Space Weather Highlights
19 October - 25 October 2026

SWPC PRF 2669
26 October 2026

Solar activity reached moderate levels on 19 Oct when Region 4551 (S15, L=102, class/area=Eki/620 on 15 Oct) produced an M1.6/1n (R1-Minor) flare at 19/0903 UTC; the largest flare of the week. Solar activity was at low levels throughout the remainder of the week. 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 19-22 Oct, with high levels observed on 23-25 Oct.

Geomagnetic field activity was quiet on 19 Oct through much of 20 Oct under background solar wind conditions. Unsettled levels were observed late on 20 Oct following the initial onset of positive polarity CH HSS influences. G1 (Minor) geomagnetic storming was observed on 21 Oct, with active conditions observed on 22-23 Oct, due to sustained positive polarity CH HSS influences. Quiet conditions were observed on 24-25 Oct with the return of an ambeint solar wind environment.

Space Weather Outlook
26 October - 21 November 2026

Solar activity is expected to be at predominately low levels, with a varying chance for M-class (R1-R2/Minor-Moderate) 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 26-30 Oct, and 03-05 Nov, and 19-21 Nov. Normal to moderate flux levels are expected for the remainder or the outlook period.

Due to multiple recurrent CH HSSs, geomagnetic field activity is likely to reach G1 (Minor) storm levels on 31 Oct, with active levels likely on 01, 09, and 17-18 Nov. The remainder of the outlook period is expected to be at quiet or quiet to unsettled levels.

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	121	66	480	B5.2	8	1	0	4	1	0	0	0
20 October	121	66	610	B5.4	8	0	0	3	1	0	0	0
21 October	115	66	590	B5.4	3	0	0	3	0	0	0	0
22 October	106	49	270	B5.5	4	0	0	5	0	0	0	0
23 October	101	51	189	B5.3	8	0	0	8	0	0	0	0
24 October	93	25	150	B4.0	1	0	0	1	0	0	0	0
25 October	89	22	150	B2.9	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
19 October	3.3e+05	2.1e+04	2.5e+07
20 October	3.5e+05	2.1e+04	2.1e+07
21 October	3.4e+05	2.1e+04	1.6e+07
22 October	2.5e+05	2.2e+04	2.8e+07
23 October	1.5e+05	2.2e+04	9.4e+07
24 October	1.1e+05	2.2e+04	1.2e+08
25 October	2.6e+05	2.2e+04	1.3e+08

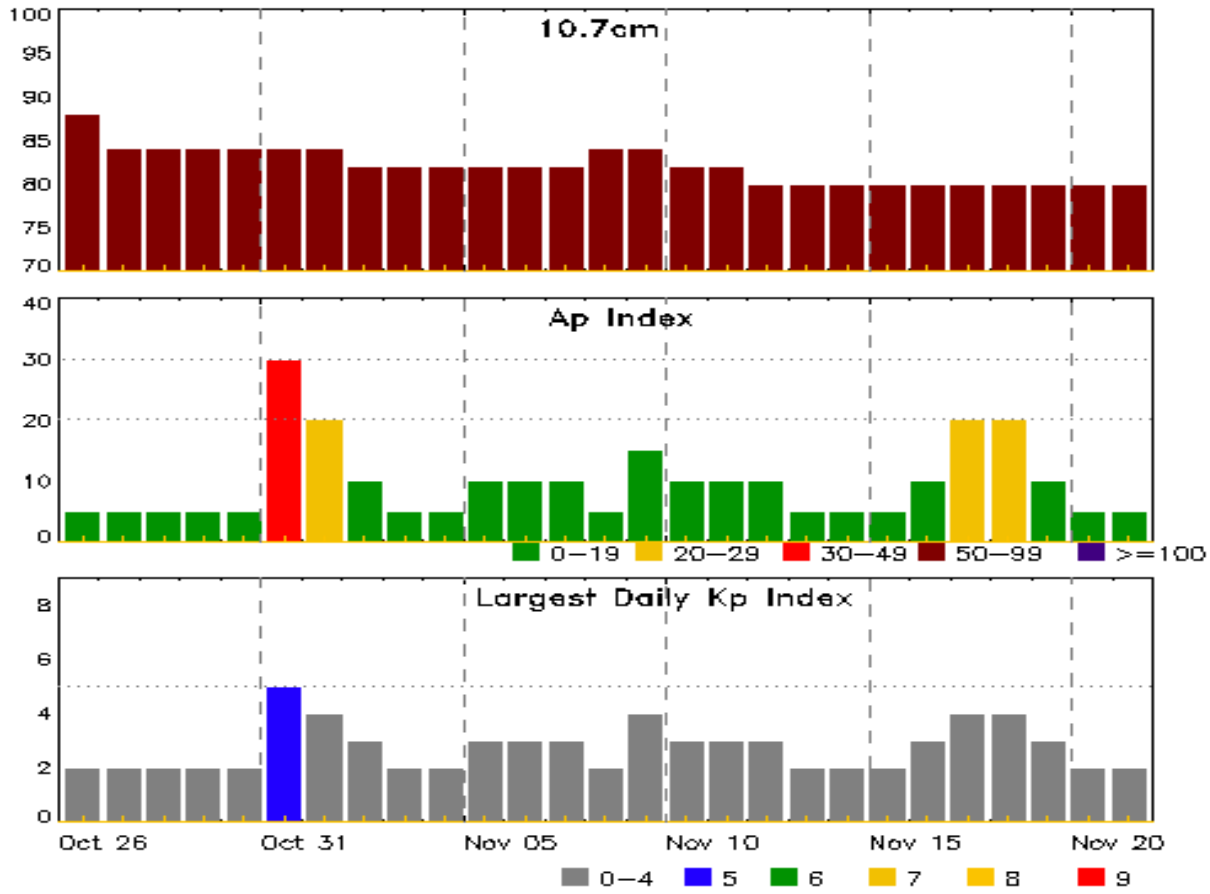
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
19 October	2	0-0-0-0-1-1-1-1	0	0-0-0-0-0-0-0-0	3	0-0-0-1-0-0-1-1
20 October	7	1-1-1-2-2-2-2-3	12	0-0-1-5-2-4-2-1	8	1-1-1-2-2-3-3-3
21 October	16	3-3-2-3-3-3-3-4	25	3-3-4-5-3-5-3-3	19	4-4-2-2-2-3-4-5
22 October	15	2-3-3-3-4-3-2-3	45	2-2-5-7-6-5-3-3	20	2-3-3-4-4-4-4-3
23 October	7	1-1-1-2-3-2-3-1	21	2-1-4-5-5-3-3-2	11	2-2-2-2-3-3-4-2
24 October	3	1-1-1-1-2-1-1-0	8	1-1-1-4-3-3-0-0	5	2-1-1-2-2-2-2-1
25 October	4	1-1-1-1-2-1-1-1	8	1-1-1-4-3-3-0-0	7	2-1-1-2-2-2-1-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
19 Oct 0909	SUMMARY: 10cm Radio Burst	19/0858 - 0859
20 Oct 1912	WATCH: Geomagnetic Storm Category G1 predicted	
21 Oct 0205	WARNING: Geomagnetic K = 4	21/0204 - 1200
21 Oct 0429	ALERT: Geomagnetic K = 4	21/0429
21 Oct 1617	WARNING: Geomagnetic K = 4	21/1616 - 22/0600
21 Oct 2130	ALERT: Geomagnetic K = 4	21/2059
21 Oct 2228	WARNING: Geomagnetic K = 5	21/2227 - 22/0900
22 Oct 0003	ALERT: Geomagnetic K = 5	21/2359
22 Oct 0532	EXTENDED WARNING: Geomagnetic K = 4	21/1616 - 22/1500
22 Oct 1424	EXTENDED WARNING: Geomagnetic K = 4	21/1616 - 22/1800
22 Oct 1648	EXTENDED WARNING: Geomagnetic K = 4	21/1616 - 22/2100
22 Oct 2021	EXTENDED WARNING: Geomagnetic K = 4	21/1616 - 23/0300
23 Oct 1147	ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1140
23 Oct 1927	WARNING: Geomagnetic K = 4	23/1926 - 24/0900
23 Oct 1955	ALERT: Geomagnetic K = 4	23/1953
24 Oct 0904	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1140
25 Oct 0927	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1140

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	88	5	2	09 Nov	84	15	4
27	84	5	2	10	82	10	3
28	84	5	2	11	82	10	3
29	84	5	2	12	80	10	3
30	84	5	2	13	80	5	2
31	84	30	5	14	80	5	2
01 Nov	84	20	4	15	80	5	2
02	82	10	3	16	80	10	3
03	82	5	2	17	80	20	4
04	82	5	2	18	80	20	4
05	82	10	3	19	80	10	3
06	82	10	3	20	80	5	2
07	82	10	3	21	80	5	2
08	84	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
19 Oct	0854	0903	0916	M1.6		0.014	1N	S15W47	4551			

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
19 Oct	0129	0136	0142	C1.0			4551
19 Oct	0206	0211	0217	C1.0			4559
19 Oct	0704	0718	0725	C2.0	SF	S14W46	4551
19 Oct	0854	0903	0916	M1.6	1N	S15W47	4551
19 Oct	1109	1116	1120	B9.1	SF	N06W20	4557
19 Oct	1248	1257	1303	C1.1			4559
19 Oct	1409	1409	1411		SF	N06W21	4557
19 Oct	1421	1429	1434	C1.9	SF	N06W21	4557
19 Oct	1706	1711	1714	B9.3			4557
19 Oct	1716	1721	1727	B9.9			4557
19 Oct	1727	1733	1738	C1.1			4557
19 Oct	2205	2210	2215	B6.2			4457
19 Oct	2309	2317	2323	B7.4			4451
19 Oct	2323	2329	2333	C1.2			4557
20 Oct	0033	0040	0051	B8.9			4551
20 Oct	0051	0058	0106	C1.0			4557
20 Oct	0213	0219	0235	C1.8	SF	N07W28	4557
20 Oct	0236	0245	0250	C3.5	SF	N05W27	4557
20 Oct	0258	0303	0308	C2.6			4557
20 Oct	0624	0636	0642	C2.0	SF	N07W27	4557
20 Oct	0743	0752	0756	C2.4			4557
20 Oct	1208	1216	1221	B9.7			4557
20 Oct	1255	1303	1329	B9.4			4557
20 Oct	1329	1337	1342	B9.5			4560
20 Oct	1346	1356	1402	C2.8	1F	N06W34	4557
20 Oct	1826	1836	1843	C1.4			4551
21 Oct	0101	0110	0118	B7.5			4551
21 Oct	0312	0319	0326	B7.5			4551
21 Oct	0326	0333	0339	B7.0			4557
21 Oct	0605	0609	0614	B7.6			4557

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
21 Oct	0737	0744	0754	B7.6			4557
21 Oct	0813	0820	0824	B8.1			4557
21 Oct	1026	1030	1043	B8.9			4557
21 Oct	1051	1058	1103	C1.3			4551
21 Oct	1749	1758	1806	B9.8			4551
21 Oct	2108	2119	2131	C1.4	SF	N10W30	4560
21 Oct	2117	2118	2135		SN	N08W51	4557
21 Oct	2244	2252	2256	C2.1	SN	N11W31	4560
22 Oct	0304	0309	0312	C3.5			4560
22 Oct	0602	0611	0615	B9.8			4557
22 Oct	0724	0731	0734	C1.4	SF	N10W33	4560
22 Oct	0804	0812	0822	B9.3			4560
22 Oct	1122	1132	1146	C1.3			4560
22 Oct	1220	1224	1229	B7.3			4560
22 Oct	1249	1253	1300	B8.4			4560
22 Oct	1356	1405	1412	B9.2			4557
22 Oct	1724	1733	1744	C1.4	SF	N04W66	4557
22 Oct	1850	1856	1901	B9.4	SF	N06W64	4557
22 Oct	1925	1926	1930		SF	N11W42	4560
22 Oct	1959	2001	2006		SF	N11W44	4560
22 Oct	2106	2110	2112	B8.7			4560
22 Oct	2222	2229	2231	B7.2			4560
22 Oct	2314	2317	2319	B7.6			4560
23 Oct	0204	0208	0214	B7.6			4560
23 Oct	0245	0251	0253	B7.8			4560
23 Oct	0343	0355	0410	C1.3			4557
23 Oct	0441	0448	0454	C1.9			4560
23 Oct	0533	0542	0544	C3.3	SF	N10W49	4560
23 Oct	0629	U0631	0648		SF	N10W33	4560
23 Oct	0754	0801	0811	C1.1			4557
23 Oct	0934	0939	0945	C1.2			4557
23 Oct	0945	1001	1016	C1.8			
23 Oct	1233	1239	1245	C1.2			4557
23 Oct	1401	1403	1406	B7.6			4560
23 Oct	1530	1530	1536		SF	N14W47	4560
23 Oct	1622	1622	1626		SF	N10W55	4560
23 Oct	1638	1644	1804		SF	N10W55	4560
23 Oct	1853	1907	1918	C1.3	SF	N10W55	4560

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
23 Oct	1945	1945	1955		SF	N11W56	4560
23 Oct	2028	2128	2139		SF	N14W61	4560
24 Oct	0411	0418	0421	B7.5			4560
24 Oct	0633	0644	0655	C1.0			4560
24 Oct	0727	U0729	0734		SF	N11W64	4560
24 Oct	2138	2144	2210	B5.2			4560
25 Oct	0433	0439	0443	B4.3			4560
25 Oct	0655	0709	0721	B5.4			
25 Oct	0739	0745	0749	B4.9			
25 Oct	1214	1226	1232	B9.1			
25 Oct	1932	1942	1946	C1.5	SF	N12W72	4560
25 Oct	2351	2358	0000	B4.6			

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 4551												
09 Oct	S13E71	105	170	6	Dao	2	B	1							
10 Oct	S14E61	102	360	12	Eko	12	B	1							
11 Oct	S15E47	102	400	13	Eko	14	BG	1			3				
12 Oct	S15E34	102	400	12	Eko	13	B								
13 Oct	S15E21	102	480	12	Eho	9	BG				1				
14 Oct	S15E07	103	500	13	Eki	23	BGD	7			7				
15 Oct	S15W06	102	620	12	Eki	32	BGD	10			7				
16 Oct	S14W19	102	600	13	Eki	34	BG	9	1		2	1			
17 Oct	S15W32	102	510	15	Eki	27	BG	6			12				
18 Oct	S16W46	103	350	12	Eki	12	BG	3			6				
19 Oct	S15W59	103	350	12	Eko	12	BG	2	1		1	1			
20 Oct	S15W71	102	340	13	Eko	4	BG	1							
21 Oct	S16W85	102	340	13	Eko	4	BG	1							
								42	2	0	39	2	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 102

			Region 4553												
11 Oct	N07E60	89	10	1	Axx	1	A	1							
12 Oct	N07E47	89	10	2	Bxo	4	B								
13 Oct	N07E47	89	plage												
14 Oct	N06E20	90	10	1	Axx	1	A								
15 Oct	N06E06	90	10	1	Axx	1	A								
16 Oct	N06W09	92	plage												
17 Oct	N06W24	94	plage												
18 Oct	N06W39	96	plage												
19 Oct	N06W54	98	plage												
20 Oct	N06W68	99	plage												
21 Oct	N06W82	99	plage												
								1	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 90

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 4554													
12 Oct	N07E61	75	20	5	Bxo	3	B	1							
13 Oct	N07E48	75	10	4	Bxo	4	B								
14 Oct	N07E33	77	10	1	Axx	1	A								
15 Oct	N07E20	76	plage												
16 Oct	N07E05	78	plage												
17 Oct	N07W10	80	plage												
18 Oct	N07W25	82	plage												
19 Oct	N07W40	84	plage												
20 Oct	N07W54	85	plage												
21 Oct	N07W68	85	plage												
22 Oct	N07W82	86	plage												
								1	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 78

		Region 4556													
13 Oct	N03E59	63	10	3	Bxo	3	B				1				
14 Oct	N03E45	64	10	4	Bxo	4	B								
15 Oct	N03E32	64	plage												
16 Oct	N03E17	66	plage					1							
17 Oct	N03E03	67	plage												
18 Oct	N03W12	69	plage												
19 Oct	N03W27	71	plage												
20 Oct	N03W41	72	plage												
21 Oct	N03W55	72	plage												
22 Oct	N03W69	73	plage												
23 Oct	N03W84	75	plage												
								1	0	0	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 67

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 4557												
13 Oct	N06E57	66	30	4	Cro	5	B								
14 Oct	N07E43	67	30	5	Cro	8	B								
15 Oct	N07E29	67	50	5	Dri	17	B	1			1				
16 Oct	N07E16	67	80	8	Dsi	15	B	1							
17 Oct	N17E01	69	110	9	Dai	29	B				1				
18 Oct	N06W13	70	140	11	Eai	22	B	1			3				
19 Oct	N06W28	72	120	8	Dai	20	B	4			3				
20 Oct	N07W41	72	150	10	Dsi	17	BG	7			3	1			
21 Oct	N07W55	72	100	9	Dao	13	B				1				
22 Oct	N07W68	72	110	10	Dao	9	B	1			2				
23 Oct	N07W82	72	9	8	Dao	9	B	4							
								19	0	0	14	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 69

			Region 4558												
14 Oct	S08W34	144	10	1	Axx	1	A								
15 Oct	S08W48	144	plage												
16 Oct	S08W62	145	plage												
17 Oct	S08W76	146	plage												
18 Oct	S08W90	147	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 144

			Region 4559												
18 Oct	S19W37	94	10	3	Bxo	4	B				1				
19 Oct	S19W51	95	plage					2							
20 Oct	S20W64	95	plage												
21 Oct	S20W78	95	plage												
								2	0	0	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 94

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 4560													
18 Oct	N14E12	44	10	4	Cro	4	B								
19 Oct	N14W01	45	10	4	Dro	4	B								
20 Oct	N13W14	45	120	10	Dai	15	BG								
21 Oct	N13W28	45	150	12	Eai	19	BG	2			2				
22 Oct	N13W42	46	160	13	Eai	20	BG	3			3				
23 Oct	N13W58	48	180	14	Eai	22	BG	3			8				
24 Oct	N13W72	50	150	17	Fai	15	BG	1			1				
25 Oct	N13W84	48	150	16	Fao	12	B	1			1				
								10	0	0	15	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 45

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