

Space Weather Highlights
06-12 September 1999

Solar activity ranged from very low to moderate levels. Region 8690 (N13, L=119, class/area Dso/050 on 08 September) produced an M1/1B flare at 08/1217UT. This was the only moderate activity during the period. Activity for the rest of the period was very low to low. Region 8690 produced most the activity, however regions 8692 (S27, L=009, class/area Eao/270 on 12 September) and 8699 (N21, L=003, class/area Dro/030 on 12 September) showed rapid growth and increased magnetic complexity at the end of the period.

Real-time solar wind data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. Wind speeds fluctuated between 320 to 550 km/sec. IMF Bz fluctuated between northward and southward for most of the week. Bz was predominately southward on 12 September with maximum southerly deflections from minus 07 to minus 10 nT. ACE real-time solar wind measurements indicated the arrival of a high speed, low density solar wind stream at about 07/0900UT. The ACE spacecraft also detected an interplanetary shock passage at L1 at 12/0322UT followed by a sudden impulse at Earth at 12/0400UT (21 nT, as measured by the Boulder USGS Magnetometer).

No proton events were detected at geo-synchronous orbit during the period.

The greater than 2 MeV electron flux was at moderate to high levels during most of the period.

The geomagnetic field was predominately quiet to active with minor storm conditions occurring on 12 September. The unsettled to active conditions were caused by recurrent coronal hole effects. Minor storm activity on 12 September was most likely caused by the interplanetary shock and corresponding southward IMF Bz described above.

Space Weather Outlook
15 September - 11 October 1999

Solar activity is expected to range from low to moderate levels with a slight chance for major flares. An increasing trend is expected to commence around 16 September with the return of old Region 8674 (S24, L=246), which produced isolated major flares during its last rotation.

There will be an increased chance for a proton event at geo-synchronous orbit beginning around 16 September.

The greater than 2 MeV electron flux at geo-synchronous altitude is expected to be at moderate to high levels beginning around 13 September.

Geomagnetic field activity is expected vary from quiet to unsettled levels during most of the period. However, active periods will be possible around 12 - 16 September and again around 26 September - 01 October due to recurrent high speed solar wind streams.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No. (10 ⁶ hemi.)	Sunspot Area	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	
06 September	119	81	180	B2.5	1	0	0	1	0	0	0	0
07 September	112	111	300	B4.1	2	0	0	3	0	0	0	0
08 September	107	111	440	B3.1	1	1	0	0	1	0	0	0
09 September	107	113	510	B2.5	1	0	0	2	0	0	0	0
10 September	122	107	460	B2.2	0	0	0	6	0	0	0	0
11 September	123	145	520	B2.6	1	0	0	7	0	0	0	0
12 September	141	126	540	B4.3	8	0	0	11	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
06	1.6E+5	1.4E+4	3.5E+3		1.4E+8	
07	1.1E+5	1.5E+4	3.3E+3		9.4E+6	
08	7.4E+4	1.4E+4	2.9E+3		9.7E+6	
09	3.3E+5	1.3E+4	3.0E+3		1.0E+7	
10	2.0E+5	1.4E+4	2.9E+3		5.4E+6	
11	1.2E+5	1.3E+4	2.7E+3		9.4E+5	
12	7.3E+5	1.4E+4	2.9E+3		5.6E+5	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	06 September	4	1-1-2-1-1-1-1-2	11	0-5-4-1-0-1-1-1	6
07 September	12	1-2-3-3-2-2-4-3	24	1-1-5-5-5-2-2-4	17	2-1-4-4-3-3-4-4
08 September	5	2-0-1-1-2-2-2-2	11	2-1-1-3-4-4-1-1	9	3-1-1-2-3-3-2-3
09 September	7	2-1-2-1-3-2-2-1	*	2-1-2-3-1-1-*.*	8	3-1-2-2-3-3-2-2
10 September	12	2-3-3-2-3-2-3-3	19	3-3-4-4-4-4-2-2	15	2-3-4-3-4-3-3-3
11 September	8	4-2-1-1-2-0-2-2	15	4-4-1-4-4-1-1-1	10	4-3-2-2-2-2-2-2
12 September	17	2-3-1-5-3-2-4-3	*	2-3-3-7-5-5-6-*	26	3-3-3-6-3-4-5-4

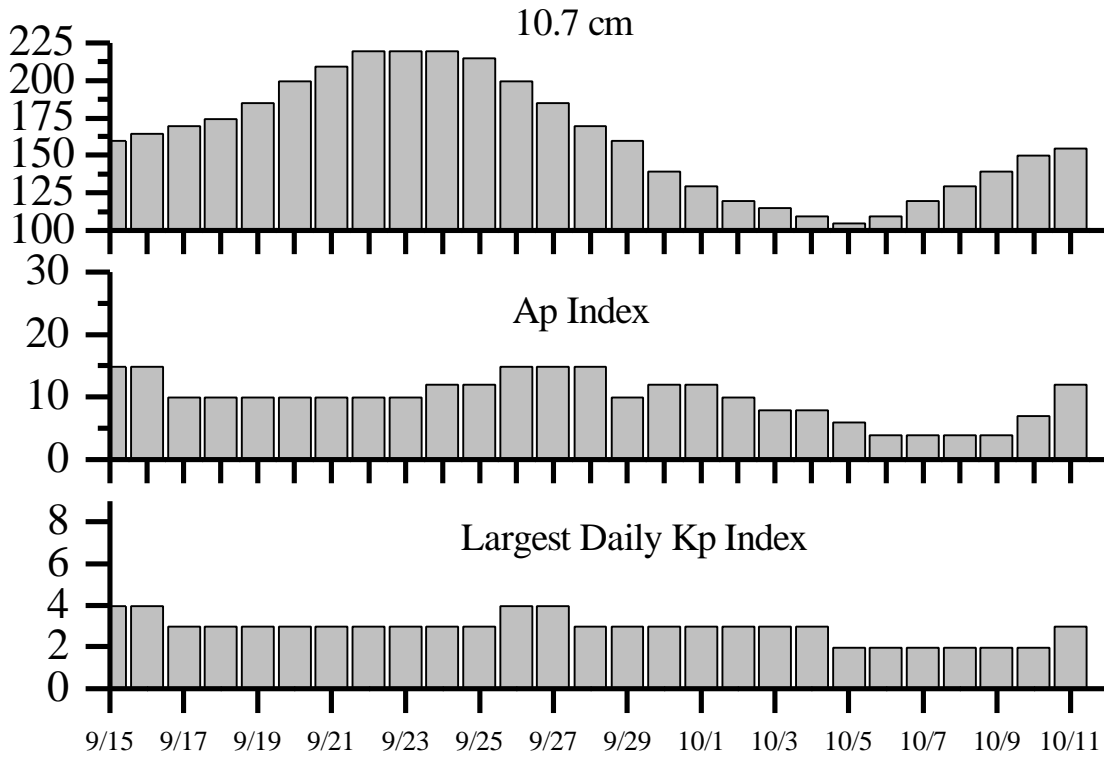


Alerts and Warnings Issued

Date and Time of Issue (UT)	Type of Alert or Warning	Date and Time of Event (UT)
06 Sep 1204	>2MeV Electron Event @ ≥ 1000 pfu CONTINUED	28 Aug 1200
07 Sep 1200	>2MeV Electron Event @ ≥ 1000 pfu CONTINUED	28 Aug 1200
07 Sep 1200	K= 4 Observed	07 Sep 09 - 12
08 Sep 0021	2 - 245 MHz Radio Bursts	07 Sep
08 Sep 0300	K= 4 Observed	08 Sep 00 - 03
08 Sep 0300	K= 4 Warning valid	08 Sep 03 - 18
08 Sep 1249	10cm Radio Burst 300 F.U.	08 Sep 1213
09 Sep 0040	6 - 245 MHz Radio Bursts	08 Sep
09 Sep 1808	Sudden Impulse Observed at Boulder 5 nT	09 Sep 1257
09 Sep 1915	10cm Radio Burst 150 F.U.	09 Sep 1703
10 Sep 0008	4 - 245 MHz Radio Bursts	09 Sep
11 Sep 0027	1 - 245 MHz Radio Bursts	10 Sep
11 Sep 0300	K= 4 Observed	11 Sep 00 - 03
11 Sep 0300	K= 4 Warning valid	11 Sep 03 - 18
11 Sep 1348	K= 4 Warning valid 11 Sep 03 - 18 CANCELLED	11 Sep 0300
12 Sep 0023	1 - 245 MHz Radio Bursts	11 Sep
12 Sep 0406	K= 4 Warning valid	12 Sep 0400 - 13 Sep 0600
12 Sep 0412	Sudden Impulse Observed at Boulder 21 nT	12 Sep 0400
12 Sep 1106	K= 5 Warning valid	12 Sep 1100 - 13 Sep 0600
12 Sep 1158	K= 5 Observed	12 Sep 09 - 12



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
15 Sep	160	15	4	29 Sep	160	10	3
16	165	15	4	30	140	12	3
17	170	10	3	01 Oct	130	12	3
18	175	10	3	02	120	10	3
19	185	10	3	03	115	8	3
20	200	10	3	04	110	8	3
21	210	10	3	05	105	6	2
22	220	10	3	06	110	4	2
23	220	10	3	07	120	4	2
24	220	12	3	08	130	4	2
25	215	12	3	09	140	4	2
26	200	15	4	10	150	7	2
27	185	15	4	11	155	12	3
28	170	15	3				



Energetic Events

Date	Time (UT)			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	$\frac{1}{2}$	Class	Integ Flux	Imp/ Brtns	Location		Radio Flux		Intensity	
			Max				Lat	CMD	245	2695	II	IV
08 Sep	1208	1217	1227	M1.4	.009	1B	N12E53		8690	2600	290	

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
06 Sep	1209	1211	1218	B6.2	SF	N17W36	8682	
	2101	2112	2118	C1.7				
07 Sep	0258	0302	0308	B5.9				
	1349	1358	1408	C1.2				
	1534	1536	1543		SF	N17W52	8682	
	1916	1921	1924	B6.4				
	2311	2311	2339	C2.7	SF	N13E59	8690	
08 Sep	2311	2311	2324		SF	N17W56	8682	
		0218	0222	0227	B5.1			
	0551	0554	0557	C1.0				
	1146	1216	1233	M1.4	1B	N12E53	8690	
	2126	2135	2140	B4.4				
09 Sep	1616	1629	1747	C3.3	SF	N13E37	8690	
	1718	1719	1723		SF	S25E49	8692	
10 Sep	0149	0153	0157	B4.5				
	0739	0743	0746	B7.0				
	0811	0814	0820	B4.0				
	0853	0853	0859		SF	S27E45	8692	
	0915	0920	0924	B8.6	SF	S28E45	8692	
	1115	1115	1119		SF	S28E44	8692	
	1145	1146	1149		SF	S25E35	8692	
	1911	1913	1916		SF	S27E41	8692	
	1941	1947	1958	B4.8				
	2242	2244	2328	B5.4	SF	N14E21	8690	



Flare List-continued

Date	Time			X-ray Class.	Optical		Rgn #
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
11 Sep	0219	0224	0227	B9.7			
	0516	0520	0529	B4.1			
	0626	0631	0633	C1.0			
	1439	1444	1449	B8.0			
	1947	1952	2000		SF	N23E31	8699
	2052	2100	2105	B7.0			
	2111	2215	2229		SF	N23E29	8699
	2234	2240	2251		SF	N13E07	8690
	2235	2244	2251		SF	N22E28	8699
	2301	2305	2307		SF	N22E28	8699
	2333	2342	2346		SF	N23E28	8699
12 Sep	2351	0004	0008		SF	N23E28	8699
	0148	0201	0207	B9.9			
	0209	0212	0217	C1.1			
	B0329	0329	A0334	C1.8	SF	N22E26	8699
	0510	0512	0514	B9.0	SF	N22E25	8699
	0546	0556	0629	C2.4	SF	N22E25	8699
	0650	0653	0659		SF	N13E03	8690
	0831	0835	0842	C1.1			
	1205	1205	1218	C2.2	SF	N21E21	8699
	1229	1235	1241	C1.3			
	1348	1350	1354		SF	N22E20	8699
	1417	1430	1457		SF	N22E21	8699
	1509	1514	1528		SF	N22E19	8699
	1700	1702	1708	C1.2	SF	N23E19	8699
	1736	1746	1758	C2.4			
	1810	1810	1818		SF	S27E16	8692
	1825	1826	1837		SF	S27E16	8692



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 8677</i>																		
25 Aug	N07E71	185	0060	02	HSX	001	A											
26 Aug	N07E60	183	0080	06	CAO	006	B											
27 Aug	N07E46	183	0090	06	CSO	006	B											
28 Aug	N08E33	183	0070	03	CSO	005	B											
29 Aug	N08E20	183	0070	04	CSO	005	B											
30 Aug	N07E07	183	0070	04	CSO	003	B						1					
31 Aug	N07W07	184	0060	04	CSO	002	B								1			
01 Sep	N08W21	184	0040	02	HSX	001	A	1										
02 Sep	N08W35	185	0040	02	HSX	001	A											
03 Sep	N08W48	185	0030	02	HSX	001	A											
04 Sep	N09W61	185	0040	02	HSX	001	A											
05 Sep	N10W74	185	0040	02	HSX	001	A											
06 Sep	N08W84	181	0000	00	AXX	001	A											
								1	0	0	1	1	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 183

<i>Region 8679</i>																		
26 Aug	S34E58	185	0050	06	CSO	002	B											
27 Aug	S31E44	185	0050	04	CAO	002	B											
28 Aug	S34E31	185	0040	05	CAO	004	B											
29 Aug	S34E22	181	0020	08	BXO	009	B											
30 Aug	S33E09	181	0010	05	BXO	004	B											
31 Aug	S30E00	177	0010	02	BXO	003	B											
01 Sep	S36W17	180	0010	01	AXX	001	A											
02 Sep	S36W28	178	0000	00	AXX	001	A											
03 Sep	S36W41	178																
04 Sep	S36W54	178																
05 Sep	S36W67	178											1					
06 Sep	S36W80	178																
07 Sep	S36W93	178																
								0	0	0	1	0	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 177



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 8682</i>																								
29 Aug	N18E65	138	0040	02	HSX	001	A																	
30 Aug	N18E51	139	0020	03	CSO	002	B																	
31 Aug	N19E37	140	0010	01	HSX	001	A																	
01 Sep	N18E26	137	0020	09	CSO	005	B																	
02 Sep	N18E11	139	0010	04	CRO	003	B																	
03 Sep	N18W02	139	0010	07	BXO	006	B														1			
04 Sep	N17W14	138	0040	07	DSO	011	B																	
05 Sep	N18W28	139	0060	09	DSO	015	B																	
06 Sep	N17W41	138	0050	10	DAO	013	B														1			
07 Sep	N18W55	139	0040	11	BXO	011	B														2			
08 Sep	N18W69	140	0020	08	CSO	004	B																	
09 Sep	N18W85	143	0030	06	CRO	003	B																	
													0	0	0	0	4	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 139

<i>Region 8684</i>																							
30 Aug	S12E49	141	0000	01	AXX	002	A																
31 Aug	S12E35	142	0010	02	BXO	004	B																
01 Sep	S12E22	142																					
02 Sep	S12E09	142																					
03 Sep	S12W04	142																					
04 Sep	S12W17	142																					
05 Sep	S14W27	138	0000	00	AXX	001	A																
06 Sep	S14W40	138																					
07 Sep	S14W53	138																					
08 Sep	S14W66	138																					
09 Sep	S14W79	138																					
													0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 142



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 8685

31 Aug S08E66	111	0020	01	BXO	002	B												
01 Sep S08E53	111																	
02 Sep S08E40	111																	
03 Sep S08E28	109	0000	01	AXX	002	A												
04 Sep S08E15	109																	
05 Sep S08E02	109																	
06 Sep S08W11	109																	
07 Sep S08W24	109																	
08 Sep S08W37	109																	
09 Sep S08W50	109																	
10 Sep S08W63	109																	
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 109

Region 8686

31 Aug S24E05	172	0010	02	BXO	004	B												
01 Sep S24W09	172	0020	05	CSO	005	B												
02 Sep S24W23	173	0010	05	BXO	008	B												
03 Sep S25W36	173	0020	06	CRO	008	B												
04 Sep S25W49	173	0010	07	BXO	005	B												
05 Sep S25W64	175	0010	04	BXO	002	B												2
06 Sep S25W79	177																	
07 Sep S25W92	177																	
										0	0	0	2	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 172

Region 8687

02 Sep N11W07	157	0020	04	CRO	006	B												
03 Sep N10W21	158	0010	05	BXO	006	B												
04 Sep N11W33	157	0020	05	BXO	010	B												
05 Sep N10W48	159	0030	06	CSO	005	B												1
06 Sep N10W60	157	0050	07	DAO	006	B												
07 Sep N12W73	157	0020	07	BXO	007	B												
08 Sep N09W87	158	0050	03	HSX	002	A												
										0	0	0	1	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 157



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 8691

07 Sep	S30W32	116	0030	05	CRO	006	B										
08 Sep	S30W45	116	0020	07	DRO	004	B										
09 Sep	S29W58	116	0010	09	BXO	005	B										
10 Sep	S31W69	114	0000	00	AXX	002	B										
11 Sep	S31W82	114															
																	0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 116

Region 8692

07 Sep	S25E74	010	0090	08	DSO	006	B										
08 Sep	S27E60	011	0230	11	ESO	008	B										
09 Sep	S26E48	010	0340	10	DAO	012	BGD					1					
10 Sep	S27E36	009	0320	12	EAI	022	BG					5					
11 Sep	S27E23	009	0270	12	EAO	016	BG										
12 Sep	S26E11	007	0230	11	EAO	019	B					2					
																	0 0 0 8 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 7

Region 8693

07 Sep	N12E79	005	0020	01	HSX	001	A										
08 Sep	N11E64	007	0050	02	HAX	001	A										
09 Sep	N12E51	007	0070	01	HSX	001	A										
10 Sep	N13E37	008	0050	06	CSO	006	B										
11 Sep	N13E23	009	0050	04	CSO	005	B										
12 Sep	N13E11	007	0050	02	DSO	002	B										
																	0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 7

Region 8694

08 Sep	S14W14	085	0000	00	AXX	002	A										
09 Sep	S16W27	085	0010	02	BXO	005	B										
10 Sep	S17W34	079	0010	00	AXX	002	A										
11 Sep	S17W47	079															
12 Sep	S17W60	079															
																	0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 85



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 8695</i>																	
10 Sep	N19E73	332	0020	01	HSX	001	A										
11 Sep	N20E60	332	0040	01	HSX	001	A										
12 Sep	N20E48	330	0030	01	HSX	001	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 330																	
<i>Region 8696</i>																	
11 Sep	N14W48	080	0010	04	BXO	002	B										
12 Sep	N14W61	080															
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 80																	
<i>Region 8697</i>																	
11 Sep	S20W06	038	0010	03	BXO	003	B										
12 Sep	S20W19	038															
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 38																	
<i>Region 8698</i>																	
11 Sep	S16E64	328	0010	01	AXX	002	A										
12 Sep	S16E51	328															
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 328																	
<i>Region 8699</i>																	
11 Sep	N21E29	003	0030	05	DRO	013	B										6
12 Sep	N21E15	003	0110	07	DAI	017	B	4									8
								4	0	0	14	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 3																	
<i>Region 8700</i>																	
12 Sep	N12E81	297	0030	03	HSX	002	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 297																	

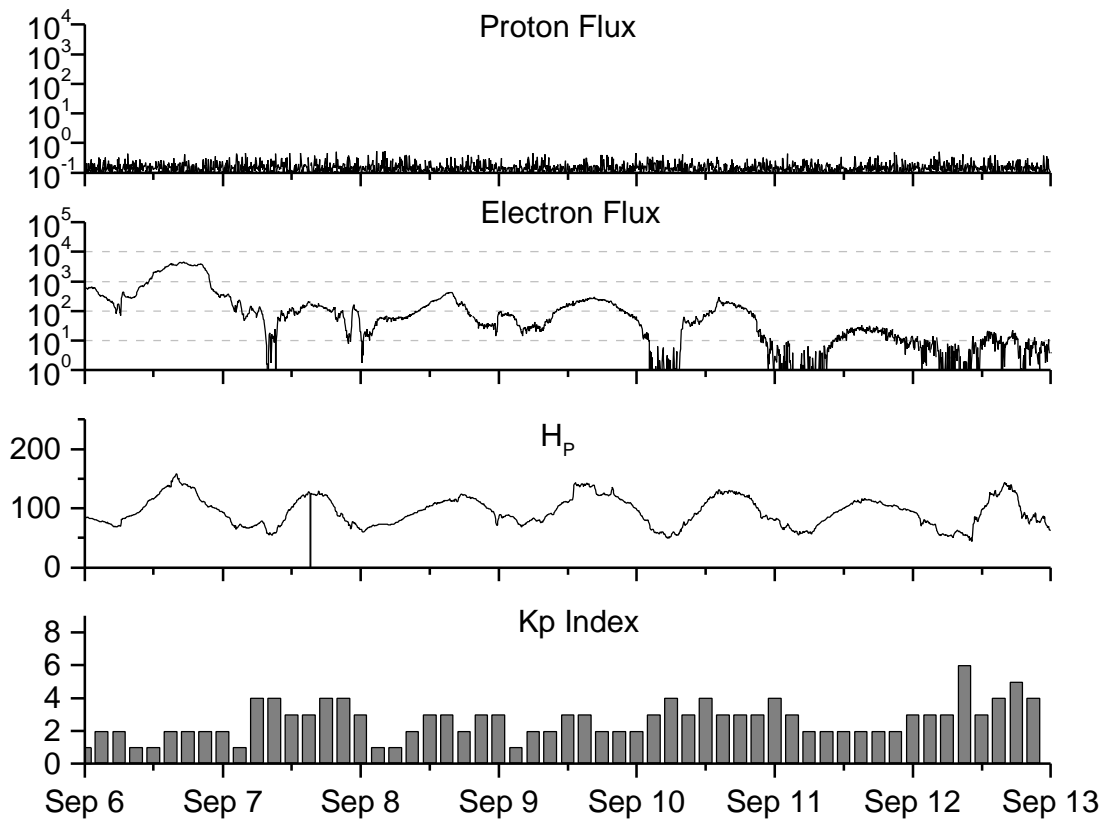


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers				Radio Flux		Geomagnetic		
	Observed SWO	values RI	Ratio RI/SWO	Smooth values SWO	values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
1997									
September	52.8	51.3	0.88	40.5	28.3	96.2	85.7	10	08.4
October	33.6	22.8	0.68	45.4	31.8	84.9	88.6	11	08.6
November	53.5	39.0	0.73	49.3	35.0	99.5	91.3	11	09.0
December	57.9	41.2	0.71	54.2	39.0	98.8	94.2	05	09.5
1998									
January	51.8	31.9	0.62	60.6	43.7	93.4	97.5	08	09.9
February	54.4	40.3	0.74	67.4	48.8	93.4	101.7	08	10.5
March	81.8	54.8	0.67	73.3	53.4	109.1	105.8	13	11.1
April	73.6	53.4	0.73	77.7	56.5	108.3	109.1	10	11.3
May	74.3	56.3	0.76	81.4	59.3	106.7	112.4	18	11.6
June	93.6	70.7	0.76	85.9	62.4	108.4	116.2	10	11.9
July	98.3	66.2	0.67	90.3	65.4	114.0	120.3	11	12.2
August	118.6	91.7	0.77	93.7	67.8	136.0	124.1	18	12.4
September	119.0	92.9	0.78	96.1	69.4	138.4	126.8	13	12.5
October	77.0	55.5	0.72	97.7	70.5	117.3	127.9	13	12.5
November	99.5	74.0	0.74	101.3	73.0	140.2	130.0	16	12.3
December	120.8	81.9	0.69	108.8	77.9	150.1	134.3	08	11.9
1999									
January	94.3	62.4	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			126.3		14	
April	92.9	63.9	0.69			117.2		12	
May	140.5	106.3	0.76			148.6		08	
June	208.3	137.4	0.66			170.0		07	
July	169.2	113.5	0.67			165.6		10	
August	136.1	93.7	0.69			170.8		15	

NOTE: All smoothed values after January 1998 and monthly values after September 1998 are preliminary estimates. The lowest smoothed sunspot indices 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 30 August 1999

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.

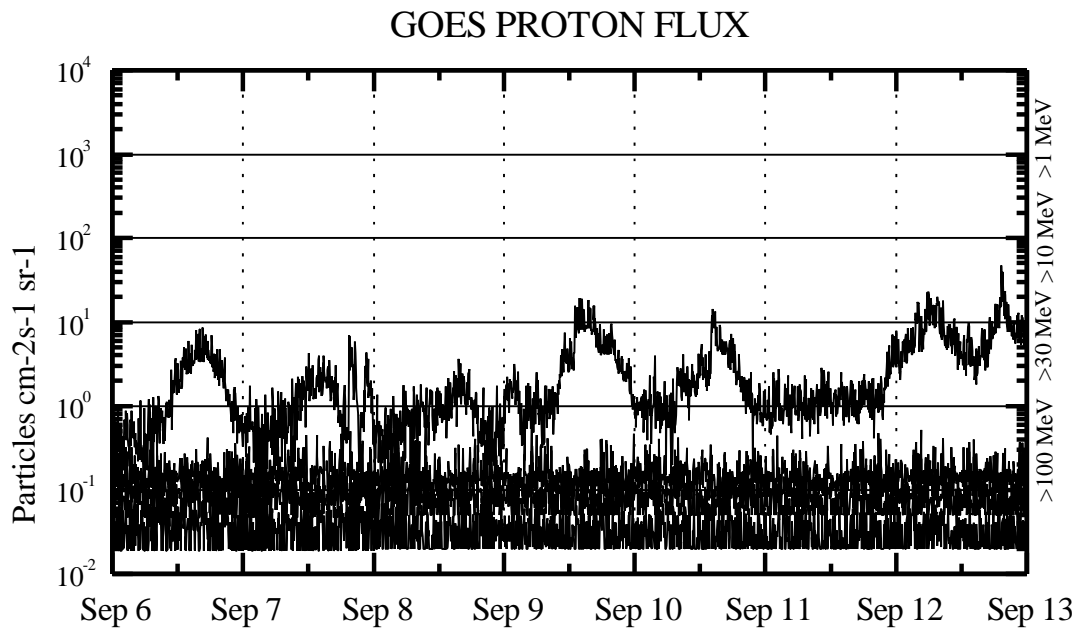
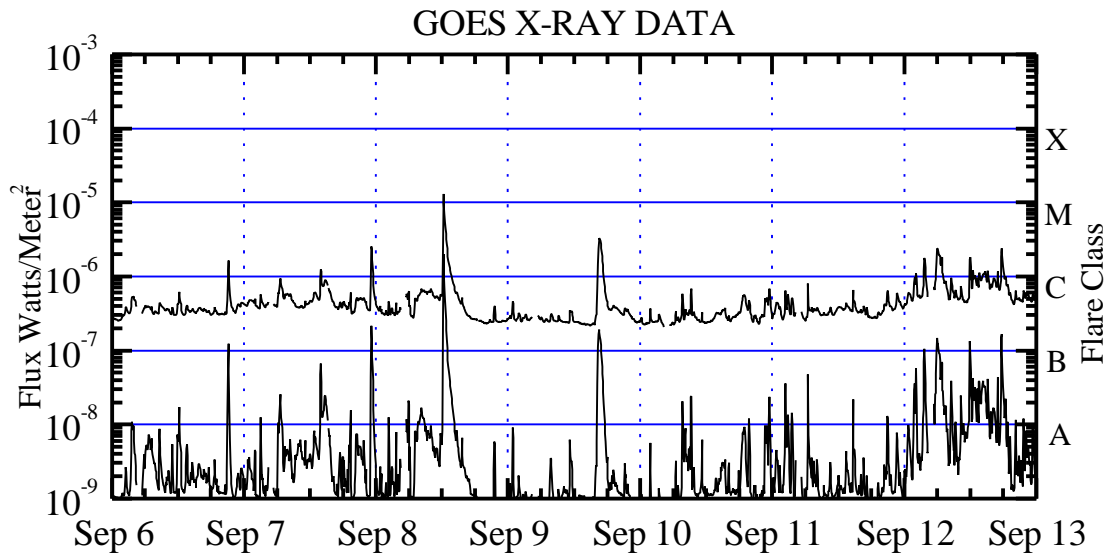
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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 (protons/ cm^2 -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^2 -sec-sr) at greater than 10 MeV.

