

Solar activity was at low to moderate levels. Region 9937 (S09, L = 190, class/area Dai/240 on 11 May) produced two M-class flares during the period. The first, an M1 at 07/0346 UTC, was associated with a Type IV radio sweep and a halo CME. The second was an M1/Sf at 11/1132 UTC associated with a Type II radio sweep. Region 9937 displayed alternate intervals of growth and decay during the period. Its last growth phase commenced on 10 May and continued for the rest of the period. A weak magnetic delta configuration was observed within its trailer spots on the last day of the period. C-class flares occurred during the rest of the period (for flare specifics, please refer to the Optical Flares list), many of which originated in Region 9934 (S17, L = 211, class/area Fki/1060 on 11 May). Region 9934 was the most impressive spot group in terms of size and complexity. It gradually grew through 10 May, particularly in the southern portion of the region where a magnetic delta configuration formed. It appeared to stabilize on 11 May, but remained large and complex as it approached the west limb.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. A number of disturbances were observed during the period. A weak disturbance occurred on 06 May, possibly due to a CME passage. The disturbance began around 06/0900 UTC and was associated with a minor increase in total field intensity, increased velocities (peaks to 420 km/sec), and periods of southward IMF Bz with deflections to minus 7 nT (GSM). Two weak transient disturbances were observed during 09 – 10 May with characteristics similar to those observed on 06 May. The most significant disturbance of the period occurred on 11 May. The associated shock front passed the ACE spacecraft at around 11/0926 UTC followed by increased velocities (peaks in the 470 to 500 km/sec range); significant increases in density, temperature, and total field intensity; and a strong southward turn of IMF Bz with maximum deflections to around minus 20 nT (GSM). This disturbance subsided early on 12 May. Another period of increased solar wind velocities began on 12 May with peak velocities in the 550 to 560 km/sec range. This increase may have been due to coronal hole effects.

There were no proton events at geo-synchronous orbit.

Greater than 2 MeV electron fluxes at geo-synchronous orbit were at normal to moderate levels.

Geomagnetic field activity was at mostly quiet to unsettled levels during 06 – 09 May. Activity increased to quiet to active levels on 10 May with unsettled to active periods detected during the latter half of the day. A sudden storm commencement (SSC) began on 11 May at 1028 UTC (41 nT, as measured by the Boulder USGS magnetometer) followed by active to major storm levels. The disturbance subsided early on 12 May.

Space Weather Outlook
15 May - 10 June 2002

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

No proton events are expected.

Greater than 2 MeV flux levels are expected to be at normal to moderate levels during the period.

Geomagnetic field activity is expected to be at quiet to unsettled levels during most of the period. However, active conditions are possible on 15 and 25 May.



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
06 May	191	226	1320	B6.2	5	0	0	4	0	0	0	0
07 May	187	217	1320	C2.6	6	1	0	2	0	0	0	0
08 May	187	249	1440	B6.2	7	0	0	8	0	0	0	0
09 May	190	244	1620	B7.5	5	0	0	4	0	0	0	0
10 May	191	245	2230	C1.2	11	0	0	12	0	0	0	0
11 May	188	226	2300	B8.3	10	1	0	9	0	0	0	0
12 May	183	210	2130	B7.2	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
	06 May	6.1E+5	1.7E+4	2.7E+3		3.1E+6
07 May	4.6E+5	1.6E+4	2.7E+3		8.3E+5	
08 May	6.9E+5	1.8E+4	2.5E+3		4.3E+5	
09 May	4.2E+5	1.6E+4	2.8E+3		7.1E+5	
10 May	4.5E+5	1.4E+4	2.6E+3		1.1E+6	
11 May	2.6E+5	1.2E+4	2.2E+3		3.4E+5	
12 May	3.0E+5	1.2E+4	2.4E+3		1.8E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	06 May	6	0-1-1-1-2-2-2-3	*	1-*-0-1-2-4-2-2	11
07 May	7	2-1-1-1-2-2-2-3	10	3-1-1-2-3-3-3-2	11	3-1-2-3-3-3-4-3
08 May	11	2-3-3-1-2-4-1-2	9	2-3-3-1-3-2-1-1	11	3-3-3-2-3-3-3-2
09 May	6	2-1-2-3-2-1-1-1	6	2-1-3-3-2-0-1-0	10	2-2-3-3-3-3-2-2
10 May	11	1-1-3-3-2-2-4-2	*	2-1-*-3-2-2-2-3	17	2-2-3-4-4-4-3-4
11 May	27	1-1-2-5-6-5-3-3	53	2-1-3-6-6-6-7-3	40	2-1-3-6-6-6-5-4
12 May	12	4-2-4-2-2-2-2-2	*	3-2-6-2-5-*-2-2	19	4-3-5-2-4-3-3-2

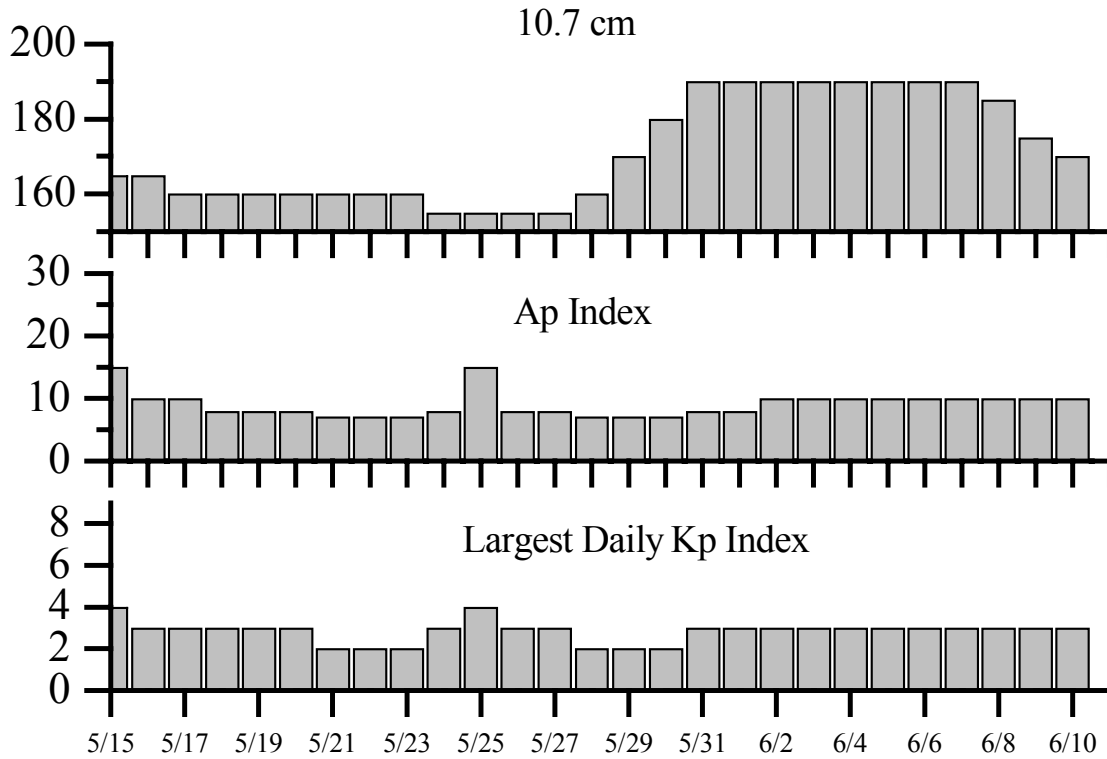


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
06 May 0035	1 - 245 MHz Burst	05 May
06 May 1634	ALERT: Geomagnetic K= 4	06 May 1630
07 May 0035	2 - 245 MHz Bursts	06 May
07 May 0035	1 - 245 MHz Radio Noise Storm	06 May
07 May 0444	ALERT: Type IV Radio Emission	07 May 0341
08 May 0009	2 - 245 MHz Bursts	07 May
08 May 0009	3 - 245 MHz Radio Noise Storms	07 May
09 May 0007	5 - 245 MHz Bursts	08 May
09 May 0007	1 - 245 MHz Radio Noise Storm	08 May
10 May 0008	1 - 245 MHz Burst	09 May
10 May 0008	1 - 245 MHz Radio Noise Storm	09 May
10 May 1135	SUMMARY: Geomagnetic Sudden Impulse	10 May 1124
11 May 0045	5 - 245 MHz Bursts	10 May
11 May 0045	1 - 245 MHz Radio Noise Storm	10 May
11 May 1027	WARNING: Geomagnetic Sudden Impulse	11 May 1025 -1115
11 May 1035	SUMMARY: Geomagnetic Sudden Impulse	11 May 1028
11 May 1036	ALERT: Geomagnetic K= 4	11 May 1028
11 May 1142	ALERT: Geomagnetic K= 5	11 May 1142
11 May 1159	ALERT: Type II Radio Emission	11 May 1131
11 May 1225	WARNING: Geomagnetic K= 4 expected	11 May 1225 -2359
11 May 1230	ALERT: Geomagnetic K= 4	11 May 1229
11 May 1500	ALERT: Geomagnetic K= 6	11 May 1455
11 May 1522	WATCH: Geomagnetic $A \geq 20$	12 May
11 May 1534	WARNING: Geomagnetic K= 5 expected	11 May 1535 - 2359
11 May 1547	WARNING: Geomagnetic K= 6 expected	11 May 1550 - 2100
11 May 1552	ALERT: Geomagnetic K= 6	11 May 1552
11 May 2141	CANCEL WATCH: Geomagnetic $A \geq 20$	12 May
11 May 2354	EXTENDED WARNING: Geomagnetic K= 4	11/1225 -12/1500 May
12 May 1916	SUMMARY: 10cm Radio Burst	12 May 1652



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 May	165	15	4	29 May	170	7	2
16	165	10	3	30	180	7	2
17	160	10	3	31	190	8	3
18	160	8	3	01 Jun	190	8	3
19	160	8	3	02	190	10	3
20	160	8	3	03	190	10	3
21	160	7	3	04	190	10	2
22 May	160	7	3	05	190	10	2
23	160	7	3	06	190	10	2
24	155	8	3	07	190	10	3
25	155	15	4	08	185	10	3
26	155	8	3	09	175	10	3
27	155	8	3	10	170	10	3
28	155	7	2				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½ Max	Class	Integ Flux	Imp/Location		Rgn #	Radio Flux		Intensity	
						Brtns	Lat CMD		245	2695	II	IV
07 May	0337	0346	0407	M1.4	.017			9937	1400	140	2	
11 May	1121	1132	1141	M1.4	.010	Sf	S06W31	9937	41	76	2	

Flare List

Date	Time			X-ray Class.	Optical Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
06 May	0226	0231	0247	C1.8			
	B0951	U0951	A0956		Sf	N18W06	9928
	1402	1404	1412	C1.7	Sf	S20W18	9935
	1412	1413	1438		Sf	S19W18	9935
	1554	1604	1621	C2.5			
	2024	2025	2027		Sf	S17E10	9934
	2201	2204	2206	C1.7			
07 May	2353	0011	0041	C6.4			
	0337	0346	0407	M1.4			9937
	0800	0804	0808	C1.4			
	0846	0852	0855	C2.8			
	1237	1242	1247	C1.9			
	1354	1358	1404	C1.1			
	1841	1843	1847	C1.1	Sf	S12E42	9943
08 May	2241	2241	2252	C1.6	Sf	S21W35	9935
	B0437	U0437	A0455	B6.8	Sf	S11E16	9937
	0627	U0628	0635	C1.0	Sf	N16E25	9940
	0937	0947	1001	C1.6			
	1056	1107	1112		Sf	S16W14	9934
	1131	1132	1143		Sf	S16W14	9934
	1149	1149	1208		Sf	S17W11	9934
	B1258	U1320	1456	C4.2	Sf	S12W07	9934
	1439	1445	1453	C2.8			
	1546	1552	1556	C2.3			
09 May	1705	1707	1712	C1.1	Sf	S19W17	9934
	1845	1846	1900		Sf	S09E01	9937
	2030	2035	2042	C1.9			
	0021	0027	0035	C1.9			
	0042	0047	0054	C2.4			
	0647	0650	0655	B9.8			
	0713	0716	0735	B9.5	Sf	S09W01	9937
	0758	0759	0809	C1.4	Sf	S08W03	9937
	1050	1052	1059	C1.1	Sf	S09E16	9943
	1820	1820	1826		Sf	S19W39	9934
10 May	2001	2003	2005	C1.6			
	0027	0038	0102	C4.0	Sf	S07E52	9946
	0105	0126	0202		Sf	S03E50	9946



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn	
	Begin	Max	End		Imp / Brtns	Location Lat CMD		
10 May	0551	0554	0556	C1.2				
	0822	0827	0832	C1.8				
	0836	0837	0847	Sf	S06W17	9937		
	0917	0918	0926	Sf	S09W17	9937		
	0939	0940	0956	C3.9	Sf	S06W18	9937	
	B1028	U1029	1032	C1.9	Sf	S07W19	9937	
	1234	1252	1308	C1.6	Sf	S06E44	9946	
	1435	1442	1448	C1.6	Sf	S07W20	9937	
	1647	1649	1700	Sf	S16W45	9934		
	1710	1710	1740	C1.2	Sf	S18W43	9934	
	2125	2126	2139	C1.6	Sf	S13W39	9934	
	2152	2153	2158	C1.1	Sf	S20W43	9934	
	11 May	0002	0002	0007	C3.3	Sf	S20W44	9934
		0012	0013	0015	Sf	S16W43	9934	
0036		0041	0045	C1.9				
0137		0142	0146	C2.3				
0244		0252	0256	C6.4				
0328		0332	0336	C1.6				
0435		0440	0444	C1.2				
0651		0656	0701	C3.6				
0736		0739	0743	C1.6				
B1137		U1137	1204	M1.4	Sf	S06W31	9937	
1357		1408	1425	Sf	S06E24	9945		
1455		1455	1532	Sf	S06E22	9945		
1647		1649	1654	C2.7	Sf	S06E48	9950	
1735		1740	1754	C3.7	Sf	S17W58	9934	
1834		1836	A1841	B9.7	Sf	S15W57	9934	
1914		1918	A2001		Sf	S15W59	9934	
2146		2150	2153	C1.5				
12 May	0100	0120	0140	C1.4				
	0229	0316	0400	C2.2			9928	
	0925	0953	1012	C3.7			9948	
	1214	1215	1220		Sf	S16W70	9934	
	1403	1404	1409		Sf	S16W70	9934	
	1445	1451	1510	C1.2	Sf	S16W64	9934	
	1652	1653	1656	C1.2	Sf	S16W66	9934	
	1702	1702	1710		Sf	S16W71	9934	
12 May	1937	1937	1950	C1.0	Sf	S16W72	9934	
	1943	1957	2014	C1.4				
	2103	2104	2118		Sf	S25E56	9948	



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 9926</i>																		
27 Apr	N12E26	312	0060	03	Dao	003	B											
28 Apr	N13E11	314	0060	03	Dso	007	B											
29 Apr	N14W01	312	0080	02	Cao	003	B											
30 Apr	N14W15	313	0060	03	Cao	005	B											
01 May	N14W29	314	0070	05	Dao	011	Bg											
02 May	N14W42	314	0080	05	Dao	009	Bg	1				1						
03 May	N15W56	315	0040	06	Dro	004	Bg	1				1						
04 May	N14W70	315	0050	02	Hsx	001	A											
05 May	N13W82	314	0040	01	Hsx	001	A											
06 May	N13W95	314																
								2	0	0	2	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 312

<i>Region 9927</i>																		
29 Apr	S28E68	243	0070	02	Hsx	002	B											
30 Apr	S29E55	243	0070	07	Cso	004	B											
01 May	S30E43	242	0080	07	Cso	006	B											
02 May	S29E27	245	0050	02	Hsx	004	A											
03 May	S28E14	245	0030	02	Hsx	002	A											
04 May	S28E02	243	0020	01	Bxo	005	A											
05 May	S28W13	245	0020	01	Bxo	004	B											
06 May	S28W26	245																
07 May	S28W39	245																
08 May	S23W34	226	0030	07	Dso	002	B											
09 May	S23W47	226																
10 May	S23W60	226																
11 May	S23W73	226																
12 May	S23W86	226																
								0	0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 243



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 9928</i>																		
29 Apr	N18E75	236	0130	02	Hax	002	A											
30 Apr	N18E61	237	0070	03	Cso	004	B											
01 May	N17E48	237	0120	03	Dao	005	B											
02 May	N17E35	237	0080	03	Dao	006	Bg											
03 May	N18E22	237	0130	05	Dao	017	B											
04 May	N17E10	235	0100	07	Dao	020	B	1				1						
05 May	N18W05	237	0090	06	Dao	015	B						1					
06 May	N18W18	237	0050	12	Cso	008	B						1					
07 May	N19W32	237	0030	04	Cso	004	B											
08 May	N19W45	237	0010	01	Hrx	001	A											
09 May	N19W58	237																
10 May	N19W71	237																
11 May	N19W84	237																
12 May	N19W97	237						1										
								2	0	0	3	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 237

<i>Region 9929</i>																		
30 Apr	N22E16	282	0010	03	Bxo	003	B											
01 May	N22E03	282	0000	00		000												
02 May	N21W11	283	0000	00	Axx	001	A											
03 May	N22W26	285	0080	05	Dso	012	B											
04 May	N21W41	286	0140	07	Dso	014	B						1					
05 May	N22W53	285	0210	08	Dao	013	B						1					
06 May	N23W66	285	0170	06	Dao	005	B											
07 May	N23W81	286	0090	06	Hax	001	A											
08 May	N23W90	282																
								0	0	0	2	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 282

<i>Region 9930</i>																		
01 May	N12W17	302	0030	05	Cso	010	B											
02 May	N12W30	302	0050	05	Dro	009	B											
03 May	N12W44	303	0020	06	Cro	003	B											
04 May	N12W57	303																
05 May	N12W70	303																
06 May	N12W83	303																
07 May	N12W96	303																
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 302



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 9931</i>																	
01 May	N15E	19	266	0030	05	Cao	008	B									
02 May	N16E	06	266	0060	07	Dao	009	B									
03 May	N16W	09	268	0120	08	Dso	013	B									
04 May	N15W	23	268	0090	11	Eso	014	B									
05 May	N16W	37	269	0070	09	Cao	010	B									
06 May	N15W	51	270	0050	05	Cso	003	B									
07 May	N15W	66	271	0030	01	Hsx	001	A									
08 May	N15W	79	271	0060	03	Hsx	001	A									
09 May	N15W	90	269	0060	02	Hax	001	A									
									0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 266

<i>Region 9932</i>																	
01 May	S28E	56	229	0040	03	Cao	003	B	3		5						
02 May	S28E	44	228	0110	07	Dao	004	B									
03 May	S28E	31	228	0160	09	Dao	010	B	1		1						
04 May	S28E	19	226	0120	09	Dao	016	B									
05 May	S28E	05	227	0100	11	Eai	016	B									
06 May	S28W	08	227	0070	11	Eso	010	B									
07 May	S27W	20	225	0050	12	Eso	005	B									
08 May	S27W	33	225	0030	02	Hax	002	A									
09 May	S27W	46	225	0040	13	Cao	005	B									
10 May	S27W	56	221	0020	01	Hsx	001	A									
11 May	S27W	67	219	0020	01	Axx	001	A									
12 May	S29W	77	216														
									4	0	0	6	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 227



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

Region 9933

01 May	N16E64	221	0090	02	Hsx	001	A								
02 May	N17E52	220	0090	02	Hsx	001	A								
03 May	N18E37	222	0100	04	Cso	004	B								
04 May	N17E25	220	0070	03	Cso	002	B								
05 May	N18E12	220	0100	04	Hsx	003	A								
06 May	N18E00	219	0100	03	Hsx	001	A								
07 May	N18W15	220	0070	02	Hsx	001	A								
08 May	N18W28	220	0080	02	Hsx	001	A								
09 May	N18W41	220	0080	03	Hsx	002	A								
10 May	N18W54	220	0060	01	Hsx	001	A								
11 May	N18W67	219	0090	02	Hax	001	A								
12 May	N18W81	220	0050	02	Hsx	001	A								
											0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 219

Region 9934

01 May	S18E73	212	0240	10	Dao	006	B								
02 May	S18E62	210	0420	13	Eao	011	Bg				1				
03 May	S17E48	211	0580	14	Eki	021	Bgd	1			8	1			
04 May	S17E35	210	0520	12	Eki	027	Bgd	2			2				
05 May	S17E21	211	0540	15	Eki	036	Bgd	3			3				
06 May	S17E08	211	0500	11	Eki	023	Bg				1				
07 May	S17W06	211	0510	11	Eki	021	Bg								
08 May	S16W19	211	0540	14	Eki	018	Bg	2			5				
09 May	S16W32	211	0610	14	Eki	037	Bg				1				
10 May	S16W46	211	1050	13	Eki	032	Bgd	4			4				
11 May	S17W59	211	1060	16	Fko	027	Bgd	1			5				
12 May	S16W72	211	0960	14	Eki	025	Bgd	3			6				
											16	0	0	36	1

Still on Disk.

Absolute heliographic longitude: 211



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 9935

02 May	S18E33	239	0030	04	Cao	006	B										
03 May	S19E16	243	0050	04	Dso	006	B										
04 May	S19E04	241	0040	05	Dso	007	B										
05 May	S19W11	243	0020	05	Bxo	007	B										
06 May	S19W23	242	0000	00	Axx	001	A	1			2						
07 May	S17W28	233						1			1						
08 May	S17W41	233	0010	00	Axx	001	A										
09 May	S19W64	243	0030	03	Cso	003	B										
10 May	S19W77	243															
11 May	S19W90	243															
								2	0	0	3	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 241

Region 9936

02 May	S15E42	230	0050	05	Dso	006	B										
03 May	S16E27	232	0030	05	Cro	005	B										
04 May	S17E15	230	0040	07	Cso	008	B										
05 May	S17E01	231	0040	07	Cao	010	B										
06 May	S16W13	232	0020	05	Cso	005	B										
07 May	S16W28	233	0020	01	Hsx	001	A										
08 May	S16W41	233	0010	01	Axx	001	A										
09 May	S16W54	233	0000	00	Axx	001	A										
10 May	S16W67	233															
11 May	S16W80	233															
12 May	S16W93	233															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 231



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

Region 9937

03 May	S09E68	191	0070	03	Cso	003	B								
04 May	S10E56	189	0100	04	Dao	003	B	2			2				
05 May	S09E42	190	0210	07	Dai	010	B	1			1				
06 May	S10E29	190	0180	06	Dko	009	B								
07 May	S09E15	190	0120	05	Dao	008	B		1						
08 May	S08E02	190	0150	06	Dao	009	B					2			
09 May	S08W11	190	0150	06	Dao	012	B	1				2			
10 May	S08W25	190	0190	06	Dao	020	B	3				5			
11 May	S09W38	190	0240	08	Dai	018	B		1			1			
12 May	S08W50	189	0150	06	Dai	014	Bgd								
								7	2	0	13	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 190

Region 9938

03 May	S04E72	187	0030	01	Hsx	001	A								
04 May	S05E59	186	0040	01	Hsx	001	A								
05 May	S05E46	186	0030	01	Hsx	001	A								
06 May	S05E32	187	0030	01	Hax	001	A								
07 May	S05E18	187	0020	01	Hsx	001	A								
08 May	S05E05	187	0020	01	Hax	002	B								
09 May	S05W08	187	0020	01	Hsx	001	A								
10 May	S05W21	187	0030	01	Hsx	001	A								
11 May	S05W34	186	0010	01	Hsx	001	A								
12 May	S06W47	186	0000	00	Axx	001	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 187

Region 9939

04 May	N16E67	178	0050	02	Hax	001	A								
05 May	N17E52	180	0050	02	Hsx	001	A								
06 May	N17E40	179	0040	01	Hsx	001	A								
07 May	N16E27	178	0020	01	Hsx	001	A								
08 May	N16E14	178	0020	01	Hax	002	B								
09 May	N19W01	180	0030	01	Hsx	001	A								
10 May	N19W12	179	0060	08	Cso	017	B								
11 May	N21W25	179													
12 May	N21W38	179													
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 180



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 9940

04 May	N14E72	173	0070	02	Hax	001	A												
05 May	N13E55	177	0040	02	Hsx	002	A												
06 May	N13E42	177	0040	02	Hax	001	A												
07 May	N15E28	177	0020	01	Hsx	001	A												
08 May	N15E15	177	0050	05	Dso	011	B	1				1							
09 May	N15E03	176	0080	06	Dso	014	B												
10 May	N17W11	176	0040	08	Dso	013	B												
11 May	N17W24	176	0030	11	Eso	007	B												
12 May	N18W38	177	0030	05	Cso	006	B												
								1	0	0	1	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 176

Region 9941

05 May	S22E09	223	0050	05	Dao	010	B												
06 May	S22W03	222	0040	07	Dso	006	B												
07 May	S22W18	223	0020	04	Cso	003	B												
08 May	S22W31	223	0030	04	Dao	004	B												
09 May	S22W44	223	0020	01	Hsx	001	A												
10 May	S22W58	223	0020	01	Axx	001	A												
11 May	S22W71	223																	
12 May	S22W84	223																	
								0	0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 222

Region 9942

05 May	N22E34	198	0020	04	Cso	004	B												
06 May	N21E21	198	0010	01	Axx	001	A												
07 May	N21E10	195	0010	04	Axx	002	A												
08 May	N21W03	195	0010	04	Bxo	002	B												
09 May	N22W16	195																	
10 May	N22W29	195																	
11 May	N22W42	195																	
12 May	N22W55	195																	
								0	0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 195



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 9943

05 May	S11E63	169	0050	07	Cao	004	B	1					1				
06 May	S11E50	169	0020	01	Hsx	001	A										
07 May	S10E37	168	0030	03	Cso	003	B	1				1					
08 May	S10E24	168	0020	06	Bxo	005	B										
09 May	S10E11	168	0010	03	Cso	003	B	1				1					
10 May	S10W03	168	0010	07	Bxo	003	B										
11 May	S10W16	168	0000	00	Axx	001	A										
12 May	S10W31	170															
								3	0	0	2	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 168

Region 9944

07 May	N08E35	170	0040	06	Cro	003	B										
08 May	N08E22	170	0010	01	Axx	002	B										
09 May	N08E09	170	0020	08	Bxo	005	B										
10 May	N09W04	170															
11 May	N09W17	170															
12 May	N09W30	170															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 170

Region 9945

07 May	S05E66	139	0240	03	Hkx	001	A										
08 May	S05E53	139	0290	03	Hkx	002	A										
09 May	S05E40	139	0370	04	Cko	004	B										
10 May	S04E27	139	0400	09	Cko	006	B										
11 May	S04E14	138	0310	05	Dko	009	B					2					
12 May	S04E02	137	0320	08	Dki	020	B										
								0	0	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 137

Region 9946

08 May	S08E65	127	0070	04	Dao	003	B										
09 May	S06E52	127	0100	03	Dao	004	B										
10 May	S06E38	127	0050	06	Cso	014	B	2				3					
11 May	S06E25	127	0060	07	Dao	016	B	1				1					
12 May	S05E12	127	0040	07	Dao	010	B										
								3	0	0	4	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 127



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

Region 9947

10 May	N23W46	211	0020	03	Bxo	003	B								
11 May	N23W59	211	0020	01	Axx	001	A								
12 May	N22W74	213													
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 211

Region 9948

10 May	S21E71	094	0280	04	Cho	003	B								
11 May	S21E61	091	0420	14	Eko	006	B								
12 May	S22E50	089	0430	14	Eko	008	B	1			1				
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 089

Region 9949

11 May	S16W06	158	0010	02	Hsx	003	A								
12 May	S16W20	159	0040	05	Dso	006	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 158

Region 9950

11 May	S06E44	108	0030	04	Bxo	005	B	1			1				
12 May	S06E31	108	0090	06	Cso	008	B								
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 108

Region 9951

12 May	N10E68	071	0020	01	Axx	001	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 071

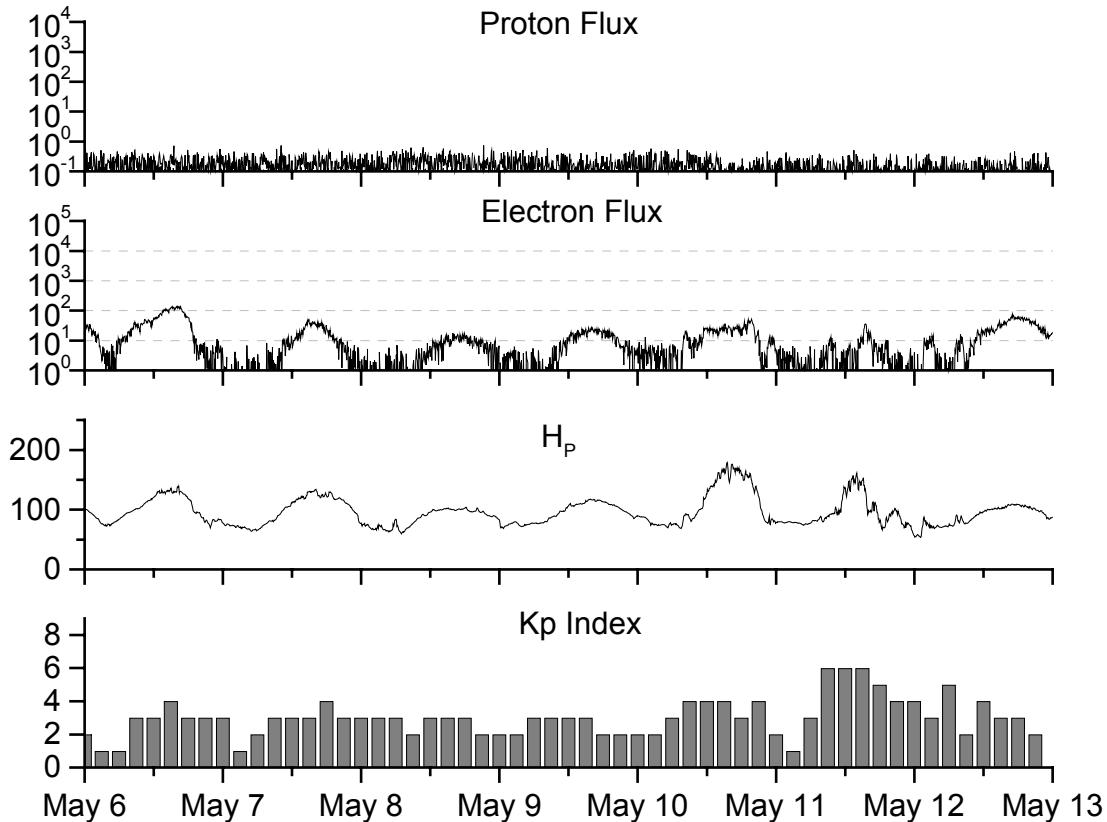


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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									
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	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			212.5		14	
December	217.5	131.8	0.61			236.6		08	
2002									
January	189.0	113.9	0.60			226.4		07	
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	

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 06 May 2002

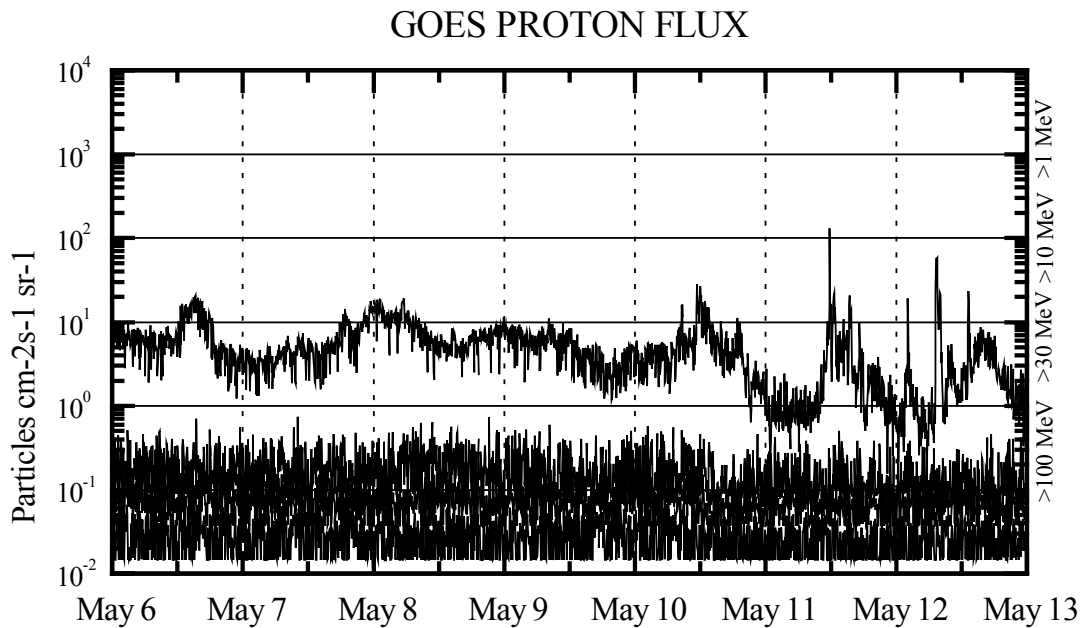
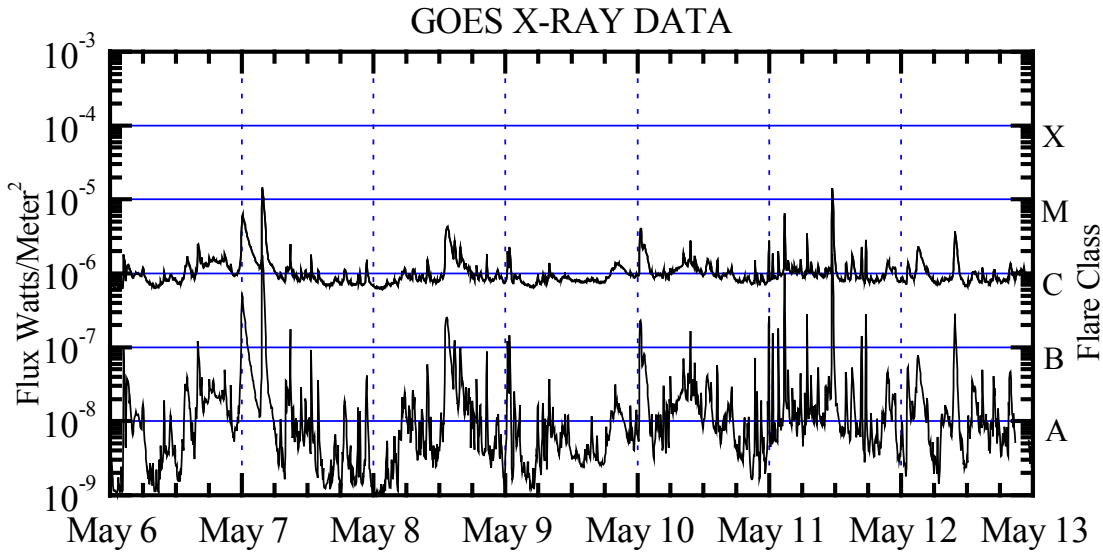
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.



Cosmic-Ray Ground-Level Events



Space
Environment
Center

April 2002
(Month 67)

Preliminary data

Comparison of Cycles
at current month in cycle

