

Space Weather Highlights
03 - 09 June 2002

SWO PRF 1397
11 June 2002

Solar activity was low. Isolated B- and C-class X-ray flares occurred during the period from a few moderate- to large-sized sunspot groups, none of which were remarkably complex. However, Region 9973 (S16, L = 144, class/area Eki/960 on 29 May) was notable in that it was large and possessed moderate magnetic complexity. It produced isolated B- and C-class flares, but gradually decayed and simplified as the period progressed. Region 9979 (S29, L = 170, class/area Dao/170 on 01 June) was the source for a long-duration C3 X-ray flare, which peaked at 05/0945 UTC. The flare was associated with an Earth-directed coronal mass ejection (CME). Region 9979 gradually decayed during the period. Region 9987 (S16, L = 144, class/area Eki/240 on 09 June) produced isolated B-class subflares late in the period. It grew gradually during the latter half of the period and was moderate in size and complexity.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. A weak CME shock front passed ACE at approximately 08/1028 UTC associated with a relatively minor increase in velocity, IMF field intensity, and density. IMF Bz turned southward for a few hours following the shock with maximum deflections to minus 12 nT (GSM). Velocities, densities, and temperatures began to increase late on 09 June, possibly due to coronal hole effects.

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 mostly quiet to unsettled levels through 07 June. Activity increased to quiet to active levels on 08 June following a sudden impulse at 08/1141 UTC (16 nT, Boulder USGS magnetometer). The increase was associated with a weak CME passage. Quiet to active levels also occurred on 09 June, possibly due to weak coronal hole effects.

Space Weather Outlook
12 June - 08 July 2002

Solar activity is expected to be at low to moderate levels during the period. Isolated low-level M-class flares are possible through 28 June.

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.

Geomagnetic field activity is expected to be at quiet to unsettled levels for most of the period. However, active conditions are possible around 23 and 29 June, and 6 – 7 July.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
03 June	170	208	1130	B9.0	10	0	0	5	1	0	0	0
04 June	170	217	1030	B4.6	5	0	0	4	0	0	0	0
05 June	159	218	1190	B4.4	2	0	0	1	0	0	0	0
06 June	155	190	980	B4.0	1	0	0	1	1	0	0	0
07 June	158	190	1060	B3.9	1	0	0	0	0	0	0	0
08 June	155	181	1140	B4.3	2	0	0	3	0	0	0	0
09 June	157	180	1050	B3.9	1	0	0	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
	03 June	1.7E+5	1.3E+4	2.5E+3		3.8E+5
04 June	2.3E+5	1.2E+4	2.5E+3		5.9E+6	
05 June	1.4E+5	1.2E+4	2.6E+3		1.3E+7	
06 June	1.1E+5	1.2E+4	2.6E+3		2.9E+7	
07 June	1.6E+5	1.2E+4	2.6E+3		2.3E+7	
08 June	2.4E+5	1.2E+4	2.5E+3		4.8E+6	
09 June	1.8E+5	1.3E+4	2.6E+3		1.7E+6	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	03 June	8	3-2-2-1-2-1-2-3	12	3-3-3-3-3-1-2-2	12
04 June	13	2-3-4-2-3-2-2-3	21	4-4-4-3-5-3-1-2	17	3-3-4-3-4-3-3-3
05 June	5	3-2-1-1-1-0-2-1	7	3-3-2-2-1-1-1-1	10	3-2-2-2-3-3-2-2
06 June	6	2-1-2-2-1-1-1-3	4	1-1-1-3-0-1-1-1	10	2-2-2-3-3-3-3-3
07 June	6	1-2-2-1-2-2-1-2	4	4-0-0-0-0-0-1-1	9	1-2-2-2-3-3-3-3
08 June	12	1-1-1-2-3-2-4-4	11	1-1-1-2-4-3-3-3	15	2-1-1-3-4-4-3-4
09 June	9	2-3-2-1-1-2-3-3	16	3-4-4-4-2-2-2-2	15	3-3-3-3-3-3-4-3

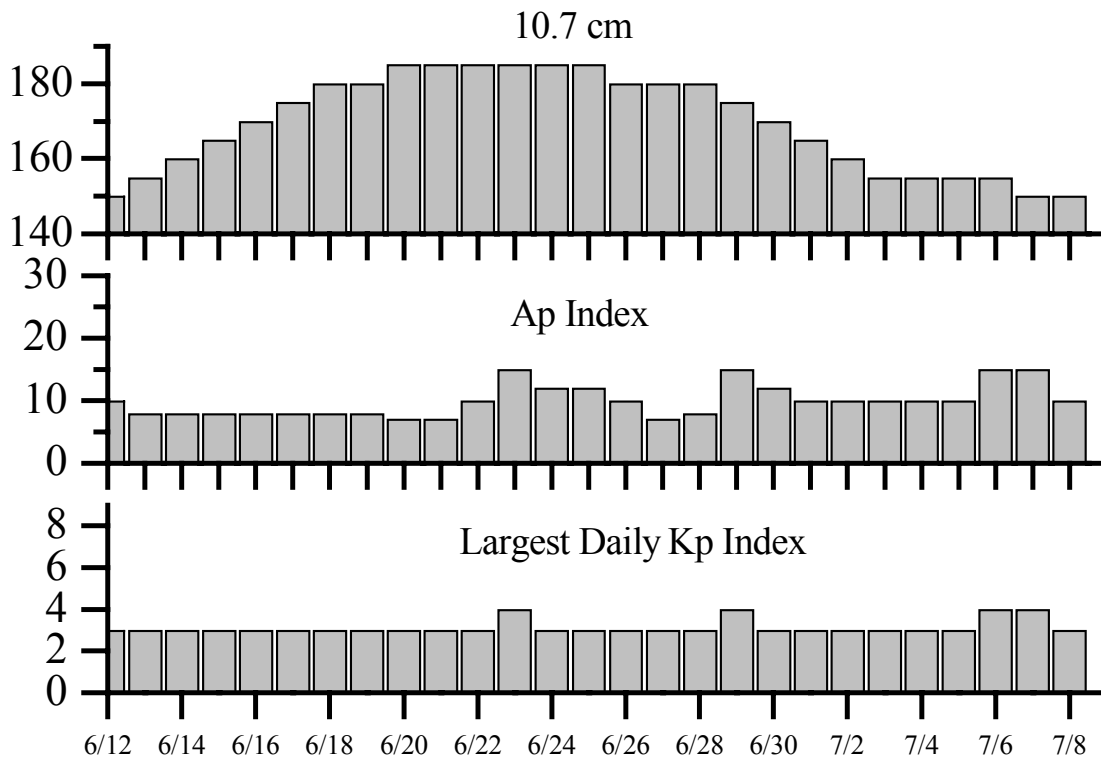


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
02 Jun 0037	4 - 245 MHz Radio Bursts	02 Jun
03 Jun 0059	3 - 245 MHz Radio Bursts	03 Jun
04 Jun 0526	WARNING: Geomagnetic K= 4	04 Jun 0530 - 1800
04 Jun 0531	ALERT: Geomagnetic K= 4	04 Jun 0530
05 Jun 0035	2 - 245 MHz Radio Bursts	04 Jun
05 Jun 0035	1 - 245 MHz Radio Noise Storm	04 Jun
05 Jun 0245	ALERT: Geomagnetic K= 4	05 Jun 0245
06 Jun 0029	2 - 245 MHz Radio Bursts	05 Jun
07 Jun 0015	1 - 245 MHz Radio Burst	06 Jun
08 Jun 0005	1 - 245 MHz Radio Burst	07 Jun
08 Jun 1106	WARNING: Geomagnetic Sudden Impulse	08 Jun 1115 - 1200
08 Jun 1154	SUMMARY: Geomagnetic Sudden Impulse	08 Jun 1141
08 Jun 1448	WARNING: Geomagnetic K= 4	08 Jun 1448 -2359
08 Jun 1450	ALERT: Geomagnetic K= 4	08 Jun 1449
09 Jun 0006	2 - 245 MHz Radio Bursts	08 Jun
09 Jun 0006	1 - 245 MHz Radio Noise Storm	08 Jun
09 Jun 0756	WARNING: Geomagnetic K= 4	09 Jun 0800 -1500
09 Jun 0823	ALERT: Geomagnetic K= 4	09 Jun 0815
09 Jun 2026	ALERT: Geomagnetic K= 4	09 Jun 2023



Twenty-seven Day Outlook



Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
12 Jun	150	10	3	26 Jun	180	10	3
13	155	8	3	27	180	7	3
14	160	8	3	28	180	8	3
15	165	8	3	29	175	15	4
16	170	8	3	30	170	12	3
17	175	8	3	01 Jul	165	10	3
18	180	8	3	02	160	10	3
19	180	8	3	03	155	10	3
20	185	7	3	04	155	10	3
21	185	7	3	05	155	10	3
22	185	10	3	06	155	15	4
23	185	7	3	07	150	15	4
24	185	8	3	08	150	10	3
25	185	15	4				



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		Rgn
	Begin	Max	End			Location	Lat CMD	
03 June	0506	0509	0511	C1.2				
	0649	0658	0702	C1.5				
	0725	0727	0735	C4.4	1f	N20E01	9974	
	0853	0857	0902	C1.0				
	B1036	U1036	A1048		Sf	S34W72	9977	
	1157	1202	1205	C1.0				
	1302	1305	1308	C1.4				
	1430	1434	1438	B9.3				
	1443	1443	1505	C3.7	Sf	S19W81	9977	
	1548	U1548	A1615		Sf	S13E06	9973	
	1657	1701	1703	C1.3				
	1713	1714	1721	C1.2	Sf	S21E21	9978	
	1818	1825	1829	B8.2				
	2013	2016	2021	B7.1				
	2110	2115	2120	C1.2				
2335	2339	2344	B9.9					
	2357	2359	0008		Sf	S19E22	9978	
04 June	0014	0017	0019	B8.4				
	1006	1009	1011	C1.2				
	1149	1158	1203	C1.2				
	1253	1253	1309	C1.9	Sf	N24W09	9975	
	1302	1303	1310		Sf	S18W09	9973	
	1613	1618	1628	C2.1	Sf	S21E07	9978	
	1808	1808	1814	C1.0	Sf	N22W17	9975	
05 June	0120	0124	0126	B7.1				
	0858	0945	1037	C3.4				
	2234	2235	2241	C1.4	Sf	S21W06	9978	
06 June	0228	0232	0235	B5.8				
	0533	0538	0543	B9.9				
	0938	0942	0945	B5.5				
	1625	1626	1628	B6.4	Sf	S17E29	9987	
	1635	1638	1640	B6.6				
	1701	1702	1721	C2.0	1f	N22W44	9975	



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
07 June	0308	0314	0319	B7.8			
	0744	0756	0814	B9.1			
	0941	0946	0949	C1.0			
08 June	B0848	0848	0854	C1.1	Sf	N25W61	9975
	1454	1457	1507		Sf	S18E64	9991
	1642	1645	1647	C1.1			
	2307	2309	2317		Sf	N25W71	9975
09 June	0927	1009	1058	C1.3			

Region Summary

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

Region 9970

26 May	N05E54	259	0180	07	Dao	006	B												
27 May	N05E41	259	0180	08	Dao	012	B												
28 May	N05E28	259	0170	09	Dao	011	B												
29 May	N06E14	260	0160	08	Dao	010	B												
30 May	N06E01	260	0120	08	Dso	008	B												
31 May	N06W13	260	0120	07	Dso	007	B												
01 Jun	N05W26	260	0090	07	Dso	005	B												1
02 Jun	N06W40	261	0070	07	Dso	002	B												
03 Jun	N06W53	261	0040	06	Dso	002	B												
04 Jun	N06W67	262	0040	07	Cso	003	B												
05 Jun	N06W80	262	0040	07	Dso	002	B												
																			0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 260

Region 9972

28 May	S21E56	231	0050	05	Cao	006	B												
29 May	S21E44	230	0090	07	Dao	009	B	1					1						
30 May	S21E31	230	0110	06	Dso	011	B	1					1						
31 May	S21E17	230	0100	06	Cao	011	B												
01 Jun	S21E04	230	0070	06	Dso	010	B												
02 Jun	S20W11	232	0030	03	Dso	004	B												
03 Jun	S21W23	231	0020	04	Cro	003	B												
04 Jun	S21W36	231	0000	01	Axx	001	A												
05 Jun	S21W49	231																	
06 Jun	S21W62	231																	
																			2 0 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 230



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares										
	Helio		Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
	(° Lat ° CMD)	Lon						C	M	X	S	1	2	3	4		
<i>Region 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										
								11	2	0	18	1	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 211

<i>Region 9974</i>																	
29 May	N18E58	216	0030	01	Hsx	001	A										
30 May	N18E45	216	0040	01	Hsx	001	A										
31 May	N18E31	216	0020	01	Hsx	001	A										
01 Jun	N19E19	215	0020	01	Hsx	001	A										
02 Jun	N18E06	215	0010	01	Hrx	002	A										
03 Jun	N15W09	217	0020	01	Hrx	002	A	1				1					
04 Jun	N14W23	218	0010	02	Hrx	002	A										
05 Jun	N14W35	217	0010	01	Axx	001	A										
06 Jun	N14W48	217															
								1	0	0	0	1	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 215



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares										
	Helio		Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
	(° Lat ° CMD)	Lon						C	M	X	S	1	2	3	4		
<i>Region 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										
								5	0	0	5	1	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 215

<i>Region 9976</i>																	
30 May	S10E01	260	0020	05	Bxo	006	B										
31 May	S10W13	260	0020	05	Cso	007	B										
01 Jun	S10W27	261	0010	04	Bxo	003	B										
02 Jun	S10W40	261															
03 Jun	S10W53	261															
04 Jun	S10W66	261															
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 260

<i>Region 9977</i>																	
31 May	S20W41	288	0020	03	Dso	004	B										
01 Jun	S20W54	288	0050	03	Cso	007	B	1			2						
02 Jun	S21W67	288	0090	06	Dso	008	B	2			3						
03 Jun	S20W79	287	0040	04	Cso	003	B	1			2						
								4	0	0	7	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 288



Region Summary - continued.

Date	Location		Sunspot Characteristics					Flares							
	Helio		Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
	(° Lat ° CMD)	Lon						C	M	X	S	1	2	3	4

Region 9978

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												
											3	0	0	6	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 188

Region 9979

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																	
											1	2	0	3	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 170

Region 9980

01 Jun	S29E08	226	0000	01	Axx	002	A												
02 Jun	S29W05	226	0010	01	Hsx	001	A												
03 Jun	S20W21	229	0010	03	Cso	003	B												
04 Jun	S26W33	228	0020	06	Cso	005	B												
05 Jun	S26W44	226	0010	01	Hsx	001	A												
06 Jun	S26W57	226																	
07 Jun	S26W70	226																	
08 Jun	S26W83	226																	
09 Jun	S26W96	226																	
											0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 226



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 9981

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

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 152

Region 9982

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					

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 147

Region 9983

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					

0 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 152



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 9984

03 Jun	N19E13	195	0010	02	Axx	002	A										
04 Jun	N19E00	195															
05 Jun	N20W11	193	0010	02	Axx	002	A										
06 Jun	N20W24	193															
07 Jun	N20W37	193															
08 Jun	N20W50	193															
09 Jun	N20W63	193															

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 195

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										

0 0 0 0 0 0 0 0

Still on Disk.

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										

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										

0 0 0 1 0 0 0 0

Still on Disk.

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															

0 0 0 0 0 0 0 0

Still on Disk.

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															

0 0 0 0 0 0 0 0

Still on Disk.

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										

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 136

Region 9991

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										

0 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 085



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 9992</i>														
08 Jun	S20E74	068	0010	01	Axx	001	A							
09 Jun	S20E60	068	0020	01	Axx	001	A							
								0	0	0	0	0	0	0
Still on Disk.														
Absolute heliographic longitude: 068														
<i>Region 9993</i>														
09 Jun	N06W20	148	0030	03	Cao	003	B							
								0	0	0	0	0	0	0
Still on Disk.														
Absolute heliographic longitude: 148														
<i>Region 9994</i>														
09 Jun	N10E59	069	0010	00	Axx	001	A							
								0	0	0	0	0	0	0
Still on Disk.														
Absolute heliographic longitude: 069														

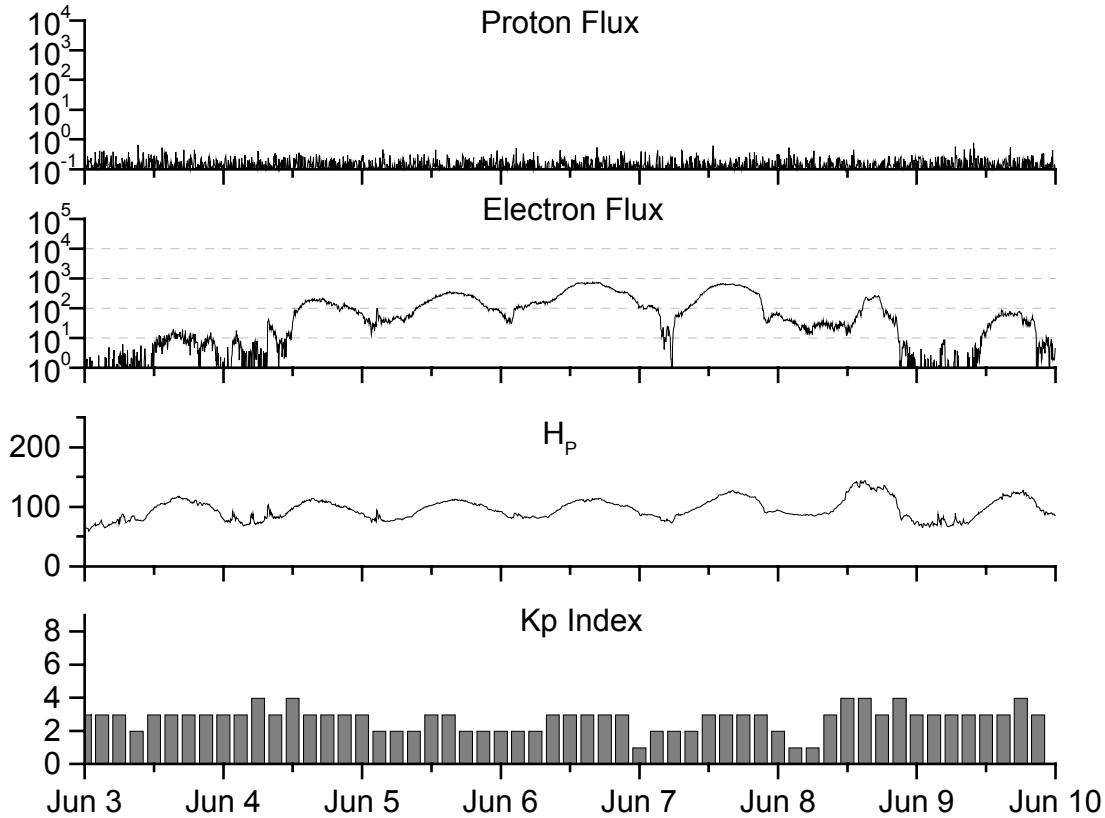


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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 03 June 2002

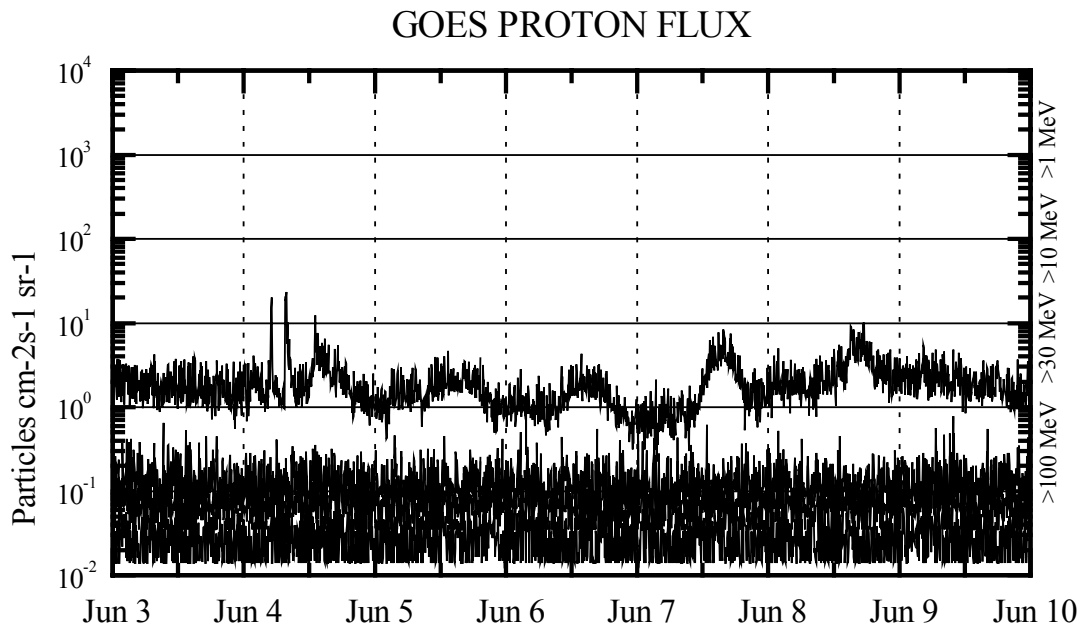
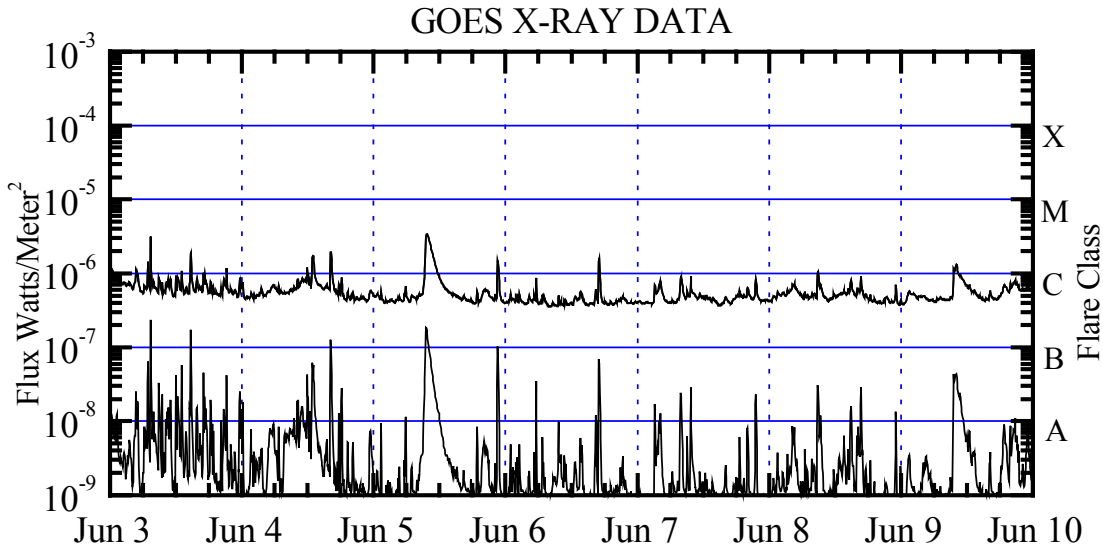
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.



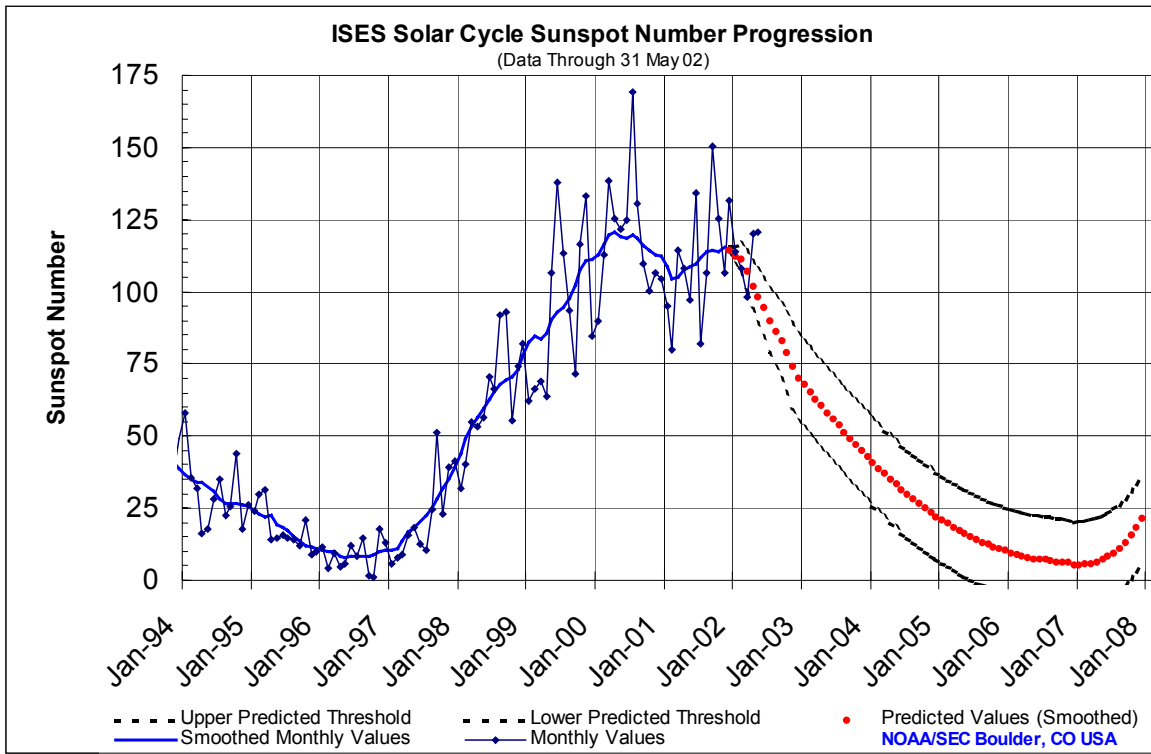


Weekly GOES Satellite X-ray and Proton Plots

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.

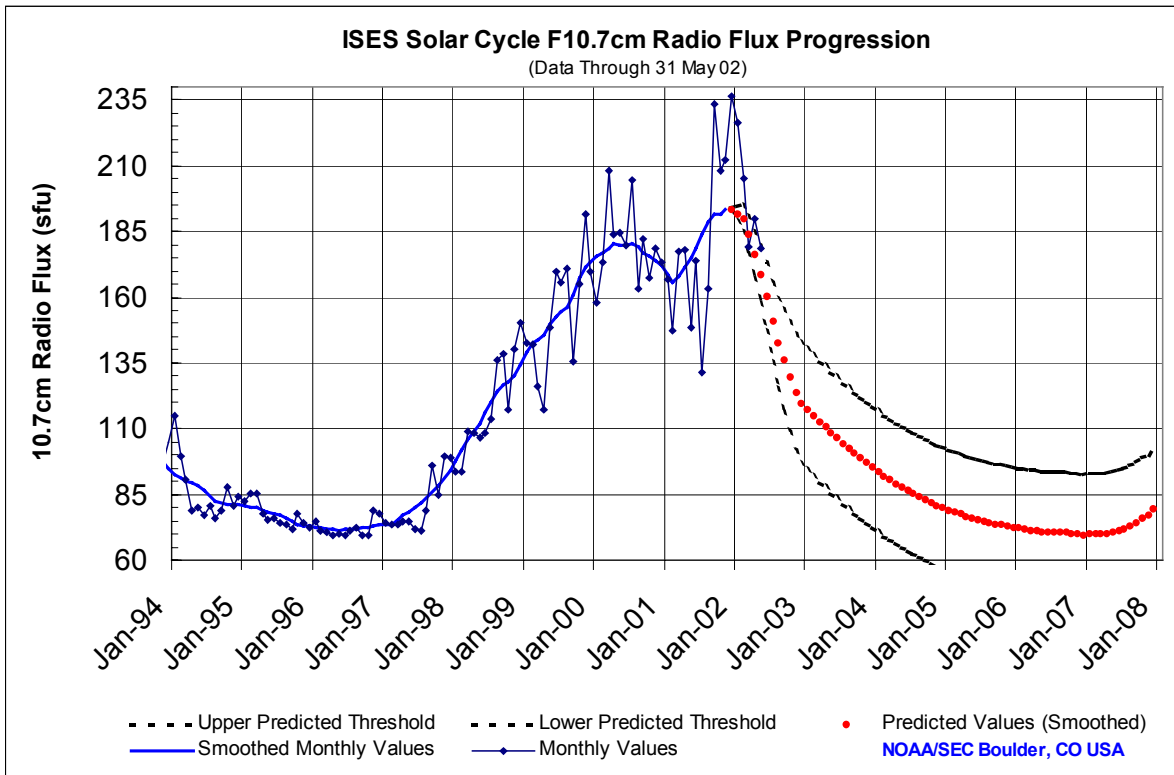




SEC Prediction of Smoothed Sunspot Number

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1998	44 (***)	49 (***)	53 (***)	57 (***)	59 (***)	63 (***)	66 (***)	68 (***)	70 (***)	71 (***)	73 (***)	78 (***)
1999	83 (***)	85 (***)	84 (***)	86 (***)	91 (***)	93 (***)	94 (***)	97 (***)	102 (***)	108 (***)	111 (***)	111 (***)
2000	113 (***)	117 (***)	120 (***)	121 (***)	119 (***)	119 (***)	120 (***)	119 (***)	116 (***)	114 (***)	113 (***)	112 (***)
2001	109 (***)	104 (***)	105 (***)	108 (***)	109 (***)	110 (***)	112 (***)	114 (***)	114 (***)	114 (***)	116 (***)	115 (1)
2002	112 (3)	111 (5)	107 (7)	102 (8)	98 (9)	95 (10)	90 (11)	86 (12)	83 (13)	79 (14)	74 (15)	70 (15)
2003	68 (15)	65 (15)	63 (15)	61 (15)	58 (15)	56 (15)	54 (15)	51 (15)	49 (15)	47 (15)	45 (15)	43 (15)
2004	41 (15)	39 (15)	37 (15)	35 (15)	33 (15)	31 (15)	30 (15)	28 (15)	27 (15)	25 (15)	24 (15)	22 (15)
2005	21 (15)	20 (15)	18 (15)	17 (15)	16 (15)	15 (15)	14 (15)	13 (15)	12 (15)	12 (15)	11 (15)	10 (15)
2006	10 (15)	9 (15)	8 (15)	8 (15)	8 (15)	7 (15)	7 (15)	7 (15)	7 (15)	6 (15)	6 (15)	5 (15)
2007	5 (15)	6 (15)	6 (15)	6 (15)	7 (15)	8 (15)	10 (15)	11 (15)	13 (15)	16 (15)	18 (15)	21 (15)





SEC Prediction of Smoothed F10.7cm Radio Flux

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1998	98 (***)	102 (***)	106 (***)	109 (***)	112 (***)	116 (***)	120 (***)	124 (***)	127 (***)	128 (***)	130 (***)	134 (***)
1999	139 (***)	143 (***)	144 (***)	146 (***)	150 (***)	153 (***)	154 (***)	156 (***)	161 (***)	167 (***)	172 (***)	173 (***)
2000	175 (***)	176 (***)	178 (***)	181 (***)	180 (***)	180 (***)	180 (***)	180 (***)	177 (***)	176 (***)	174 (***)	172 (***)
2001	169 (***)	166 (***)	168 (***)	172 (***)	175 (***)	179 (***)	184 (***)	189 (***)	191 (***)	192 (***)	194 (***)	193 (1)
2002	191 (3)	190 (5)	184 (7)	176 (9)	169 (11)	160 (13)	151 (15)	143 (17)	136 (19)	130 (21)	124 (22)	120 (23)
2003	117 (23)	115 (23)	113 (23)	111 (23)	109 (23)	107 (23)	104 (23)	103 (23)	101 (23)	99 (23)	97 (23)	95 (23)
2004	94 (23)	92 (23)	91 (23)	89 (23)	88 (23)	87 (23)	85 (23)	84 (23)	83 (23)	82 (23)	81 (23)	80 (23)
2005	79 (23)	78 (23)	78 (23)	77 (23)	76 (23)	75 (23)	75 (23)	74 (23)	74 (23)	73 (23)	73 (23)	73 (23)
2006	72 (23)	72 (23)	71 (23)	71 (23)	71 (23)	71 (23)	71 (23)	71 (23)	70 (23)	70 (23)	70 (23)	70 (23)
2007	70 (23)	70 (23)	70 (23)	70 (23)	71 (23)	71 (23)	72 (23)	73 (23)	74 (23)	76 (23)	77 (23)	79 (23)



ISES Solar Cycle Ap Progression

(Data Through 31 May 02)

