

**Space Weather Highlights**  
**17 November - 23 November 2025**

**SWPC PRF 2621**  
**24 November 2025**

Solar activity was at low levels. C-class activity was observed from Regions 4274 (N25, L=274), 4284 (S07, L=177, class/area Dai/150 on 19 Nov), 4290 (S10, L=035, class/area Cao/120 on 22 Nov) and 4291 (S14, L=028, class/area Dao,120 on 22 Nov).

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 19-20 Nov with a peak flux of 2,880 pfu on 20/1435 UTC. Normal to moderate levels were reached on 17-18 Nov and 21-23 Nov.

Geomagnetic field activity was at mostly quiet to unsettled levels with isolated active levels observed early on 17 Nov and midday on 23 Nov. Solar wind parameters were enhanced midday on 20 Nov when Bt reached 18 nT and Bz reached values at -10 nT. Solar wind speeds began the highlight period at about 550 km/s, declined to near 325 km/s early on 20 Nov and gradually increased to about 500 km/s late on 23 Nov.

**Space Weather Outlook**  
**24 November - 20 December 2025**

Solar activity is expected to be expected to be at R1-R2 (Minor-Moderate) levels on 28-30 Nov and 01-11 Dec, primarily due to the flare potential and return of old Region 4274. Mostly C-class activity is expected on 24-27 Nov and 12-20 Dec.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 28-30 Nov, 01-03 Dec, 08-12 Dec and 16-17 Dec, all due to coronal hole influence. The remainder of the outlook period is likely to be at normal to moderate levels.

Geomagnetic field activity is expected to range from quiet to G1-G2 (Minor-Moderate) geomagnetic storm levels. G1-G2 (Minor-Moderate) levels are likely on 26-27 Nov and 03-04 Dec due to anticipated influence from CH HSS. Unsettled to active conditions are likely on 24-25 Nov, 28-30 Nov, 05-07 Dec, 12-14 Dec and 17-19 Dec. Mostly quiet levels are likely on 01-02 Dec, 08-11 Dec, 15-16 Dec and 20 Dec.



### ***Daily Solar Data***

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
17 November	122	45	140	B6.9	12	0	0	13	0	0	0	0
18 November	120	66	160	B4.7	7	0	0	2	0	0	0	0
19 November	123	60	260	B5.6	3	0	0	0	0	0	0	0
20 November	121	51	320	B6.5	8	0	0	1	0	0	0	0
21 November	121	75	130	B6.5	12	0	0	2	0	0	0	0
22 November	119	74	460	B6.1	12	0	0	0	0	0	0	0
23 November	120	79	240	B5.2	9	0	0	1	0	0	0	0

### ***Daily Particle Data***

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)		Electron Fluence (electrons/cm <sup>2</sup> -day -sr)	
	>1 MeV	>10 MeV	>2MeV	
17 November	1.9e+06	2.5e+04	3.7e+07	
18 November	1.3e+06	1.8e+04	4.4e+07	
19 November	2.5e+06	1.7e+04	6.2e+07	
20 November	8.9e+06	1.6e+04	7.9e+07	
21 November	1.9e+06	2.1e+04	2.0e+07	
22 November	2.0e+06	1.8e+04	1.6e+07	
23 November	2.8e+06	1.6e+04	1.7e+07	

### ***Daily Geomagnetic Data***

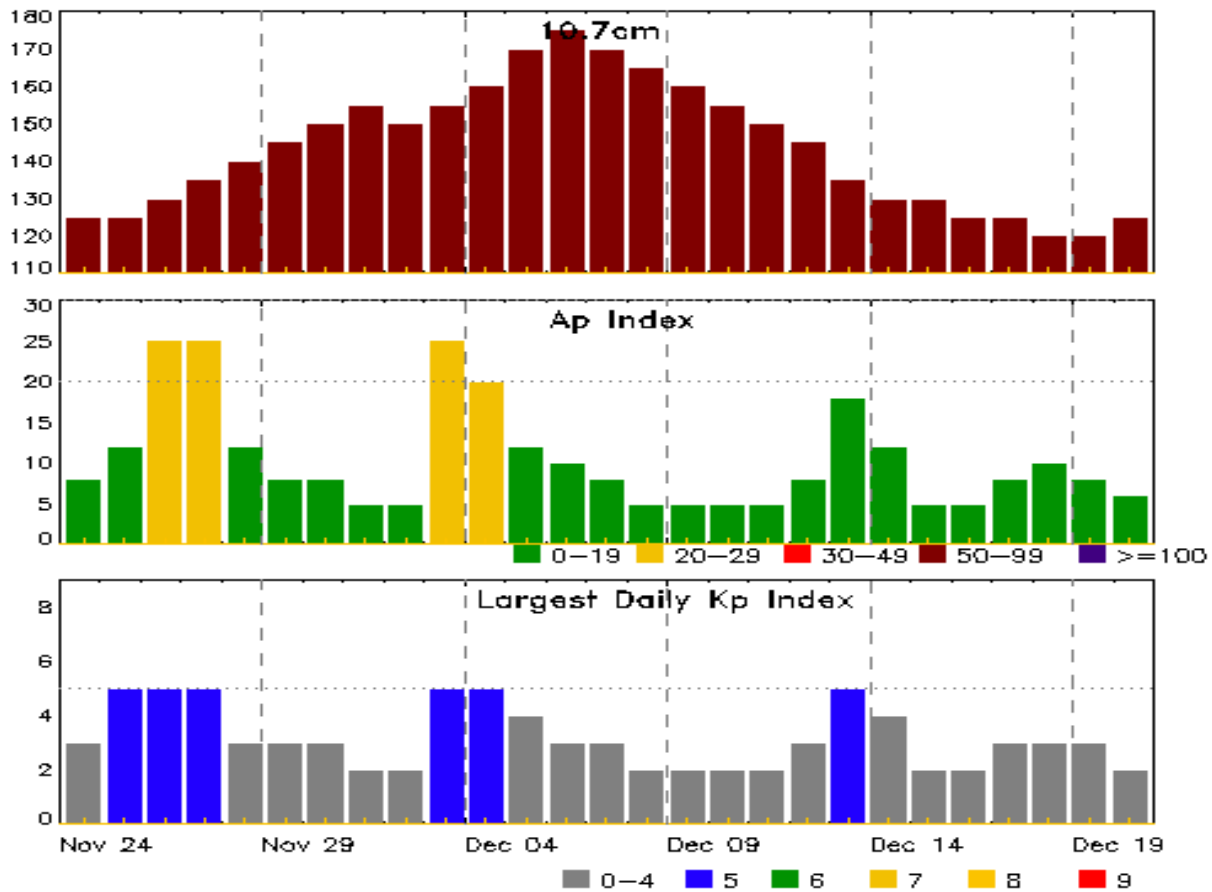
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
17 November	9	4-2-2-1-2-1-2-2	8	3-2-3-1-2-2-2-1	11	4-3-3-1-2-1-2-2
18 November	4	2-2-2-0-1-1-1-1	4	1-2-3-1-0-0-0-0	5	3-2-2-1-0-0-1-1
19 November	2	0-0-1-0-1-0-1-1	0	0-0-0-0-0-0-1-0	3	1-0-1-1-0-0-1-1
20 November	6	0-2-2-1-1-3-1-2	4	0-1-2-1-0-1-1-3	7	1-2-1-1-0-2-2-3
21 November	5	2-2-1-1-1-2-2-1	9	2-2-2-3-3-2-2-1	8	3-3-1-2-1-2-2-2
22 November	3	1-1-0-0-1-1-1-2	4	1-1-0-0-3-1-1-1	6	3-1-1-1-1-1-2-3
23 November	8	2-1-1-2-3-3-2-2	26	2-1-1-6-6-3-3-1	15	3-2-2-2-3-4-3-3



### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
17 Nov 1047	EXTENDED WARNING: Geomagnetic K = 4	15/2000 - 17/2359
17 Nov 2355	EXTENDED WARNING: Geomagnetic K = 4	15/2000 - 18/0600
19 Nov 1341	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	19/1310
19 Nov 2235	ALERT: Type II Radio Emission	19/2215
20 Nov 0059	ALERT: Type IV Radio Emission	20/0023
20 Nov 1046	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	19/1310
20 Nov 1654	ALERT: Type II Radio Emission	20/1459
20 Nov 2329	WARNING: Geomagnetic K = 4	20/2327 - 21/1200
23 Nov 1650	WATCH: Geomagnetic Storm Category G1 predicted	
23 Nov 1708	WARNING: Geomagnetic K = 4	23/1708 - 2359
23 Nov 1801	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
24 Nov	125	8	3	08 Dec	165	5	2
25	125	12	5	09	160	5	2
26	130	25	5	10	155	5	2
27	135	25	5	11	150	5	2
28	140	12	3	12	145	8	3
29	145	8	3	13	135	18	5
30	150	8	3	14	130	12	4
01 Dec	155	5	2	15	130	5	2
02	150	5	2	16	125	5	2
03	155	25	5	17	125	8	3
04	160	20	5	18	120	10	3
05	170	12	4	19	120	8	3
06	175	10	3	20	125	6	2
07	170	8	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

**No Events Observed**

## ***Flare List***

Date	Time			X-ray Class	Imp/ Brtns	Optical Location Lat CMD	Rgn #
	Begin	Max	End				
17 Nov	0123	0130	0135	C7.5	SF	S09W06	4284
17 Nov	0217	0222	0226	C2.0	SF	S09W06	4284
17 Nov	0419	0427	0430	C1.3			4284
17 Nov	0434	0434	0440		SF	S08W07	4284
17 Nov	0522	0522	0525		SF	S08W07	4284
17 Nov	0549	0552	0554		SF	S08W07	4284
17 Nov	0608	0611	0616	C1.5	SF	S08W09	4284
17 Nov	0641	0648	0653	C1.6			4284
17 Nov	0658	0701	0702		SF	S08W09	4284
17 Nov	0800	0809	0812	C1.7			4284
17 Nov	0926	0932	0939	B9.9			4284
17 Nov	1035	1041	1046	C1.2			4284
17 Nov	1312	1322	1341	C2.1			4274
17 Nov	1431	1606	1703	C6.1			4274
17 Nov	1627	1628	1632		SF	S07W14	4284
17 Nov	1649	1654	1658	C5.4	SF	S07W14	4284
17 Nov	1732	1732	1735		SF	S08W14	4284
17 Nov	1819	1822	1825		SF	S07W15	4284
17 Nov	2027	2034	2041	C1.2	SF	S07W15	4284
17 Nov	2258	2305	2309	B9.2	SF	S07W18	4284
17 Nov	2309	2313	2318	C1.6			4283
18 Nov	0020	0044	0138	C1.5			
18 Nov	0138	0141	0144	C1.3			4284
18 Nov	0212	0220	0225	C1.3			4284
18 Nov	0306	0325	0334	C2.2	SF	S08W20	4284
18 Nov	0404	0409	0413	C1.2			4284
18 Nov	0530	0535	0538	C1.5	SF	S07W22	4284
18 Nov	1014	1022	1026	B7.4			4284
18 Nov	1027	1033	1038	C1.5			4284
19 Nov	0049	0055	0103	B9.3			4282
19 Nov	0516	0520	0523	B9.5			4282



## *Flare List*

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
19 Nov	0626	0631	0635	B8.2			
19 Nov	0929	0953	1012	C9.9			
19 Nov	1503	1513	1519	C1.2			4284
19 Nov	1544	1548	1552	B8.0			
19 Nov	2207	2215	2221	B9.0			
19 Nov	2304	2314	2324	C1.0			
20 Nov	0304	0314	0324	C1.0			
20 Nov	0324	0335	0339	C1.1			
20 Nov	0339	0357	0400	C1.4			
20 Nov	0400	0411	0419	C1.6			
20 Nov	0723	0732	0736	C1.3			
20 Nov	0754	0823	0908	C1.8			
20 Nov	0921	0928	0934	C1.8			4284
20 Nov	0959	1004	1009	C2.3	SF	S15E33	4286
21 Nov	0037	0041	0047	C1.1			4284
21 Nov	0049	0055	0103	C1.1			4284
21 Nov	0235	0245	0258	C1.1			4288
21 Nov	0258	0302	0306	C1.1			4288
21 Nov	0419	0425	0430	C1.1			4287
21 Nov	0518	0536	0556	C1.3			
21 Nov	0755	0803	0811	C1.0			4284
21 Nov	1156	1200	1204	C1.0	SF	S07W65	4284
21 Nov	1321	1330	1333	C3.8			4290
21 Nov	1745	1750	1753	C1.6			4284
21 Nov	1947	1954	1957	C1.3			4284
21 Nov	2229	2237	2242	C2.1	SF	S15E79	4290
22 Nov	0100	0108	0110	C1.2			4290
22 Nov	0110	0120	0130	C2.3			4290
22 Nov	0227	0232	0234	C1.1			4290
22 Nov	0438	0445	0449	C1.6			4290
22 Nov	0542	0545	0547	C1.0			4290
22 Nov	0650	0658	0702	B9.3			4290
22 Nov	0754	0802	0816	B9.5			4290
22 Nov	1014	1022	1025	C1.1			4290
22 Nov	1039	1045	1047	C1.3			4290
22 Nov	1141	1146	1148	C4.8			4291
22 Nov	1518	1523	1526	C1.6			4291
22 Nov	1613	1619	1622	C1.5			4291



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
22 Nov	1849	1900	1908	C6.3			4291
22 Nov	2209	2229	2249	C1.0			4290
23 Nov	0114	0120	0123	B8.0			4291
23 Nov	0432	0441	0446	B9.8			4291
23 Nov	0547	0602	0640	C1.4			4291
23 Nov	0645	0654	0700	C1.8			4291
23 Nov	0849	0856	0900	C1.2			4291
23 Nov	0933	0941	0959	C1.0			4291
23 Nov	1109	1109	1112		SF	S12E59	4291
23 Nov	1149	1158	1205	C1.0			4291
23 Nov	1205	1209	1213	C1.0			4288
23 Nov	1230	1234	1236	C1.5			4291
23 Nov	1631	1640	1653	C1.0			4291
23 Nov	1653	1659	1703	B9.9			4291
23 Nov	1947	1950	1956	B7.7			4290
23 Nov	2010	2019	2026	C1.6			4290
23 Nov	2152	2200	2210	B9.0			4291

### ***Region Summary***

Location		Sunspot Characteristics						Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 4250															
11 Oct	N07E31	255	40	5	Dai	8	B								
12 Oct	N06E20	254	40	4	Dso	4	B	1							
13 Oct	N07E06	254	20	4	Cro	3	B								
14 Oct	N07W07	254	20	4	Cro	2	B								
15 Oct	N07W21	255	10	1	Hrx	1	A								
16 Oct	N05W34	255	10	1	Axx	1	A								
17 Oct	N04W45	253	10	1	Axx	1	A								
								1	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 254

<b><i>Region 4276</i></b>															
04 Nov	S17E96	237	plage								1				
06 Nov	S17E67	237	40	8	Dai	8	BG	6	1						
07 Nov	S17E51	240	180	10	Dai	7	BG	2			1				
08 Nov	S17E39	239	180	10	Dao	8	BG	1							
09 Nov	S17E28	236	140	10	Dao	10	BG	4			2	1			
10 Nov	S17E13	238	150	10	Dao	12	BG	1							
11 Nov	S17W01	239	110	12	Cao	11	B								
12 Nov	S17W15	240	80	13	Cai	15	BG	1							
13 Nov	S17W29	241	40	13	Cao	6	B	8			4				
14 Nov	S17W45	243	40	10	Cao	6	B								
15 Nov	S16W60	245	10	1	Axx	1	A								
16 Nov	S16W74	246	plage												
17 Nov	S16W88	247	plage												
								23	1	1	7	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 239





### *Region Summary - continued*

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
Region 4277															
06 Nov	S07E64	242	plage					4							
07 Nov	S07E49	242	120	2	Dao	8	B	3							
08 Nov	S06E38	240	120	8	Dai	10	B	4			1				
09 Nov	S06E25	239	150	8	Dsi	12	B	1							
10 Nov	S07E11	240	140	8	Dsi	8	B								
11 Nov	S07W02	240	120	7	Dsi	6	B	1							
12 Nov	S07W15	240	100	7	Dso	8	B								
13 Nov	S07W30	242	70	5	Cso	5	B								
14 Nov	S07W45	242	60	5	Cao	5	B								
15 Nov	S06W58	243	30	3	Cao	3	B								
16 Nov	S06W72	244	10	2	Axx	1	A								
17 Nov	S06W87	246	plage												
								13	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 240

### **Region 4278**

07 Nov	N11E44	247	50	1	Cao	5	B								
08 Nov	N11E31	247	10	2	Bxo	2	B								
09 Nov	N11E20	244	10	3	Bxo	4	B								
10 Nov	N11E06	245	plage												
11 Nov	N11W08	246	plage												
12 Nov	N11W22	247	plage												
13 Nov	N11W36	248	plage												
14 Nov	N11W50	248	plage												
15 Nov	N11W64	249	plage												
16 Nov	N11W78	250	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 245



### *Region Summary - continued*

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 4279															
09 Nov	S12E57	207	30	1	Hsx	1	A	1							
10 Nov	S14E44	207	20	1	Hsx	1	A								
11 Nov	S13E31	207	30	1	Hsx	1	A	1							
12 Nov	S13E17	208	20	1	Hsx	1	A								
13 Nov	S13E04	208	20	1	Hsx	1	A								
14 Nov	S13W10	208	30	1	Hax	2	A								
15 Nov	S13W22	207	10	1	Hrx	1	A								
16 Nov	S12W35	207	10	1	Hrx	1	A								
17 Nov	S12W48	207	10	1	Axx	1	A								
18 Nov	S12W62	208	plage												
19 Nov	S12W76	209	plage												
20 Nov	S12W90	209	plage												
								2	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 208

<b>Region 4280</b>															
10 Nov	S09E61	190	10	4	Bxo	3	B								
11 Nov	S09E49	189	20	4	Bxi	7	B								
12 Nov	S08E35	190	30	5	Cro	5	B								
13 Nov	S08E22	190	30	6	Cro	5	B								
14 Nov	S08E07	191	10	7	Cao	3	B								
15 Nov	S07W06	191	10	2	Bxo	2	B								
16 Nov	S08W22	194	plage												
17 Nov	S08W36	195	plage												
18 Nov	S08W50	196	plage												
19 Nov	S08W64	197	plage												
20 Nov	S08W78	197	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 191

<b>Region 4282</b>															
14 Nov	S17W35	233	10	3	Bxo	2	B								
15 Nov	S21W49	234	10	2	Bxo	2	B								
16 Nov	S21W63	235	10	2	Bxo	2	B								
17 Nov	S21W77	236	plage												
								0	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 233



### *Region Summary - continued*

Location		Sunspot Characteristics						Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 4283															
15 Nov	S19E04	181	10	2	Hrx	1	A								
16 Nov	S18W11	183	10	1	Axx	1	A								
17 Nov	S19W24	183	10	1	Axx	1	A	1							
18 Nov	S19W38	184	10	1	Axx	1	A								
19 Nov	S19W52	185	plage												
20 Nov	S19W66	185	plage												
21 Nov	S19W80	186	plage												
								1	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 181

<b>Region 4284</b>															
16 Nov	S07W05	177	60	4	Dao	11	B	3			2				
17 Nov	S07W19	178	120	6	Dsi	13	B	9			13				
18 Nov	S07W32	178	130	7	Dai	22	B	6			2				
19 Nov	S07W44	177	150	8	Dai	15	B	1							
20 Nov	S07W58	177	100	8	Dai	8	B	1							
21 Nov	S07W72	178	30	8	Dao	8	B	6			1				
22 Nov	S07W89	182	30	4	Cao	2	B								
								26	0	0	18	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 177

<b>Region 4285</b>															
18 Nov	S16W42	188	10	4	Bxo	2	B								
19 Nov	S16W55	188	10	5	Bxo	3	B								
20 Nov	S16W68	187	10	1	Axx	1	A								
21 Nov	S17W82	188	0	1	Axx	1	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 188



### *Region Summary - continued*

	Location	Sunspot Characteristics						Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 4286															
18 Nov	S15E49	97	10	1	Axx	1	A								
19 Nov	S15E37	96	10	1	Axx	1	A								
20 Nov	S15E23	96	plage					1			1				
21 Nov	S15E09	97	plage												
22 Nov	S15W05	98	plage												
23 Nov	S15W19	99	plage												
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 98

<b>Region 4287</b>															
19 Nov	N02E65	67	90	2	Hsx	1	A								
20 Nov	N02E53	66	90	1	Hsx	1	A								
21 Nov	N03E39	67	20	1	Hsx	1	A	1							
22 Nov	N02E26	67	50	2	Hsx	1	A								
23 Nov	N02E13	67	20	1	Hrx	1	A								
								1	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 67

<b>Region 4288</b>															
20 Nov	N18E75	44	120	2	Hsx	1	A								
21 Nov	N17E63	43	30	2	Cso	1	B	2							
22 Nov	N17E49	44	120	3	Cso	1	B								
23 Nov	N18E36	44	90	3	Hsx	2	A	1							
								3	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 44

<b>Region 4289</b>															
21 Nov	S03E49	57	10	1	Axx	1	A								
22 Nov	S01E36	57	20	1	Hsx	1	A								
23 Nov	S01E21	59	10	1	Axx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 59



### ***Region Summary - continued***

Region 4290															
Location		Sunspot Characteristics						Flares							
Date	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
		Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
21 Nov	S10E74	32	40	2	Cao	3	B	2			1				
22 Nov	S10E58	35	120	3	Cao	3	B	8							
23 Nov	S10E45	35	20	2	Cao	3	B	1							
								11	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 35

#### **Region 4291**

22 Nov	S14E65	28	120	5	Dao	6	B	4							
23 Nov	S13E54	26	100	11	Eai	9	B	7			1				
								11	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 26

#### **Region 4292**

23 Nov	S17W07	87	0	3	Cao	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 87

## ***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

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

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<https://www.ngdc.noaa.gov/stp/satellite/goes-r.html> -- NCEI GOES data  
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