

Space Weather Highlights
11 - 16 June 2001

SWO PRF 1346
19 June 2001

Solar activity alternated between low and high levels. Activity reached high levels on 13 and 15 June due to two major flares from Region 9502 (S25, L = 155, class/area Dso/160 on 14 June). The first was an M7/1n at 13/1142 UTC and the other an M6/1n at 15/1013 UTC. Both flares were impulsive with minor radio emission. Region 9502 was unremarkable in terms of size and structure and entered a gradual decay phase on 17 June. Solar activity was low during the rest of the period with isolated occasional C-class flares. Other events of note included a C6/1n at 12/0719 UTC from Region 9488 (S18, L = 288, class/area Cko/290 on 04 June) associated with a Type II radio sweep and a minor proton enhancement at greater than 10 MeV; a long-duration C6/Sf flare at 14/0943 UTC associated with a partial-halo coronal mass ejection (CME), and a CME from beyond the west limb on 15 June associated with a proton event at greater than 10 MeV.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A transient structure passed the spacecraft during 14 - 15 June. Minor increases in velocity and density occurred during the passage, which commenced at approximately 14/2000 UTC. IMF Bz took a southward turn beginning approximately 14/2100 UTC, then remained southward into the early hours of 15 June with maximum deflections to minus 07 nT (GSM). Nominal solar wind conditions occurred during the rest of the period.

A proton event at greater than 10 MeV occurred during 15 - 16 June following an event from beyond the west limb. The event began at 15/1750 UTC, reached a maximum of 26 PFU at 16/0005 UTC, and ended at 16/1210 UTC.

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

Geomagnetic field activity was at mostly quiet to unsettled levels until late on 14 June. Active conditions occurred during 14/2100 - 2400 UTC associated with the CME passage described above. Quiet to unsettled levels occurred during the remainder of the period.

Space Weather Outlook
20 June - 16 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
11 June	162	249	1660	B9.3	9	0	0	4	0	0	0	0
12 June	166	193	1240	B9.0	12	0	0	5	1	0	0	0
13 June	181	221	1440	C1.8	11	2	0	12	2	0	0	0
14 June	195	273	1840	C1.5	5	0	0	6	0	0	0	0
15 June	197	264	1850	C1.1	7	1	0	9	2	0	0	0
16 June	208	276	2550	C1.4	8	0	0	9	0	0	0	0
17 June	205	289	2110	C1.2	6	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
11 June	2.1E+5	1.1E+4	2.4E+3		3.2E+7	
12 June	3.4E+5	2.4E+4	2.4E+3		2.5E+7	
13 June	8.6E+5	2.1E+4	2.4E+3		3.8E+6	
14 June	6.4E+5	1.7E+4	2.6E+3		5.0E+6	
15 June	3.7E+6	4.7E+5	5.7E+3		2.7E+6	
16 June	1.1E+7	1.0E+6	3.5E+3		1.8E+7	
17 June	6.9E+6	2.6E+5	2.9E+3		7.9E+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

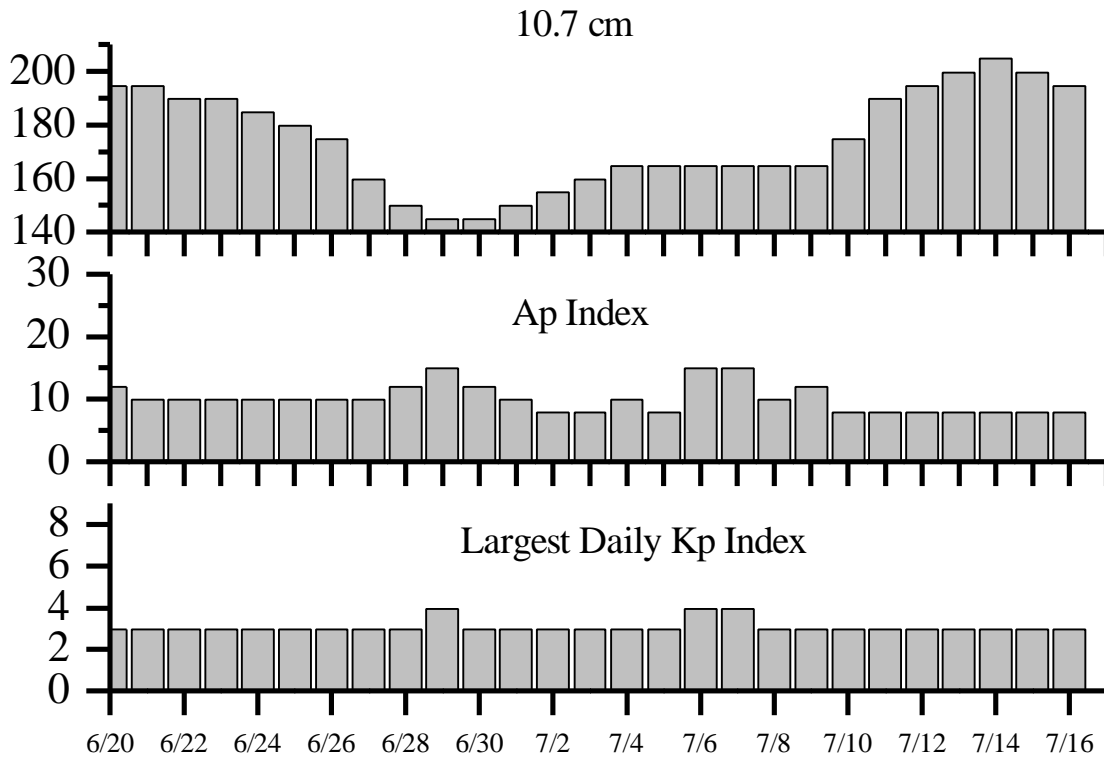


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
11 Jun 0054	4 – 245 MHz Radio Bursts	10 Jun
11 Jun 0054	1 – 245 MHz Radio Noise Storm	10 Jun
11 Jun 0737	Type II Radio Emission	11 Jun 0554
12 Jun 0048	3 – 245 MHz Radio Bursts	11 Jun
12 Jun 0048	1 – 245 MHz Radio Noise Storm	11 Jun
12 Jun 0739	Type II Radio Emission	12 Jun 0718
13 Jun 0109	2- 245 MHz Radio Bursts	12 Jun
13 Jun 0737	K= 4 Warning	13 Jun 0745 - 1500
13 Jun 0859	K= 4 Observed	13 Jun 0600 - 0900
13 Jun 0905	Type II Radio Emission	13 Jun 0838
13 Jun 1155	X-Ray event M7/1n/S29E66	13 Jun 1142
13 Jun 1657	Type II Radio Emission	13 Jun 1627
14 Jun 0020	5 – 245 MHz Radio Bursts	13 Jun
15 Jun 0000	K= 4 Observed	14 Jun 2100 – 0000
15 Jun 0027	2 – 245 MHz Radio Bursts	14 Jun
15 Jun 0027	1 – 245 MHz Radio Noise Storm	14 Jun
15 Jun 0235	K= 4 Warning	15 Jun 0240 - 1500
15 Jun 1043	X-Ray event M6.3/1N/S25E45	15 Jun 1013
15 Jun 1128	10cm Radio Burst 260 F.U.	15 Jun 1047
15 Jun 1639	A >=20 Watch	17 Jun
15 Jun 1807	Protons Event >10 MeV >=10pfu	15 Jun 1750
15 Jun 1939	Proton Event >10MeV >=10pfu Warning	15 Jun 1937 – 2359
15 Jun 2248	Type II Radio Emission	15 Jun 2228
15 Jun 2252	Type IV Radio Emission	15 Jun 1011
15 Jun 2353	CONTINUED Proton >10MeV >=10pfu Warning	15/1937 –16/1500
16 Jun 0100	CONTINUED Protons Event >10 MeV >=10pfu	15 Jun 1750
16 Jun 1632	ENDED ^Protons Event >10 MeV >=10pfu	16 Jun 1210



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
20 June	195	12	3	04 July	165	10	3
21	195	10	3	05	165	8	3
22	190	10	3	06	165	15	4
23	190	10	3	07	165	15	4
24	185	10	3	08	165	10	3
25	180	10	3	09	165	12	3
26	175	10	3	10	175	8	3
27	160	10	3	11	190	8	3
28	150	12	3	12	195	8	3
29	145	15	4	13	200	8	3
30	145	12	3	14	205	8	3
01 July	150	10	3	15	200	8	3
02	155	8	3	16	195	8	3
03	160	8	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
13 Jun 01	0422	0433	0444	M2.0	.017	1F	S25E74	9502	110	85		
13 Jun 01	1122	1142	1151	M7.8	.053	1N	S29E66	9502	490	120		
15 Jun 01	1001	1013	1020	M6.3	.042	1N	S26E41	9502	5800	130		

Flare List

Date	Time			X-ray Class.	Optical Imp / Brtns	Location Lat CMD	Rgn			
	Begin	Max	End							
11 June	0015	0019	0025	C2.3	SF	S05W59	9494			
	0423	0451	0532	C5.0						
	0533	0552	0611	C7.1						
	1006	1010	1017	C1.6						
	1034	1040	1047	C2.0						
	1403	1403	1406		SF	N27W38	9487			
	1438	1444	1454	C2.0	SF	N19W23	9489			
	1524	1545	1600	C2.1						
	2048	2051	2101	C4.3	SF	S17W41	9488			
	2127	2130	2134	C1.9						
12 June	0036	0036	0039	C1.2	SF	N21W03	9492			
	0321	0334	0402	C3.0						
	0408	0430	0441	C5.1						
	0704	0709	0717	C1.7				SF	N25W47	9487
	0713	0715	0748	C6.7				1N	S15W52	9488
	0857	0933	0940	C3.2						
	1244	1246	1259	C2.1				SF	N21W50	9487
	1533	1533	1535					SF	S06W81	9494
	1700	1705	1711	C2.9				SF	S07W79	9494
	1739	1745	1752	C3.3						
1840	1909	1924	C2.5							
2051	2056	2101	C2.8							
2118	2138	2153	C6.0							
13 June	0007	0030	0052	C5.3						
	0129	0134	0139	C2.4						
	0303	0330	0343	C6.2						
	0426	U0428	A0510	M2.0	1F	S25E74	9502			
	0744	0746	0803	C2.4	SF	N14E80				
	0802	0806	0811	C2.8						
	0828	0830	0904	C3.7	SF	N20W48	9489			
	1045	1045	1048		SF	N22W44	9489			
	1109	1115	1117	C1.8						
	1135	1139	1218	M7.8	1N	S29E66	9502			
	1214	1215	1217		SF	N22W66	9487			
	1311	1311	1316		SF	N21W48	9489			
1417	1418	1433		SF	N20W49	9489				



Flare List – continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
13 June	1621	1628	1639	C9.1	SF	N20W49	9489
	1621	1628	1702		SF	S27E65	9502
	1654	1655	1700		SF	N20W54	9489
	1704	1712	1715		SF	S27E64	9502
	1843	1849	1855	C3.9			
	1954	1956	2009	C7.6	SF	N20W52	9489
	2241	2247	2255	C2.9			
	2311	2313	2324		SF	N04W33	9495
14 June	B0101	U0112	A0120		SF	N20W55	9489
	0205	0219	0239	C3.2			
	0304	0305	0316		SF	N23W72	9487
	0346	0350	0410	C3.4	SF	N19W55	9489
	0937	0938	1002	C6.5	SF	N19W58	9489
	1005	1006	1018		SF	N20W34	9492
	1702	1703	1711	C4.4	SF	N03W45	9495
	2004	2014	2024	C2.9			
15 June	0159	0210	0218	C2.1			
	0520	0520	0524		SF	N17W44	9492
	0524	0525	0529		SF	S10W27	9497
	0637	0639	0655	C3.8	SF	S26E48	9502
	0652	0655	A0806	C4.5	SF	N21W45	9492
	0849	0853	0857	C2.6			
	1005	1008	1108	M6.3	1N	S26E41	9502
	1240	1240	1246		SF	N20W73	9489
	1617	1618	1626	C2.2	SF	S16E18	9501
	1727	1727	1733		SF	S26E36	9502
	2007	2012	2030	C3.7			
	2217	2223	2239	C9.9	1F	N18E72	9506
	2241	2242	2247		SF	S28E41	9502
2249	2253	2307		SF	S25E33	9502	
16 June	0146	0158	0206	C5.0			
	0230	0247	0252	C2.2			
	0328	0331	0333	C4.4			
	0419	0421	0432		SF	N16E68	9506
	0458	0500	0517		SF	N04W64	9495
	0623	0623	0636		SF	N04W65	9495
	0648	0709	0718	C1.9	SF	N07W64	9495
	0806	0807	0809		SF	N07W64	9495
	0934	0934	0937		SF	N07W66	9495
	1103	1118	1215	C2.8			
	1317	1317	1321		SF	N24W90	9489
	1855	1858	1957	C3.9	SF	N21E50	9505



Flare List – continued.

Date	Time			X-ray Class.	Imp / Brtns	Optical	Rgn
	Begin	Max	End			Location Lat CMD	
16 June	2006	2010	A2039	C5.1	SF	S29E25	9502
	2236	2242	2253	C3.4			
17 June	0312	0315	0319	C2.2	SF	N14E38	9503
	0313	0314	0325		SF	N09E36	9504
	0520	0548	0602	C2.1			
	0957	1009	1035	C2.6			
	1345	1356	1415	C1.6			
	1724	1802	1842	C2.0			
	2226	2231	2239	C2.9			

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

Region 9485

01 Jun	S23E75	298	0060	02	HAX	001	A										
02 Jun	S21E64	295	0170	12	ESO	002	B										
03 Jun	S23E46	300	0030	01	HRX	001	A										
04 Jun	S23E35	297	0020	05	BXO	003	B										
05 Jun	S23E20	299	0010	00	AXX	001	A										
06 Jun	S23E07	299															
07 Jun	S23W06	299															
08 Jun	S23W19	299															
09 Jun	S23W32	299															
10 Jun	S23W45	299															
11 Jun	S23W58	299															
12 Jun	S23W71	299															
13 Jun	S23W84	299															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 299



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 9487</i>																		
02 Jun	N20E75	284	0180	03	CAO	004	B											
03 Jun	N19E60	286	0340	06	CKO	004	B											
04 Jun	N19E48	284	0290	05	CKO	006	B											
05 Jun	N19E35	284	0250	05	CKO	007	B											
06 Jun	N21E22	284	0250	05	CKO	009	B											
07 Jun	N22E09	283	0250	03	HKX	006	A											
08 Jun	N22W03	282	0170	04	CAO	011	B											
09 Jun	N22W18	283	0160	05	CAI	013	BG						1					
10 Jun	N21W30	282	0160	04	CAO	009	B	3					3					
11 Jun	N21W43	282	0110	04	CAO	008	B						1					
12 Jun	N22W55	281	0120	05	CAO	003	B	2					2					
13 Jun	N22W68	280	0120	07	DAO	004	B						1					
14 Jun	N23W82	281	0140	07	CRO	003	B						1					
								5	0	0	0	9	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 282

<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						
11 Jun	S19W45	284	0140	11	CSI	015	BG	1				1						
12 Jun	S18W56	282	0040	06	CSO	002	B	1				1	1					
13 Jun	S18W70	282	0060	02	HSX	001	A											
14 Jun	S17W82	281	0040	02	HSX	001	A											
								11	2	0	18	4	1	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 288



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 9489</i>																		
05 Jun	N17E	267	0040	05	DSO	003	B											
06 Jun	N18E	267	0060	07	DSO	005	B											
07 Jun	N18E	268	0100	07	DAO	007	B											
08 Jun	N17E	271	0070	08	DAO	010	BG											
09 Jun	N18W	269	0170	12	EAI	036	BG	1				2						
10 Jun	N18W	269	0220	13	EAI	031	BG	1				2						
11 Jun	N17W	269	0260	14	EKI	021	B	1				1						
12 Jun	N20W	268	0100	11	CSO	009	B											
13 Jun	N20W	267	0090	08	DAO	004	B	3				7						
14 Jun	N20W	268	0160	11	EAO	009	B	2				3						
15 Jun	N20W	266	0130	09	DSO	004	B					1						
								8	0	0	0	16	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 269

<i>Region 9490</i>																		
05 Jun	S13E	270	0010	01	AXX	001	A											
06 Jun	S12E	271	0010	00	AXX	001	A											
07 Jun	S12E	271																
08 Jun	S12E	271																
09 Jun	S16W	269	0020	08	BXO	007	B											
10 Jun	S16W	269																
11 Jun	S16W	269																
12 Jun	S16W	269																
13 Jun	S16W	269																
14 Jun	S16W	269																
15 Jun	S16W	269																
								0	0	0	0	0	0	0	0	0	0	

Crossed West Limb.

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	4		
<i>Region 9491</i>																	
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										
11 Jun	N25W03	242	0110	02	HSX	001	A										
12 Jun	N26W14	240	0100	04	CSO	003	B										
13 Jun	N27W27	239	0100	04	CSO	004	B										
14 Jun	N28W40	239	0090	04	CSO	003	B										
15 Jun	N24W53	239	0070	03	HSX	002	A										
16 Jun	N28W66	239	0110	02	HSX	001	A										
17 Jun	N27W79	239	0100	02	HAX	002	A										

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 242

<i>Region 9492</i>																	
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										
11 Jun	N20W02	241	0140	09	DAO	011	B										
12 Jun	N21W15	241	0100	07	DAO	005	B	1					1				
13 Jun	N21W28	240	0080	08	DAO	005	B										
14 Jun	N21W41	240	0060	07	DSO	004	B							1			
15 Jun	N21W52	238	0040	05	CSO	003	B	1					2				
16 Jun	N23W70	243	0020	01	AXX	001	A										
17 Jun	N23W84	244	0020	01	HSX	001	A										

2 0 0 5 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 241



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 9496

09 Jun	N09W36	301	0030	04	CSO	005	B											
10 Jun	N09W47	299	0010	01	HRX	001	A											
11 Jun	N08W62	301	0010	01	BXO	001	B											
12 Jun	N08W75	301																
13 Jun	N08W88	301																
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 301

Region 9497

10 Jun	S10E27	225	0040	04	DSO	010	B	1			2							
11 Jun	S09E14	225	0030	05	CAO	009	B											
12 Jun	S09E02	224	0020	05	CRO	005	B											
13 Jun	S10W12	224	0020	04	CRO	004	B											
14 Jun	S09W23	222	0030	03	DSO	005	B											
15 Jun	S10W35	221	0020	01	AXX	001	A				1							
16 Jun	S10W49	223	0020	03	BXO	002	B											
17 Jun	S09W67	227	0000	00	AXX	001	A											
										1	0	0	3	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 224

Region 9498

10 Jun	N22E58	194	0030	01	HSX	001	A											
11 Jun	N24E46	193	0070	05	CAI	007	B											
12 Jun	N23E31	195	0030	04	CSO	002	B											
13 Jun	N23E18	194	0060	05	DSO	004	B											
14 Jun	N24E05	194	0060	06	DSO	010	B											
15 Jun	N24W08	194	0070	07	DAO	009	B											
16 Jun	N24W22	195	0040	05	CSO	004	B											
17 Jun	N23W37	197	0030	01	HSX	002	A											
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 194



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 9499

11 Jun	N18E17	222	0050	06	CAO	006	B											
12 Jun	N18E03	223	0040	08	DSO	006	B											
13 Jun	N19W12	224	0060	07	DSO	004	B											
14 Jun	N20W26	225	0060	08	CSO	004	B											
15 Jun	N19W41	227	0060	02	HSX	001	A											
16 Jun	N20W58	231	0060	02	HSX	001	A											
17 Jun	N20W71	231	0030	01	HAX	001	A											

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 223

Region 9500

11 Jun	N10E71	168	0090	06	DAO	003	B											
12 Jun	N10E57	169	0070	03	HAX	003	A											
13 Jun	N09E43	169	0060	04	CAO	006	B											
14 Jun	N10E31	168	0080	03	DAO	007	B											
15 Jun	N09E18	168	0080	04	DAO	007	B											
16 Jun	N10E04	169	0040	04	CAO	007	B											
17 Jun	N10W09	169	0050	05	DSO	009	B											

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 169

Region 9501

11 Jun	S14E69	170	0050	02	HSX	001	A											
12 Jun	S15E55	171	0060	01	CSO	001	B											
13 Jun	S15E42	170	0090	03	CAO	002	B											
14 Jun	S13E28	171	0070	04	CSO	004	B											
15 Jun	S13E15	171	0080	04	DSO	005	B	1				1						
16 Jun	S13E02	171	0090	04	CAO	007	B											
17 Jun	S13W11	171	0090	04	DAO	016	B											

1 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 171



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 9502

12 Jun	S25E68	158	0140	07	DAO	003	B										
13 Jun	S26E58	154	0150	08	DSO	005	B	1	2		2	2					
14 Jun	S26E45	154	0160	08	DAO	012	B										
15 Jun	S25E32	154	0160	08	DSO	014	BG	1	1		4	1					
16 Jun	S25E19	154	0110	08	DAO	019	B	1			1						
17 Jun	S25E05	155	0090	09	DAO	014	B										
								3	3	0	7	3	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 155

Region 9503

13 Jun	N13E68	144	0160	07	CSO	004	B										
14 Jun	N15E59	140	0250	15	EAO	014	B										
15 Jun	N15E46	140	0290	14	EAI	024	B										
16 Jun	N13E33	140	0420	16	FKC	035	BG										
17 Jun	N14E20	140	0520	15	EKI	039	BG	1			1						
								1	0	0	1	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 140

Region 9504

13 Jun	N06E76	136	0140	05	HSX	001	A										
14 Jun	N07E63	136	0320	06	CKO	007	B										
15 Jun	N07E51	135	0290	05	CKO	005	B										
16 Jun	N07E37	136	0410	04	CKO	007	B										
17 Jun	N08E24	136	0370	04	CKO	005	B				1						
								0	0	0	1	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 136

Region 9505

14 Jun	N22E73	126	0060	02	BXO	003	B										
15 Jun	N23E59	127	0120	04	DAO	003	B										
16 Jun	N21E46	127	0100	03	DSO	002	B	1			1						
17 Jun	N21E32	128	0050	03	DAO	003	B										
								1	0	0	1	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 128



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 9506

14 Jun	N17E79	120	0050	02	HSX	001	A											
15 Jun	N17E67	119	0180	07	CAO	006	B	1					1					
16 Jun	N17E61	112	0720	22	FKI	017	BG					1						
17 Jun	N17E48	112	0460	22	FKI	024	B											
								1	0	0	1	1	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 112

Region 9507

15 Jun	N13E26	160	0040	04	CSO	005	B											
16 Jun	N12E11	162	0030	04	CSO	002	B											
17 Jun	N12W01	161	0020	04	BXO	004	B											
								0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 161

Region 9508

16 Jun	S20W60	233	0010	01	AXX	001	A											
17 Jun	S20W72	232	0010	01	AXX	001	A											
								0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 233

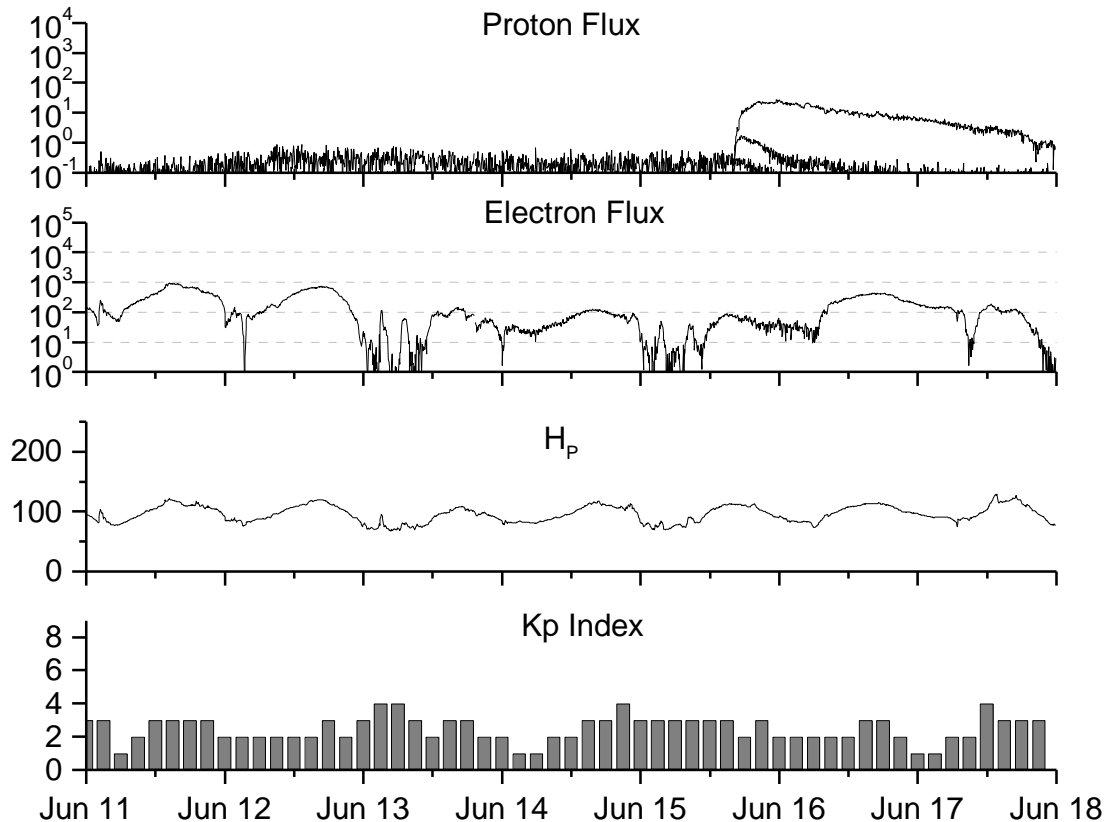


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers				Radio Flux		Geomagnetic		
	Observed values SWO	RI	Ratio RI/SWO	Smooth values SWO	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 11 June 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.

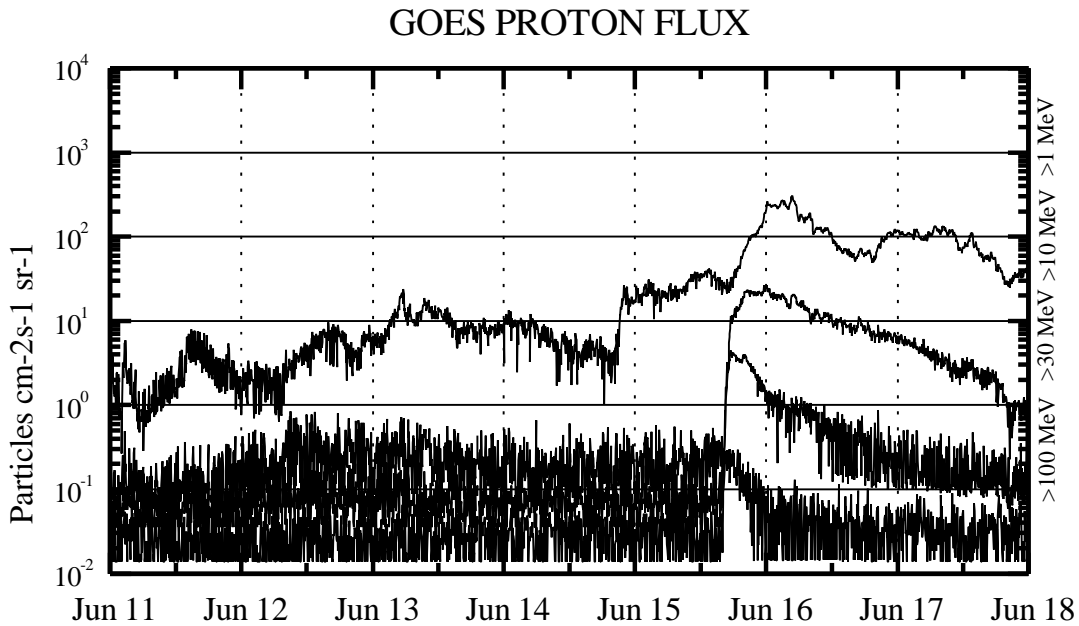
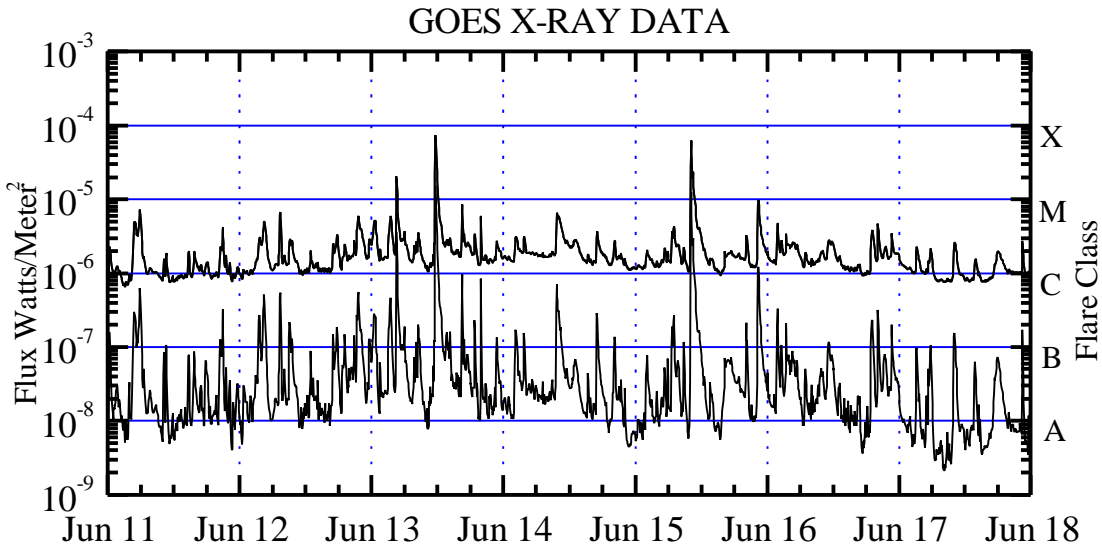
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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_pparallel 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.

