

Space Weather Highlights

03 September - 09 September 2001

SWO PRF 1358
11 September 2001

Solar activity ranged from low to high levels. However, the predominate condition was moderate with high levels observed on 05 and 09 September due to major solar flares (for flare specifics, please refer to the Energetic Events list). Region 9601 (N13, L=214, class/area Eki/830 on 05 September) produced the first major flare, an impulsive M6/2b at 05/1432 UTC associated with a 800 sfu Tenflare. Region 9601 also produced isolated, low-level M-class flares during the period including an M1/1f at 07/1538 UTC associated Type II and IV radio sweeps. This large, magnetically complex sunspot group rotated out of view at the close of the period. Region 9608 (S26, L=111, class/area Fkc/1050 on 09 September) produced the other major flare of the period, an impulsive M9/2n flare at 09/2045 UTC associated with a 510 sfu Tenflare. Region 9608 developed multiple magnetic delta configurations within its interior spots prior to the M9 flare. This region also produced isolated, low-level M-class flares during the rest of the period as it remained large and magnetically complex. Region 9591 (S19, L=295, class/area Fki/740 on 25 August), which produced a major flare on 25 August, was large, magnetically complex and in a gradual decay phase as it rotated out of view on 04 September. Regions 9606 (S17, L=151, class/area Eki/360 on 06 September) and 9607 (S16, L=126, class/area Eai/300 on 08 September) produced isolated, low-level M-class flares during the period. Both regions were moderate in size and complexity.

Solar Wind data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A high-speed stream associated with a coronal hole was observed during 03 - 04 September. Velocities peaked at around 570 km/sec late on 03 September into the early hours of 04 September, then gradually decreased. There were no significant disturbances observed during the remainder of the period.

There were no proton events detected at geosynchronous orbit.

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

The geomagnetic field was disturbed during 03 - 04 September due to coronal hole effects. Unsettled to minor storm levels occurred during this disturbance. Quiet to unsettled conditions prevailed during the remainder of the period.

Space Weather Outlook

12 September – 08 October 2001

Solar activity is expected to be at mostly moderate levels. Isolated M-class flares are expected. Isolated major flare activity will be possible throughout the period.

There will be a slight chance for a solar proton event during the period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during most of the period. However, high levels will be possible around 20 - 21 September and 03 - 04 October.

Active to minor storm conditions will be possible during 12 - 13 September. Active conditions will be possible on 18 September and again during 30 September - 01 October. Quiet to unsettled levels are expected during the rest of the period.



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
03 September	199	168	1310	C1.2	5	2	0	7	0	0	0	0
04 September	218	168	1760	C2.0	5	3	0	19	2	0	0	0
05 September	218	175	1920	C3.7	6	3	0	16	1	1	0	0
06 September	222	204	2500	C5.0	4	0	0	18	0	0	0	0
07 September	226	288	2660	C3.0	6	1	0	8	1	0	0	0
08 September	250	281	2570	C2.4	7	2	0	26	0	0	0	0
09 September	236	291	2460	C1.8	8	6	0	10	1	3	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
03 September	1.0E+5	1.1E+4	2.0E+3		4.6E+5	
04 September	1.1E+5	1.1E+4	2.1E+3		4.8E+6	
05 September	8.4E+4	1.1E+4	2.2E+3		8.6E+6	
06 September	7.0E+4	1.1E+4	2.3E+3		2.1E+7	
07 September	2.4E+5	1.2E+4	2.9E+3		3.4E+7	
08 September	7.1E+4	1.2E+4	2.9E+3		1.7E+6	
09 September	4.3E+4	1.2E+4	3.1E+3		2.8E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	03 September	12	2-2-3-2-3-3-3-3	21	2-2-4-4-5-4-3-2	17
04 September	11	3-4-3-2-2-2-1-1	29	2-4-6-5-5-3-2-1	20	3-4-4-3-4-4-3-3
05 September	6	3-1-2-1-2-2-2-0	13	3-1-1-0-4-5-2-1	10	3-1-2-2-3-3-3-2
06 September	3	1-0-2-1-1-1-0-1	8	2-1-2-4-2-1-1-1	8	2-0-2-2-3-3-3-3
07 September	4	0-1-0-2-0-1-2-3	2	0-0-0-0-0-1-1-2	6	1-0-1-1-3-3-1-3
08 September	5	2-1-1-1-3-1-1-0	6	1-2-2-2-3-2-0-0	7	3-2-2-2-2-3-2-2
09 September	7	2-1-1-2-3-3-2-1	3	1-0-1-3-1-0-0-0	7	2-1-1-2-2-3-3-2

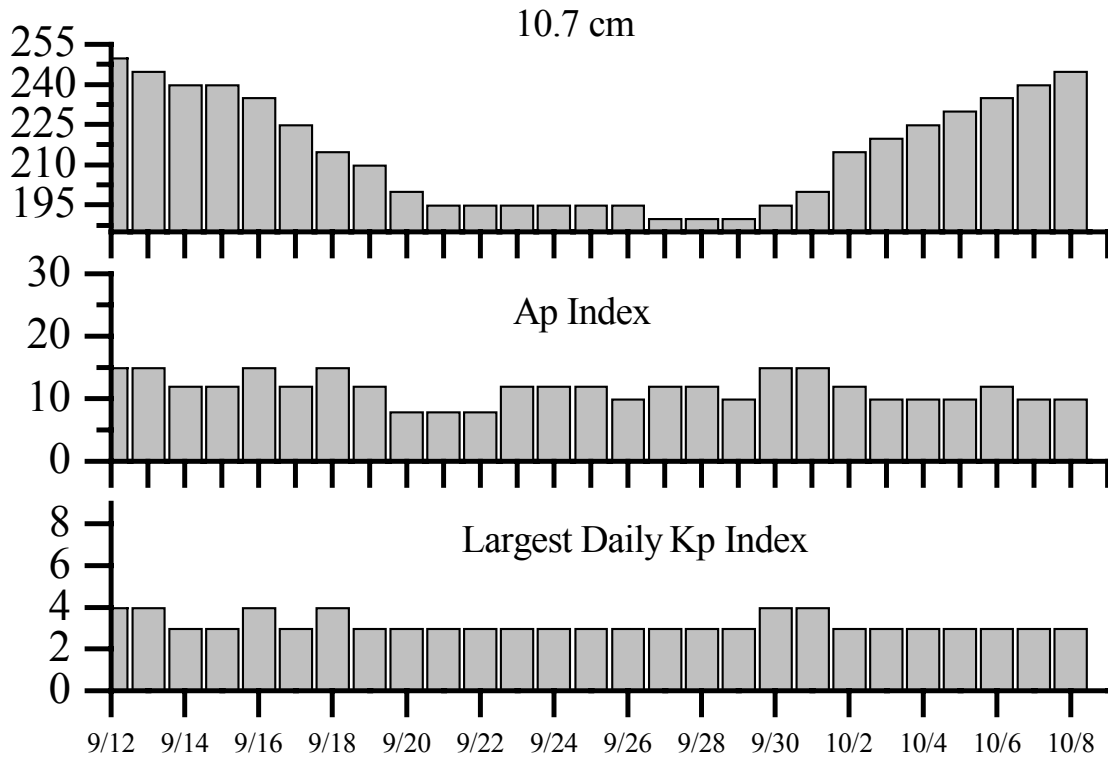


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
03 Sep 0012	2 – 245 MHz Radio Bursts	02 Sep
03 Sep 0012	245 MHz Noise Storm	02 Sep
03 Sep 0210	Type II Radio Emission	03 Sep 0158
03 Sep 1457	EXTENDED K = 4 Warning	01/0055 – 04 Sep 1500
03 Sep 1500	K = 5 Observed	03 Sep 1200 – 1500
03 Sep 1903	10cm Radio Burst 300 F.U.	03 Sep 1822
03 Sep 1927	Type II Radio Emission	03 Sep 1832
04 Sep 0000	A \geq 20 Observed	03 Sep 2359
04 Sep 0021	2 – 245 MHz Radio Bursts	03 Sep
04 Sep 0652	Type II Radio Emission	04 Sep 0625
04 Sep 1937	Type II Radio Emission	04 Sep 1834
04 Sep 2120	CANCELLED Type II Radio Emission	04 Sep 1834
05 Sep 0001	ENDED A \geq 20 Observed	03 Sep 2359
05 Sep 0012	2 – 245 MHz Radio Bursts	04 Sep
05 Sep 0012	245 MHz Noise Storm	04 Sep
05 Sep 0028	10cm Radio Burst 320 F.U.	04 Sep 2155
05 Sep 1456	X-Ray event M6.0/1N/N13W28	05 Sep 1432
05 Sep 1505	10cm Radio Burst 770 F.U.	05 Sep 1427
06 Sep 0045	2 – 245 MHz Radio Bursts	05 Sep
07 Sep 0009	6 – 245 MHz Radio Bursts	06 Sep
07 Sep 0009	245 MHz Noise Storm	06 Sep
07 Sep 1614	Type II Radio Emission	07 Sep 1528
07 Sep 1745	Type IV Radio Emission	07 Sep 1550
08 Sep 0019	6 – 245 MHz Radio Bursts	07 Sep
08 Sep 0019	245 MHz Noise Storm	07 Sep
08 Sep 0803	Type IV Radio Emission	08 Sep 0709
09 Sep 0011	5 – 245 MHz Radio Bursts	08 Sep
09 Sep 0011	245 MHz Noise Storm	08 Sep
09 Sep 1641	Type II Radio Emission	09 Sep 1519
09 Sep 1643	10cm Radio Burst 340 F.U.	09 Sep 1511
09 Sep 2056	X-Ray event M9.5/2N/S31E26	09 Sep 2045
09 Sep 2119	10cm Radio Burst 460 F.U.	09 Sep 2043



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
12 Sep	250	15	4	26 Sep	195	10	3
13	245	15	4	27	190	12	3
14	240	12	3	28	190	12	3
15	240	12	3	29	190	10	3
16	235	15	4	30	195	15	4
17	225	12	3	01 Oct	200	15	4
18	215	15	4	02	215	12	3
19	210	12	3	03	220	10	3
20	200	8	3	04	225	10	3
21	195	8	3	05	230	10	3
22	195	8	3	06	235	12	3
23	195	12	3	07	240	10	3
24	195	12	3	08	245	10	3
25	195	12	3				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	½	Class	Integ Flux	Imp/Location		Rgn #	Radio Flux		Intensity	
			Max			Brtns	Lat		CMD	245	2695	II
03 Sep	1545	1716	1737	M1.1	.038							
03 Sep	1821	1841	1910	M2.5	.060				86	300	1	
04 Sep	1853	1925	1937	M1.0	.023							
04 Sep	2012	2017	2022	M1.8	.008	1N	S19E45	9606				
04 Sep	2153	2159	2205	M3.7	.020	1N	N15W23	9601	270	320		
05 Sep	1425	1432	1434	M6.0	.016	2B	N15W31	9601	4300	800		
05 Sep	1903	1913	1922	M1.3	.012	1N	S16E35	9606		70		
05 Sep	2223	2233	2246	M2.2	.023	SF	S25E67	9608		24		
07 Sep	1526	1538	1551	M1.2	.013	1F	N19W65	9601	59	41	2	1
08 Sep	0438	0457	0507	M1.2	.014	SF	S28E50	9608				
08 Sep	1900	1923	1946	M1.1	.022	SF	N08W74	9601				
09 Sep	0232	0240	0247	M1.9	.012	2B	S24E26	9608		65		
09 Sep	0955	1001	1006	M1.0	.004	SF	S31E30	9608				
09 Sep	1510	1516	1521	M3.4	.013	1N	S17E03	9607	870	340	2	
09 Sep	1523	1526	1528	M2.2	.006	SN	S32E22	9608				
09 Sep	1835	1841	1843	M2.0	.005	2B	S26E24	9608		36		
09 Sep	2040	2045	2048	M9.5	.022	2N	S31E26	9608		510		

Flare List

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
03 September	0149	0158	0203	C9.0			
	0327	0328	0331	C3.4	SF	N11E02	9601
	0539	0540	0543		SF	N14E00	9601
	0553	0625	0711	C4.2	SF	N13E05	9601
	0940	U0946	1013	C7.2	SF	N13W03	9601
	1042	1046	1109	C6.8	SF	N12E02	9601
	1542	1543	1548		SF	S22W58	9604
	1545	1716	1737	M1.1			
	1804	1810	1817		SF	N10W06	9601
	1821	1841	1910	M2.5			
04 September	0337	0338	0341		SF	S16E53	9606
	0413	0418	0433	C5.0	SF	N12W11	9601
	0854	0855	0900		SF	N10W17	9601
	0912	0912	0916		SF	S17E54	9606
	1155	1157	1207	C3.9	SF	S17E52	9606
	1351	1351	1355		SF	S17E51	9606
	1426	1430	1439		SF	S16E47	9606
	1459	1500	1506	C9.0	SF	S16E49	9606
	1518	1535	1616		SF	N15W16	9601
	1519	1535	1613		SF	N14W16	9601
	1543	1557	1603		SF	S19E47	9605
	1543	1544	1601		SF	S19E47	9606
	1721	1723	1745	C7.4	SF	S16E46	9606
	1853	1925	1937	M1.0			



Flare List- continued

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
04 September	1902	1903	1907		SF	S21W75	9604
	1902	1906	1935		SF	N13W20	9601
	2008	2016	2037	M1.8	1N	S19E45	9606
	2023	2028	2031		SF	N14W20	9601
	2033	2036	2043		SF	N13W19	9601
	2058	2058	2109		SF	S16E45	9606
	2151	2152	2216		SF	S16E45	9606
	2154	2201	A2232	M3.7	1N	N15W23	9601
	2350	0016	0039	C8.9			
05 September	0253	0259	0311	C9.3			
	0507	0515	0519	C4.2			
	0605	0636	0655	C6.4			
	0913	0916	0921	C5.7	SF	N08W28	9601
	1057	1116	1136		SF	N08W30	9601
	1414	1417	1420	C4.5			
	1423	1423	1435		SF	S28E76	9608
	1427	1432	1538	M6.0	2B	N15W31	9601
	1526	1528	1559		SF	S24E72	9608
	1538	1545	1547		SF	N15W39	9601
	1630	1632	1635	C8.1	SF	S25E70	
	1905	1907	1946	M1.3	1N	S16E35	9606
	1939	1940	1949		SF	N06W37	9601
	2018	2019	2022		SF	N08W38	9601
	2038	2047	2058		SF	S25E67	9608
	2054	2057	2111		SF	N11W38	9601
	2106	2109	2122		SF	S17E35	9606
	2111	2111	2117		SF	S24E68	9608
	2202	2215	2255		SF	S18E31	9606
	2224	2229	2319	M2.2	SF	S25E67	9608
	2329	U2330	A2331		SF	S20W54	9599
	2330	U2330	A2331		SF	S17E33	9606
	06 September	0341	0346	0351	C8.1		
B0531		U0531	A0534		SF	S26E67	9608
0730		0730	0734		SF	N12W34	9601
1319		1320	1329	C6.7	SF	S18E24	9605
1321		1321	1330		SF	S19E21	9606
1357		1357	1404		SF	S13E40	9607
1537		1537	1545	C4.6	SF	S16E45	9607
1623		1624	1632		SF	N13W42	9601
1719		1721	1727		SF	S20E50	9608
1720		1732	1749		SF	S14E77	9610
1759		1802	1818		SF	S21E48	9608



Flare List- continued

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
06 September	1825	1825	1834	C4.5	SF	S32E31	9608
	1846	1846	1849		SF	S23E57	9608
	1954	1955	1959	C5.0	SF	S14E75	9610
	2007	2008	2013		SF	S16E51	9607
	2036	2047	2105		SF	S13E76	9610
	2105	2111	2115		SF	S13E77	9610
	2137	2349	0042		SF	S14E75	9610
	2154	2157	2200		SF	N15W43	9601
	2333	2334	2337		SF	S17E49	9607
07 September	0105	0117	0129	C8.2			
	0359	0402	0412	C5.5			
	0705	0709	0712	C3.7			
	1439	1441	1505		SF	S13E66	9610
	1529	1538	1610	M1.2	1F	N19W65	9601
	1727	1728	1735		SF	S22E44	9608
	1754	1756	1759		SF	S25E43	9608
	1832	1833	1843		SF	S22E43	9608
	1851	1852	1858		SF	S22E43	9608
	2116	2116	2128	C5.1	SF	S14E64	9610
	2126	2131	2147		SF	S22E42	9608
	2248	2249	2303	C2.9	SF	N14W58	9601
	2321	2333	2346	C4.9			
	08 September	0130	0135	0145	C7.4		
B0449		U0449	0525	M1.2	SF	S28E50	9608
0703		0708	0714	C3.4			
1127		1130	1135		SF	N11W66	9601
1140		1141	1147		SF	N10W69	9601
1228		1230	1236	C3.5	SF	S17W64	9613
1342		1408	1445	C3.8	SF	N11W32	9611
1429		1429	1433		SF	S16W67	9613
1430		1433	1435		SF	S25E42	9608
1457		1459	1502		SF	S15E18	9607
1527		1531	1541	C3.3	SF	S19W03	9606
1643		1644	1720	C5.1	SF	S23E32	9608
1648		1650	1652		SF	S16W68	9613
1658		1701	1717		SF	S23E34	9608
1739		1740	1745		SF	N10W33	9611
1810		1816	1822		SF	S15E16	9607
1813		1814	1821		SF	S25E30	9608
1814		1814	1823		SF	S16W68	9613
1823		1824	1828		SF	N11W35	9611
1826		1840	1845		SF	S16W68	9613
1900	1907	1911		SF	S16W68	9613	



Flare List- continued

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
08 September	1902	1904	1912		SF	S19W10	9606
	1912	1923	1937	M1.1	SF	N08W74	9601
	2129	2130	2136		SF	S24E30	9608
	2139	2141	2213		SF	S26E40	9608
	2248	2251	2256		SF	S17W71	9613
	2304	2304	2312		SF	S17W71	9613
	2334	2351	0004	C4.6	SF	S17E16	9607
09 September	0139	0145	0151	C5.0			9608
	0141	0240	0419	M1.9	2B	S24E26	9608
	0803	0803	0812	C4.5	SF	S16E09	9607
	0958	1001	1010	M1.0	SF	S31E30	9608
	1053	1036	1104	C3.2	SF	S30E29	9608
	1121	1123	1132	C3.0	SF	S25E21	9608
	1229	1235	1241	C4.7			
	1332	1334	1345	C7.5	SF	S25E20	9608
	1359	1404	1509		SF	S30E29	9608
	1512	1517	1533	M3.4	1N	S17E03	9607
	1513	1525	1543	M2.2	SN	S32E22	9608
	1824	1841	1921	M2.0	2B	S26E24	9608
	1825	1825	1834	C4.5	SF	S32E31	9608
	2043	2048	2120	M9.5	2N	S31E26	9608
	2204	2208	2218		SF	S22E14	9608
	2235	2238	2245	C4.9	SF	S24E18	9608



Region Summary

Date	Location		Sunspot Characteristics					Flares															
	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 9591</i>																							
21 Aug	S18E71	309	0060	06	HAX	001	A																
22 Aug	S17E63	303	0280	16	FKO	008	B	7				8	1										
23 Aug	S17E53	300	0730	25	FKI	028	BGD	4				4	1										
24 Aug	S18E42	298	0650	26	FKI	032	BGD	3	3			6	1										
25 Aug	S19E32	295	0740	32	FKI	032	BGD	11	2	1	21										1		
26 Aug	S19E18	296	0740	28	FKI	043	BGD	6				14											
27 Aug	S18E06	295	0720	24	FKI	040	BGD	9				11											
28 Aug	S19W06	293	0620	26	FKI	041	BGD	1	1			2	1										
29 Aug	S18W22	296	0570	21	FKI	026	BGD	2				2											
30 Aug	S20W33	294	0490	15	FKI	025	BGD	2	1			3									1		
31 Aug	S20W39	287	0400	28	FKO	017	BGD					1											
01 Sep	S20W46	281	0370	29	FKO	019	BGD	1				1											
02 Sep	S18W65	286	0340	15	EKO	015	BGD	3	2			7	1	1									
03 Sep	S18W81	289	0260	16	FKO	006	BGD																
04 Sep	S19W92	287	0100	04	HKX	001	A																
								49	9	1	80	5	2	1	0								

Crossed West Limb.

Absolute heliographic longitude: 295

<i>Region 9596</i>							
25 Aug	N23E79	248	0120	02	HAX	001	A
26 Aug	N22E67	247	0130	02	HSX	001	A
27 Aug	N22E54	247	0170	02	HSX	002	A
28 Aug	N22E40	247	0160	03	HAX	001	A
29 Aug	N21E28	246	0190	06	CAO	002	B
30 Aug	N22E14	247	0190	03	HSX	001	A
31 Aug	N22E01	247	0150	03	HSX	001	A
01 Sep	N21W12	247	0190	03	HSX	001	A
02 Sep	N22W23	244	0160	03	HSX	001	A
03 Sep	N22W38	246	0180	03	HSX	001	A
04 Sep	N21W48	243	0140	03	HAX	001	A
05 Sep	N21W64	246	0160	02	HSX	001	A
06 Sep	N19W79	248	0150	03	HAX	001	A
07 Sep	N22W91	247	0090	03	HAX	001	A

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 247



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 9597

26 Aug	N17E48	266	0010	03	BXO	002	B											
27 Aug	N16E35	266	0050	04	DAO	008	B											
28 Aug	N17E22	265	0040	06	DAO	009	B											
29 Aug	N17E09	265	0020	06	BXO	009	B											2
30 Aug	N19W02	263	0010	03	BXO	003	B											
31 Aug	N19W15	263																
01 Sep	N19W28	263																
02 Sep	N19W41	263																
03 Sep	N19W54	263																
04 Sep	N19W67	263																
05 Sep	N19W80	263																
																		0 0 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 263

Region 9599

27 Aug	S18E65	236	0010	05	BXO	002	B											1
28 Aug	S17E51	236	0080	06	DAO	003	B											
29 Aug	S19E36	238	0110	08	DAO	010	B	1										1
30 Aug	S18E24	237	0220	10	DAI	019	BG		1									2
31 Aug	S18E11	237	0190	10	DAO	014	B											1
01 Sep	S18W03	238	0150	10	DAO	012	B											
02 Sep	S18W14	235	0100	09	DAO	007	B											
03 Sep	S18W31	239	0060	09	DSO	002	B											
04 Sep	S18W47	242	0030	01	HSX	001	A											
05 Sep	S17W61	243	0020	01	HSX	001	A											1
06 Sep	S18W76	245	0030	01	HRX	001	A											
07 Sep	S18W89	245																
																		1 1 0 6 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 238



Region Summary - continued.

Date	Location		Sunspot Characteristics					Flares															
	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 9601</i>																							
27 Aug	N10E85	216	0060	02	HAX	001	A		1														
28 Aug	N12E73	214	0150	08	DAO	007	B	2	1		11	1											
29 Aug	N09E58	216	0390	10	DAO	008	BG	1			3		1										
30 Aug	N14E49	216	0700	19	FKI	028	BGD	2	1		3	1											
31 Aug	N14E32	216	0760	19	FKC	045	BG	4	2		4	2	1										
01 Sep	N14E18	217	0710	19	FKI	058	BGD	3			3												
02 Sep	N14E08	213	0700	15	EKC	051	G	3	1		6												
03 Sep	N14W06	214	0680	17	FKC	055	BG	4			6												
04 Sep	N13W22	217	0780	16	FKC	049	BG	1	1		7	1											
05 Sep	N13W38	220	0830	14	EKI	040	BG	1	1		6		1										
06 Sep	N11W51	220	0780	16	FKC	030	BGD	1			3												
07 Sep	N13W64	220	0730	14	EKI	024	BGD	1	1		1	1											
08 Sep	N13W79	221	0500	12	EKI	014	BG		1		3												
09 Sep	N13W93	222	0210	03	HKX	001	A																
											23	10	0	56	6	3	0	0					

Still on Disk.

Absolute heliographic longitude: 214

<i>Region 9602</i>																							
01 Sep	S08E30	205	0010	04	BXO	002	B																
02 Sep	S08E18	203	0020	04	BXO	006	B																
03 Sep	S07E02	206	0010	03	CSO	003	B																
04 Sep	S07W11	206																					
05 Sep	S07W24	206																					
06 Sep	S07W37	206																					
07 Sep	S07W50	206																					
08 Sep	S07W63	206																					
09 Sep	S07W76	206																					
											0	0	0	0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 206



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 9603

02 Sep	S08E64	157	0040	02	HSX	001	A
03 Sep	S09E49	159	0020	01	HSX	002	A
04 Sep	S08E36	159	0030	01	HSX	001	A
05 Sep	S08E23	159	0020	01	HSX	001	A
06 Sep	S08E10	159	0010	01	HRX	001	A
07 Sep	S08W03	159	0010	01	HRX	001	A
08 Sep	S08W16	159					
09 Sep	S08W29	159					

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 159

Region 9604

03 Sep	S21W61	269	0040	03	DSO	004	B
04 Sep	S22W76	271	0250	08	DAO	005	B
05 Sep	S20W90	272	0100	08	DAO	004	B

0 0 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 269

Region 9605

03 Sep	S20E53	155	0020	03	CSO	003	B
04 Sep	S19E39	156	0070	05	CSO	006	B
05 Sep	S20E25	157	0030	05	CSO	004	B
06 Sep	S18E12	157	0120	07	DAO	009	B
07 Sep	S19W02	158	0120	07	DAO	016	B
08 Sep	S18W15	157	0070	01	HSX	002	A
09 Sep	S19W30	159	0050	07	DSO	005	B

1 0 0 2 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 158



Region Summary - continued.

Date	Location		Sunspot Characteristics					Flares						
	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

Region 9606

03 Sep	S17E57	151	0040	07	DSO	002	B										
04 Sep	S17E45	150	0150	07	DAO	010	B	3	1		10	1					
05 Sep	S17E32	150	0210	08	DAO	019	B		1		3	1					
06 Sep	S17E19	150	0360	11	EKI	025	BG				1						
07 Sep	S18E05	151	0270	12	EKI	033	BG										
08 Sep	S18W07	149	0220	11	EAI	030	B	1			2						
09 Sep	S18W22	151	0210	11	EAO	033	B										
								4	2	0	15	2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 151

Region 9607

04 Sep	S16E68	127	0210	11	EAO	004	B										
05 Sep	S15E55	127	0230	15	EAO	009	B										
06 Sep	S15E42	127	0220	15	EAI	013	B	1			4						
07 Sep	S16E29	127	0180	16	FAO	031	B										
08 Sep	S17E17	125	0300	15	EAI	027	BG	1			3						
09 Sep	S17E03	126	0260	15	EAI	025	BG	1	1		1	1					
								3	1	0	8	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 126

Region 9608

05 Sep	S24E70	112	0320	15	EAO	006	B		1		5						
06 Sep	S26E56	113	0720	22	FKI	018	BG				4						
07 Sep	S26E45	111	0850	24	FKI	035	BG				5						
08 Sep	S26E33	109	0940	26	FKC	047	BG	1	1		7						
09 Sep	S27E18	111	1050	27	FKC	060	BG	6	4		6	3					
								7	6	0	27	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 111

Region 9609

06 Sep	S07W53	222	0040	05	DSO	005	B										
07 Sep	S06W67	223	0030	05	CSO	003	B										
08 Sep	S06W85	227	0020	01	HSX	002	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 222



R 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 9610

06 Sep	S10E71	098	0070	02	HAX	001	A	1			5						
07 Sep	S13E60	096	0280	13	EKO	011	B	1			2						
08 Sep	S14E48	094	0330	13	EAO	014	B										
09 Sep	S14E34	095	0410	12	EAO	026	B										
								2	0	0	7	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 95

Region 9611

07 Sep	N10W23	179	0030	03	CAO	007	B										
08 Sep	N10W37	179	0130	07	DAO	011	B	1			3						
09 Sep	N10W51	180	0170	07	DAO	010	B										
								1	0	0	3	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 179

Region 9612

07 Sep	N22E40	116	0050	06	DAO	003	B										
08 Sep	N22E27	115	0030	07	DRO	005	B										
09 Sep	N21E12	117	0040	10	DSO	013	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 117

Region 9613

07 Sep	S17W52	208	0020	04	CAO	003	B										
08 Sep	S17W68	210	0030	07	BXO	007	B	1			8						
09 Sep	S17W83	212	0040	06	CSO	004	B										
								1	0	0	8	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 208

Region 9614

08 Sep	N13W19	161	0000	01	HRX	001	A										
09 Sep	N15W34	163	0010	02	AXX	003	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 161



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares																
	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 9615</i>																							
08 Sep	N12E64	078	0000	00	AXX	001	A																
09 Sep	N11E49	080	0010	01	AXX	001	A																
																						0 0 0 0 0 0 0 0	
Still on Disk.																							
Absolute heliographic longitude: 80																							

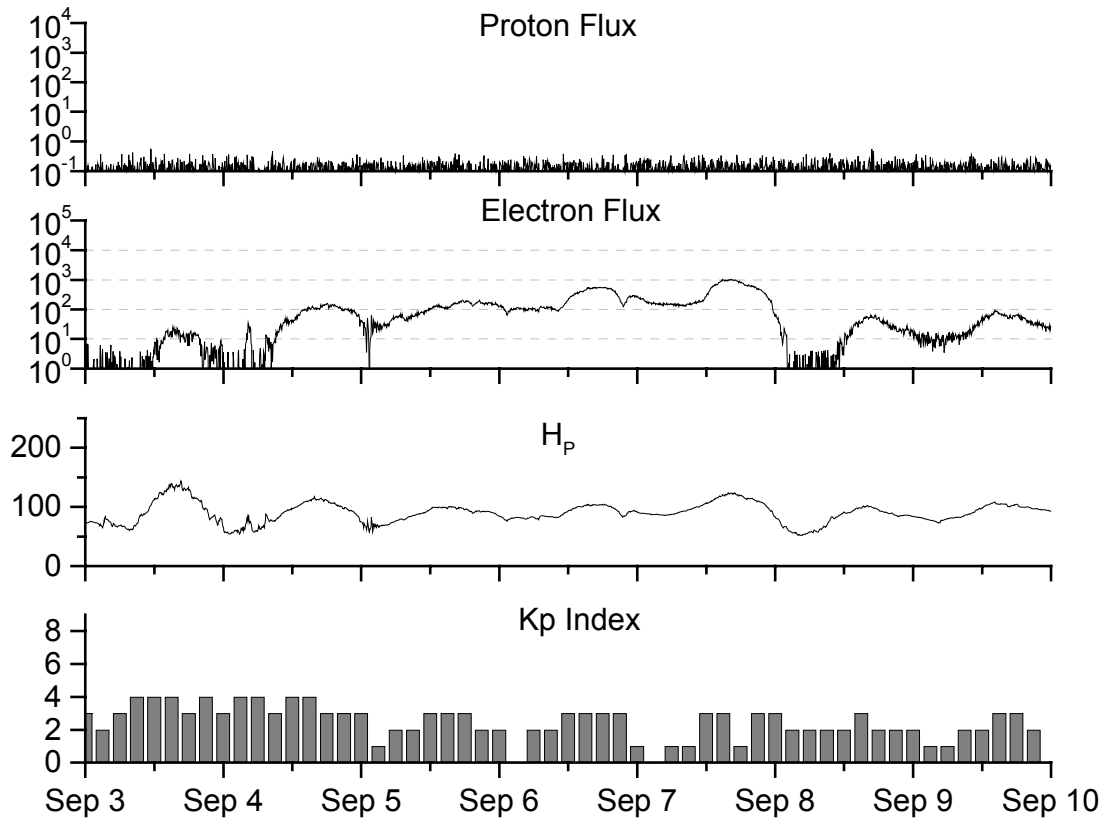


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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
1999									
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	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			147.3		06	
March	166.7	114.2	0.69			177.7		17	
April	163.6	108.2	0.66			178.3		18	
May	135.1	97.3	0.72			148.7		12	
June	196.7	134.0	0.68			173.7		12	
July	124.6	82.2	0.66			131.3		11	

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 03 September 2001*

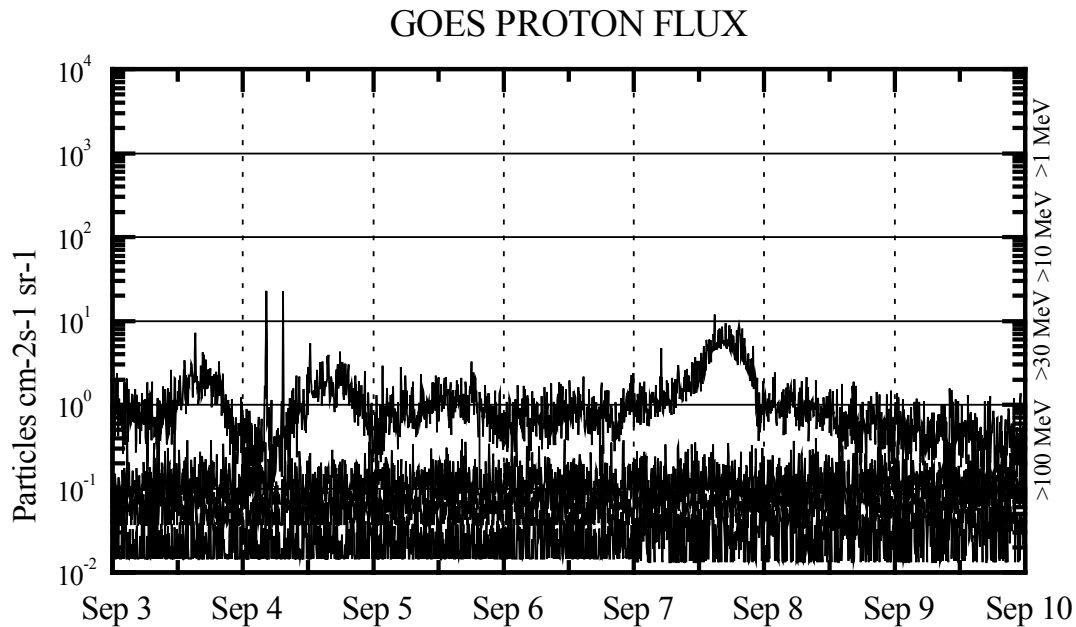
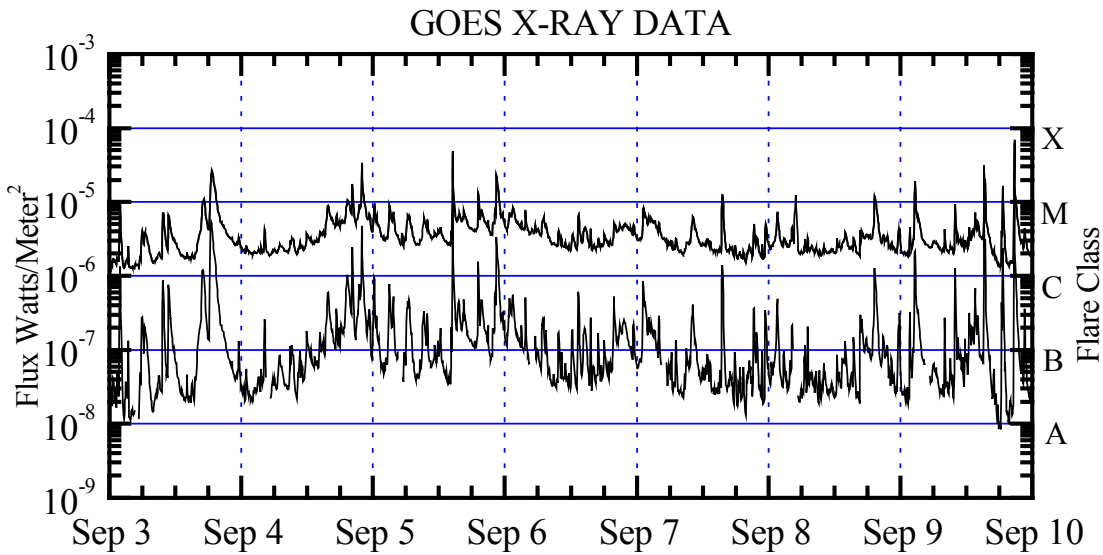
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 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.

