

Solar activity reached Moderate levels during the period, with a total of 35 C-class flares and 2 R1 (Minor) radio blackouts events. Region 4494 (S05, L=88) produced an M1.0/Sf peaking at 27/0243 UTC and Region 4492 (N=15, L=107, class/area Cko/310 on 26 July) produced the largest flare of the week, a long-duration M1.9/Sf that peaked at 30/1700 UTC. This event was accompanied by a partial-halo CME and a simultaneous eight-degree-long filament eruption, centered near N20W67. Associated with these 30 Jul events, two Type II radio sweeps were observed at 30/1627 UTC and 30/1645 UTC, with estimated shock speeds of 843 km/s and 1,681 km/s, respectively. Other radio events included a Type IV sweep at 30/1631 UTC and a 17-minute-long Tenflare (190 sfu) that peaked at 30/1643 UTC.

Analysis of the CME propagation indicated an Earth-directed component with estimated velocity of 878 km/s that was anticipated to disturb the Geospace on Aug 02, which was later confirmed by a Sudden Impulse observed on 02/1229 UTC (with deviation of 27 nT) and further geomagnetic activity enhancement.

The greater than 10 MeV proton flux crossed the S1 (Minor) solar radiation event threshold twice during the period: first at 30/1845 UTC (reaching a peak of 18 pfu at 30/2055 UTC); and, after returning to levels below S1 around 30/0715 UTC, the flux got elevated again and crossed the threshold of 10pfu at 31/1335 UTC. Additionally, the greater than 100 MeV proton flux briefly exceeded 1pfu at 30/1835. All proton flux enhancements were likely associated with the M1.9/Sf flare mentioned above.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 27 Jul and 01 Aug, with the maximum value of the period (1,379 pfu) observed at 27/1630 UTC.

Geomagnetic activity was at Quiet to G2 (Moderate) levels during the week. Unsettled levels were observed on 27-28 Jul, followed by quiet levels on 29 Jul to 01 Aug. On 02 Aug, active levels were observed, with an isolated synoptic period of G2 (Moderate) storming level due to the impact of the abovementioned CME that left the Sun on 30 Jul.

Space Weather Outlook **03 August - 29 August 2026**

Solar activity is expected to be predominantly at low levels, with a chance for R1-R2 (Minor-Moderate) levels throughout the outlook period.

No proton events (greater than 10 MeV) are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 12-16 Aug and 22-23 Aug due to recurrent high speed streams. Normal to moderate electron flux levels are expected for the remaining days of the outlook period.



Geomagnetic activity is expected to reach G1 (Minor) storming levels on 03 Aug (as the ongoing CME disturbances persist and wane) and on 19 Aug (due to the anticipated effects of a High Speed Stream originated in a negative polarity Coronal Hole). Active levels are expected on 17-18 Aug, due to the -CH HSS previously mentioned. Unsettled levels are expected on 04, 11-12 and 20 Aug, and Quiet levels on the remaining days of the outlook 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 July	147	89	660	C1.0	6	1	0	2	0	0	0	0
28 July	143	102	530	B8.6	5	0	0	2	0	0	0	0
29 July	143	123	410	B9.2	4	0	0	0	0	0	0	0
30 July	152	130	460	B8.3	1	1	0	2	0	0	0	0
31 July	148	123	560	B8.7	10	0	0	5	1	0	0	0
01 August	140	102	410	B7.2	5	0	0	4	0	0	0	0
02 August	127	105	360	B6.2	3	0	0	2	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 July	3.8e+05	1.9e+04	6.3e+07	
28 July	2.9e+05	1.9e+04	3.6e+07	
29 July	2.1e+05	1.9e+04	2.9e+07	
30 July	6.6e+05	3.2e+05	3.6e+07	
31 July	3.8e+07	7.1e+05	4.2e+07	
01 August	8.7e+07	2.5e+05	4.1e+07	
02 August	5.5e+07	3.8e+04	2.4e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
27 July	7	1-1-2-1-3-2-2-2	3	1-1-1-1-0-1-1-2	7	2-1-2-1-2-2-2-3
28 July	10	2-1-2-3-3-2-2-3	5	1-2-2-1-1-1-2-2	8	2-1-2-2-2-2-2-3
29 July	6	2-2-1-2-2-2-2-0	4	2-2-1-2-0-1-1-0	5	2-2-1-2-1-1-1-1
30 July	8	1-1-0-3-3-3-2-1	4	1-0-0-2-3-1-0-0	5	1-1-1-2-2-2-1-1
31 July	7	1-1-2-3-3-2-2-0	3	1-1-0-1-2-2-0-0	5	1-1-1-2-2-1-1-1
01 August	5	1-1-1-2-2-2-1-1	3	0-0-1-1-2-1-1-1	4	1-1-1-1-1-1-1-1
02 August	15	1-1-1-2-4-5-4-1	28	0-0-0-1-5-7-4-2	4	1-1-1-1-4-6-4-2



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
27 Jul 0403	ALERT: Type II Radio Emission	27/0244
27 Jul 1453	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1534
30 Jul 1710	ALERT: Type II Radio Emission	30/1627
30 Jul 1711	ALERT: Type IV Radio Emission	30/1631
30 Jul 1712	ALERT: Type II Radio Emission	30/1645
30 Jul 1716	SUMMARY: 10cm Radio Burst	30/1636 - 1653
30 Jul 1808	WARNING: Proton 100MeV Integral Flux $>$ 1pfu	30/1807 - 31/0300
30 Jul 1833	ALERT: Proton Event 100MeV Integral Flux $>$ 1pfu	30/1833
30 Jul 1834	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	30/1833 - 31/0900
30 Jul 1903	ALERT: Proton Event 10MeV Integral Flux $\geq$ 10pfu	30/1903
31 Jul 0156	CANCELLATION: Proton Event 100MeV Integral Flux $>$ 1pfu	
31 Jul 0908	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	30/1845 - 31/0715
31 Jul 1105	WATCH: Geomagnetic Storm Category G2 predicted	
31 Jul 1336	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	31/1335 - 2359
31 Jul 1337	ALERT: Proton Event 10MeV Integral Flux $\geq$ 10pfu	31/1336
31 Jul 1846	SUMMARY: Proton Event 100MeV Integral Flux $>$ 1pfu	30/1825 - 1830
31 Jul 2154	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	31/1335 - 01/1200
01 Aug 1644	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	01/1644
01 Aug 1702	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	31/1320 - 1745
02 Aug 1140	WARNING: Geomagnetic Sudden Impulse expected	02/1215 - 1315
02 Aug 1238	WARNING: Geomagnetic K = 4	02/1237 - 03/0300
02 Aug 1246	SUMMARY: Geomagnetic Sudden Impulse	02/1229
02 Aug 1342	ALERT: Geomagnetic K = 4	02/1342
02 Aug 1428	WARNING: Geomagnetic K = 5	02/1427 - 2359
02 Aug 1634	WATCH: Geomagnetic Storm Category G1 predicted	
02 Aug 1712	ALERT: Geomagnetic K = 5	02/1712
02 Aug 1746	WARNING: Geomagnetic K = 6	02/1745 - 2359

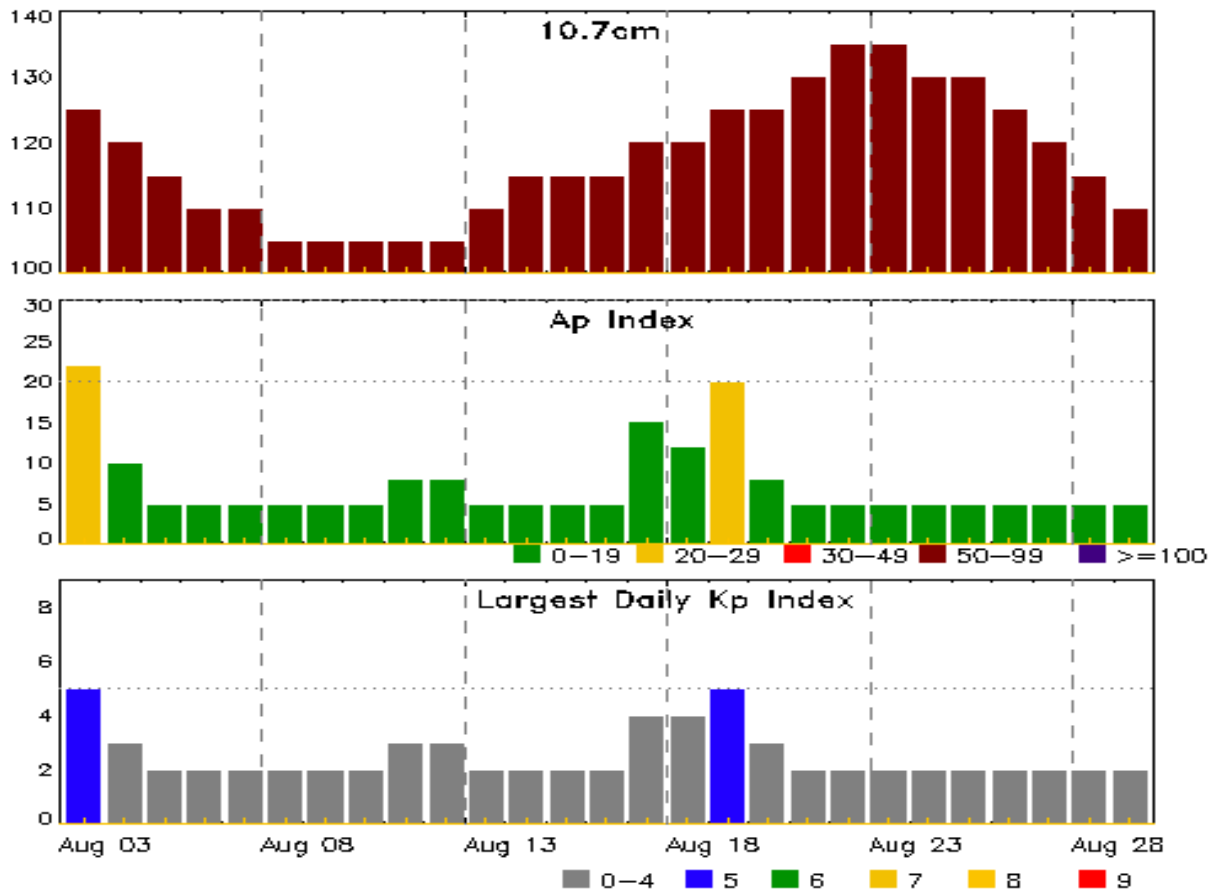


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
02 Aug 1747	EXTENDED WARNING: Geomagnetic K = 5	02/1427 - 03/0300
02 Aug 1748	EXTENDED WARNING: Geomagnetic K = 4	02/1237 - 03/1200
02 Aug 1800	ALERT: Geomagnetic K = 6	02/1759



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
03 Aug	125	22	5	17 Aug	120	15	4
04	120	10	3	18	120	12	4
05	115	5	2	19	125	20	5
06	110	5	2	20	125	8	3
07	110	5	2	21	130	5	2
08	105	5	2	22	135	5	2
09	105	5	2	23	135	5	2
10	105	5	2	24	130	5	2
11	105	8	3	25	130	5	2
12	105	8	3	26	125	5	2
13	110	5	2	27	120	5	2
14	115	5	2	28	115	5	2
15	115	5	2	29	110	5	2
16	115	5	2				

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
27 Jul	0232	0243	0248	M1.0	0.005	SF	S04W04	4494	390		2	
30 Jul	1553	1700	2151	M1.9	0.057	SF	N20E50	4492		190	2	2

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
27 Jul	0031	0050	0104	C1.6				4493
27 Jul	0232	0243	0248	M1.0	SF	S04W04		4494
27 Jul	1244	1246	1248		SF	N06E27		4496
27 Jul	1336	1342	1347	C1.5				4494
27 Jul	1713	1725	1731	C2.8				4494
27 Jul	1935	1948	1953	C3.6				4494
27 Jul	2233	2244	2248	C3.3				4494
27 Jul	2251	2259	2305	C3.5				4494
28 Jul	0208	0215	0220	C1.8				4496
28 Jul	0308	0319	0322	C5.1	SF	S04W18		4494
28 Jul	1113	1120	1123	C1.4	SF	N16E69		4498
28 Jul	1740	1747	1752	C1.5				4495
28 Jul	2336	2345	2355	C1.7				4498
29 Jul	0019	0022	0025	C1.6				4498
29 Jul	0431	0438	0444	C1.2				4498
29 Jul	1610	1619	1625	C1.6				4498
29 Jul	1719	1724	1729	C1.3				4501
30 Jul	0544	0606	0628	C3.8	SF	N18E48		4498
30 Jul	1553	1700	2151	M1.9	SF	N20E50		4492
31 Jul	0121	0129	0137	C1.8				4500
31 Jul	0231	0239	0248	C2.3				4499
31 Jul	0305	0316	0330	C3.1				4498
31 Jul	0608	0608	0614		SF	N05E01		4499
31 Jul	0641	0647	0710	C2.4	SF	N05E00		4499
31 Jul	0825	0834	0841	C1.4	SF	N05E00		4499
31 Jul	1001	1001	1010		SF	N05E00		4499
31 Jul	1109	1119	1129	C2.3	1F	N06W00		4499
31 Jul	1136	1141	1143	C2.5				4499
31 Jul	1143	1147	1156	C3.9				4499



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
31 Jul	1347	1357	1404	C1.7	SF	N06W02	4499
31 Jul	1803	1813	1824	C1.6			4499
01 Aug	0222	0226	0230	C1.1			4498
01 Aug	1324	1330	1336	C1.0	SF	N03W16	4499
01 Aug	1933	1934	1937		SF	N03W20	4499
01 Aug	2002	2011	2020	C2.0			4498
01 Aug	2020	2026	2030	C1.9			4492
01 Aug	2028	2032	2039		SF	N18E11	4498
01 Aug	2111	2113	2116		SF	S06W24	4501
01 Aug	2229	2240	2247	C2.5			4492
02 Aug	0020	0033	0039	C4.0			4492
02 Aug	0155	0202	0216	C1.6			4499
02 Aug	0519	0535	0541	C6.3			4492
02 Aug	1608	1609	1615		SF	N07W58	4496
02 Aug	1644	1650	1654	B8.4	SF	N06W59	4496



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
<i>Region 4491</i>																
15 Jul	S11E79	154	plage						1							
16 Jul	S11E63	156	10	2	Axx	1	A									
17 Jul	S11E50	155	20	2	Hrx	2	A									
18 Jul	S11E36	156	10	1	Hrx	2	A									
19 Jul	S11E21	158	10	1	Axx	1	A									
20 Jul	S11E08	157	10	3	Bxo	4	B									
21 Jul	S11W06	158	plage													
22 Jul	S11W20	159	plage													
23 Jul	S11W34	160	plage													
24 Jul	S12W48	161	plage													
25 Jul	S12W62	162	plage													
26 Jul	S12W76	162	plage													
27 Jul	S12W90	163	plage													
									1	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 158

Region 4492															
18 Jul	N15E87	106	plage								1				
19 Jul	N15E73	106	230	6	Hax	3	A								
20 Jul	N15E60	106	230	5	Dao	5	BG	1			1				
21 Jul	N16E45	107	250	5	Hhx	9	A								
22 Jul	N15E32	107	300	5	Hhx	4	A								
23 Jul	N16E20	106	310	5	Hhx	9	A								
24 Jul	N15E06	107	290	5	Hhx	9	A								
25 Jul	N16W08	108	250	6	Dko	6	B								
26 Jul	N16W21	107	310	6	Cko	6	B								
27 Jul	N16W35	108	210	3	Cso	5	BGD								
28 Jul	N16W48	108	130	3	Hsx	3	A								
29 Jul	N16W61	108	90	4	Hsx	3	A								
30 Jul	N16W74	107	100	3	Hsx	3	A				1				
31 Jul	N15W88	108	110	2	Hax	2	A								
								2	0	0	2	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 107



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 4493															
20 Jul	N05E09	156	120	9	Dac	18	BGD	7	3		5				
21 Jul	N05W05	157	300	10	Dkc	30	BGD	17	1		11	1			
22 Jul	N05W19	158	430	12	Eki	13	BG	7	1		10				
23 Jul	N06W32	158	440	13	Eki	19	BGD	6			1	1			
24 Jul	N05W46	159	420	13	Eki	15	BG	2			1				
25 Jul	N05W59	159	380	12	Ehi	12	BG	3			3				
26 Jul	N05W73	159	320	11	Ehi	8	BG								
27 Jul	N05W86	159	210	10	Cso	3	B	1							
								43	5	0	31	2	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 157

Region 4494															
21 Jul	S04E65	87	50	6	Cso	3	B								
22 Jul	S04E52	87	50	3	Hsx	4	A								
23 Jul	S04E40	86	70	5	Cao	5	BD	1			2				
24 Jul	S04E27	86	110	5	Cao	7	BD	3			1				
25 Jul	S04E12	88	80	4	Dao	7	BD	1							
26 Jul	S04W02	88	120	5	Dac	9	BD	1	1		1				
27 Jul	S04W14	87	90	5	Hsx	7	A	5	1		1				
28 Jul	S03W28	88	40	5	Cso	6	B	1			1				
29 Jul	S03W42	89	40	1	Hsx	1	A								
30 Jul	S04W55	88	20	2	Hsx	2	A								
31 Jul	S05W70	90	10	1	Axx	1	A								
01 Aug	S05W85	92	plage												
								12	2	0	6	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 88



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 4495																
23 Jul	S02E28	98	10	2	Axx	3	A									
24 Jul	S03E14	99	10	2	Axx	2	A									
25 Jul	S02W00	99	plage													
26 Jul	S02W13	98	10	6	Dao	4	B	3				3				
27 Jul	S02W25	98	30	5	Dro	6	B									
28 Jul	S02W39	99	30	4	Cro	4	B	1								
29 Jul	S02W53	100	10	1	Cro	1	B									
30 Jul	S03W69	102	10	1	Axx	1	A									
31 Jul	S04W83	103	10	1	Axx	1	A									
								4	0	0	3	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 99

<i>Region 4496</i>															
24 Jul	N05E59	54	30	5	Cso	6	B								
25 Jul	N05E46	54	70	7	Dao	9	B				2				
26 Jul	N05E33	52	90	9	Dao	10	B	3							
27 Jul	N05E20	53	80	10	Cao	7	B				1				
28 Jul	N05E06	54	80	8	Cso	8	B	1							
29 Jul	N05W10	57	60	3	Hsx	1	A								
30 Jul	N05W23	56	100	4	Hsx	3	A								
31 Jul	N05W37	56	110	5	Cso	4	B								
01 Aug	N05W50	57	70	4	Cso	3	B								
02 Aug	N04W65	59	50	3	Hsx	3	A				2				
								4	0	0	5	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 54

<i>Region 4497</i>															
26 Jul	S20W20	106	10	2	Bxo	2	B								
27 Jul	S19W34	107	plage												
28 Jul	S19W48	108	10	1	Axx	1	A								
29 Jul	S19W62	109	10	1	Axx	1	A								
30 Jul	S21W74	107	plage												
31 Jul	S21W88	108	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 106



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 4498															
27 Jul	N14E76	357	40	2	Hax	1	A								
28 Jul	N14E62	358	210	4	Cao	5	B	2				1			
29 Jul	N14E50	357	140	5	Dai	11	BG	3							
30 Jul	N14E37	356	130	5	Cai	12	BG	1				1			
31 Jul	N14E22	358	150	6	Dai	8	BG	1							
01 Aug	N14E10	357	150	5	Dai	12	BD	2				1			
02 Aug	N15W03	356	120	7	Dsi	17	BD								
								9	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 356

Region 4499															
28 Jul	N04E32	28	30	6	Dro	5	B								
29 Jul	N04E18	29	30	7	Cro	8	BG								
30 Jul	N04E05	28	60	8	Dao	15	BGD								
31 Jul	N05W08	28	80	8	Dao	12	B	8			5	1			
01 Aug	N04W21	28	50	6	Dai	11	B	1			2				
02 Aug	N04W38	32	30	8	Cso	7	B	1							
								10	0	0	7	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 28

Region 4500															
29 Jul	N18E58	349	10	2	Cro	2	B								
30 Jul	N18E44	349	20	5	Cao	6	B		1						
31 Jul	N18E28	352	50	4	Cao	7	B	1							
01 Aug	N18E14	353	60	6	Dao	8	B								
02 Aug	N19E02	352	50	6	Cso	6	B								
								1	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 352



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 4501

29 Jul	S09E16	31	20	5	Dro	5	BG	1							
30 Jul	S08E03	30	20	8	Dso	8	B								
31 Jul	S08W12	32	40	8	Cao	8	B								
01 Aug	S07W27	34	70	6	Dao	6	B				1				
02 Aug	S07W42	36	90	6	Dso	7	B								
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 30

Region 4502

01 Aug	S06E17	350	10	1	Bxo	2	B								
02 Aug	S06E03	351	20	4	Cro	5	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 351



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> --

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