

Space Weather Highlights **21 - 27 January 2002**

SWO PRF 1378
22 January 2002

Solar activity was at low to moderate levels. The period began with activity at low levels due to isolated C-class flares from a few unremarkable sunspot groups (for flare details, please refer to the Optical Flares or Energetic Events lists). Activity increased to moderate levels on 22 January due to an impulsive, low-level M-class flare from Region 9791 (S03, L = 195, class/area Dso/120 on 21 January). Region 9791 began to gradually decay following the M-flare. Activity decreased to low levels during 23 – 25 January due to C-class subflares. During this period Region 9794 (N12, L = 113, class/area Dao/090 on 25 January) produced a few C-class subflares associated with Type II radio sweeps. Region 9794 was unimpressive in terms of size and structure. A long-duration C7 X-ray flare peaked at 24/0439 UTC. This flare was associated with a type II radio sweep and a non-earth-directed CME and appeared to be from a source beyond the east limb. Activity increased to moderate levels on 26 January as Region 9802 (S14, L = 023, class/area Dso/230 on 27 January) produced an M1/Sf flare late in the day. Region 9802 was moderate-sized with a slight degree of magnetic complexity. Activity dropped to low levels on 27 January. An event occurred from beyond the northwest limb around midday on 27 January. This event was associated with a non-Earth-directed partial-halo CME as well as a >10 MeV proton flux enhancement.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the period. Solar wind velocities were elevated during 21 January, possibly due to a high-speed stream associated with a coronal hole. Velocities peaked at around 550 km/sec during this period. There were no significant disturbances observed during the rest of the period.

There were no proton events detected at geosynchronous orbit. However, a greater than 10 MeV proton flux enhancement (peak flux 9.0 PFU) occurred during the latter half of 27 January following an event from beyond the northwest limb of the Sun.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels during 21 – 22 January, then decreased to normal levels during the rest of the period.

No significant geomagnetic field activity occurred during the period.

Space Weather Outlook **30 January - 25 February 2002**

Solar activity is expected to be at low to moderate levels. Isolated low-level M-class flares are expected. There will be a slight chance for a major flare during the first half of the period.

There will be a slight chance for a proton flare during the forecast period.

The greater than 2 MeV electron flux is expected to be at normal to moderate levels during most of the period. However, high flux levels will be possible during 07 – 10 February.

Geomagnetic field activity is expected to be at quiet to unsettled levels during most of the period. However, active conditions will be possible during 06 – 08 February due to coronal hole effects.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
21 January	225	187	1400	C1.1	7	0	0	6	0	0	0	0
22 January	229	178	1130	C1.0	11	1	0	7	0	0	0	0
23 January	227	272	1250	C1.3	7	0	0	5	0	0	0	0
24 January	231	173	1180	C1.2	3	0	0	3	0	0	0	0
25 January	235	196	1120	C1.7	6	0	0	3	0	0	0	0
26 January	240	194	1320	C2.1	4	1	0	6	0	0	0	0
27 January	248	189	1440	C2.0	1	0	0	3	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day-sr)			Electron Fluence (electrons/cm ² -day-sr)		
	>1MeV	>10MeV	>100MeV	>.6MeV	>2MeV	>4MeV
21 January	4.1E+5	2.8E+4	2.8E+3		5.3E+5	
22 January	3.8E+5	2.7E+4	2.9E+3		1.3E+6	
23 January	3.7E+5	2.4E+4	2.9E+3		9.1E+5	
24 January	2.3E+5	2.2E+4	3.0E+3		3.5E+5	
25 January	8.1E+5	3.2E+4	2.6E+3		7.4E+5	
26 January	7.3E+5	3.8E+4	2.7E+3		3.1E+5	
27 January	1.1E+6	1.7E+5	3.6E+3		3.0E+5	

Daily Geomagnetic Data

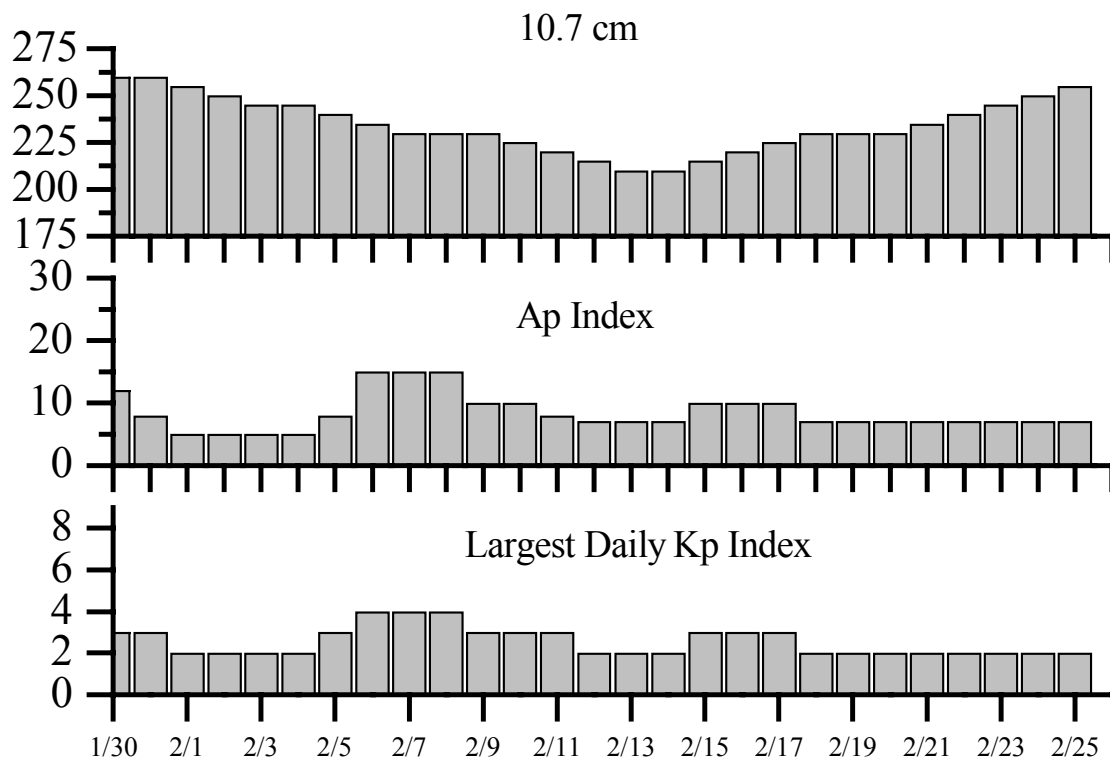
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	21 January	7	2-2-2-2-2-1-2-2	14	2-2-2-5-4-2-2-1	9
22 January	5	1-1-2-1-2-2-1-1	7	0-0-2-3-4-1-1-0	6	1-1-3-2-2-2-2-2
23 January	4	2-0-1-2-1-1-2-1	10	1-0-1-4-3-2-3-2	6	2-0-1-2-2-3-3-2
24 January	3	1-1-0-0-2-1-1-1	1	1-1-0-0-0-1-0-0	4	1-2-0-0-1-2-2-2
25 January	6	0-1-1-1-3-2-3-1	12	0-0-1-0-3-4-5-1	8	1-0-1-1-3-3-4-2
26 January	6	1-1-2-2-2-2-2-1	6	1-1-2-3-1-2-2-0	7	2-2-2-2-2-2-2-2
27 January	4	1-1-1-1-1-2-1-1	5	1-2-1-2-3-1-1-0	7	3-3-1-2-2-2-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
22 Jan 0042	1 - 245 Burst	21 Jan
22 Jan 0817	Type II Radio Emission	22 Jan 0758
23 Jan 0359	Type II Radio Emission	23 Jan 0340
23 Jan 1358	Type II Radio Emission	23 Jan 1341
24 Jan 0909	Type II Radio Emission	24 Jan 0401
25 Jan 0237	Type II Radio Emission	25 Jan 0226
27 Jan 1522	Proton Event >10MeV ≥10pfu Warning	27 Jan 1522 - 28 Jan 1500
27 Jan 2001	CANCELLED Proton Event >10MeV ≥10pfu Warning	27 Jan 2000



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
30 Jan	260	12	3	13 Feb	210	7	2
31	260	8	3	14	210	7	2
01 Feb	255	5	2	15	215	10	3
02	250	5	2	16	220	10	3
03	245	5	2	17	225	10	3
04	245	5	2	18	230	7	2
05	240	8	3	19	230	7	2
06	235	15	4	20	230	7	2
07	230	15	4	21	235	7	2
08	230	15	4	22	240	7	2
09	230	10	3	23	240	7	2
10	225	10	3	24	250	7	2
11	220	8	3	25	255	7	2
12	215	7	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	$\frac{1}{2}$	Class	Integ Flux	Imp/Location		Rgn #	Radio Flux		Intensity	
			Max			Brtns	Lat		CMD	245	2695	II
22 Jan	0852	0900	0903	M1.3	.005			9791				
26 Jan	1926	2005	2034	M1.3	.037	Sf	S15E78	9802				

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical Location		Rgn
	Begin	Max	End			Lat	CMD	
21 January	0136	0137	0153	C1.7	Sf	N18E25	9788	
	0324	0328	0350	C3.4	Sf	N18E25	9788	
	0537	0539	0542	C1.6	Sf	N07W45	9785	
	0743	0744	0755	C1.7	Sf	N15W20	9789	
	1818	1818	1822	C1.7	Sf	S03W28	9791	
	2126	2137	2144	C2.2				
	2237	2242	2245	C3.5	Sf	S02W30	9791	
22 January	0252	0255	0257	C1.4				
	0542	0546	0550	C1.9				
	0741	0758	0826	C1.6				
	0852	0900	0903	M1.3			9791	
	0914	0914	0921		Sf	S09E22	9787	
	1119	1126	1135	C3.3				
	1311	1316	1323	C5.0	Sf	N17W32	9789	
	1420	1429	1434	C2.6				
	1639	1639	1645	C1.4	Sf	S16E10	9793	
	1808	1811	1812	C1.4				
	1824	1826	1831		Sf	N13E40	9794	
	2207	2211	2218	C2.4	Sf	S24E68	9799	
	2241	2242	2249	C1.3	Sf	N12E36	9794	
2330	2333	2337	C1.6	Sf	S05E21	9787		
23 January	0117	0121	0125	C1.9				
	0316	0319	0324	C1.6				
	0335	0336	0340	C1.7	Sf	N11E34	9794	
	0906	0907	0922	C1.4	Sf	S06E09	9787	
	0958	0959	1002	C1.6	Sf	S09W57	9783	
	1334	1336	1357	C3.7	Sf	N12E29	9794	
	2227	2228	2235	C2.3	Sf	S08E01	9787	
24 January	0325	0439	0706	C7.1				
	0509	0510	0517		Sf	S09W02	9787	
	0608	0608	0634		Sf	N13E21	9794	
	1503	1509	1513	C3.7				
	2040	2045	2048	C3.8				
25 January	2049	2050	2054		Sf	S11W10	9787	
	0217	0224	0307	C6.6	Sn	N13E10	9794	
	1030	1035	1055	C3.5				



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
25 January	1130	1133	1137		C2.6		
	1735	1736	1742		Sf	N12E00	9794
	1815	1818	1823	C2.5			
	1902	1906	1909	C4.6			
	2214	2218	2224	C7.5			
26 January	2348	2349	2351		Sf	N07E62	9800
	0000	0003	0005	C4.5			
	1235	1237	1300		Sf	N06E57	9800
	1254	1300	1313		Sf	N15W49	9788
	1351	1352	1403		Sf	N19W49	9788
	1447	1451	1454	C2.7			
	1947	1947	1950	M1.3	Sf	S15E78	9802
	2101	2105	2115		Sf	N20W55	9788
	2225	2226	2234	C6.2	Sf	N19W57	9788
	2358	0006	0014	C4.3			
27 January	1214	1214	1219		Sf	N18W63	9788
	1720	1722	1731	C2.7	Sf	S07W48	9787
	2033	2033	2036		Sf	S17E61	9802



Region Summary

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

Region 9781

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												
14 Jan	S04E25	230	0060	03	Hsx	001	A												
15 Jan	S05E13	229	0060	02	Hsx	001	A												
16 Jan	S05W01	229	0080	02	Hax	002	A												
17 Jan	S04W14	229	0100	01	Hsx	001	A												
18 Jan	S05W28	230	0080	02	Hsx	001	A												
19 Jan	S05W42	231	0080	02	Hsx	001	A												
20 Jan	S04W55	231	0060	02	Hsx	002	A												
21 Jan	S04W69	231	0070	02	Hsx	001	A												
22 Jan	S06W82	231	0050	01	Hsx	001	A												
23 Jan	S03W95	231	0030	02	Hax	001	A												
																			0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 229

Region 9782

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
14 Jan	N07E33	222	0240	05	Dao	009	Bd	1	1										2 1
15 Jan	N06E20	222	0220	05	Dao	011	Bd	1											1
16 Jan	N06E05	223	0260	08	Dao	016	B												
17 Jan	N06W08	223	0270	06	Dko	010	B												
18 Jan	N06W22	224	0200	04	Dao	010	B												
19 Jan	N07W35	224	0140	05	Dao	007	B												
20 Jan	N08W48	224	0140	05	Cao	003	B												
21 Jan	N07W62	224	0080	02	Hax	001	A												
22 Jan	N08W75	224	0090	02	Hsx	001	A												
23 Jan	N08W88	224	0060	02	Hax	001	A												
																			2 1 0 10 0 1 0 0

Crossed West Limb.

Absolute heliographic longitude: 223



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares											
	(° Lat ° CMD)	Helio	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
		Lon						C	M	X	S	1	2	3	4			
<i>Region 9783</i>																		
12 Jan	S10E76	205	0090	03	Hax	001	A											
13 Jan	S11E65	203	0160	03	Hax	002	A											
14 Jan	S11E52	203	0140	03	Hsx	002	A											
15 Jan	S11E42	202	0260	03	Hkx	002	A											
16 Jan	S12E25	203	0170	05	Cao	006	B											
17 Jan	S12E12	203	0210	04	Cao	005	B	1				1						
18 Jan	S11E01	201	0180	07	Cao	006	B											
19 Jan	S11W12	201	0140	05	Dao	005	B											
20 Jan	S11W25	201	0130	04	Cao	006	B											
21 Jan	S11W39	201	0130	05	Cao	005	B											
22 Jan	S10W52	201	0140	04	Dao	010	B											
23 Jan	S11W65	201	0140	05	Dao	008	B	1				1						
24 Jan	S12W79	202	0170	06	Cao	006	B											
25 Jan	S12W90	200	0060	03	Hax	001	A											
								2	0	0	2	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 201

<i>Region 9784</i>																		
13 Jan	S29E58	210	0010	01	Axx	001	A											
14 Jan	S28E44	211	0000	00	Axx	001	A											
15 Jan	S28E31	211																
16 Jan	S28E18	211																
17 Jan	S28E05	211																
18 Jan	S28W08	211																
19 Jan	S28W21	211																
20 Jan	S28W34	211																
23 Jan	S28W73	211	0030	04	Cao	003	B											
24 Jan	S34W80	203	0050	01	Hsx	001	A											
25 Jan	S34W90	200	0050	01	Bxo	002	B											
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 211



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares									
	(° Lat ° CMD)	Helio	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical					
		Lon						C	M	X	S	1	2	3	4	
<i>Region 9785</i>																
13 Jan	N12E53	215	0110	07	Cao	006	B									
14 Jan	N11E41	214	0200	07	Dao	006	Bg									
15 Jan	N11E28	214	0190	06	Dao	005	Bg									
16 Jan	N10E14	214	0180	08	Dao	007	B									
17 Jan	N10E01	214	0250	07	Dao	012	B									
18 Jan	N09W14	216	0180	07	Dso	011	B									
19 Jan	N09W26	215	0120	05	Dao	007	B									
20 Jan	N11W39	215	0110	07	Dao	006	B									
21 Jan	N10W53	215	0100	04	Dso	006	B	1				1				
22 Jan	N13W66	215	0090	03	Dso	002	B									
23 Jan	N31W79	215	0080	02	Hsx	001	A									
24 Jan	N08W92	215	0060	03	Hax	002	A									
									1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 214

Region 9786

16 Jan	S26E07	221	0030	06	Dso	003	B									
17 Jan	S26W06	221	0050	06	Dso	007	B									
18 Jan	S26W19	221	0030	06	Cso	015	B									
19 Jan	S25W32	221	0090	08	Dao	012	B									
20 Jan	S25W45	221	0080	08	Dao	006	B									
21 Jan	S25W59	221	0070	09	Dso	004	B									
22 Jan	S26W73	222	0050	01	Hsx	001	A									
23 Jan	S24W86	222	0060	02	Hax	001	A									
									0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 221



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares											
	Helio		Area (10 ⁻⁶ 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 9787</i>																		
17 Jan	S08E85	130	0120	05	Hhx	001	A											
18 Jan	S07E71	131	0210	04	Hax	002	A											
19 Jan	S07E59	130	0360	10	Cko	006	B	1	1		2							
20 Jan	S07E46	130	0420	10	Cko	006	B				4							
21 Jan	S07E32	130	0430	11	Eko	007	B											
22 Jan	S06E19	130	0400	07	Dko	013	Bg	1			2							
23 Jan	S07E06	130	0440	08	Dki	010	Bg	2			2							
24 Jan	S06W06	129	0470	10	Dko	010	B				2							
25 Jan	S09W21	131	0400	06	Dko	008	B											
26 Jan	S09W33	130	0410	10	Dko	012	B											
27 Jan	S08W48	131	0450	05	Cko	005	B	1			1							
								5	1	0	13	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 130

<i>Region 9788</i>																		
18 Jan	N16E52	150	0030	01	Cro	002	B											
19 Jan	N17E40	149	0080	07	Dso	008	B	1			1							
20 Jan	N17E27	149	0090	07	Dso	016	B	2			3							
21 Jan	N18E13	149	0160	08	Dai	014	B	2			2							
22 Jan	N18E00	149	0200	10	Dai	018	Bg											
23 Jan	N17W14	150	0170	11	Eai	020	Bg											
24 Jan	N18W30	153	0150	12	Eao	010	B											
25 Jan	N17W43	153	0120	06	Dao	011	B											
26 Jan	N15W57	154	0190	10	Dao	017	B	1			4							
27 Jan	N17W70	153	0120	09	Dao	012	B				1							
								6	0	0	11	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 149

<i>Region 9789</i>																		
18 Jan	N15E10	192	0020	04	Bxo	004	B											
19 Jan	N15W02	191	0020	03	Bxo	005	B											
20 Jan	N15W15	191	0020	03	Cso	007	B											
21 Jan	N17W29	191	0070	05	Dso	010	B	1			1							
22 Jan	N18W42	191	0010	04	Cro	004	B	1			1							
23 Jan	N26W55	191	0010	01	Hrx	001	A											
24 Jan	N26W70	193																
25 Jan	N26W83	193																
								2	0	0	2	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 191



Region Summary - continued.

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

Region 9790

19 Jan	N28E25	164	0010	01	Hsx	001	A
20 Jan	N28E12	164	0000	00	Axx	001	A
21 Jan	N28W02	164	0100	04	Bxo	003	B
22 Jan	N29W15	164	0010	03	Cso	003	B
23 Jan	N29W28	164	0000	00	Axx	001	A
24 Jan	N29W39	162					
25 Jan	N28W55	165	0010	03	Bxo	003	B
26 Jan	N27W69	166	0010	01	Axx	001	A
27 Jan	N25W82	166					

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 164

Region 9791

20 Jan	S03W19	195	0030	04	Cso	009	B
21 Jan	S03W33	195	0120	04	Dso	006	B
22 Jan	S02W46	195	0070	06	Dao	010	B
23 Jan	S02W59	195	0060	07	Dso	005	B
24 Jan	S04W78	201	0040	02	Hsx	001	A

2 1 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 195

Region 9792

20 Jan	N07E23	153	0010	03	Bxo	002	B
21 Jan	N07E10	153					
22 Jan	N07W03	153					
23 Jan	S03W16	152	0010	03	Bxo	005	B
24 Jan	S03W28	151					
25 Jan	S03W41	151					
26 Jan	S03W54	151					
27 Jan	S03W67	151					

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 153



Region Summary - continued.

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

Region 9793

20 Jan	S15E32	144	0020	05	Cro	005	B												
21 Jan	S15E19	143	0050	06	Dso	008	B												
22 Jan	S12E01	144	0020	04	Cso	005	B	1				1							
23 Jan	S14W10	146	0020	05	Cso	008	B												
24 Jan	S14W23	146	0030	04	Dso	004	B												
25 Jan	S14W38	148	0010	04	Cso	003	B												
26 Jan	S15W50	147	0020	01	Hsx	001	A												
27 Jan	S14W66	149	0010	03	Bxo	003	B												
									1	0	0	1	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 144

Region 9794

20 Jan	N11E65	111	0010	01	Axx	001	A												
21 Jan	N11E51	111	0020	04	Bxo	002	B												
22 Jan	N11E36	113	0000	00		000		1				2							
23 Jan	N12E23	113	0010	01	Hsx	002	A	2				2							
24 Jan	N13E10	113	0010	00	Hsx	001	A					1							
25 Jan	N13W03	113	0090	04	Dao	004	B	1				2							
26 Jan	N12W17	114	0050	05	Dso	005	B												
27 Jan	N13W30	113	0040	05	Cso	005	B												
									4	0	0	7	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 113

Region 9795

23 Jan	N23W60	199	0040	04	Dso	003	B												
24 Jan	N21W80	203	0100	09	Dso	004	B												
25 Jan	N18W86	196	0030	01	Hax	001	A												
									0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 199

Region 9796

23 Jan	N09E18	118	0030	05	Cso	004	B												
24 Jan	N09E03	120	0020	07	Cro	005	B												
25 Jan	N09W08	118	0040	05	Cao	006	B												
26 Jan	N10W21	118	0000	00		000													
27 Jan	N10W34	118	0000	00		000													
									0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 120



Region Summary - continued.

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

Region 9797

23 Jan	S16E32	104	0020	01	Hsx	002	A										
24 Jan	S16E19	104															
25 Jan	S16E06	104															
26 Jan	S18W12	109	0010	03	Bxo	003	B										
27 Jan	S18W25	109															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 104

Region 9798

23 Jan	S03E42	094	0020	06	Cso	004	B										
24 Jan	S02E30	093	0050	06	Cro	007	B										
25 Jan	S02E15	095	0060	04	Cao	009	B										
26 Jan	S01E01	096	0010	03	Bxo	002	B										
27 Jan	S02W13	096	0020	04	Cro	005	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 096

Region 9799

23 Jan	S25E54	082	0020	04	Bxo	002	B										
24 Jan	S23E43	080	0030	04	Cso	002	B										
25 Jan	S23E29	081	0070	04	Cao	005	B										
26 Jan	S24E15	082	0150	06	Cko	009	B										
27 Jan	S24E03	080	0100	05	Dao	007	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 080

Region 9800

25 Jan	N07E63	047	0130	08	Dao	010	B						1				
26 Jan	N08E49	048	0230	10	Dsi	027	B						1				
27 Jan	N07E35	048	0330	12	Eai	035	B										
								0	0	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 048



Region Summary - continued.

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

Region 9801

25 Jan	S03E77	033	0050	06	Cso	003	B											
26 Jan	S03E64	033	0100	04	Cao	002	B											
27 Jan	S03E50	033	0110	04	Dao	003	B											
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 033

Region 9802

26 Jan	S13E72	025	0140	08	Dao	005	B		1		1							
27 Jan	S15E60	023	0230	09	Dso	010	B				1							
									0	1	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 023

Region 9803

27 Jan	S24W47	130	0030	03	Cso	004	B											
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 130

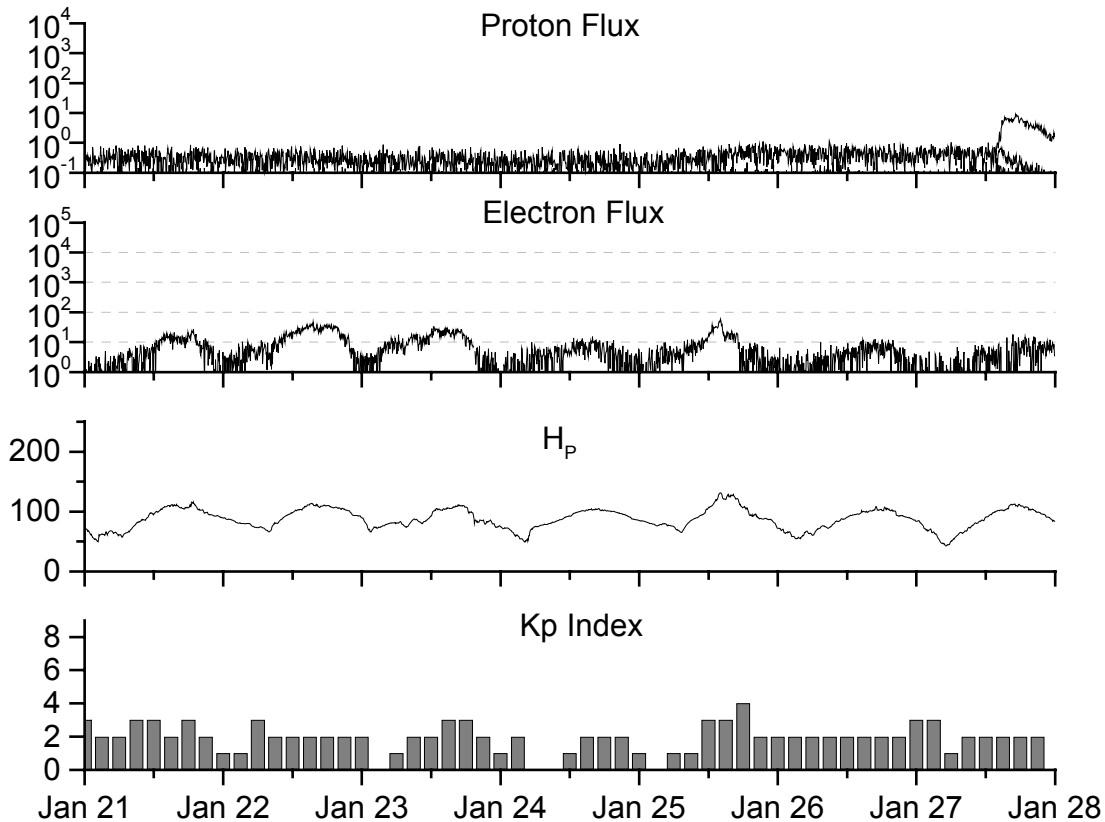


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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
2000									
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
2001									
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 21 January 2002

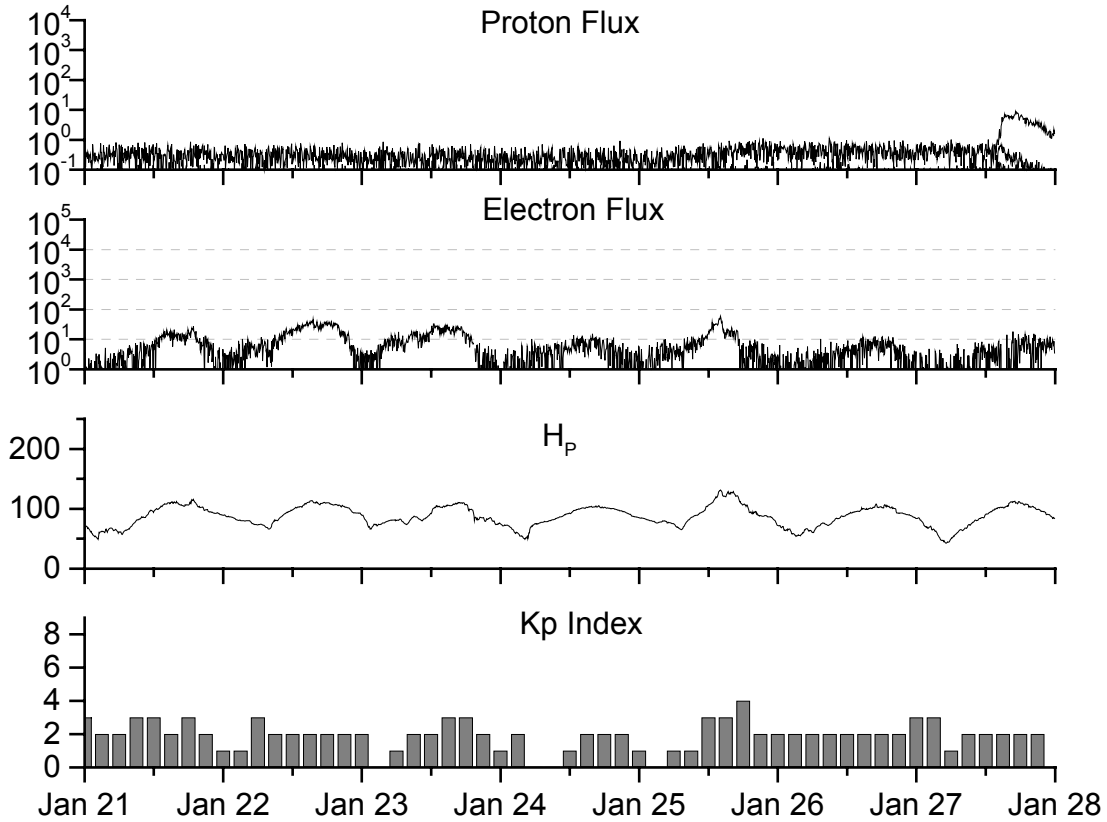
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-8.

H_p 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_p 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_p 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_p are "global" parameters that are applicable to a first order approximation over large areas. H_p 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/m²) 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/cm²-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/cm²-sec-sr) at greater than 10 MeV.

