

Space Weather Highlights **09 – 15 October 2000**

SWO PRF 1311
17 October 2000

Solar activity varied from low to moderate levels. Activity was low during 09 - 10 October with isolated C-class flares. Most of these flares were produced by Region 9182 (N03, L = 246, class/area Dai/360 on 11 October) as it gradually developed, including a long-duration C6/1f flare at 09/2343 UTC with associated Type II and IV radio sweeps and a halo CME. Activity increased to moderate levels on 12 October due to a long-duration M1/Sf flare at 12/2049 UTC from Region 9182, which continued to gradually develop. Activity dropped to low levels on 13 October with isolated C-class subflares. Activity returned to moderate levels on 14 October as Region 9182 produced an M1/Sf flare at 14/0840 UTC as it was crossing the west limb. Activity decreased to low levels on the last day of the period with isolated C-class subflares. There were two long-duration, optically uncorrelated C-class X-ray flares detected on 15 October - a C3 at 15/0836 UTC and a C2 at 15/2212 UTC. Both flares may have been produced beyond the west limb from old Region 9182.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A CME, associated with the long-duration C6/1F at 09/2343 UTC, passed the spacecraft at 12/2145 UTC. The CME passage was accompanied by a velocity jump from 326 to 438 km/sec, a total field increase from 08 to 18 nT, a minor density increase, and variable IMF Bz with southerly deflections to minus 20 nT (GSM). There was a period of sustained southward Bz during 13/1600 - 14/1600 UTC with maximum southerly deflections to minus 12 nT. A coronal hole signature was observed during 14 - 15 October with increased velocities (peaks to 610 Km/sec on 15 October), low densities, and variable Bz.

There were no proton events at geosynchronous orbit during the period.

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

The geomagnetic field was at mostly quiet to unsettled levels during 09 - 12 October with brief active levels. The field was disturbed during 13 - 14 October due to a CME passage. Active to major storm periods occurred during both days. Field activity decreased to quiet to unsettled levels on 15 October.

Space Weather Outlook **18 October - 13 November 2000**

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

There will be a slight chance for a proton event at geosynchronous orbit during the latter half of the forecast period.

The greater than 2 MeV electron flux at geosynchronous orbit may reach moderate to high levels during 22 - 23 October. Otherwise, normal to moderate fluxes are expected.

Geomagnetic field activity may increase to active levels on 18 - 19 October due to weak CME effects. Active to minor storm levels are possible during 21 - 22 October 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
09 October	141	106	530	B5.0	11	0	0	4	2	0	0	0
10 October	140	95	350	C1.7	3	0	0	4	0	0	0	0
11 October	151	131	540	B5.3	3	0	0	5	0	0	0	0
12 October	163	187	670	B4.7	2	1	0	3	1	0	0	0
13 October	168	167	760	C1.3	3	0	0	8	0	1	0	0
14 October	163	157	630	C1.1	12	1	0	18	0	0	0	0
15 October	161	99	480	C1.2	7	0	0	7	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
	09 October	6.6E+5	1.0E+4	2.4E+3		1.4E+7
10 October	1.1E+5	1.5E+4	2.6E+3		1.4E+6	
11 October	3.7E+5	2.7E+4	2.7E+3		1.7E+6	
12 October	8.9E+5	2.2E+4	2.4E+3		7.1E+6	
13 October	1.7E+6	1.4E+4	2.2E+3		6.4E+5	
14 October	3.8E+5	1.0E+4	2.2E+3		2.1E+6	
15 October	4.5E+5	1.1E+4	2.3E+3		9.4E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	09 October	2	0-0-0-0-1-1-1-1	8	1-1-0-0-1-1-4-4	5
10 October	7	1-1-3-3-2-1-1-1	14	0-2-4-5-3-2-1-1	12	2-2-4-4-3-3-3-2
11 October	13	4-4-2-2-3-2-2-1	20	2-4-3-3-6-2-2-1	14	3-4-3-2-4-2-2-2
12 October	5	2-1-1-1-2-1-0-3	7	1-1-2-3-2-2-1-2	8	3-1-2-2-2-3-2-3
13 October	22	5-5-3-3-3-3-3-1	20	5-5-2-2-3-3-3-1	27	5-6-3-3-3-4-3-3
14 October	27	3-3-4-4-5-4-4-4	*	3-6-*-*-*-*-*	42	3-3-5-6-6-5-4-4
15 October	9	1-2-1-1-3-3-3-3	*	*-*-*-*-*-*	8	2-2-1-1-2-3-3-3

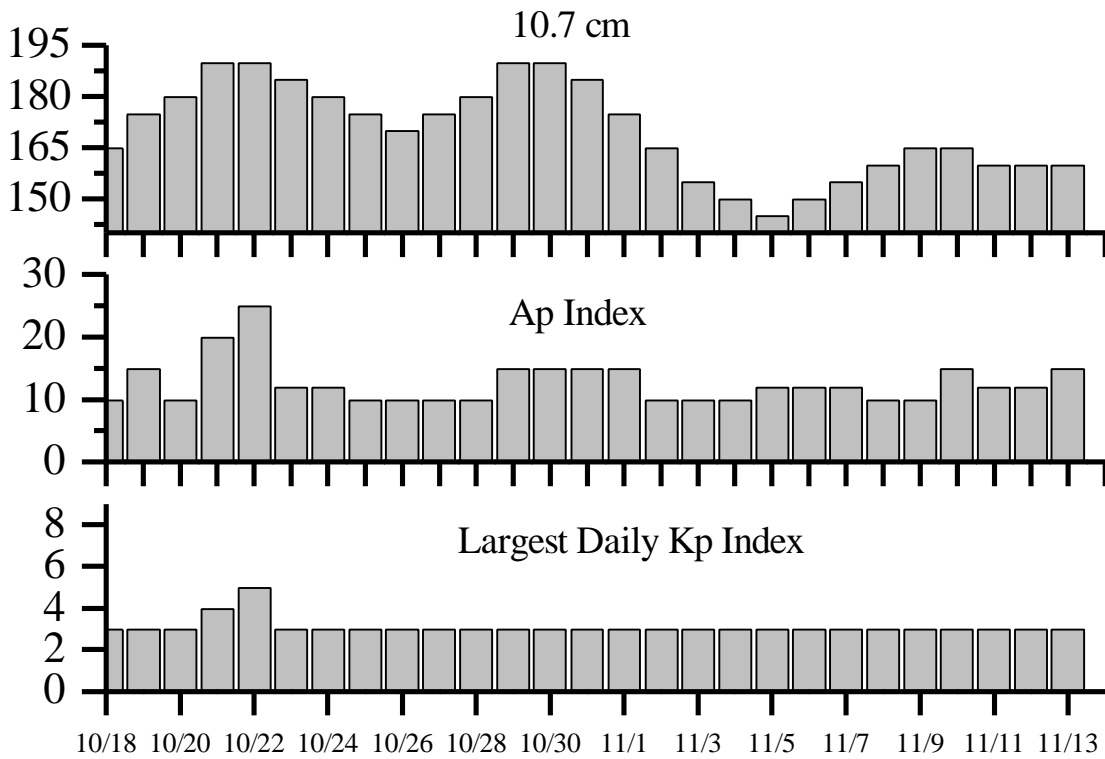


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
09 Oct 0031	245 MHz Radio Burst	08 Oct
09 Oct 0031	245 MHz Noise Storm	08 Oct
09 Oct 2056	CANCELLED A \geq 20 Watch	10 Oct
10 Oct 0000	Type II Radio Emission	09 Oct 2338
10 Oct 0101	10 – 245 MHz Radio Bursts	09 Oct
10 Oct 0101	245 MHz Noise Storm	09 Oct
10 Oct 0602	Type IV Radio Emission	09 Oct 2355
10 Oct 0900	K = 4 Observed	10 Oct 0600 - 0900
10 Oct 2011	A \geq 30 Watch	12 Oct
10 Oct 2013	A \geq 20 Watch	13 Oct
11 Oct 0052	2 – 245 MHz Noise Storm	10 Oct
11 Oct 0600	K = 4 Observed	11 Oct 0300 - 0600
12 Oct 0043	245 MHz Radio Burst	11 Oct
12 Oct 1931	A \geq 30 Watch	13 Oct
12 Oct 2057	10cm Radio Burst 170 F.U.	12 Oct
12 Oct 2240	Sudden Impulse observed at Boulder	12 Oct 2230
12 Oct 2347	K = 4 Warning	13 Oct 0013 - 1200
13 Oct 0108	K = 5 Warning	13 Oct 0115 - 1200
13 Oct 0118	245 MHz Noise Storm	12 Oct
13 Oct 0300	K= 5 Observed	13 Oct 0000 - 0300
13 Oct 1527	K = 4 Warning	13 Oct 1527 - 2100
13 Oct 1805	K = 4 Observed	13 Oct 1500 - 1800
13 Oct 1834	A \geq 20 Observed	13 Oct 1800
14 Oct 0302	ENDED A \geq 20 Observed	13 Oct 1800
14 Oct 0538	K = 4 Warning	14 Oct 0540 - 1200
14 Oct 0601	K = 4 Observed	14 Oct 0300 - 0600
14 Oct 0749	K = 5 Warning	14 Oct 0750 - 1200
14 Oct 0900	K = 5 Observed	14 Oct 0600 - 0900
14 Oct 905	A \geq 20 Observed	14 Oct 0900
14 Oct 1155	EXTENDED K = 4 Warning	14 Oct 0540 - 1800
14 Oct 1755	EXTENDED K = 4 Warning	14 Oct 0540 - 2100
15 Oct 0001	K = 4 Observed	14 Oct 2100 - 0000
15 Oct 0002	A \geq 30 Observed	15 Oct 0000
15 Oct 0122	2 – 245 MHz Radio Bursts	14 Oct
15 Oct 0307	ENDED A \geq 30 Observed	15 Oct 0000
15 Oct 1205	ENDED A \geq 20 Observed	14 Oct 0900



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
18 Oct	165	10	3	01 Nov	175	15	3
19	175	15	3	02	165	10	3
20	180	10	3	03	155	10	3
21	190	20	4	04	150	10	3
22	190	25	5	05	145	12	3
23	185	12	3	06	150	12	3
24	180	12	3	07	155	12	3
25	175	10	3	08	160	10	3
26	170	10	3	09	165	10	3
27	175	10	3	10	165	15	3
28	180	10	3	11	160	12	3
29	190	15	3	12	160	12	3
30	190	15	3	13	160	15	3
31	185	15	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
12 Oct	2026	2049	2145	M1.5	.052	SF	N02W56	9182	170			
14 Oct	0831	0840	0907	M1.1	.016	SF	N04W82	9182				

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical Location Lat CMD	Rgn
	Begin	Max	End				
09 October	0146	0153	0203	B8.2	SF	S29W07	9181
	0538	0550	0633	C1.1			
	0700	0705	0714	C1.1			
	0750	0754	0806				
	1313	1314	1333	C5.7			
	1342	1343	1358	C3.5			
	1658	1658	1702	C1.0			
	1755	1759	1801	B9.6			
	1812	1817	1821	C1.4			
	1915	1919	1923	C1.8			
	1931	1936	1941	C1.6			
	2049	2053	2059	C1.4			
	2244	2249	2253	C2.0			
10 October	2322	2345	0028	C6.7	1F	N01W14	9182
	0331	0333	0347		SF	N02W28	9182
	0403	0406	0428		SF	N02W27	9182
	0627	0632	0639	C1.6			
	0648	0653	0705		SF	N00W26	9182
	0902	0908	0914	C1.5			
	1514	1515	1527	C1.8	SF	S01W30	9182
11 October	B0122	U0127	0141		SF	N01W33	9182
	0613	0621	0640	C2.3	SF	N03W41	9182
	0834	0834	0841	C1.2	SF	S14W33	9184
	B2004	U2015	A2016	C3.5	SF	N01W47	9182
	2306	2307	2313		SF	S20E34	9190
12 October	1131	1137	A1147	C1.1	1F	N03W59	9182
	1740	1746	1752	C2.3			
	B2117	U2127	2139	M1.5	SF	N02W56	9182
	B2235	U2245	2300		SF	N13W72	9195
	2347	2350	2354		SF	N20E74	9197
13 October	0414	0419	0439		SF	S35W54	9196
	0435	0446	0448		SF	N12W73	9195
	0506	0513	0517		SF	N13W71	9195
	0519	0522	0525		SF	N05W67	9182
	0540	0545	0556		SF	N13W72	9195
	0602	0619	0655	C6.2	2N	N11W74	9195



Flare List – continued.

Date	Time			X-ray	Optical		Rgn Lat CMD
	Begin	Max	End		Imp / Class.	Location Brtns	
13 October	1008	1015	1025	C2.1			
	1809	1812	1816		SF	N13W78	9195
	1840	1842	1845		SF	N14W78	9195
	1914	1918	1927		SF	N04W74	9182
	2340	2344	2346		C1.8		
14 October	0117	0144	0225	C3.3	SF	N20E59	9197
	0217	0220	0230	C2.7	SF	S12E48	9194
	0421	0426	0430	C3.3			
	0540	0545	0553	C1.8			
	0704	0709	0713	C2.8	SF	N02W80	9182
	0736	0741	0749		SF	S13E44	9194
	0757	0801	0807	C2.4			
	0821	0822	0832		SF	N09W36	9193
	0835	0837	0905	M1.1	SF	N04W82	9182
	1050	1052	1103	C8.7	SF	N14W81	9187
	1140	1140	1145		SF	S14E40	9194
	1141	1143	1145		SF	N07W80	9182
	1156	1159	1220	C8.4	SF	N08W81	9182
	1246	1249	1253	C4.1	SF	S14E40	9194
	1405	1409	1439	C3.9	SF	S11E40	9194
	1733	1734	1744	C1.7	SF	S34E64	9198
	1751	1754	1803		SF	S35E70	9198
	1825	1825	1830		SF	S35E69	9198
	2021	2022	2027		SF	S15W36	9192
	2027	2034	2036		SF	S12W38	9192
	B2250	U2255	A2309	C3.9	SF	S30E72	9198
15 October	0107	0116	0124	C2.3			
	0215	0229	0237	C2.2			
	0720	0724	0729	C3.4			
	0817	0836	0912	C3.6			
	1710	1728	1740		SF	S29E58	9198
	1740	1741	1809	C1.7	SF	S29E59	9198
	1819	1822	1827		SF	S29E57	9198
	1833	1842	1904	C1.7	SF	S29E57	9198
	1906	1912	1928		SF	S33E64	9198
	1929	1929	1934		SF	S29E57	9198
	2131	2212	2304	C2.7			
	2306	2312	2325		SF	S29E56	9198



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	4								
<i>Region 9176</i>																							
27 Sep	S10E68	321	0140	02	HSX	001	A	1				5											
28 Sep	S09E57	319	0250	10	DAO	009	B					1											
29 Sep	S09E45	318	0410	12	EAO	016	B	1				1											
30 Sep	S09E31	319	0310	13	EKI	024	BG					2											
01 Oct	S09E18	318	0300	13	EKI	026	BG	2				1	2										
02 Oct	S09E04	319	0270	16	FHI	026	BG	2				2	1										
03 Oct	S08W10	320	0210	13	CAO	018	B																
04 Oct	S09W22	319	0190	14	CSO	015	B																
05 Oct	S09W37	321	0170	12	CSO	007	B																
06 Oct	S10W53	323	0130	10	CSO	005	B						1										
07 Oct	S08W66	323	0170	08	DSO	009	B																
08 Oct	S06W79	323	0220	08	DAO	006	B						4										
09 Oct	S09W92	323	0120	10	DAO	001	B																
								6	0	0	17	3	0	0	0	0							

Crossed West Limb.

Absolute heliographic longitude: 319

<i>Region 9178</i>																							
28 Sep	S23E63	313	0030	02	CRO	002	B																
29 Sep	S22E49	314	0050	06	CAO	005	B	1				2											
30 Sep	S23E38	312	0120	06	DAO	011	B	5	2			10											
01 Oct	S22E24	312	0160	09	DAI	015	B	1	1			11											
02 Oct	S22E09	314	0230	10	DAI	018	BG	1				3											
03 Oct	S22W04	314	0260	10	DAI	017	BG																
04 Oct	S22W16	313	0250	11	EAI	021	BG	2				2											
05 Oct	S23W30	314	0190	13	EAI	020	B																
06 Oct	S22W43	313	0150	10	CAO	011	B																
07 Oct	S20W59	316	0100	06	CSO	005	B	1				1											
08 Oct	S18W73	317	0080	07	CSO	004	B																
09 Oct	S20W86	317	0080	04	HSX	001	A																
								11	3	0	29	0	0	0	0	0							

Crossed West Limb.

Absolute heliographic longitude: 314



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	4								
<i>Region 9181</i>																							
02 Oct	S32E65	258	0150	06	DAO	006	B																
03 Oct	S29E53	257	0150	06	DAI	007	B																
04 Oct	S27E41	256	0130	06	DAI	011	B	2				2											
05 Oct	S28E30	254	0140	07	DSI	011	B					1											
06 Oct	S28E16	254	0070	06	DAO	014	B																
07 Oct	S29E01	256	0060	06	DSO	010	B	1					1										
08 Oct	S30W12	256	0100	07	DSO	007	B					1											
09 Oct	S29W24	255	0060	05	DSO	006	B					1											
10 Oct	S28W35	253	0030	05	CSO	005	B																
11 Oct	S29W46	251	0020	03	CSO	003	B																
12 Oct	S27W60	251	0010	01	HSX	001	A																
13 Oct	S27W73	251																					
14 Oct	S28W86	251																					
										3	0	0	5	1	0	0	0						

Crossed West Limb.

Absolute heliographic longitude: 256

<i>Region 9182</i>																							
02 Oct	S02E73	250	0060	02	CAO	003	B	1				1											
03 Oct	S02E63	247	0140	10	DAO	004	B	1				2											
04 Oct	N01E51	246	0160	12	EAO	008	B					1											
05 Oct	N03E39	245	0150	13	ESO	008	B					1											
06 Oct	N00E25	245	0140	14	ESO	013	B					1											
07 Oct	N01E10	247	0110	11	ESO	006	B																
08 Oct	N02W02	246	0090	12	ESO	007	B																
09 Oct	N02W18	249	0130	10	CSO	004	B	4				3	2										
10 Oct	N03W33	251	0180	16	FSO	014	BG	1				4											
11 Oct	N03W51	256	0360	08	DAI	016	B	2				3											
12 Oct	N06W66	257	0310	09	DAI	012	B	1	1			1	1										
13 Oct	N04W78	256	0290	10	DKO	012	BG					2											
14 Oct	N04W90	255	0240	08	DKI	006	BG	2	1			4											
										12	2	0	23	3	0	0	0						

Crossed West Limb.

Absolute heliographic longitude: 246



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 9184

03 Oct S14E61	249	0000	00	AXX	001	A												
04 Oct S13E53	244	0020	08	CSO	003	B												
05 Oct S14E37	247	0010	00	AXX	001	A												
06 Oct S14E24	247																	
07 Oct S14E11	247																	
08 Oct S14W02	247																	
09 Oct S14W15	247																	
10 Oct S14W28	247																	
11 Oct S14W41	247								1				1					
12 Oct S14W54	247																	
13 Oct S14W68	246																	
14 Oct S14W77	242	0020	04	DRO	003	B												
15 Oct S12W88	240																	
									1	0	0	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 247

Region 9187

08 Oct N21W07	251	0010	01	CSO	003	B												
09 Oct N21W22	253	0000	00	AXX	001	A												
10 Oct N21W35	253																	
11 Oct N21W48	253																	
12 Oct N21W61	252																	
13 Oct N21W74	252																	
14 Oct N21W87	252								1				1					
									1	0	0	1	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 251

Region 9188

08 Oct S12E32	212	0010	01	CSO	002	B												
09 Oct S12E16	215	0000	02	BXO	003	B												
10 Oct S12E03	215	0010	04	BXO	006	B												
11 Oct S11W08	213	0020	05	BXO	006	B												
12 Oct S10W22	213	0020	05	DSO	005	B												
13 Oct S10W34	212	0010	06	DSO	005	B												
14 Oct S07W48	213	0010	02	CSO	003	B												
15 Oct S07W61	213																	
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 215



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 9192

11 Oct	S14E02	203	0030	04	CRO	007	B											
12 Oct	S13W12	203	0050	06	DAO	009	B											
13 Oct	S13W25	203	0040	07	DSO	008	B											
14 Oct	S13W38	203	0020	07	CRO	009	B					2						
15 Oct	S13W51	203	0020	06	BXO	006	B											
												0	0	0	2	0	0	0

Still on Disk.

Absolute heliographic longitude: 203

Region 9193

11 Oct	N10W04	209	0010	04	CSO	003	B											
12 Oct	N08W18	209	0030	05	DAO	009	B											
13 Oct	N05W32	210	0070	06	DAO	008	B											
14 Oct	N05W46	211	0140	09	DSO	012	B					1						
15 Oct	N05W61	213	0150	09	DSO	007	B											
												0	0	0	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 209

Region 9194

12 Oct	S13E60	131	0050	06	DSO	003	B										
13 Oct	S12E50	128	0060	04	DSO	004	B										
14 Oct	S12E36	129	0060	04	DAO	008	B	3			5						
15 Oct	S12E23	129	0120	06	DAI	013	B										
								3	0	0	5	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 129

Region 9195

12 Oct	N14W70	261	0030	02	DSO	003	B					1					
13 Oct	N14W82	260	0070	05	DSO	004	B	1			5		1				
								1	0	0	6	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 261



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 9196</i>																				
12 Oct	S31W54	245	0040	04	DSO	004	B													
13 Oct	S33W65	243	0100	06	DSO	006	B						1							
14 Oct	S34W77	242	0030	07	CRO	006	B													
15 Oct	S33W88	240																		
													0	0	0	1	0	0	0	0
Still on Disk.																				
Absolute heliographic longitude: 245																				
<i>Region 9197</i>																				
12 Oct	N26E70	121	0020	03	CSO	004	B						1							
13 Oct	N26E57	121																		
14 Oct	N25E42	123						1				1								
15 Oct	N25E29	123																		
													1	0	0	2	0	0	0	0
Still on Disk.																				
Absolute heliographic longitude: 123																				
<i>Region 9198</i>																				
14 Oct	S30E65	100	0030	04	BXO	003	B	2				4								
15 Oct	S31E54	098	0080	10	CSO	004	B	2				7								
								4	0	0	0	11	0	0	0	0	0			
Still on Disk.																				
Absolute heliographic longitude: 98																				
<i>Region 9199</i>																				
15 Oct	N12E68	084	0040	01	HSX	001	A													
													0	0	0	0	0	0	0	0
Still on Disk.																				
Absolute heliographic longitude: 84																				

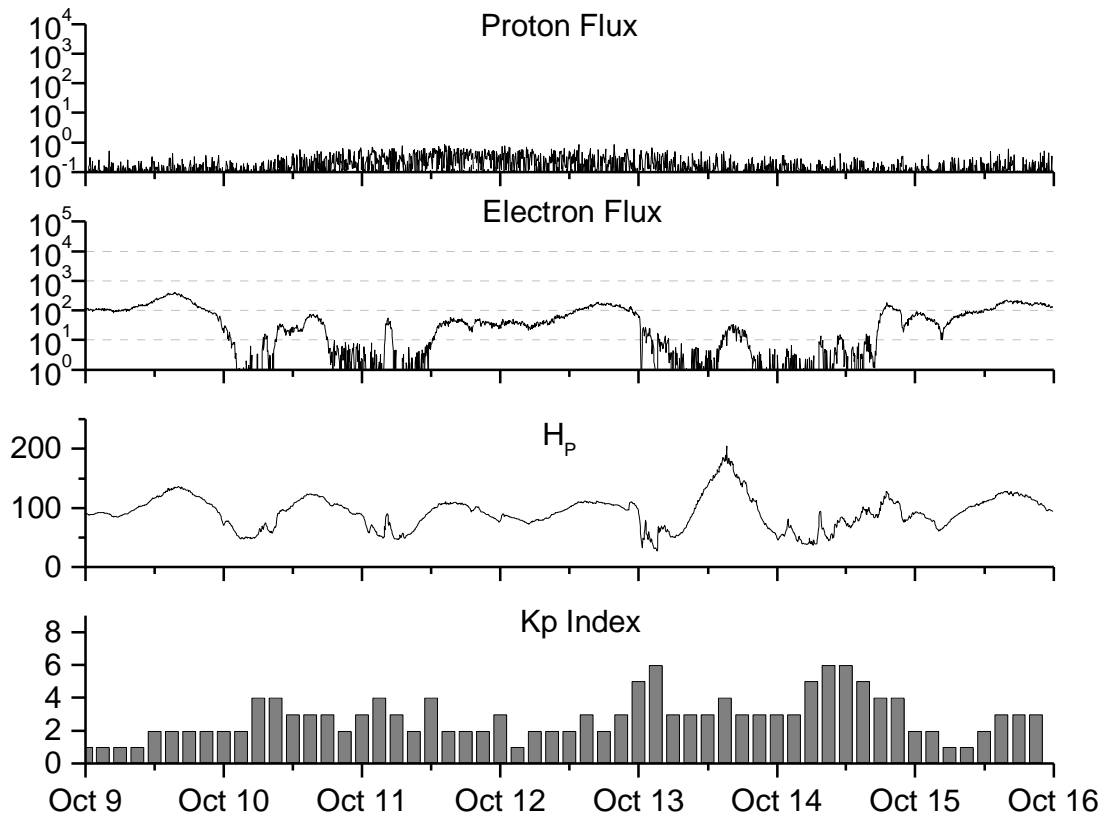


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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 09 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.

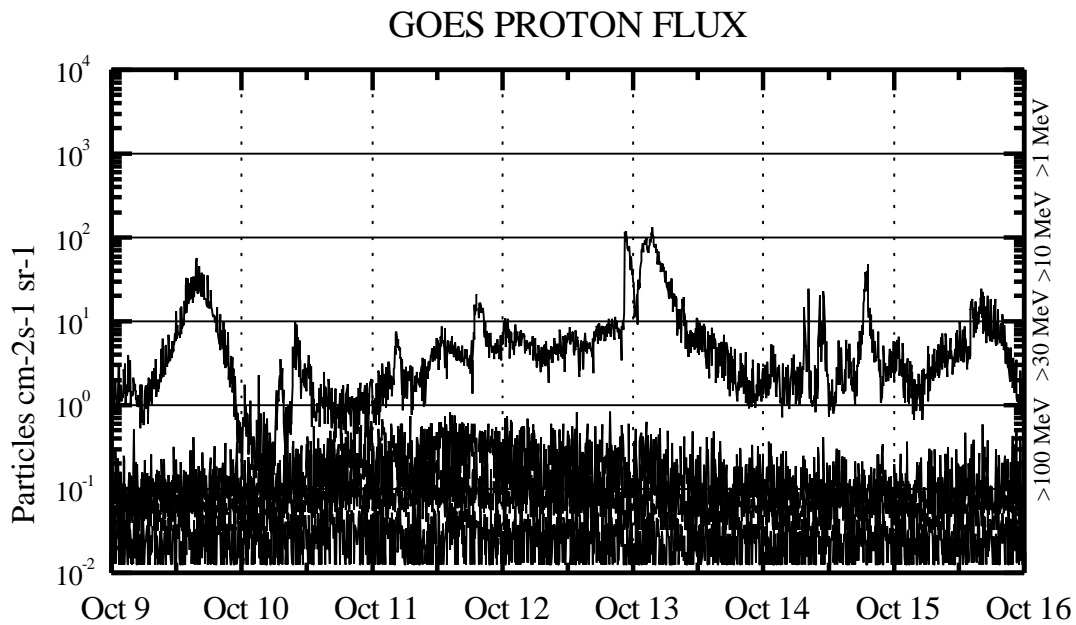
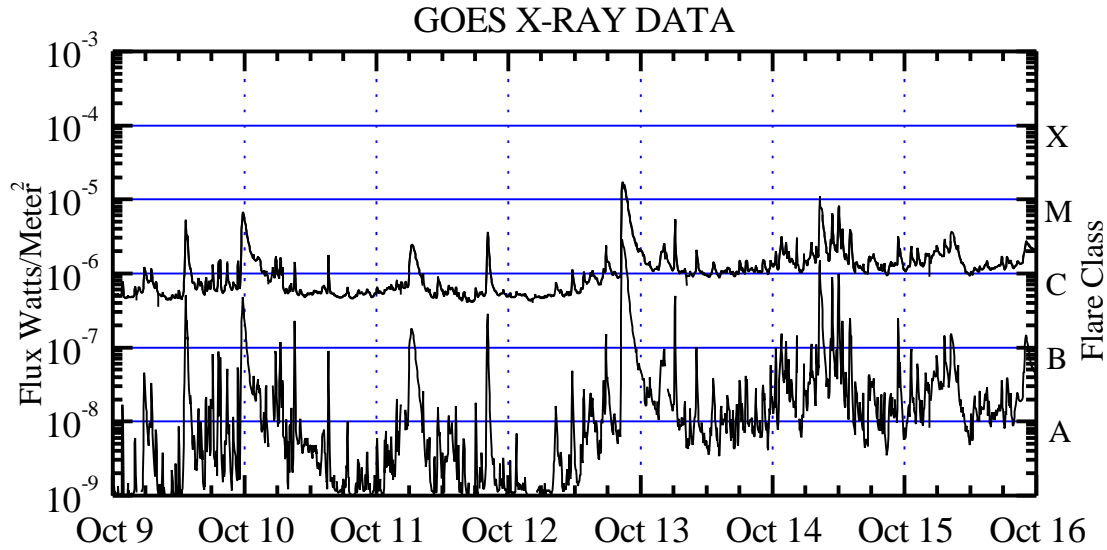
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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/m^2) 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 ($\text{protons/cm}^2\text{-sec-sr}$) as measured by GOES-8 (W75) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu ($\text{protons/cm}^2\text{-sec-sr}$) at greater than 10 MeV.

