Space Weather Highlights **SWPC PRF 2477**
13 February - 19 February 2023 **20 February 2023**

Solar activity was at low to high levels during the period. M-class (R1-Minor) activity was predominate during 13-16 Feb with weak M-class flares observed from Regions 3213 (N30, L=223, class/area Fki/480 on 12 Feb), 3226 (N11, L=113, class/area Dki/480 on 14 Feb) and 3229 (N25, L=035, class/area Dko/400 on 17 Feb). The largest of these events was a long duration M2.6 from Region 3213 at 14/1212 UTC. This region also produced an M1.0 at 15/2114 UTC wth an associated Type II radio Sweep (576 km/s) and a projected glancing blow CME.

X flare activity was present on 17 Feb when Region 3229 produced a long duration X2.2/2b (R3-Strong) event at 17/2016 UTC. Associated with this flare was a fast Type II Sweep (1250 km/s) and an associated assumetric, halo CME. 18-19 Feb witnessed C-class activity during those two days.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 13-14 Feb with a maximum flux of 5,450 pfu observed at 13/1725 UTC. Normal to moderate levels were present on 15-19 Feb.

Geomagnetic field activity generally ranged from quiet to active levels with some isolated minor storm periods (G1-Minor). Quiet conditions persisted through 13 Feb. quiet to unsettled levels were observed on 14 Feb, increasing to unsettled to G1-Minor levels on 15-16 Feb, all due to CME effects. Quiet to unsettled levels were present on 17 Feb due to weak positive polarity CH HSS effects. Mostly quiet levels persisted on 18-19 Feb.

Space Weather Outlook
20 February - 18 March 2023

Solar activity is expected to be at low to M-class flare activity (R1-R2, Minor-Moderate) levels throughout the outlook period.

No proton events are expected at geosynchronous orbit. However, a chance for a proton event exists throughout the period from the more complex, magnetically active regions.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 07-13 Mar. Normal to moderate levels are expected on 20 Feb-06 Mar and 14-18 Mar.

Geomagnetic field activity is expected to range from quiet to minor storm levels (G1-Minor). Active to G1-Minor levels are expected on 20-21 Feb due to CME effects. Unsettled to active conditions are expected on 22-24 and 27-28 Feb, 02, 05-08 and 15-17 Mar due to CH HSS effects.

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
13 February	189	185	1165	C2.2	10	2	0	20	0	0	0	0
14 February	180	206	1500	C1.7	9	2	0	13	1	0	0	0
15 February	174	140	1290	C1.9	15	4	0	13	0	0	0	0
16 February	163	101	1100	C1.1	7	1	0	3	1	0	0	0
17 February	343	86	1260	B9.5	7	0	1	11	0	1	0	0
18 February	167	109	1100	C2.0	4	0	0	25	1	0	0	0
19 February	169	112	1080	C1.4	9	0	0	11	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
13 February	1.6e+06	2.6e+04	1.3e+08
14 February	9.5e+05	2.5e+04	4.9e+07
15 February	1.2e+06	2.4e+04	1.3e+06
16 February	8.1e+05	2.3e+04	2.1e+06
17 February	4.3e+05	2.5e+04	2.7e+06
18 February	2.2e+05	2.6e+04	4.6e+06
19 February	1.6e+05	2.5e+04	7.5e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
13 February	3	1-0-0-1-2-1-1-1	9	0-0-1-3-5-1-1-0	4	1-0-1-1-2-1-1-1
14 February	6	2-1-3-2-1-1-0-2	11	1-0-3-5-2-2-1-1	8	3-1-3-2-1-1-1-2
15 February	23	3-3-5-5-3-3-3-3	46	2-4-7-5-4-6-4-3	29	3-4-5-5-3-4-3-4
16 February	21	2-3-5-4-4-4-2-2	41	3-3-5-6-6-6-2-1	24	3-3-5-4-4-5-2-2
17 February	4	1-2-1-0-2-1-2-0	6	1-3-1-3-1-1-1-0	6	2-3-2-1-2-1-2-0
18 February	5	1-2-0-1-2-2-2-2	3	0-0-0-1-3-1-1-0	6	1-2-1-1-2-1-2-2
19 February	4	2-0-0-1-2-1-2-1	10	1-1-0-2-5-3-1-1	15	3-1-1-1-2-1-2-2

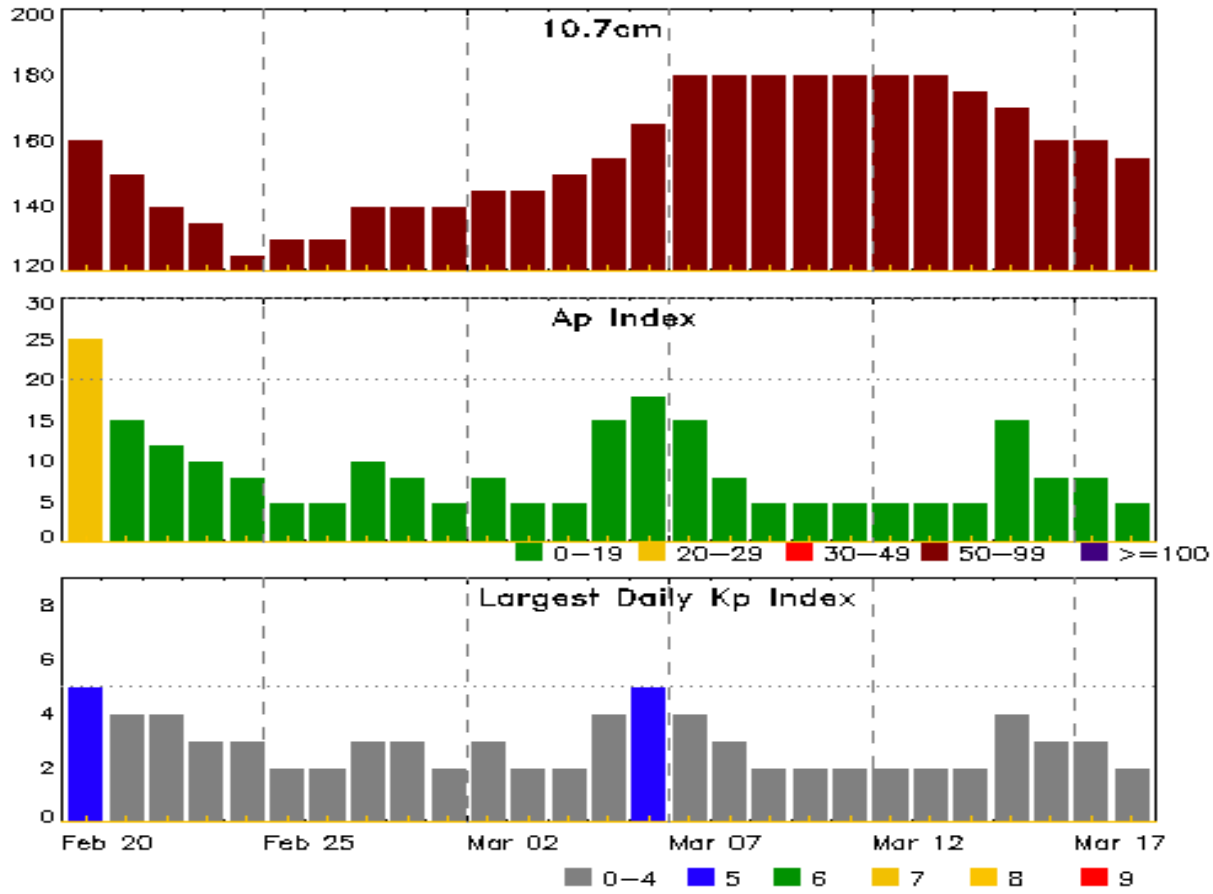
Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
13 Feb 1141	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	12/1600
14 Feb 0606	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	12/1600
15 Feb 0449	WARNING: Geomagnetic K = 4	15/0449 - 0900
15 Feb 0532	ALERT: Geomagnetic K = 4	15/0528
15 Feb 0615	EXTENDED WARNING: Geomagnetic K = 4	15/0449 - 1500
15 Feb 0643	WARNING: Geomagnetic K = 5	15/0643 - 1200
15 Feb 0830	ALERT: Geomagnetic K = 5	15/0825
15 Feb 0841	WARNING: Geomagnetic K = 6	15/0840 - 1200
15 Feb 1134	ALERT: Geomagnetic K = 5	15/1128
15 Feb 1138	EXTENDED WARNING: Geomagnetic K = 4	15/0449 - 1800
15 Feb 1139	EXTENDED WARNING: Geomagnetic K = 5	15/0643 - 1500
15 Feb 1644	EXTENDED WARNING: Geomagnetic K = 4	15/0449 - 16/0300
15 Feb 1812	WARNING: Geomagnetic K = 5	15/1810 - 16/0300
15 Feb 2025	WATCH: Geomagnetic Storm Category G2 predicted	
15 Feb 2143	ALERT: Type II Radio Emission	15/2118
16 Feb 0413	WARNING: Geomagnetic K = 4	16/0412 - 0900
16 Feb 0437	WARNING: Geomagnetic K = 5	16/0436 - 1200
16 Feb 0440	EXTENDED WARNING: Geomagnetic K = 4	16/0412 - 1500
16 Feb 0633	ALERT: Geomagnetic K = 4	16/0627
16 Feb 0706	ALERT: Geomagnetic K = 5	16/0700
16 Feb 1115	EXTENDED WARNING: Geomagnetic K = 4	16/0412 - 1800
16 Feb 1116	EXTENDED WARNING: Geomagnetic K = 5	16/0436 - 1500
16 Feb 1443	EXTENDED WARNING: Geomagnetic K = 4	16/0412 - 17/0900
16 Feb 1443	EXTENDED WARNING: Geomagnetic K = 5	16/0436 - 17/0600
16 Feb 1802	ALERT: Geomagnetic K = 5	16/1759
17 Feb 0855	EXTENDED WARNING: Geomagnetic K = 4	16/0412 - 17/1500
17 Feb 2007	ALERT: X-ray Flux exceeded M5	17/2001
17 Feb 2033	ALERT: Type II Radio Emission	17/1957

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
17 Feb 2050	SUMMARY: 10cm Radio Burst	17/1957 - 2019
17 Feb 2133	SUMMARY: X-ray Event exceeded X1	17/1938 - 2050
18 Feb 1856	ALERT: Type II Radio Emission	18/1837
18 Feb 2225	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
20 Feb	160	25	5	06 Mar	165	18	5
21	150	15	4	07	180	15	4
22	140	12	4	08	180	8	3
23	135	10	3	09	180	5	2
24	125	8	3	10	180	5	2
25	130	5	2	11	180	5	2
26	130	5	2	12	180	5	2
27	140	10	3	13	180	5	2
28	140	8	3	14	175	5	2
01 Mar	140	5	2	15	170	15	4
02	145	8	3	16	160	8	3
03	145	5	2	17	160	8	3
04	150	5	2	18	155	5	2
05	155	15	4				

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
13 Feb	0504	0518	0537	M1.0	0.017				3226				
13 Feb	1549	1556	1603	M1.4	0.009				3226				
14 Feb	0157	0203	0207	M1.8	0.006	1N	N10	E39	3226				
14 Feb	1159	1212	1246	M2.6	0.047				3213				
15 Feb	0433	0447	0507	M1.1	0.017				3213				
15 Feb	0516	0523	0530	M2.0	0.014				3213				
15 Feb	0642	0705	0719	M1.3	0.018				3213				
15 Feb	2105	2114	2118	M1.0	0.004				3213	600			
16 Feb	0019	0032	0043	M1.1	0.009				3229				
17 Feb	1938	2016	2050	X2.2	0.510	2B	N25	E64	3229	320	550	3	

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
13 Feb	B0000	0003	0015		SF	N10E48	3226
13 Feb	0002	0003	0011		SF	N27W64	3213
13 Feb	0009	0016	0021	C3.1	SF	S21E38	3220
13 Feb	0330	0335	0341		SF	N10W45	3214
13 Feb	0335	0335	0339		SF	N27W64	3213
13 Feb	0442	0449	0459		SF	N27W64	3213
13 Feb	0454	0459	0509		SF	N10W45	3214
13 Feb	0500	0506	0514		SF	N27W64	3213
13 Feb	0504	0518	0537	M1.0			3226
13 Feb	0554	0606	0616		SF	N27W64	3213
13 Feb	0623	0624	0637		SF	N10W45	3214
13 Feb	0654	0705	0716	C6.2			3226
13 Feb	B0727	U1046	1232		SF	N09E44	3226
13 Feb	0759	0807	0814	C4.8	SF	S25E25	
13 Feb	0947	0947	0958		SF	S11E21	3217
13 Feb	1029	1036	1043	C3.7			3226
13 Feb	1029	1030	1036		SF	S10E19	3217
13 Feb	1033	1033	1114		SF	N28W67	3213
13 Feb	1043	1047	1051	C4.5			3226
13 Feb	1226	1229	1231		SF	N28W68	3213
13 Feb	1255	1305	1311	C3.7	SF	S10E18	3217

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
13 Feb	1337	1339	1343		SF	N10E41	3226
13 Feb	1422	1435	1443	C6.5	SF	N11E41	3226
13 Feb	1444	1444	1451		SF	S11E22	3217
13 Feb	1511	1512	1539	C7.7	SF	N10E41	3226
13 Feb	1549	1556	1603	M1.4			3226
13 Feb	1810	1817	1827	C3.3			3213
13 Feb	1857	1916	1931	C7.3			3213
14 Feb	0013	0020	0033	C3.0			
14 Feb	B0038	0038	0104		SF	N10E39	3226
14 Feb	0157	0201	0220	M1.8	1N	N10E39	3226
14 Feb	0237	0241	0242		SF	N24W19	3216
14 Feb	0340	0341	0344		SF	N10E39	3226
14 Feb	0406	0414	0425	C2.7			
14 Feb	0508	0517	0526	C3.7			3214
14 Feb	0508	0517	1202	C3.7			3214
14 Feb	0613	0625	0646	C9.6	SF	N10E30	3226
14 Feb	0649	0700	0713		SF	N10E39	3226
14 Feb	0937	0943	0957	C3.0			3226
14 Feb	1038	1045	1058	C3.5			3226
14 Feb	1111	1119	1126	C5.5			3226
14 Feb	1159	1212	1246	M2.6			3213
14 Feb	B1305	U1306	A1315		SF	N15E17	3224
14 Feb	B1341	U1346	A1358		SF	N14E18	3224
14 Feb	B1428	U1429	A1436		SF	N10E28	3226
14 Feb	1453	1503	1523		SF	N09E27	3226
14 Feb	1529	1551	1553		SF	N10E25	3226
14 Feb	1556	1557	1619		SF	N10E25	3226
14 Feb	1656	1657	1712		SF	N09E27	3226
14 Feb	1728	1728	1731		SF	N09E24	3226
14 Feb	2113	2125	2137	C8.9			3213
15 Feb	0038	0039	0044		SF	N11E21	3226
15 Feb	0102	0133	0153	C5.6	SF	S15E12	3220
15 Feb	0215	0225	0235	C8.1			
15 Feb	0250	0253	0301	C7.3	SF	N11E19	3226
15 Feb	0433	0447	0507	M1.1			3213
15 Feb	0516	0523	0530	M2.0			3213
15 Feb	0642	0705	0719	M1.3			3213
15 Feb	B0752	U0752	A0758		SF	S19E03	3220

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
15 Feb	0800	0803	0805		SF	N11E19	3226
15 Feb	0842	0850	0856	C3.2			
15 Feb	0904	0921	0933	C7.1			3213
15 Feb	1004	1011	1021	C3.3	SF	N10E16	3226
15 Feb	1055	1100	1104		SF	N10E17	3226
15 Feb	1120	1123	1132		SF	N10E16	3226
15 Feb	1145	1150	1152		SF	N10E16	3226
15 Feb	1246	1251	1256	C2.4	SF	N10E14	3226
15 Feb	1326	1336	1339	C3.9			
15 Feb	1339	1343	1347	C3.9	SF	N10E14	3226
15 Feb	1432	1439	1450		SF	N10E14	3226
15 Feb	1552	1559	1625	C3.7			3213
15 Feb	1731	1738	1742	C2.0			
15 Feb	1742	1750	1754	C2.4			
15 Feb	1923	1935	1942	C2.5			3220
15 Feb	1949	2003	2018	C3.4			
15 Feb	2105	2114	2118	M1.0			3213
15 Feb	2327	2339	2349	C2.3	SF	S10W19	3217
16 Feb	0019	0032	0043	M1.1			3229
16 Feb	0504	0519	0554	C2.6	SF	N09E05	3226
16 Feb	0636	0646	0652	C3.4			
16 Feb	0843	0848	0856	C3.6			3215
16 Feb	1016	1059	1141	C9.0	1F	N27W44	3216
16 Feb	1317	1317	1324		SF	S09W27	3217
16 Feb	1645	1652	1658	C1.7			
16 Feb	1834	1855	1903	C2.9			3229
16 Feb	2039	2116	2203	C9.1	SF	N27E72	3229
17 Feb	0131	0135	0142	C3.8			3229
17 Feb	0419	0425	0434	C1.3			3229
17 Feb	0729	0733	0743	C1.9			3229
17 Feb	0929	0938	0942	C2.2	SF	N25E69	3229
17 Feb	1009	U1014	A1023		SF	S22W50	3225
17 Feb	1024	1033	1039	C2.1			
17 Feb	1044	1050	1100	C2.0			3229
17 Feb	B1045	U1045	A1049		SF	S22W50	3225
17 Feb	1130	1132	1138		SF	S22W51	3225
17 Feb	1143	1148	1152	C2.0	SF	N08W08	3226
17 Feb	1149	1157	1200		SF	S22W51	3225

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
17 Feb	1227	1343	1401		SF	S22W52	3225
17 Feb	1246	1246	1252		SF	N07W13	3226
17 Feb	1427	1428	1430		SF	N30E65	3229
17 Feb	1453	1511	1524		SF	S22W51	3225
17 Feb	1621	1629	1626		SF	S21W54	3225
17 Feb	1938	2016	2050	X2.2	2B	N25E64	3229
18 Feb	0539	0553	0615		SF	S21W59	3225
18 Feb	B0652	0710	0716		SF	S23W63	3225
18 Feb	0716	0716	0722		SF	S23W63	3225
18 Feb	0723	0741	0829		SF	S23W63	3225
18 Feb	0816	0825	0829	C4.9			3226
18 Feb	0820	0825	0828		SF	N16W34	3221
18 Feb	0821	0825	0830		1F	N07W13	3226
18 Feb	0845	0909	0925		SF	S22W64	3225
18 Feb	0905	0907	0910		SF	N07W20	3226
18 Feb	0923	0923	0925		SF	N25E60	3229
18 Feb	0932	0934	0943		SF	S22W64	3225
18 Feb	0948	0953	0954		SF	S22W64	3225
18 Feb	0958	0959	1004		SF	N25E60	3229
18 Feb	1023	1031	1035		SF	S22W65	3225
18 Feb	1149	1200	1207	C7.7	SF	N07W31	3226
18 Feb	1204	1208	1218		SF	N16W35	3221
18 Feb	1249	1249	1253		SF	N25E60	3229
18 Feb	1405	1406	1408		SF	N24E53	3229
18 Feb	1409	1409	1414		SF	N23E52	3229
18 Feb	1420	1420	1423		SF	S22W67	3225
18 Feb	1427	U1428	A1504		SF	N08W27	3226
18 Feb	1427	U1430	A1505		SF	S23W69	3225
18 Feb	1831	1836	1841	C7.6			3226
18 Feb	2015	2023	2025		SF	N12W40	3221
18 Feb	2140	2140	2144		SF	N09W28	3226
18 Feb	2214	2221	2225	C2.7	SF	N09W28	3226
18 Feb	2231	2235	2238		SF	S21W68	3225
18 Feb	2245	2248	2251		SF	S20W72	3225
19 Feb	0328	0330	0332		SF	S21W72	3225
19 Feb	0355	0402	0409	C3.5	SF	N10W28	3226
19 Feb	0438	0442	0446		SF	S21W72	3225
19 Feb	0625	0629	0631		SF	S21W72	3225

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
19 Feb	0641	0645	0703		SF	N10W28	3226
19 Feb	0647	0647	0701		SF	N16W44	3221
19 Feb	0726	0727	0742	C2.4	SF	N05W41	3226
19 Feb	0800	0817	0833	C6.8	SF	N07W42	3226
19 Feb	1154	1156	1206		SF	N08W39	3226
19 Feb	1212	1213	1215		SF	N23E39	3229
19 Feb	1252	1259	1305	C2.0	SF	N09W39	3226
19 Feb	1450	1501	1512	C2.6			3229
19 Feb	1542	1550	1559	C2.1			
19 Feb	1709	1722	1736	C2.5			
19 Feb	1853	1901	1907	C5.7			
19 Feb	2054	2103	2110	C4.7			3229

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 3208												
01 Feb	N16E51	252	10	3	Cro	1	B				1				
02 Feb	N16E39	250	20	2	Cro	1	B								
03 Feb	N16E27	250	10	1	Axx	1	A								
04 Feb	N15E13	251	plage												
05 Feb	N15W01	252	plage								1				
06 Feb	N15W15	253	plage												
07 Feb	N15W29	254	plage												
08 Feb	N15W43	255	plage												
09 Feb	N15W57	255	plage												
10 Feb	N09W66	251	20	3	Cro	5	B	1			9				
11 Feb	N08W79	251	70	6	Dao	8	B	3	3		13	1			
12 Feb	N08W92	251	30	6	Cao	3	B								
								4	3	0	24	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 252

			Region 3209												
03 Feb	N18E56	221	40	4	Dao	6	B								
04 Feb	N18E41	223	70	4	Dso	6	B								
05 Feb	N18E26	225	60	7	Dso	6	B								
06 Feb	N18E12	226	30	7	Cro	7	B								
07 Feb	N20W01	226	10	7	Bxo	3	B								
08 Feb	N20W15	223	plage								1				
09 Feb	N20W29	226	plage												
10 Feb	N22W38	223	10	2	Bxo	2	B								
11 Feb	N20W52	224	plage								1				
12 Feb	N20W66	225	plage												
13 Feb	N20W80	226	plage												
								0	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 226

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 3213												
06 Feb	N29E13	225	10	3	Cri	15	BG	4			4				
07 Feb	N31W01	226	80	7	Dai	9	BG	4	2		2	2			
08 Feb	N31W15	225	290	11	Eki	25	BG	4	3		6	1	1		
09 Feb	N30W28	228	290	13	Ekc	18	BD	7	2		8	2			
10 Feb	N30W39	224	450	17	Fki	22	BG	2	4		7	1	1		
11 Feb	N29W51	223	460	16	Fki	31	G				9				
12 Feb	N30W64	223	480	17	Fki	25	BG	1			2				
13 Feb	N28W78	224	140	16	Fao	9	BG	2			7				
14 Feb	N28W92	225	140	16	Fao	9	BG	1	1						
								25	12	0	45	6	2	0	0

Crossed West Limb.
Absolute heliographic longitude: 226

			Region 3214												
06 Feb	N10E33	205	30	5	Dao	7	B				2				
07 Feb	N13E19	206	120	6	Dao	8	B	2			6				
08 Feb	N12E06	205	250	9	Dho	9	B				2				
09 Feb	N11W07	205	280	9	Dho	13	B				1				
10 Feb	N11W20	205	300	9	Dho	11	B	1			4				
11 Feb	N12W33	205	380	9	Dki	16	BG	1			9				
12 Feb	N12W46	205	390	10	Dki	9	B	2			3				
13 Feb	N11W60	206	360	11	Eko	6	B				3				
14 Feb	N11W74	207	320	11	Eho	6	B	2							
15 Feb	N13W89	208	320	11	Eho	6	B								
								8	0	0	30	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 205

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 3215												
06 Feb	N21E57	181	10	3	Bxo	3	B								
07 Feb	N23E43	182	10	2	Axx	2	A								
08 Feb	N22E29	179	20	1	Axx	2	A				1				
09 Feb	N22E16	179	20	5	Cro	3	B								
10 Feb	N22E03	182	10	1	Axx	1	A								
11 Feb	N22W10	182	plage												
12 Feb	N22W24	183	plage												
13 Feb	N22W38	184	plage												
14 Feb	N22W52	185	plage												
15 Feb	N22W67	186	plage												
16 Feb	N22W81	187	plage					1							
								1	0	0	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 182

			Region 3216												
06 Feb	N24E67	171	40	3	Hsx	1	A								
07 Feb	N27E53	172	140	2	Hsx	1	A								
08 Feb	N26E40	169	120	3	Hsx	2	A								
09 Feb	N25E31	167	150	7	Dao	5	B				1				
10 Feb	N24E19	166	140	2	Hsx	3	A								
11 Feb	N24E06	166	140	3	Hax	2	A					1			
12 Feb	N24W08	167	140	3	Hax	3	A								
13 Feb	N24W22	168	90	3	Hsx	1	A								
14 Feb	N24W34	169	90	2	Hsx	2	A				1				
15 Feb	N25W47	166	110	2	Hsx	1	A								
16 Feb	N24W59	165	110	2	Hsx	1	A	1				1			
17 Feb	N23W72	165	110	2	Hsx	1	A								
18 Feb	N23W85	165	60	2	Hsx	1	A								
								1	0	0	2	2	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 166

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 3217												
08 Feb	S09E72	140	280	4	Dko	9	B	1	1			1			
09 Feb	S10E63	135	260	10	Dkc	9	B	1	4		4				
10 Feb	S11E49	136	380	9	Dki	11	BGD	3			7	1			
11 Feb	S09E36	135	380	11	Eki	14	BGD	2	2	1	6		1		
12 Feb	S12E22	137	400	10	Dki	19	BG	3	3		1	2			
13 Feb	S10E08	138	250	5	Dho	7	B	1			3				
14 Feb	S10W06	139	250	5	Hhx	4	A								
15 Feb	S09W21	139	250	6	Hhx	4	A	1			1				
16 Feb	S10W34	140	170	9	Hsx	3	A				1				
17 Feb	S11W47	140	150	6	Cso	3	B								
18 Feb	S11W60	140	140	5	Hsx	1	A								
19 Feb	S12W72	139	130	2	Hsx	1	A								
								12	10	1	23	4	1	0	0

Still on Disk.
Absolute heliographic longitude: 139

			Region 3218												
08 Feb	N12E62	150	20	2	Bxo	2	B								
09 Feb	N12E49	149	20	5	Cro	3	B								
10 Feb	N11E35	150	10	2	Bxo	2	B								
11 Feb	N11E21	151	10	1	Axx	1	A								
12 Feb	N11E05	153	10	1	Hrx	1	A								
13 Feb	N09W09	155	5	1	Axx	1	A								
14 Feb	N11W23	156	5	1	Axx	1	A								
15 Feb	N11W38	157	plage												
16 Feb	N11W52	158	plage												
17 Feb	N11W66	159	plage												
18 Feb	N11W80	160	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 153

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 3219												
09 Feb	S17E54	144	10	3	Bxo	5	B								
10 Feb	S07E42	143	30	5	Cro	6	B	1			1				
11 Feb	S07E29	143	30	3	Cro	4	B				1				
12 Feb	S07E13	146	20	1	Hrx	3	A								
13 Feb	S07W01	146	10	3	Axx	2	A								
14 Feb	S06W13	146	5	1	Axx	1	A								
15 Feb	S06W27	146	5	1	Axx	1	A								
16 Feb	S06W41	147	10	2	Axx	3	A								
17 Feb	S06W55	148	plage												
18 Feb	S06W70	150	plage												
19 Feb	S06W85	152	plage												
								1	0	0	2	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 146

			Region 3220												
09 Feb	S15E77	121	80	6	Dso	2	B								
10 Feb	S15E64	121	130	6	Cso	3	B		1		1	1			
11 Feb	S14E51	121	150	4	Hsx	2	A		1		3	1			
12 Feb	S15E37	122	150	4	Cso	2	B								
13 Feb	S14E23	123	150	4	Hhx	1	A	1			1				
14 Feb	S14E10	123	140	4	Hsx	3	A								
15 Feb	S14W04	123	130	3	Hsx	2	A	2			2				
16 Feb	S14W16	122	150	4	Hsx	2	A								
17 Feb	S14W29	122	140	2	Hsx	1	A								
18 Feb	S14W42	122	120	2	Hsx	1	A								
19 Feb	S14W55	122	120	2	Hsx	1	A								
								3	2	0	7	2	0	0	0

Still on Disk.
Absolute heliographic longitude: 123

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 3221												
09 Feb	N14E75	123	80	8	Hax	2	A								
10 Feb	N16E62	123	100	5	Hax	2	A								
11 Feb	N16E48	124	50	3	Hax	2	A				2	1			
12 Feb	N15E34	125	40	3	Hax	3	A				1				
13 Feb	N14E21	125	50	5	Cho	4	B								
14 Feb	N16E08	125	10	5	Axx	3	A								
15 Feb	N19W06	125	10	7	Bxo	3	B								
16 Feb	N19W19	122	plage												
17 Feb	N19W33	125	plage												
18 Feb	N19W47	127	plage								3				
19 Feb	N19W61	128	plage								1				
								0	0	0	7	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 125

			Region 3222												
10 Feb	N35W64	249	30	4	Cro	2	B								
11 Feb	N29W79	251	30	6	Dao	4	B		1		11				
12 Feb	N30W92	251	40	7	Dao	3	B	3	1		1				
								3	2	0	12	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 249

			Region 3223												
11 Feb	N19E31	141	10	4	Bxo	3	B								
12 Feb	N17E16	143	plage												
13 Feb	N17E02	144	plage												
14 Feb	N17W12	145	plage												
15 Feb	N17W27	146	plage												
16 Feb	N17W41	147	plage												
17 Feb	N17W55	148	plage												
18 Feb	N17W69	149	plage												
19 Feb	N17W83	150	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 144

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 3224												
11 Feb	N23E50	122	10	5	Cro	2	B								
12 Feb	N22E35	124	10	1	Bxo	3	B				1				
13 Feb	N51E21	125	10	5	Axx	3	A								
14 Feb	N23E08	125	10	5	Bxo	5	B				2				
15 Feb	N22W07	126	10	4	Bxo	4	B								
16 Feb	N22W20	123	plage												
17 Feb	N22W34	126	plage												
18 Feb	N22W48	128	plage												
19 Feb	N22W62	129	plage												
								0	0	0	3	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 126

			Region 3225												
12 Feb	S22E06	153	20	3	Cro	3	B								
13 Feb	S21W08	154	30	5	Cro	6	B								
14 Feb	S20W21	154	30	6	Cri	11	B								
15 Feb	S20W34	153	30	6	Cro	5	B								
16 Feb	S21W47	153	10	5	Bxo	3	B								
17 Feb	S21W59	152	70	6	Dao	3	B				7				
18 Feb	S21W71	151	80	5	Dao	4	B				12				
19 Feb	S21W85	152	90	7	Dao	4	B				3				
								0	0	0	22	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 153

			Region 3226												
13 Feb	N11E33	113	60	6	Dai	9	BG	5	2		5				
14 Feb	N10E20	113	480	9	Dki	26	BG	4	1		10	1			
15 Feb	N11E06	113	420	10	Dki	13	BD	4			10				
16 Feb	N10W06	112	410	10	Dki	17	B	1			1				
17 Feb	N10W19	112	390	11	Ehi	12	B	1			2				
18 Feb	N10W33	113	330	9	Dko	14	B	4			5	1			
19 Feb	N10W47	114	320	10	Dki	14	B	4			6				
								24	3	0	39	2	0	0	0

Still on Disk.
Absolute heliographic longitude: 113

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 3227												
13 Feb	S03E42	104	0	3	Bxo	3	B								
14 Feb	S03E29	104	10	3	Bxo	3	B								
15 Feb	S03E14	105	5	3	Axx	1	A								
16 Feb	S03W01	107	plage												
17 Feb	S03W15	108	plage												
18 Feb	S03W30	110	plage												
19 Feb	S03W45	112	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 107

			Region 3228												
13 Feb	S25E14	132	10	3	Bxo	3	B								
14 Feb	S24W00	133	10	2	Axx	2	A								
15 Feb	S24W14	133	plage												
16 Feb	S24W28	134	plage												
17 Feb	S24W42	135	plage												
18 Feb	S24W56	136	plage												
19 Feb	S24W70	137	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 133

			Region 3229												
16 Feb	N30E70	36	240	6	Dao	2	B	2	1		1				
17 Feb	N25E58	35	400	7	Dko	6	B	5		1	2		1		
18 Feb	N26E45	35	280	7	Dki	14	BD				5				
19 Feb	N26E32	35	300	11	Eki	16	BD	2			1				
								9	1	1	9	0	1	0	0

Still on Disk.
Absolute heliographic longitude: 35

			Region 3230												
18 Feb	S23E71	9	90	3	Cao	4	B								
19 Feb	S23E57	10	90	2	Hax	3	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 10

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 3231													
19 Feb	N21W38	103	30	5	Cro	3	B	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 103

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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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