

Solar activity was at low levels. Region 4475 (S09, L=129, class/area=Eki/250 on 25 Jun) produced the strongest flare of the period, a C9.5 flare at 28/2144 UTC. Region 4478 (S06, L=077, class/area=Fkc/BGD on 27 Jun) and 4479 (N16, L=094, class/area=Dai/160 on 28 Jun) were the most prominent on the visible disk by area. The remaining numbered spotted regions were mostly quiet and stable or in gradual decay.

Other activity included CME events, first observed in coronagraph imagery at ~26/2230 UTC and ~27/1848 UTC, that were analyzed and likely to have Earth-directed components. The model output suggested arrival at Earth from the first CME over 29-30 Jun and the second CME would likely be seen over 01 Jul.

No other Earth-directed CMEs were identified in available coronagraph imagery.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was high levels on 26-28 Jun following influence from a negative polarity CH HSS. The remainder of the summary period was at normal to moderate levels.

Geomagnetic field activity reached G1 (Minor) geomagnetic storm levels on 25 Jun. Active conditions were observed on 24 Jun and unsettled conditions were observed on 23 and 26-27 Jun. All increases in geomagnetic activity were due to influence from a negative polarity CH HSS. Solar wind speeds peaked near 700 km/s on 25 Jun. Bt reached a maximum of 15 nT on 24 Jun as the CIR passed Earth. Wind speeds slowly tapered down to ~400 km/s by end of 28 Jun.

Space Weather Outlook **29 June - 25 July 2026**

Solar activity is expected to continue at low levels, with a chance for M-class (R1-R2/Minor-Moderate) activity, and a slight chance for R3 (Strong), over 29 Jun - 07 Jul, due primarily to the flare potential of Regions 4475, 4479, and 4478. Only a slight chance for M-class activity is anticipated for the remainder of the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is likely to reach high levels over 29 Jun - 07 Jul, 10-13 Jul, and 24-25 Jul. Increases in electron flux are expected due to the anticipated influence of multiple, recurrent, CH HSSs.

Geomagnetic field activity is likely to reach G1 (Minor) geomagnetic storm levels on 29-30 Jun due to the anticipated arrival of a CME that left the Sun on 26 Jun. G1 conditions are again likely on 22 Jul; Active conditions are likely on 01 Jul, 08-09 Jul and 23 Jul; unsettled conditions are



likely on 02 Jul, 10 Jul, 16-17 Jul, and 24-25 Jul. All enhancements in geomagnetic activity after 01 Jul are due to the anticipated effects of multiple, recurrent, CH HSSs.



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
22 June	122	81	315	B6.2	1	0	0	1	0	0	0	0
23 June	130	106	275	B7.9	2	0	0	3	0	0	0	0
24 June	137	126	640	B9.5	12	0	0	8	1	0	0	0
25 June	156	136	1175	C1.0	10	0	0	8	1	0	0	0
26 June	163	99	1210	C1.0	5	0	0	10	0	0	0	0
27 June	188	119	1480	C1.4	9	0	0	25	0	0	0	0
28 June	186	131	1500	C1.6	8	0	0	8	2	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	
22 June	4.2e+05	1.7e+04	2.7e+07	
23 June	5.2e+05	1.7e+04	2.1e+07	
24 June	6.4e+05	1.7e+04	1.2e+07	
25 June	2.1e+06	1.7e+04	1.7e+07	
26 June	1.2e+06	1.8e+04	5.9e+07	
27 June	7.9e+05	1.9e+04	1.5e+08	
28 June	7.6e+05	1.9e+04	1.5e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
22 June	5	1-1-1-2-2-1-2-2	5	1-1-0-3-2-0-2-2	5	1-1-1-2-1-1-2-2
23 June	8	1-0-1-2-3-3-3-2	8	1-1-0-2-4-3-2-1	7	1-0-1-2-2-3-3-1
24 June	11	2-2-2-2-3-3-3-3	16	2-2-3-3-4-4-3-3	15	2-2-3-3-3-4-4-4
25 June	29	3-5-3-3-6-4-3-3	36	4-5-4-4-6-5-3-3	25	4-5-4-3-4-3-4-3
26 June	13	3-2-3-2-3-3-3-3	15	3-3-3-2-4-4-2-2	11	3-2-2-1-2-3-3-3
27 June	8	3-2-2-2-2-1-2-2	8	3-3-3-0-2-1-1-2	7	3-2-2-1-2-1-2-2
28 June	6	2-2-1-1-2-2-2-2	4	2-2-1-2-1-0-0-1	7	2-2-1-1-1-1-1-1

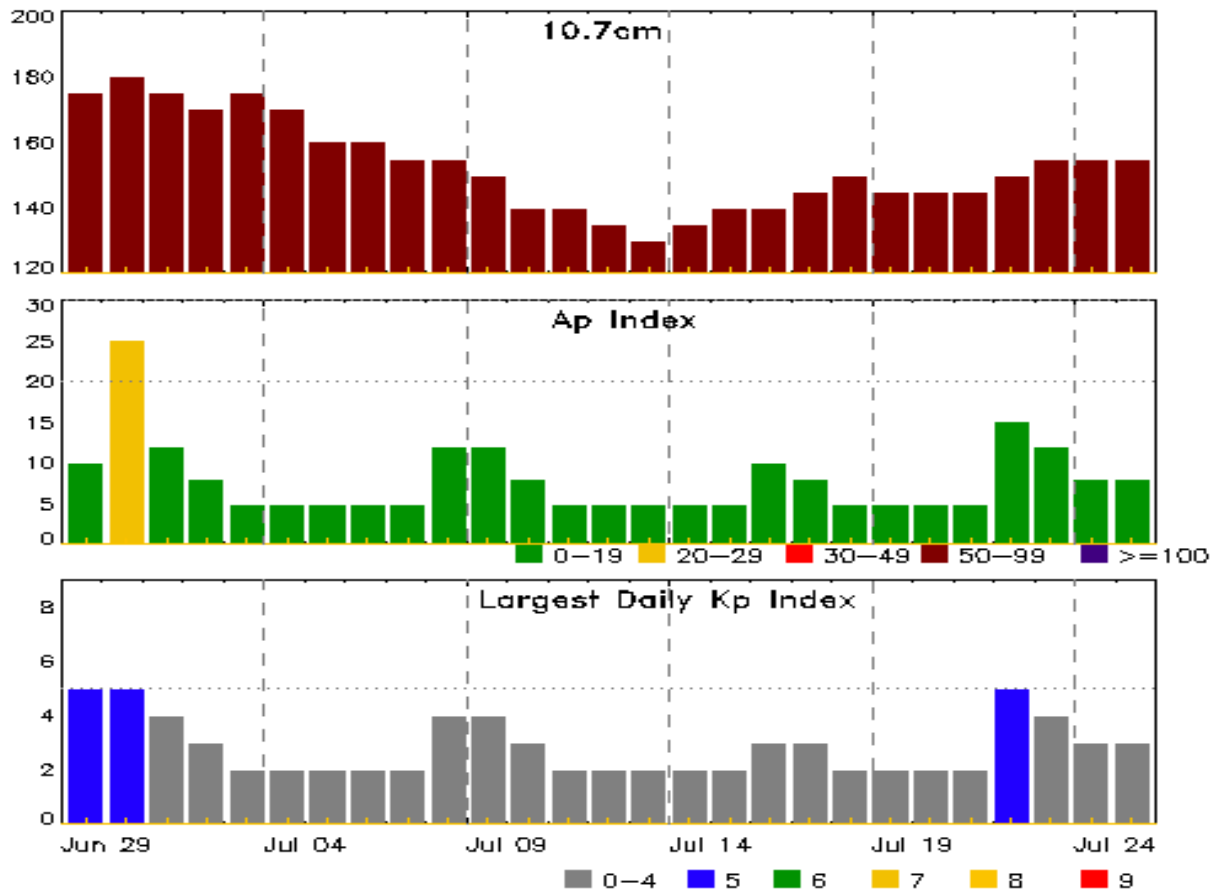


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
24 Jun 1746	WARNING: Geomagnetic K = 4	24/1740 - 25/2359
24 Jun 1748	ALERT: Geomagnetic K = 4	24/1746
24 Jun 1904	WARNING: Geomagnetic K = 4	24/1740 - 2359
24 Jun 2354	EXTENDED WARNING: Geomagnetic K = 4	24/1740 - 25/1200
25 Jun 0338	WARNING: Geomagnetic K = 5	25/0337 - 26/0900
25 Jun 0341	WARNING: Geomagnetic K = 5	25/0337 - 0900
25 Jun 0356	ALERT: Geomagnetic K = 5	25/0343
25 Jun 0846	EXTENDED WARNING: Geomagnetic K = 4	24/1740 - 25/1800
25 Jun 0847	EXTENDED WARNING: Geomagnetic K = 5	25/0337 - 1500
25 Jun 1939	WARNING: Geomagnetic K = 4	25/1939 - 2359
25 Jun 1941	ALERT: Geomagnetic K = 4	25/1940
25 Jun 2343	EXTENDED WARNING: Geomagnetic K = 4	25/1939 - 26/1200
26 Jun 1406	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1345
27 Jun 0713	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1345
28 Jun 0507	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1345
28 Jun 1041	WATCH: Geomagnetic Storm Category G1 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
29 Jun	175	10	5	13 Jul	130	5	2
30	180	25	5	14	135	5	2
01 Jul	175	12	4	15	140	5	2
02	170	8	3	16	140	10	3
03	175	5	2	17	145	8	3
04	170	5	2	18	150	5	2
05	160	5	2	19	145	5	2
06	160	5	2	20	145	5	2
07	155	5	2	21	145	5	2
08	155	12	4	22	150	15	5
09	150	12	4	23	155	12	4
10	140	8	3	24	155	8	3
11	140	5	2	25	155	8	3
12	135	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
22 Jun	0257	0300	0303	B9.1			4475
22 Jun	0326	0456	0525	C1.5			
22 Jun	1124	1131	1137	B9.1			
22 Jun	1137	1142	1144	B8.9			4473
22 Jun	2052	2059	2111	B8.9			4475
22 Jun	2144	2146	2156		SF	N07E25	
23 Jun	0714	0718	0730		SF	N08E20	
23 Jun	1819	1820	1829		SF	S11E40	4475
23 Jun	1958	1959	2003		SF	S11E39	4475
23 Jun	2201	2224	2250	C3.8			4477
23 Jun	2318	2325	2331	C8.7			4478
24 Jun	0034	0104	0111	C3.5	SF	N17E70	4479
24 Jun	0344	0353	0359	C2.7			4478
24 Jun	0640	0651	0657	C2.6			4478
24 Jun	0707	0711	0715	C3.5	1F	S10E32	4475
24 Jun	0856	0903	0908	C1.9	SF	S09E16	4473
24 Jun	0902	0904	0906	C1.8	SF	S11E29	4475
24 Jun	0958	1003	1009	C1.8	SF	S12E28	4475
24 Jun	1428	1441	1453	C3.8			4478
24 Jun	1500	1501	1504		SF	S10E26	4475
24 Jun	1608	1615	1617	C2.7	SF	S11E25	4475
24 Jun	1735	1735	1740		SF	S11E24	4475
24 Jun	1832	1842	1847	C2.5	SF	S09E28	4475
24 Jun	2022	2031	2042	C1.4			4475
24 Jun	2202	2215	2232	C2.6			4478
25 Jun	0015	0022	0029	C4.3			4477
25 Jun	0237	0254	0303	C4.0			4478
25 Jun	0532	U0542	A0556	C2.1	SF	S09E21	4475
25 Jun	0659	0707	0715		SF	S08E04	4473
25 Jun	0757	0803	0814	C1.6			
25 Jun	0829	0831	0833		SF	S07E61	4478



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
25 Jun	0858	0905	0915	C2.2			4478
25 Jun	1327	1331	1334	C2.7	SF	S05E69	4478
25 Jun	1453	1503	1507	C6.6	1N	S04E58	4478
25 Jun	1610	1610	1615		SF	S05E67	4478
25 Jun	1621	1626	1644		SF	S12E46	4477
25 Jun	1907	1909	1912		SF	N14E45	4479
25 Jun	1943	2020	2119		SF	N14E45	4479
25 Jun	2111	2114	2116	C2.3			4478
25 Jun	2155	2202	2214	C2.0			4475
25 Jun	2335	2348	2351	C5.0			4478
26 Jun	0513	U0514	A0531		SF	S04E60	4478
26 Jun	0846	0851	0910		SF	S03E58	4478
26 Jun	0915	0918	0922		SF	S12E36	4477
26 Jun	0938	0950	1011		SF	S12E36	4477
26 Jun	1223	1248	1304	C5.7	SF	S07E57	4478
26 Jun	1346	1353	1357	C1.7	SF	N16E36	4479
26 Jun	1357	1404	1409	C3.5			4475
26 Jun	1452	1501	1508	C2.0	SF	S05E55	4478
26 Jun	1930	1930	1935		SF	S11W06	4475
26 Jun	2012	2021	2028	C2.4	SF	S11W06	4475
26 Jun	2220	2223	2228		SF	S12W10	4475
27 Jun	0532	0534	0540		SF	S11W09	4475
27 Jun	0540	0541	0548		SF	S04E43	4478
27 Jun	0622	0626	0628	C2.3	SF	S04E43	4478
27 Jun	0638	0638	0640		SF	S04E42	4478
27 Jun	0648	0654	0717	C2.1	SF	S11W14	4475
27 Jun	0717	0727	0744	C2.2	SF	S04E40	4478
27 Jun	0908	0923	0941	C3.9	SF	S10W18	4473
27 Jun	0952	0955	1005		SF	N15E24	4479
27 Jun	1046	1053	1055	C3.1			4475
27 Jun	1146	1147	1154		SF	S06E43	4478
27 Jun	1212	1219	1240	C2.9	SF	S06W15	4475
27 Jun	1218	1218	1236		SF	N15E23	4479
27 Jun	1350	1351	1354		SF	S06E42	4478
27 Jun	1413	1417	1429		SF	N17E22	4479
27 Jun	1438	1450	1457		SF	N17E22	4479
27 Jun	1508	1514	1525	C1.9	SF	N16E23	4479
27 Jun	1537	1538	1540		SF	S06W16	4475



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
27 Jun	1558	1600	1602		SF	S08W17	4475
27 Jun	1712	1712	1714		SF	S09E31	4478
27 Jun	1746	1750	1753		SF	N16E21	4479
27 Jun	1754	1758	1805		SF	N16E21	4479
27 Jun	1835	1835	1838		SF	S12W20	4475
27 Jun	1839	1842	1846		SF	S11W22	4475
27 Jun	1853	1900	1906		SF	S11W22	4475
27 Jun	1907	1908	1911		SF	S12W21	4475
27 Jun	2053	2102	2106	C7.4	SN	S05W20	4475
27 Jun	2106	2111	2113	C7.4			4475
28 Jun	0144	0155	0200	C4.1			4475
28 Jun	B0453	0455	0503		SF	S11W25	4475
28 Jun	0524	0525	0526		SF	S11W25	4475
28 Jun	0646	0654	0703	C2.4			4475
28 Jun	0703	0707	0709	C2.2			4475
28 Jun	0824	0824	0831		SF	N15E13	4479
28 Jun	0844	0845	0859		SF	N17E11	4479
28 Jun	1358	1401	1414		SF	S06E26	4478
28 Jun	1501	1509	1515	C2.7	SF	S05E28	4478
28 Jun	1521	1522	1534		SF	S08W28	4475
28 Jun	1808	1821	1826		SF	S16E01	4480
28 Jun	2038	2046	2050	C2.8			4479
28 Jun	2050	2059	2103	C3.3			4477
28 Jun	2117	2144	2155	C9.5	1F	S06W33	4475
28 Jun	2152	2203	2222	C8.7	1F	N17E09	4479



Region Summary

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 4468															
14 Jun	N10E39	243	20	3	Cro	5	B								
15 Jun	N11E25	244	10	4	Bxo	3	B								
16 Jun	N11E11	245	plage												
17 Jun	N11W03	246	plage												
18 Jun	N11W17	246	plage												
19 Jun	N11W31	247	plage												
20 Jun	N11W45	248	plage												
21 Jun	N11W58	248	plage									1			
22 Jun	N11W72	248	plage												
23 Jun	N11W86	249	plage												
								0	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 246

Region 4469

15 Jun	S16E20	249	10	5	Bxo	3	B								
16 Jun	S16E08	248	20	5	Bxi	10	B								
17 Jun	S16W06	248	10	4	Bxo	4	B								
18 Jun	S16W22	251	plage												
19 Jun	S16W36	252	plage												
20 Jun	S16W50	253	plage												
21 Jun	S16W64	254	plage												
22 Jun	S16W78	254	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 248



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 4470															
16 Jun	N07E68	188	40	6	Dro	4	B	1							
17 Jun	N07E54	187	80	8	Dao	8	B								
18 Jun	N07E40	186	70	8	Dao	6	B	2			2				
19 Jun	N06E28	188	90	8	Dao	5	B	1				1			
20 Jun	N08E14	189	90	8	Dao	4	B	1			1				
21 Jun	N07E02	188	20	7	Dro	5	B								
22 Jun	N07W12	188	15	7	Dro	6	B								
23 Jun	N07W24	187	5	6	Bxo	4	B								
24 Jun	N07W38	188	10	3	Bxo	3	B								
25 Jun	N08W52	190	10	5	Bxo	2	B								
26 Jun	N08W64	187	plage												
27 Jun	N08W78	188	plage												
								5	0	0	3	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 188

Region 4471

18 Jun	N18E11	218	30	3	Dao	5	B								
19 Jun	N18W02	218	20	4	Cro	4	B								
20 Jun	N19W17	220	10	1	Axx	1	A								
21 Jun	N17W30	219	plage												
22 Jun	N17W44	220	plage												
23 Jun	N17W58	221	plage												
24 Jun	N17W72	221	plage												
25 Jun	N17W86	222	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 218



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 4472

18 Jun	S13E82	148	plage								1				
19 Jun	S13E68	148	80	3	Hax	2	A								
20 Jun	S14E54	149	100	4	Dao	7	B			1					
21 Jun	S14E42	148	60	3	Dao	6	B								
22 Jun	S14E28	148	60	5	Dao	9	B								
23 Jun	S14E15	148	25	4	Cri	8	B								
24 Jun	S15E02	147	5	4	Axx	8	A								
25 Jun	S15W12	148	plage												
26 Jun	S15W26	149	plage												
27 Jun	S15W40	150	plage												
28 Jun	S15W54	151	plage												
								1	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 147

Region 4473

20 Jun	S08E69	133	270	11	Eko	9	B	2	1		1				
21 Jun	S08E56	134	200	11	Eai	12	BG	4	2		2		1		
22 Jun	S09E40	137	70	3	Dai	7	BG								
23 Jun	S09E26	137	30	3	Hrx	4	A								
24 Jun	S09E13	137	10	3	Bxo	4	B	1			1				
25 Jun	S07W04	140	10	2	Bxo	2	B				1				
26 Jun	S07W19	142	plage												
27 Jun	S07W34	144	plage					1			1				
28 Jun	S07W49	146	plage												
								8	3	0	6	0	1	0	0

Still on Disk.

Absolute heliographic longitude: 140

Region 4474

22 Jun	N03W75	251	40	4	Cao	4	BG								
23 Jun	N03W89	252	20	1	Hsx	1	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 251



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 4475															
22 Jun	S09E51	126	130	9	Cao	5	BG								
23 Jun	S09E38	125	140	9	Cso	6	BG				2				
24 Jun	S09E21	128	200	5	Cai	6	BG	6			6	1			
25 Jun	S09E07	129	250	12	Eki	16	BG	2			1				
26 Jun	S09W06	129	220	9	Dai	12	BG	2			3				
27 Jun	S10W19	129	150	6	Dai	17	BG	5			10				
28 Jun	S10W33	130	110	7	Dai	17	BG	4			3	1			
								19	0	0	25	2	0	0	0

Still on Disk.

Absolute heliographic longitude: 129

Region 4476															
23 Jun	N08E11	152	45	5	Dai	9	B								
24 Jun	N08W03	153	50	5	Dao	8	B								
25 Jun	N08W16	153	30	5	Dro	6	B								
26 Jun	N08W29	152	20	5	Cso	6	B								
27 Jun	N08W44	154	10	1	Axx	2	A								
28 Jun	N08W58	155	10	1	Axx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 153

Region 4477															
23 Jun	S13E68	95	10	8	Bxo	4	B	1							
24 Jun	S13E56	94	10	9	Bxo	6	B								
25 Jun	S13E41	96	30	8	Cri	20	B	1			1				
26 Jun	S13E27	96	20	7	Cro	8	B				2				
27 Jun	S15E13	97	10	6	Bxo	7	B								
28 Jun	S14W00	97	10	6	Bxo	6	B	1							
								3	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 97



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 4478															
23 Jun	S06E90	75	plage					1							
24 Jun	S06E75	75	350	17	Fkc	9	BG	4							
25 Jun	S06E63	74	825	19	Fhc	16	BGD	6			3	1			
26 Jun	S06E46	76	920	19	Fkc	19	BGD	2			4				
27 Jun	S06E33	77	1190	18	Fkc	24	BGD	2			7				
28 Jun	S06E20	77	1140	17	Fkc	27	BGD	1			2				
								16	0	0	16	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 77

Region 4479															
24 Jun	N14E58	90	5	3	Axx	2	A	1							
25 Jun	N16E45	91	20	4	Cro	4	B				2				
26 Jun	N16E31	92	30	4	Dao	4	B	1			1				
27 Jun	N15E16	94	90	4	Dai	5	B	1			7				
28 Jun	N16E02	95	160	7	Dai	11	B	2			2	1			
								5	0	0	12	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 95

Region 4480															
27 Jun	S18E07	103	30	5	Dao	4	B								
28 Jun	S18W05	102	70	6	Dao	9	B				1				
								0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 102



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

<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

