Space Weather Highlights
08 May - 14 May 2023

SWPC PRF 2489
15 May 2023

Solar activity reached high levels on 09 May and moderate levels on 08, 10, and 11 May. In total, nine M-class flares were observed from three sunspot regions this period. Region 3296 (N15, L=140, class/area=Ekc/290 on 10 May) was the most active sunspot region and produced two R2 (Moderate) events and four R1 (Minor) events. Region 3294 (S07, L=125, class/area=Cso/130 on 11 May) produced two R1 events and Region 3293 (N13, L=149, class/area=Dhc/290 on 03 May) produced a single R1 event. Two solar energetic particle (SEP) events associated with this weeks activity were observed as were multiple Earth-directed CMEs; see below for more information.

The greater than 10 MeV proton flux reached S1 (Minor) storm levels in two distinct SEP events. The first SEP event followed a pair of long-duration M1 flares (at 07/2234 UTC and 07/2323 UTC) from Region 3296 and reached S1 levels at 08/1240 UTC, reached a peak of 38 pfu at 09/0150 UTC, and ended at 09/1235 UTC. The second SEP event followed an M4 flare at 09/1858 UTC from Region 3296 and reached S1 levels at 09/2335 UTC, reached a peak of 83 pfu at 10/1250 UTC, and ended at 11/0405 UTC.

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

Geomagnetic field activity reached G1 (Minor) levels on 08 May due to the continued (at the time) influence of CMEs (from 05 May) that arrived on 07 May. G1 (Minor) storms were observed again on 09-10 May due to the arrival of CMEs that resulted from a pair of long-duration M1 flares (at 07/2234 UTC and 07/2323 UTC) from Region 3296. G1 (Minor) storms were observed on 12 May due to the arrival of a CME that resulted from an M4 flare at 09/1858 UTC from Region 3296.

Space Weather Outlook
15 May - 10 June 2023

Solar activity is expected to be low to 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 23 May-02 Jun, with normal to moderate levels expected for the remainder of the period.

Geomagnetic field activity is likely to reach active levels on 16 May due to the anticipated arrival of a CME from 12 May. G1 (Minor) storms are likely on 24 May, with active levels likely on 23, 25-26 May, due to recurrent negative polarity CH HSS influences. Active conditions are likely on 02 Jun in response to recurrent positive polarity CH HSS influences. Quiet and quiet to unsettled conditions are expected to prevail throughout the remainder 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
08 May	172	103	1040	C1.3	10	1	0	6	1	1	0	0
09 May	180	151	1180	C1.5	11	5	0	10	4	0	0	0
10 May	170	154	1060	C1.3	10	1	0	9	1	0	0	0
11 May	163	152	990	C1.1	8	2	0	7	3	0	0	0
12 May	149	134	820	C1.0	10	0	0	13	0	0	0	0
13 May	144	120	750	B9.9	9	0	0	0	0	0	0	0
14 May	140	109	380	B7.8	4	0	0	3	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
08 May	1.1e+08	8.3e+05	1.3e+06
09 May	2.9e+08	1.3e+06	1.0e+07
10 May	1.4e+08	3.0e+06	6.7e+06
11 May	9.0e+07	4.5e+05	1.5e+07
12 May	1.5e+07	1.9e+04	1.2e+07
13 May	1.2e+06	1.9e+04	6.8e+06
14 May	2.4e+05	2.0e+04	3.3e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
08 May	13	4-2-2-2-3-3-2-3	21	4-3-3-1-5-5-2-2	16	5-2-2-2-3-4-2-3
09 May	11	3-3-1-2-2-2-1-4	17	4-4-2-3-4-3-1-3	14	4-3-1-2-2-2-1-5
10 May	19	3-5-2-3-4-3-2-3	27	4-5-2-5-5-4-2-2	26	4-5-2-4-5-3-2-3
11 May	10	2-3-2-2-3-2-2-3	11	3-3-4-2-2-2-1-2	9	3-3-2-2-2-2-2-3
12 May	15	2-3-3-2-5-2-2-3	23	2-4-4-4-5-4-3-2	19	2-4-3-2-5-3-2-3
13 May	12	2-2-3-2-2-2-3-4	0	2-2-3-0-0-0-0-0	13	3-2-2-1-2-2-4-4
14 May	9	1-2-1-1-3-3-3-2	8	0-1-0-0-1-4-3-2	5	1-2-1-1-2-3-2-2

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
08 May 0221	ALERT: Geomagnetic K = 5	08/0218
08 May 0958	ALERT: Type II Radio Emission	08/0826
08 May 1127	WARNING: Proton 10MeV Integral Flux > 10pfu	08/1127 - 2359
08 May 1257	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	08/1240
08 May 1406	WARNING: Geomagnetic K = 4	08/1406 - 2100
08 May 1800	ALERT: Geomagnetic K = 4	08/1759
08 May 2000	WATCH: Geomagnetic Storm Category G1 predicted	
08 May 2017	EXTENDED WARNING: Geomagnetic K = 4	08/1406 - 09/0300
08 May 2344	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	08/1127 - 09/2359
09 May 0044	ALERT: Type II Radio Emission	09/0017
09 May 0249	EXTENDED WARNING: Geomagnetic K = 4	08/1406 - 09/1500
09 May 0356	ALERT: X-ray Flux exceeded M5	09/0353
09 May 0410	SUMMARY: X-ray Event exceeded M5	09/0342 - 0405
09 May 0420	SUMMARY: 10cm Radio Burst	09/0348 - 0354
09 May 0435	ALERT: Type II Radio Emission	09/0353
09 May 0653	ALERT: Type IV Radio Emission	09/0622
09 May 0710	SUMMARY: 10cm Radio Burst	09/0610 - 0625
09 May 1611	CANCELLATION: Proton 10MeV Integral Flux > 10pfu	
09 May 1616	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	08/1240 - 09/1235
09 May 1921	ALERT: Type IV Radio Emission	09/1837
09 May 1932	ALERT: Type II Radio Emission	09/1840
09 May 1946	SUMMARY: 10cm Radio Burst	09/1834 - 1921
09 May 1954	WATCH: Geomagnetic Storm Category G2 predicted	
09 May 2055	ALERT: X-ray Flux exceeded M5	09/2051
09 May 2107	SUMMARY: 10cm Radio Burst	09/2045 - 2048
09 May 2227	WARNING: Geomagnetic Sudden Impulse expected	09/2230 - 2330
09 May 2230	WARNING: Geomagnetic K = 4	09/2230 - 10/0300
09 May 2241	EXTENDED WARNING: Geomagnetic K = 4	09/2230 - 10/0900

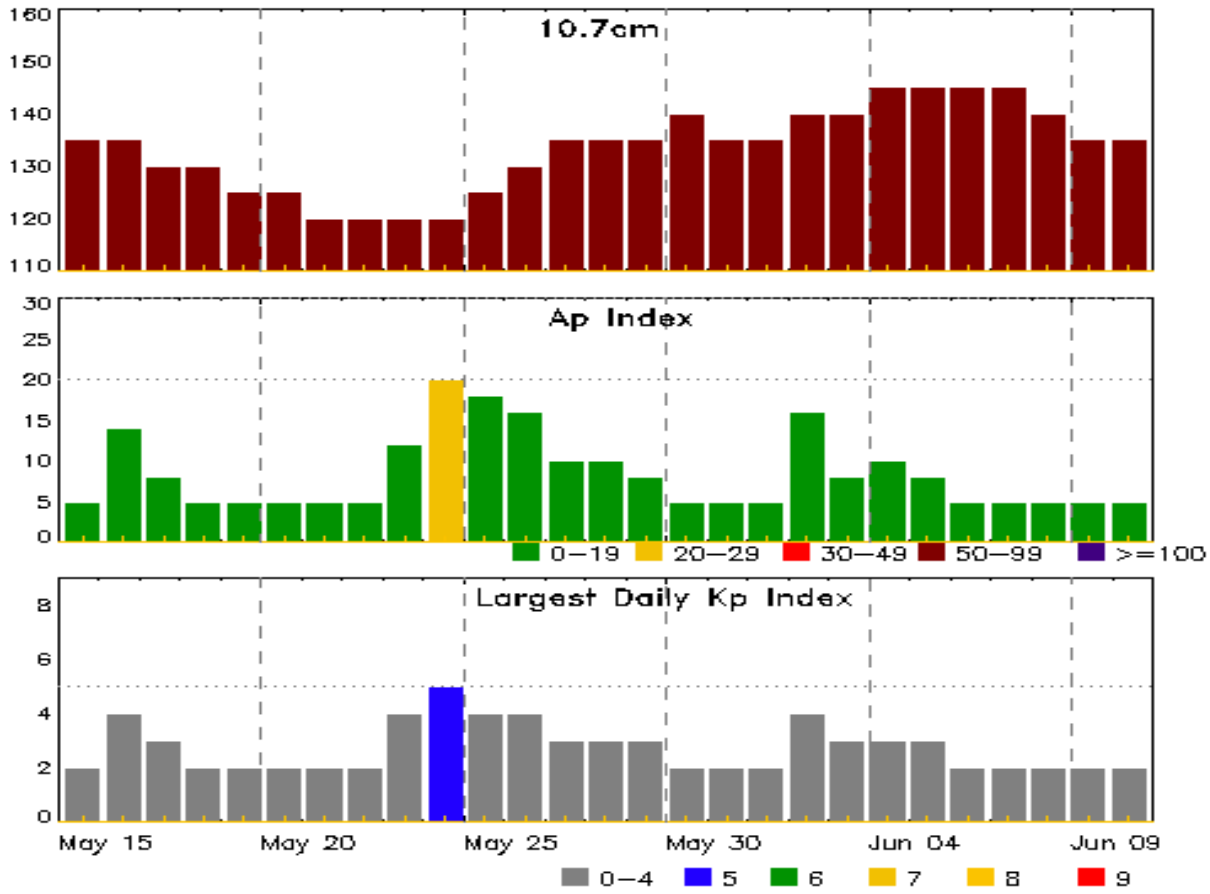
Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
09 May 2241	WARNING: Geomagnetic K = 5	09/2240 - 10/0300
09 May 2256	ALERT: Geomagnetic K = 4	09/2256
09 May 2301	WARNING: Proton 10MeV Integral Flux > 10pfu	09/2300 - 10/1200
09 May 2310	SUMMARY: Geomagnetic Sudden Impulse	09/2248
09 May 2322	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	09/2322
10 May 0256	EXTENDED WARNING: Geomagnetic K = 4	09/2230 - 10/1500
10 May 0256	EXTENDED WARNING: Geomagnetic K = 5	09/2240 - 10/0900
10 May 0325	ALERT: Geomagnetic K = 5	10/0317
10 May 0331	WARNING: Geomagnetic K = 6	10/0331 - 0900
10 May 0829	EXTENDED WARNING: Geomagnetic K = 5	09/2240 - 10/1800
10 May 0830	EXTENDED WARNING: Geomagnetic K = 4	09/2230 - 10/2100
10 May 0847	EXTENDED WARNING: Geomagnetic K = 6	10/0331 - 1500
10 May 1106	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	09/2300 - 10/2359
10 May 1324	ALERT: Geomagnetic K = 5	10/1323
10 May 1644	WATCH: Geomagnetic Storm Category G3 predicted	
10 May 2052	EXTENDED WARNING: Geomagnetic K = 4	09/2230 - 11/1200
10 May 2352	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	09/2300 - 11/1200
11 May 0138	ALERT: Type II Radio Emission	11/0106
11 May 0144	ALERT: Type IV Radio Emission	11/0105
11 May 0910	ALERT: Type II Radio Emission	11/0857
11 May 1141	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	09/2300 - 11/2359
11 May 2022	ALERT: Type II Radio Emission	11/1832
11 May 2041	ALERT: Type IV Radio Emission	11/1844
11 May 2044	SUMMARY: 10cm Radio Burst	11/1824 - 1828
12 May 0022	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	09/2335 - 11/0405
12 May 0220	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	09/2335 - 11/0405
12 May 0549	WARNING: Geomagnetic K = 4	12/0545 - 1800

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
12 May 0601	ALERT: Geomagnetic K = 4	12/0559
12 May 0609	WARNING: Geomagnetic Sudden Impulse expected	12/0620 - 0720
12 May 0640	SUMMARY: Geomagnetic Sudden Impulse	12/0635
12 May 1442	WARNING: Geomagnetic K = 5	12/1440 - 2359
12 May 1445	ALERT: Geomagnetic K = 5	12/1445
12 May 1451	EXTENDED WARNING: Geomagnetic K = 4	12/0545 - 13/0600
13 May 1920	WARNING: Geomagnetic K = 4	13/1920 - 2359
13 May 2055	ALERT: Geomagnetic K = 4	13/2055
13 May 2350	EXTENDED WARNING: Geomagnetic K = 4	13/1920 - 14/0600

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
15 May	135	5	2	29 May	135	8	3
16	135	14	4	30	140	5	2
17	130	8	3	31	135	5	2
18	130	5	2	01 Jun	135	5	2
19	125	5	2	02	140	16	4
20	125	5	2	03	140	8	3
21	120	5	2	04	145	10	3
22	120	5	2	05	145	8	3
23	120	12	4	06	145	5	2
24	120	20	5	07	145	5	2
25	125	18	4	08	140	5	2
26	130	16	4	09	135	5	2
27	135	10	3	10	135	5	2
28	135	10	3				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
08 May	2011	2025	2033	M2.3	0.016	2B	N13W18	3296	1300			
09 May	0342	0354	0405	M6.5	0.044	1N	N12W13	3296	740	360	2	
09 May	0555	0613	0628	M1.2	0.013			3296	1100	210		2
09 May	1000	1020	1033	M1.3	0.016			3296				
09 May	1820	1858	1924	M4.2	0.100	1B	N13W31	3296		1300	2	3
09 May	2032	2052	2104	M5.0	0.055	1N	N14W35	3296	200	180		
10 May	1411	1421	1433	M2.2	0.018	SF	N13W51	3293				
11 May	0847	0901	0911	M2.1	0.018	1N	S06W41	3294	5000	100	2	
11 May	1813	1829	1838	M1.8	0.014	1N	S05W44	3294	330	180	2	

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
08 May	B0000	0000	0031		SF	N09E02	3297
08 May	0216	0223	0227	C7.9			3296
08 May	0640	0646	0655	C3.6			
08 May	0830	0838	0843	C3.6	SN	N12W13	3296
08 May	0950	1000	1006	C4.6			3296
08 May	1056	1105	1111	C2.2			3296
08 May	1228	1235	1239	C1.7			
08 May	1313	1322	1354		SF	N09E04	3297
08 May	1410	1421	1425	C9.6	1B	N13W14	3296
08 May	1502	1515	1523	C2.1			
08 May	1559	1610	1624	C3.0	SF	N13W18	3296
08 May	2011	2025	2033	M2.3	2B	N13W18	3296
08 May	2149	2201	2216		SF	N13W21	3296
08 May	2231	2238	2242	C2.6	SF	N13W18	3296
09 May	0005	0033	0057	C2.7			3299
09 May	0053	0054	0104		SF	N09W02	3297
09 May	0144	0150	0152	C2.4			3296
09 May	0152	0219	0233	C3.5			
09 May	0240	0243	0252	C5.6	SF	N10E14	3296
09 May	0339	0351	0423	M6.5	1N	N12W13	3296
09 May	0342	0349	0401		SF	N14E34	3293
09 May	0426	0426	0428		SF	S10E70	

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
09 May	0555	0613	0628	M1.2			3296
09 May	0757	0757	0759		SF	N13W27	3296
09 May	0758	0814	0828	C5.2	SF	N14E34	3293
09 May	0918	0928	0940	C4.3			3296
09 May	1000	1020	1033	M1.3			3296
09 May	1109	1118	1123	C6.9			3296
09 May	1222	1231	1243	C5.7			3299
09 May	1315	1326	1425		SF	N07W11	3297
09 May	1329	1331	1356		SF	N13W29	3296
09 May	1358	1405	1409	C6.4	1B	N13W31	3296
09 May	1423	1442	1456	C7.3	SF	N12W36	3293
09 May	1743	1748	1758	C2.9	SN	N13W31	3296
09 May	1820	1858	1924	M4.2	1B	N13W31	3296
09 May	2032	2052	2104	M5.0	1N	N14W35	3296
10 May	0131	0142	0147	C3.8			
10 May	0310	0316	0322	C2.1			
10 May	0402	0412	0415	C4.0			3296
10 May	0415	0420	0424	C3.9			
10 May	0523	0659	0728		SF	N15E02	3296
10 May	0533	0533	0545		SF	N10E19	3297
10 May	0637	0640	0649		SF	N10E19	3297
10 May	1319	1419	1556		1B	N14W44	3296
10 May	1411	1421	1433	M2.2	SF	N13W51	3293
10 May	1454	1500	1507	C5.7			3296
10 May	1513	1516	1520		SF	N12W28	3297
10 May	1558	1604	1611	C2.6	SF	N14W44	3296
10 May	1804	1814	1825		SF	N15W47	3296
10 May	1836	1842	1847	C2.9	SF	N09W58	3293
10 May	1922	1935	1946	C5.8			
10 May	1953	1959	2006	C4.3			3296
10 May	2207	2216	2225	C4.5	SF	N08W61	3293
11 May	0020	0030	0046	C2.9			3293
11 May	0102	0109	0117	C4.1			3294
11 May	0251	0258	0306	C2.5			3296
11 May	0425	0439	0449	C3.2	SF	N16W55	3296
11 May	B0645	U0649	A0656		SF	N17W50	3296
11 May	B0804	U0804	A0824		SF	N22E33	
11 May	0847	0901	0911	M2.1	1N	S06W41	3294

Flare List

Date	Time			X-ray	Optical		
	Begin	Max	End	Class	Imp/ Brtns	Location Lat CMD	Rgn #
11 May	B0923	U0923	A0932		SF	N08W67	3293
11 May	1259	1306	1315	C3.0	SF	N13W54	3296
11 May	1353	1402	1410	C6.2	1F	N14W53	3296
11 May	1813	1829	1838	M1.8	1N	S05W44	3294
11 May	1953	1959	2008	C1.8	SF	N20W57	3296
11 May	2010	2018	2027	C3.4	SF	N13W61	3296
12 May	0616	0617	0625		SF	N12W67	3296
12 May	0641	0641	0646		SF	N10W45	3297
12 May	0653	0656	0700		SF	N14W64	3296
12 May	0810	0821	0831	C2.0	SF	N12W69	3296
12 May	0944	0946	0949		SF	N14W69	3296
12 May	1133	1139	1145	C4.6	SN	N10W49	3297
12 May	1231	1302	1317	C4.4	SF	N14W67	3296
12 May	1317	1336	1345	C5.6			3296
12 May	1403	1408	1412	C4.9	SF	N12W80	3293
12 May	1455	1500	1508		SF	N16W68	3296
12 May	1519	1529	1536	C2.5	SF	N13W78	3296
12 May	1605	1605	1619		SF	N21E14	3304
12 May	1622	1624	1636		SF	N09W55	3297
12 May	1657	1659	1718		SF	N21E14	3304
12 May	1904	1910	1914	C1.7			3302
12 May	2034	2042	2050	C1.3			3304
12 May	2239	2250	2300	C1.7			3301
12 May	2353	0045	0121	C9.0			3296
13 May	1016	1027	1031	C4.9			3296
13 May	1341	1351	1402	C2.1			3305
13 May	1448	1453	1457	C2.0			3297
13 May	1628	1635	1644	C1.6			3296
13 May	1835	1847	1900	C4.3			3296
13 May	2047	2055	2100	C4.4			3305
13 May	2126	2131	2139	C2.3			3297
13 May	2223	2233	2246	C2.4			3301
13 May	2336	2343	2350	C3.4			3296
14 May	0354	0406	0418	C3.5	SF	N11E33	3297
14 May	0435	0444	0454	C3.6	SF	N08E28	3305
14 May	0907	0917	0925	C7.0			3296
14 May	1143	1150	1157	C1.4			3296
14 May	1914	1918	1919		SF	S19W31	3306

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
			Region 3289												
25 Apr	N20E67	222	90	1	Hax	2	A								
26 Apr	N20E58	219	150	6	Dso	3	B	1			7				
27 Apr	N20E51	216	180	3	Dao	5	B	2			3				
28 Apr	N20E37	213	180	4	Dsi	10	B	1				1			
29 Apr	N20E24	213	200	5	Dai	7	B	1			1				
30 Apr	N20E10	213	220	5	Dai	8	B								
01 May	N20W03	213	200	5	Dai	8	B	1			1				
02 May	N20W14	214	150	6	Dsi	14	B	1							
03 May	N20W28	211	30	5	Cro	7	B								
04 May	N20W41	212	10	4	Bxo	4	B								
05 May	N20W55	212	plage												
06 May	N20W68	212	plage												
07 May	N20W81	212	plage												
								7	0	0	12	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 213

			Region 3292												
27 Apr	N14E62	201	10	1	Hrx	1	A								
28 Apr	N15E43	204	20	1	Hrx	1	A								
29 Apr	N14E29	205	20	1	Hrx	1	A								
30 Apr	N14E16	207	plage												
01 May	N14E02	208	plage												
02 May	N14W12	209	plage												
03 May	N14W26	210	plage												
04 May	N14W40	211	plage												
05 May	N14W54	211	plage												
06 May	N14W67	211	plage												
07 May	N14W80	211	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 208

Region Summary - continued

	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
			Region 3293												
30 Apr	N13E82	141	30	3	Cao	2	B	2	1						
01 May	N12E63	147	100	9	Dac	5	BD	11			2				
02 May	N13E51	149	250	10	Dhi	9	BD	1							
03 May	N13E35	149	290	9	Dhc	12	BD	3	4		2	2	1		
04 May	N13E21	150	240	10	Dac	14	BD	3			1				
05 May	N13E07	150	110	10	Dai	6	B								
06 May	N13W06	150	130	10	Dai	10	B								
07 May	N13W19	150	130	10	Dai	10	B	3							
08 May	N13W33	151	110	7	Cai	10	B								
09 May	N09W48	154	20	5	Cro	8	B	2			3				
10 May	N10W60	152	10	4	Bxo	4	B	2	1		3				
11 May	N10W74	152	10	1	Axx	1	A	1			1				
12 May	N10W87	152	10	1	Axx	1	A	1			1				
								29	6	0	13	2	1	0	0

Crossed West Limb.
Absolute heliographic longitude: 150

			Region 3294												
02 May	S08E73	127	100	2	Hsx	1	A								
03 May	S08E59	125	120	2	Hsx	1	A								
04 May	S08E44	127	120	2	Hsx	1	A								
05 May	S08E30	127	120	2	Hsx	1	A								
06 May	S08E17	127	120	4	Hsx	2	A								
07 May	S08E04	127	120	4	Hsx	2	A								
08 May	S08W09	127	130	4	Hsx	1	A								
09 May	S08W21	125	130	2	Hsx	1	A								
10 May	S07W33	127	130	5	Cso	6	B								
11 May	S07W47	125	130	5	Cso	6	B	1	2			2			
12 May	S07W60	125	100	3	Cso	3	B								
13 May	S07W73	125	100	3	Hsx	2	A								
14 May	S07W87	125	10	1	Axx	1	A								
								1	2	0	0	2	0	0	0

Still on Disk.
Absolute heliographic longitude: 127

Region Summary - continued

	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
		Region 3295													
02 May	N15W21	221	10	1	Axx	2	A								
03 May	N15W34	218	10	3	Bxo	3	B								
04 May	N16W47	216	10	4	Bxo	3	B								
05 May	N16W61	218	plage												
06 May	N16W74	218	plage												
07 May	N16W87	218	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 221

		Region 3296													
02 May	N15E64	133	30	3	Cso	5	B								
03 May	N16E49	135	170	4	Dai	12	B				10				
04 May	N16E34	135	300	5	Dki	11	B		1		7				
05 May	N16E20	137	280	5	Dki	11	B		2			1			
06 May	N16E07	137	280	15	Ekc	12	B	2			1				
07 May	N16W06	137	280	15	Ekc	12	B	1	2		1				
08 May	N16W20	138	280	13	Ekc	16	BG	7	1		4	1	1		
09 May	N15W37	141	280	12	Ekc	16	BGD	6	5		3	4			
10 May	N15W49	140	290	11	Ekc	28	BG	4			3	1			
11 May	N15W63	141	260	11	Ekc	16	BG	6			5	1			
12 May	N15W76	141	210	11	Eac	12	BG	5			7				
13 May	N15W89	141	130	6	Dai	8	B	4							
								35	11	0	41	8	1	0	0

Crossed West Limb.
Absolute heliographic longitude: 137

Region Summary - continued

	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
			Region 3297												
02 May	N08E76	124	180	3	Hax	1	A	2							
03 May	N08E64	120	400	10	Dki	20	B	2							
04 May	N08E50	119	500	11	Eki	18	B								
05 May	N08E36	121	460	11	Ekc	18	B	1			2				
06 May	N08E23	121	460	11	Ekc	18	B	4			2				
07 May	N08E10	121	460	12	Ekc	18	B	1			1				
08 May	N08W04	122	510	13	Ekc	21	BG				2				
09 May	N10W15	119	500	12	Eki	20	BG				2				
10 May	N10W29	120	400	12	Eki	20	BG				3				
11 May	N10W43	121	320	12	Eki	14	BG								
12 May	N09W56	121	260	6	Cko	8	B	1			3				
13 May	N09W69	121	260	6	Cko	5	B	2							
14 May	N09W83	121	40	2	Cao	2	B	1			1				
								14	0	0	16	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 122

			Region 3298												
04 May	S16E32	137	10	3	Bxo	2	B								
05 May	S16E18	139	plage												
06 May	S16E05	139	plage												
07 May	S16W08	139	plage												
08 May	S16W22	140	plage												
09 May	S16W36	140	plage												
10 May	S16W50	141	plage												
11 May	S16W64	142	plage												
12 May	S16W77	142	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 139

Region Summary - continued

	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
			Region 3299												
04 May	S06E69	101	30	4	Dao	6	B				1				
05 May	S06E55	102	50	5	Dao	4	B								
06 May	S06E42	102	60	7	Cao	7	B	1			1				
07 May	S06E29	102	60	7	Cao	7	B								
08 May	S07E15	103	10	6	Bxo	5	B								
09 May	S08E01	103	10	2	Bxo	5	B	2							
10 May	S08W13	104	plage												
11 May	S08W27	105	plage												
12 May	S08W40	105	plage												
13 May	S08W53	105	plage												
14 May	S08W67	105	plage												
								3	0	0	2	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 103

			Region 3300												
09 May	N10W01	105	30	5	Cro	5	B								
10 May	N10W13	104	50	5	Dao	6	B								
11 May	N10W27	105	50	4	Dao	4	B								
12 May	N09W40	105	10	2	Axx	2	A								
13 May	N09W53	105	10	2	Axx	2	A								
14 May	N09W67	105	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 105

			Region 3301												
09 May	N11E67	37	120	1	Hsx	2	A								
10 May	N11E54	37	120	1	Hsx	2	A								
11 May	N12E40	38	120	3	Hsx	3	A								
12 May	N14E27	38	120	3	Hax	3	A	1							
13 May	N14E14	38	120	3	Hax	3	A	1							
14 May	N14W00	38	120	3	Hax	4	A								
								2	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 38

Region Summary - continued

	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
			Region 3302												
09 May	N18E72	32	60	1	Hsx	1	A								
10 May	N18E59	32	30	1	Cro	4	B								
11 May	N18E45	33	80	5	Cso	6	B								
12 May	N19E32	33	70	5	Cao	5	B	1							
13 May	N19E19	33	70	5	Cso	5	B								
14 May	N19E05	33	70	5	Cso	5	B								
								1	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 33

			Region 3303												
09 May	S10E54	50	30	2	Cro	3	B								
10 May	S10E41	50	30	2	Cro	4	B								
11 May	S10E27	51	10	5	Bxo	4	B								
12 May	S10E14	51	plage												
13 May	S10E01	51	plage												
14 May	S10W13	51	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 51

			Region 3304												
11 May	N22E21	57	10	5	Bxo	8	B								
12 May	N22E08	57	10	8	Bxo	7	B	1			2				
13 May	N22W05	57	30	8	Cro	7	B								
14 May	N22W19	57	30	8	Cro	8	B								
								1	0	0	2	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 57

			Region 3305												
12 May	N10E38	27	30	7	Cao	3	B								
13 May	N10E25	27	30	7	Cro	8	B	2							
14 May	N10E11	27	70	7	Dai	14	B	1			1				
								3	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 27

Region Summary - continued

	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
		Region 3306													
14 May	S18W36	74	40	3	Cao	5	B				1				
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 74

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

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