Space Weather Highlights **SWPC PRF 2534**
18 March - 24 March 2024 **25 March 2024**

Solar activity during the week reached high levels. The largest flare was an X1.1/ 2F at 23/0133 UTC. Region 3614 (N17, L=224, Dso-B/210 on 23 Mar) produced the flare which appeared along a filanment channel to the north of the spot group. A 240 SFU 10cm radio burst and Type II sweep (791 km/s) were observed. The flare was also accompanied by an EUV wave, dimming and post-eruptive arcades visible in GOES SUVI 195 Angstrom imagery. An asymmetric halo cme was first visible in SOHO/LASCO C2 imagery at 23/0048 UTC. Plane of sky measurments averaged from C2 and C3 suggested the CME was moving at 1492 km/s. While Region 3614 produced the largest flare of the week, Region 3615 (S13, L-215, Fkc-BGD/810 on 24 March) was the most prolific. It produced 27 M-class flares during the week, three of which were greater than M5 (R2). The largest was an M7.4, 3B on 20/0736 UTC.

The X1.1 and CME described above triggered a 10 MeV proton event. The 10 MeV flux began rising at 23/0400 UTC, crossed the 10 pfu (S1) threshold at 23/0815 UTC and the 100 pfu (S2) threshold at 23/1405 UTC. The event peaked on 23/1820 UTC at 956 pfu. A second peak of 687 pfu was observed at 24/1230 UTC as the CME described earlier approached.

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

Four distinct geomagnetic storms ocurred during the week. The first was associated with a CME arrival at 21/0225 UTC. Bz dipped southward to -12 nt and, and a couple of periods of prolonged southward Bz led to three synoptic periods of minor (G1) geomagnetic storm conditions between 21/1200-2100 UTC. The second even began on 22/2320 UTC Bz shifted southward around 23/0100 UTC and remained there for about 7 hours. This gave rise to two periods of minor (G1) geomagnetic storm conditions between 23/0300-0900 UTC. This activity was most likely a CIR, in advance of a negative polarity coronal hole, based on the density increase and rotation of the Phi angle .Solar wind speed and temperature began rising at the end of the storm activity, suggesting the high-speed stream had become geoeffective. The third storm began with the 23/1800 UTC UTC synoptic period (Kp=5-, G1), peaked during the 2100-0000 UTC synoptic period, reaching Kp=6- (G2), and returned to G1 conditions for the final period from 24/0000 UTC to 24/0300 UTC. The final storm began with the arrival of the CME described in the first paragraph. The interplanetary shock arrived at L1 at 24/1411 UTC and a sudden impulse (377 nT at Meanook Observatory) was detected at 24/1437 UTC. Solar wind speed jumped from the 500-550 km/s high speed stream values to approximately 800 km/s and remained elevated. Bz dipped southward to -27 nT at 24/1510 UTC. Kp ranged from 6+ (G2) moderate storm conditions to 8o (G4) sever conditions between 24/1200-2100 UTC. The severe synoptic period was from 24/1500-1800 UTC. The magnetic cloud appears to have arrived around 24/1826 UTC distinguised by a slow rotation of the Phi angle. Earth was still within the magnetic cloud at the end of this reporting period.

Space Weather Outlook
25 March - 20 April 2024

The threat of high solar activity remains throughout the coming week. Region 3615 (Fkc-BGD) is expected to remain on the visible disk until March 29th-30th. The departure of Region 3615 is anticipated to bring a period of low solar activity with a lingering chance for M flares. Regions 3614 and 3615 are expected to return on April 11th, increasing the potential for moderate to high activity.

Along with the high solar activity, there is a chance for another proton event at geosynchronous orbit, with the greatest threat from Region 3615 until it departs. The threat will decrease until the region returns on April 11th.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to high levels during the forecast period. The high levels are anticipated between March 28th-31st, and again from 6-8 April in the wake of coronal holes.

The beginning of the forecast period is expected to see strong (G3) geomagnetic conditions declining to mostly quiet conditions after March 26th. Levels will increase to potentially minor (G1) levels with the influence of a coronal hole high speed stream on April 3rd-5th. High speed streams on April 9th-11th and 19th-20th are expected to bring less than minor (G1) storm conditions. The threat of more CMEs and subsequent storms associated with Regions 3614 and 3615, or with new regions that emerge, remains.

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
18 March	177	127	580	C1.3	7	3	0	1	0	0	0	0
19 March	169	123	680	C1.3	15	2	0	11	1	0	0	0
20 March	176	120	730	C1.4	8	2	0	8	1	0	1	0
21 March	197	141	1060	C1.7	3	0	0	4	0	0	0	0
22 March	198	171	1080	C2.2	15	2	0	18	1	1	0	0
23 March	209	146	1280	C4.3	5	12	1	9	3	3	0	0
24 March	195	145	1230	C2.7	12	9	0	12	6	2	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
18 March	7.9e+06	9.2e+04	8.7e+06
19 March	3.7e+05	2.8e+04	1.0e+06
20 March	2.3e+05	2.1e+04	1.2e+06
21 March	1.2e+05	1.8e+04	9.8e+05
22 March	7.0e+04	1.8e+04	9.2e+05
23 March	1.2e+08	1.5e+07	1.4e+06
24 March	1.1e+09	2.6e+07	1.6e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
18 March	5	0-0-0-1-2-2-2-3	1	0-0-0-0-0-0-1-2	6	0-0-1-2-1-1-2-3
19 March	7	2-1-2-3-2-1-2-2	13	2-3-4-4-3-2-1-1	9	3-2-3-3-2-1-2-2
20 March	3	1-0-1-1-1-1-1-2	4	0-0-3-3-0-0-0-0	4	2-1-2-1-1-0-1-2
21 March	20	3-2-3-2-5-4-4-3	45	2-2-3-4-7-6-6-2	27	3-2-3-3-5-5-5-4
22 March	10	3-3-3-3-1-2-1-1	9	3-2-3-4-1-1-0-0	11	4-3-3-3-1-1-1-1
23 March	25	3-5-4-4-3-4-3-4	44	2-4-7-5-4-5-4-4	36	3-5-5-4-4-4-5-6
24 March	43	4-3-3-4-5-7-5-4	100	4-4-5-5-6-9-7-4	39	5-3-4-4-6-8-6-4

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
18 Mar 1011	WATCH: Geomagnetic Storm Category G1 predicted	
18 Mar 1918	ALERT: X-ray Flux exceeded M5	18/1916
18 Mar 1942	SUMMARY: X-ray Event exceeded M5	18/1902 - 1928
20 Mar 0735	ALERT: X-ray Flux exceeded M5	20/0733
20 Mar 0752	SUMMARY: X-ray Event exceeded M5	20/0723 - 0747
21 Mar 0304	WARNING: Geomagnetic K = 4	21/0304 - 1200
21 Mar 1128	EXTENDED WARNING: Geomagnetic K = 4	21/0304 - 2100
21 Mar 1340	ALERT: Geomagnetic K = 4	
21 Mar 1342	WARNING: Geomagnetic K = 5	21/1342 - 2100
21 Mar 1442	ALERT: Geomagnetic K = 5	
21 Mar 1803	ALERT: Geomagnetic K = 5	
21 Mar 2028	EXTENDED WARNING: Geomagnetic K = 4	21/0304 - 22/0900
21 Mar 2039	EXTENDED WARNING: Geomagnetic K = 5	21/1342 - 22/0600
21 Mar 2102	ALERT: Geomagnetic K = 5	
22 Mar 0855	EXTENDED WARNING: Geomagnetic K = 4	21/0304 - 22/1200
22 Mar 1155	EXTENDED WARNING: Geomagnetic K = 4	21/0304 - 22/1500
22 Mar 2013	WATCH: Geomagnetic Storm Category G1 predicted	
23 Mar 0119	ALERT: X-ray Flux exceeded M5	23/0116
23 Mar 0202	ALERT: Type II Radio Emission	23/0109
23 Mar 0231	SUMMARY: X-ray Event exceeded X1	23/0058 - 0222
23 Mar 0233	SUMMARY: 10cm Radio Burst	23/0107 - 0213
23 Mar 0414	WARNING: Geomagnetic K = 4	23/0415 - 1200
23 Mar 0512	ALERT: Geomagnetic K = 4	
23 Mar 0523	WARNING: Geomagnetic K = 5	23/0523 - 1200
23 Mar 0537	ALERT: Geomagnetic K = 5	
23 Mar 0617	WARNING: Proton 10MeV Integral Flux > 10pfu	23/0617 - 2100
23 Mar 0833	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	23/0815
23 Mar 0904	ALERT: Geomagnetic K = 5	
23 Mar 1155	EXTENDED WARNING: Geomagnetic K = 4	23/0415 - 1800

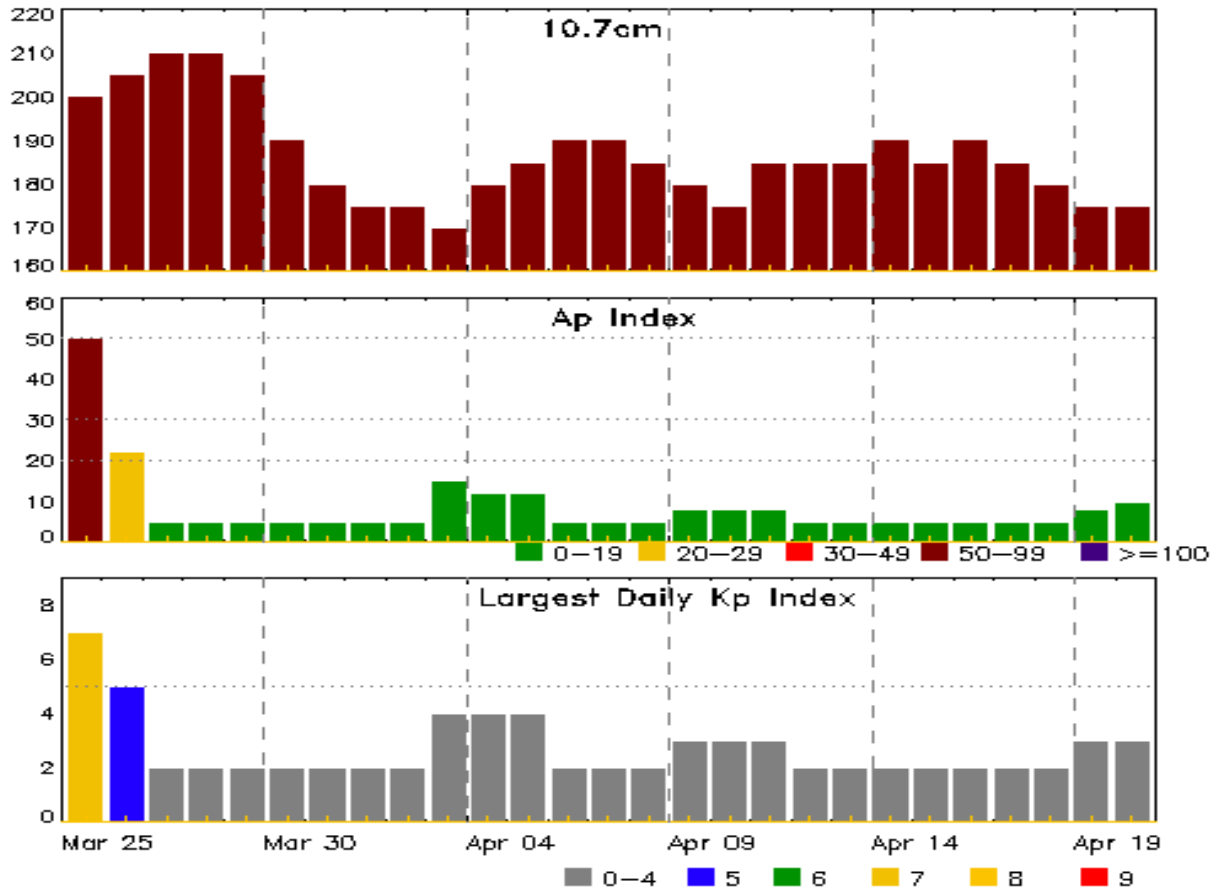
Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
23 Mar 1354	ALERT: X-ray Flux exceeded M5	23/1352
23 Mar 1430	ALERT: Proton Event 10MeV Integral Flux >= 100pfu	23/1405
23 Mar 1514	SUMMARY: X-ray Event exceeded M5	23/1351 - 1415
23 Mar 1754	EXTENDED WARNING: Geomagnetic K = 4	23/0415 - 24/0600
23 Mar 1840	WATCH: Geomagnetic Storm Category G3 predicted	
23 Mar 2037	WARNING: Geomagnetic K = 5	23/2036 - 24/0600
23 Mar 2043	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	23/0617 - 24/2359
23 Mar 2056	ALERT: Geomagnetic K = 5	
23 Mar 2144	ALERT: Geomagnetic K = 5	
23 Mar 2220	WARNING: Geomagnetic K = 6	23/2219 - 24/0600
23 Mar 2223	EXTENDED WARNING: Geomagnetic K = 4	23/0415 - 24/1200
23 Mar 2224	EXTENDED WARNING: Geomagnetic K = 5	23/2036 - 24/0900
23 Mar 2322	ALERT: Geomagnetic K = 6	
24 Mar 0301	ALERT: Geomagnetic K = 5	
24 Mar 0855	EXTENDED WARNING: Geomagnetic K = 4	23/0415 - 24/2100
24 Mar 0855	EXTENDED WARNING: Geomagnetic K = 5	23/2036 - 24/1500
24 Mar 1426	WARNING: Geomagnetic Sudden Impulse expected	24/1430 - 1500
24 Mar 1434	WARNING: Geomagnetic K = 6	24/1435 - 25/0900
24 Mar 1434	EXTENDED WARNING: Geomagnetic K = 5	23/2036 - 25/1200
24 Mar 1434	EXTENDED WARNING: Geomagnetic K = 4	23/0415 - 25/1500
24 Mar 1443	ALERT: Geomagnetic K = 5	
24 Mar 1445	ALERT: Geomagnetic K = 6	
24 Mar 1502	SUMMARY: Geomagnetic Sudden Impulse	24/1437
24 Mar 1517	ALERT: Geomagnetic K = 5	
24 Mar 1531	ALERT: Geomagnetic K = 6	
24 Mar 1543	WARNING: Geomagnetic K>= 7	24/1543 - 25/0600
24 Mar 1547	ALERT: Geomagnetic K = 7	
24 Mar 1629	ALERT: Geomagnetic K = 8	

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
24 Mar 1843	ALERT: Geomagnetic K = 5	
24 Mar 1907	ALERT: Geomagnetic K = 6	
24 Mar 2336	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	23/0617 - 25/1200

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
25 Mar	200	50	7	08 Apr	185	5	2
26	205	22	5	09	180	8	3
27	210	5	2	10	175	8	3
28	210	5	2	11	185	8	3
29	205	5	2	12	185	5	2
30	190	5	2	13	185	5	2
31	180	5	2	14	190	5	2
01 Apr	175	5	2	15	185	5	2
02	175	5	2	16	190	5	2
03	170	15	4	17	185	5	2
04	180	12	4	18	180	5	2
05	185	12	4	19	175	8	3
06	190	5	2	20	175	10	3
07	190	5	2				

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
18 Mar	0321	0332	0345	M2.7	0.002				3612				
18 Mar	0406	0414	0424	M1.0	0.009				3614				
18 Mar	1902	1919	1928	M6.7	0.049				3615				
19 Mar	0224	0229	0238	M1.4	0.007				3615				
19 Mar	2317	2327	2332	M2.1	0.009	SN	S16E57		3615				
20 Mar	0723	0736	0747	M7.4	0.055	3B	S10E51		3615		100		
20 Mar	2246	2255	2300	M1.9	0.003				3615		100		
22 Mar	2018	2032	2045	M4.2	0.042	2B	S13E22		3615				
22 Mar	2120	2122	2125	M1.1	0.004	SN	S14E18		3615				
23 Mar	0058	0133	0221	X1.1	0.350	2F	N27E08		3614	350	240	2	
23 Mar	0647	0655	0659	M1.1	0.006	SF	S13E04		3615				
23 Mar	0701	0709	0726	M2.4	0.036				3615				
23 Mar	0726	0738	0747	M3.1	0.035				3615				
23 Mar	1122	1129	1136	M1.0	0.008	SF	S15E10		3615				
23 Mar	1236	1247	1256	M1.3	0.011	1B	S15E09		3615				
23 Mar	1304	1311	1320	M1.1	0.003				3615				
23 Mar	1331	1337	1344	M1.9	0.005				3615				
23 Mar	1351	1402	1415	M5.3	0.064				3615				
23 Mar	1449	1453	1458	M1.5	0.007				3615				
23 Mar	1501	1513	1517	M3.8	0.013				3615				
23 Mar	1622	1651	1707	M2.8	0.056				3615				
23 Mar	2330	2349	0003	M2.4	0.030	2N	S12E01		3615				
24 Mar	0112	0125	0130	M1.4	0.005				3615				
24 Mar	0143	0154	0157	M2.1	0.008	2N	S14E00		3615				
24 Mar	0157	0205	0209	M2.3	0.007				3615				
24 Mar	0209	0218	0229	M2.7	0.033				3615				
24 Mar	0559	0606	0610	M2.2	0.006	1B	S14W03		3615				
24 Mar	0736	0751	0806	M1.3	0.021	2N	S14W03		3615				
24 Mar	1210	1218	1222	M1.1	0.004	1N	S14W05		3615				
24 Mar	1227	1234	1239	M1.0	0.007	SF	S13W07		3615				
24 Mar	1300	1313	1328	M1.2	0.002								

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
18 Mar	0049	0100	0102	C2.4			3615
18 Mar	0102	0107	0111	C2.4			3615
18 Mar	0321	0332	0345	M2.7			3612
18 Mar	0406	0414	0424	M1.0			3614
18 Mar	0441	0445	0451	C4.9			3615
18 Mar	1131	1136	1150	C2.4			3615
18 Mar	1351	1406	1416	C5.1			3614
18 Mar	1425	1428	1434	C4.2			3615
18 Mar	1506	1513	1517	C3.1	SF	S14E68	3615
18 Mar	1902	1919	1928	M6.7			3615
19 Mar	0109	0116	0122	C3.7			3615
19 Mar	0153	0159	0203	C3.5			3616
19 Mar	0224	0229	0238	M1.4			3615
19 Mar	0336	0347	0352	C5.2			3616
19 Mar	0506	0516	0523	C5.3			3615
19 Mar	0614	0618	0622	C4.2			3615
19 Mar	0721	0728	0739	C2.4			3615
19 Mar	0954	1001	1005	C2.8			3615
19 Mar	1130	1140	1148	C3.6	SF	S12E60	3615
19 Mar	1148	1153	1159	C3.1			3615
19 Mar	1232	U1251	A1320	C5.9	SF	S11E59	3615
19 Mar	B1446	U1514	1533		1F	S13E59	3615
19 Mar	1553	1559	1606	C2.7			3615
19 Mar	1622	1629	1633	C2.9			3615
19 Mar	1631	1638	1652		SF	S18W48	3607
19 Mar	1635	1635	1643		SF	S14E60	3615
19 Mar	1645	1649	1651		SF	S14E60	3615
19 Mar	1656	1656	1700		SF	S14E60	3615
19 Mar	1706	1725	1748	C7.1	SN	S14E59	3615
19 Mar	1940	1940	1943		SF	S14E58	3615
19 Mar	1948	1958	2005	C5.8			3615
19 Mar	2116	2129	2206	C5.9	SF	N05W44	3616
19 Mar	2317	2327	2332	M2.1	SN	S16E57	3615
19 Mar	2338	2338	2343		SF	N04W44	3616
20 Mar	0052	0112	0121	C6.1			
20 Mar	B0130	0131	0139		SF	S16E57	3615
20 Mar	0220	0225	0233	C4.0			3615
20 Mar	0631	0637	0643	C2.0			3615

Flare List

Date	Time			X-ray	Optical		
	Begin	Max	End	Class	Imp/ Brtns	Location Lat CMD	Rgn #
20 Mar	0719	0719	0722		SF	S15E53	3615
20 Mar	0723	0736	0747	M7.4	3B	S10E51	3615
20 Mar	0926	0931	0937		SF	S11E48	3615
20 Mar	0949	0953	1001	C6.3	SF	S15E50	3615
20 Mar	1014	1015	1016		SF	S15E51	3615
20 Mar	1137	1138	1140		SF	S11E44	3615
20 Mar	1207	1209	1228		1F	S15E50	3615
20 Mar	1323	1331	1343	C3.2	SF	S11E43	3615
20 Mar	1443	1453	1504	C3.3	SF	S16E50	3615
20 Mar	2053	2057	2102	C2.8			3615
20 Mar	2246	2255	2300	M1.9			3615
20 Mar	2314	2317	2322	C8.9			3615
21 Mar	0002	0006	0011	C3.7			3615
21 Mar	1009	1010	1014		SF	S15E36	3615
21 Mar	1125	1132	1137	C8.7	SN	S16E37	3615
21 Mar	1546	1546	1553		SF	S14E30	3615
21 Mar	1802	1819	1839	C5.8	SF	N23E25	3614
22 Mar	0124	0127	0132	C3.3	SF	N14E19	3614
22 Mar	0214	0217	0222	C2.6			3615
22 Mar	0341	0343	0345		SF	S14E28	3615
22 Mar	0432	0432	0441		SF	S13E21	3615
22 Mar	0450	0455	0459	C3.6	SF	S13E27	3615
22 Mar	0505	0516	0532	C5.7	SN	S15E26	3615
22 Mar	1109	1116	1129	C4.3	SN	S17E49	3617
22 Mar	B1318	U1324	1536	C6.0	1F	N14E09	3614
22 Mar	1330	1335	1340	C6.2			3614
22 Mar	1342	1440	1502	C8.4	SF	N20E14	3614
22 Mar	1606	1607	1608		SF	S15E22	3615
22 Mar	1624	1629	1635	C4.1			3615
22 Mar	1646	1657	1709	C4.9			3617
22 Mar	1743	1745	1749		SF	S16E45	3617
22 Mar	1813	1821	1845	C3.8			3615
22 Mar	1901	1929	1929		SF	S10E17	3615
22 Mar	1907	1911	1914		SF	N15E06	3614
22 Mar	1936	1940	1941		SF	S14E18	3615
22 Mar	2002	2004	2008	C5.1			3615
22 Mar	2004	2028	2119		2B	S13E22	3615
22 Mar	2008	2012	2018	C5.9			3615

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
22 Mar	2018	2032	2045	M4.2			3615
22 Mar	2120	2122	2125	M1.1	SN	S14E18	3615
22 Mar	2156	2156	2158		SF	S09E13	3615
22 Mar	2245	2248	2248		SF	S14E17	3615
22 Mar	2251	2254	2258		SF	S15E17	3615
22 Mar	B2256	2256	2258		SF	S12E64	
22 Mar	2259	2324	2333	C8.5			
22 Mar	2340	2341	2343		SF	S08E13	3615
22 Mar	2355	2358	0002	C8.3	SF	S13E15	3615
23 Mar	0058	0133	0221	X1.1	2F	N27E08	3614
23 Mar	0113	0114	0316		2N	S15E15	3615
23 Mar	0213	0215	0222		SF	N10E02	
23 Mar	0445	0454	0501		SF	S15E17	3615
23 Mar	B0528	0540	0617		1F	S15E14	3615
23 Mar	0647	0655	0659	M1.1	SF	S13E04	3615
23 Mar	0701	0709	0726	M2.4			3615
23 Mar	0702	0707	0933		1B	S15E12	3615
23 Mar	0726	0738	0747	M3.1			3615
23 Mar	0852	0858	0915		SF	S14E14	3615
23 Mar	1021	1023	1034		SF	S17E37	3617
23 Mar	1114	1118	1122	C6.7			3615
23 Mar	B1119	U1127	1233	M1.0	SF	S15E10	3615
23 Mar	1236	1247	1256	M1.3	1B	S15E09	3615
23 Mar	1304	1311	1320	M1.1			3615
23 Mar	1331	1337	1344	M1.9			3615
23 Mar	1351	1402	1415	M5.3			3615
23 Mar	1436	1436	1438		SF	N21W02	3614
23 Mar	1449	1453	1458	M1.5			3615
23 Mar	1501	1513	1517	M3.8			3615
23 Mar	1557	1557	1609		SF	S14E54	
23 Mar	1622	1651	1707	M2.8			3615
23 Mar	1851	1857	1914	C9.9			3615
23 Mar	1932	1942	2002	C9.0			3615
23 Mar	2248	2250	2256	C5.8			3615
23 Mar	2256	2259	2303	C7.9			3615
23 Mar	2330	2349	0003	M2.4	2N	S12E01	3615
24 Mar	0051	0104	0112	C9.9			3615
24 Mar	0051	0151	0415		2N	S14E00	3615

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
24 Mar	0112	0125	0130	M1.4			3615
24 Mar	0143	0154	0157	M2.1			3615
24 Mar	0157	0205	0209	M2.3			3615
24 Mar	0209	0218	0229	M2.7			3615
24 Mar	0332	0333	0337		1F	S12E31	3617
24 Mar	0418	0419	0424		SF	S14E00	3615
24 Mar	0426	0427	0428		SF	S14E00	3615
24 Mar	0439	0444	0448	C3.8	SF	S14E00	3615
24 Mar	0511	0514	0517		SF	S13W00	3615
24 Mar	0520	0521	0522		SF	S13W02	3615
24 Mar	0544	0544	0548		SF	S14E01	3615
24 Mar	0558	0605	0617	M2.2	1B	S14W03	3615
24 Mar	0707	0718	0722	C7.2			3615
24 Mar	B0712	U0740	0906		2N	S14W03	3615
24 Mar	0722	0725	0730	C8.2			3615
24 Mar	0736	0751	0806	M1.3			3615
24 Mar	0913	U0952	A1025		1N	S14W04	3615
24 Mar	0919	0925	0935	C7.4			3615
24 Mar	0948	0952	0956	C9.5	SF	S15W01	3615
24 Mar	0959	0959	A1001		SF	S13W02	3615
24 Mar	1107	1117	1125	C9.7	1F	S13W04	3615
24 Mar	B1147	U1218	A1234	M1.1	1N	S14W05	3615
24 Mar	1227	1234	1239	M1.0			3615
24 Mar	1300	1313	1328	M1.2			
24 Mar	B1348	U1218	1406		SF	S13W07	3615
24 Mar	1415	1420	1424		SF	S13W07	3615
24 Mar	1441	1445	1450	C5.2	1F	S14W10	3615
24 Mar	1505	1507	1510		SF	S15W06	3615
24 Mar	1513	1521	1533	C5.3	SF	S15W06	3615
24 Mar	1738	1745	1752	C5.6			3615
24 Mar	1829	1836	1858	C4.1			3615
24 Mar	2157	2205	2209	C3.5			3615

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 3606												
12 Mar	N08E27	330	40	4	Dao	5	B								
13 Mar	N09E13	331	30	5	Dao	5	B								
14 Mar	N09E01	332	20	6	Cro	3	B								
15 Mar	N09W13	333	plage												
16 Mar	N09W26	332	10	1	Axx	2	A								
17 Mar	N09W40	333	plage												
18 Mar	N09W54	334	plage												
19 Mar	N09W68	335	plage												
20 Mar	N09W82	336	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 332

			Region 3607												
12 Mar	S18E44	314	30	2	Dso	3	B	1			4				
13 Mar	S17E32	313	110	6	Dao	5	B								
14 Mar	S18E19	314	80	7	Dao	8	B								
15 Mar	S17E06	314	40	8	Dro	6	B								
16 Mar	S17W08	314	20	9	Cro	6	B								
17 Mar	S17W21	314	20	9	Bxo	5	B				1				
18 Mar	S17W34	314	50	5	Dao	7	B								
19 Mar	S17W48	315	80	6	Dao	11	B				1				
20 Mar	S18W62	316	70	6	Dai	10	B								
21 Mar	S19W76	317	120	8	Dso	5	B								
22 Mar	S18W91	318	150	6	Dso	2	B								
								1	0	0	6	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 314

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 3608												
13 Mar	N12E40	305	10		Axx	1	A								
14 Mar	N11E28	305	10	1	Axx	1	A								
15 Mar	N11E14	306	plage												
16 Mar	N11W00	307	plage												
17 Mar	N11W10	303	30	5	Dro	10	B								
18 Mar	N10W24	304	10	5	Bxo	7	B								
19 Mar	N10W38	305	20	5	Cao	5	B								
20 Mar	N10W52	306	10	2	Axx	2	A								
21 Mar	N10W66	307	20	2	Cro	3	B								
22 Mar	N11W81	308	10	5	Bxo	2	B								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 307

			Region 3609												
13 Mar	N07E48	298	10	1	Axx	1	A								
14 Mar	N06E37	296	10	1	Axx	1	A								
15 Mar	N06E22	298	plage												
16 Mar	N06E07	300	plage												
17 Mar	N06W08	301	plage												
18 Mar	N06W23	303	plage												
19 Mar	N06W38	305	plage												
20 Mar	N06W53	307	plage												
21 Mar	N06W67	308	plage												
22 Mar	N06W82	309	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 300

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 3610												
13 Mar	S16E68	278	10	1	Hax	1	A								
14 Mar	S16E55	278	20	1	Hrx	2	A								
15 Mar	S16E42	278	10	1	Axx	1	A								
16 Mar	S16E28	279	plage												
17 Mar	S16E14	279	plage												
18 Mar	S16W00	280	plage												
19 Mar	S16W14	281	plage												
20 Mar	S16W28	282	plage												
21 Mar	S16W42	283	plage												
22 Mar	S16W57	284	plage												
23 Mar	S16W71	285	plage												
24 Mar	S16W85	286	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 280

			Region 3611												
14 Mar	N26E59	274	30	1	Hsx	1	A								
15 Mar	N28E48	272	20	1	Hrx	1	A								
16 Mar	N28E35	271	30	1	Hrx	1	A								
17 Mar	N28E21	272	20	1	Hrx	1	A								
18 Mar	N28E09	271	10	1	Hrx	1	A								
19 Mar	N28W03	270	10	1	Hrx	1	A								
20 Mar	N28W17	271	plage												
21 Mar	N28W31	272	plage												
22 Mar	N28W46	273	plage												
23 Mar	N28W60	274	plage												
24 Mar	N28W74	275	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 270

			Region 3612												
15 Mar	N23W57	17	10	1	Axx	1	A								
16 Mar	N23W68	15	10	1	Axx	1	A	1			1				
17 Mar	N22W80	13	10	2	Axx	2	A	3			1				
								4	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 17

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 3613												
16 Mar	S23W17	323	70	6	Cao	7	B	1							
17 Mar	S22W30	323	130	6	Dai	7	B								
18 Mar	S22W44	324	110	7	Dai	8	B								
19 Mar	S22W57	324	80	5	Dai	9	B								
20 Mar	S22W71	325	60	5	Dao	5	B								
21 Mar	S24W82	323	70	6	Cao	2	B								
								1	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 323

			Region 3614												
17 Mar	N16E70	223	80	2	Hax	1	A	3							
18 Mar	N16E56	224	170	4	Dai	9	B	1	1						
19 Mar	N16E43	224	200	5	Dao	6	BD								
20 Mar	N17E32	222	200	3	Dao	4	BD								
21 Mar	N17E18	223	180	8	Dso	4	B	1			1				
22 Mar	N17E03	224	210	5	Dso	4	B	4			3	1			
23 Mar	N17W07	221	170	6	Dso	5	B			1	1		1		
24 Mar	N17W21	222	150	5	Dso	3	B								
								9	1	1	5	1	1	0	0

Still on Disk.
Absolute heliographic longitude: 224

			Region 3615												
17 Mar	S12E78	216	plage					1							
18 Mar	S12E62	218	180	11	Eao	13	BG	6	1		1				
19 Mar	S12E53	214	240	11	Eac	14	BG	12	2		8	1			
20 Mar	S12E39	215	300	13	Ekc	20	BGD	7	2		8	1		1	
21 Mar	S12E25	216	310	13	Ekc	24	BGD	2			3				
22 Mar	S13E10	217	370	15	Ekc	52	BGD	8	2		12		1		
23 Mar	S13W01	215	730	16	Fkc	53	BGD	5	12		5	3	2		
24 Mar	S13W14	215	810	16	Fkc	54	BGD	12	8		12	5	2		
								53	27	0	49	10	5	1	0

Still on Disk.
Absolute heliographic longitude: 215

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 3616												
18 Mar	N02W31	311	50	5	Dai	12	B								
19 Mar	N02W44	311	50	7	Cao	7	B	3			2				
20 Mar	N02W59	313	30	8	Cao	6	B								
21 Mar	N02W73	314	20	2	Hsx	1	A								
22 Mar	N03W88	315	10	3	Bxo	1	B								
								3	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 311

			Region 3617												
20 Mar	S15E70	184	60	4	Hax	3	A								
21 Mar	S15E56	185	150	6	Cao	2	B								
22 Mar	S14E41	186	100	6	Cao	6	B	2			2				
23 Mar	S14E29	185	90	4	Cao	4	B				1				
24 Mar	S13E17	184	60	3	Cao	5	B					1			
								2	0	0	3	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 184

			Region 3618												
21 Mar	S20W62	303	60	5	Dao	5	B								
22 Mar	S19W77	304	100	10	Cao	6	B								
23 Mar	S18W90	304	120	6	Cao	4	B								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 303

			Region 3619												
21 Mar	N17E61	179	130	4	Cao	5	B								
22 Mar	N20E46	181	100	6	Cao	5	B								
23 Mar	N19E31	183	120	3	Cao	3	B								
24 Mar	N19E16	185	100	2	Cso	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 185

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 3620												
22 Mar	S10E74	153	30	2	Cro	3	B								
23 Mar	S10E61	153	30	2	Hrx	3	A								
24 Mar	S10E46	155	30	2	Hax	2	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 155

			Region 3621												
23 Mar	N17W38	252	20	4	Cro	4	B								
24 Mar	N17W52	253	20	3	Cso	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 252

			Region 3622												
24 Mar	N19E61	139	60	3	Dao	5	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 139

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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

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