

Space Weather Highlights 10 - 16 June 2002

SWO PRF 1398
18 June 2002

Solar activity was low during most of the period with isolated B- and C-class flares. X-ray background levels were B-class throughout the period (and have been so since 03 June). Regions 9987 and 9991 were the sunspot groups of interest, both of which produced isolated B- and C-class flares. Region 9987 (S15, L = 144, class/area Eki/420 on 11 June) was moderate in size and magnetic complexity and was in a gradual growth phase until 11 June. However, it began to gradually decay on 12 June. Region 9991 (S22, L = 084, class/area Cko/350 on 14 June) was a reversed-polarity region with minor spot growth noted during 11 – 12 June. It began a gradual decay phase on 13 June.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. Wind velocities increased early on 10 June with peaks to around 540 km/sec, then decreased to nominal readings by the end of the day. This increase may have been a result of weak coronal hole effects. No significant disturbances occurred during the rest of the period.

There were no proton events during the period.

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

Geomagnetic field activity was at quiet to active levels on 10 June, possibly due to weak coronal hole effects. Quiet to unsettled conditions prevailed during the rest of the period.

Space Weather Outlook 19 June – 15 July 2002

Solar activity is expected to be at low levels during most of the period. There is a chance for isolated low-level M-class flares during 23 June – 06 July.

No proton events are expected.

Greater than 2 MeV electron fluxes at geo-synchronous orbit are expected to be at normal to moderate levels for most of the period.

Quiet to unsettled levels are expected for most of the period. However, active conditions are possible around 20 - 21 and 29 June, and again during 6 – 7 July.

Please note: As you may have noticed, Region number 10000 was assigned on June 14, 2002, Space Weather Operations is going through the sequence of Region numbers as 9998, 9999, 0000, 0001, and so on. SEC's product text discussions of the active regions will ignore the leading zeroes (for example, we will say 'Region number 5' rather than Region number '0005'). However, the flare lists as well as the USAF and IUWDS data exchange codes will preserve the 4-digit format. The necessity of using four digits is for operational purposes only. For historical purposes all regions beyond Region 9999 will be understood to be in a series of region numbers 10000 and higher.



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	
10 June	152	177	1180	B6.2	3	0	0	0	0	0	0	0	0
11 June	148	131	960	B5.8	6	0	0	7	0	0	0	0	0
12 June	142	134	940	B5.4	2	0	0	2	0	0	0	0	0
13 June	133	126	830	B4.4	0	0	0	4	0	0	0	0	0
14 June	131	102	650	B5.2	3	0	0	3	0	0	0	0	0
15 June	135	137	640	B9.2	2	0	0	3	0	0	0	0	0
16 June	137	132	670	B4.4	3	0	0	2	0	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
	10 June	2.1E+5	1.2E+4	2.5E+3		2.6E+6
11 June	8.1E+4	1.0E+4	2.4E+3		2.9E+6	
12 June	6.7E+4	1.1E+4	2.4E+3		8.0E+6	
13 June	6.8E+4	1.1E+4	2.5E+3		3.7E+6	
14 June	5.1E+4	1.1E+4	2.4E+3		3.0E+6	
15 June	5.0E+4	1.1E+4	2.5E+3		3.3E+6	
16 June	7.0E+4	1.1E+4	2.4E+3		1.2E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	10 June	10	2-1-2-2-3-3-3-2	33	2-2-3-6-5-6-3-3	16
11 June	7	2-2-2-2-2-1-2-2	14	2-2-3-4-4-3-1-2	12	3-2-3-3-3-3-3-3
12 June	6	3-1-0-2-2-2-1-2	17	3-5-2-2-1-2-1-1	10	3-2-1-3-3-3-3-2
13 June	7	1-2-1-2-2-2-3-2	7	1-3-2-2-1-2-2-1	11	2-3-2-3-3-3-3-3
14 June	4	2-0-1-1-1-1-2-1	3	2-2-1-0-1-1-0-0	7	2-1-1-2-2-3-2-2
15 June	4	1-1-0-1-0-1-1-3	5	1-1-0-4-1-0-0-1	7	2-1-1-2-2-2-3-3
16 June	7	1-2-3-2-2-1-1-2	6	2-2-2-2-2-1-2-1	11	2-3-3-3-3-2-2-3

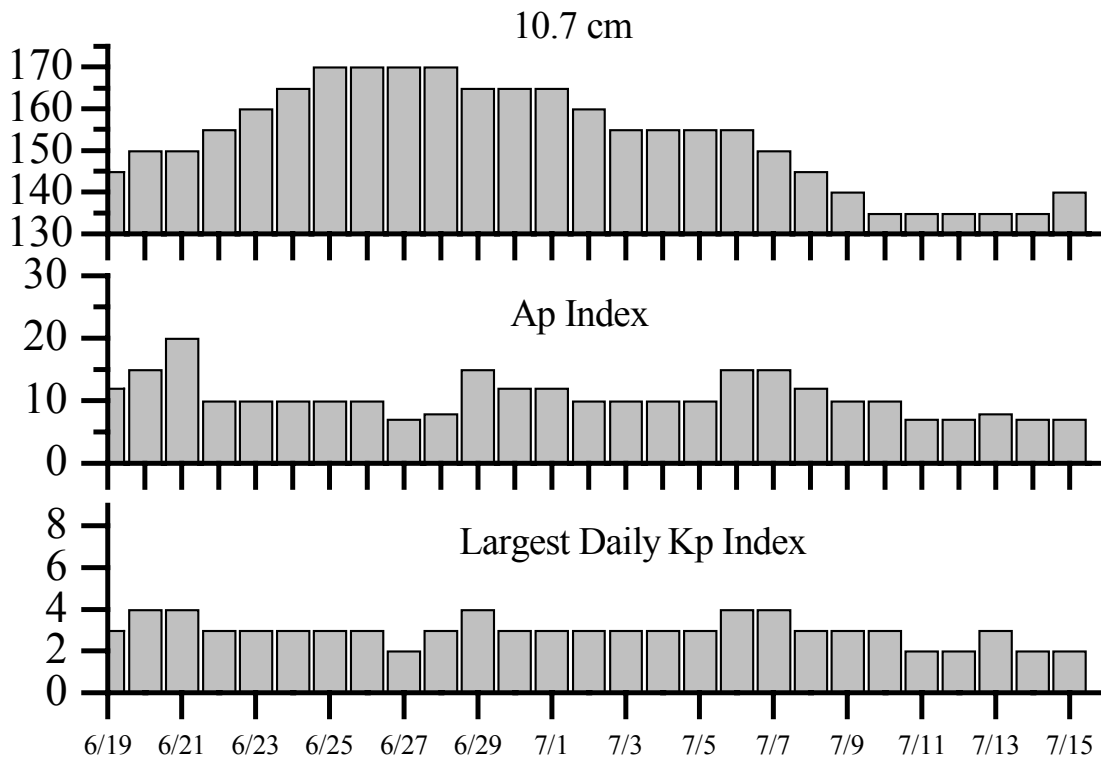


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
10 Jun 0014	2 – 245 MHz Radio Bursts	09 Jun
10 Jun 0536	WARNING: Geomagnetic Sudden	10 Jun 0545 – 0700
10 Jun 1113	ALERT: Geomagnetic K = 4	10 Jun 1111
10 Jun 1615	ALERT: Geomagnetic K = 4	10 Jun 1615
11 Jun 0011	8 – 245 MHz Radio Bursts	10 Jun
11 Jun 0011	245 MHz Noise Storm	10 Jun
12 Jun 0204	ALERT: Type II Radio Emission	12 Jun 0145
13 Jun 0039	4 – 245 MHz Radio Bursts	12 Jun
13 Jun 0039	245 MHz Noise Storm	12 Jun
13 Jun 0918	ALERT: Type II Radio Emission	13 Jun 0855
14 Jun 0023	4 – 245 MHz Radio Bursts	13 Jun
14 Jun 0023	245 MHz Noise Storm	13 Jun
15 Jun 0019	4 – 245 MHz Radio Bursts	14 Jun
15 Jun 0019	245 MHz Noise Storm	14 Jun
16 Jun 0037	245 MHz Noise Storm	15 Jun



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
19 Jun	154	12	3	03 Jul	155	10	3
20	150	15	4	04	155	10	3
21	150	20	4	05	155	10	3
22	155	10	3	06	155	15	4
23	160	10	3	07	150	15	4
24	165	10	3	08	145	12	3
25	170	10	3	09	140	10	3
26	170	10	3	10	135	10	3
27	170	7	2	11	135	7	2
28	170	8	3	12	135	7	2
29	165	15	4	13	135	8	3
30	165	12	3	14	135	7	2
01 Jul	165	12	3	15	140	7	2
02	160	10	3				



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

No Events Observed

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical Location		Rgn
	Begin	Max	End			Lat	CMD	
10 June	0205	0209	0213	C1.4				
	1020	1027	1035	C1.6				
	2144	2155	2206	C1.3				
11 June	0615	0643	0714	C1.4				
	1005	1007	1013	C1.1	Sf	S13W38	9987	
	1104	1106	1111	C1.2	Sf	S15W38	9987	
	1147	1149	1154	C1.2	Sf	S16W38	9987	
	1217	1218	1232	C1.6	Sf	S15W38	9987	
	1403	1405	1411	B7.6	Sf	S16W40	9987	
	1510	1514	1529	C1.5	Sf	S14W38	9987	
	1911	1911	1915	B5.8	Sf	N19W64	9984	
12 June	0115	0119	0122	B8.6				
	0854	0903	0914	C1.0				9987
	1219	1237	1251	B4.2				
	1439	1440	1442	B5.5	Sf	N16W70	9985	
	2117	2122	2126	C1.5	Sf	S24E05	9991	
13 June	0135	0223	0302	B8.6				
	0715	0716	0719	B6.7	Sf	S25E01	9991	
	1128	1137	1143		Sf	S13W69	9987	
	1550	1557	1621	B5.7				
	2117	2125	2128	B5.8	Sf	N19E82	0001	
	2147	2150	2157	B6.2				
14 June	2206	2211	2225		Sf	N19E81	0001	
	0000	0004	0018	B9.0	Sf	N19E81	0001	
	0058	0107	0116	B7.9				
	0908	0923	0937	B7.6				
	1004	1020	1038	C1.3				
	1135	1201	1259		Sf	N21E75	0001	
	2137	2137	2143	C1.0	Sf	N21E71	0001	
15 June	2348	0058	0125	C1.7				0000
	0230	0236	0241	C1.5				
	0741	0746	0750	B8.1				
	0900	0904	0917	B6.7				
	1622	1702	1717	C1.0				0000
	1829	1830	1841	B7.5	Sf	N18E40	0000	
	2057	2057	2116	B8.5	Sf	N01E66	0003	
	2357	2359	0001	B8.9	Sf	S01E65	0003	



Flare List - continued.

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn
	Begin	Max	End			Location Lat CMD		
16 June	0309	0332	0351	C1.4				
	0746	0814	0909	C1.0				0000
	1651	1653	1656	B6.7	Sf	S23W46		9991
	2120	2125	2132	C1.2	Sf	S23W49		9991

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 9973</i>																							
28 May	S16E73	214	0420	11	Eki	005	B	1				1											
29 May	S16E61	213	0960	13	Eki	019	Bg	4				7											
30 May	S16E48	213	0880	13	Ekc	023	Bg	1	1			3											
31 May	S16E34	213	0800	14	Eki	017	Bg	2				2											
01 Jun	S17E23	211	0790	15	Eki	030	Bg	1	1			1	1										
02 Jun	S17E10	211	0720	13	Eki	027	Bg	2				2											
03 Jun	S16W03	211	0570	16	Fki	029	Bg					1											
04 Jun	S16W16	211	0430	15	Esi	032	Bg					1											
05 Jun	S16W29	211	0390	12	Ekc	027	B																
06 Jun	S15W43	211	0390	11	Ekc	015	B																
07 Jun	S15W56	211	0300	06	Dao	010	B																
08 Jun	S15W69	211	0220	09	Dao	004	B																
09 Jun	S15W83	211	0110	02	Hsx	001	A																
10 Jun	S15W90	211	0120	02	Hax	001	A																

11 2 0 18 1 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 211



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 9975</i>																	
29 May	N23E63	211	0020	02	Bxo	002	B										
30 May	N23E50	211	0020	07	Bxo	005	B										
31 May	N23E36	211	0030	08	Cso	006	B										
01 Jun	N22E19	215	0010	02	Bxo	002	B										
02 Jun	N22E06	215	0020	03	Cso	002	B	1				1					
03 Jun	N21W07	215	0030	06	Dso	007	B										
04 Jun	N21W20	215	0050	05	Dso	008	B	2				2					
05 Jun	N22W32	214	0060	05	Cao	010	B										
06 Jun	N22W45	213	0060	04	Cao	006	B	1						1			
07 Jun	N23W58	213	0040	01	Hax	001	A										
08 Jun	N22W71	213	0030	01	Hsx	001	A	1				2					
09 Jun	N22W85	213	0050	02	Hax	001	A										
10 Jun	N22W98	213															
								5	0	0	5	1	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 215

<i>Region 9978</i>																	
31 May	S20E62	185	0020	05	Bxo	002	B										
01 Jun	S20E47	187	0040	03	Cso	003	B					2					
02 Jun	S19E34	187	0130	06	Dao	010	B										
03 Jun	S20E21	187	0250	06	Dai	015	B	1				2					
04 Jun	S20E07	188	0210	08	Dao	014	B	1				1					
05 Jun	S20W06	188	0260	08	Dai	017	B	1				1					
06 Jun	S21W20	188	0180	07	Dao	014	B										
07 Jun	S21W33	188	0140	05	Cao	011	B										
08 Jun	S21W47	189	0120	06	Dso	006	B										
09 Jun	S21W61	189	0080	04	Cao	002	B										
10 Jun	S21W74	189	0080	02	Hax	001	A										
11 Jun	S21W87	189	0050	02	Hsx	001	A										
								3	0	0	6	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 188



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 9979</i>																		
31 May	S31E77	170	0030	04	Cso	006	B											
01 Jun	S30E63	171	0130	07	Dao	007	Bg	1	1			3						
02 Jun	S30E50	171	0070	07	Dso	009	B		1				1					
03 Jun	S28E36	172	0060	06	Dri	009	B											
04 Jun	S29E24	171	0040	04	Cso	006	B											
05 Jun	S30E11	171	0040	05	Cso	007	B											
06 Jun	S29W02	170	0030	06	Cao	007	B											
07 Jun	S29W15	170																
08 Jun	S29W28	170																
09 Jun	S29W41	170																
10 Jun	S29W54	170																

1 2 0 3 1 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 170

<i>Region 9981</i>																		
02 Jun	S22E70	151	0050	02	Hax	001	A											
03 Jun	S22E56	152	0050	02	Hax	001	A											
04 Jun	S22E43	152	0040	01	Hsx	001	A											
05 Jun	S22E30	152	0080	02	Hsx	001	A											
06 Jun	S22E17	151	0040	01	Hsx	001	A											
07 Jun	S22E03	152	0040	01	Hsx	001	A											
08 Jun	S21W11	153	0030	01	Hsx	001	A											
09 Jun	S20W25	153	0010	01	Hsx	001	A											
10 Jun	S20W38	153	0010	01	Hsx	001	A											
11 Jun	S20W52	153	0010	01	Axx	001	A											
12 Jun	S20W65	153																
13 Jun	S20W78	153																

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 152



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 9982</i>																	
02 Jun	S03E74	147	0000	00	Axx	001	A										
03 Jun	S02E62	146	0020	01	Hrx	001	A										
04 Jun	S04E49	146	0010	02	Hrx	002	A										
05 Jun	S04E37	145	0020	04	Cso	003	B										
06 Jun	S04E21	147	0010	07	Bxo	006	B										
07 Jun	S04E08	147															
08 Jun	S04W05	147															
09 Jun	S04W18	147															
10 Jun	S04W32	147	0020	04	Cso	003	B										
11 Jun	S04W45	147															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 147

<i>Region 9983</i>																	
02 Jun	N24E72	149	0050	06	Cao	002	B										
03 Jun	N24E57	151	0010	01	Hsx	001	A										
04 Jun	N23E43	152	0030	01	Hsx	001	A										
05 Jun	N24E30	152	0030	01	Hsx	001	A										
06 Jun	N24E17	151	0020	01	Hsx	001	A										
07 Jun	N24E03	152	0010	01	Axx	001	A										
08 Jun	N25W10	152	0010	01	Axx	001	A										
09 Jun	N25W23	152															
10 Jun	N25W36	152															
11 Jun	N25W49	152															
12 Jun	N25W62	152															
13 Jun	N25W75	152															

0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 152



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 9985

04 Jun	N17E29	166	0090	07	Dao	011	B											
05 Jun	N18E17	165	0190	09	Dao	015	B											
06 Jun	N17E02	166	0170	09	Dao	012	B											
07 Jun	N18W11	166	0150	09	Dai	025	B											
08 Jun	N18W24	166	0210	10	Dai	013	B											
09 Jun	N18W38	166	0200	11	Eao	012	B											
10 Jun	N18W51	166	0170	10	Dao	009	B											
11 Jun	N18W65	166	0110	02	Hsx	001	A											
12 Jun	N18W78	166	0130	02	Hsx	001	A											1
13 Jun	N18W95	170	0060	05	Hsx	001	A											
																		0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 166

Region 9986

04 Jun	N03E72	123	0060	01	Hax	001	A											
05 Jun	N04E58	124	0050	01	Hax	001	A											
06 Jun	N03E44	124	0050	01	Hax	002	A											
07 Jun	N03E31	124	0020	01	Hsx	001	A											
08 Jun	N03E18	124	0020	03	Cso	003	B											
09 Jun	N03E07	121	0020	05	Cso	003	B											
10 Jun	N03W06	121																
11 Jun	N03W19	121																
12 Jun	N03W32	121																
13 Jun	N03W45	121																
																		0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 121

Region 9987

06 Jun	S16E24	144	0020	05	Bxo	010	B											1
07 Jun	S16E11	144	0020	07	Cso	021	B											
08 Jun	S15W02	144	0210	11	Eai	025	B											
09 Jun	S15W16	144	0240	14	Eki	033	B											
10 Jun	S15W29	144	0380	14	Eki	027	Bg											
11 Jun	S15W43	144	0420	14	Eki	020	Bg	5										6
12 Jun	S15W56	144	0370	11	Eko	016	Bg	1										
13 Jun	S15W71	146	0340	12	Eho	012	B											1
14 Jun	S16W86	148	0120	03	Hax	001	A											
																		6 0 0 8 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 144



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 9988

06 Jun	S14E04	164	0010	03	Bxo	006	B										
07 Jun	S14W09	164															
08 Jun	S14W22	164															
09 Jun	S14W35	164															
10 Jun	S14W48	164															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 164

Region 9989

07 Jun	S33W31	186	0030	04	Cso	005	B										
08 Jun	S35W44	186	0010	01	Axx	001	A										
09 Jun	S35W57	186															
10 Jun	S35W70	186															
11 Jun	S35W83	186															
12 Jun	S35W96	186															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 186

Region 9990

07 Jun	S23E19	136	0010	03	Bxo	003	B										
08 Jun	S23E06	136	0020	04	Bxo	004	B										
09 Jun	S23W08	136	0010	01	Axx	001	A										
10 Jun	S23W21	136	0010	01	Axx	001	A										
11 Jun	S23W34	136															
12 Jun	S23W47	136															
13 Jun	S23W60	136															
14 Jun	S23W73	136															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 136



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 9991</i>																							
07 Jun	S22E69	086	0300	03	Hkx	001	A																
08 Jun	S21E57	085	0250	03	Hhx	001	A														1		
09 Jun	S22E43	085	0270	02	Hkx	001	A																
10 Jun	S22E30	085	0270	03	Hhx	001	A																
11 Jun	S22E17	085	0290	05	Dho	006	B																
12 Jun	S22E04	084	0340	06	Dho	010	B	1						1									
13 Jun	S20W09	084	0310	07	Cho	007	B														1		
14 Jun	S21W21	083	0350	06	Cko	004	B																
15 Jun	S21W34	083	0290	04	Cho	003	B																
16 Jun	S21W47	083	0270	05	Hkx	002	A	1													2		
								2	0	0	0	5	0	0	0	0	0	0					

Still on Disk.

Absolute heliographic longitude: 084

Region 9992

08 Jun	S20E74	068	0010	01	Axx	001	A															
09 Jun	S20E60	068	0020	01	Axx	001	A															
10 Jun	S20E47	068	0050	05	Cso	005	B															
11 Jun	S20E34	068	0040	06	Cso	006	B															
12 Jun	S20E21	068	0040	03	Cso	007	B															
13 Jun	S18E08	067	0060	03	Dao	007	A															
14 Jun	S18W03	065	0020	03	Dso	005	B															
15 Jun	S17W18	067	0010	03	Bxo	002	B															
16 Jun	S18W32	068	0010	02	Bxo	002	B															
									0	0	0	0	0	0	0	0	0	0				

Still on Disk.

Absolute heliographic longitude: 065

Region 9993

09 Jun	N06W20	148	0030	03	Cao	003	B															
10 Jun	N06W33	148	0030	03	Cso	003	B															
11 Jun	N06W46	148	0010	01	Axx	001	A															
12 Jun	N06W59	148	0020	01	Axx	001	A															
13 Jun	N06W74	149	0010	01	Hrx	002	A															
14 Jun	N06W89	151																				
									0	0	0	0	0	0	0	0	0	0				

Crossed West Limb.

Absolute heliographic longitude: 148



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 9994

09 Jun	N10E59	069	0010	00	Axx	001	A								
10 Jun	N10E46	069	0020	01	Hsx	002	A								
11 Jun	N10E33	069	0020	01	Hsx	002	A								
12 Jun	N10E20	069													
13 Jun	N10E07	069													
14 Jun	N10W06	069													
15 Jun	N10W19	069													
16 Jun	N10W32	069													
											0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 069

Region 9995

10 Jun	N10W01	116	0020	03	Cso	003	B								
11 Jun	N10W14	116	0010	03	Bxo	003	B								
12 Jun	N10W27	116	0010	03	Bxo	005	B								
13 Jun	N12W41	116	0020	03	Bxo	004	B								
14 Jun	N12W54	116													
15 Jun	N12W67	116													
16 Jun	N12W80	116													
											0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 116

Region 9996

12 Jun	S27E46	042	0010	01	Axx	002	A								
13 Jun	S28E35	040	0010	01	Hrx	001	A								
14 Jun	S28E22	040													
15 Jun	S26E10	039													
16 Jun	S26W03	039													
											0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 039



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 9997

12 Jun	N08E73	015	0010	01	Axx	001	A											
13 Jun	N09E59	016	0010	01	Axx	001	A											
14 Jun	N09E46	016	0010	00	Axx	001	A											
15 Jun	N12E31	018	0010	08	Bxo	005	B											
16 Jun	N13E16	020	0020	03	Bxo	004	B											
																		0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 020

Region 9998

12 Jun	N15E74	014	0010	01	Axx	001	A											
13 Jun	N14E59	016	0010	01	Axx	001	A											
14 Jun	N14E47	015	0020	01	Hsx	001	A											
																		0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 015

Region 9999

14 Jun	S05W61	123	0030	04	Cao	005	B											
15 Jun	S05W75	124	0020	01	Hsx	001	A											
16 Jun	S05W87	123	0000	00	Axx	001	A											
																		0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 123

Region 0

14 Jun	N18E50	012	0030	04	Dso	003	B	1										
15 Jun	N18E36	013	0090	04	Dao	013	B	1		1								
16 Jun	N18E24	012	0060	06	Dso	012	B	1										
								3	0	0	1	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 012

Region 1

14 Jun	N20E70	352	0070	04	Cso	002	B	1		3								
15 Jun	N20E58	351	0180	09	Dao	011	B											
16 Jun	N20E46	350	0190	09	Dao	012	B											
								1	0	0	3	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 350



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 2</i>																	
15 Jun	S24W08	057	0000	00	Axx	001	A										
16 Jun	S24W21	057						0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 057																	
<i>Region 3</i>																	
15 Jun	N00E63	346	0010	06	Bxo	003	B					2					
16 Jun	N00E49	347	0030	05	Cso	003	B										
								0	0	0	2	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 347																	
<i>Region 4</i>																	
15 Jun	S16E10	039	0030	04	Dso	008	B										
16 Jun	S15W04	040	0020	06	Cao	005	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 040																	
<i>Region 5</i>																	
16 Jun	N13E74	322	0070	02	Hsx	001	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 322																	

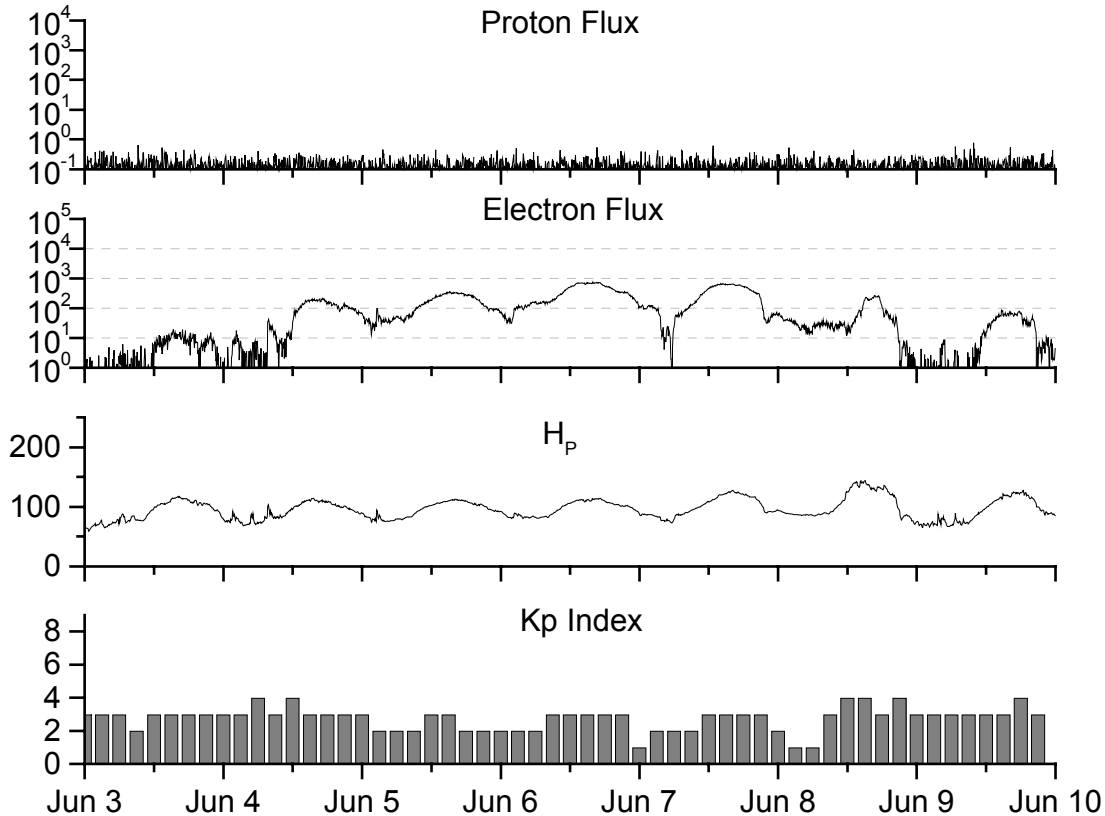


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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									
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	183.7	115.6	212.5	193.6	14	11.9
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	
May	204.1	120.8	0.59			178.4		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 09 June 2002

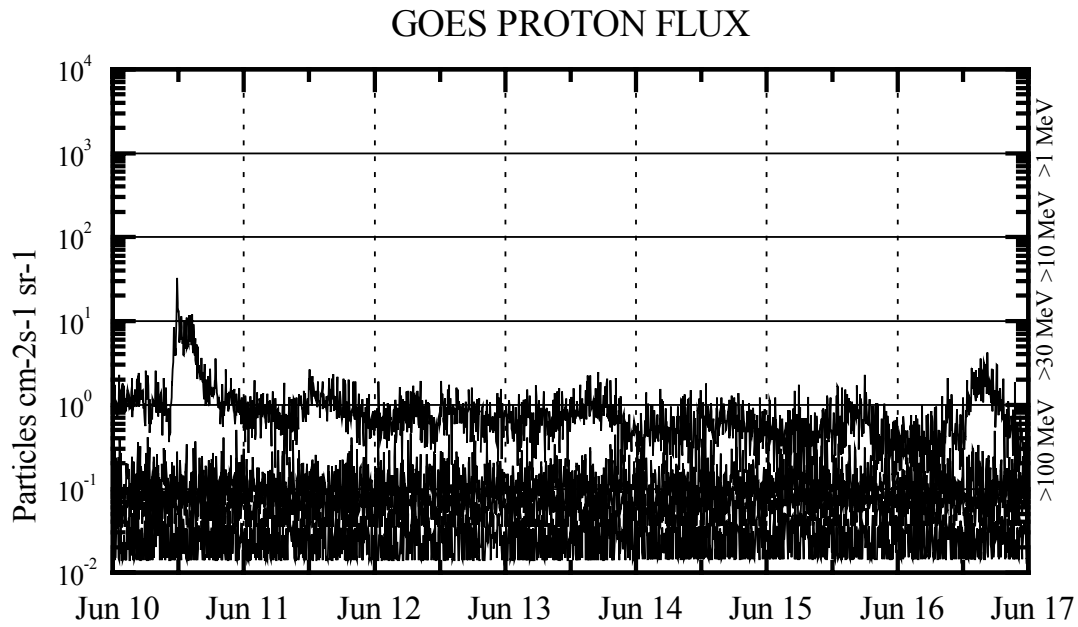
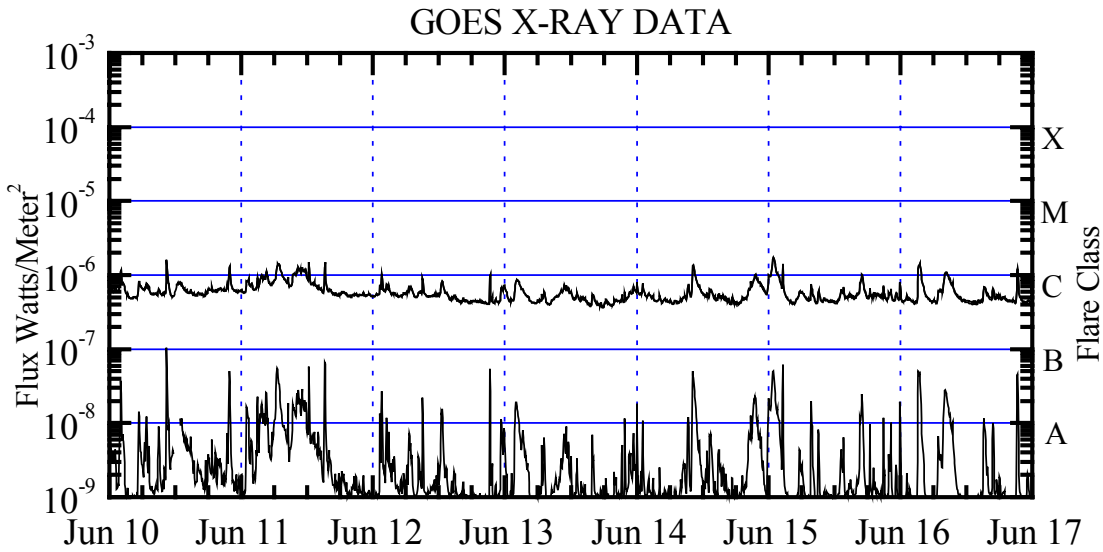
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.

