

Space Weather Highlights
18 November - 24 November 2024

SWPC PRF 2569
25 November 2024

Solar activity ranged from low to moderate levels this period. R1 (Minor) radio blackouts were observed on 18 Nov, 20 Nov and 22-24 Nov. Numerous regions produced R1 (Minor) activity, but a majority of the M-class flares were produced from Regions 3897 (S12, L=347, class/area Dao/220 on 20 Nov) and 3901 (S08, L=218, class/area Dao/200 on 19 Nov). The largest event of the period was an M3.7 at 18/1253 UTC produced by Region 3901. During the period, a total of 49 C-class and 15 M-flares were observed.

A 10 MeV proton event at geosynchronous orbit was observed on 21-22 Nov. The S1 (Minor) event began at 21/1925 UTC, reached a peak of S2 (Moderate) of 125 pfu at 22/0355 UTC and ended at 22/1845 UTC. A 100 MeV proton event at geosynchronous orbit was observed on 21-22 Nov. The event began at 21/1845 UTC, reached a peak of 7.4 pfu at 21/2010 UTC and ended at 22/0305 UTC.

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

Geomagnetic field activity ranged from quiet to active levels. Unsettled levels were observed on 19-23 Nov with isolated active levels observed on 19 Nov, 22 Nov and 24 Nov. On 19 Nov, the field was influenced by waning positive coronal hole high speed stream (CH HSS) effects and weak effects from a 14 Nov CME. On 20-23 Nov, the field was influenced by negative polarity CH HSS effects. The solar wind environment was pretty steady throughout the highlight period. Total field varied between 3-13 nT, while the Bz component varied between +8 nT to -10 nT. The wind field was steady at 400 km/s +/-50 km/s. The phi angle was in a positive sector through 20 Nov and negative through the rest of the highlight period.

Space Weather Outlook
25 November - 21 December 2024

Solar activity is expected to be at low to moderate levels (R1/R2 - Minor/Moderate), with a chance for high levels (R3 - Strong) from 25 Nov - 21 Dec. The disk is expected to feature numerous complex regions throughout the outlook period.

No proton events are expected at geosynchronous orbit. However, there is a chance for proton activity following significant solar flare activity during the outlook period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels.

Geomagnetic field activity is likely to be at unsettled to active periods on 29-30 Nov, 06-08 Dec, 11-14 Dec and 16-20 Dec, the first three due to influence from recurrent positive coronal hole effects and the last to a recurrent negative coronal hole. Mostly quiet periods are likely on 25-28 Nov, 01-05 Dec, 09-10 Dec, 15 Dec, and 21 Dec.



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 November	165	118	730	C1.5	16	10	0	8	2	0	0	0
19 November	157	109	610	C1.3	9	0	0	6	0	0	0	0
20 November	163	113	650	C1.5	7	1	0	1	0	0	0	0
21 November	166	148	520	C1.7	5	0	0	1	0	0	0	0
22 November	179	170	640	C1.9	8	2	0	7	1	0	0	0
23 November	200	156	655	C1.7	10	2	0	3	1	1	0	0
24 November	203	164	1025	C2.3	7	1	0	4	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 November	3.4e+04	1.5e+04	1.3e+07	
19 November	5.6e+04	1.5e+04	1.3e+07	
20 November	4.4e+04	1.4e+04	1.9e+06	
21 November	6.7e+05	6.3e+05	1.3e+06	
22 November	2.0e+07	4.2e+06	2.3e+06	
23 November	2.6e+06	1.7e+04	1.6e+06	
24 November	1.7e+05	1.6e+04	2.0e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
18 November	3	1-2-0-0-2-2-0-1	2	0-1-0-1-1-2-0-0	4	1-2-0-1-1-1-1-1
19 November	6	0-1-2-2-3-2-2-1	21	0-0-2-3-6-5-3-1	9	1-1-2-2-3-3-3-1
20 November	8	0-3-3-2-2-2-1-2	11	0-2-4-4-3-2-1-0	9	1-3-3-3-2-2-1-2
21 November	5	0-0-0-0-0-0-2-2	7	0-1-3-3-1-1-1-3	8	1-1-2-2-1-2-3-3
22 November	10	1-1-1-2-3-4-2-3	19	2-1-0-3-5-5-3-3	12	2-2-1-2-3-4-3-3
23 November	7	2-1-1-1-3-2-3-1	11	1-1-2-4-4-2-2-1	8	2-2-2-2-3-2-2-2
24 November	7	1-1-2-1-2-2-2-3	3	0-1-0-0-0-1-2-2	6	2-2-2-1-1-2-2-4

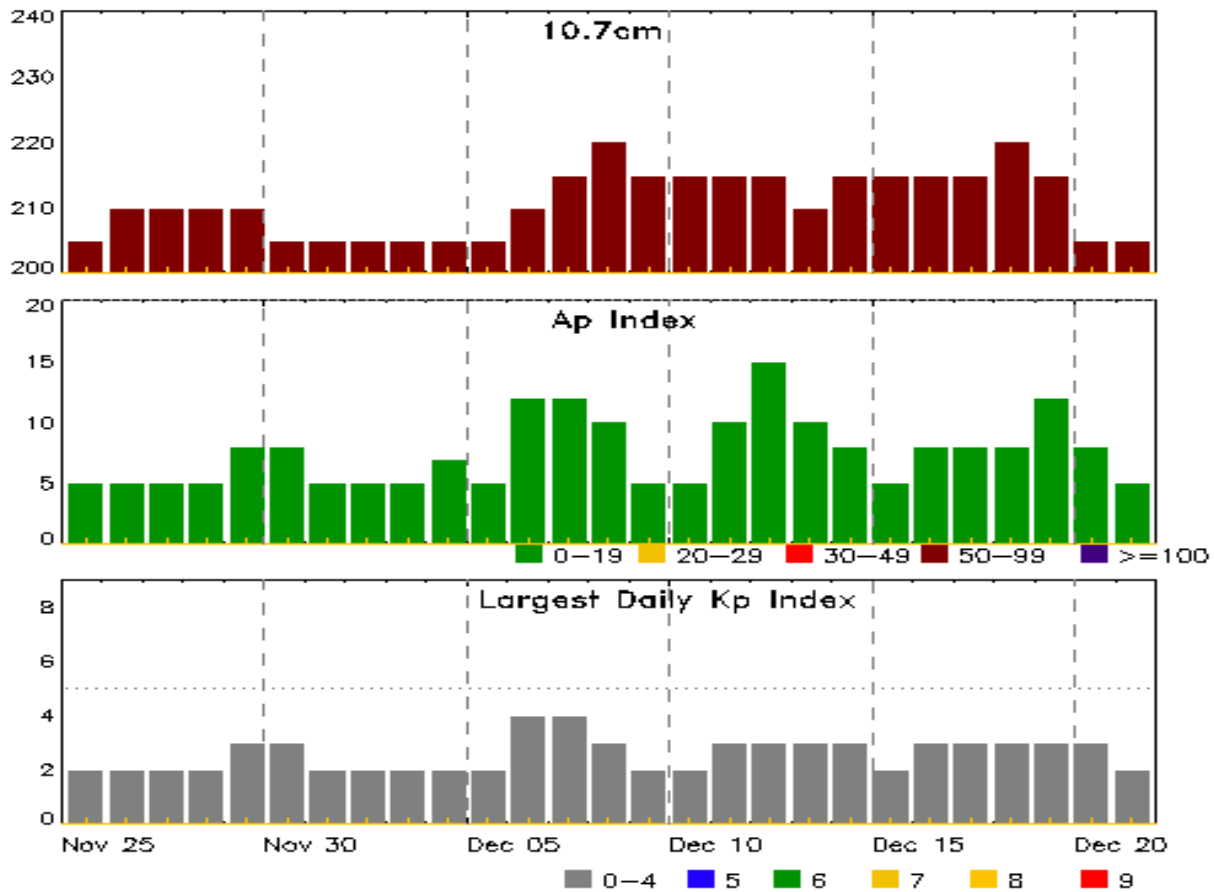


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
19 Nov 1157	WARNING: Geomagnetic K = 4	19/1157 - 1800
20 Nov 0452	WARNING: Geomagnetic K = 4	20/0452 - 1200
21 Nov 1853	WARNING: Proton 100MeV Integral Flux > 1pfu	21/1851 - 22/2359
21 Nov 1859	CANCELLATION: Proton 100MeV Integral Flux > 1pfu	
21 Nov 1900	WARNING: Proton 100MeV Integral Flux > 1pfu	21/1851 - 2359
21 Nov 1903	ALERT: Proton Event 100MeV Integral Flux > 1pfu	21/1855
21 Nov 1918	WARNING: Proton 10MeV Integral Flux > 10pfu	21/1917 - 22/0300
21 Nov 2010	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	21/1925
21 Nov 2336	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	21/1917 - 22/2359
21 Nov 2336	EXTENDED WARNING: Proton 100MeV Integral Flux > 1pfu	21/1851 - 22/1500
22 Nov 0112	ALERT: Proton Event 10MeV Integral Flux >= 100pfu	22/0112
22 Nov 0950	CANCELLATION: Proton 100MeV Integral Flux > 1pfu	
22 Nov 0955	SUMMARY: Proton Event 100MeV Integral Flux > 1pfu	21/1855 - 22/0305
22 Nov 1508	SUMMARY: Proton Event 10MeV Integral Flux >= 100pfu	21/1925 - 22/0530
22 Nov 1720	WARNING: Geomagnetic K = 4	22/1719 - 2359
22 Nov 1759	ALERT: Geomagnetic K = 4	
22 Nov 2035	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	21/1925 - 22/1845
22 Nov 2316	EXTENDED WARNING: Geomagnetic K = 4	22/1719 - 23/0600
24 Nov 2308	WARNING: Geomagnetic K = 4	24/2308 - 25/0600
24 Nov 2336	ALERT: Geomagnetic K = 4	



Twenty-seven Day Outlook



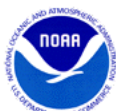
Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
25 Nov	205	5	2	09 Dec	215	5	2
26	210	5	2	10	215	5	2
27	210	5	2	11	215	10	3
28	210	5	2	12	215	15	3
29	210	8	3	13	210	10	3
30	205	8	3	14	215	8	3
01 Dec	205	5	2	15	215	5	2
02	205	5	2	16	215	8	3
03	205	5	2	17	215	8	3
04	205	7	2	18	220	8	3
05	205	5	2	19	215	12	3
06	210	12	4	20	205	8	3
07	215	12	4	21	205	5	2
08	220	10	3				

Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
18 Nov	0513	0522	0527	M1.0	0.001				3901	370	130	
18 Nov	0725	0732	0736	M1.7	0.006	SF	S07E76		3901			
18 Nov	0754	0757	0801	M1.2	0.003	1N	S07E76		3901			
18 Nov	1041	1058	1102	M2.5	0.009	SF	S07E76		3901			
18 Nov	1106	1112	1119	M1.6	0.005				3897			
18 Nov	1119	1127	1144	M1.5	0.023				3897		2	
18 Nov	1242	1253	1257	M3.7	0.016				3901			
18 Nov	1743	1749	1754	M1.8	0.002	1F	S07E68		3901	210		
18 Nov	1845	1915	1948	M2.0	0.002	SN	S09E72		3901		1	
18 Nov	2350	0000	0004	M1.1	0.005				3889	620		
20 Nov	1911	1948	2044	M1.1	0.049				3897			
22 Nov	1542	1546	1551	M1.6	0.006	1N	S08E73		3905			
22 Nov	2126	2215	2233	M1.0	0.031				3906			
23 Nov	1554	1607	1621	M1.1	0.002	2N	S07E04		3901			
23 Nov	1749	1810	1834	M1.1	0.023				3908			
24 Nov	2011	2022	2031	M1.1	0.008							

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
18 Nov	0105	0114	0118	C3.2			3889
18 Nov	0152	0155	0200	C1.5			3889
18 Nov	0201	0207	0211	C4.5			3889
18 Nov	0224	0232	0236	C3.1			3897
18 Nov	0327	0335	0339	C1.8			3889
18 Nov	0400	0409	0420	C2.3			3900
18 Nov	0444	0453	0500	C3.8			3889
18 Nov	0513	0522	0527	M1.0			3901
18 Nov	0551	0559	0603	C2.8			3901
18 Nov	0651	0659	0704	C2.9			3901
18 Nov	0713	0720	0725	C3.7			3901
18 Nov	0725	0732	0736	M1.7	SF	S07E76	3901
18 Nov	0754	0756	0807	M1.2	1N	S07E76	3901
18 Nov	1023	1030	1034	C2.2			3901
18 Nov	1041	1058	1102	M2.5	SF	S07E76	3901



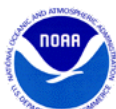
Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
18 Nov	1058	1059	1101		SF	S07W87	3889
18 Nov	1106	1112	1119	M1.6			3897
18 Nov	1119	1127	1144	M1.5			3897
18 Nov	B1134	U1137	A1138		SF	S07W87	3889
18 Nov	1242	1253	1257	M3.7			3901
18 Nov	1524	1539	1546	C4.3			3901
18 Nov	1547	1548	1553		SF	S11W58	3897
18 Nov	1658	1706	1710	C5.5			3889
18 Nov	1738	1738	1742		SF	S06E68	3901
18 Nov	1743	1749	1754	M1.8	1F	S07E68	3901
18 Nov	1759	1804	1808	C6.6			3901
18 Nov	1845	1915	1948	M2.0	SN	S09E72	3901
18 Nov	2042	2045	2054	C6.8			3889
18 Nov	2224	2230	2237	C4.3	SF	S11W63	3897
18 Nov	2350	0000	0004	M1.1			3889
19 Nov	0244	0247	0253	C2.4			3897
19 Nov	0344	0353	0357	C2.7			3901
19 Nov	0659	0703	0710		SF	S12W66	3897
19 Nov	1527	1535	1543	C3.0	SF	S11W71	3897
19 Nov	1559	1602	1606	C3.1			3901
19 Nov	1640	1641	1646		SF	S16W06	3898
19 Nov	1640	1641	1644		SF	S05E57	3901
19 Nov	1649	1656	1659	C4.0			3901
19 Nov	1659	1728	1732	C9.0	SN	S05E56	3901
19 Nov	1830	1834	1838	C7.9			3901
19 Nov	2112	2128	2145	C7.0	SF	S12W75	3897
19 Nov	2227	2240	2255	C3.1			3897
20 Nov	0305	0311	0315	C3.2			3897
20 Nov	0352	0358	0402	C2.7			3901
20 Nov	0527	0530	0534	C4.2			3897
20 Nov	0629	0632	0636	C3.5			3898
20 Nov	1219	1226	1230	C3.7			3901
20 Nov	1528	1536	1548	C2.4			3897
20 Nov	1746	1752	1756	C2.4	SF	N00E00	3897
20 Nov	1911	1948	2044	M1.1			3897
21 Nov	0552	0606	0623	C2.9			
21 Nov	1245	1307	1324	C3.4			3901
21 Nov	1324	1352	1415	C5.4			3901



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
21 Nov	1450	1457	1510	C4.7			3905
21 Nov	1752	1807	1828	C5.9	SF	S08E31	3901
22 Nov	0323	0344	0409	C9.0			3901
22 Nov	0514	0543	0613	C3.0			
22 Nov	0805	0813	0824	C3.2			
22 Nov	1539	1545	1603	M1.6	1N	S08E73	3905
22 Nov	1624	1624	1640		SF	S05E17	3901
22 Nov	1655	1707	1715	C4.1	SF	S05E16	3901
22 Nov	1748	1756	1800	C2.8	SF	S07E70	3905
22 Nov	1817	1826	1830	C5.0			3905
22 Nov	1951	1957	2005	C4.8	SF	S08E70	3905
22 Nov	2054	2054	2101		SF	S16W76	3904
22 Nov	2106	2116	2126	C3.9			3906
22 Nov	2126	2215	2233	M1.0			3906
22 Nov	2144	2219	2300		SF	S18E68	3906
22 Nov	2146	2147	2157		SF	S08E68	3905
23 Nov	0306	0320	0328	C7.0			3906
23 Nov	0718	0724	0729	C2.3			3906
23 Nov	0830	0837	0854	C3.9			3898
23 Nov	1140	1147	1151	C3.1			3908
23 Nov	1300	1307	1325	C3.2			3898
23 Nov	1325	1337	1344	C3.6	SF	S15W65	3898
23 Nov	1422	1424	1426		SF	S06E04	3901
23 Nov	1520	1614	1734	M1.1	2N	S07E04	3901
23 Nov	1749	1810	1834	M1.1			3908
23 Nov	1906	1920	1942	C5.4	SF	S14W65	3898
23 Nov	2132	2139	2143	C4.0			3908
23 Nov	2247	2258	2302	C5.5	1F	S16E60	3906
23 Nov	2305	2310	2315	C5.3			3906
24 Nov	0041	0052	0059	C5.4			3906
24 Nov	0100	0108	0113	C7.6			3906
24 Nov	0327	0336	0343	C5.6			3906
24 Nov	0623	0633	0640	C5.6			3906
24 Nov	0740	0753	0812	C5.5	SF	S17E52	3906
24 Nov	1304	1312	1317	C5.6	SF	N12E75	3908
24 Nov	1310	1313	1316		SF	S16E58	3906
24 Nov	1621	1631	1639	C6.6	SF	S15E52	3906
24 Nov	2011	2022	2031	M1.1			



Region Summary

Location			Sunspot Characteristics					Flares							
Date	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
		Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 3889															
06 Nov	S10E80	1	plage					2	8						
07 Nov	S10E66	2	250	13	Ekc	10	BD	2	4						
08 Nov	S10E52	3	400	13	Eko	18	BGD	3			1				
09 Nov	S10E38	4	450	14	Eko	20	BGD	2	1		7	1			
10 Nov	S10E24	5	480	19	Fko	20	BGD	4	3		4	2	2		
11 Nov	S10E11	5	460	17	Fki	25	BGD	3	2		2	3			
12 Nov	S09W02	4	420	18	Fki	30	BGD	5			5				
13 Nov	S10W15	4	430	18	Fki	26	BGD	8	2		2	1			
14 Nov	S09W29	5	430	19	Fki	25	BGD	4			1				
15 Nov	S09W43	6	540	19	Fki	20	BGD	1			1				
16 Nov	S09W57	7	450	19	Fko	12	BGD	3	1		1	1			
17 Nov	S09W71	8	430	21	Fko	12	BG	3			1				
18 Nov	S09W81	4	320	18	Fko	7	BG	7	1		2				
								47	22	0	27	8	2	0	0

Crossed West Limb.

Absolute heliographic longitude: 4

Region 3891

11 Nov	S15E02	14	30	3	Cro	3	B								
12 Nov	S15W12	14	10	1	Axx	1	A								
13 Nov	S15W28	17	0	1	Axx	1	A								
14 Nov	S15W42	18	plage					1							
15 Nov	S15W56	19	plage								1				
16 Nov	S15W70	20	plage												
17 Nov	S15W84	21	plage												
								1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 14



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 3892															
11 Nov	S11E25	351	20	5	Dro	2	B								
12 Nov	S11E11	351	20	5	Cro	5	B								
13 Nov	S11W01	350	30	6	Cro	6	B								
14 Nov	S11W15	351	20	2	Bxo	4	B								
15 Nov	S11W29	352	10	2	Bxo	2	B	2							
16 Nov	S11W43	353	10	1	Axx	1	A	1							
17 Nov	S11W57	354	plage												
18 Nov	S11W72	355	plage												
19 Nov	S11W88	357	70	3	Hsx	1	A								
								3	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 350

Region 3893															
13 Nov	S19E62	287	30	1	Hsx	1	A								
14 Nov	S19E48	288	40	3	Cso	4	B								
15 Nov	S19E34	289	50	3	Cso	4	B	2			1				
16 Nov	S19E20	290	50	3	Cso	2	B								
17 Nov	S19E06	291	30	2	Hsx	1	A								
18 Nov	S19W05	288	30	2	Hsx	1	A								
19 Nov	S19W17	286	50	1	Hsx	1	A								
20 Nov	S19W31	288	20	1	Hrx	1	A								
21 Nov	S19W45	289	20	1	Hrx	1	A								
22 Nov	S19W59	290	10	1	Axx	1	A								
23 Nov	S19W74	291	plage												
24 Nov	S19W88	292	plage												
								0	2	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 288



Region Summary - continued

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 3894

14 Nov	N24E44	292	30	6	Bxo	12	B								
15 Nov	N24E30	293	30	7	Cro	5	B								
16 Nov	N23E16	294	10	6	Cro	2	B								
17 Nov	N21E02	295	10	1	Axx	1	A								
18 Nov	N21W13	296	plage												
19 Nov	N21W27	297	plage												
20 Nov	N21W41	298	plage												
21 Nov	N21W55	299	plage												
22 Nov	N21W69	300	plage												
23 Nov	N21W84	301	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 295

Region 3895

16 Nov	S03W35	345	20	3	Cro	4	B								
17 Nov	S03W49	346	5	1	Axx	1	A								
18 Nov	S03W64	347	plage												
19 Nov	S03W79	349	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 345

Region 3896

17 Nov	N05W04	301	50	3	Cao	5	B								
18 Nov	N05W19	302	50	4	Cao	5	B								
19 Nov	N06W31	300	60	4	Dao	5	B								
20 Nov	N05W46	303	60	4	Dao	4	B								
21 Nov	N05W60	304	50	7	Dso	6	B								
22 Nov	N05W74	305	10	4	Bxo	6	B								
23 Nov	N05W89	306	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 301



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 3897															
17 Nov	S12W47	344	70	5	Cao	9	B								
18 Nov	S12W62	345	80	3	Dao	10	B	2	2			2			
19 Nov	S10W75	345	140	3	Dai	10	B	4				3			
20 Nov	S12W90	347	220	5	Dao	6	B	4	1			1			
								10	3	0		6	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 344

Region 3898															
17 Nov	S15E19	278	50	6	Cao	5	B								
18 Nov	S16E02	281	10	5	Bxo	4	B								
19 Nov	S17W11	280	30	6	Cro	7	B				1				
20 Nov	S16W27	283	50	6	Cao	8	B	1							
21 Nov	S16W41	285	40	7	Dao	8	B								
22 Nov	S16W55	286	30	8	Cao	10	B								
23 Nov	S15W69	286	10	9	Cao	4	B	4			2				
24 Nov	S15W83	287	10	4	Bxo	3	B								
								5	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 281

Region 3899															
17 Nov	S13E60	237	10	5	Bxo	3	B								
18 Nov	S13E43	240	30	5	Cao	4	B								
19 Nov	S12E27	242	30	2	Hax	1	A								
20 Nov	S13E12	245	30	1	Hsx	1	A								
21 Nov	S12W02	246	30	1	Hax	1	A								
22 Nov	S12W16	247	20	1	Hsx	1	A								
23 Nov	S11W30	247	10	1	Hsx	1	A								
24 Nov	S11W41	245	10	1	Hsx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 246



Region Summary - continued

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 3900

18 Nov	N24E62	221	30	4	Cso	2	B	1							
19 Nov	N22E47	222	30	1	Cro	1	B								
20 Nov	N22E34	223	20	1	Hax	1	A								
21 Nov	N22E20	224	10	2	Bxo	2	B								
22 Nov	N22E06	225	10	2	Cao	2	B								
23 Nov	N22W08	225	10	2	Bxo	2	B								
24 Nov	N22W22	226	plage												
								1	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 225

Region 3901

18 Nov	S07E63	220	180	6	Dai	5	BG	6	7		3	1			
19 Nov	S08E51	218	200	6	Dao	3	BG	5			2				
20 Nov	S07E35	221	180	6	Dao	10	BG	2							
21 Nov	S07E21	223	190	6	Dai	12	BG	3			1				
22 Nov	S08E07	224	150	7	Cao	8	BG	2			2				
23 Nov	S07W07	224	90	5	Cao	5	BG		1		1		1		
24 Nov	S07W16	221	90	8	Cao	10	BG								
								18	8	0	9	1	1	0	0

Still on Disk.

Absolute heliographic longitude: 224

Region 3902

20 Nov	S17E70	187	70	11	Cso	2	B								
21 Nov	S16E56	188	70	2	Hsx	1	A								
22 Nov	S16E42	189	70	2	Hsx	1	A								
23 Nov	S16E28	189	60	2	Hsx	1	A								
24 Nov	S16E22	182	60	2	Hsx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 182



Region Summary - continued

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 3903

21 Nov	S11W17	261	20	4	Cai	6	BG								
22 Nov	S11W31	262	50	7	Dao	6	BG								
23 Nov	S11W45	262	40	8	Dao	5	BG								
24 Nov	S11W60	264	30	8	Dao	5	BG								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 261

Region 3904

21 Nov	S13W63	307	30	5	Cao	8	B								
22 Nov	S14W77	308	50	8	Cao	8	B				1				
23 Nov	S14W91	308	50	8	Cao	8	B								
								0	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 307

Region 3905

21 Nov	S09E78	164	60	9	Dao	3	B	1							
22 Nov	S09E64	166	80	10	Dao	6	BG	3	1		3	1			
23 Nov	S09E53	164	120	12	Eso	8	BG								
24 Nov	S09E40	164	250	12	Eko	8	BGD								
								4	1	0	3	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 164

Region 3906

22 Nov	S16E73	158	160	9	Dao	11	B	1	1		1				
23 Nov	S16E59	158	240	10	Dai	11	BG	4				1			
24 Nov	S16E47	157	500	11	Ekc	15	BGD	6			3				
								11	1	0	4	1	0	0	0

Still on Disk.

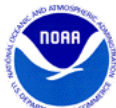
Absolute heliographic longitude: 157

Region 3907

23 Nov	S21E15	202	25	7	Cro	11	B								
24 Nov	S21E01	203	25	7	Cro	11	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 203



Region Summary - continued

Location		Sunspot Characteristics					Flares							
Date	Lat	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical			
	CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3

Region 3908

23 Nov	N14E79	152	plage					2	1						
24 Nov	N14E65	139	40	6	Bxo	6	B	1			1				
								3	1	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 139

Region 3909

24 Nov	N25W04	208	10	4	Bxo	4	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 208



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

