

Space Weather Highlights
12 - 18 February 2001

SWO PRF 1329
20 February 2001

Solar activity was very low to low with isolated, optically uncorrelated B- and C-class X-ray flares. Sunspot groups were largely stable and unremarkable. A long-duration B8 X-ray flare occurred at 15/1416 UTC associated with a partial-halo CME. The 10.7 cm solar radio flux dropped to 130 sfu during 16 - 17 February, the lowest readings since May 2000.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A coronal transient passed the ACE spacecraft at approximately 13/0300 UTC, possibly associated with a halo CME observed on 11 February. The passage was associated with a velocity increase from 430 to 610 km/sec and a brief southward turning of the Bz component of the IMF with maximum deflections to minus 15 nT (GSM). A possible coronal hole signature was observed during 14 - 15 February with elevated velocities (peaks to 640 km/sec on 15 February) and proton temperatures, along with low densities.

There were no proton events detected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit increased from normal to moderate levels beginning 14 February. The flux briefly reached high levels during 15 - 18 February.

The geomagnetic field was at quiet to unsettled levels on 12 February. Field activity increased to unsettled to active levels during 13 - 14 February with isolated minor storm periods. Activity decreased to mostly quiet levels during the rest of the period.

Space Weather Outlook
21 February - 19 March 2001

Solar activity is expected to be at low levels during most of the period.

No proton events are expected during the period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal levels during most of the period.

Geomagnetic field activity is expected to be at quiet to unsettled levels, barring an Earth-directed CME.



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
12 February	145	106	470	B3.3	2	0	0	1	0	0	0	0
13 February	141	113	410	B3.4	1	0	0	2	0	0	0	0
14 February	138	99	430	B2.8	1	0	0	1	0	0	0	0
15 February	135	113	470	B3.0	0	0	0	0	0	0	0	0
16 February	130	133	380	B3.2	0	0	0	0	0	0	0	0
17 February	130	95	230	B1.9	0	0	0	0	0	0	0	0
18 February	132	143	340	B2.1	1	0	0	0	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	>4Me
12 February	7.9E+5	1.6E+4	2.4E+3		4.2E+5	
13 February	3.7E+5	1.1E+4	2.2E+3		4.7E+5	
14 February	4.7E+5	1.0E+4	2.4E+3		1.5E+7	
15 February	1.8E+5	1.0E+4	2.5E+3		3.9E+7	
16 February	2.2E+5	1.0E+4	2.5E+3		5.7E+7	
17 February	2.7E+5	1.0E+4	2.5E+3		5.6E+7	
18 February	4.3E+5	1.1E+4	2.7E+3		4.7E+7	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	12 February	5	2-0-0-0-3-2-1-2	3	1-0-0-1-1-1-1-2	4
13 February	16	2-3-3-3-3-4-3-3	24	2-3-4-4-4-5-4-3	19	2-4-4-3-3-4-4-4
14 February	14	4-3-2-3-3-1-3-3	26	3-4-2-4-5-5-4-2	17	4-4-3-4-4-3-3-3
15 February	3	1-0-2-2-0-1-1-0	6	1-0-1-4-2-1-1-0	5	1-1-2-3-1-1-2-1
16 February	2	0-1-0-1-1-1-1-1	2	0-0-0-1-1-1-1-1	3	0-0-0-1-1-1-2-2
17 February	2	1-0-0-0-1-1-2-0	1	1-0-0-1-0-1-0-0	3	1-0-0-1-1-2-2-1
18 February	2	1-1-0-1-0-1-1-0	1	0-0-0-0-1-1-0-0	4	1-0-0-0-1-2-2-2

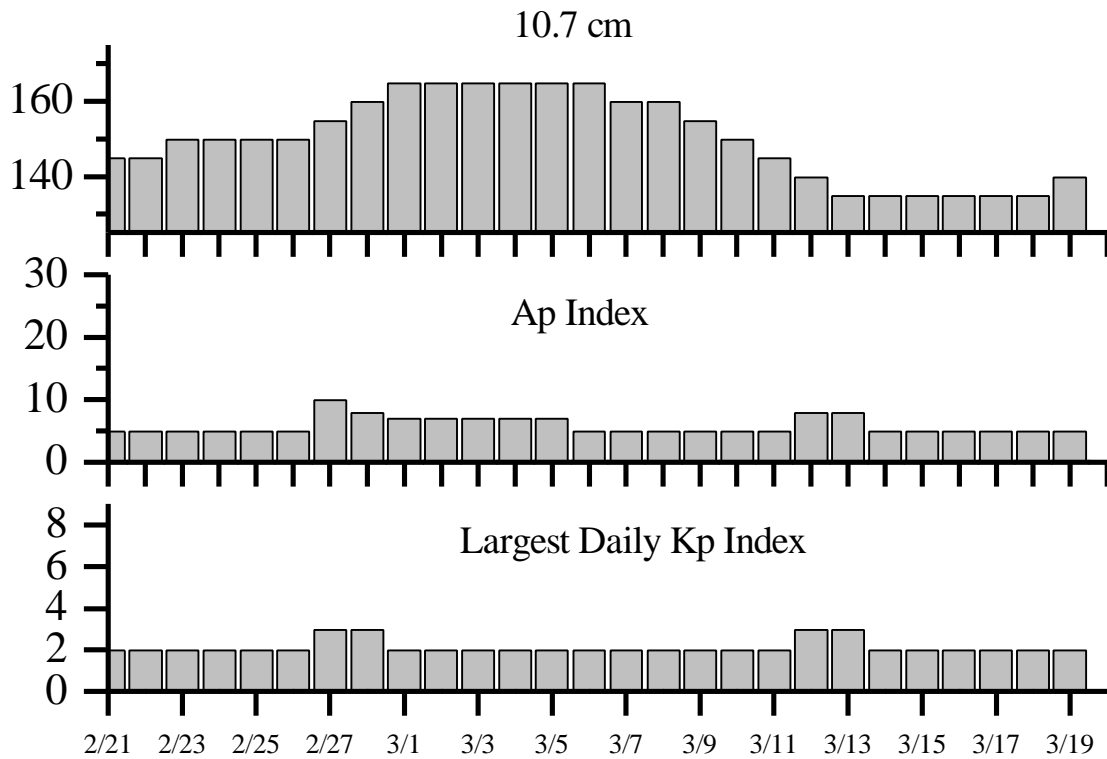


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
12 Feb 1346	Stratwarm Alert Exists Monday	
13 Feb 0025	Type II Radio Emission	12 Feb 2030
13 Feb 0407	K = 4 Warning	13 Feb 0415 - 1500
13 Feb 0601	K = 4 Observed	13 Feb 03 - 06
13 Feb 1227	Stratwarm Alert Exists Tuesday	
13 Feb 1722	K = 5 Warning	13/1730 - 14/1500 Feb
13 Feb 1801	K = 5 Observed	13 Feb 15 - 18
13 Feb 2100	A \geq 20 Observed	13 Feb 2100
14 Feb 2254	ENDED A \geq 20 Observed	14 Feb 2100
15 Feb 1334	Stratwarm Alert Exists Thursday	
16 Feb 1244	Stratwarm Alert Exists Friday	
16 Feb 1536	Electron Event $>2\text{MeV}$ $\geq 1000\text{pfu}$	16 Feb 1515
17 Feb 0100	CONTINUED Electron Event $>2\text{MeV}$ $\geq 1000\text{pfu}$	16 Feb 1515
17 Feb 1333	Stratwarm Alert Exists Saturday	
18 Feb 0100	CONTINUED Electron Event $>2\text{MeV}$ $\geq 1000\text{pfu}$	16 Feb 1515
18 Feb 1350	Stratwarm Alert Exists Sunday	



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
21 Feb	145	5	2	07 Mar	160	5	2
22	145	5	2	08	160	5	2
23	150	5	2	09	155	5	2
24	150	5	2	10	150	5	2
25	150	5	2	11	145	5	2
26	150	5	2	12	140	8	3
27	155	10	3	13	135	8	3
28	160	8	3	14	135	5	2
01 Mar	165	7	2	15	135	5	2
02	165	7	2	16	135	5	2
03	165	7	2	17	135	5	2
04	165	7	2	18	135	5	2
05	165	7	2	19	140	5	2
06	165	7	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location		Radio Flux		Intensity	
							Lat	CMD	245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn
	Begin	Max	End			Lat	CMD	
12 February	0112	0118	0121	C5.9				9338
	2026	2027	2056	C4.2	Sf	N12W60		9334
13 February	0538	0539	0548		Sf	N08W23		9348
	1508	1512	1514	B8.2				
	1630	1634	1645	C1.1	Sf	N15W33		9348
14 February	0601	0614	0634	C1.7	Sf	N18E41		9350
15 February	0531	0533	0536	B6.4				
	1040	1043	1046	B4.6				
	1308	1416	1518	B8.8				
	2020	2106	2131	B8.5				
16 February	1230	1235	1238	B5.5				
	2007	2012	2019	B4.1				
	2026	2030	2034	B9.8				
17 February	0310	0314	0317	B6.0				
	1048	1053	1059	B3.5				
	1631	1639	1645	B4.2				
18 February	0156	0201	0207	B3.3				
	1821	1929	2006	C1.7				



Region Summary

Location		Sunspot Characteristics					Flares								
Date	(° Lat ° CMD)	Helio Lon	Area (10 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
							C	M	X	S	1	2	3	4	
<i>Region 9334</i>															
01 Feb	N12E78	077	0060	02	Hsx	001	A				5				
02 Feb	N11E67	075	0200	15	Eso	006	B		1		1	1			
03 Feb	N11E54	075	0210	11	Eso	009	B								
04 Feb	N11E41	075	0220	14	Eai	018	B	3			3				
05 Feb	N12E27	076	0180	13	Eai	017	B				1				
06 Feb	N11E13	077	0130	12	Eao	019	B								
07 Feb	N12W01	078	0150	13	Eao	021	B								
08 Feb	N12W14	077	0110	13	Eai	016	B								
09 Feb	N12W27	077	0100	12	Esi	015	B								
10 Feb	N12W42	079	0050	11	Eao	009	B								
11 Feb	N12W55	079	0040	11	Cso	005	B								
12 Feb	N13W65	076	0030	07	Cro	002	B	1			1				
13 Feb	N13W78	076													
								4	1	0	11	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 078

<i>Region 9335</i>															
03 Feb	N09E68	061	0100	10	Dao	005	B								
04 Feb	N08E52	064	0130	09	Dao	009	B								
05 Feb	N08E40	063	0080	08	Dao	011	B	2			1	1			
06 Feb	N09E28	062	0100	11	Eao	013	B								
07 Feb	N10E14	063	0100	10	Dao	015	Bg								
08 Feb	N09E01	062	0070	10	Dsi	011	B	1			1				
09 Feb	N09W13	063	0060	10	Dao	009	B	1			1				
10 Feb	N11W29	066	0030	01	Hsx	002	A								
11 Feb	N11W43	067	0000	01	Axx	002	A								
12 Feb	N11W55	066	0010	00	Hrx	001	A								
13 Feb	N11W68	066													
14 Feb	N09W81	066													
								4	0	0	3	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 062



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 9339</i>																					
04 Feb	S12E74	042	0070	07	Hsx	003	A	2			2										
05 Feb	S11E62	041	0220	11	Eao	007	B				1										
06 Feb	S11E48	042	0250	11	Eao	011	B														
07 Feb	S09E34	043	0240	11	Eao	012	B														
08 Feb	S11E21	042	0210	12	Eao	013	B														
09 Feb	S10E06	044	0200	13	Eao	011	B														
10 Feb	S10W08	045	0130	12	Eao	006	B														
11 Feb	S08W19	043	0120	16	Cao	009	B														
12 Feb	S09W33	044	0100	09	Cso	004	B														
13 Feb	S09W52	049	0080	02	Hsx	002	A														
14 Feb	S09W66	050	0100	02	Hsx	002	A														
15 Feb	S09W80	051	0080	02	Hsx	001	A														
16 Feb	S11W92	050	0060	01	Hsx	001	A														
												2	0	0	3	0	0	0	0	0	
Crossed West Limb.																					
Absolute heliographic longitude: 044																					
<i>Region 9340</i>																					
05 Feb	S13E05	098	0010	03	Bxo	004	B														
06 Feb	S13W08	098																			
07 Feb	S13W21	098																			
08 Feb	S11W36	099	0000	01	Axx	002	A														
09 Feb	S11W49	099																			
10 Feb	S11W62	099																			
11 Feb	S11W75	099																			
12 Feb	S11W88	099																			
												0	0	0	0	0	0	0	0	0	0
Crossed West Limb.																					
Absolute heliographic longitude: 098																					
<i>Region 9341</i>																					
06 Feb	S10E23	067	0010	01	Cso	002	B														
07 Feb	S08E09	068	0010	02	Cro	002	B														
08 Feb	S09W03	066	0010	03	Bxo	003	B														
09 Feb	S09W16	066	0010	03	Cso	003	B														
10 Feb	S10W30	067	0010	01	Cso	003	B														
11 Feb	S09W43	067	0010	03	Bxo	003	B														
12 Feb	S09W56	067																			
13 Feb	S09W69	067																			
14 Feb	S09W82	067																			
												0	0	0	0	0	0	0	0	0	0
Crossed West Limb.																					
Absolute heliographic longitude: 066																					



Region Summary- continued.

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

Region 9342

06 Feb	S26E56	034	0010	01	Hrx	001	A										
07 Feb	S26E42	035	0000	00	Axx	001	A										
08 Feb	S26E29	035															
09 Feb	S26E16	035															
10 Feb	S26E03	035															
11 Feb	S26W10	035															
12 Feb	S26W23	035															
13 Feb	S27W31	028	0020	05	Cao	007	B										
14 Feb	S28W45	029	0030	06	Cao	005	B										
15 Feb	S27W55	026	0010	01	Axx	001	A										
16 Feb	S23W65	023	0000	02	Bxo	002	B										
17 Feb	S23W78	023															

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 035

Region 9343

07 Feb	N03E08	069	0000	00	Axx	001	A										
08 Feb	N03W05	069															
09 Feb	N03W18	069															
10 Feb	N03W31	069															
11 Feb	N03W44	069															
12 Feb	N03W57	069															
13 Feb	N03W70	069															
14 Feb	N03W83	069															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 069

Region 9344

08 Feb	N31E13	050	0020	03	Bxo	003	B										
09 Feb	N31E01	049	0020	04	Cso	004	B										
10 Feb	N30W14	051	0010	01	Cso	002	B										
11 Feb	N30W27	051															
12 Feb	N30W40	051															
13 Feb	N30W53	051															
14 Feb	N30W66	051															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 049



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 9345

08 Feb	S20E19	044	0000	01	Axx	002	A											
09 Feb	S19E07	043	0040	05	Cso	007	B											
10 Feb	S20W07	044	0030	05	Dao	007	B											
11 Feb	S20W20	044	0020	06	Cso	006	B											
12 Feb	S20W33	044																
13 Feb	S20W45	042	0000	01	Axx	002	A											
14 Feb	S20W58	042																

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 043

Region 9347

09 Feb	N04E66	344	0090	06	Cso	004	B											
10 Feb	N03E51	346	0040	03	Cso	004	B											
11 Feb	N04E38	346	0050	04	Dao	004	B											
12 Feb	N04E25	346	0050	04	Dso	003	B											
13 Feb	N04E12	345	0030	03	Dso	003	B											
14 Feb	N04W01	345	0030	04	Cso	004	B											
15 Feb	N04W15	346	0030	05	Dao	005	B											
16 Feb	N04W29	347	0010	04	Cso	003	B											
17 Feb	N05W41	346	0020	02	Hsx	002	A											
18 Feb	N05W54	346																

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 345

Region 9348

10 Feb	N09E05	032	0010	03	Cro	003	B											
11 Feb	N11W08	032	0010	05	Bxo	006	B											
12 Feb	N13W20	031	0020	03	Cao	003	B											
13 Feb	N15W33	030	0040	04	Dao	010	B	1				2						
14 Feb	N15W45	029	0060	05	Dao	011	B											
15 Feb	N15W58	029	0120	06	Dso	008	B											
16 Feb	N15W73	031	0110	07	Dao	007	B											
17 Feb	N17W83	028	0050	08	Dso	004	B											

1 0 0 2 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 032



Region Summary- continued.

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

Region 9349

10 Feb	N28E60	337	0050	01	Hsx	001	A											
11 Feb	N28E46	338	0040	01	Hsx	001	A											
12 Feb	N28E34	337	0030	02	Hsx	001	A											
13 Feb	N28E21	336	0030	01	Hsx	001	A											
14 Feb	N28E08	336	0030	01	Hax	001	A											
15 Feb	N28W05	336	0020	01	Hsx	001	A											
16 Feb	N28W18	336	0030	01	Hsx	001	A											
17 Feb	N28W31	336	0010	01	Hrx	001	A											
18 Feb	N28W44	336	0020	01	Hrx	001	A											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 336

Region 9350

11 Feb	N18E69	315	0060	03	Hsx	001	A											
12 Feb	N18E56	315	0060	02	Hax	001	A											
13 Feb	N18E43	314	0060	01	Hsx	002	A											
14 Feb	N18E30	314	0060	02	Hsx	002	A											
15 Feb	N18E16	315	0070	02	Hsx	001	A											
16 Feb	N18E04	314	0060	02	Hsx	001	A											
17 Feb	N18W09	314	0080	02	Hsx	001	A											
18 Feb	N18W23	315	0070	02	Hsx	001	A											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 314

Region 9351

15 Feb	S21W42	013	0010	03	Bxo	003	B											
16 Feb	S23W53	011	0030	04	Cso	002	B											
17 Feb	S23W66	011	0000	00		000												
18 Feb	S20W81	013	0010	03	Cso	002	B											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 013

Region 9352

15 Feb	S23E63	268	0020	04	Bxo	002	B											
16 Feb	S22E51	267	0010	05	Bxo	002	B											
17 Feb	S22E36	269	0010	03	Bxo	003	B											
18 Feb	S23E25	267	0020	05	Cso	006	B											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 267



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 9353</i>																	
16 Feb	S23E17	301	0010	02	Hsx	002	A										
17 Feb	S23E03	302	0010	04	Bxo	006	B										
18 Feb	S22W10	302	0030	05	Cso	006	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 302																	
<i>Region 9354</i>																	
16 Feb	S09E34	284	0000	01	Axx	001	A										
17 Feb	S08E20	285	0050	04	Dao	008	B										
18 Feb	S09E07	285	0110	07	Dao	014	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 285																	
<i>Region 9355</i>																	
18 Feb	N20E35	257	0020	04	Cro	004	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 257																	
<i>Region 9356</i>																	
18 Feb	S13W10	302	0010	03	Bxo	004	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 302																	
<i>Region 9357</i>																	
18 Feb	S26E35	257	0040	02	Hsx	003	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 257																	
<i>Region 9358</i>																	
18 Feb	S08E46	246	0010	03	Bxo	002	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 246																	

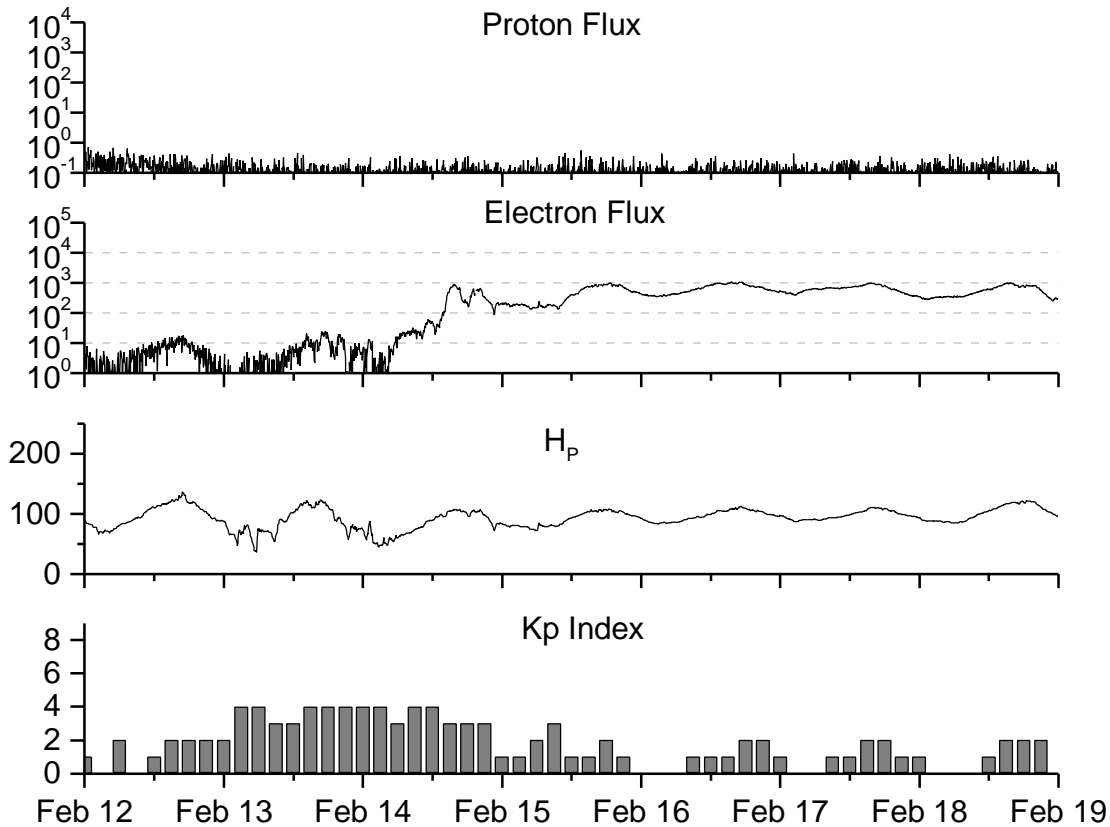


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	<u>Observed values</u>		<u>Ratio</u>	<u>Smooth values</u>		<u>*Penticton</u>	<u>Smooth</u>	<u>Planetary</u>	<u>Smooth</u>
	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value
1999									
February	93.4	66.3	0.71	120.2	84.6	142.0	142.6	12	11.6
March	100.5	68.8	0.68	120.5	83.8	126.3	144.0	14	11.7
April	92.9	63.7	0.69	123.8	85.5	117.2	145.8	12	12.2
May	140.5	106.4	0.76	131.7	90.5	148.6	149.9	08	12.4
June	208.3	137.7	0.66	136.0	93.1	169.8	152.9	07	12.4
July	169.2	113.5	0.67	138.0	94.3	165.6	154.4	10	12.6
August	136.1	93.7	0.69	142.8	97.5	170.8	156.3	15	12.9
September	107.4	71.5	0.67	150.0	102.3	135.7	161.0	19	12.8
October	167.7	116.7	0.70	158.5	107.8	164.8	167.2	19	12.7
November	199.3	133.2	0.67	164.7	110.0	191.5	171.5	14	13.1
December	123.5	86.4	0.69	165.9	111.1	169.8	173.4	10	13.8
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			163.1		16	
September	157.9	109.9	0.70			182.1		18	
October	138.9	100.1	0.72			167.7		18	
November	149.9	106.5	0.71			178.8		17	
December	146.4	104.5	0.71			173.6		08	
2001									
January	142.7	95.1	0.67			166.7		08	

NOTE: All smoothed values after December 1999 and monthly values after June 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 12 February 2001*

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.

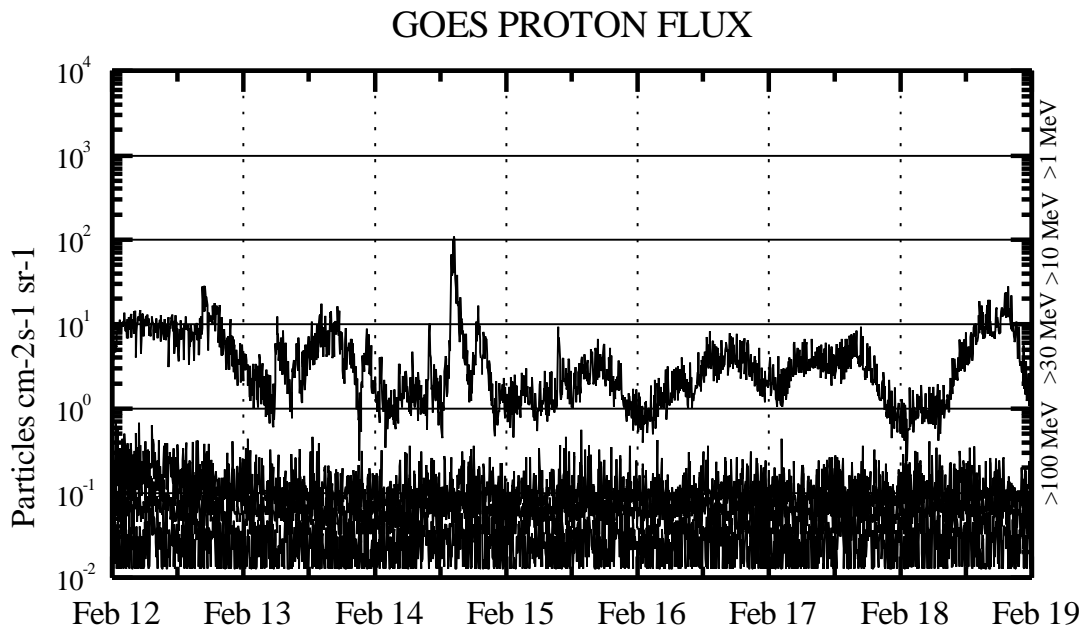
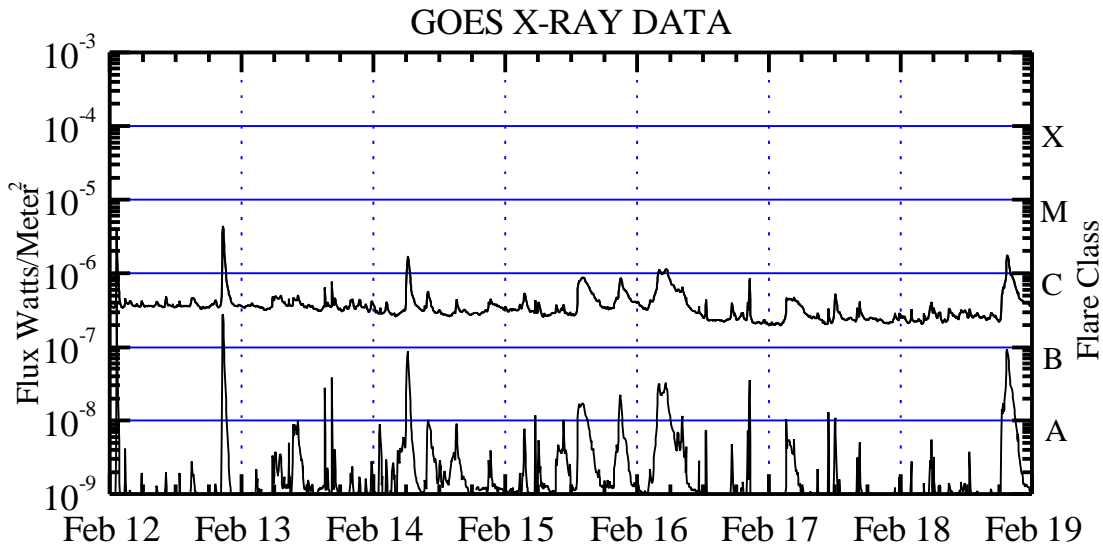
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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 USAF 55th Space Weather Squadron) 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_{parallel} 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.

