

Solar activity was at low to high levels during the period. Numerous C-class flares were observed from Regions 3211 (S17, L=295, class/area Dao/100 on 06 Feb), 3213 (N30, L=223, class/area Fki/480 on 12 Feb) and 3214 (N12, L=205, class/area Dki/380 on 11 Feb). 07 Feb experienced R1-R2 (Minor-Moderate) activity with M-class activity from Region 3213 to include an M6.3 observed at 07/2307 UTC. R1 (Minor) levels occurred on 08 Feb from Region 3213 and 3217 (S12, L=137, class/area Dki/400 on 12 Feb). 09 Feb witnessed six total R1 (Minor) flares from Regions 3213 and 3217. Of note was an M1.1/Sf at 09/0717 UTC from Region 3217 with associated Type II (672 km/s) and Type IV radio emissions and an M2.8 from Region 3217 at 09/0907 UTC with associated Type II (453 km/s) and Type IV radio emissions.

10 Feb saw five total R1 (Minor) flares from Regions 3208 (N08, L=251, class/area Dao/070 on 11 Feb), 3220 (S15, L=122, class area Cso/150 on 12 Feb) and 3213. At 10/030 UTC, Region 3213 produced an M3.7/2n with associated Type II (376 km/s) and Type IV radio emissions. R1 (Minor) levels were reached on 11 Feb from Regions 3208, 3217, 3220 and 3222 (N30, L=251, class/area Dao/040 on 12 Feb). R3 (Strong) levels were observed at 11/1548 UTC from Region 3217 when the region produced an X1.1/1b flare. The highlight period ended on 12 Feb with R1 (Minor) flare activity from Regions 3217 and 3222. The flare and DSF activity during the week produced numerous CMEs, but most were detected to be Earth misses. The lone exception was from CME activity from events that took place on the Sun over 10-11 Feb.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels on 06, 07 and 11 Feb. High levels were observed on 08-10 Feb and 12 Feb with a peak flux of 2,520 pfu observed at 08/1550 UTC.

Geomagnetic field activity was at primarily unsettled to active levels, with a single G1 (Minor) minor storm reading late on 09 Feb. Activity was mostly associated with negative polarity CH HSS influence.

## **Space Weather Outlook**

### **13 February - 11 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 13-15 Feb and 07-11 Mar. Normal to moderate levels are expected on 16 Feb - 06 Mar.



Geomagnetic field activity is expected to range from quiet to active levels. Active conditions are likely on 14-15 Feb due to CME activity and 05-07 Mar due to negative polarity CH HSS activity. Unsettled levels are expected on 16 Feb due to waning CME activity, 22-24 Feb due to positive polarity CH HSS activity, 27 Feb, 02 Mar and 08 Mar, all due to negative polarity CH HSS activity.



### *Daily Solar Data*

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
06 February	158	139	260	B7.4	8	0	0	8	0	0	0	0
07 February	185	110	425	C1.7	13	2	0	10	2	0	0	0
08 February	192	131	1000	C1.7	6	4	0	15	2	1	0	0
09 February	215	150	1190	C3.2	9	6	0	14	3	0	0	0
10 February	208	190	1610	C2.3	8	5	0	29	3	1	0	0
11 February	210	209	1720	C2.8	6	7	1	55	4	1	0	0
12 February	200	197	1730	C2.4	9	4	0	10	2	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)		Electron Fluence (electrons/cm <sup>2</sup> -day -sr)	
	>1 MeV	>10 MeV	>2MeV	
	06 February	1.2e+05	2.5e+04	1.1e+06
07 February	2.5e+05	2.5e+04	8.0e+06	
08 February	9.3e+05	2.5e+04	6.4e+07	
09 February	5.6e+05	2.4e+04	4.2e+07	
10 February	3.0e+05	2.3e+04	2.5e+07	
11 February	3.2e+05	2.3e+04	4.3e+07	
12 February	6.5e+05	2.5e+04	5.3e+07	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	06 February	13	3-2-3-3-3-2-3-3	16	1-3-3-4-4-3-3-2	18
07 February	12	3-3-3-3-3-2-2-2	27	3-4-2-6-4-4-4-2	20	4-4-3-4-3-3-3-3
08 February	12	2-4-2-3-2-2-3-2	25	2-4-3-5-5-4-3-3	18	3-4-3-4-3-3-3-3
09 February	16	2-4-3-3-3-3-2-4	33	3-3-3-6-5-5-3-4	21	3-4-3-3-3-3-3-5
10 February	12	4-2-2-2-2-2-3-3	21	3-3-4-4-5-3-3-2	16	4-3-3-3-3-2-3-4
11 February	10	4-3-1-3-2-2-1-1	21	3-5-3-5-4-1-2-1	11	4-3-2-3-2-1-1-1
12 February	5	1-2-2-1-2-1-2-1	9	1-2-3-3-2-3-1-1	7	2-3-2-2-2-1-2-2



### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
06 Feb 0222	WARNING: Geomagnetic K = 4	06/0220 - 0900
06 Feb 0248	ALERT: Geomagnetic K = 4	06/0248
06 Feb 0855	EXTENDED WARNING: Geomagnetic K = 4	06/0220 - 1800
06 Feb 1924	WARNING: Geomagnetic K = 4	06/1925 - 07/0300
06 Feb 2101	ALERT: Geomagnetic K = 4	06/2058
07 Feb 0257	EXTENDED WARNING: Geomagnetic K = 4	06/1925 - 07/1500
07 Feb 1458	EXTENDED WARNING: Geomagnetic K = 4	06/1925 - 07/2100
07 Feb 2310	ALERT: X-ray Flux exceeded M5	07/2309
08 Feb 0020	SUMMARY: X-ray Event exceeded M5	07/2246 - 2309
08 Feb 0456	WARNING: Geomagnetic K = 4	08/0455 - 1200
08 Feb 0512	ALERT: Geomagnetic K = 4	08/0505
08 Feb 1132	EXTENDED WARNING: Geomagnetic K = 4	08/0455 - 1800
08 Feb 1302	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1300
08 Feb 2201	WARNING: Geomagnetic K = 4	08/2201 - 09/0300
09 Feb 0414	WARNING: Geomagnetic K = 4	09/0414 - 0900
09 Feb 0426	ALERT: Geomagnetic K = 4	09/0415
09 Feb 0748	ALERT: Type II Radio Emission	09/0725
09 Feb 0806	ALERT: Type IV Radio Emission	09/0729
09 Feb 0854	EXTENDED WARNING: Geomagnetic K = 4	09/0414 - 1500
09 Feb 0926	ALERT: Type IV Radio Emission	09/0853
09 Feb 1446	EXTENDED WARNING: Geomagnetic K = 4	09/0414 - 1800
09 Feb 1506	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	08/1300
09 Feb 1754	EXTENDED WARNING: Geomagnetic K = 4	09/0414 - 2359
09 Feb 2258	EXTENDED WARNING: Geomagnetic K = 4	09/0414 - 10/0600
09 Feb 2326	WARNING: Geomagnetic K = 5	09/2326 - 10/0600
09 Feb 2329	EXTENDED WARNING: Geomagnetic K = 4	09/0414 - 10/1500
09 Feb 2356	ALERT: Geomagnetic K = 5	09/2354
10 Feb 0406	ALERT: Type II Radio Emission	10/0304

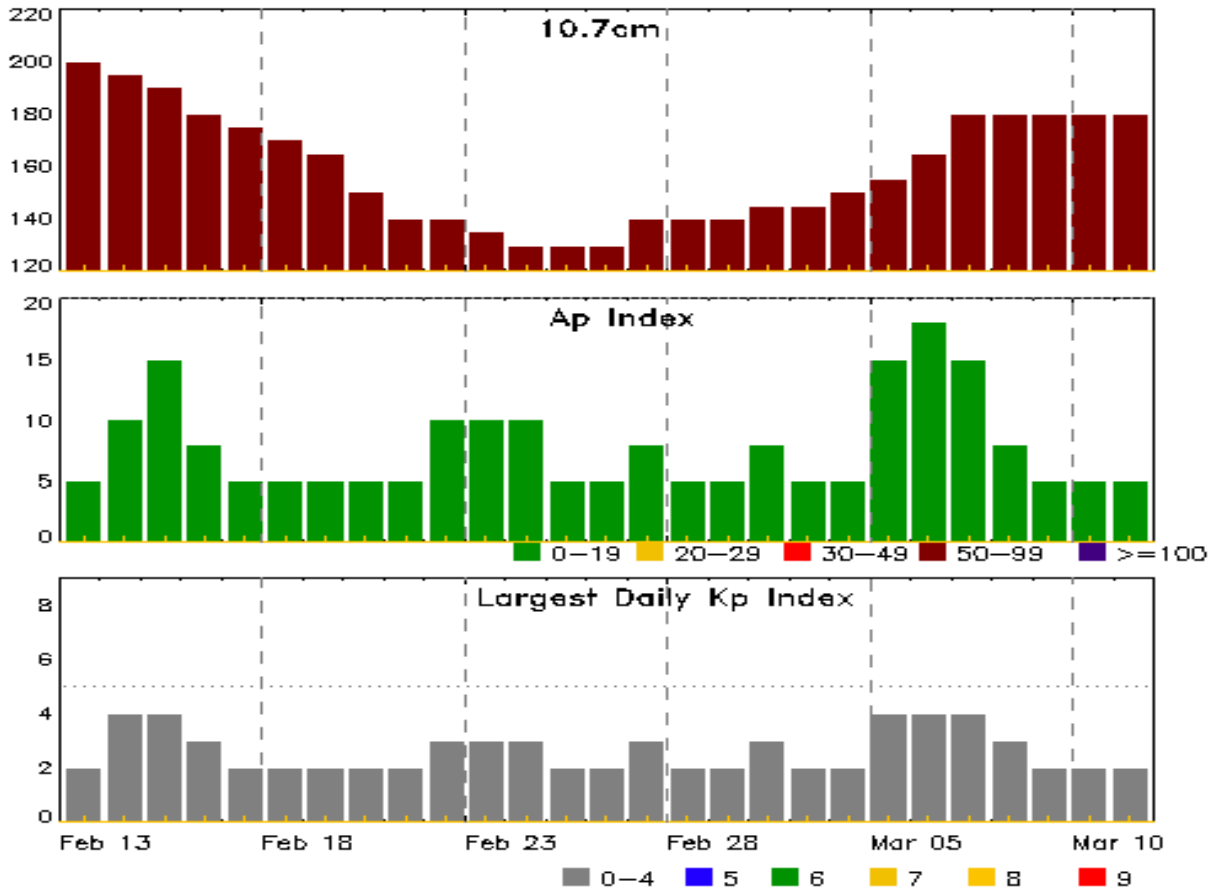


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
10 Feb 0406	ALERT: Type IV Radio Emission	10/0319
10 Feb 2252	WARNING: Geomagnetic K = 4	10/2250 - 11/0900
10 Feb 2257	ALERT: Geomagnetic K = 4	10/2257
11 Feb 0855	EXTENDED WARNING: Geomagnetic K = 4	10/2250 - 11/1500
11 Feb 1550	ALERT: X-ray Flux exceeded M5	11/1547
11 Feb 1611	SUMMARY: X-ray Event exceeded X1	11/1540 - 1554
12 Feb 1639	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	12/1600



## 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
13 Feb	200	5	2	27 Feb	140	8	3
14	195	10	4	28	140	5	2
15	190	15	4	01 Mar	140	5	2
16	180	8	3	02	145	8	3
17	175	5	2	03	145	5	2
18	170	5	2	04	150	5	2
19	165	5	2	05	155	15	4
20	150	5	2	06	165	18	4
21	140	5	2	07	180	15	4
22	140	10	3	08	180	8	3
23	135	10	3	09	180	5	2
24	130	10	3	10	180	5	2
25	130	5	2	11	180	5	2
26	130	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 245	Radio Flux 2695	Intensity II	Intensity IV
07 Feb	2001	2007	2014	M1.5	0.007	1N	N30E05	3213			57	
07 Feb	2305	2307	2309	M6.3	0.012			3213	100			
08 Feb	0245	0253	0257	M2.0	0.007			3213				
08 Feb	1528	1603	1626	M1.6	0.037	2N	N31W05	3213	470			
08 Feb	1956	2012	2046	M1.5	0.035	1N	S09E72	3217				
08 Feb	2103	2113	2121	M1.7	0.011	1F	N30W10	3213				
09 Feb	0245	0310	0328	M3.0	0.041			3217	230			
09 Feb	0711	0717	0721	M1.1	0.004	SF	S02E70	3217	530			
09 Feb	0849	0907	0924	M2.8	0.038			3217	220		1	1
09 Feb	1444	1456	1505	M1.5	0.012	1N	N30W18	3213				
09 Feb	1514	1525	1534	M1.4	0.015	SN	S09E69	3217				
09 Feb	1818	1842	1902	M1.8	0.037			3213				
10 Feb	0245	0303	0320	M3.7	0.046	2N	N29W25	3213	370	110	2	1
10 Feb	0802	0805	0809	M1.4	0.004	SN	N31W27	3213				
10 Feb	1435	1455	1512	M1.1	0.018	1F	N34W29	3213	870			
10 Feb	1529	1600	1613	M1.6	0.033			3213				
10 Feb	2234	2241	2248	M1.2	0.008	1N	S18E63	3220	410			
11 Feb	0759	0808	0815	M2.2	0.017	1N	N06W68	3208				
11 Feb	1042	1058	1129	M1.0	0.008	1N	S18E57	3220				
11 Feb	1129	1134	1141	M1.4	0.009			3222				
11 Feb	1205	1209	1215	M1.5	0.009	SF	S11E42	3217				
11 Feb	1218	1223	1228	M1.1	0.007			3217				
11 Feb	1228	1240	1249	M1.5	0.017	SF	N06W71	3208				
11 Feb	1540	1548	1554	X1.1	0.046	2B	S08E39	3217				
11 Feb	1711	1723	1731	M1.4	0.011			3208				
12 Feb	0835	0848	0852	M3.1	0.014	1B	S09E30	3217		200		
12 Feb	0911	0927	0937	M1.4	0.018			3217	100			
12 Feb	1323	1334	1344	M1.2	0.010			3222				
12 Feb	1533	1538	1601	M1.0	0.013	SN	S09E26	3217	14000			



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
06 Feb	1144	1151	1155	C1.3			3213
06 Feb	1158	1212	1225	C7.8			3211
06 Feb	1519	1524	1526		SF	N11E40	3214
06 Feb	1536	1546	1601	C1.5	SF	S17W62	3212
06 Feb	1607	1617	1628	C1.9	SF	S17W62	3212
06 Feb	1655	1700	1704	C3.0	SF	N30E19	3213
06 Feb	1737	1744	1750	C1.6			3212
06 Feb	1752	1756	1800	C2.1			3213
06 Feb	1844	1844	1854		SF	N11E39	3214
06 Feb	2015	2019	2034	C2.1	SF	N29E17	3213
06 Feb	2042	2049	2104		SF	N11E37	3214
06 Feb	2115	2116	2120		SF	N31E16	3213
06 Feb	2231	2236	2244		SF	N29E15	3213
07 Feb	0018	0018	0102		SF	N12E36	3214
07 Feb	0105	0108	0122	C2.0	SF	N12E36	3214
07 Feb	0234	0242	0249	C3.0			
07 Feb	0257	0313	0317		SF	N12E36	3214
07 Feb	0324	0330	0334		SF	N12E36	3214
07 Feb	0337	0345	0351	C2.1			
07 Feb	0452	0518	0529		SF	N12E36	3214
07 Feb	0600	0607	0611	C3.5			
07 Feb	0657	0715	0731	C2.2	SF	N12E36	3214
07 Feb	0822	0832	0844	C3.2	SF	N28E10	3213
07 Feb	0845	0917	1004		1F	N28E10	3213
07 Feb	0948	0951	1005	C3.0	SF	N29E10	3213
07 Feb	1202	1213	1216	C2.5			
07 Feb	1309	1323	1333	C5.5			3213
07 Feb	1505	2008	2141		1N	N30E05	3213
07 Feb	1710	1717	1723	C6.7			3213
07 Feb	1806	1809	1814	C5.4	SF	S16W64	3211
07 Feb	1926	1933	1938	C4.5			
07 Feb	1944	1947	1954		SF	S17W63	3211
07 Feb	2001	2007	2014	M1.5			3213
07 Feb	2121	2130	2134	C5.3			3211
07 Feb	2305	2307	2309	M6.3			3213
08 Feb	0114	0115	0124		SF	S17W67	3211
08 Feb	0157	0157	0200		SF	N10E21	3214
08 Feb	0206	0217	0219	C4.5	SF	S17W67	3211





## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
08 Feb	0245	0253	0257	M2.0			3213
08 Feb	0331	0336	0336		SF	S18W83	3212
08 Feb	0412	0412	0441		SF	N23E50	3215
08 Feb	0445	0446	0449		SF	S18W83	3212
08 Feb	0504	0521	0534	C5.3			3213
08 Feb	0627	0637	0645	C3.7	SF	N31E02	3213
08 Feb	0732	0732	0741		SF	N31E02	3213
08 Feb	1004	1033	1047	C7.4	SN	N29W03	3213
08 Feb	1102	1122	1155		SF	N28W04	3213
08 Feb	1122	1136	1204		SF	N21W02	3209
08 Feb	1434	1557	1722		2N	N31W05	3213
08 Feb	1500	1505	1512	C2.7			3217
08 Feb	1528	1603	1626	M1.6			3213
08 Feb	1813	1940	2049		SF	N30W13	3213
08 Feb	1839	1846	1850	C6.4			3213
08 Feb	1908	1923	1935		SF	S15W82	3211
08 Feb	1956	2012	2046	M1.5	1N	S09E72	3217
08 Feb	2103	2113	2121	M1.7	1F	N30W10	3213
08 Feb	2210	2214	2217		SF	N11E07	3214
08 Feb	2222	2228	2229		SF	N30W10	3213
09 Feb	0037	0038	0044		SF	N25E45	3216
09 Feb	0245	0310	0328	M3.0			3217
09 Feb	0300	0309	0433		SN	N31W13	3213
09 Feb	0511	0520	0533	C5.9			3213
09 Feb	0530	0531	0551	C5.9	SF	N31W13	3213
09 Feb	0616	0616	0623		SF	N31W13	3213
09 Feb	0711	0717	0721	M1.1	SF	S02E70	3217
09 Feb	0741	0750	0801		SF	N10E04	3214
09 Feb	B0802	U0803	A0804		SF	N27W15	3213
09 Feb	0849	0907	0924	M2.8			3217
09 Feb	1016	1020	1028		SF	N31W13	3213
09 Feb	1203	1220	1243	C8.4			3213
09 Feb	1430	1453	1527	M1.5	1N	N30W18	3213
09 Feb	1510	1522	1552	M1.4	SN	S09E69	3217
09 Feb	1532	1537	1545		1F	N00E00	3211
09 Feb	1638	1639	1648		SF	N28W22	3213
09 Feb	1707	1714	1718	C6.4	SF	N29W21	3213
09 Feb	1745	1752	1804	C6.2			3213



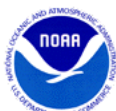
## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
09 Feb	1745	1752	1804	C6.1			3713
09 Feb	1750	1826	2017		1N	N29W21	3213
09 Feb	1804	1812	1818	C6.5	SF	S13E72	3217
09 Feb	1818	1842	1902	M1.8			3213
09 Feb	2104	2109	2115	C4.8			3213
09 Feb	2215	2219	2221		SF	S14E59	3217
09 Feb	2241	2244	2248	C4.9	SF	N34W17	3213
10 Feb	0008	0013	0024	C3.4	SF	N31W23	3213
10 Feb	0141	0141	0145		SF	N30W25	3213
10 Feb	0212	0212	0217		SF	N29W22	3213
10 Feb	0245	0303	0320	M3.7	2N	N29W25	3213
10 Feb	0532	0546	0624	C9.3	1F	S10E62	3217
10 Feb	0713	0714	0720		SF	N07W56	3208
10 Feb	0802	0805	0809	M1.4	SN	N31W27	3213
10 Feb	0828	0853	0917	C5.7	SN	S10E55	3217
10 Feb	0900	0906	0911	C5.5	SF	S12E54	3219
10 Feb	0944	0954	1000		SF	S10E55	3217
10 Feb	1016	1017	1022		SF	N11W10	3214
10 Feb	1023	1029	1034	C4.1			3208
10 Feb	1025	1035	1039		SF	N10W11	3214
10 Feb	1025	1029	1038		SF	S10E55	3217
10 Feb	1032	1041	1048		SF	N06W57	3208
10 Feb	1043	1050	1054	C9.6	SF	S11E54	3217
10 Feb	1224	1225	1230		SF	N07W58	3208
10 Feb	B1259	U1259	A1321		SF	N07W58	3208
10 Feb	B1351	U1352	A1358		SF	N07W58	3208
10 Feb	B1421	1426	1434		SF	N13W11	3214
10 Feb	1435	1455	1512	M1.1			3213
10 Feb	1437	1441	1452		SF	N13W60	3208
10 Feb	1441	1556	1711		1F	N34W29	3213
10 Feb	1526	1527	1529		SF	N14W62	3208
10 Feb	1529	1600	1613	M1.6			3213
10 Feb	1645	1647	1649		SF	S13E51	3217
10 Feb	1747	1751	1811		SF	S21E68	3220
10 Feb	2006	2007	2014		SF	N33W33	3213
10 Feb	2028	2028	2035		SF	S14E49	3217
10 Feb	2140	2144	2146		SF	N07W64	3208
10 Feb	2210	2210	2227		SF	N12W17	3214



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	Rgn #
10 Feb	2219	2225	2231	C5.3	SF	N28W38	3213
10 Feb	2234	2241	2248	M1.2	1N	S18E63	3220
10 Feb	B2304	2304	2345		SF	S11E59	3217
10 Feb	2309	2320	A2359		SF	N29W37	3213
10 Feb	2321	2332	2342		SF	N07W64	3208
10 Feb	2355	0003	0009	C5.8	SF	N11W20	3214
11 Feb	B0000	0010	0059		SF	N29W37	3213
11 Feb	0014	0222	0239		SF	N08W66	3208
11 Feb	0050	0103	0107		SF	N11W20	3214
11 Feb	0053	0058	0113		SF	S09E46	3217
11 Feb	0134	0136	0143		SF	N11W20	3214
11 Feb	0213	0224	0231		SF	N11W20	3214
11 Feb	0418	0431	0441		SF	S13E54	3220
11 Feb	0440	0452	0505		SF	N29W37	3213
11 Feb	0523	0526	0541		SF	N29W68	3222
11 Feb	0610	0620	0627	C5.2	SF	N06W68	3208
11 Feb	0627	0634	0642	C7.7	SF	N10W24	3214
11 Feb	0642	0645	0651	C7.2			3208
11 Feb	0711	0712	0729		SF	N28W39	3213
11 Feb	0713	0717	0800		SF	N10W25	3214
11 Feb	0720	0752	0818		SF	S10E44	3217
11 Feb	0728	0728	0734		SF	N07W67	3208
11 Feb	0742	0748	0757		SF	N28W39	3213
11 Feb	0744	0807	0833		1N	N06W68	3208
11 Feb	0747	0751	0755		SF	N28W66	3222
11 Feb	0748	0756	0759	C9.9			3208
11 Feb	0749	0800	0802		SF	N29W68	3222
11 Feb	0759	0808	0815	M2.2			3208
11 Feb	0831	0842	0852		SF	S10E43	3217
11 Feb	0834	0834	0838		SF	N21E60	3221
11 Feb	0907	0907	0910		SF	N10W25	3214
11 Feb	0913	0921	0932	C7.3	SF	S10E43	3217
11 Feb	0922	0922	0932		SF	S10E54	3220
11 Feb	0926	0929	0951		SF	N28W67	3222
11 Feb	0929	0935	0940		1N	N21E59	3221
11 Feb	0943	1131	1143		SF	N10W25	3214
11 Feb	1012	1013	1017		SF	S10E43	3217
11 Feb	1016	1019	1023		SF	N21E58	3221



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
11 Feb	1022	1028	1035		SF	N06W70	3208
11 Feb	1036	1042	1116		SF	N06W70	3208
11 Feb	1042	1058	1129	M1.0			3220
11 Feb	1048	1051	1055		SF	N28W43	3213
11 Feb	1049	1057	1132		1N	S18E57	3220
11 Feb	1055	1111	1321		1F	N26E18	3216
11 Feb	1055	1059	1101		SF	N28W67	3222
11 Feb	1129	1134	1141	M1.4			3222
11 Feb	1148	1149	1155		SF	N06W70	3208
11 Feb	1149	1150	1156		SF	N28W67	3222
11 Feb	1158	1202	1304		SN	S06E39	3219
11 Feb	1200	1208	1305	M1.5	SF	S11E42	3217
11 Feb	1210	1211	1224		SF	N06W71	3208
11 Feb	1217	1222	1229		SN	N28W67	3222
11 Feb	1218	1223	1228	M1.1			3217
11 Feb	1227	1234	1257	M1.5	SF	N06W71	3208
11 Feb	1228	1229	1238		SF	N19W42	3209
11 Feb	1348	1348	1353		SF	S19E58	3220
11 Feb	1407	1418	1452		SF	N06W72	3208
11 Feb	1413	1414	1417		SF	N29W69	3222
11 Feb	1453	1453	1456		SF	N29W72	3222
11 Feb	1540	1548	1554	X1.1	2B	S08E39	3217
11 Feb	1621	1621	1625		SF	N29W48	3213
11 Feb	1642	1642	1644		SF	N30W76	3222
11 Feb	1709	1713	1728		SF	N30W76	3222
11 Feb	1711	1723	1731	M1.4			3208
11 Feb	1855	1901	1927		SF	N29W47	3213
11 Feb	1939	2001	2011		SF	N29W47	3213
11 Feb	2041	2041	2044		SF	N11W31	3214
11 Feb	2102	2102	2111		SF	N07W76	3208
11 Feb	2113	2121	2139		SF	N07W76	3208
11 Feb	2138	2143	2245		SF	N27W49	3213
11 Feb	2245	2257	2312	C8.7			3217
11 Feb	2314	2320	2324		SF	N08W79	3208
11 Feb	2338	2339	2348		SF	N08W81	3208
12 Feb	0036	0036	0044		SF	N12W34	3214
12 Feb	0147	0200	0205	C7.2			3217
12 Feb	0233	0237	0246	C4.0			3214



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
12 Feb	0334	0344	0353	C8.8	SF	N11W35	3214
12 Feb	0422	0422	0434		SF	N29W53	3213
12 Feb	0456	0502	0509	C5.0			3222
12 Feb	0500	0519	0546		SF	N11W35	3214
12 Feb	0502	0504	0509		SF	N30W83	3222
12 Feb	0520	0526	0532		SF	N29W53	3213
12 Feb	0524	0541	0602	C9.0	1F	S11E36	3217
12 Feb	0828	0846	0959	M3.1	1B	S09E30	3217
12 Feb	0836	0839	0843		SF	N23E46	3224
12 Feb	0911	0927	0937	M1.4			3217
12 Feb	1323	1334	1344	M1.2			3222
12 Feb	1503	1509	1519	C5.5			
12 Feb	1533	1538	1601	M1.0	SN	S09E26	3217
12 Feb	1717	1724	1737	C6.1	SF	N13E41	3221
12 Feb	1758	1841	1918		SF	N11E52	
12 Feb	1956	2006	2017	C5.6			3222
12 Feb	2254	2301	2310	C3.8			3222



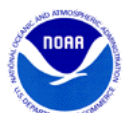
## Region Summary

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
<b>Region 3206</b>																		
29 Jan	S22E59	284	10	4	Bxo	4	B											
30 Jan	S22E47	282	40	5	Cso	5	B	1				3						
31 Jan	S22E33	282	30	6	Cao	5	B	1										
01 Feb	S21E19	285	30	4	Bxo	4	B											
02 Feb	S20E05	286	30	3	Bxo	3	B											
03 Feb	S21W08	285	10	3	Axx	1	A											
04 Feb	S21W22	286	plage															
05 Feb	S21W36	287	plage															
06 Feb	S21W50	288	plage															
07 Feb	S21W64	289	plage															
08 Feb	S21W78	290	plage															
								2	0	0	3	0	0	0	0	0		

Crossed West Limb.  
 Absolute heliographic longitude: 286

<b>Region 3207</b>																		
30 Jan	S12E72	257	60	1	Cai	2	B	6										
31 Jan	S11E65	254	130	7	Cao	5	B	4				7						
01 Feb	S11E49	254	90	7	Cao	7	B	2				2						
02 Feb	S12E36	253	110	9	Cao	10	B											
03 Feb	S12E23	254	100	9	Cai	11	B	3				3	1					
04 Feb	S13E10	254	60	8	Cao	10	B	1				1						
05 Feb	S14W04	255	60	7	Bxo	10	B					1						
06 Feb	S14W19	257	10	2	Bxo	3	B											
07 Feb	S14W33	258	plage															
08 Feb	S13W47	259	plage															
09 Feb	S13W61	259	plage															
10 Feb	S13W75	260	plage															
11 Feb	S13W89	261	plage															
								16	0	0	14	1	0	0	0	0		

Crossed West Limb.  
 Absolute heliographic longitude: 255



### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical												
								C	M	X	S	1	2	3	4								
<b>Region 3208</b>																							
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								

Still on Disk.

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																		
								0	0	0	2	0	0	0	0	0					

Still on Disk.

Absolute heliographic longitude: 226



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
								C	M	X	S	1	2	3	4		
<b>Region 3210</b>																	
03 Feb	S15W05	282	30	5	Cao	5	B										
04 Feb	S15W16	280	30	5	Cao	5	B										
05 Feb	S17W29	280	20	4	Bxo	4	B										
06 Feb	S15W43	281	10	1	Axx	1	A										
07 Feb	S14W56	281	5	1	Axx	1	A										
08 Feb	S14W70	282	10	1	Axx	1	A										
09 Feb	S14W84	282	plage														
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.  
Absolute heliographic longitude: 282

<b>Region 3211</b>																	
04 Feb	S16W29	293	20	3	Cao	5	B	2									
05 Feb	S17W41	292	40	4	Cro	6	B	1			1						
06 Feb	S17W57	295	100	5	Dao	7	B	1									
07 Feb	S16W71	296	50	5	Cao	3	B	2			2						
08 Feb	S16W84	296	10	1	Axx	1	A	1			3						
								7	0	0	6	0	0	0	0	0	

Crossed West Limb.  
Absolute heliographic longitude: 293

<b>Region 3212</b>																	
05 Feb	S17W56	307	20	5	Bxo	3	B				1						
06 Feb	S17W70	308	20	4	Cro	5	B	3			2						
07 Feb	S16W84	309	10	7	Bxo	3	B										
								3	0	0	3	0	0	0	0	0	

Crossed West Limb.  
Absolute heliographic longitude: 307





### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 <sup>6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 3213</b>																							
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					2											
								21	11	0	38	6	2	0	0								

Still on Disk.

Absolute heliographic longitude: 226

<b>Region 3214</b>																							
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											
								6	0	0	27	0	0	0	0								

Still on Disk.

Absolute heliographic longitude: 205

<b>Region 3215</b>																							
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																				
								0	0	0	1	0	0	0	0								

Still on Disk.

Absolute heliographic longitude: 182



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
<b>Region 3216</b>																							
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																
												0	0	0	1	1	0	0	0				

Still on Disk.

Absolute heliographic longitude: 166

<b>Region 3217</b>																							
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	2	3			1	2										
								9	10	1	18	4	1	0	0								

Still on Disk.

Absolute heliographic longitude: 137

<b>Region 3218</b>																							
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																
								0	0	0	0	0	0	0	0	0	0	0					

Still on Disk.

Absolute heliographic longitude: 153

<b>Region 3219</b>																							
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																
								1	0	0	2	0	0	0	0	0							

Still on Disk.

Absolute heliographic longitude: 146



### *Region Summary - continued*

Date	Location		Sunspot Characteristics				Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical			
			Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3

#### **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										
								0	2	0	4	2	0	0	0	0	

Still on Disk.  
Absolute heliographic longitude: 122

#### **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			1						
								1	0	0	3	1	0	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	0	

Still on Disk.  
Absolute heliographic longitude: 249

#### **Region 3223**

11 Feb	N19E31	141	10	4	Bxo	3	B										
12 Feb	N17E16	143	plage														
								0	0	0	0	0	0	0	0	0	

Still on Disk.  
Absolute heliographic longitude: 143

#### **Region 3224**

11 Feb	N23E50	122	10	5	Cro	2	B										
12 Feb	N22E35	124	10	1	Bxo	3	B				1						
								0	0	0	1	0	0	0	0	0	

Still on Disk.  
Absolute heliographic longitude: 124



***Region Summary - continued***

Date	Location		Sunspot Characteristics				Flares									
	Lat CMD	Lon	Heli 10 <sup>-6</sup> hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
									C	M	X	S	1	2	3	4
<b><i>Region 3225</i></b>																
12 Feb	S22E06	153	20	3	Cro	3	B	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 153



## ***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

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