

Solar activity reached high levels on 28 Nov when Region 3500 (S20, L=307, class/area=Dkc/320 on 27 Nov) produced an M3.4 flare (R1/Minor) at 28/1932 UTC, followed by an M9.8 flare (R2/Moderate) at 28/1950 UTC; the largest event observed during the period. The asymmetric halo CME associated with the M9.8 flare, visible in LASCO/C2 coronagraph imagery at 28/2012 UTC, arrived at Earth on 01 Dec. Solar activity reached moderate levels on 01 Dec with M1 flares observed at 01/0439 UTC and 01/2120 UTC from Regions 3502 (N14, L=343, class/area=Cao/80 on 27 Nov) and 3500, respectively. Solar activity was at low levels with C-class flare activity observed over 27, 29-30 Nov, and 02-03 Dec.

Solar activity was low on 27 Nov, however, three distinct CMEs associated with four prominent eruptions were analyzed to have partial Earth-directed components. The first 27 Nov CME, visible in LASCO/C2 imagery at 27/0624 UTC off the SSW, was associated with a filament eruption near S26W27 at 27/0531 UTC (in SUVI 304 imagery). The second CME, visible in C2 imagery at 27/2000 off the SE, was associated with a C3.8 flare at 27/1837 UTC from an unnumbered area of flux near N20E15. The third CME, visible in C2 imagery at 27/2336 off the NW, was believed to be associated with a C5.5 flare at 27/2340 UTC from Region 3503 (N15, L=284, class/area=Hrx/10 on 27 Nov) and a filament eruption that occurred at around the same time just northward of 3503.

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 under background solar wind conditions on 27 Nov through late 30 Nov. The solar wind environment became weakly enhanced at around 30/2330 UTC due to the arrival of CME(s) from 27 Nov. Active conditions were observed in the early hours of 01 Dec following CME arrival. An additional, stronger, solar wind enhancement was observed at 01/0853 UTC due to the arrival of a CME from 28 Nov. Periods of G1-G3 (Minor-Strong) geomagnetic storming were observed following CME arrival on 01 Dec, and active and G1 levels were observed in the early hours of 02 Dec as CME influences waned. Quiet and unsettled levels were observed on 03 Dec.

Space Weather Outlook **04 December - 30 December 2023**

Solar activity is expected to be low with a chance for M-class flare activity (R1-R2/Minor-Moderate) throughout the outlook period.

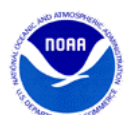
No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on



05-09 Dec. Normal to moderate levels of flux are expected throughout the remainder of the period.

Geomagnetic field activity is likely to reach G2 (Moderate) storm levels on 04 Dec, G1 (Minor) levels on 05 Dec, and active levels on 06 Dec, in response to negative polarity CH HSS influences. Active conditions are likely on 12 Dec due to positive polarity CH HSS influences. Periods of G1 storms are likely on 18-19 and 22 Dec, with active levels likely on 23 Dec, due to the influences of positive polarity CH HSSs. Quiet and quiet to unsettled levels are expected to persist throughout the remainder of the 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
27 November	187	159	885	C1.1	6	0	0	2	0	0	0	0
28 November	182	130	335	C1.1	3	2	0	4	1	0	0	0
29 November	171	164	530	C1.2	10	0	0	6	0	0	0	0
30 November	167	138	620	C1.0	7	0	0	1	0	0	0	0
01 December	162	140	640	C1.2	7	2	0	2	0	0	0	0
02 December	148	92	580	C1.1	9	0	0	3	0	0	0	0
03 December	139	107	550	B9.6	4	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	
	27 November	8.3e+04	1.8e+04	2.4e+06
28 November	9.3e+04	1.8e+04	3.7e+06	
29 November	1.1e+05	1.8e+04	1.1e+07	
30 November	1.3e+05	1.8e+04	1.4e+07	
01 December	6.6e+06	1.8e+04	1.8e+06	
02 December	3.8e+05	1.6e+04	1.1e+06	
03 December	8.1e+05	1.7e+04	1.3e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	27 November	2	0-0-0-0-0-0-1-1	9	0-0-4-2-4-2-1-0	7
28 November	6	1-1-2-2-2-2-2-1	11	1-0-2-5-2-3-2-1	7	2-2-2-2-2-2-2-2
29 November	5	0-2-2-1-1-2-2-1	8	0-1-3-3-4-1-1-0	5	1-2-2-1-2-1-2-1
30 November	4	2-1-1-1-1-2-1-0	6	0-2-3-2-3-0-0-0	5	2-2-1-1-2-1-1-0
01 December	30	4-3-3-6-5-3-3-4	57	3-3-4-7-6-6-6-3	56	4-4-4-7-6-5-5-5
02 December	11	5-3-2-1-1-2-1-1	8	4-3-2-2-0-2-0-1	14	5-4-2-1-1-2-1-2
03 December	10	2-3-3-1-2-3-2-2	8	2-2-3-2-1-2-2-2	12	3-3-3-2-2-3-2-2



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
27 Nov 1819	WATCH: Geomagnetic Storm Category G1 predicted	
28 Nov 1945	WATCH: Geomagnetic Storm Category G2 predicted	
28 Nov 1946	ALERT: X-ray Flux exceeded M5	28/1940
28 Nov 1957	SUMMARY: 10cm Radio Burst	28/1921 - 1926
28 Nov 1958	SUMMARY: 10cm Radio Burst	28/1936 - 1940
28 Nov 2000	ALERT: Type II Radio Emission	28/1934
28 Nov 2018	SUMMARY: X-ray Event exceeded M5	28/1935 - 2009
28 Nov 2020	SUMMARY: 10cm Radio Burst	28/1936 - 1956
28 Nov 2027	ALERT: Type II Radio Emission	28/1959
29 Nov 1756	WATCH: Geomagnetic Storm Category G3 predicted	
01 Dec 0013	WARNING: Geomagnetic Sudden Impulse expected	01/0030 - 0130
01 Dec 0029	WARNING: Geomagnetic K = 4	01/0028 - 0900
01 Dec 0032	SUMMARY: Geomagnetic Sudden Impulse	01/0021
01 Dec 0036	WARNING: Geomagnetic K = 5	01/0035 - 0600
01 Dec 0206	ALERT: Geomagnetic K = 4	
01 Dec 0452	EXTENDED WARNING: Geomagnetic K = 4	01/0028 - 2100
01 Dec 0554	EXTENDED WARNING: Geomagnetic K = 5	01/0035 - 1500
01 Dec 0958	WARNING: Geomagnetic K = 6	01/0957 - 1500
01 Dec 1038	ALERT: Geomagnetic K = 5	
01 Dec 1055	ALERT: Geomagnetic K = 6	
01 Dec 1116	WARNING: Geomagnetic K \geq 7	01/1116 - 1500
01 Dec 1124	ALERT: Geomagnetic K = 7	
01 Dec 1143	EXTENDED WARNING: Geomagnetic K = 4	01/0028 - 2359
01 Dec 1143	EXTENDED WARNING: Geomagnetic K = 5	01/0035 - 2100
01 Dec 1143	EXTENDED WARNING: Geomagnetic K = 6	01/0957 - 1800
01 Dec 1222	ALERT: Geomagnetic K = 5	
01 Dec 1349	ALERT: Geomagnetic K = 6	
01 Dec 1457	EXTENDED WARNING: Geomagnetic K = 6	01/0957 - 2100
01 Dec 1457	EXTENDED WARNING: Geomagnetic K = 4	01/0028 - 02/0900

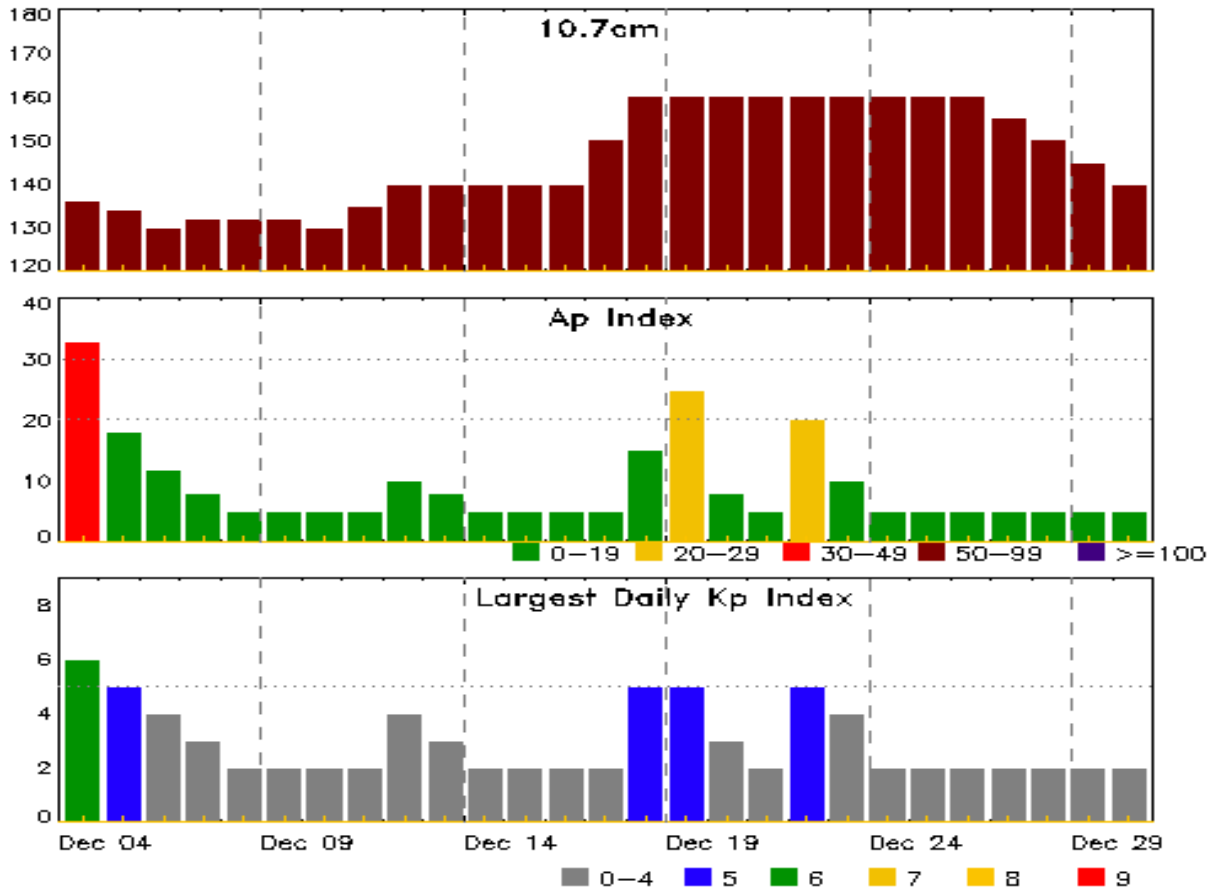


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
01 Dec 1457	EXTENDED WARNING: Geomagnetic K \geq 7	01/1116 - 2100
01 Dec 1457	EXTENDED WARNING: Geomagnetic K = 5	01/0035 - 02/0600
01 Dec 1801	ALERT: Geomagnetic K = 5	
01 Dec 2051	ALERT: Geomagnetic K = 5	
01 Dec 2055	EXTENDED WARNING: Geomagnetic K = 6	01/0957 - 02/0600
01 Dec 2338	ALERT: Geomagnetic K = 5	
02 Dec 0124	ALERT: Geomagnetic K = 5	
02 Dec 0550	EXTENDED WARNING: Geomagnetic K = 5	01/0035 - 02/1200
02 Dec 0551	EXTENDED WARNING: Geomagnetic K = 4	01/0028 - 02/1200
02 Dec 2121	WATCH: Geomagnetic Storm Category G2 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 Dec	136	33	6	18 Dec	160	15	5
05	134	18	5	19	160	25	5
06	130	12	4	20	160	8	3
07	132	8	3	21	160	5	2
08	132	5	2	22	160	20	5
09	132	5	2	23	160	10	4
10	130	5	2	24	160	5	2
11	135	5	2	25	160	5	2
12	140	10	4	26	160	5	2
13	140	8	3	27	155	5	2
14	140	5	2	28	150	5	2
15	140	5	2	29	145	5	2
16	140	5	2	30	140	5	2
17	150	5	2				



Energetic Events

Date	Time		Class	X-ray	Optical Information			Peak		Sweep Freq	
	Begin	Max		Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
		Half Max					245	2695	II	IV	
28 Nov	1907	1932	1935	M3.4	0.014		3500	6500	720	2	
28 Nov	1935	1950	2009	M9.8	0.160		3500			1	
01 Dec	0412	0439	0507	M1.1	0.027		3502				
01 Dec	2055	2120	2210	M1.0	0.031		3500				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
27 Nov	0416	0425	0436	C1.7			3492
27 Nov	0534	0612	0639	C3.3			3502
27 Nov	0803	0811	0826	C3.4	SF	N20W31	3490
27 Nov	0823	0823	0825		SF	N20W31	3490
27 Nov	1821	1837	1840	C3.8			
27 Nov	1840	1852	1903	C6.7			3500
27 Nov	2313	2340	0026	C5.5			3503
28 Nov	0438	0448	0455	C2.1			3500
28 Nov	1322	1323	1328		SF	N13W35	3502
28 Nov	1402	1403	1406		SF	N20W48	3490
28 Nov	1446	1537	1542		1N	N12W90	3504
28 Nov	1457	1458	1505		SF	S16W01	3500
28 Nov	1537	1537	1545		SF	S16W02	3500
28 Nov	1745	1753	1800	C2.2			
28 Nov	1907	1932	1935	M3.4			3500
28 Nov	1935	1950	2009	M9.8			3500
28 Nov	2321	2331	2339	C8.1			3499
29 Nov	0432	0447	0459	C2.8			3502
29 Nov	0750	0803	0814	C6.4			3502
29 Nov	1126	1133	1139	C2.0			3500
29 Nov	1314	1325	1336	C2.1			3499
29 Nov	1427	1435	1443	C3.8			3500
29 Nov	1512	1534	1554	C3.1			3500
29 Nov	1554	1601	1609	C2.7			3507
29 Nov	1609	1613	1618	C2.8			3500
29 Nov	1610	1605	1635		SF	S15W13	3500
29 Nov	1755	1755	1801		SF	S19W08	3500



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
29 Nov	2034	2037	2058		SF	S16W15	3500
29 Nov	2054	2055	2057		SF	N20W71	3490
29 Nov	2103	2103	2108	C1.9	SF	S19W11	3500
29 Nov	2235	2241	2248	C2.4	SF	S18W14	3500
30 Nov	0043	0043	0046		SF	N22W72	3490
30 Nov	0412	0420	0426	C1.7			
30 Nov	1540	1544	1549	C2.1			3500
30 Nov	1755	1807	1815	C1.4			3493
30 Nov	1916	1927	1937	C2.2			3500
30 Nov	1937	2013	2039	C2.9			3504
30 Nov	2223	2231	2236	C2.4			3499
30 Nov	2237	2248	2256	C3.6			3499
01 Dec	0252	0311	0324	C4.8			3492
01 Dec	0412	0439	0507	M1.1			3502
01 Dec	0934	0942	0947	C1.7			3500
01 Dec	0958	1011	1024	C1.8			3502
01 Dec	1148	1159	1205	C5.2			3500
01 Dec	1309	1316	1323	C1.6			3500
01 Dec	1323	1328	1334	C1.9			3499
01 Dec	1917	1927	1933	C3.2	SF	S19W42	3500
01 Dec	2055	2120	2210	M1.0			3500
01 Dec	2253	2253	2253		SF	S16W43	3500
02 Dec	0140	0147	0157	C2.7			3492
02 Dec	0219	0225	0236	C2.2			3492
02 Dec	0334	0351	0401	C3.1			3500
02 Dec	0435	0445	0502	C2.2			3492
02 Dec	0653	0702	0717	C2.0			3509
02 Dec	0717	0735	0742	C2.9			3492
02 Dec	0928	0935	0946	C1.7			3500
02 Dec	1621	1626	1638	C1.9			3493
02 Dec	2048	2049	2051		SF	S21W54	3500
02 Dec	2112	2120	2124	C2.6	SF	N23W33	3503
02 Dec	2135	2135	2141		SF	S18W52	3500
03 Dec	0754	0806	0813	C4.0			3494
03 Dec	1418	1436	1453	C2.8			3492
03 Dec	1948	1955	1959	C1.3			3510
03 Dec	2227	2237	2242	C2.7			3500



Region Summary

Date	Location		Sunspot Characteristics				Flares									
	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 3488																
14 Nov	N29E76		51	30	1	Hrx	1	A								
15 Nov	N29E63		51	10	1	Axx	1	A								
16 Nov	N31E52		51	plage												
17 Nov	N31E38		49	plage												
18 Nov	N31E24		50	plage												
19 Nov	N31E10		51	plage												
20 Nov	N31W04		52	plage												
21 Nov	N31W18		53	plage												
22 Nov	N31W32		53	plage												
23 Nov	N31W46		54	plage												
24 Nov	N31W60		55	plage												
25 Nov	N31W74		56	plage												
26 Nov	N31W88		57	plage												
										0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 52

Region 3489																
17 Nov	S15E71		15	60	2	Cao	2	B	2							
18 Nov	S15E58		15	180	4	Dao	3	B	1							
19 Nov	S15E45		16	220	11	Eac	12	B	3			4				
20 Nov	S16E32		14	230	6	Dai	20	BD	2			1				
21 Nov	S16E18		16	220	7	Dac	14	B	2			1				
22 Nov	S16E04		17	220	7	Cai	14	B				1				
23 Nov	S14W09		16	120	5	Cai	7	B								
24 Nov	S15W23		18	60	4	Cai	6	B								
25 Nov	S15W36		18	30	3	Hrx	3	A								
26 Nov	S14W50		18	10	2	Axx	3	A				1				
27 Nov	S15W64		19	5	1	Axx	2	A								
28 Nov	S15W78		20	plage												
										10	0	0	8	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 17



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 3490																	
18 Nov	N18E69	344	80	5	Dao	5	B	3	3								
19 Nov	N23E65	355	150	13	Eac	8	B	6									
20 Nov	N17E47	240	40	1	Hax	1	A										
21 Nov	N20E36	358	120	6	Cao	4	B										
22 Nov	N20E22	359	150	6	Dac	9	BG										
23 Nov	N21E11	356	160	7	Dac	10	BGD	3	1								
24 Nov	N20W03	358	180	6	Dai	6	BD	2				1					
25 Nov	N21W16	358	110	4	Cao	6	B	1				3					
26 Nov	N22W27	356	90	3	Cai	6	B	2				2					
27 Nov	N22W42	357	40	2	Cao	4	B	1				2					
28 Nov	N22W56	358	5	1	Axx	1	A					1					
29 Nov	N22W70	359	plage									1					
30 Nov	N22W84	360	plage									1					
								18	4	0	11	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 358

Region 3491																	
19 Nov	N11E68	353	30	2	Hsx	1	A	1				1					
20 Nov	N13E55	351	40	1	Hsx	1	A	1									
21 Nov	N13E41	353	40	1	Hsx	1	A										
22 Nov	N13E27	354	40	1	Hsx	1	A	1									
23 Nov	N11E18	351	60	1	Hsx	2	A										
24 Nov	N10E04	351	60	2	Hax	2	A										
25 Nov	N10W09	351	30	1	Hrx	2	A										
26 Nov	N11W23	352	plage														
27 Nov	N11W38	353	plage														
28 Nov	N11W52	354	plage														
29 Nov	N11W66	355	plage														
30 Nov	N11W80	356	plage														
								3	0	0	1	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 351



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
Region 3492																							
20 Nov	N18E64	343	280	8	Dhi	7	BG	11	1			1	1										
21 Nov	N18E50	345	280	10	Dki	14	BG	6				4											
22 Nov	N18E36	345	310	14	Ekc	33	BG	1				6											
23 Nov	N19E24	343	320	14	Ekc	26	BG	3				2											
24 Nov	N19E11	345	380	13	Ehi	21	BG	2				1											
25 Nov	N19W03	345	240	11	Csi	11	B																
26 Nov	N19W18	347	210	7	Hax	9	A																
27 Nov	N19W33	348	190	7	Dso	4	B	1															
28 Nov	N19W47	349	70	8	Dso	3	B																
29 Nov	N19W60	349	70	8	Dso	3	B																
30 Nov	N20W75	353	60	8	Cso	3	B																
01 Dec	N19W87	350	50	7	Cso	2	B	1															
								25	1	0	14	1	0	0	0	0							

Crossed West Limb.
Absolute heliographic longitude: 345

Region 3493																							
20 Nov	S12E69	338	30	1	Hax	1	A																
21 Nov	S12E55	339	30	2	Hsx	1	A	1															
22 Nov	S12E43	338	40	5	Cso	3	B																
23 Nov	S12E32	335	70	3	Cso	2	B																
24 Nov	S13E17	338	80	4	Cso	2	B					1											
25 Nov	S13E05	337	90	3	Hsx	4	A																
26 Nov	S13W07	336	100	3	Cso	4	B																
27 Nov	S13W22	337	30	2	Hsx	3	A																
28 Nov	S13W36	338	10	3	Cso	2	B																
29 Nov	S13W50	339	10	1	Hax	1	A																
30 Nov	S13W61	336	10	1	Hrx	1	A	1															
01 Dec	S13W75	338	plage																				
02 Dec	S13W89	339	plage					1															
								3	0	0	1	0	0	0	0	0							

Crossed West Limb.
Absolute heliographic longitude: 337



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 3494																							
20 Nov	S15E78	330	30	1	Hax	1	A																
21 Nov	S16E64	330	30	2	Hsx	1	A																
22 Nov	S16E50	331	30	2	Hsx	12	A																
23 Nov	S17E37	330	50	1	Hax	1	A	1															
24 Nov	S18E23	332	60	2	Hsx	1	A	2				1	1										
25 Nov	S18E09	333	60	2	Hsx	2	A																
26 Nov	S17W03	332	70	2	Hsx	1	A																
27 Nov	S18W18	333	60	1	Hsx	1	A																
28 Nov	S17W29	331	10	1	Hsx	1	A																
29 Nov	S17W43	332	20	1	Hsx	1	A																
30 Nov	S17W56	330	30	2	Hsx	1	A																
01 Dec	S17W68	331	30	1	Hsx	1	A																
02 Dec	S17W82	332	20	2	Hsx	1	A																
								3	0	0	1	1	0	0	0								

Crossed West Limb.
 Absolute heliographic longitude: 332

Region 3495																							
20 Nov	N27E59	348	30	1	Hrx	2	A																
21 Nov	N27E45	349	30	1	Hrx	2	A	2				2											
22 Nov	N27E31	350	30	1	Hrx	2	A	1				5											
23 Nov	N25E18	349	10	2	Axx	1	A																
24 Nov	N25E06	349	10	2	Axx	2	A	1				4											
25 Nov	N25W09	351	plage																				
26 Nov	N25W23	352	plage																				
27 Nov	N25W38	353	plage																				
28 Nov	N25W52	354	plage																				
29 Nov	N25W66	355	plage																				
30 Nov	N25W80	356	plage																				
								4	0	0	11	0	0	0	0	0							

Crossed West Limb.
 Absolute heliographic longitude: 349



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares								
	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

Region 3496

20 Nov	N09E36	12	10	4	Bxo	3	B										
21 Nov	N09E22	12	10	4	Bxo	3	B										
22 Nov	N09E08	13	10	4	Bxo	2	B										
23 Nov	N09W06	14	plage														
24 Nov	N09W20	15	plage														
25 Nov	N09W34	16	plage														
26 Nov	N09W48	17	plage														
27 Nov	N09W63	18	plage														
28 Nov	N09W77	19	plage														
									0	0	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 14

Region 3497

20 Nov	N16E50	357	80	1	Hsx	1	A										
21 Nov	N16E36	359	plage						1								
22 Nov	N16E22	359	plage														
23 Nov	N16E08	360	plage						1			1					
24 Nov	N17W06	360	plage														
25 Nov	N17W20	2	plage														
26 Nov	N17W34	3	plage														
27 Nov	N17W49	4	plage														
28 Nov	N17W63	5	plage														
29 Nov	N17W77	6	plage														
									2	0	0	1	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 360



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares									
	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 3499																	
23 Nov	S18E04		3	90	6	Dsi	6	B									
24 Nov	S17W09		4	60	6	Dao	9	B		1			1				
25 Nov	S17W25		7	60	7	Cai	8	B	1								
26 Nov	S17W37		6	60	8	Cai	9	BG									
27 Nov	S17W52		7	30	8	Dri	12	BG									
28 Nov	S17W59		1	10	1	Bxo	4	B	1								
29 Nov	S17W73		2	10	1	Bxo	2	B	1								
30 Nov	S17W87		2	plage					2								
									5	1	0	0	1	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 3

Region 3500																	
23 Nov	S18E65		302	520	7	Dko	6	BGD									
24 Nov	S19E50		305	530	9	Dkc	6	BGD									
25 Nov	S18E36		306	560	8	Dkc	13	BGD									
26 Nov	S19E23		306	470	6	Dkc	10	BGD	2				1				
27 Nov	S20E08		307	320	6	Dkc	12	BG	1								
28 Nov	S19W05		307	160	8	Dkc	12	BG	1	2			2				
29 Nov	S18W18		307	210	11	Esc	25	BG	6				5				
30 Nov	S18W30		304	300	12	Ekc	24	BG	2								
01 Dec	S18W44		307	280	11	Ekc	15	BG	4	1			2				
02 Dec	S18W58		308	270	10	Ekc	12	BG	2				2				
03 Dec	S18W71		307	250	10	Dkc	9	BG	1								
									19	3	0	12	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 307



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares								
	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

Region 3501

23 Nov	S10E73	295	120	2	Hsx	1	A											
24 Nov	S09E58	297	60	2	Hsx	1	A											
25 Nov	S09E44	298	60	2	Hsx	1	A											
26 Nov	S09E32	297	60	2	Hsx	1	A											
27 Nov	S10E17	298	90	2	Hsx	1	A											
28 Nov	S09E04	298	20	2	Hsx	1	A											
29 Nov	S09W09	298	30	1	Hsx	1	A											
30 Nov	S09W21	295	40	1	Hsx	1	A											
01 Dec	S09W35	298	40	2	Hsx	1	A											
02 Dec	S08W49	299	30	2	Hsx	1	A											
03 Dec	S08W62	298	20	1	Hsx	1	A											
											0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 298

Region 3502

23 Nov	N14E27	342	plage							1								
24 Nov	N14E13	342	90	6	Dai	7	B						1					
25 Nov	N14W01	343	110	8	Cao	6	B											
26 Nov	N15W14	343	100	8	Cao	7	B	1										
27 Nov	N14W28	343	80	7	Cao	7	B	1										
28 Nov	N14W37	339	20	2	Cao	4	B						1					
29 Nov	N14W51	340	30	6	Dao	4	B	2										
30 Nov	N15W68	342	50	5	Cso	4	B											
01 Dec	N14W81	344	30	6	Cso	5	B	1	1									
								6	1	0	2	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 343



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 3503																		
25 Nov	N21E58	284	20	2	Cro	2	B	1										
26 Nov	N21E45	284	20	1	Cro	5	B											
27 Nov	N15E31	284	10	1	Hrx	1	A	1										
28 Nov	N15E18	284	10	1	Hrx	1	A											
29 Nov	N15E04	285	10	1	Hrx	1	A											
30 Nov	N21W06	282	0	1	Axx	1	A											
01 Dec	N19W20	283	10	3	Axx	2	A											
02 Dec	N19W34	284	plage					1				1						
03 Dec	N19W48	284	plage															
								3	0	0		1	0	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 285

Region 3504																		
26 Nov	N14W65	33	30	1	Dro	4	B											
27 Nov	N14W79	34	30	6	Dro	2	B											
								0	0	0		0	0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 33

Region 3505																		
28 Nov	S17E69	233	20	3	Hax	1	A											
29 Nov	S18E55	234	30	3	Hsx	1	A											
30 Nov	S18E41	233	20	1	Hsx	1	A											
01 Dec	S17E29	234	30	2	Hsx	1	A											
02 Dec	S18E16	234	20	1	Hsx	1	A											
03 Dec	S17E03	233	20	2	Cso	3	B											
								0	0	0		0	0	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 233



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	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

Region 3506

29 Nov	N15W24	313	10	3	Bxo	3	B										
30 Nov	N15W43	316	plage														
01 Dec	N15W57	320	plage														
02 Dec	N15W71	321	plage														
03 Dec	N15W85	321	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 313

Region 3507

29 Nov	N08E70	219	60	3	Hsx	1	A	1									
30 Nov	N08E55	219	70	2	Hsx	1	A										
01 Dec	N08E40	223	80	3	Hsx	1	A										
02 Dec	N08E28	222	130	3	Hsx	1	A										
03 Dec	N08E14	222	130	3	Hsx	2	A										
									1	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 222

Region 3508

29 Nov	S14E65	224	40	3	Hsx	1	A										
30 Nov	S15E53	221	40	2	Hsx	1	A										
01 Dec	S15E38	225	60	2	Hsx	1	A										
02 Dec	S15E25	225	60	2	Hsx	1	A										
03 Dec	S15E12	224	60	2	Hsx	1	A										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 224

Region 3509

01 Dec	N10W50	313	30	10	Cri	11	B										
02 Dec	N10W65	315	50	5	Cso	5	B	1									
03 Dec	N11W79	315	30	5	Cro	2	B										
									1	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 313



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

Region 3510

03 Dec	S15E22	214	30	3	Cri	6	B	1	1	0	0	0	0	0	0	0
--------	--------	-----	----	---	-----	---	---	---	---	---	---	---	---	---	---	---

Still on Disk.
Absolute heliographic longitude: 214

Region 3511

03 Dec	S23E23	213	10	3	Bxo	3	B	0	0	0	0	0	0	0	0	0
--------	--------	-----	----	---	-----	---	---	---	---	---	---	---	---	---	---	---

Still on Disk.
Absolute heliographic longitude: 213



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

