

Space Weather Highlights
26 August - 01 September 2002

SWO PRF 1409
03 September 2002

Solar activity ranged from low to high levels. Activity was low on 27, 31 August and 01 September. Moderate levels were reached on 26, 28 and 29 August. Activity was at high levels on 30 August due to an X1/Sn flare at 30/1329 UTC from Region 95 (N07, L= 059 class/area Fkc/810 on 31 August). This flare was associated with a Type II radio sweep and a Tenflare, however, no Earth directed CME was observed. Region 95 rotated onto the east limb on 29 August and was fairly active, producing an M-class flare and numerous C-class flares (For flare times and magnitudes, refer to the Energetic Events or Optical Flare lists). Region 95 has shown some mixing of polarities in the intermediate spots and developed a small, short lived, delta magnetic configuration in the trailing spots on 31 August. At the close of the period, Region 95 was a large group with a beta-gamma magnetic configuration.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. A CME shock passage was detected by ACE at 26/1048 UTC marked by a 100 km/s increase in solar wind velocity to near 420 km/s. Corresponding increases in solar wind temperature and density were also observed. Velocity increased to a peak value around 525 km/s late on 28 August and gradual decreased on 29-30 August to approximately 350 km/s.

The greater than 10 MeV proton event that began at 24/0140 UTC, ended at 26/1335 UTC (peak flux was 317 pfu). No other proton events were observed during the summary period.

The greater than 2 MeV electron flux at geo-synchronous orbit was at normal levels for most of the period. An enhancement to moderate levels was observed on 29 August.

The geomagnetic field was at quiet to active levels for most of the period. Minor storming was observed on 26 August due to the arrival of a fast CME, associated with the X3/Sf, full halo event on 24 August. A 15 nT sudden impulse was recorded at the Boulder Magnetometer at 26/1133 UTC. The geomagnetic field for the remainder of the period was mostly quiet to unsettled with isolated periods of active conditions on 27 August, 31 August, and 01 September.

Space Weather Outlook
04 – 30 September 2002

Solar activity is expected to be low to moderate. Activity is expected to be low early in the period, 04-08 September. With the return of old Region 69 (S08, L=299, class/area Ekc/1990, on 19 August) on 07 September and Region 95 on 23 September, low to moderate levels are expected for the remainder of the period.

No proton events are expected early in the period. A proton event is possible on 07-22 September.

The greater than 2 MeV electron flux at geo-synchronous orbit may reach event threshold on 08-09 September due to a recurring coronal hole.

The geomagnetic field is expected to be at quiet to unsettled levels for most of the period. Active conditions are possible on 06-07 September due to a recurring coronal hole.



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
26 August	169	105	1320	C3.5	7	1	0	8	1	0	0	0
27 August	161	133	1070	B7.4	6	0	0	2	0	0	0	0
28 August	163	87	1070	C1.0	12	3	0	6	0	0	0	0
29 August	169	146	910	C2.3	11	3	0	12	1	0	0	0
30 August	170	150	1300	C1.3	10	0	1	15	0	0	0	0
31 August	180	153	1740	C1.3	11	0	0	5	0	0	0	0
01 September	181	187	1560	C1.7	5	0	0	2	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
26 August	3.0E+7	9.1E+5	6.1E+3		6.2E+6	
27 August	4.1E+6	1.3E+5	2.9E+3		4.1E+5	
28 August	3.7E+5	2.5E+4	2.4E+3		5.7E+5	
29 August	1.5E+5	1.4E+4	2.5E+3		1.2E+6	
30 August	9.1E+4	1.1E+4	2.5E+3		6.4E+5	
31 August	6.0E+4	1.1E+4	2.5E+3		8.3E+5	
01 September	5.2E+4	1.1E+4	2.6E+3		1.6E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	26 August	11	2-2-2-3-3-3-3-2	30	2-3-2-3-3-7-3-4	18
27 August	14	2-4-2-3-2-4-3-2	15	3-4-3-1-4-3-2-2	15	3-4-3-3-3-3-3-3
28 August	7	2-1-1-1-2-2-2-3	8	3-2-2-2-2-1-2-2	10	3-3-2-2-2-3-3-3
29 August	6	0-0-1-1-3-3-2-2	12	2-1-1-2-4-5-1-1	10	3-2-1-2-3-3-3-2
30 August	7	1-2-3-1-3-1-2-1	17	1-4-4-3-4-4-2-1	10	1-3-3-2-3-2-3-2
31 August	7	1-1-3-3-2-1-1-2	21	2-1-2-6-5-3-1-2	13	2-2-3-3-4-2-3-3
01 September	13	4-2-3-2-2-3-2-3	11	3-3-3-3-2-1-2-2	13	4-3-3-2-2-3-3-4

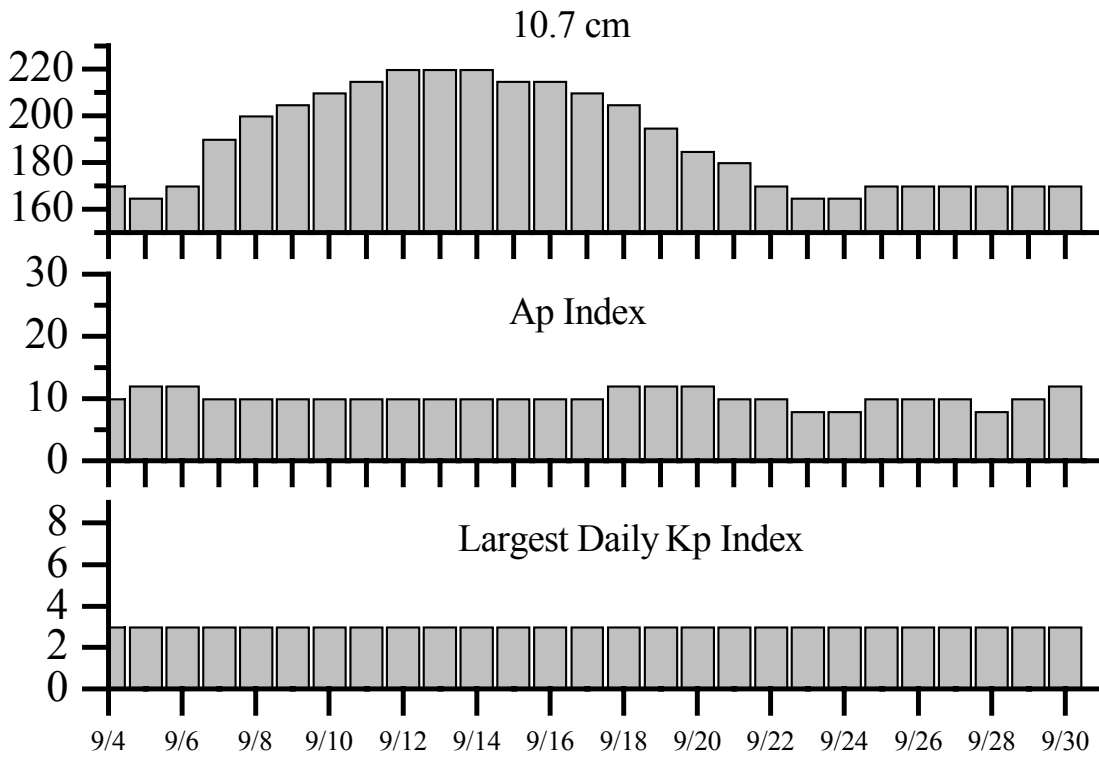


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
26 Aug 0025	CONTINUED ALERT: Proton Event 10MeV Integral Flux > 100pfu	24 Aug 0235
26 Aug 0028	7 – 245 MHz Radio Bursts	25 Aug
26 Aug 0028	245 MHz Noise Storm	25 Aug
26 Aug 1139	SUMMARY: Geomagnetic Sudden Impulse	26 Aug 1133
26 Aug 1446	ALERT: Geomagnetic K = 4	26 Aug 1442
26 Aug 1502	WARNING: Geomagnetic K = 4 expected	26 Aug 1505 – 2359
26 Aug 1541	ALERT: Geomagnetic K = 4	26 Aug 1535
26 Aug 1551	WARNING: Geomagnetic K = 5 expected	26 Aug 1553 – 2100
26 Aug 1610	ALERT: Geomagnetic K = 5	26 Aug 1605
26 Aug 1701	ALERT: Geomagnetic K = 6	26 Aug 1655
26 Aug 1805	SUMMARY: Proton Event 10MeV Integral Flux exceeded 10pfu	24 Aug 0140
26 Aug 1902	SUMMARY: Proton Event 10MeV Integral Flux exceeded 100pfu	24 Aug 0235
26 Aug 1908	CANC. SUMMARY: Proton Event 10MeV Integral Flux exceeded 100pfu	26 Aug 1902
26 Aug 1909	SUMMARY: Proton Event 10MeV Integral Flux exceeded 100pfu	24 Aug 0235
26 Aug 2313	EXTENDED WARNING: Geomagnetic K = 4 expected	24/1505 – 27 Aug 1500
27 Aug 0020	2 – 245 MHz Radio Bursts	26 Aug
27 Aug 0020	245 MHz Noise Storm	26 Aug
27 Aug 0414	ALERT: Geomagnetic K = 4	27 Aug 0413
27 Aug 1733	ALERT: Geomagnetic K = 4	27 Aug 1728
28 Aug 0013	5 – 245 MHz Radio Bursts	27 Aug
28 Aug 0013	245 MHz Noise Storm	27 Aug
28 Aug 1924	ALERT: Type II Radio Emission	28 Aug 1855
28 Aug 1927	SUMMARY: 10cm Radio Burst	28 Aug 1854
28 Aug 2013	ALERT: Type IV Radio Emission	28 Aug 1855
28 Aug 2203	SUMMARY: 10cm Radio Burst	28 Aug 2142
29 Aug 0019	8 – 245 MHz Radio Bursts	28 Aug
29 Aug 0019	245 MHz Noise Storm	28 Aug
29 Aug 1303	SUMMARY: 10cm Radio Burst	29 Aug 1247
30 Aug 0032	3 – 245 MHz Radio Bursts	29 Aug
30 Aug 1158	ALERT: Type II Radio Emission	30 Aug 1059
30 Aug 1329	ALERT: X-Ray Flux exceeded M5	30 Aug 1328
30 Aug 1340	SUMMARY: X-ray Event exceeded X1	30 Aug 1247
30 Aug 1359	ALERT: Type II Radio Emission	30 Aug 1330
30 Aug 1402	SUMMARY: 10cm Radio Burst	30 Aug 1327
31 Aug 1215	ALERT: Geomagnetic K = 4	31 Aug 1200
31 Aug 1518	SUMMARY: 10cm Radio Burst	31 Aug 1422
01 Sep 0045	ALERT: Geomagnetic K = 4	01 Sep 0040



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
04 Sep	170	10	3	18 Sep	205	12	3
05	165	12	3	19	195	12	3
06	170	12	3	20	185	12	3
07	190	10	3	21	180	10	3
08	200	10	3	22	170	10	3
09	205	10	3	23	165	8	3
10	210	10	3	24	165	8	3
11	215	10	3	25	170	10	3
12	220	10	3	26	170	10	3
13	220	10	3	27	170	10	3
14	220	10	3	28	170	8	3
15	215	10	3	29	170	10	3
16	215	10	3	30	170	12	3
17	210	10	3				



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	Rgn #	245	2695	II
26 Aug	0039	0103	0125	M1.8	.037	Sf	S19W45		100			
28 Aug	1645	1658	1709	M1.3	.013				54			
28 Aug	1852	1859	1906	M4.6	.025	Sf	S03E23		16000	930	1	3
28 Aug	2138	2145	2149	M1.1	.004				240	200		
29 Aug	0245	0253	0302	M1.6	.011				78	100		
29 Aug	0456	0506	0526	M1.8	.023							
29 Aug	1242	1252	1256	M3.2	.015	Sf	S18E73		720			
30 Aug	1247	1329	1335	X1.5	.070	Sn	N15E74		160000	780	1	

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn
	Begin	Max	End			Location Lat CMD		
26 August	0043	0107	0121	M1.8	Sf	S19W45		83
	B0535	0538	0549	C2.9	Sf	S05W14		85
	0942	0944	1016	C4.0	1f	S05W15		85
	1254	1301	1316	C2.5	Sf	S07W15		85
	1341	1342	1344		Sf	S07W19		85
	1623	1623	1646	C7.6	Sf	S19W53		83
	1840	1842	1847	C3.4	Sf	S07W24		85
	1939	2000	2034	C7.8	Sf	S18W56		83
	2134	2135	2138	C3.8	Sf	S08W25		85
	27 August	0515	0519	0523	C1.8			
0818		0821	0823	C1.0				
B0926		U0932	A0949		Sf	S10E17		87
1004		1007	1011	C1.4				
1018		1022	1025	C1.5				
1225		1229	1232	C9.0				
1857		1858	1900		Sf	S18W65		83
2030		2033	2039	C1.2				
28 August	0115	0119	0123	C2.0				
	0250	0253	0255	C2.0				
	0311	0315	0325	C2.0				
	0638	0647	0653	C1.7				
	0705	0708	0712	C1.3				
	1059	1100	1105	C5.7	Sf	S15W79		83
	1141	1148	1156	C2.4				
	1424	1427	1432	C1.6				
	1440	1448	1453	C2.9				
	1548	1552	1555	C8.1				
	1645	1658	1709	M1.3				83
	1743	1749	1756	C4.4	Sf	S18W78		83
1806	1812	1819	C6.6					
1841	1842	1847		Sf	S17W81		83	
1847	1848	1855	M4.6	Sf	S03E23		90	



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
28 August	1908	1916	1925		Sf	S03E27	90
	2017	2023	2030		Sf	S18W79	83
	2138	2145	2149	M1.1			
29 August	0014	0052	0108	C4.7			
	0245	0253	0302	M1.6			
	0456	0506	0526	M1.8			
	0713	0742	0755	C7.2			
	B1038	U1038	1059	C4.5	Sf	S11W49	85
	1058	1102	1106	C3.8			
	1215	1215	1227		Sf	S17E73	95
	1242	1248	1259	M3.2	Sf	S18E73	95
	1321	1326	1330	C4.9			
	B1356	U1357	1401		Sf	S03W16	87
	1423	1425	1440		Sf	S04W16	87
	1427	1431	1440		Sf	S04E12	90
	1447	1450	1453	C2.9			
	1522	1528	1531	C4.4			
	1655	1700	1704	C2.8			
	B1742	U1815	1817		Sf	S23E73	94
	1823	1829	1837		Sf	S17E69	94
	1925	1928	1932	C5.2			
	1934	1938	1941		Sf	S11W21	87
	2140	2143	2145	C4.7			
2147	2148	2151		Sf	N08E83	95	
2148	2152	2156		Sf	S16E67	94	
2151	2156	2158		Sf	N07E87	95	
2331	2334	2349	C7.3	1f	N08E83	95	
30 August	0234	0241	0247	C8.5			
	0252	0309	0320	C7.4			
	0427	0431	0436	C3.4			
	0447	0455	0458	C5.7			
	0501	0505	0511	C3.9			
	0735	0741	0748	C2.6			
	1059	1100	1108	C4.3	Sf	S19W29	92
	1130	1134	1145		Sf	N09E76	95
	1154	1155	1157		Sf	N09E75	95
	1226	1328	1349	X1.5	Sn	N15E74	95
	1306	1322	1332		Sf	S06W26	87
	1315	1319	1322		Sf	S11W70	85
	1415	1418	1424		Sf	N08E76	95
	1427	1431	1436	C8.4	Sf	N08E75	95
	1518	1527	1529	C2.4			



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
30 August	1525	1527	1530		Sf	N07E81	95
	1534	1539	1542	C2.8	Sf	N09E78	95
	1552	1555	1601		Sf	N08E77	95
	1744	1744	1749		Sf	N06E81	95
	1822	1827	1834		Sf	N08E70	95
	1824	1825	1827		Sf	S11W29	87
	2029	2030	2033		Sf	S11W30	87
31 August	0002	0005	0007	C3.2			
	0110	0114	0116	C2.6			
	0336	0347	0410	C6.7			
	0509	0527	0600	C1.8			
	1330	1330	1335	C3.0	Sf	N10E60	95
	1418	1422	1425	C4.7			
	1529	1529	1533	C3.8	Sf	N08E60	95
	1614	1615	1619	C8.8	Sf	N11E61	95
	1622	1623	1625		Sf	S14E65	96
	1924	1928	1930	C3.4			
	1955	1955	A2003	C9.1	Sf	N10E60	95
2251	2257	2303	C2.0				
01 September	0221	0224	0226	C2.8			
	0930	0933	0935	C6.7			
	1215	U1216	A1258	C3.1	Sf	S08W55	87
	1637	1642	1647	C3.3			
	2013	2028	2043	C3.1			
	2058	2059	2103		Sf	N02E42	95



Region Summary

Location		Sunspot Characteristics					Flares										
Date	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 80</i>																	
14 Aug	N16E69	266	0120	11	Eao	004	B										
15 Aug	N16E55	266	0160	10	Dso	007	B										
16 Aug	N16E42	266	0170	08	Dso	009	B										
17 Aug	N16E30	265	0140	09	Dao	011	B										
18 Aug	N16E17	265	0110	07	Dao	013	B										
19 Aug	N16E03	266	0130	08	Dao	010	B										
20 Aug	N16W10	266	0120	09	Cao	013	B										
21 Aug	N15W23	265	0070	10	Dao	011	B										
22 Aug	N15W33	262	0020	02	Hsx	003	A						1				
23 Aug	N14W45	261	0030	01	Hax	001	A										
24 Aug	N14W58	261															
25 Aug	N14W70	260	0060	04	Cso	005	B	1				2					
26 Aug	N12W83	259	0080	05	Dso	003	B										
								1	0	0	3	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 266

<i>Region 83</i>																	
17 Aug	S18E67	228	0050	02	Cao	002	B		1			1					
18 Aug	S18E52	230	0080	09	Dso	008	B	1				3					
19 Aug	S18E36	233	0050	07	Dao	005	B										
20 Aug	S17E25	231	0030	05	Dso	005	B	1				1					
21 Aug	S18E11	231	0050	08	Dao	013	B	1				2					
22 Aug	S18W03	232	0100	11	Eai	022	Bg	1				1					
23 Aug	S19W15	231	0170	16	Fao	021	Bg		1			5		1			
24 Aug	S18W27	230	0170	15	Eao	025	Bg	1				2					
25 Aug	S17W41	231	0120	08	Dao	007	Bg		2			2					
26 Aug	S19W56	232	0090	02	Hax	002	A	2	1			3					
27 Aug	S18W71	234	0100	03	Cao	002	B					1					
28 Aug	S18W84	234	0070	02	Hsx	001	A	2	1			4					
								9	6	0	25	0	1	0	0		

Crossed West Limb.

Absolute heliographic longitude: 232



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 84</i>																		
18 Aug	S16E64	218	0110	01	Hax	001	A											
19 Aug	S16E50	219	0100	02	Hax	001	A						1					
20 Aug	S17E39	217	0100	07	Cso	005	B											
21 Aug	S16E26	216	0110	09	Cao	014	B							1				
22 Aug	S17E12	217	0080	09	Dao	018	B											
23 Aug	S15E00	216	0090	08	Dao	019	B						3					
24 Aug	S16W12	215	0070	08	Dao	014	B											
25 Aug	S16W26	216	0070	06	Dao	006	B											
26 Aug	S17W39	215	0050	03	Cao	003	B											
27 Aug	S17W53	216	0040	04	Dao	006	B											
28 Aug	S17W66	216	0060	05	Cao	003	B											
29 Aug	S17W79	216	0030	01	Hsx	001	A											
30 Aug	S18W90	214																
								0	0	0	4	1	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 216

<i>Region 85</i>																		
19 Aug	S11E69	200	0460	05	Dho	005	B											
20 Aug	S11E56	200	0480	06	Cko	003	B	1	1			2	1					
21 Aug	S11E42	200	0520	08	Cko	010	B					1						
22 Aug	S10E29	200	0550	07	Cko	013	B	2				7						
23 Aug	S09E16	200	0520	09	Dko	019	B	1	1			3		1				
24 Aug	S09E03	200	0500	09	Dko	024	B					4						
25 Aug	S08W09	199	0520	07	Dko	019	B											
26 Aug	S09W19	195	0500	08	Dko	012	B	5				5	1					
27 Aug	S08W37	200	0380	09	Dko	018	B											
28 Aug	S08W50	200	0450	07	Dko	005	B											
29 Aug	S08W63	200	0310	03	Hhx	003	A	1				1						
30 Aug	S08W76	200	0280	03	Hax	001	A					1						
31 Aug	S08W89	200	0180	02	Hhx	001	A											
								10	2	0	24	2	1	0	0			

Crossed West Limb.

Absolute heliographic longitude: 200



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 86

22 Aug	S21E29	200	0020	04	Bxo	004	B											
23 Aug	S23E17	199	0010	02	Hrx	002	A											
24 Aug	S26E02	201	0010	06	Bxo	006	B											
25 Aug	S26W11	201																
26 Aug	S26W24	201																
27 Aug	S26W37	201																
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 201

Region 87

22 Aug	S07E74	155	0170	04	Cho	004	B	1	1		2	1						
23 Aug	S07E60	156	0450	07	Dko	010	B	1	1		5		2					
24 Aug	S07E47	156	0330	06	Dki	019	Bg		1		1	1						
25 Aug	S07E34	156	0410	06	Dki	015	Bg											
26 Aug	S08E21	155	0390	05	Dko	009	B											
27 Aug	S08E06	157	0420	06	Dko	019	B				1							
28 Aug	S08W07	157	0450	06	Dkc	013	Bgd											
29 Aug	S08W20	157	0250	08	Dai	026	Bgd				3							
30 Aug	S08W33	157	0230	08	Dkc	029	Bg				3							
31 Aug	S08W47	157	0300	07	Dai	023	Bg											
01 Sep	S08W61	158	0190	07	Cso	017	B	1			1							
								3	3	0	16	2	2	0	0			

Still on Disk.

Absolute heliographic longitude: 157

Region 88

23 Aug	S22W28	244	0040	03	Cro	006	B				1							
24 Aug	S22W41	244	0120	07	Dai	016	B											
25 Aug	S23W54	244	0200	08	Dai	013	B				1							
26 Aug	S23W68	244	0200	08	Dao	005	B											
27 Aug	S22W83	246	0090	02	Hsx	001	A											
28 Aug	S22W96	246																
								0	0	0	2	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 244



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 89

24 Aug	S16E62	141	0010	01	Axx	001	A										
25 Aug	S16E47	143	0000	00	Axx	001	A										
26 Aug	S16E34	143															
27 Aug	S16E21	143															
28 Aug	S16E08	143															
29 Aug	S16W05	143															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 143

Region 90

26 Aug	S03E48	128	0010	01	Axx	001	A										
27 Aug	S04E33	130	0020	01	Hrx	002	A										
28 Aug	S04E20	130	0020	04	Cso	003	B		1		2						
29 Aug	S04E07	130	0050	07	Dso	015	B				1						
30 Aug	S04W06	130	0070	06	Dao	013	B										
31 Aug	S04W20	130	0060	07	Dao	008	B										
01 Sep	S06W36	133	0050	06	Cso	006	B										
								0	1	0	3	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 130

Region 91

27 Aug	N06E37	126	0010	02	Axx	003	A										
28 Aug	N06E24	126															
29 Aug	N06E11	126															
30 Aug	N06W02	126															
31 Aug	N06W15	126															
01 Sep	N06W28	126															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 126



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 92

27 Aug S19E04	159	0010	01	Axx	002	A												
28 Aug S19W09	159	0020	01	Hsx	002	A												
29 Aug S19W22	159	0040	05	Dso	005	B												
30 Aug S19W35	159	0030	04	Bxo	003	B	1				1							
31 Aug S19W48	159																	
01 Sep S19W61	159																	
							1	0	0	1	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 159

Region 93

29 Aug S16E13	124	0010	01	Hrx	002	A												
30 Aug S16E00	124																	
31 Aug S16W13	124																	
01 Sep S16W26	124																	
							0	0	0	0	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 124

Region 94

29 Aug S17E67	070	0040	06	Cso	003	B					3							
30 Aug S17E54	070	0160	06	Dso	009	B												
31 Aug S17E40	070	0200	06	Dso	005	B												
01 Sep S18E27	070	0170	07	Dao	009	B												
							0	0	0	3	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 70

Region 95

29 Aug N07E76	061	0180	12	Eao	011	B	1	1		4	1							
30 Aug N07E65	059	0450	17	Fki	024	Bg	2		1	10								
31 Aug N07E51	059	0810	20	Fkc	028	Bgd	4			4								
01 Sep N08E38	059	0730	21	Fki	034	Bg				1								
							7	1	1	19	1	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 59



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 96</i>																									
30 Aug	S14E75	049	0080	02	Hax	001	A																		
31 Aug	S14E62	049	0140	07	Dao	003	B						1												
01 Sep	S15E50	047	0140	07	Dso	004	B																		
														0	0	0	1	0	0	0	0	0			
Still on Disk.																									
Absolute heliographic longitude: 47																									
<i>Region 97</i>																									
31 Aug	N13E36	074	0020	05	Dro	003	B																		
01 Sep	N10E21	076	0030	06	Dso	008	B																		
														0	0	0	0	0	0	0	0	0	0		
Still on Disk.																									
Absolute heliographic longitude: 76																									
<i>Region 98</i>																									
31 Aug	S10E76	034	0030	01	Axx	002	A																		
01 Sep	S12E65	032	0030	01	Hsx	001	A																		
														0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																									
Absolute heliographic longitude: 32																									
<i>Region 99</i>																									
01 Sep	S03E27	070	0040	04	Dao	006	B																		
														0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																									
Absolute heliographic longitude: 70																									
<i>Region 100</i>																									
01 Sep	S20E67	030	0130	02	Hsx	001	A																		
														0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																									
Absolute heliographic longitude: 30																									
<i>Region 101</i>																									
01 Sep	N03E71	026	0050	01	Hsx	001	A																		
														0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																									
Absolute heliographic longitude: 26																									

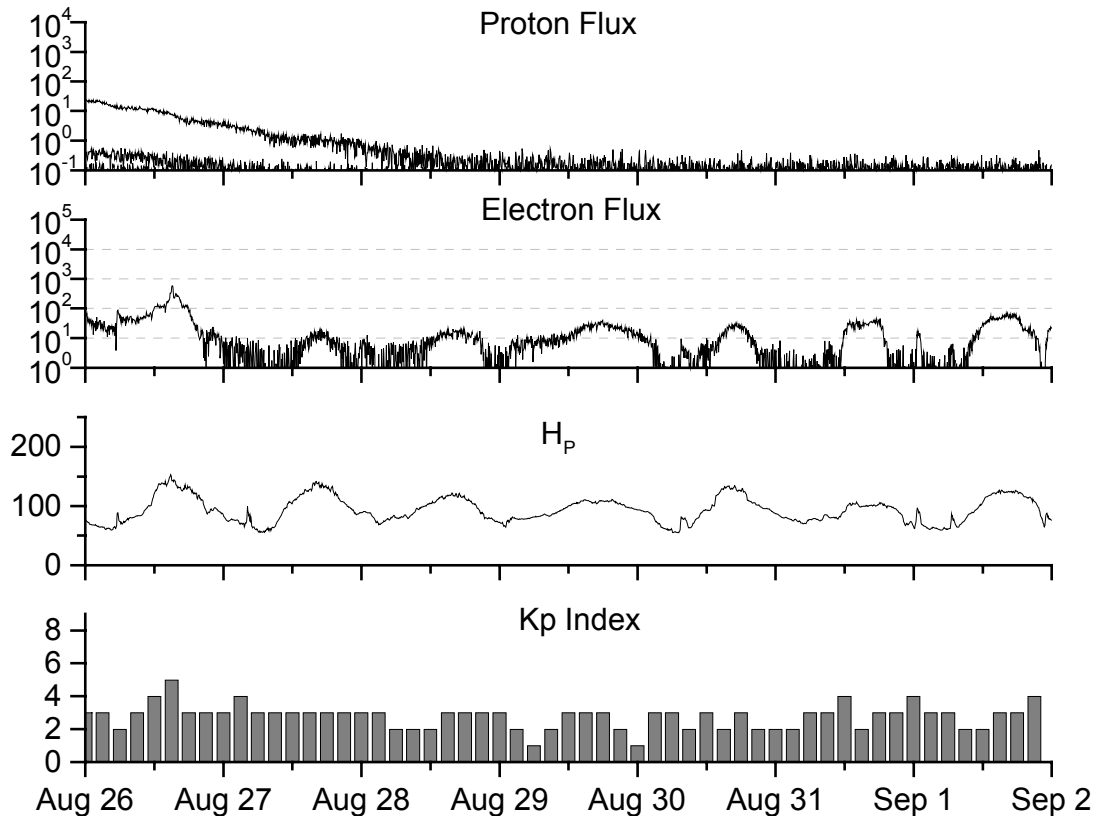


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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									
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	172.1	111.8	131.3	183.9	11	12.4
August	159.4	106.8	0.67	176.7	113.8	163.2	188.8	13	12.5
September	229.1	150.7	0.66	178.8	114.3	233.3	191.3	12	12.3
October	197.4	125.6	0.64	179.5	114.1	208.2	191.9	18	11.9
November	178.6	106.5	0.60	183.7	115.6	212.5	193.6	14	11.9
December	217.5	131.8	0.61	184.5	114.7	236.6	193.8	08	12.0
2002									
January	189.0	113.9	0.60	184.8	113.5	226.4	194.6	07	12.0
February	194.5	108.0	0.56			205.1		09	
March	153.1	98.1	0.64			179.5		10	
April	194.9	120.4	0.62			189.7		15	
May	204.1	120.8	0.59			178.4		15	
June	146.0	88.5	0.61			148.8		11	
July	183.5	99.9	0.54			174.5		13	

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 26 August 2002

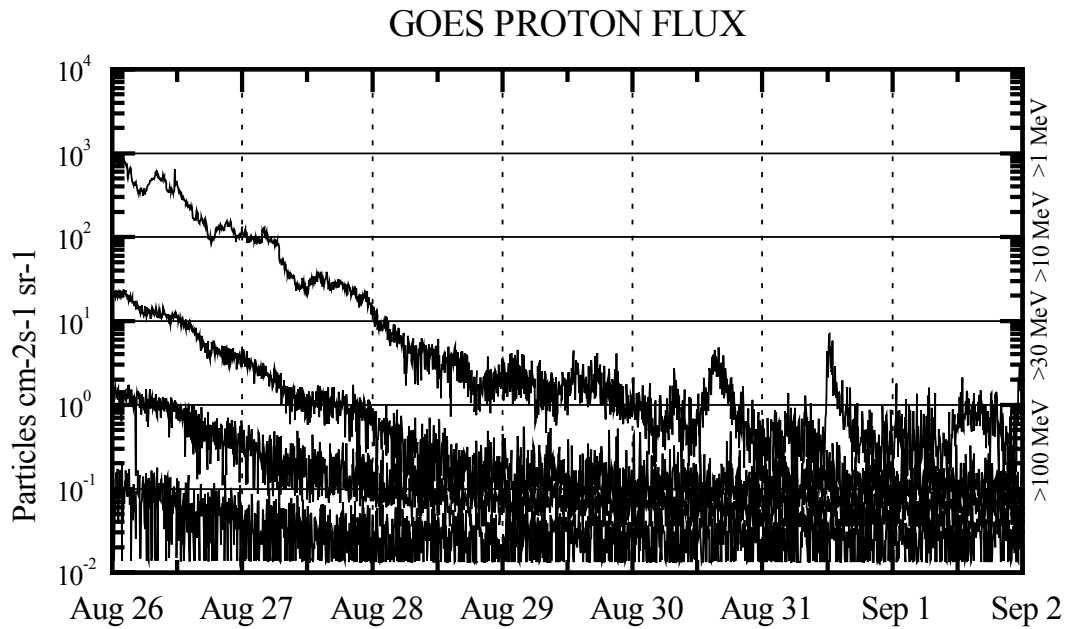
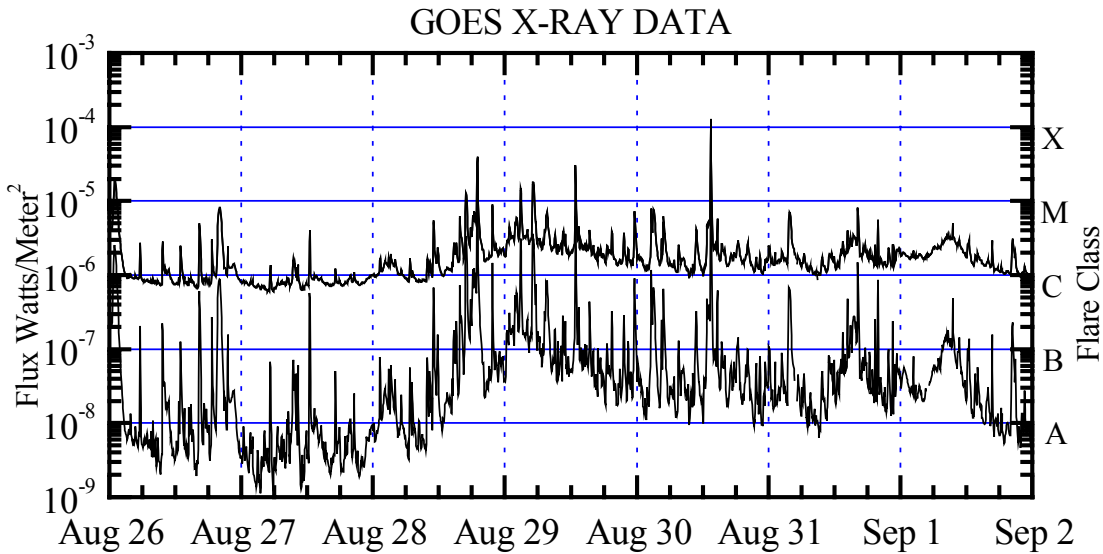
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.

