

Space Weather Highlights
23 - 29 October 2000

SWO PRF 1313
31 October 2000

Solar activity varied from low to moderate levels. Activity was low during 23 - 26 October due to isolated C-class flares including a long-duration (approx. 7 hours) C4 X-ray flare that occurred at 25/1125 UTC from beyond the west limb. A halo-CME and a greater than 10 MeV proton event were associated with this event. Activity increased to moderate levels for the rest of the period with isolated low-level M-class, the largest of which was an M4/2B at 29/0157 UTC from Region 9209 (S24, L = 305, class/area Eki/300 on 29 October). This flare was associated with Type II and IV radio sweeps, and a 9-degree

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A coronal hole signature was evident during 23 - 24 October with elevated velocities (peak to 600 km/sec) and low densities. A CME-related shock passage occurred at approximately 28/0900 UTC accompanied by a sudden velocity increase (370 to 440 km/sec), increased densities, and periods of sustained southward IMF Bz with maximum deflections to minus 19 nT (GSM).

A greater than 10 MeV proton event at geosynchronous orbit was associated with the long-duration M4 flare at 25/1125 UTC. The event began at 26/0040 UTC, reached a maximum of 15 pfu at 26/0340 UTC, and ended at 26/1000 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels.

The geomagnetic field was at quiet to active levels during 23 - 25 October with brief minor to major storm periods detected at high latitudes. Activity declined to quiet to unsettled levels during 26 - 27 October. Activity increased to unsettled to minor storm levels on 28 - 29 October due to a CME passage.

Space Weather Outlook
01 November - 27 November 2000

Solar activity is expected to be at low to moderate levels. Isolated M-class flares may occur sometime during the period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit may reach moderate to high levels beginning 14 November. Otherwise, normal to moderate fluxes are expected.

Geomagnetic field activity is expected to be unsettled to minor storm levels on 01 November due to CME effects. Active levels will be possible during 04 - 05 and 18 - 19 filament disappearance November due to coronal hole effects. Quiet to unsettled levels are expected during the rest of the period, 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
23 October	167	143	410	B6.6	2	0	0	1	0	0	0	0
24 October	159	99	470	B6.1	2	0	0	0	0	0	0	0
25 October	164	112	600	B6.0	6	0	0	4	0	0	0	0
26 October	171	113	530	B9.4	6	0	0	5	1	0	0	0
27 October	176	113	480	C1.0	7	1	0	0	0	0	0	0
28 October	182	153	810	C1.1	10	1	0	5	0	0	0	0
29 October	187	163	1090	C1.5	3	1	0	6	1	1	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
	23 October	2.7E+5	1.1E+4	2.6E+3		8.1E+6
24 October	1.5E+5	1.1E+4	2.5E+3		1.2E+7	
25 October	7.3E+5	2.0E+5	2.8E+3		1.3E+7	
26 October	1.6E+7	6.3E+5	2.8E+3		1.4E+7	
27 October	1.3E+7	1.3E+5	2.6E+3		1.8E+7	
28 October	6.0E+6	3.7E+4	2.4E+3		1.6E+7	
29 October	4.2E+5	1.1E+4	1.7E+3		6.2E+5	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	23 October	13	4-3-4-2-3-1-2-1	23	3-4-4-6-4-1-1-1	15
24 October	10	3-1-2-3-4-1-1-1	32	1-1-6-6-6-2-1-1	11	2-2-3-4-3-2-2-2
25 October	9	0-1-3-3-4-2-2-1	*	0-1-4-5-6-1-*-0	8	1-0-2-3-3-2-2-2
26 October	9	2-2-3-3-3-2-1-2	17	1-3-4-4-5-2-1-1	7	2-2-2-3-2-2-1-2
27 October	3	2-0-1-1-1-1-1-1	6	3-0-1-3-3-0-1-0	5	2-0-2-2-2-2-1-1
28 October	17	0-1-2-4-4-3-2-5	32	0-0-2-6-7-2-2-3	19	2-0-3-5-4-3-3-5
29 October	24	5-5-3-5-3-3-2-1	41	2-6-4-5-5-6-4-2	26	5-5-4-4-4-3-3-2

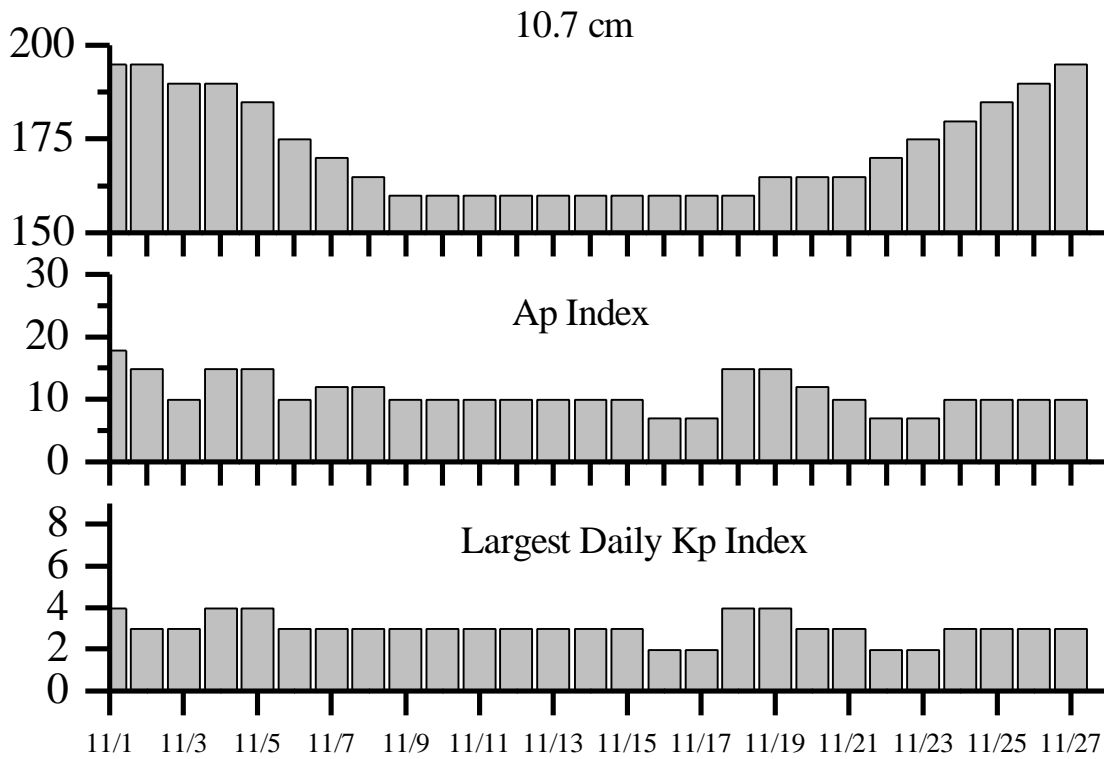


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
23 Oct 0100	CONTINUED Electron Event $>2\text{MeV} \geq 1000\text{pfu}$	18 Oct 1435
24 Oct 1503	K= 4 Observed	24 Oct 12 - 15
25 Oct 1459	K= 4 Observed	25 Oct 12 - 15
25 Oct 1843	Proton Event $>10\text{MeV} \geq 10\text{pfu}$ Warning	25/1842 - 26/0700 Oct
26 Oct 0101	Protons Event $>10 \text{ MeV} \geq 10\text{pfu}$	26 Oct 0045
26 Oct 1857	ENDED Proton Event $>10 \text{ MeV} \geq 10\text{pfu}$	26 Oct 1000
28 Oct 0008	1 – 245 MHz Radio Burst	27 Oct
28 Oct 0651	K = 4 Warning	28/0700 - 29 /1500 Oct
28 Oct 1204	K = 4 Observed	28 Oct 09 - 12
28 Oct 2348	10cm Radio Burst 220 F.U.	28 Oct 2327
28 Oct 2359	K = 5 Warning	29 Oct 00 - 12
29 Oct 0001	K = 5 Observed	28 Oct 21 - 24
29 Oct 0012	2 – 245 MHz Radio Bursts	28 Oct
29 Oct 0237	Type II Radio Emission	29 Oct 0148
29 Oct 0241	10cm Radio Burst 1800 F.U.	29 Oct 0142
29 Oct 0244	Type IV Radio Emission	29 Oct 0210
29 Oct 0300	$A \geq 20$ Observed	29 Oct 0300
29 Oct 0322	10cm Radio Burst 480 F.U.	29 Oct 0230
29 Oct 1200	$A \geq 30$ Observed	29 Oct 1200
29 Oct 1424	EXTENDED K= 4 Warning	28/0700 - 29/1800 Oct



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
01 Nov	195	18	3	15 Nov	160	10	3
02	195	15	3	16	160	7	3
03	190	10	3	17	160	7	3
04	190	15	3	18	160	15	3
05	185	15	3	19	165	15	3
06	175	10	3	20	165	12	3
07	170	12	3	21	165	10	3
08	165	12	3	22	170	7	3
09	160	10	2	23	175	7	2
10	160	10	2	24	180	10	2
11	160	10	2	25	185	10	3
12	160	10	2	26	190	10	3
13	160	10	3	27	195	10	3
14	160	10	3				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
27 Oct	2039	2056	2108	M1.1	.011							
28 Oct	1841	1849	1854	M1.7	.007							
29 Oct	0128	0157	0209	M4.4	.056	2B	S25E35	9209	120	1800	3	1

Flare List

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
23 October	0039	0043	0052	C1.2			
	0622	0627	0652	C2.9	SF	N06W40	9199
24 October	0804	0932	1144	C2.3			
	1530	1538	1542	C2.1			
	2250	2255	2259	B9.8			
25 October	0300	0308	0319	C1.2			
	0420	0426	0434	C2.6			
	0546	0556	0609	C2.1			
	0845	1125	1521	C4.0			
	1355	1359	1406		SF	S20E46	9207
	1947	1950	1955		SF	S24E72	9209
	2039	2044	2055	C2.3			
	2105	2111	2113		SF	S22E73	9209
26 October	2253	2255	2302	C1.8	SF	S20E72	9209
	0500	0517	0522	C3.7			
	0606	0610	0638	C4.3	SF	S25E71	9209
	0729	0730	0749	C3.1	SF	N15W85	9203
	1135	1139	1143	C6.9	SF	N17W77	9203
	1341	1343	1346		SF	N17W92	
	1539	1543	1552	C1.4			
	1557	1607	1740	C8.5	1N	S20E64	9209
	1745	1753	1756		SF	S17E64	9209
	27 October	0422	0425	0428	C1.3		
0835		0838	0843	C1.7			
1114		1127	1150	C8.2			
1155		1203	1213	C9.7			
1850		1855	1903	C1.8			
1947		1956	2004	C3.3			
2039		2056	2108	M1.1			
2329		2333	2338	C2.0			



Flare List – continued.

Date	Time			X-ray	Optical		Rgn Lat CMD
	Begin	Max	End		Imp / Class.	Location Brtns	
28 October	0140	0144	0149	C2.1			
	0404	0436	0508	C4.9			
	0707	0708	0712	C9.7	SF	N07E82	9212
	0718	0723	0727	C8.1			
	0826	0829	0832		SF	S12E75	9214
	0939	0952	1002	C9.6			
	1106	1136	1154	C3.1			
28 October	1630	1638	1645	C4.8			
	1841	1849	1854	M1.7			
	1940	1944	1946	C3.9			
	2151	2151	2201		SF	S12E70	9214
	2233	2237	2240	C2.6			
	2309	2312	2318		SF	S12E69	9214
29 October	2327	2327	2332	C2.5	SF	S02E72	9213
	0050	0051	0058	C3.4	SF	N07E75	9212
	0130	0151	0327	M4.4	2B	S25E35	9209
	0216	0216	0222		SF	S30E32	9210
	0245	0251	0303		SF	S27E42	9210
	0546	0551	0558	C5.4	SF	N07E70	9212
	0611	0614	0627	C3.1	1F	S12E64	9214
	0637	0638	0648		SF	S12E65	9214
	2110	2113	2119		SF	S20E25	9209



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 9198

14 Oct	S30E65	100	0030	04	BXO	003	B	2				4						
15 Oct	S31E54	098	0080	10	CSO	004	B	2				7						
16 Oct	S31E39	100	0070	08	DSO	008	B					1						
17 Oct	S31E26	099	0100	09	DAO	009	B											
18 Oct	S30E13	099	0110	08	DSO	008	B					1						
19 Oct	S30W01	100	0090	07	CAO	006	B											
20 Oct	S30W11	097	0150	08	DAO	011	B											
21 Oct	S29W24	097	0120	08	DAO	011	B											
22 Oct	S29W37	097	0160	07	DSI	011	B											
23 Oct	S30W49	095	0120	10	DAO	011	B											
24 Oct	S30W61	094	0110	09	CAO	005	B											
25 Oct	S31W75	095	0080	06	CSO	004	B											
26 Oct	S29W85	092	0030	02	HSX	001	A											
								4	0	0	13	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 100

Region 9199

15 Oct	N12E68	084	0040	01	HSX	001	A											
16 Oct	N12E54	085	0030	01	HSX	001	A	1				1						
17 Oct	N12E41	084	0020	01	HSX	001	A											
18 Oct	N12E24	088	0050	11	ESO	010	B	1				2						
19 Oct	N08E09	090	0070	12	ESO	015	B					1						
20 Oct	N08W04	090	0140	12	ESI	021	BG	3				4						
21 Oct	N10W17	090	0090	16	FAO	018	B	2				4						
22 Oct	N09W31	091	0040	10	DAO	009	B	1				2						
23 Oct	N08W49	095	0080	07	DSO	011	B	1				1						
24 Oct	N07W63	096	0090	08	DSO	004	B											
25 Oct	N07W80	100	0090	02	HSX	001	A											
26 Oct	N07W94	101	0030	02	HSX	001	A											
								9	0	0	15	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 090



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 9200

16 Oct	S16E58	081	0110	04	DSO	003	B										
17 Oct	S18E46	079	0100	06	DSO	007	B	1				2					
18 Oct	S17E32	080	0110	04	DAO	010	B										
19 Oct	S16E20	079	0040	04	DAO	011	B										
20 Oct	S16E08	078	0040	03	BXO	007	B										
21 Oct	S17W08	081	0010	06	BXO	012	B										
22 Oct	S15W20	080	0010	03	HSX	003	A										
23 Oct	S13W32	078	0000	02	AXX	002	A										
24 Oct	S13W45	078															
25 Oct	S13W58	078															
26 Oct	S13W71	078															
27 Oct	S13W84	078															

1 0 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 078

Region 9201

17 Oct	N16E69	056	0080	08	CSO	005	B										
18 Oct	N17E57	055	0110	08	DAI	012	B										
19 Oct	N16E45	054	0120	07	DAO	016	B					1					
20 Oct	N17E32	054	0220	09	DKI	022	B										
21 Oct	N16E19	054	0250	10	DAI	034	BG	2	1			2	1				
22 Oct	N17E06	054	0250	11	EAI	031	B	1				1					
23 Oct	N17W08	054	0150	11	EAO	028	B										
24 Oct	N18W23	056	0200	12	EAI	023	B										
25 Oct	N22W34	054	0100	09	DAO	020	B										
26 Oct	N19W48	055	0070	07	CAO	008	B										
27 Oct	N19W65	059	0030	01	HSX	002	A										
28 Oct	N19W78	058	0020	01	HSX	002	A										

3 1 0 4 1 0 0 0

Still on Disk.

Absolute heliographic longitude: 054



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 9202

18 Oct	N14E26	086	0040	05	CSO	006	B											
19 Oct	N14E13	086	0030	06	DAO	004	B											
20 Oct	N11E05	081	0030	05	AXX	005	A											
21 Oct	N07W10	083	0010	03	AXX	003	A											
22 Oct	N10W24	084	0010	01	AXX	002	A											
23 Oct	N13W37	083	0010	05	BXO	005	B											
24 Oct	N13W50	083																
25 Oct	N13W63	083																
26 Oct	N13W76	083																
27 Oct	N13W89	083																
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 081

Region 9203

20 Oct	N15W15	101	0030	04	CSO	004	B											
21 Oct	N15W29	102	0020	01	HSX	002	A											
22 Oct	N13W43	103	0010	01	HSX	001	A	1				1						
23 Oct	N13W56	103																
24 Oct	N13W69	103																
25 Oct	N13W82	103																
									1	0	0	1	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 101

Region 9204

20 Oct	N09E15	071	0020	03	AXX	004	A											
21 Oct	N10E01	072	0020	04	AXX	005	A											
22 Oct	N10W12	072																
23 Oct	N10W25	072																
24 Oct	N10W38	072																
25 Oct	N10W51	072																
26 Oct	N10W64	072																
27 Oct	N10W77	072																
									0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 072



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 9205

21 Oct	N36W20	093	0010	01	HRX	001	A										
22 Oct	N36W33	093															
23 Oct	N36W46	093															
24 Oct	N36W59	093															
25 Oct	N36W72	093															
26 Oct	N36W85	093															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 093

Region 9206

23 Oct	N21E53	353	0020	03	CRO	004	B										
24 Oct	N21E40	353	0020	01	HSX	001	A										
25 Oct	N22E29	351	0010	07	BXO	004	B										
26 Oct	N21E14	353	0010	07	BXO	005	B										
27 Oct	N22E03	351	0020	08	CSO	007	B										
28 Oct	N22W11	351	0010	06	BXO	007	B										
29 Oct	N22W22	349	0030	06	CAO	004	B										

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 351

Region 9207

23 Oct	S20E65	341	0010	01	HRX	001	A										
24 Oct	S18E51	342	0030	06	CAO	005	B										
25 Oct	S18E42	338	0110	06	CAO	004	B										
26 Oct	S19E27	340	0090	05	DSO	007	B										
27 Oct	S19E14	340	0040	05	CSO	009	B										
28 Oct	S19E01	339	0010	06	BXO	005	B										
29 Oct	S17W12	339	0010	03	BXO	003	B										

0 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 339



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 9208

23 Oct	S10E77	329	0020	02	HSX	001	A										
24 Oct	S09E63	330	0020	01	HSX	001	A										
25 Oct	S08E51	329	0080	03	CSO	006	B										
26 Oct	S08E39	328	0050	04	CSO	003	B										
27 Oct	S10E24	330	0040	01	HSX	001	A										
28 Oct	S10E10	330	0020	01	HSX	002	A										
29 Oct	S09W03	330	0010	04	CSO	002	B										
										0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 330

Region 9209

25 Oct	S25E71	309	0130	03	DAO	003	B	1			3						
26 Oct	S24E59	308	0180	07	DSO	007	B	2			2	1					
27 Oct	S24E48	306	0240	08	DAI	016	B										
28 Oct	S24E34	306	0200	09	DSI	020	B										
29 Oct	S24E21	306	0270	09	DAI	023	BG		1		1		1				
								3	1	0	6	1	1	0	0		

Still on Disk.

Absolute heliographic longitude: 306

Region 9210

26 Oct	S30E74	293	0070	02	HSX	001	A										
27 Oct	S30E59	295	0110	06	DSO	006	B										
28 Oct	S30E49	291	0100	07	DSI	004	B										
29 Oct	S29E35	292	0090	05	CAO	008	B				2						
								0	0	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 292

Region 9211

27 Oct	N30W43	037	0000	01	AXX	002	A										
28 Oct	N33W53	033	0010	03	BXO	003	B										
29 Oct	N33W66	033	0000	00		000											
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 037

Region 9212

28 Oct	N06E76	264	0200	07	DAO	003	B	1			1						
29 Oct	N08E61	266	0270	06	DAO	007	B	2			2						
								3	0	0	3	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 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
		Lon						C	M	X	S	1	2	3	4		
<i>Region 9213</i>																	
28 Oct	N00E71	269	0190	03	HSX	002	A	1			1						
29 Oct	N02E57	270	0210	03	HSX	004	A										
								1	0	0	1	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 270																	
<i>Region 9214</i>																	
28 Oct	S13E70	270	0050	06	CSO	005	B				3						
29 Oct	S11E55	272	0190	09	DSO	006	B	1			1	1					
								1	0	0	4	1	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 272																	
<i>Region 9215</i>																	
29 Oct	N20W57	024	0010	05	BXO	004	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 024																	
<i>Region 9216</i>																	
29 Oct	N17W07	334	0000	01	AXX	002	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 334																	

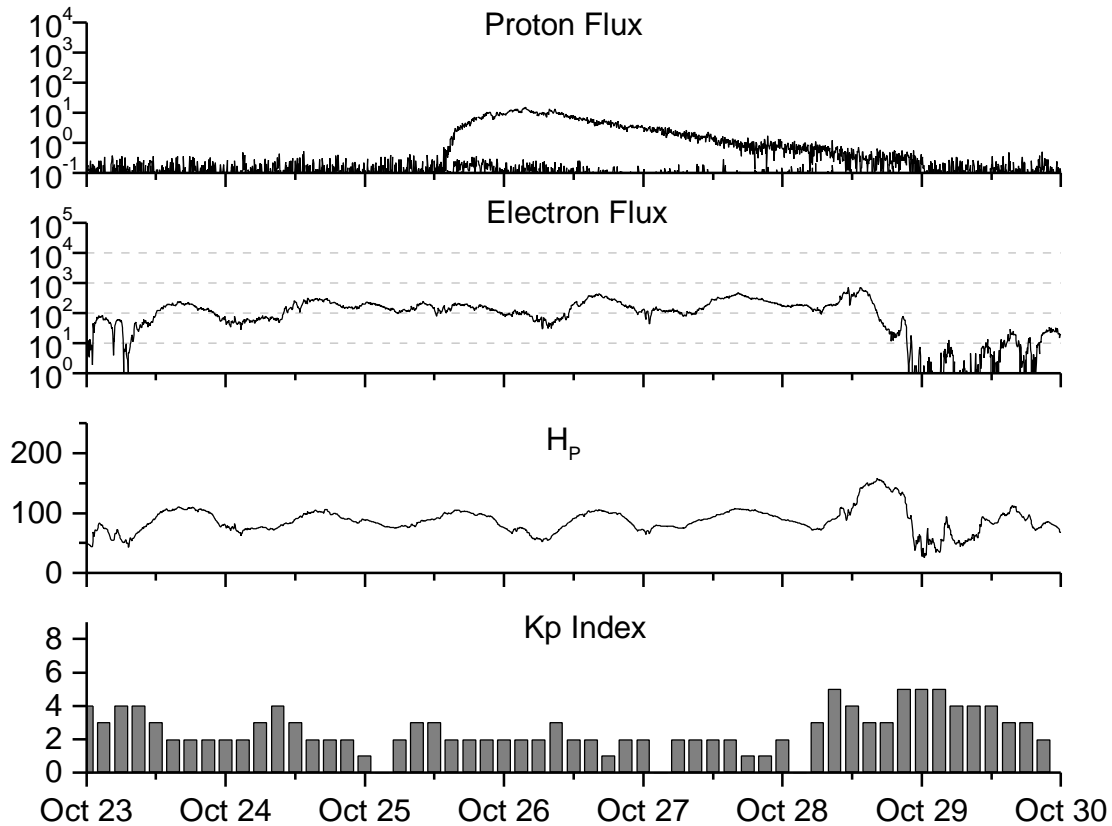


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers				Radio Flux		Geomagnetic		
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value
1998									
October	77.0	55.5	0.72	97.7	70.5	117.3	127.9	13	12.8
November	99.5	74.0	0.74	101.3	73.0	140.2	130.0	16	12.4
December	120.8	81.9	0.68	108.8	77.9	150.1	134.3	08	11.9
1999									
January	94.3	62.0	0.66	116.5	82.6	142.6	139.0	10	11.7
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	94.4	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	0.66	150.0	102.3	135.7	161.0	19	12.8
October	167.7	116.7	0.69	158.5	107.7	164.8	167.2	19	12.7
November	199.3	133.2	0.67	164.7	110.9	191.5	171.5	14	13.2
December	123.5	86.4	0.70	165.9	110.9	169.8	173.4	10	13.9
2000									
January	140.8	90.2	0.64	168.0	112.7	158.1	175.2	13	14.7
February	161.9	112.3	0.69	172.1	116.6	173.2	176.3	15	15.3
March	203.6	138.2	0.68	175.4	119.7	208.2	177.9	09	15.3
April	193.4	125.3	0.65			184.2		15	
May	188.8	120.8	0.64			184.5		16	
June	190.3	124.9	0.66			178.8		16	
July	236.7	169.1	0.71			200.0		21	
August	166.6	130.5	0.78			163.1		18	
September	157.9	109.9	0.70			182.1		16	

NOTE: All smoothed values after June 1999 and monthly values after December 1999 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 23 October 2000*

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.

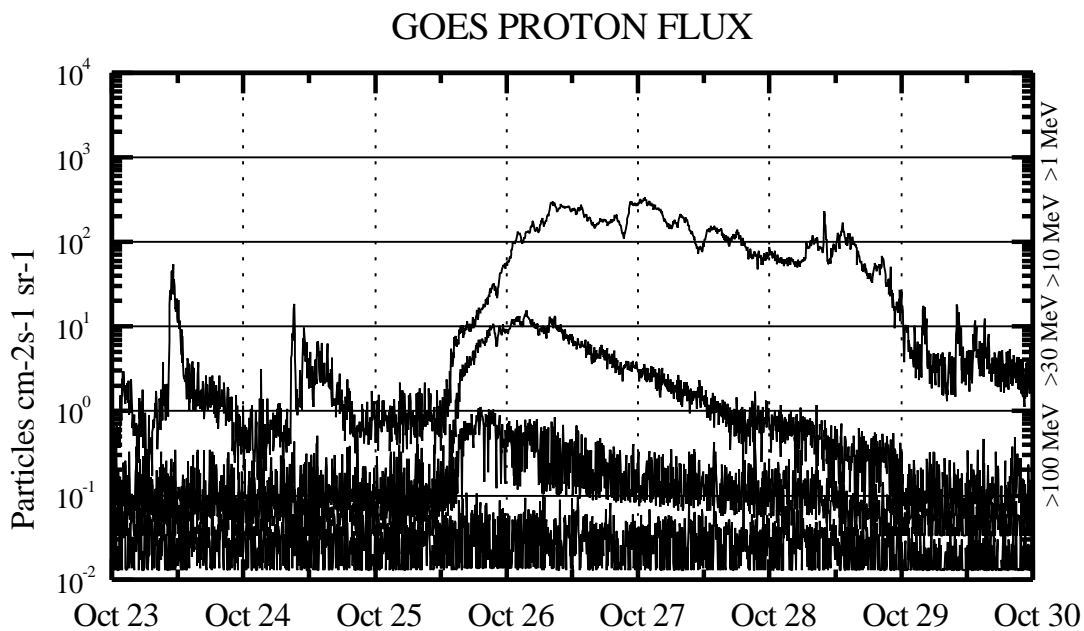
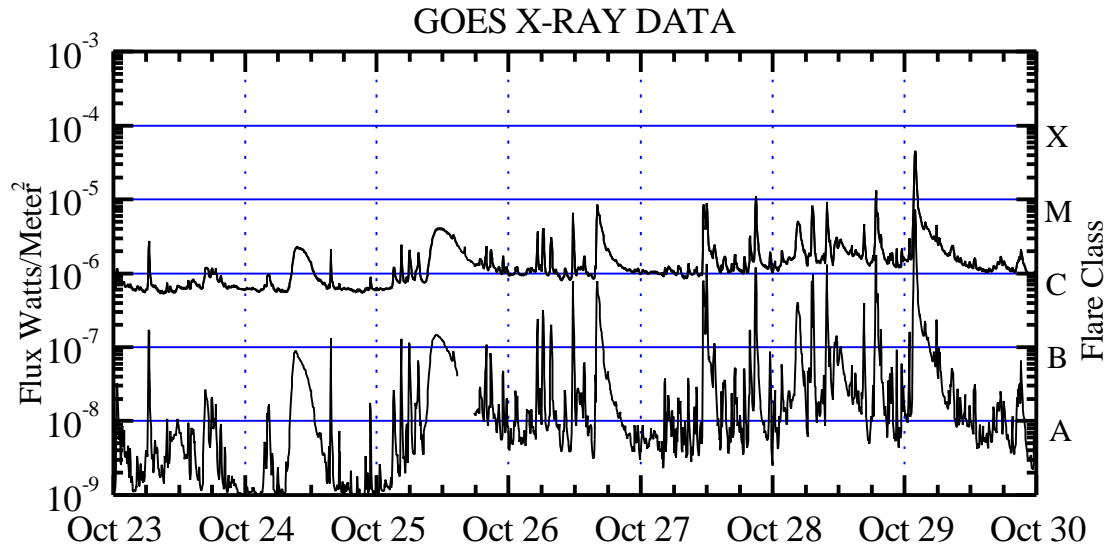
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm² -sec -sr) with energies greater than 2 MeV at GOES-8.

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_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.

