

Solar activity ranged from low to high levels. Activity was low during 07 – 08 January with C-class flares from Regions 9767 (S22, L = 016, class/area Eki/510 on 31 December) and 9773 (N14, L = 326, class/area Eki/570 on 11 January). A long-duration C9 X-ray flare occurred at 08/2025 UTC due to a prominence eruption near the southeast limb. A halo coronal mass ejection was also associated with this eruption, but it was not Earth-directed. Activity increased to high levels on 09 January due to an M9/2b flare at 09/1801 UTC from Region 9773 associated with a 230 SFU Tenflare. Region 9773 showed a rapid increase in size and magnetic complexity prior to the M9 flare, then grew at a gradual pace during the rest of the period as it produced isolated low-level M-class flares (for flare specifics, please refer to the Energetic Events or Optical Flares lists). Activity dropped to low levels on 10 January. Activity increased to moderate levels during 11 – 13 January due to isolated low-level M-class flares and C-class flares from Regions 9767, 9773, and 9775 (S05, L = 310, class/area Eao/180 on 13 January). Region 9767 was in a gradual decay phase as it departed the west limb on 11 January. Region 9775 was in a gradual growth phase during the period.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the period. A high-speed stream associated with a coronal hole was observed during 10 – 13 January. Solar wind velocities peaked early on 11 January with “gusts” as high as 700 km/sec, then gradually decreased. There were no significant disturbances observed during the rest of the period.

A greater than 10 MeV proton event began at 10/2045 UTC, reached a maximum of 91 PFU at 11/0530 UTC, and ended at 13/1425 UTC. The prominence eruption of 09 January may have been the source for this proton event. Note: a greater than 10 MeV proton event began on the day of this report. Details will be provided in next week's issue.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels during 07 – 11 January, then increased to moderate to high levels for the rest of the period.

The geomagnetic field was disturbed during 10 – 13 January due to coronal hole effects. Mostly unsettled to active conditions occurred during this disturbance with minor to major storm periods at high latitudes.

### **Space Weather Outlook** **16 January - 11 February 2002**

Solar activity is expected to be at moderate levels during most of the period with isolated low-level M-class flares the rule. There will also be a chance for isolated major flare activity during the period.

The greater than 10 MeV proton event that began on 15 January is expected to end on 16 or 17 January. There will be a chance for another isolated proton flare during the period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during most of the period. However, high flux levels will be possible during 08 - 10 February.

The geomagnetic field is expected to be at quiet to unsettled levels during most of the period. However, active conditions are expected during 06 - 08 February due to coronal hole effects.



### *Daily Solar Data*

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
07 January	189	158	570	C1.2	7	0	0	8	1	0	0	0
08 January	199	143	680	C1.0	5	0	0	6	1	0	0	0
09 January	229	159	1090	C4.2	1	2	0	15	1	1	0	0
10 January	225	179	1160	C2.5	5	0	0	17	0	0	0	0
11 January	229	195	1480	C2.1	6	1	0	12	0	0	0	0
12 January	233	174	1500	C1.5	7	4	0	11	2	0	0	0
13 January	241	190	1650	C1.6	8	2	0	20	1	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)		
	>1MeV	>10MeV	>100MeV	>.6MeV	>2MeV	>4MeV
	07 January	3.7E+6	1.1E+5	2.3E+3		1.5E+6
08 January	1.7E+6	6.8E+4	2.7E+3		2.9E+5	
09 January	7.1E+5	4.9E+4	2.8E+3		2.3E+5	
10 January	5.3E+6	4.8E+5	3.2E+3		2.1E+6	
11 January	7.8E+7	5.2E+6	3.4E+3		1.4E+7	
12 January	3.7E+7	2.0E+6	3.0E+3		2.1E+7	
13 January	2.2E+7	9.5E+5	2.7E+3		3.6E+7	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	07 January	8	0-1-1-3-1-3-3-2	*	*-*-*-*-*-*-*	7
08 January	6	2-1-3-1-3-1-0-0	*	*-*-*-*-*-*-*	7	2-1-3-2-2-2-2-1
09 January	2	0-0-0-0-1-2-2-0	*	0-0-0-0-1-1-0-*	3	1-0-0-0-1-2-2-0
10 January	16	1-2-1-2-4-5-3-3	45	0-1-3-4-6-7-6-3	17	2-1-2-3-4-5-4-3
11 January	12	3-3-3-3-2-3-2-1	37	4-4-5-6-4-5-4-3	21	4-4-4-4-4-4-3-2
12 January	12	3-3-3-3-2-3-2-1	30	2-3-5-6-4-5-2-2	15	3-3-4-4-3-3-3-2
13 January	10	1-2-3-2-3-2-2-3	25	2-2-5-5-5-4-2-2	11	2-2-4-3-3-2-2-3

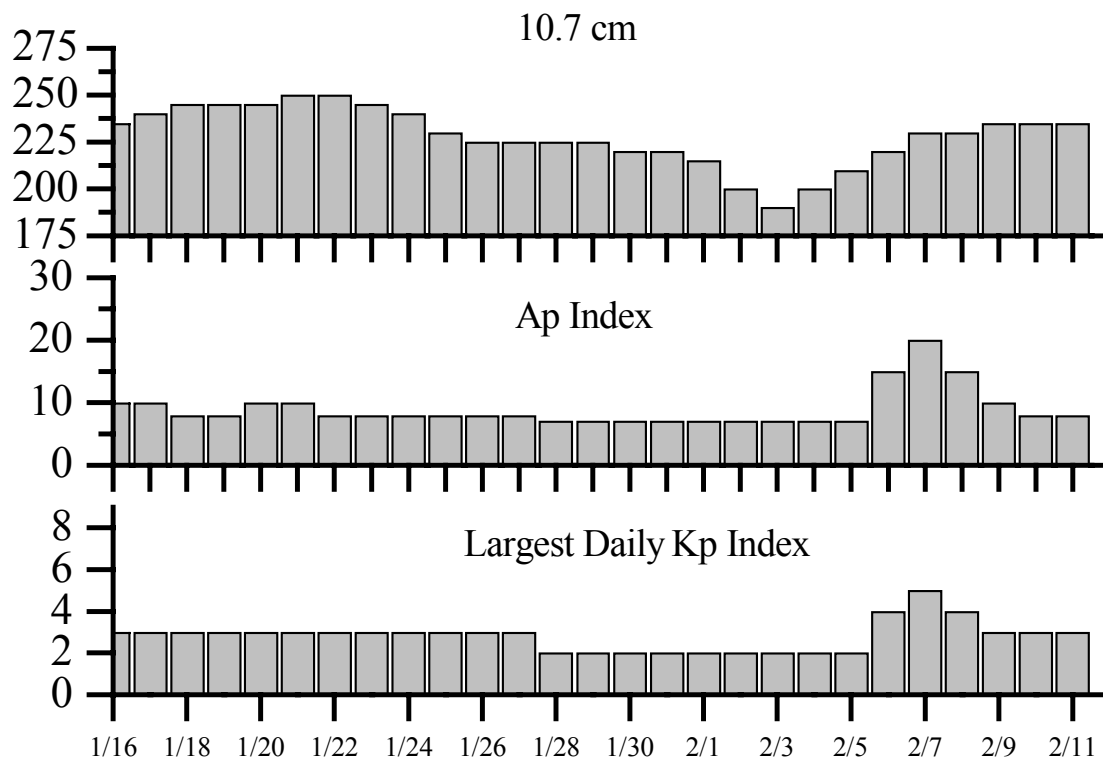


### *Alerts and Warnings Issued*

<u>Date &amp; Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date &amp; Time of Event UT</u>
07 Jan 0024	1 - 245 MHz Burst	06 Jan
08 Jan 0859	K= 4 Observed	08 Jan 0600 - 0900
09 Jan 1818	X-Ray event M9.5	09 Jan 1801
09 Jan 1820	10cm Radio Burst 230 F.U.	09 Jan 1752
10 Jan 0013	1 - 245 Mhz Burst	09 Jan
10 Jan 1440	K= 4 Warning	10/1440 - 11/1500 Jan
10 Jan 1500	K= 4 Observed	10 Jan 1200 - 1500
10 Jan 1647	K=5 Warning	10/1646 - 11/1500 Jan
10 Jan 2013	A $\geq$ 20 Watch	11 Jan
10 Jan 2100	Protons Event $>10$ MeV $\geq$ 10pfu	10 Jan 2045
10 Jan 2132	Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 11/2100 Jan
11 Jan 0010	2 - 245 MHz Bursts	10 Jan
11 Jan 0212	CONTINUED Protons Event $>10$ MeV $\geq$ 10pfu	10 Jan 2045
11 Jan 0903	A $\geq$ 20 Observed	11 Jan 0900
11 Jan 1451	EXTENDED K= 4 Warning	10/1440 - 12/1500 Jan
11 Jan 2047	CONTINUED Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 12/1800 Jan
11 Jan 2244	ENDED A $\geq$ 20 Observed	11 Jan 1800
12 Jan 0042	CONTINUED Protons Event $>10$ MeV $\geq$ 10pfu	10 Jan 2045
12 Jan 1807	K-Index of 4 Observed	12 Jan 1500 - 1800
12 Jan 1811	CONTINUED Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 13/0000 Jan
12 Jan 2350	CONTINUED Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 13/0300 Jan
13 Jan 0048	4 - 245 Bursts	12 Jan
13 Jan 0049	CONTINUED Protons Event $>10$ MeV $\geq$ 10pfu	10 Jan 2045
13 Jan 0254	CONTINUED Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 13/2100 Jan
13 Jan 1149	CONTINUED Proton Event $>10$ MeV $\geq$ 10pfu Warning	10/2131 - 11/2100 Jan
13 Jan 1411	Electron Event $>2$ MeV $\geq$ 1000pfu	13 Jan 1355
13 Jan 1749	ENDED Protons Event $>10$ MeV $\geq$ 10pfu	13 Jan 1425



### Twenty-seven Day Outlook



Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
16 Jan	235	10	3	30 Jan	220	7	2
17	240	10	3	31	220	7	2
18	245	8	3	01	215	7	2
19	245	8	3	02	200	7	2
20	245	10	3	03	190	7	2
21	250	10	3	04	200	7	2
22	250	8	3	05	210	7	2
23	245	8	3	06	220	15	4
24	240	8	3	07	230	20	5
25	230	8	3	08	230	15	4
26	225	8	3	09	235	10	3
27	225	8	3	10	235	8	3
28	225	7	2	11	235	8	3
29	225	7	2				



### *Energetic Events*

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	½	Class	Integ Flux	Imp/Location		Rgn #	Radio Flux		Intensity	
			Max			Brtns	Lat		CMD	245	2695	II
09 Jan 02	1101	1113	1130	M1.6	.020	1f	N13E08	9773				
09 Jan 02	1742	1801	1812	M9.5	.091	2b	N13W02	9773	230			
11 Jan 02	0753	0807	0831	M1.0	.017	Sf	S19W79	9767	25			
12 Jan 02	0307	0322	0338	M1.0	.015	Sf	S07W19	9775				
12 Jan 02	1505	1519	1533	M1.7	.019	1n	S05W26	9775				
12 Jan 02	1832	1843	1903	M3.4	.043							
12 Jan 02	1925	1929	1934	M1.3	.006	Sf	S11W39	9775	180	27		
13 Jan 02	0304	0310	0313	M1.4	.005	1n	N17W40	9773	250	23		
13 Jan 02	1935	1946	1949	M2.2	.009	Sf	S07W48	9775	5500	110		

### *Flare List*

Date	Time			X-ray Class.	Optical Imp / Brtns	Optical Location Lat CMD	Rgn
	Begin	Max	End				
07 January	0227	0256	0305	C2.4			
	0532	0532	0540		Sf	N16E33	9773
	0643	0645	0700	C3.5	1f	N15E37	9773
	1318	1319	1338		Sf	S22W24	9767
	1415	1419	1439	C3.8	Sf	S20W27	9767
	1559	1559	1608	C2.7	Sf	N14E27	9773
	1819	1819	1822		Sf	N08W58	9763
	2049	2050	2053		Sf	N07W58	9765
	2055	2058	2124	C2.9	Sf	N13E24	9773
	2210	2221	2228	C2.3			
08 January	2245	2248	2307	C2.8	Sf	N14E24	9773
	1256	1300	1307	C2.5	Sf	N14E17	9773
	1717	1719	1749	C7.2	1f	S18W42	9767
	1722	1728	1734		Sf	S18E79	9778
	1814	2025	2139	C9.6			
	2018	2030	2106		Sf	S18W44	9767
	2207	2223	2234	C6.7	Sf	N14E11	9773
	2253	2256	2315	C7.5	Sf	N13E06	9773
09 January	2325	2338	2349		Sf	N14E12	9773
	0043	0051	0101		Sf	N15E08	9773
	0051	0054	0057		Sf	S19W45	9767
	0302	0303	0308		Sf	N14E05	9773
	0401	0407	0418		Sf	S20W45	9767
	0546	0547	0553		Sf	S14E67	9778
	0630	0633	0636		Sf	N14E03	9773
	0638	0640	0657		Sf	N14E04	9773
	0646	0649	0657		Sf	S14E66	9778
	0744	0752	0758		Sf	N13E00	9773
	0805	0809	0812		Sf	N32E57	9779
	0817	0818	0822		Sf	S13E65	9778
0848	0848	0854		Sf	S16W54	9767	



*Flare List - continued.*

Date	Time			X-ray Class.	Optical		Rgn	
	Begin	Max	End		Imp / Brtns	Location Lat CMD		
09 January	0952	0955	0957	C4.3				
	B1115	1147	1214	M1.6	1f	N13E08	9773	
	1251	1305	1310		Sf	N13W01	9773	
	1744	1800	1900	M9.5	2b	N13W02	9773	
	1958	1959	2004		Sf	S19E72	9778	
10 January	2321	2321	2323		Sf	N15W10	9773	
	0251	0253	0316		Sf	S17W66	9771	
	0255	0256	0304		Sf	S24W56	9767	
	0451	0455	0504		Sf	S04E08	9775	
	0738	0756	0830	C4.3	Sf	N13W10	9773	
	0846	0851	0857		Sf	S15E57	9778	
	0938	0946	1004	C7.0	Sf	N14W09	9773	
	1154	1156	1205		Sf	S20W64	9767	
	1419	1419	1423	C2.6	Sf	N14W10	9773	
	1511	1516	1524		Sf	S15E49	9778	
	1511	1516	1545	C3.2	Sf	N14W13	9773	
	1529	1530	1540		Sf	N14W10	9773	
	1605	1606	1621	C3.6	Sf	N14W16	9773	
	1855	1856	1900		Sf	S15E48	9778	
	1921	1925	1933		Sf	S17E47	9778	
	2004	2005	2009		Sf	N14W19	9773	
	2016	2025	2044		Sf	N14W19	9773	
	2348	2353	0009		Sf	N11W23	9773	
	11 January	0324	0328	0335	C3.7			
0650		0653	0658		Sf	S06W08	9775	
0755		0800	0809		Sf	N30E36	9779	
0757		0801	0816	M1.0	Sf	S19W79	9767	
0918		0918	0931		Sf	N12W26	9773	
0945		0947	0952		Sf	N31E35	9779	
0954		0957	0958		Sf	N15W21	9773	
1224		1236	1245	C4.2	Sf	N13W27	9773	
1321		1328	1340	C6.1	Sf	N17W22	9773	
1333		1334	1342		Sf	S04W09	9775	
1847		1848	1855	C3.7	Sf	S06W16	9775	
1958		2007	2019	C7.3	Sf	N16W27	9773	
2049		2053	2100	C4.8	Sf	S05W15	9775	
12 January		0110	0112	0131	C4.7	Sf	N12W33	9773
		0155	0156	0157	C3.0			
	0311	0311	0317		Sf	N11E78	9782	
	0313	0318	0345	M1.0	Sf	S07W19	9775	
	0318	0318	0320		Sf	N11E77	9782	
	0717	0721	0725	C2.7				



*Flare List - continued.*

Date	Time			X-ray Class.	Imp / Brtns	Optical	Rgn
	Begin	Max	End			Location Lat CMD	
12 January	0738	0744	0758	C4.1	Sf	S06W21	9775
	0839	0840	0844	C3.1	Sf	N15W38	9773
	0856	0856	0928	C3.4	1f	N11W41	9773
	1215	1221	1229	C5.4			
	1506	1517	1606	M1.7	1n	S05W26	9775
	1540	1543	1553		Sf	N18W40	9773
	1745	1748	1754		Sf	N18W37	9773
	1755	1757	1801		Sf	S05W28	9775
	1832	1843	1903	M3.4			
	1918	1918	1925		Sf	N18W35	9773
1930	1930	1934	M1.3	Sf	S11W39	9775	
13 January	0205	0205	0212		Sf	N30E15	9779
	0306	0311	0328	M1.4	1n	N17W40	9773
	0350	0351	0359		Sf	N06E54	9782
	0358	0401	0405	C8.0	Sf	S14E15	9778
	0536	0538	0551	C3.5	Sf	N30E13	9779
	0734	0735	0738		Sf	N09E52	9782
	0751	0752	0758	C3.7	Sf	N17W43	9773
	1055	1055	1058		Sf	N18W47	9773
	1203	1205	1210		Sf	N30E10	9779
	1319	1321	1350	C7.8	Sf	S06W45	9775
	1322	1323	1329		Sf	S16E12	9778
	1337	1338	1342	C8.0	Sf	S05W44	9775
	1534	1536	1539	C7.4	Sf	N17W50	9773
	1617	1623	1626		Sf	S02W41	9775
	1617	1623	1626		Sf	N02E50	9782
	1708	1709	1712	C5.4	Sf	S07W46	9775
	1750	1818	1859		Sf	N02E50	9782
	1942	1946	1953	M2.2	Sf	S07W48	9775
2002	2004	2016		Sf	S07W49	9775	
2002	2003	2010		Sf	N04E48	9782	
2340	2341	2348	C3.6	Sf	S15E04	9778	



### Region Summary

Date	Location		Sunspot Characteristics				Flares															
	( ° Lat ° CMD)	Helio	Area (10 <sup>-6</sup> hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
		Lon						C	M	X	S	1	2	3	4							
<i>Region 9756</i>																						
26 Dec	S28E72	073	0040	02	Hsx	001	A															
27 Dec	S29E60	072	0070	02	Hsx	001	A															
28 Dec	S29E47	072	0120	03	Cao	005	B															
29 Dec	S28E34	072	0080	03	Cao	004	B															
30 Dec	S29E20	071	0060	03	Cao	003	B															
31 Dec	S29E08	070	0030	03	Cao	004	B															1
01 Jan	S28W05	070	0020	01	Hsx	001	A															
02 Jan	S28W17	069																				
03 Jan	S28W30	069																				
04 Jan	S28W43	069																				
05 Jan	S28W56	069																				
06 Jan	S28W69	069																				
07 Jan	S28W82	069																				

0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 070

<i>Region 9761</i>																						
26 Dec	N09E75	070	0050	02	Hsx	001	A															
27 Dec	N10E61	071	0050	02	Hsx	001	A															
28 Dec	N10E47	072	0070	02	Hsx	001	A															
29 Dec	N10E34	072	0070	02	Hsx	001	A															
30 Dec	N10E21	070	0070	02	Hsx	001	A															
31 Dec	N11E08	070	0040	02	Hsx	001	A															
01 Jan	N10W05	070	0050	02	Hsx	001	A															
02 Jan	N11W18	070	0030	04	Cso	002	B															
03 Jan	N11W31	071	0020	02	Hsx	003	A															
04 Jan	N11W45	072	0010	01	Hsx	001	A															
05 Jan	N12W56	069	0020	01	Hsx	001	A															
06 Jan	N10W70	070	0010	01	Axx	001	A															
07 Jan	N09W83	070	0010	01	Axx	001	A															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 070





**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
<i>Region 9763</i>														
27 Dec	N06E76	056	0060	03	Hsx	001	A							
28 Dec	N06E61	058	0080	07	Cso	004	B							
29 Dec	N06E49	057	0090	08	Cao	006	B				1			
30 Dec	N06E35	056	0060	06	Cso	004	B							
31 Dec	N07E20	058	0040	02	Hsx	001	A							
01 Jan	N06E07	058	0040	02	Hsx	001	A							
02 Jan	N06W06	058	0040	02	Hsx	001	A							
03 Jan	N07W20	059	0050	02	Hsx	001	A							
04 Jan	N06W34	061	0020	02	Hsx	003	A							
05 Jan	N06W45	058	0010	01	Hsx	001	A							
06 Jan	N06W59	059	0020	01	Hrx	001	A							
07 Jan	N05W73	060	0010	01	Axx	001	A				1			
08 Jan	N05W86	060												
											0	0	0	2
											0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 058

*Region 9765*

28 Dec	N05E78	041	0070	07	Dso	003	B							
29 Dec	N06E63	043	0150	06	Dao	004	B							
30 Dec	N06E50	041	0110	06	Dao	005	B							
31 Dec	N06E36	042	0120	06	Dso	006	B							
01 Jan	N06E24	041	0080	04	Dso	007	B							
02 Jan	N06E11	041	0080	04	Dso	005	B							
03 Jan	N06W03	043	0070	03	Cso	004	B							
04 Jan	N06W16	043	0070	07	Cso	009	B							
05 Jan	N07W25	038	0070	07	Cso	003	B							
06 Jan	N06W41	041	0070	01	Hsx	001	A							
07 Jan	N06W54	041	0070	11	Cso	002	B				1			
08 Jan	N06W71	045	0070	02	Hsx	001	A							
09 Jan	N07W86	047	0040	02	Hsx	001	A							
											0	0	0	1
											0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 043



**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
<i>Region 9766</i>														
30 Dec	N05E62	029	0040	03	Cso	003	B							
31 Dec	N05E48	030	0020	04	Cso	002	B							
01 Jan	N04E35	030	0020	01	Hrx	001	A							
02 Jan	N04E21	031	0000	00	Axx	001	A							
03 Jan	N07E08	032	0010	03	Bxo	002	B							
04 Jan	N07W05	032												
05 Jan	N07W18	032												
06 Jan	N07W31	032												
07 Jan	N07W44	032												
08 Jan	N07W57	032												
09 Jan	N07W70	032												
10 Jan	N07W83	032												

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 032

<i>Region 9767</i>														
30 Dec	S23E73	018	0210	09	Eki	004	Bg	2		1	1			
31 Dec	S23E60	018	0510	13	Eki	017	Bg			2				
01 Jan	S23E49	016	0510	14	Ehi	022	Bg			1				
02 Jan	S23E36	016	0410	14	Eai	037	Bg			3				
03 Jan	S23E23	017	0310	14	Eai	039	Bg	3		4	1			
04 Jan	S22E08	019	0340	17	Fki	051	Bg	1		3				
05 Jan	S22W03	016	0320	17	Fki	034	Bg	1		4				
06 Jan	S22W17	017	0280	16	Fai	029	Bg	4		6				
07 Jan	S22W30	017	0250	16	Fai	028	Bg	1		2				
08 Jan	S21W43	017	0160	14	Eao	016	Bg	1		1	1			
09 Jan	S18W61	022	0170	10	Dao	006	B			3				
10 Jan	S17W73	020	0120	05	Cao	004	B			2				
11 Jan	S18W87	021	0090	09	Cao	003	B		1	1				

13 1 0 33 3 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 016



**Region Summary - continued.**

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

*Region 9770*

02 Jan	N08W29	081	0030	04	Cso	008	B											
03 Jan	N09W41	081	0050	04	Cso	009	B	2				2						
04 Jan	N07W55	082	0050	05	Cso	008	B											
05 Jan	N07W62	075	0090	06	Cso	010	B											
06 Jan	N07W75	075																
07 Jan	N07W88	075																

Crossed West Limb.

Absolute heliographic longitude: 081

*Region 9771*

02 Jan	S20E17	035	0010	05	Bxo	005	B											
03 Jan	S20E05	035	0040	07	Cro	009	B											
04 Jan	S20W10	037	0060	09	Cso	013	B											
05 Jan	S23W20	033	0030	04	Dso	004	B					1						
06 Jan	S23W34	034	0010	09	Bxo	005	B											
07 Jan	S21W49	036	0010	07	Bxo	006	B											
08 Jan	S21W62	036																
09 Jan	S21W75	036																
10 Jan	S21W88	036																

Crossed West Limb.

Absolute heliographic longitude: 035

*Region 9772*

03 Jan	S18E83	317	0120	02	Hax	001	A											
04 Jan	S16E65	322	0060	02	Hax	001	A											
05 Jan	S17E52	321	0050	02	Hsx	001	A											
06 Jan	S17E38	322	0070	02	Hsx	001	A											
07 Jan	S17E24	323	0060	01	Hsx	001	A											
08 Jan	S16E11	323	0060	02	Hsx	001	A											
09 Jan	S16W02	323	0060	01	Hsx	001	A											
10 Jan	S16W14	321	0040	02	Hsx	001	A											
11 Jan	S16W28	322	0060	02	Hsx	002	A											
12 Jan	S16W41	322	0060	02	Hsx	002	A											
13 Jan	S17W54	322	0030	01	Hsx	001	A											

Still on Disk.

Absolute heliographic longitude: 323



**Region Summary - continued.**

Date	Location		Sunspot Characteristics				Flares									
	Helio		Area (10 <sup>-6</sup> hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
	( ° Lat ° CMD)	Lon						C	M	X	S	1	2	3	4	
<i>Region 9773</i>																
04 Jan	N14E64	323	0080	07	Cso	006	B	2			1	2				
05 Jan	N13E52	321	0130	08	Dso	008	B	3	1		5	1				
06 Jan	N13E36	324	0140	07	Dao	008	B	2			7					
07 Jan	N12E22	325	0120	08	Dao	013	B	4			4	1				
08 Jan	N13E07	327	0090	08	Dao	019	B	3			4					
09 Jan	N14W05	326	0300	11	Eai	027	Bgd		2		7	1	1			
10 Jan	N14W17	324	0510	14	Eac	044	Bgd	5			9					
11 Jan	N14W32	326	0570	15	Eki	028	Bgd	3			5					
12 Jan	N15W46	327	0500	16	Fki	016	Bgd	3			5	1				
13 Jan	N16W57	325	0530	16	Fki	015	Bgd	2	1		3	1				
								27	4	0	50	7	1	0	0	

Still on Disk.

Absolute heliographic longitude: 326

*Region 9774*

07 Jan	N12W37	024	0010	04	Bxo	002	B									
08 Jan	N12W50	024														
09 Jan	N12W63	024														
10 Jan	N12W76	024														
11 Jan	N12W89	024														
								0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 024

*Region 9775*

07 Jan	S06E37	310	0020	03	Cro	003	B									
08 Jan	S05E24	310	0040	07	Cso	010	B									
09 Jan	S05E11	310	0080	09	Dso	015	B									
10 Jan	S05W03	310	0080	07	Dso	017	B				1					
11 Jan	S05W16	310	0140	08	Dao	016	B	2			4					
12 Jan	S05W30	311	0140	12	Eao	019	Bg	1	3		4	1				
13 Jan	S05W43	311	0180	14	Eao	022	Bg	3	1		6					
								6	4	0	15	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 310



***Region Summary - continued.***

Date	Location		Sunspot Characteristics				Flares							
	Lat	° CMD) 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

*Region 9776*

07 Jan	N10E59	288	0010	00	Axx	001	A											
08 Jan	N11E46	288	0040	03	Cso	003	B											
09 Jan	N11E32	289	0070	06	Dso	004	B											
10 Jan	N10E19	288	0040	07	Cso	004	B											
11 Jan	N11E04	290	0030	07	Cso	004	B											
12 Jan	N11W13	294	0020	06	Cso	005	B											
13 Jan	N11W26	294	0020	04	Cso	003	B											
											0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 290

*Region 9777*

08 Jan	S06E64	270	0010	01	Axx	001	A											
09 Jan	S06E51	270																
10 Jan	S06E38	270																
11 Jan	S06E25	270																
12 Jan	S06E12	270																
13 Jan	S06W01	270																
											0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 270

*Region 9778*

08 Jan	S15E67	267	0060	02	Hsx	001	A				1							
09 Jan	S16E58	263	0170	11	Eao	009	B				4							
10 Jan	S17E45	262	0220	15	Eai	021	B				4							
11 Jan	S16E33	261	0180	13	Eai	026	B											
12 Jan	S16E21	260	0140	12	Eai	020	Bg											
13 Jan	S16E09	259	0140	13	Eai	018	Bgd	2			3							
								2	0	0	12	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 259

*Region 9779*

08 Jan	N28E65	269	0150	03	Hsx	001	A											
09 Jan	N28E53	268	0170	09	Cao	003	B				1							
10 Jan	N28E40	267	0100	04	Cao	002	B											
11 Jan	N28E27	267	0120	07	Cso	005	B								2			
12 Jan	N29E13	268	0120	06	Cso	003	B											
13 Jan	N30E02	266	0130	02	Hsx	001	A	1			3							
								1	0	0	6	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 266



**Region Summary - continued.**

Date	Location		Sunspot Characteristics				Flares										
	( ° Lat ° CMD)	Helio	Area (10 <sup>-6</sup> hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
		Lon						C	M	X	S	1	2	3	4		
<i>Region 9780</i>																	
09 Jan	S11W49	010	0030	04	Dso	003	B										
10 Jan	S11W62	009	0050	05	Dso	006	B										
11 Jan	S10W78	012	0040	06	Cso	003	B										
12 Jan	S10W93	014	0030	01	Hsx	001	A										
									0	0	0	0	0	0	0	0	0
Crossed West Limb.																	
Absolute heliographic longitude: 010																	
<i>Region 9781</i>																	
11 Jan	S06E64	230	0090	02	Hsx	001	A										
12 Jan	S05E52	229	0080	02	Hsx	001	A										
13 Jan	S05E39	229	0060	02	Hsx	001	A										
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 229																	
<i>Region 9782</i>																	
11 Jan	N09E73	221	0160	10	Dao	007	B										
12 Jan	N09E62	219	0320	10	Dao	006	B					2					
13 Jan	N08E48	220	0280	08	Dao	010	B					5					
									0	0	0	7	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 220																	
<i>Region 9783</i>																	
12 Jan	S10E76	205	0090	03	Hax	001	A										
13 Jan	S11E65	203	0160	03	Hax	002	A										
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 203																	
<i>Region 9784</i>																	
13 Jan	S29E58	210	0010	01	Axx	001	A										
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 210																	
<i>Region 9785</i>																	
13 Jan	N12E53	215	0110	07	Cao	006	B										
									0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 215																	

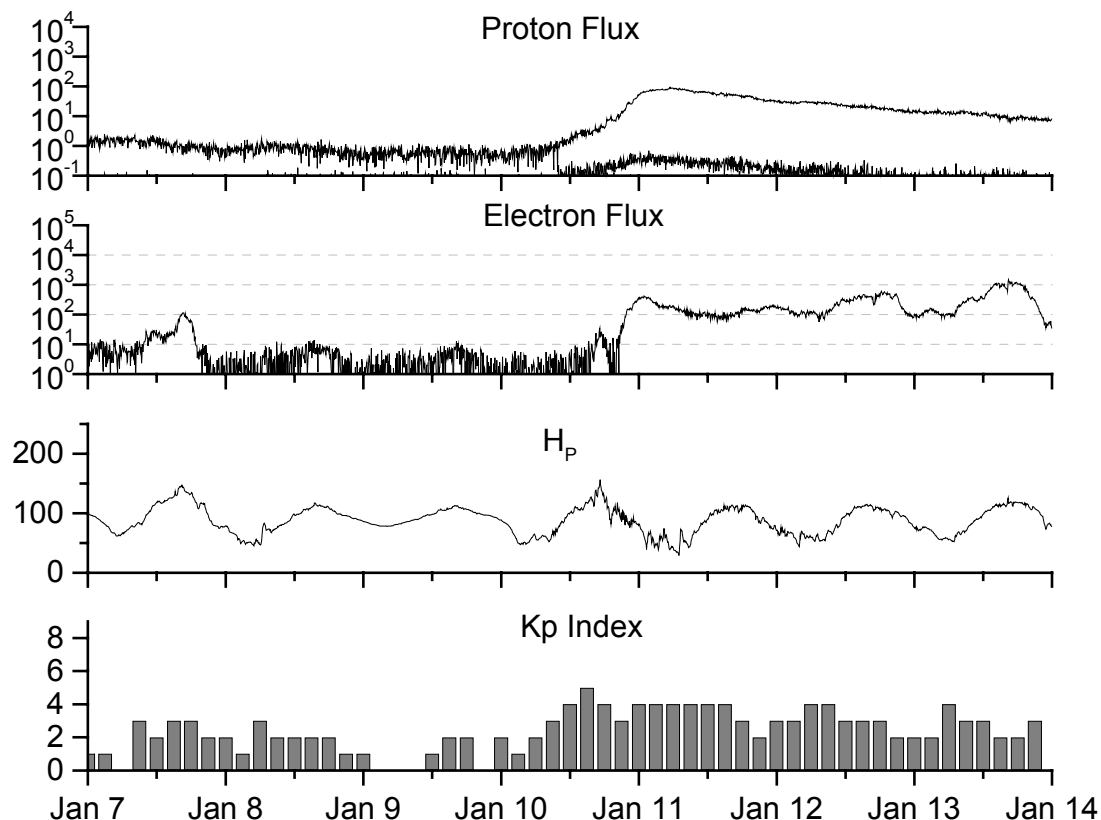


**Recent Solar Indices (preliminary)  
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SWO	Ratio RI	Ratio RI/SWO	Smooth values SWO	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
<b>2000</b>									
January	140.8	90.1	0.64	168.0	112.9	158.1	175.5	13	14.5
February	161.9	112.9	0.70	172.1	116.7	173.2	176.8	15	15.0
March	203.6	138.5	0.68	175.4	119.9	208.2	178.4	09	15.0
April	193.4	125.5	0.65	176.3	120.8	184.2	180.5	15	15.0
May	188.8	121.6	0.64	173.1	119.0	184.5	180.0	15	15.0
June	190.3	124.9	0.66	172.0	118.7	179.8	179.7	15	15.1
July	236.7	169.1	0.71	173.0	119.7	204.7	180.2	21	14.8
August	166.6	130.5	0.78	171.8	118.6	163.1	179.5	16	14.2
September	157.9	109.9	0.70	169.0	116.2	182.1	177.1	18	14.2
October	138.9	100.1	0.72	166.2	114.4	167.7	175.6	18	14.6
November	149.9	106.5	0.71	162.7	112.7	178.8	173.6	17	14.6
December	146.4	104.5	0.71	160.8	112.1	173.6	172.0	08	14.4
<b>2001</b>									
January	142.7	95.1	0.67	156.3	108.8	166.7	168.8	08	13.8
February	131.0	80.1	0.61	151.4	104.2	147.3	165.8	06	13.3
March	166.7	114.2	0.69	154.0	104.9	177.7	167.9	17	12.9
April	163.6	108.2	0.66	159.4	107.7	178.3	171.7	18	12.7
May	135.1	97.3	0.72	163.1	108.8	148.7	174.8	12	12.5
June	196.7	134.0	0.68	167.2	109.9	173.7	178.8	12	12.4
July	124.6	82.2	0.66			131.3		11	
August	159.4	106.8	0.67			163.2		13	
September	229.1	150.7	0.66			233.3		12	
October	197.4	125.6	0.64			208.2		18	
November	178.6	106.5	0.60			212.5		14	
December	217.5	131.8	0.61			236.6		08	

**NOTE:** All smoothed values after June 1999 and monthly values after December 2000 are preliminary estimates. The lowest smoothed sunspot index number for Cycle 22, RI = 8.0, occurred in May 1996. The highest smoothed sunspot number for Cycle 22, RI= 158.5, occurred July 1989. \*After June 1991, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.





*Weekly Geosynchronous Satellite Environment Summary*

*Week Beginning 07 January 2002*

*Protons* plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

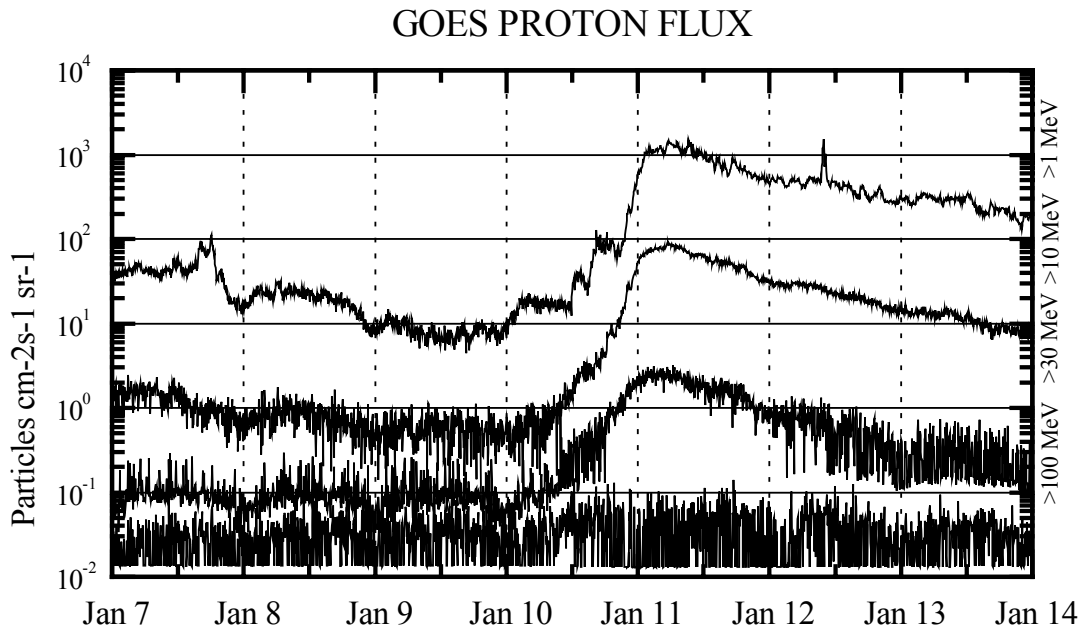
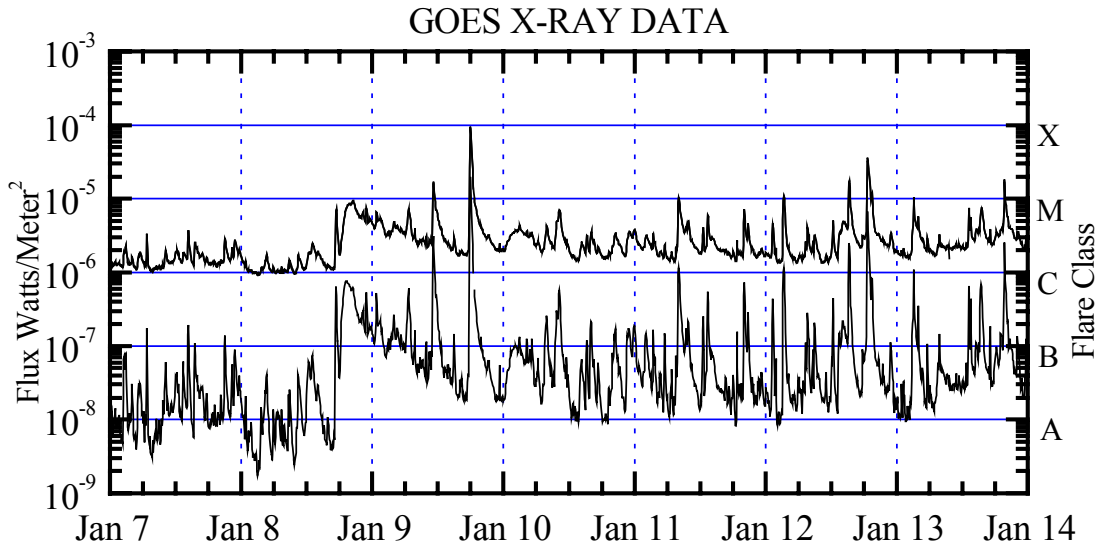
*Electrons* plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec-sr) with energies greater than 2 MeV at GOES-8.

*H<sub>p</sub>* plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-8. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

*K<sub>p</sub>* plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Heartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC) and the US Geological Survey. These may differ from the final K<sub>p</sub> values derived from a more extensive network of magnetometers. The data included here are those now available in real time at the SWO and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and K<sub>p</sub> are "global" parameters that are applicable to a first order approximation over large areas. H<sub>p</sub> is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.







*Weekly GOES Satellite X-ray and Proton Plots*

X-ray plot contains five-minute averaged x-ray flux (watts/m<sup>2</sup>) as measured by GOES 8 and 10 in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec-sr) as measured by GOES-8 (W75) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu (protons/cm<sup>2</sup>-sec-sr) at greater than 10 MeV.

