Space Weather Highlights **SWPC PRF 2357**
26 October - 01 November 2020 **02 November 2020**

Solar activity was at very low to low levels. Multiple C-class flares were observed from both Regions 2778 (S20, L=086, class/area Eko/300 on 29 Oct) and 2779 (S17, L=075, class/area Cai/140 on 29 Oct). The largest was a pair of C4.3/Sf flares at 27/0616 UTC from Region 2778 and at 29/1150 UTC from Region 2779.

Other activity included an approximate 14 degree filament eruption centered near N37E05 was observed in H-alpha imagery beginning at 26/2212 UTC. An associated, slow moving, CME was observed off the SE limb in SOHO/LASCO C2 imagery beginning at 27/0724 UTC. WSA/ENLIL analysis of the event showed a likely arrival on 01 Nov.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 26 Oct - 01 Nov due to coronal hole high speed stream (CH HSS) influence. The largest flux of the period was 21,600 pfu observed at 28/1510 UTC.

Geomagnetic field activity ranged from quiet to active levels. The period began under the influence of a positive polarity, polar connected, CH HSS. Solar wind speed reached a maximum of 639 km/s at 26/1001 UTC with total field reaching 9 nT early. Solar wind speed was in slow decline by 27 Oct and was at nominal levels by 30 Oct. The geomagnetic field responded with quiet to active levels on 26-27 Oct and 29 Oct. Quiet to unsettled levels were observed on 28 Oct. A return to quiet levels was observed on 30 Oct. By 31/1500 UTC, a slight increase in density was observed followed by an increased in total field on 01 Nov to 9 nT with a prolonged period of southward Bz near -6 nT. This is likely an indication of weak CME influences from the 26 Oct filament eruption. The geomagnetic field responded with quiet to unsettled levels on 31 Oct - 01 Nov.

Space Weather Outlook
02 November - 28 November 2020

Solar activity is expected to be at very low levels on 02-13 Nov. Very low to low levels are expected on 14-28 Nov due to the return of Regions 2778 and 2779.

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 21-28 Nov due to recurrent CH HSS influence.

Geomagnetic field activity is expected to be at quiet to unsettled levels on 02 Nov due to persistent weak CME influence. Recurrent CH HSS influence is expected to cause unsettled to active levels on 17 and 19-25 Nov. Mostly quiet conditions are expected on 03-16, 18, and 26-28

Nov.

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
26 October	75	17	80	A2.2	0	0	0	0	0	0	0	0
27 October	82	22	140	B1.3	4	0	0	8	0	0	0	0
28 October	88	36	230	B1.1	4	0	0	5	0	0	0	0
29 October	85	35	440	B1.6	4	0	0	11	0	0	0	0
30 October	80	32	260	B1.2	0	0	0	2	0	0	0	0
31 October	77	26	120	A7.0	0	0	0	0	0	0	0	0
01 November	77	12	10	B1.5	2	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
26 October	8.7e+05	4.5e+04	4.7e+08
27 October	3.1e+05	4.5e+04	8.8e+08
28 October	2.7e+05	4.4e+04	7.4e+08
29 October	4.2e+05	4.5e+04	5.6e+08
30 October	1.3e+05	4.5e+04	4.3e+08
31 October	2.6e+05	4.5e+04	2.1e+08
01 November	1.1e+05	4.6e+04	3.9e+07

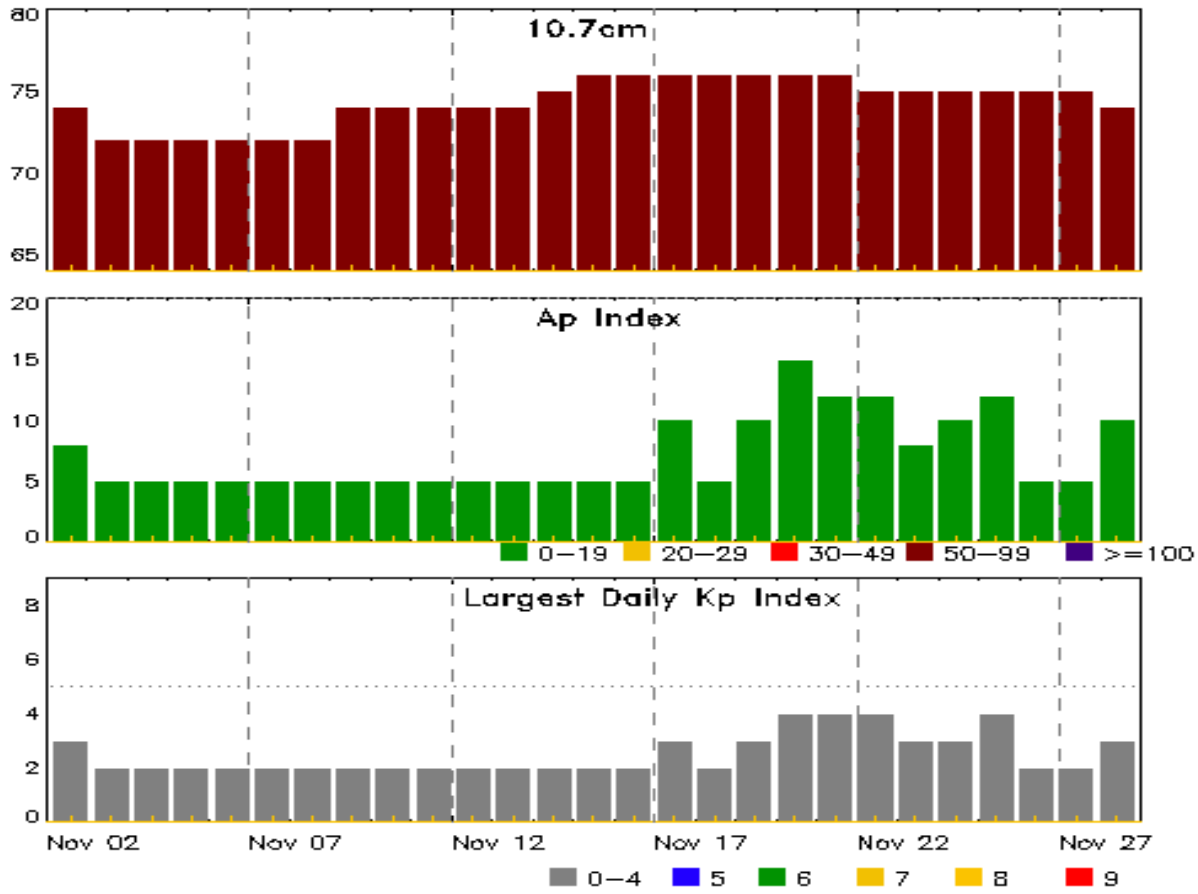
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
26 October	15	2-4-3-3-3-2-2-4	32	2-3-5-6-6-2-3-2	15	2-4-3-3-4-2-3-3
27 October	7	2-2-3-3-1-0-2-1	13	2-2-5-4-1-1-1-1	9	2-2-4-3-1-0-2-2
28 October	9	2-3-1-2-2-2-3-2	23	1-2-2-5-5-5-3-2	12	2-3-2-2-3-3-3-3
29 October	11	2-2-3-3-3-3-2-2	22	0-1-3-6-4-5-1-1	14	2-3-3-3-3-4-2-2
30 October	4	2-2-0-1-1-1-1-2	4	1-0-2-3-1-0-0-0	5	2-2-1-1-1-0-1-2
31 October	6	1-1-3-2-3-1-1-0	15	1-0-4-5-4-3-0-0	6	1-1-3-2-2-2-0-1
01 November	8	1-1-3-2-3-2-2-1	21	0-1-4-3-6-4-3-0	4	1-1-2-2-3-3-3-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
26 Oct 0513	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
26 Oct 0555	EXTENDED WARNING: Geomagnetic K = 4	25/1305 - 26/1500
26 Oct 1454	EXTENDED WARNING: Geomagnetic K = 4	25/1305 - 26/2100
27 Oct 0459	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
27 Oct 0809	WARNING: Geomagnetic K = 4	27/0808 - 1500
27 Oct 0901	ALERT: Geomagnetic K = 4	27/0859
28 Oct 0459	WARNING: Geomagnetic K = 4	28/0500 - 0900
28 Oct 0500	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
28 Oct 1636	WARNING: Geomagnetic K = 4	28/1635 - 2100
28 Oct 1801	SUMMARY: 10cm Radio Burst	28/1746 - 1748
28 Oct 1923	CANCELLATION: 10cm Radio Burst	
29 Oct 0505	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
29 Oct 1109	WARNING: Geomagnetic K = 4	29/1110 - 1500
29 Oct 1137	ALERT: Geomagnetic K = 4	29/0535
29 Oct 1652	WARNING: Geomagnetic K = 4	29/1650 - 2359
29 Oct 1717	ALERT: Geomagnetic K = 4	29/1715
30 Oct 0459	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
31 Oct 0459	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320
01 Nov 1409	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	25/1320

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
02 Nov	74	8	3	16 Nov	76	5	2
03	72	5	2	17	76	10	3
04	72	5	2	18	76	5	2
05	72	5	2	19	76	10	3
06	72	5	2	20	76	15	4
07	72	5	2	21	76	12	4
08	72	5	2	22	75	12	4
09	74	5	2	23	75	8	3
10	74	5	2	24	75	10	3
11	74	5	2	25	75	12	4
12	74	5	2	26	75	5	2
13	74	5	2	27	75	5	2
14	75	5	2	28	74	10	3
15	76	5	2				

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 #
26 Oct	0422	0430	0436	B1.2			2778
26 Oct	0623	0631	0646	B1.2			2778
26 Oct	1920	1927	1931	B1.4			2778
26 Oct	2245	2252	2256	B1.6			2778
26 Oct	2331	2336	2340	B1.7			2778
27 Oct	0147	0152	0154		SF	S20W14	2778
27 Oct	0203	0231	0238	B2.0	SF	S20W14	2778
27 Oct	0321	0325	0329	B2.2			
27 Oct	0432	0442	0446	C1.4			2778
27 Oct	0537	0547	0553	B3.2			2778
27 Oct	0611	0616	0621	C4.3	SF	S20W19	2778
27 Oct	0647	U0702	0707		SF	S20W21	2778
27 Oct	0735	0739	0749	B6.2	SF	S21W18	2778
27 Oct	0843	0849	0904	B3.2			2778
27 Oct	0947	0952	0956	C1.4	SF	S21W20	2778
27 Oct	B1022	U1022	A1027		SF	S20W24	2778
27 Oct	1058	1103	1107	B4.7	SF	S20W24	2778
27 Oct	1246	1304	1311	B5.5			2778
27 Oct	1331	1341	1354	C1.5			2778
27 Oct	1543	1554	1601	B7.9			2778
27 Oct	1815	1831	1836	B7.3			2778
27 Oct	1947	1951	1956	B2.7			2778
27 Oct	2135	2139	2146	B8.8			2778
27 Oct	2232	2239	2244	B6.0			2778
28 Oct	B0135	0136	0138		SF	S21W27	2778
28 Oct	0200	0211	0216	C1.1			2778
28 Oct	0306	0317	0322	B7.8			2778
28 Oct	0533	0542	0550	B3.9			2778
28 Oct	0717	0720	0727	B3.9			2778
28 Oct	0823	0829	0841	B3.4			2778
28 Oct	0940	0946	0956	B5.1			2778

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
28 Oct	1006	1012	1019	B5.1			2778
28 Oct	1025	1033	1052	B5.1			2778
28 Oct	1427	1433	1437	B2.2			2779
28 Oct	1710	1717	1722	B2.2			2779
28 Oct	1747	1756	1802	B4.4			2779
28 Oct	1933	1943	1947	C1.3	SF	S15W30	2779
28 Oct	2040	2054	2058	C1.1	SF	S16W31	2779
28 Oct	2159	2211	2218	C1.4	SF	S16W32	2779
28 Oct	2326	2330	2334	B4.3			2779
28 Oct	2335	2341	2345	B4.3	SF	S16W32	2779
28 Oct	2354	0002	0008	B5.3			2779
29 Oct	0045	0055	0104	B4.5			2779
29 Oct	0414	0419	0423	B3.1			2779
29 Oct	0423	0431	0436	B4.9			2779
29 Oct	0448	0457	0507	B8.9			2779
29 Oct	0530	0535	0546	B6.4			2778
29 Oct	0754	0802	0806	B4.4	SF	S16W36	2779
29 Oct	0849	0855	0903	B2.8			2779
29 Oct	0925	0934	0939	B3.1			2779
29 Oct	0939	0948	0956	B4.4	SF	S16W39	2779
29 Oct	1007	1019	1027	B9.6	SF	S17W38	2779
29 Oct	1105	1112	1116	B3.2			2779
29 Oct	1118	1126	1130	B3.8			2779
29 Oct	1130	1150	1207	C4.3	SF	S16W37	2779
29 Oct	1310	1320	1327	C1.0			2779
29 Oct	1329	1329	1332		SF	S17W41	2779
29 Oct	1446	1451	1459	B6.2			2779
29 Oct	1553	1602	1608	C1.3	SN	S15W40	2779
29 Oct	1903	1911	1922	B2.5			2779
29 Oct	2000	2016	2038	C1.5	SF	S15W44	2779
29 Oct	2051	2051	2054		SF	S15W44	2779
29 Oct	2141	2147	2152	B4.0	SF	S15W45	2779
29 Oct	2310	2314	2320	B2.9	SF	S15W45	2779
29 Oct	2327	2327	2335		SF	S17W54	2778
30 Oct	0006	0012	0016	B3.5			2779
30 Oct	0058	0108	0115	B3.7			2779
30 Oct	1039	1039	1041		SF	S19W64	2778
30 Oct	1116	1116	1120		SF	S19W64	2778

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
30 Oct	1206	1214	1218	B2.3			2778
30 Oct	1308	1313	1318	B3.0			2778
31 Oct	1519	1525	1533	B1.0			2778
31 Oct	2248	2255	2300	B2.0			2778
31 Oct	2338	2345	2352	B1.6			2778
01 Nov	0045	0054	0100	B1.9			
01 Nov	0106	0112	0118	B1.8			
01 Nov	0118	0124	0128	B1.7			
01 Nov	0137	0146	0154	B3.2			
01 Nov	0506	0514	0525	B2.3			
01 Nov	0525	0532	0536	B2.3			
01 Nov	0715	0724	0729	B4.2			
01 Nov	1207	1220	1240	B7.1			
01 Nov	1543	1551	1557	B9.7			2779
01 Nov	1715	1730	1740	C3.4			2778
01 Nov	1901	1916	1941	C1.6			2779

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 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

Crossed West Limb.
Absolute heliographic longitude: 165

			Region 2778												
26 Oct	S19W17	87	80	7	Cai	7	B								
27 Oct	S19W30	86	140	8	Dai	12	BG	4			8				
28 Oct	S20W44	86	150	10	Dai	11	BG	1			1				
29 Oct	S20W56	86	300	11	Eko	8	B				1				
30 Oct	S20W70	87	160	11	Eao	6	B				2				
31 Oct	S22W80	84	100	2	Hax	2	A								
								5	0	0	12	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 87

			Region 2779												
28 Oct	S15W33	76	80	4	Cai	5	B	3			4				
29 Oct	S17W45	75	140	7	Cai	7	B	4			10				
30 Oct	S15W57	74	100	8	Cao	6	B								
31 Oct	S16W72	76	20	6	Bxo	4	B								
01 Nov	S17W85	76	10	3	Bxo	2	B	1							
								8	0	0	14	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 76

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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