and quiet to unsettled conditions are expected to prevail throughout 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
30 November	109	62	710	B3.5	0	0	0	3	0	0	0	0
01 December	104	46	620	B3.3	3	0	0	3	0	0	0	0
02 December	105	41	530	B3.1	0	0	0	1	0	0	0	0
03 December	103	40	680	B3.0	3	0	0	3	0	0	0	0
04 December	96	38	680	B2.4	0	0	0	2	0	0	0	0
05 December	100	42	440	B2.7	3	0	0	2	0	0	0	0
06 December	91	25	80	B2.0	1	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
30 November	4.9e+05	1.8e+05	2.4e+07
01 December	7.5e+05	3.2e+05	2.6e+07
02 December	2.0e+06	2.7e+05	5.0e+07
03 December	4.7e+06	1.6e+05	3.7e+07
04 December	1.0e+07	7.8e+04	2.5e+07
05 December	1.4e+07	5.8e+04	2.9e+07
06 December	5.2e+06	5.0e+04	2.7e+07

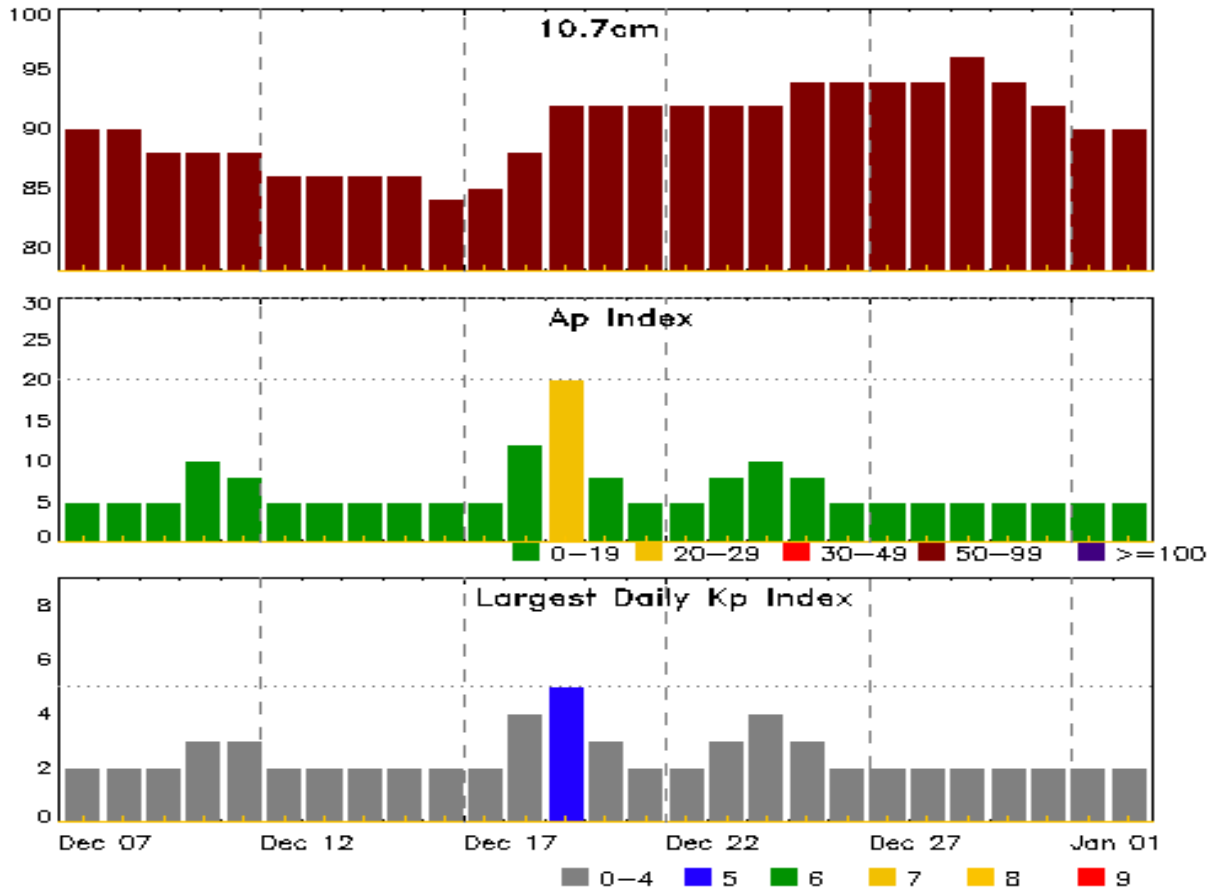
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
30 November	6	1-3-2-2-1-2-1-1	9	0-2-3-5-0-1-0-0	8	1-3-3-2-1-1-0-1
01 December	2	0-0-0-0-1-2-0-1	0	0-0-0-0-0-0-0-0	2	1-0-0-0-0-0-0-1
02 December	4	1-1-2-0-1-2-1-1	0	0-0-1-0-0-0-0-0	4	1-1-2-1-0-1-1-1
03 December	1	0-0-0-0-2-1-0-0	2	0-0-0-1-2-2-0-0	3	1-0-0-0-1-2-0-0
04 December	1	0-0-0-0-1-1-1-0	0	0-0-0-0-0-0-0-0	2	0-0-0-0-0-0-0-1
05 December	4	0-0-0-1-3-2-2-1	1	0-0-0-1-1-0-1-0	5	0-0-1-1-2-1-2-1
06 December	4	1-1-1-1-1-1-1-2	5	0-0-2-3-3-1-1-0	9	2-1-1-1-2-1-2-2

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
02 Dec 1504	ALERT: Electron 2MeV Integral Flux >= 1000pfu	02/1455
03 Dec 0303	ALERT: Type II Radio Emission	03/0153
03 Dec 1438	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	02/1455

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
07 Dec	90	5	2	21 Dec	92	5	2
08	90	5	2	22	92	5	2
09	88	5	2	23	92	8	3
10	88	10	3	24	92	10	4
11	88	8	3	25	94	8	3
12	86	5	2	26	94	5	2
13	86	5	2	27	94	5	2
14	86	5	2	28	94	5	2
15	86	5	2	29	96	5	2
16	84	5	2	30	94	5	2
17	85	5	2	31	92	5	2
18	88	12	4	01 Jan	90	5	2
19	92	20	5	02	90	5	2
20	92	8	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 #
30 Nov	0246	0248	0250		SF	S18E02	2786
30 Nov	0312	0315	0319	B7.9			2786
30 Nov	0506	0512	0516	B6.9			
30 Nov	0924	0931	0935	B8.1			
30 Nov	1940	1950	2001	B8.8	SF	S16W04	2786
30 Nov	2301	2302	2305		SF	S25E86	
01 Dec	0100	0106	0112	B5.6			2786
01 Dec	0154	0159	0203	B5.2			2786
01 Dec	0218	0242	0250	B9.2			2786
01 Dec	0408	0427	0434	C3.8	SF	S23E75	2790
01 Dec	0548	0554	0604	B5.4			2790
01 Dec	0713	0721	0729	C1.2			2787
01 Dec	1540	1552	1607	B5.7			
01 Dec	2229	2241	2250	B6.1	SF	S24E70	2790
01 Dec	2311	2320	2326	C1.4	SF	S18E02	2786
02 Dec	0256	0301	0307	B6.4			2790
02 Dec	0617	0625	0629	B6.6			2790
02 Dec	1449	1453	1457	B5.2			
02 Dec	1541	1542	1546		SF	S11W39	2786
02 Dec	1906	1915	1920	B5.8			
03 Dec	0145	0156	0203	C1.7	SF	S18E02	2786
03 Dec	0546	0604	0630	B9.0			2786
03 Dec	0955	1000	1004	C1.2	SF	S23E50	2790
03 Dec	1051	1101	1113	B6.8			2790
03 Dec	1502	1513	1523	B5.3			2786
03 Dec	1929	1939	1954	B6.5			2786
03 Dec	2346	2359	0029	C1.4			2790
03 Dec	2352	2353	2355		SF	S19E38	2790
04 Dec	1310	1319	1324	B5.1			2786
04 Dec	1508	1515	1522	B5.0			2786
04 Dec	1709	1717	1722	B4.8			2786

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
04 Dec	1917	1925	1931	B6.2	SF	S24W68	2788
04 Dec	2218	2229	2243	B5.3	SF	S25E28	2790
05 Dec	0016	0038	0052	C1.6	SF	S24E27	2790
05 Dec	0805	0806	0807		SF	S26W75	2788
05 Dec	0854	0859	0905	B6.8			
05 Dec	1120	1129	1136	C1.2			2786
05 Dec	1236	1241	1250	B5.3			2790
05 Dec	1420	1431	1436	B8.7			2786
05 Dec	1656	1700	1704	B4.9			2786
05 Dec	1736	1747	1759	B8.0			2786
05 Dec	1759	1806	1815	C1.2			2790
06 Dec	1318	1327	1336	C1.6			2790
06 Dec	2332	2342	2349	B8.3	SF	S24E27	2790

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 2783												
17 Nov	S22E68	71	30	2	Hsx	1	A								
18 Nov	S23E53	72	80	1	Hsx	1	A								
19 Nov	S22E40	72	70	2	Hsx	1	A								
20 Nov	S23E27	73	70	2	Hsx	1	A	1				1			
21 Nov	S23E15	72	80	2	Hsx	1	A				1				
22 Nov	S23E02	72	70	2	Hsx	1	A								
23 Nov	S18W07	67	90	9	Dso	6	B				1	1			
24 Nov	S20W19	66	100	8	Cso	4	B								
25 Nov	S21W34	68	80	7	Cso	3	B								
26 Nov	S22W47	68	80	8	Cso	3	B								
27 Nov	S22W59	67	60	5	Cso	3	B								
28 Nov	S22W75	70	50	2	Hsx	1	A								
29 Nov	S22W89	71	20	2	Hsx	1	A								
								1	0	0	2	2	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 72

			Region 2784												
21 Nov	N33E28	59	30	3	Cro	2	B								
22 Nov	N32E14	60	30	5	Bxo	3	B								
23 Nov	N32E01	60	plage												
24 Nov	N32W13	61	plage												
25 Nov	N32W27	61	plage												
26 Nov	N32W41	62	plage												
27 Nov	N32W55	63	plage												
28 Nov	N32W69	64	plage												
29 Nov	N32W83	65	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 60

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 2785												
22 Nov	S23E74	359	60	2	Hsx	1	A	3			1				
23 Nov	S22E57	2	120	2	Cso	1	B	1							
24 Nov	S20E44	2	140	2	Hsx	1	A	2							
25 Nov	S21E31	2	100	2	Hsx	1	A								
26 Nov	S21E18	3	100	2	Hsx	1	A				2				
27 Nov	S22E12	356	110	15	Cso	2	B								
28 Nov	S25W01	356	120	18	Fso	8	B				1				
29 Nov	S23W22	4	90	3	Hsx	1	A				1				
30 Nov	S22W34	2	100	3	Hsx	1	A								
01 Dec	S22W48	2	90	2	Hsx	1	A								
02 Dec	S22W60	2	80	2	Hsx	1	A								
03 Dec	S23W75	3	160	4	Hsx	1	A								
04 Dec	S22W88	4	120	2	Hsx	1	A								
								6	0	0	5	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 356

			Region 2786												
22 Nov	S16E82	353	plage					1							
23 Nov	S16E71	349	120	5	Hsx	1	A								
24 Nov	S15E59	347	380	4	Cko	2	B								
25 Nov	S17E53	343	1000	11	Cko	6	B	1			3				
26 Nov	S17E41	340	840	19	Fko	9	BG	3			5				
27 Nov	S18E29	339	800	18	Fko	14	BG	1			5				
28 Nov	S18E15	340	780	18	Fko	17	BG	4			4				
29 Nov	S17E03	339	770	18	Fki	13	BG	2			1				
30 Nov	S17W10	338	590	17	Cki	17	B				2				
01 Dec	S17W27	341	430	12	Cko	12	B	1			1				
02 Dec	S17W40	342	370	13	Hkx	6	A				1				
03 Dec	S17W57	345	410	3	Hkx	3	A	1			1				
04 Dec	S17W71	347	460	5	Hkx	3	A								
05 Dec	S17W85	348	350	4	Cko	3	B	1							
								15	0	0	23	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 339

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 2787												
27 Nov	N29E64	304	10	1	Axx	1	A								
28 Nov	N29E51	304	10	1	Axx	1	A								
29 Nov	N29E37	305	10	1	Axx	1	A								
30 Nov	N30E24	303	10	1	Axx	1	A								
01 Dec	N30E10	305	plage					1							
02 Dec	N30W04	306	plage												
03 Dec	N30W18	307	plage												
04 Dec	N30W32	308	plage												
05 Dec	N30W46	309	plage												
06 Dec	N30W60	310	plage												
								1	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 306

			Region 2788												
29 Nov	S26W07	349	30	6	Cro	7	B								
30 Nov	S29W18	346	10	2	Axx	3	A								
01 Dec	S27W34	349	plage												
02 Dec	S27W48	350	plage												
03 Dec	S27W62	351	plage												
04 Dec	S27W76	352	plage								1				
05 Dec	S27W90	353	plage								1				
								0	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 349

			Region 2789												
29 Nov	S25E43	299	10	1	Axx	1	A								
30 Nov	S25E29	299	plage												
01 Dec	S25E15	300	plage												
02 Dec	S25E01	301	plage												
03 Dec	S25W13	302	plage												
04 Dec	S25W27	303	plage												
05 Dec	S25W41	304	plage												
06 Dec	S25W55	305	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 301

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 2790												
01 Dec	S23E62	253	100	2	Cso	3	B	1			2				
02 Dec	S23E50	251	80	3	Cao	4	B								
03 Dec	S22E36	252	110	5	Hsx	6	A	2			2				
04 Dec	S23E24	252	100	4	Cao	4	B				1				
05 Dec	S23E12	251	70	4	Cso	4	B	2			1				
06 Dec	S23W02	252	60	2	Hsx	1	A	1			1				
								6	0	0	7	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 252

			Region 2791												
05 Dec	S16E45	218	20	5	Bxo	5	B								
06 Dec	S16E30	220	20	5	Bxo	4	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 220

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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