

Space Weather Highlights 04 - 10 June 2001

**SWO PRF 1345
12 June 2001**

Solar activity was at low to moderate levels. Moderate activity occurred during 04 - 05 June due to isolated, low-level M-class flares from Region 9488 (S18, L = 288, class/area Cko/290 on 04 June) (please refer to the Energetic Events list for flare particulars). These flares occurred as a weak delta magnetic configuration formed, then dissipated near the leader spots. Region 9488 entered a gradual decay phase on 08 June, but maintained a minor degree of magnetic complexity through the rest of the period as it produced isolated C-class subflares. Another event of note was a C3/Sf flare from Region 9474 (N20, L = 037, class/area Dao/060 on 29 May), which was a spotless plage area at the time of the flare. This flare was associated with a Type II radio sweep, a small filament disappearance, and a proton enhancement at greater than 10 MeV. Activity dropped to low levels during 06 - 07 June due to occasional C-class flares from a few sunspot groups of minor magnetic complexity. Activity increased to moderate levels on 08 June due to an M1/Sf flare from Region 9494 (S08, L = 309, class/area Eki/410 on 10 June). The flare occurred during a gradual growth phase in Region 9494, which continued through the remainder of the period. Activity decreased to low levels for the rest of the period with isolated C-class subflares.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A high speed stream associated with a negative polarity coronal hole commenced late on 08 June and continued through 10 June. Increased velocities (peaks to 710 km/sec on 10 June), low densities, and variable IMF Bz (maximum range plus to minus 10 nT (GSM)) were observed during this stream. Solar wind conditions recovered to near nominal values late on 10 June.

There were no proton events detected during the period. However, a small proton enhancement occurred during 04 June in the wake of the C3 X-ray flare mentioned above.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels through most of the period.

The geomagnetic field was disturbed during 09 - 10 June due to coronal hole effects. Unsettled to minor storm levels were observed during this disturbance. Quiet to unsettled levels occurred during the rest of the period.

Space Weather Outlook 13 June - 09 July 2001

Solar activity is expected to range from low to moderate levels during the period. Isolated M-class flares will be possible during the period.

No proton events are expected 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, there will be a chance for high levels around 30 June and 07 - 08 July.

The geomagnetic field is expected to be at quiet to unsettled levels during most of the period, barring an Earth-directed CME. However, active levels will be possible around 29 June and 06 - 07 July due to coronal hole effects.



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
04 June	154	125	1080	C1.0	7	2	0	7	2	0	0	0
05 June	153	160	1250	B5.6	3	1	0	2	0	1	0	0
06 June	158	170	1170	B4.6	9	0	0	17	1	1	0	0
07 June	165	163	1280	B6.6	8	0	0	4	0	0	0	0
08 June	180	179	1340	B7.9	12	1	0	5	2	0	0	0
09 June	177	250	1480	C1.7	18	0	0	22	1	0	0	0
10 June	163	217	1430	C1.0	17	0	0	16	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
04 June	5.9E+5	5.9E+4	2.7E+3		1.4E+6	
05 June	9.5E+5	5.8E+4	2.7E+3		1.4E+6	
06 June	6.5E+5	2.4E+4	2.5E+3		1.8E+6	
07 June	4.4E+5	1.6E+4	2.7E+3		8.4E+5	
08 June	2.4E+5	1.4E+4	2.5E+3		1.0E+6	
09 June	2.3E+5	1.1E+4	2.4E+3		3.6E+5	
10 June	3.6E+5	1.1E+4	2.5E+3		6.5E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
04 June	4	2-1-1-0-1-2-1-2	9	3-2-4-1-2-2-1-1	11	4-1-2-2-3-3-3-3
05 June	5	2-2-1-1-1-1-1-2	6	2-3-1-2-0-1-1-2	9	3-3-1-2-2-3-2-3
06 June	6	2-1-1-1-2-2-2-2	7	2-1-2-1-4-1-1-1	10	2-2-2-2-3-3-3-3
07 June	9	2-3-1-2-3-2-2-2	11	2-3-2-4-4-0-1-1	12	2-3-2-3-3-3-3-3
08 June	7	1-2-2-2-1-2-2-3	7	1-2-1-1-3-2-2-2	8	2-2-2-2-2-2-3-3
09 June	19	2-3-3-2-3-3-4-5	28	2-3-5-4-4-5-4-4	20	3-4-3-3-3-3-4-5
10 June	13	5-2-3-2-2-2-2-2	31	5-5-5-5-4-3-2-2	20	5-3-4-4-3-4-3-3

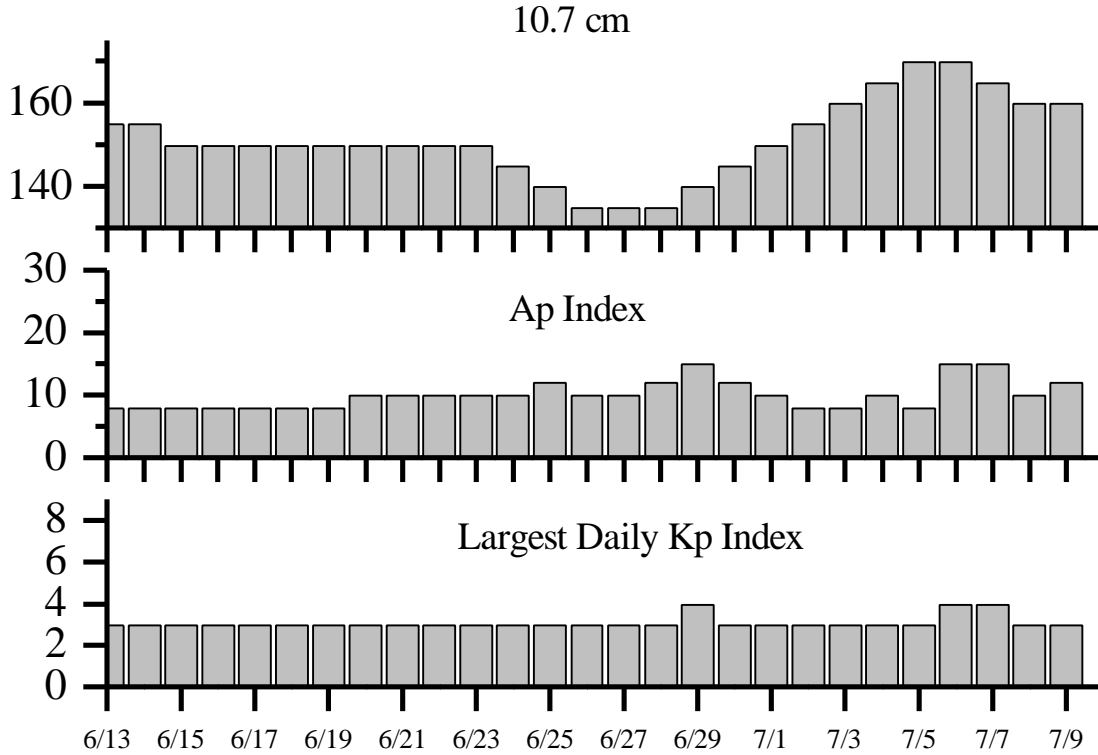


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
04 Jun 0004	2 - 245 MHz Bursts	03 Jun
04 Jun 0818	10cm Radio Burst 210 F.U.	04 Jun 0807
04 Jun 1749	Type II Radio Emission	04 Jun 1622
05 Jun 0005	6 - 245 MHz Bursts	04 Jun
05 Jun 0005	1 - 245 MHz Noise Storm	04 Jun
05 Jun 0457	10cm Radio Burst 1000 F.U.	05 Jun 0444
06 Jun 0011	1 - 245 MHz Bursts	05 Jun
07 Jun 0009	11 - 245 MHz Bursts	06 Jun
07 Jun 0009	1 - 245 MHz Noise Storms	06 Jun
08 Jun 0029	4 - 245 MHz Bursts	07 Jun
08 Jun 0245	Type II Radio Emission	08 Jun 0232
09 Jun 0105	2 - 245 MHz Bursts	08 Jun
09 Jun 0105	245 MHz Noise Storms	08 Jun
09 Jun 0512	K= 4 Warning	09 Jun 0515 - 1500
09 Jun 2236	K= 4 Warning	09 Jun 2235 - 10 Jun 1200
09 Jun 2358	K= 4 Observed	09 Jun 2100 - 0000
10 Jun 0109	5 - 245 MHz Bursts	09 Jun
10 Jun 0109	2 - 245 MHz Noise Storms	09 Jun
10 Jun 0300	K= 5 Warning	10 Jun 0300 - 0900
10 Jun 0301	K= 5 Observed	10 Jun 0000 - 0300
10 Jun 0302	A \geq 20 Observed	10 Jun 0301
10 Jun 0600	ENDED A \geq 20 Observed	10 Jun 0301
10 Jun 1206	A \geq 20 Observed	10 Jun 1200
10 Jun 2106	ENDED A \geq 20 Observed	10 Jun 1200



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
13 June	155	8	3	27 June	135	10	3
14	155	8	3	28	135	12	3
15	150	8	3	29	140	15	4
16	150	8	3	30	145	12	3
17	150	8	3	01 July	150	10	3
18	150	8	3	02	155	8	3
19	150	8	3	03	160	8	3
20	150	10	3	04	165	10	3
21	150	10	3	05	170	8	3
22	150	10	3	06	170	15	4
23	150	10	3	07	165	15	4
24	145	10	3	08	160	10	3
25	140	12	3	09	160	12	3
26	135	10	3				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
04 Jun	0803	0812	0820	M2.4	.015	1F	S18E57	9488	110	210		
04 Jun	2234	2259	2309	M1.7	.017	SF	S04W03	9484	110			
05 Jun	0441	0451	0501	M2.5	.020	2N	S18E44	9488	3900	1000		
08 Jun	1918	1927	1934	M1.0	.006	SF	S09W30	9494	59			

Flare List

Date	Time			X-ray Class.	Optical		Rgn	
	Begin	Max	End		Imp / Brtns	Location Lat CMD		
04 June	0037	0047	0056	C2.2	SF	N27W20	9486	
	0340	0351	0357	C1.2				
	0441	0449	0457	C1.2				
	B0812	0821	0850	M2.4	1F	S18E57	9488	
	1511	1517	1528	C1.4	SF	S19E52	9488	
	1625	1628	1646	C3.2	SF	N24W59	9474	
	1850	1853	1859		SF	S19E50	9488	
	2107	2110	2116	C1.3	SF	S05W04	9484	
	2202	2203	2208	C1.4	SF	N28W34	9486	
	2237	2255	2340		1F	N29W32	9486	
	2251	2252	2314	M1.7	SF	S04W03	9484	
	05 June	0036	0036	0052		SF	S18E46	9488
		0444	0450	0521	M2.5	2N	S18E44	9488
0756		0801	0805	B9.3				
1158		1205	1212	C1.6				
1419		1421	1441	C9.4	SN	S05W15	9484	
1556		1601	1606	C1.1				
06 June	2345	2348	2351	B7.9				
	0134	0137	0142	C1.7				
	0618	0622	0627	B8.1				
	0816	0817	0831	C2.0	SF	S19E22	9488	
	1027	1033	1050	C1.3				
	1159	1159	1207		SF	N24W73	9474	
	1226	1226	1234		SF	N23W73	9474	
	1252	1253	1259		SF	N07W69	9474	
	1304	1305	1331	C1.1	SF	S19E21	9488	
	1316	1317	1324		SF	N21W74	9475	
	1344	1344	1352		SF	S18E21	9488	
	1350	1352	1354		SF	N19W85	9474	
	1442	1444	1448	C1.1	SF	S04W26	9484	
1445	1446	1450		SF	N29W57	9486		
1608	1610	1617		SF	S18E20	9488		
1658	1704	1713	C1.0					
1723	1726	1737	C3.0	1F	N23W80	9475		



1805 1805 1810 SF N23W79 9474

Flare List – continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
06 June	1847	1847	1851		SF	S20E17	9488
	1914	1918	1927	C4.7	2F	N23W84	9474
	1934	1937	1944		SF	S19E17	9488
	2122	2124	2156	C3.3	SF	S18E21	9488
	2144	2144	2150		SF	S06W30	9484
	2348	2356	0020		SF	S17E21	9488
07 June	0031	0042	0059	C1.5			
	0103	0106	0109	C1.9			
	0633	0634	0641		SF	S06W35	9484
	0813	0813	0816	C1.1	SF	S17E14	9488
	1259	1303	1305	C1.3			
	1329	1330	1336		SF	N17E57	9492
	1612	1613	1620	C2.5	SF	S06W44	9484
	1905	1910	1914	C3.8			
	2003	2007	2011	C6.4			
08 June	2102	2136	2142	C2.3			
	0220	0228	0323	C6.0	1N	S17E04	9488
	0332	0336	0340	C1.5			
	0345	0412	0414	C2.1			
	1113	1116	1130	C1.9	SF	S08W25	9494
	1310	1320	1326	C4.5			
	1600	1604	1633	C7.2	SF	S09W24	9494
	1801	1801	1805	C1.8	SF	N04E54	9493
	1928	1929	1958	M1.0	SF	S09W30	9494
	2044	2050	2054	C5.1			
	2101	2108	2111	C4.4			
	B2132	U2134	2146		1F	S09W30	9494
	2214	2216	2218	C1.9	SF	S09W30	9494
	2245	2256	2307	C6.5			
2312	2324	2350	C7.5				
09 June	0049	0049	0055		SF	N06E50	9493
	0142	0145	0149	C2.1			
	0230	0234	0246	C1.9			
	0255	0258	0302	C2.3			
	0509	0516	0521	C3.7			
	0533	0537	0541	C3.9			
	B0621	U0624	0633		SF	S07W35	9494
	0731	0739	0751		SF	S08W36	9494
	1006	1009	1013	C1.1			
	1020	1029	1038	C2.8			
	1310	1312	1322	C2.0	SF	S08W38	9494



Flare List – continued.

Date	Time			X-ray Class.	Imp / Brtns	Optical	Rgn	
	Begin	Max	End			Location Lat CMD		
09 June	1329	1344	1444		SF	S08W35	9494	
	1343	1345	1349	C2.0	SF	S16W14	9488	
	1436	1438	1446		SF	S07W39	9494	
	1449	1450	1454		SF	S07W35	9494	
	1505	1506	1515	C1.3	SF	S07W39	9494	
	1529	1531	1536		SF	S06W40	9494	
	1552	1554	1608		SF	S08W40	9494	
	1621	1624	1628		SF	N26W13	9487	
	1628	1629	1641	C1.6	SF	N16E00	9489	
	1653	1701	1705	C1.4	SF	S06W41	9494	
	1829	1830	1834		SF	N06E46	9493	
	1833	1839	1855	C2.6	SF	S08W43	9494	
	1835	1839	1845		SF	N06E46	9493	
	1910	1924	1941	C2.6	1F	S07W40	9494	
	1913	1914	1917		SF	N20W05	9489	
	2049	2057	2100		SF	S08W43	9494	
	2102	2119	2254	C3.3	SF	S08W45	9494	
	2335	2336	2339	C1.2	SF	S07W39	9494	
	2345	2350	0003	C1.8	SF	N06E38	9493	
	10 June	0100	0106	0123	C9.7	SF	S08W42	9494
		0142	0142	0200		SF	S16W13	9488
0436		0440	0445	C2.7				
B0646		U0646	A0647	C8.7	SF	S07W48	9494	
0711		0716	0719	C4.2				
B0843		U0859	A0912	C6.3	SF	S08W50	9494	
0928		0932	0936	C4.4				
1111		1125	1152	C2.2	SF	S07W51	9494	
1137		1141	1146		SF	N06E34	9493	
1138		1139	1146		SF	N21W06	9489	
1154		1154	1200	C2.7	SF	N22W26	9487	
1214		1215	1220	C1.9	SF	S12E34	9497	
1243		1247	1253	C2.4	SF	S07W51	9494	
1511		1517	1526	C1.4				
1542		1542	1546		SF	S12E34	9497	
1545		1547	1611	C2.5	SF	S07W55	9494	
1725		1726	1730	C1.1	SF	N18W13	9489	
1739	1740	1743	C1.0	SF	S08W49	9494		
1947	1949	1953	C2.4	SF	N21W30	9487		
2114	2115	2139	C2.0	SF	N28W26	9487		
2341	2346	2353	C1.3					



Region Summary

Date	Location		Sunspot Characteristics				Flares							
	° Lat	° CMD	Area (10 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical			
								C	M	X	S	1	2	3

Region 9474

26 May	N18E53	039	0030	05	BXO	003	B										
27 May	N19E42	036	0050	06	DAO	005	B										
28 May	N19E29	036	0060	07	CAO	008	B										
29 May	N19E15	037	0060	06	DAO	008	B										
30 May	N20E02	037	0030	07	CSO	008	B										
31 May	N20W14	040	0020	02	CSO	003	B										
01 Jun	N20W27	040	0010	00	AXX	001	A										
02 Jun	N21W38	037	0000	05	BXO	003	B										
03 Jun	N22W51	037	0010	01	AXX	001	A										
04 Jun	N22W64	037							1			1					
05 Jun	N22W77	037															
06 Jun	N22W90	037							1			5	1	1			
									2	0	0	6	1	1	0	0	

Crossed West Limb.

Absolute heliographic longitude: 037

Region 9475

26 May	N17E71	021	0050	01	HSX	001	A										
27 May	N17E59	019	0030	08	CAO	003	B										
28 May	N17E48	017	0050	10	DSO	004	B										
29 May	N18E34	018	0100	10	DAO	007	BGD	2			2						
30 May	N19E19	020	0130	13	EAI	015	BG										
31 May	N18E06	020	0070	13	EAO	008	BG										
01 Jun	N19W08	021	0060	11	ESO	008	B					1					
02 Jun	N20W19	018	0060	05	CAO	008	B										
03 Jun	N19W29	015	0070	05	DAO	009	B										
04 Jun	N20W42	014	0110	07	DAI	013	B										
05 Jun	N21W56	015	0160	07	DAO	013	B										
06 Jun	N20W71	017	0090	10	DSO	008	B	1			1	1	1				
07 Jun	N18W85	017	0060	02	HAX	001	A										
									3	0	0	4	1	1	0	0	

Crossed West Limb.

Absolute heliographic longitude: 020



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 9477</i>																		
27 May	S16E20	058	0040	06	DSO	006	B											
28 May	S16E07	058	0030	06	DSO	005	B											
29 May	S16W08	060	0000	00	AXX	001	A											
30 May	S16W21	060																
31 May	S16W34	060											1					
01 Jun	S16W43	056	0010	02	BXO	002	B											
02 Jun	S17W55	054	0020	03	BXO	004	B											
03 Jun	S17W68	054																
04 Jun	S17W81	054																
05 Jun	S17W94	054																
								0	0	0	1	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 058

<i>Region 9480</i>																		
28 May	S14E52	013	0010	01	AXX	002	A											
29 May	S13E36	016	0000	00	AXX	001	A											
30 May	S13E23	016																
31 May	S13E10	016																
01 Jun	S13W03	016																
02 Jun	S13W16	016																
03 Jun	S13W29	016																
04 Jun	S13W42	016																
05 Jun	S13W55	016																
06 Jun	S13W68	016																
07 Jun	S13W81	016																
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 016



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 9488</i>																							
03 Jun	S18E61	285	0280	08	CAO	006	B	2				2	1										
04 Jun	S18E48	284	0290	08	CKO	007	BG	1	1			2	1										
05 Jun	S20E33	286	0250	07	DAO	008	BG		1			1		1									
06 Jun	S20E19	287	0210	09	DAI	015	BG	3				8											
07 Jun	S18E04	288	0220	11	EAI	033	BG	1				1											
08 Jun	S19W09	288	0140	14	EAI	015	BG	1						1									
09 Jun	S19W20	285	0100	15	EAI	023	B	1				1											
10 Jun	S18W32	284	0070	07	CAO	010	B					1											
								9	2	0	16	3	1	0	0								

Still on Disk.

Absolute heliographic longitude: 288

Region 9489

05 Jun	N17E52	267	0040	05	DSO	003	B														
06 Jun	N18E39	267	0060	07	DSO	005	B														
07 Jun	N18E24	268	0100	07	DAO	007	B														
08 Jun	N17E08	271	0070	08	DAO	010	BG														
09 Jun	N18W04	269	0170	12	EAI	036	BG	1				2									
10 Jun	N18W17	269	0220	13	EAI	031	BG	1				2									
								2	0	0	4	0	0	0	0						

Still on Disk.

Absolute heliographic longitude: 269

Region 9490

05 Jun	S13E49	270	0010	01	AXX	001	A														
06 Jun	S12E35	271	0010	00	AXX	001	A														
07 Jun	S12E22	271																			
08 Jun	S12E09	271																			
09 Jun	S16W04	269	0020	08	BXO	007	B														
10 Jun	S16W17	269																			
								0	0	0	0	0	0	0	0						

Still on Disk.

Absolute heliographic longitude: 269



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 9491

05 Jun	N22E75	244	0090	02	HSX	001	A											
06 Jun	N23E63	243	0100	02	HSX	001	A											
07 Jun	N24E50	242	0140	02	HSX	001	A											
08 Jun	N24E37	242	0140	02	HSX	001	A											
09 Jun	N25E23	242	0170	03	HAX	002	A											
10 Jun	N25E10	242	0130	03	HAX	001	A											
												0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 242

Region 9492

06 Jun	N18E62	244	0040	03	CSO	003	B											
07 Jun	N19E50	242	0120	07	CAO	007	B					1						
08 Jun	N19E36	243	0230	10	DAO	011	BG											
09 Jun	N20E23	242	0250	09	DAO	015	B											
10 Jun	N20E11	241	0130	09	DAO	009	B											
												0	0	0	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 241

Region 9493

06 Jun	N05E73	233	0080	04	HSX	001	A											
07 Jun	N06E64	228	0130	11	ESO	005	B											
08 Jun	N05E51	228	0130	15	EAO	006	B	1			1							
09 Jun	N06E37	228	0150	17	FAO	008	BG	1			4							
10 Jun	N06E25	227	0130	16	FAO	006	B				1							
								2	0	0	6	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 227

Region 9494

08 Jun	S08W30	309	0130	06	DAO	011	BG	3	1		4	1						
09 Jun	S08W44	309	0260	09	DAI	021	BG	7			14	1						
10 Jun	S08W57	309	0410	11	EKI	011	BG	6			7							
								16	1	0	25	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 309



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 9495

08 Jun	N04E24	255	0090	08	DAO	007	B										
09 Jun	N04E11	254	0040	07	DAO	009	B										
10 Jun	N04W03	255	0030	07	CSO	007	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 255

Region 9496

09 Jun	N09W36	301	0030	04	CSO	005	B										
10 Jun	N09W47	299	0010	01	HRX	001	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 301

Region 9497

10 Jun	S10E27	225	0040	04	DSO	010	B	1			2						
								1	0	0	2	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 225

Region 9498

10 Jun	N22E58	194	0030	01	HSX	001	A										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 194

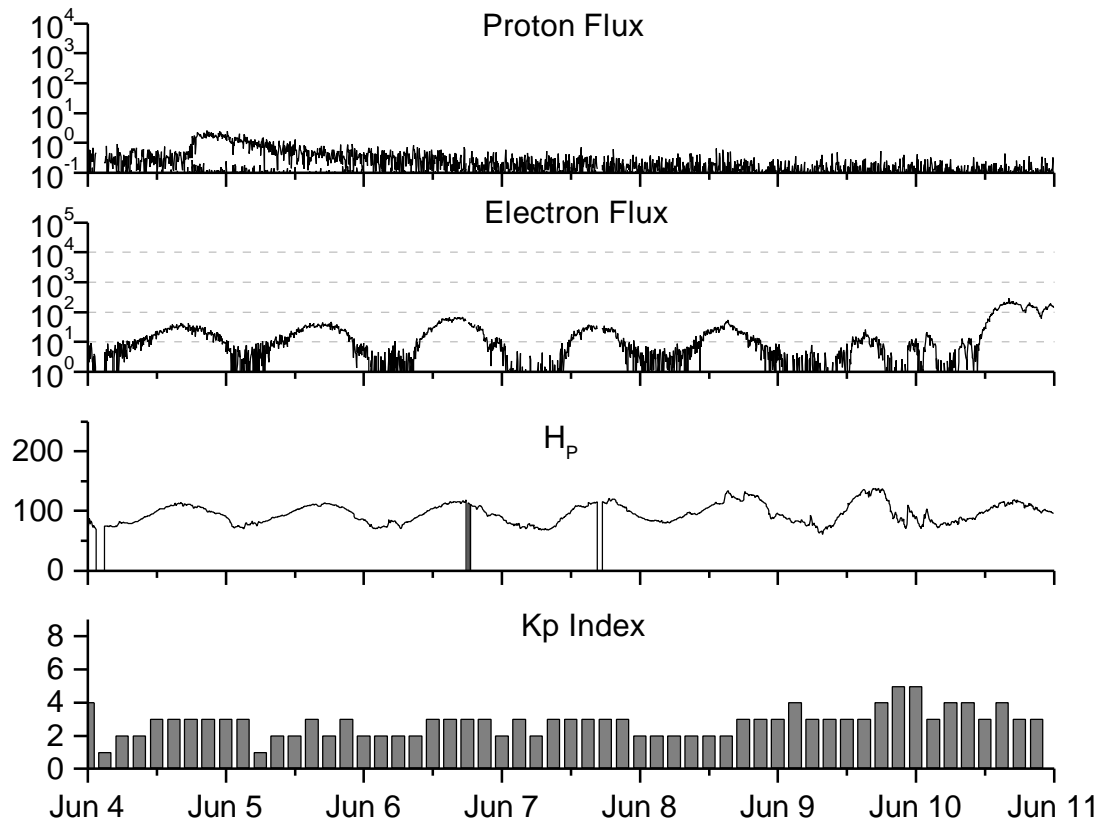


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SWO	Ratio RI	Ratio RI/SWO	Smooth values SWO	Smooth RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
1999									
June	208.3	137.7	0.66	136.0	93.1	169.8	152.9	07	12.4
July	169.2	113.5	0.67	138.0	94.3	165.6	154.4	10	12.6
August	136.1	93.7	0.69	142.8	97.5	170.8	156.3	15	12.9
September	107.4	71.5	0.67	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			173.6		08	
2001									
January	142.7	95.1	0.67			166.7		08	
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	

NOTE: All smoothed values after December 1999 and monthly values after June 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 28 May 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.

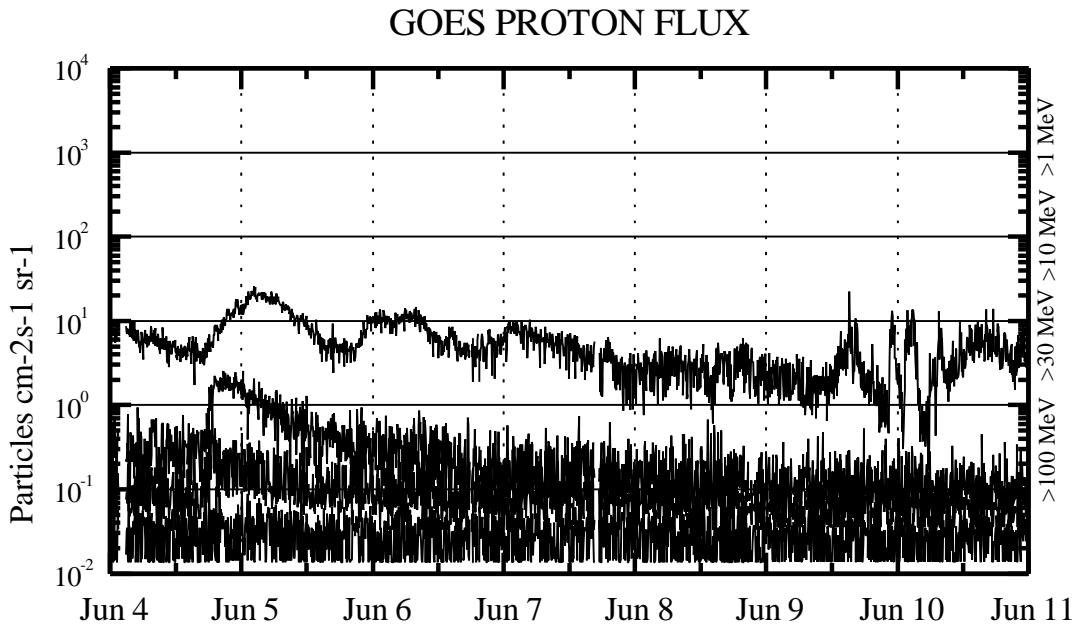
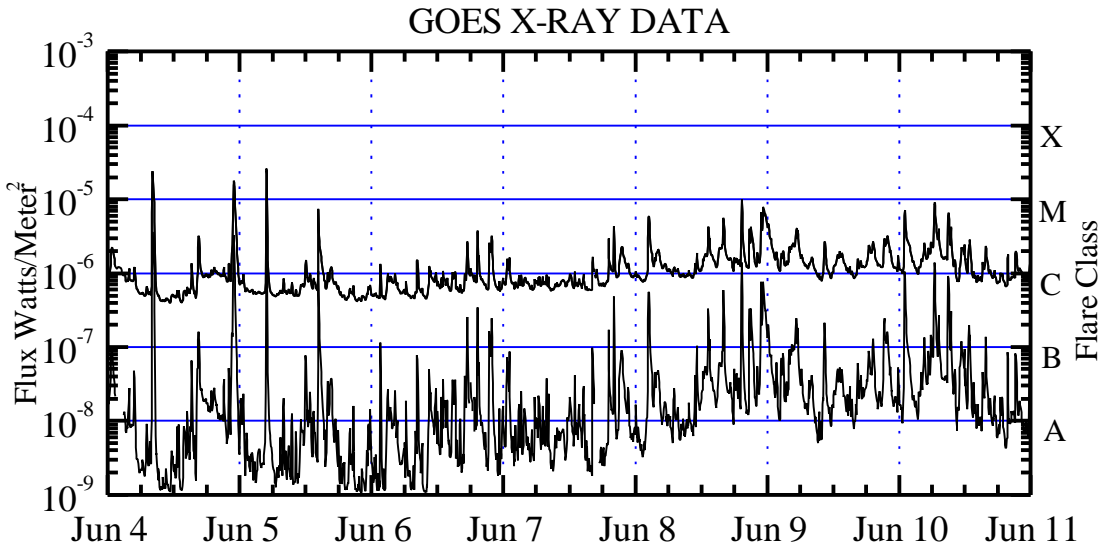
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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 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/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.

