

Space Weather Highlights 02 - 08 September 2002

**SWO PRF 1410
10 September 2002**

Solar Activity ranged from low to moderate levels. Moderate activity was observed on 03 September, and again on 08 September, with low-level M-class flares. For flare times and magnitudes, please refer to the Energetic Events or Optical Flare lists. Low activity was observed for the rest of the summary period. The most significant event during the period was long duration C5/Sf flare from Region 102 (N09, L=019, class/area Hsx/50 on 02 September) on 05 September. Associated with this event was a disappearing solar filament, a Type II radio sweep, and a full halo CME as observed by SOHO/LASCO C2 imagery. This event was the only activity observed from Region 102. Region 105 (S07, L=299, class/area Fko/850 on 08 September) rotated onto the visible disk on 07 September as a large, beta-gamma spot group. Region 95 (N08, L=060, class/area Fki/750 on 03 September) was in a gradual decay phase during the summary period. On 06 September, Region 95 simplified to a beta magnetic configuration and at the close of the period had an area coverage of 160 millionths and an Fso spot class.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. A weak transient CME shock passage was detected by ACE at 03/1710 UTC, marked by an increase in solar wind velocity to near 390 km/s and a prolonged period of negative Bz. On 04 September solar wind velocity reached a peak value around 500 km/s then gradually decayed over the next three days. On 07 September a CME shock was observed by ACE at 07/1611 UTC with a 175 km/s increase in solar wind velocity to near 575 km/s and a 20 nT deflection in Bz to near -22 nT. Severe storming levels followed this shock impact.

A greater than 10 MeV proton event began on 07/0440 UTC, reached peak value of 208 pfu at 07/1650 UTC and ended at 08/0145 UTC. The proton event was associated with the long duration C5 flare mentioned above.

The greater than 2 MeV electron flux at geo-synchronous orbit was at normal to moderate levels for most of the period. Electron flux reached high levels on 06 September due to recurring coronal hole effects.

The geomagnetic field was at quiet to severe storm levels. Active to major storming conditions were observed on 04 September due to combined coronal hole effects and a weak transient. Late on 07 September and early on 08 September severe storming conditions occurred as a result of the CME from the long duration C5 event on 05 September. A 7 nT sudden impulse was observed at the Boulder magnetometer at 07/1638 UTC.

Space Weather Outlook 11 September - 07 October 2002

Solar activity is expected to be low to high. Activity is expected to be moderate to high early in the period, 11-21 September, due to Region 105. Low to moderate levels are expected for the remainder of the period.

A proton event is possible on 11-21 September due to activity from Region 105. No proton events are expected after Region 105 rotates beyond the west limb on 21

The greater than 2 MeV electron flux at geo-synchronous orbit may reach event threshold on 13-15 September due to coronal hole effects.

The geomagnetic field is expected to be at quiet to unsettled levels for most of the period. Active conditions are possible on 11-13 September due to a coronal hole.



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
02 September	174	227	1890	B9.4	8	0	0	1	0	0	0	0
03 September	171	266	1750	C1.3	7	1	0	4	0	0	0	0
04 September	171	215	1380	B9.7	13	0	0	10	0	0	0	0
05 September	175	225	1260	B6.4	8	0	0	6	0	0	0	0
06 September	178	189	990	B7.5	3	0	0	1	0	0	0	0
07 September	183	180	1060	B9.4	6	0	0	1	0	0	0	0
08 September	192	221	1620	B8.3	1	1	0	7	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day-sr)			Electron Fluence (electrons/cm ² -day-sr)		
	>1MeV	>10MeV	>100MeV	>6MeV	>2MeV	>4MeV
02 September	7.7E+4	1.1E+4	2.4E+3		1.4E+6	
03 September	1.0E+5	1.2E+4	2.5E+3		1.7E+6	
04 September	1.5E+5	1.2E+4	2.7E+3		6.8E+5	
05 September	1.3E+5	1.1E+4	2.5E+3		1.3E+7	
06 September	1.5E+6	3.0E+5	3.0E+3		3.9E+7	
07 September	1.0E+8	2.1E+6	3.2E+3		1.0E+7	
08 September	2.8E+7	3.0E+5	2.4E+3		7.5E+5	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	02 September	5	2-2-1-2-2-1-1-1	23	3-4-2-6-5-1-0-0	14
03 September	5	0-1-1-2-1-1-3-2	3	1-1-0-1-1-0-2-2	10	2-2-1-3-3-3-3-3
04 September	23	3-4-4-5-4-3-3-2	56	4-6-5-7-6-5-4-2	42	4-6-5-6-5-4-4-3
05 September	*	2-3-1-2-*-*2-2	21	3-2-3-5-4-3-1-5	10	3-3-2-2-3-2-3-2
06 September	5	1-2-2-2-2-1-1-1	20	2-2-5-4-3-5-2-1	10	2-3-3-3-3-2-3-2
07 September	16	2-3-2-2-4-4-4-4	66	1-3-3-3-5-8-7-5	45	3-3-3-3-3-7-7-6
08 September	19	6-4-2-1-1-1-3-3	19	5-5-3-0-1-2-3-3	26	6-5-3-2-2-2-4-4

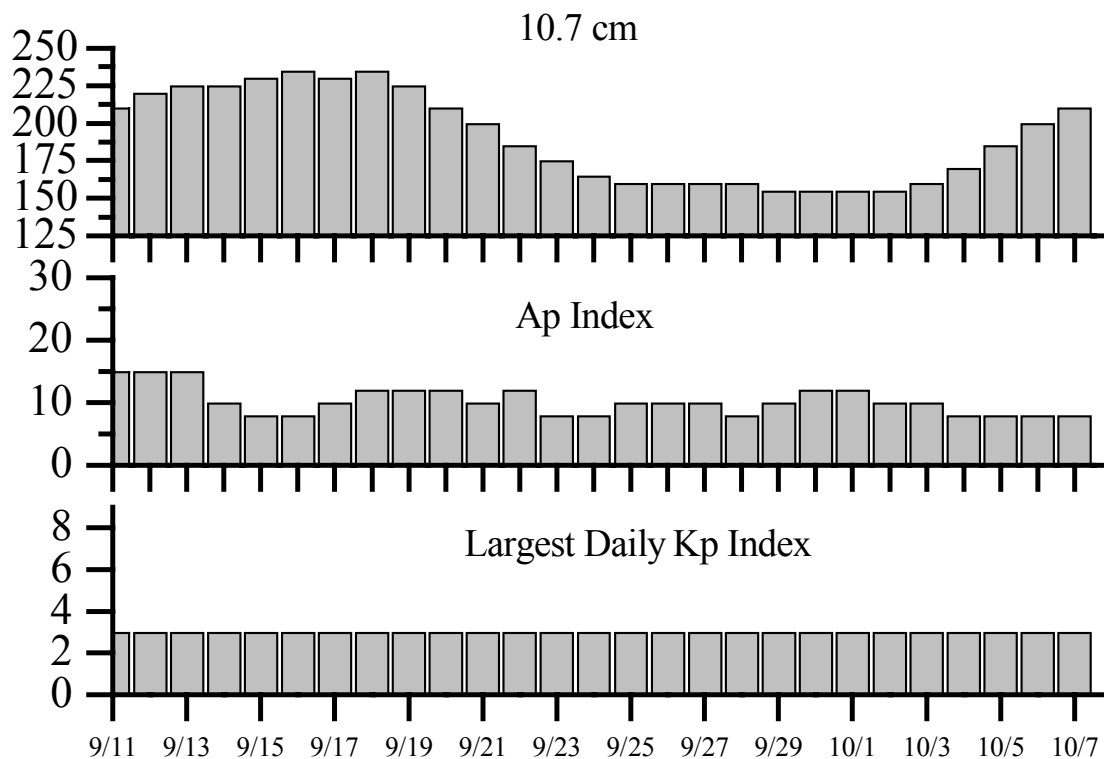


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
02 Sep 0027	ALERT: Type II Radio Emission	02 Sep 0012
02 Sep 0032	8 - 245 MHz Radio Bursts	01 Sep
02 Sep 0032	1 -245 MHz Radio Noise Storm	01 Sep
02 Sep 1140	ALERT: Geomagnetic K-index of 4	02 Sep 1135
02 Sep 1150	WARNING: Geomagnetic K= 4	02 Sep 1155 -1500
03 Sep 0022	5 - 245 MHz Radio Bursts	02 Sep
03 Sep 0022	2 -245 MHz Radio Noise Storms	02 Sep
03 Sep 2308	WARNING: Geomagnetic K= 4	03 Sep 2315 - 04 Sep 1500
04 Sep 0211	ALERT: Geomagnetic K=4	04 Sep 0210
04 Sep 0418	ALERT: Geomagnetic K= 5	04 Sep 0417
04 Sep 0530	WARNING: Geomagnetic K= 5	04 Sep 0530 -1500
04 Sep 0533	ALERT: Geomagnetic K= 5	04 Sep 0533
04 Sep 0542	ALERT: Geomagnetic K= 6	04 Sep 0540
04 Sep 1227	WATCH: Geomagnetic A \geq 30	04 Sep
04 Sep 1459	EXTENDED WARNING: Geomagnetic K= 4	03 Sep 2315 -05 Sep 1500
04 Sep 1500	EXTENDED WARNING: Geomagnetic K= 5	04 Sep 0530 - 2359
04 Sep 2131	CANCEL WARNING: Geomagnetic K= 5	04 Sep 0530
05 Sep 0055	3 - 245 MHz Radio Bursts	04 Sep
05 Sep 2333	ALERT: Type II Radio Emission	05 Sep 1635
06 Sep 0009	5 - 245 MHz Radio Bursts	05 Sep
06 Sep 1145	ALERT: Electron 2MeV Integral Flux > 1000pfu	06 Sep 1125
06 Sep 1233	ALERT: Type II Radio Emission	05 Sep 1635
06 Sep 1557	WARNING: Proton 10MeV Integral Flux above 10pfu	06 Sep 1600 -2359
07 Sep 0010	7 - 245 MHz Radio Bursts	06 Sep
07 Sep 0010	1 -245 MHz Radio Noise Storms	06 Sep
07 Sep 0458	ALERT: Proton Event 10MeV Integral Flux > 10pfu	07 Sep 0440
07 Sep 0459	WARNING: Proton 10MeV Integral Flux above 10pfu	07 Sep 0459 - 1500
07 Sep 1455	EXT WARNING: Proton 10MeV Integral Flux > 10pfu	07 Sep 0459 -08 Sep 1500
07 Sep 1457	WARNING: Geomagnetic K= 4	07 Sep 1500 -Sep 08 1500
07 Sep 1500	ALERT: Geomagnetic K= 4	07 Sep 1500
07 Sep 1643	SUMMARY: Geomagnetic Sudden Impulse	07 Sep 1638
07 Sep 1646	WARNING: Geomagnetic K= 5	07 Sep 1650 -Sep 07 2359
07 Sep 1652	ALERT: Proton Event 10MeV Integral Flux > 100pfu	07 Sep 1640
07 Sep 1655	ALERT: Geomagnetic K=5	07 Sep 1651
07 Sep 1705	ALERT: Geomagnetic K= 6	07 Sep 1700
07 Sep 1747	WARNING: Geomagnetic K \geq 7	07 Sep 1750 - 2100
07 Sep 1906	ALERT: Geomagnetic K= 6	07 Sep 1904
07 Sep 2042	WATCH: Geomagnetic A \geq 20	08 Sep
07 Sep 2104	SUMMARY: Proton Event 10MeV Integral Flux > 100pfu	07 Sep 1650
07 Sep 2334	EXTENDED WARNING: Geomagnetic K= 5	07 Sep 1650 -08 Sep 1500
08 Sep 0147	CONT ALERT: Proton Event 10MeV Integral Flux > 10pfu	07 Sep 0440
08 Sep 0156	SUMMARY: 10cm Radio Burst	08 Sep 0139
08 Sep 158	ALERT: Geomagnetic K= 6	08 Sep 0155
08 Sep 159	WARNING: Geomagnetic K= 6	08 Sep 0159 -08 Sep 1500
08 Sep 212	ALERT: Type II Radio Emission	08 Sep 0145
08 Sep 1544	SUMMARY: Proton Event 10MeV Integral Flux > 10pfu	07 Sep 1650



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
11 Sep	210	15	3	25 Sep	160	10	3
12	220	15	3	26	160	10	3
13	225	15	3	27	160	10	3
14	225	10	3	28	160	8	3
15	230	8	3	29	155	10	3
16	235	8	3	30	155	12	3
17	230	10	3	01 Oct	155	12	3
18	235	12	3	02	155	10	3
19	225	12	3	03	160	10	3
20	210	12	3	04	170	8	3
21	200	10	3	05	185	8	3
22	185	12	3	06	200	8	3
23	175	8	3	07	210	8	3
24	165	8	3				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	1/2 Max	Class	Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
03 Sep	0021	0054	0101	M1.0	.012							
08 Sep	0135	0143	0153	M1.5	.011	Sf	S11E76	105	1600	220	2	

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical Location Lat CMD	Rgn
	Begin	Max	End				
02 Sep	0006	0008	0010	C2.0			
	0244	0248	0250	C2.3			
	0713	0717	0719	C1.9			
	0905	0911	0933	C1.9			
	0955	1014	1024	C2.0			
	1203	1203	1212	C1.6	Sf	S17E21	0094
	1949	2036	2046	C1.2			
	2112	2115	2119	C1.0			
03 Sep	0021	0054	0101	M1.0			
	0203	0228	0246	C2.3			
	0251	0259	0308	C2.6			
	0741	0745	0748	C2.6			
	1002	1005	1008	C1.5			
	1123	1125	1143	C1.4	Sf	N13E03	0097
	1150	1150	1154	C1.4	Sf	N13W01	0097
	1244	1247	1250	C1.5			
04 Sep	1502	1503	1507	C1.5	Sf	N14E76	
	1756	1807	1820	C1.3			
	2206	2206	2211	C1.3	Sf	N06E03	0095
	0323	0327	0331	C1.9			
	0335	0339	0342	C1.7			
	0530	0533	0539	C1.0			
	0542	0542	0545	C1.5	Sf	N04E10	0095
	0625	0625	0631	C2.3	Sf	S17E22	0096
	0740	0743	0746	C2.0			
	1030	1030	1037	C1.6	Sf	S17E21	0096
	1352	1353	1355	C1.6	Sf	S16E20	0096
	1416	1416	1425	C1.2	Sf	S17W11	0094
	1452	1455	1502	C2.5	Sf	S16E18	0096
	1529	1532	1539	C1.6	Sf	N08E05	0095
	1530	1530	1533	C1.6	Sf	N14E64	0103
	1649	1652	1655	C1.6	Sf	N08E04	0095
05 Sep	1701	1701	1709	C1.2	Sf	N08E04	0095
	1804	1807	1810	C1.1			
	0012	0012	0016	C1.2	Sf	N07E00	0095
	0225	0229	0236	C1.6			
	B0456	U0456	A0506		Sf	S13E02	0096



Flare List - continued.

Date	Time			X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
05 Sep	0547	0551	0606	C2.0			
	0806	0810	0814	C1.6			
	1130	1134	1139	C1.2			
	1237	1240	1305	C5.1	Sf	S15E07	0096
	1631	1645	1733	C5.2	Sf	N09E28	0102
	1747	1748	1753		Sf	N13E26	0102
	2042	2043	A2117	C8.6	Sf	S16E03	0096
06 Sep	1216	1225	1236	C2.0			
	1623	1628	1631	C9.2			
	1636	1644	1650	C5.3			
	2324	2327	2330		Sf	N12E70	0107
07 Sep	0113	0152	0158	C4.6			
	0439	0450	0456	C1.6			
	1051	1057	1104	C1.7			
	1458	1502	1506	C1.3			
	1619	1625	1634	C1.6			
	1713	1714	1718		Sf	N12W52	097
	1735	1747	1754	C5.4			
08 Sep	0143	0144	0148	M1.5	Sf	S11E76	0105
	0240	0242	0251		Sf	N15E12	0103
	0253	0258	0314		Sf	N05W14	0101
	1419	1453	1504	C4.0	Sf	N12E76	0107
	1600	1605	1607		Sf	N12E74	0107
	1819	1822	1827		Sf	S17W37	0096
	2037	2039	2041		Sf	N12E72	0107



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 87</i>																	
22 Aug	S07E74	155	0170	04	Cho	004	B	1	1		2	1					
23 Aug	S07E60	156	0450	07	Dko	010	B	1	1		5		2				
24 Aug	S07E47	156	0330	06	Dki	019	Bg		1		1	1					
25 Aug	S07E34	156	0410	06	Dki	015	Bg										
26 Aug	S08E21	155	0390	05	Dko	009	B										
27 Aug	S08E06	157	0420	06	Dko	019	B					1					
28 Aug	S08W07	157	0450	06	Dkc	013	Bgd										
29 Aug	S08W20	157	0250	08	Dai	026	Bgd					3					
30 Aug	S08W33	157	0230	08	Dkc	029	Bg					3					
31 Aug	S08W47	157	0300	07	Dai	023	Bg										
01 Sep	S08W61	158	0190	07	Cso	017	B	1				1					
02 Sep	S08W74	158	0180	05	Cso	005	B										
03 Sep	S08W86	157	0060	02	Hax	001	A										
								3	3	0	16	2	2	0	0		

Crossed West Limb.

Absolute heliographic longitude: 157

Region 90

26 Aug	S03E48	128	0010	01	Axx	001	A										
27 Aug	S04E33	130	0020	01	Hrx	002	A										
28 Aug	S04E20	130	0020	04	Cso	003	B		1		2						
29 Aug	S04E07	130	0050	07	Dso	015	B					1					
30 Aug	S04W06	130	0070	06	Dao	013	B										
31 Aug	S04W20	130	0060	07	Dao	008	B										
01 Sep	S06W36	133	0050	06	Cso	006	B										
02 Sep	S06W51	135	0030	04	Cso	004	B										
03 Sep	S05W67	138	0090	01	Hsx	001	A										
04 Sep	S04W80	138	0040	01	Hsx	001	A										
								0	1	0	3	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 130



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 91

27 Aug N06E37	126	0010	02	Axx	003	A												
28 Aug N06E24	126																	
29 Aug N06E11	126																	
30 Aug N06W02	126																	
31 Aug N06W15	126																	
01 Sep N06W28	126																	
02 Sep N06W41	126																	
03 Sep N06W54	126																	
04 Sep N06W67	126																	
05 Sep N06W80	126																	
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 126

Region 92

27 Aug S19E04	159	0010	01	Axx	002	A												
28 Aug S19W09	159	0020	01	Hsx	002	A												
29 Aug S19W22	159	0040	05	Dso	005	B												
30 Aug S19W35	159	0030	04	Bxo	003	B	1				1							
31 Aug S19W48	159																	
01 Sep S19W61	159																	
02 Sep S17W74	159																	
03 Sep S17W87	159																	
										1	0	0	1	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 159

Region 93

29 Aug S16E13	124	0010	01	Hrx	002	A												
30 Aug S16E00	124																	
31 Aug S16W13	124																	
01 Sep S16W26	124																	
02 Sep S16W39	124																	
03 Sep S16W52	124																	
04 Sep S16W65	124																	
05 Sep S16W78	124																	
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 124



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 94</i>																		
29 Aug	S17E67	070	0040	06	Cso	003	B					3						
30 Aug	S17E54	070	0160	06	Dso	009	B											
31 Aug	S17E40	070	0200	06	Dso	005	B											
01 Sep	S18E27	070	0170	07	Dao	009	B											
02 Sep	S18E13	071	0160	06	Dho	008	B	1				1						
03 Sep	S18E01	070	0140	07	Cho	005	B											
04 Sep	S18W14	072	0130	06	Cso	002	B	1				1						
05 Sep	S19W27	072	0120	05	Cao	006	B											
06 Sep	S19W41	072	0110	05	Cso	005	B											
07 Sep	S19W55	073	0110	03	Hsx	001	A											
08 Sep	S18W69	074	0110	02	Hsx	001	A											
								2	0	0	5	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 70

<i>Region 95</i>																		
29 Aug	N07E76	061	0180	12	Eao	011	B	1	1		4	1						
30 Aug	N07E65	059	0450	17	Fki	024	Bg	2		1	10							
31 Aug	N07E51	059	0810	20	Fkc	028	Bgd	4			4							
01 Sep	N08E38	059	0730	21	Fki	034	Bg				1							
02 Sep	N08E24	060	0840	20	Fki	053	Bg											
03 Sep	N08E11	060	0750	22	Fki	064	Bg				1							
04 Sep	N08W03	061	0550	20	Fkc	039	Bg	3			4							
05 Sep	N08W17	062	0500	20	Fki	046	Bg	1			1							
06 Sep	N08W31	062	0360	20	Fki	033	B											
07 Sep	N07W43	061	0210	20	Fao	015	B											
08 Sep	N08W56	061	0160	16	Fso	011	B											
								11	1	1	25	1	0	0	0			

Still on Disk.

Absolute heliographic longitude: 61



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

Region 96

30 Aug	S14E75	049	0080	02	Hax	001	A											
31 Aug	S14E62	049	0140	07	Dao	003	B						1					
01 Sep	S15E50	047	0140	07	Dso	004	B											
02 Sep	S15E38	046	0170	10	Dso	010	B											
03 Sep	S14E25	046	0120	08	Dso	017	B											
04 Sep	S16E13	045	0160	10	Dai	020	Bg	4					4					
05 Sep	S16W02	047	0220	11	Eai	022	B	2					3					
06 Sep	S16W15	046	0160	13	Eai	022	B											
07 Sep	S16W30	048	0070	11	Eso	011	B											
08 Sep	S16W44	049	0080	11	Eao	014	B						1					
								6	0	0	9	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 47

Region 97

31 Aug	N13E36	074	0020	05	Dro	003	B											
01 Sep	N10E21	076	0030	06	Dso	008	B											
02 Sep	N13E08	076	0110	08	Dai	019	B											
03 Sep	N12W06	077	0070	08	Dao	019	B	1					2					
04 Sep	N13W19	077	0080	08	Dao	015	B											
05 Sep	N12W34	079	0110	08	Dao	013	B											
06 Sep	N12W47	078	0050	08	Dso	007	B											
07 Sep	N12W62	080	0040	07	Cso	004	B						1					
08 Sep	N13W72	077	0030	05	Cso	002	B											
								1	0	0	3	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 77

Region 98

31 Aug	S10E76	034	0030	01	Axx	002	A											
01 Sep	S12E65	032	0030	01	Hsx	001	A											
02 Sep	S09E51	033	0030	02	Cro	002	B											
03 Sep	S10E38	033	0040	02	Axx	003	A											
04 Sep	S10E25	033	0020	04	Cao	004	B											
05 Sep	S10E11	034	0010	03	Bxo	002	B											
06 Sep	S10W02	034																
07 Sep	S10W15	034																
08 Sep	S10W28	034																
								0	0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 034



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 102

02 Sep	N09E65	019	0050	01	Hsx	001	A										
03 Sep	N08E53	018	0040	01	Hsx	002	A										
04 Sep	N08E39	019	0020	01	Hax	001	A										
05 Sep	N08E26	019	0010	01	Hsx	001	A	1				2					
06 Sep	N08E13	019															
07 Sep	N08E00	019															
08 Sep	N08W13	019															
									1	0	0	2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 019

Region 103

03 Sep	N15E73	358	0130	06	Dai	009	B										
04 Sep	N14E60	358	0110	09	Dao	008	B					1					
05 Sep	N15E46	359	0120	09	Dao	020	B										
06 Sep	N15E31	000	0140	08	Dao	020	B										
07 Sep	N15E20	358	0180	09	Dao	025	B										
08 Sep	N16E06	359	0200	09	Dai	027	B					1					
									0	0	0	2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 359

Region 104

07 Sep	N11E59	319	0030	01	Hsx	001	A										
08 Sep	N10E44	321	0030	01	Hsx	001	A										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 321

Region 105

07 Sep	S06E77	301	0290	10	Dko	004	B										
08 Sep	S07E66	299	0850	22	Fko	025	Bg		1			1					
									0	1	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 299



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 106

08 Sep	N28E50	315	0010	04	Bxo	003	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 315

Region 107

08 Sep	N11E70	295	0060	08	Cso	005	B	1			3				
								1	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 295

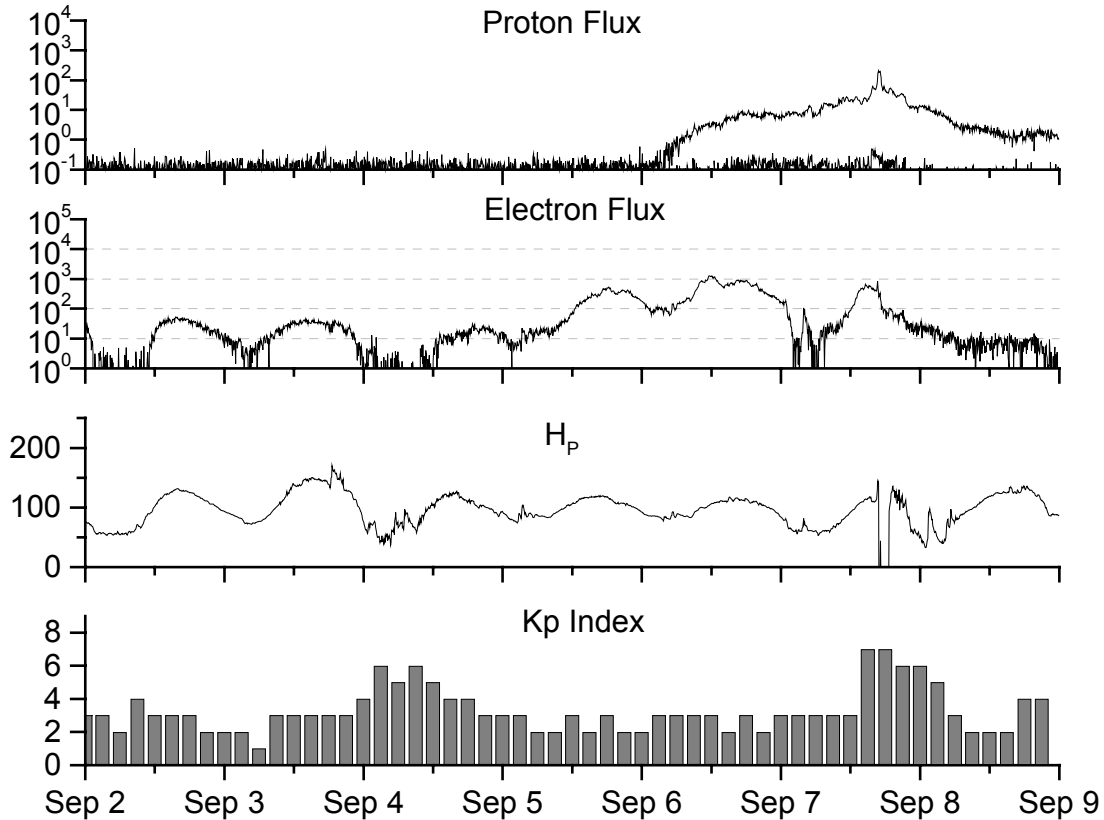


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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									
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	184.5	114.7	236.6	193.8	08	12.0
2002									
January	189.0	113.9	0.60	184.8	113.5	226.4	194.6	07	12.0
February	194.5	108.0	0.56	188.6	114.7	205.1	197.2	09	12.2
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	
June	146.0	88.5	0.61			148.8		11	
July	183.5	99.9	0.54			174.5		13	
August	191.0	116.4	0.61			184.0		16	

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 02 September 2002

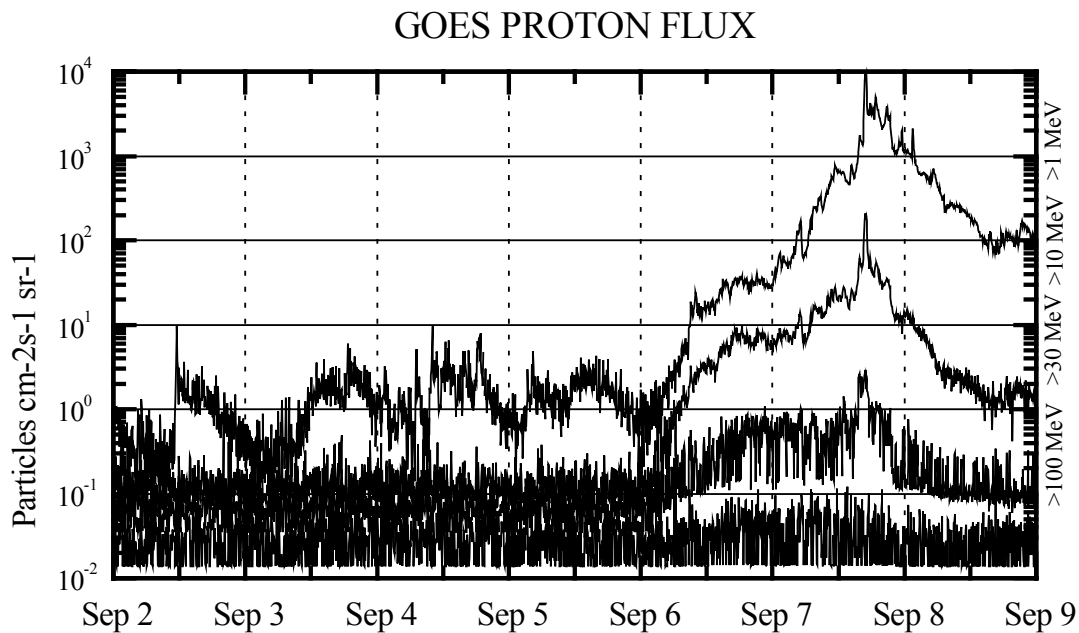
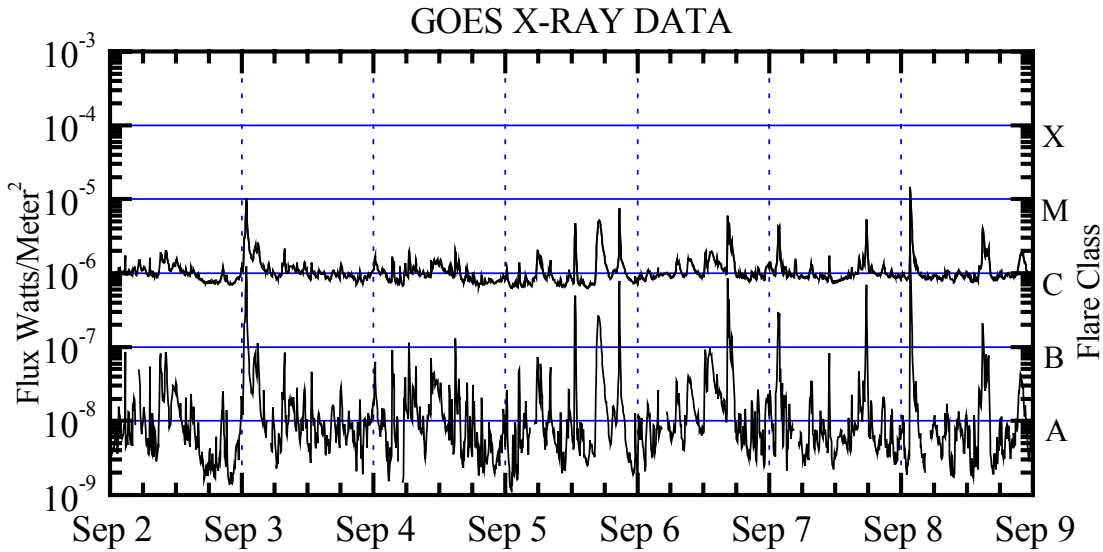
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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.



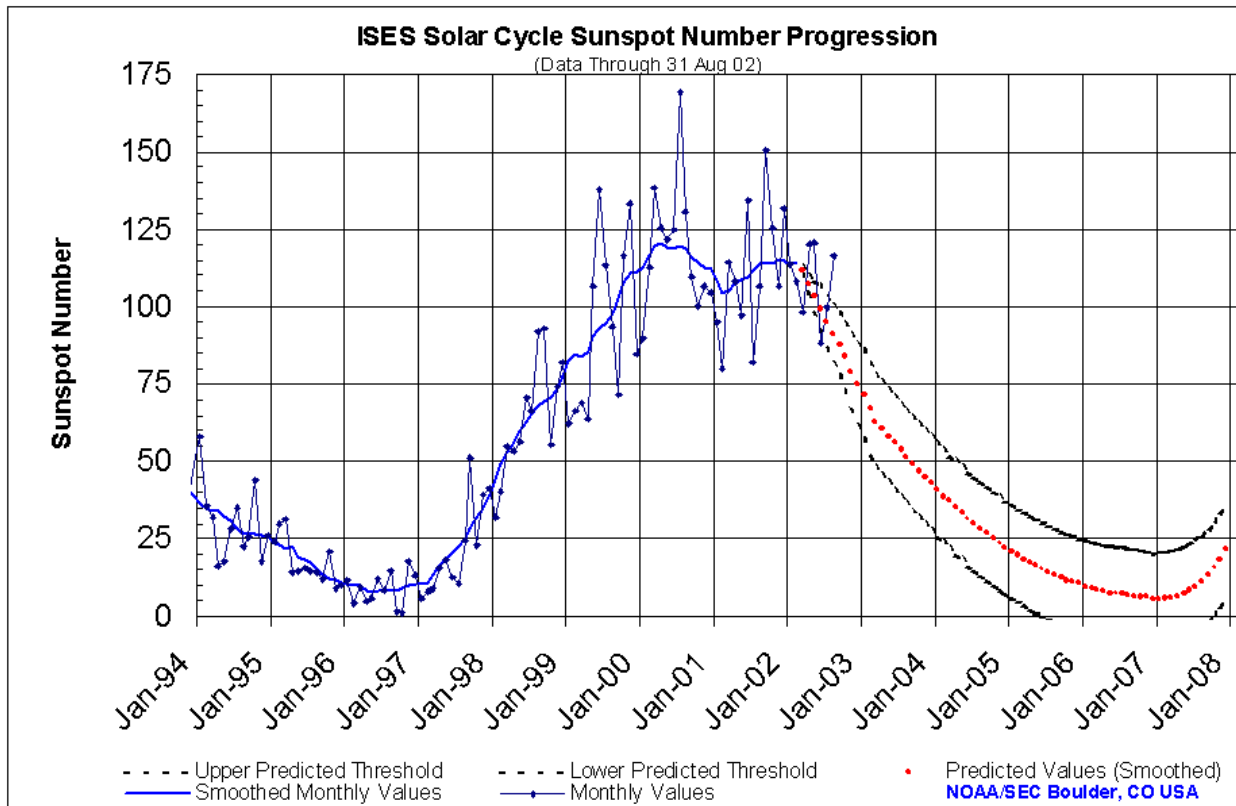


Weekly GOES Satellite X-ray and Proton Plots

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.

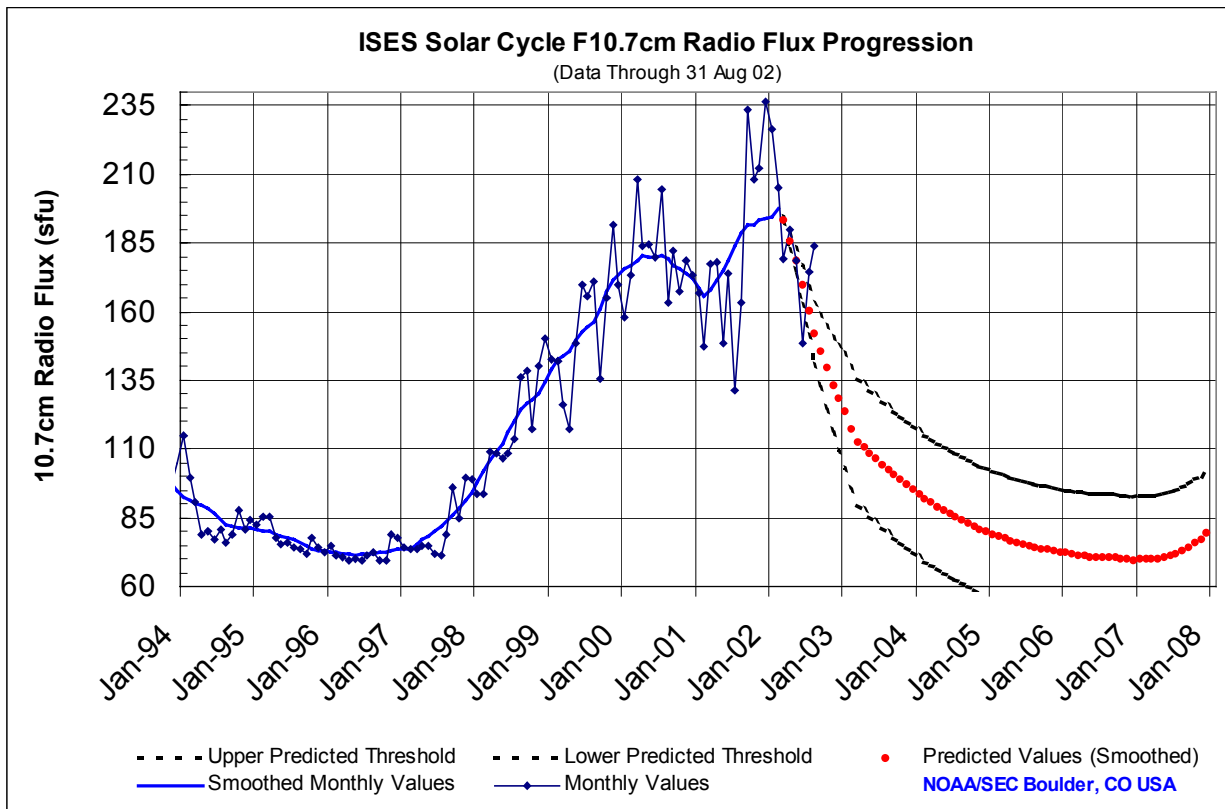




SEC Prediction of Smoothed Sunspot Number

	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
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
2002	114	115	112	107	103	99	95	91	88	84	79	75
	(***)	(***)	(1)	(3)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2003	72	67	63	61	58	56	54	51	49	47	45	43
	(14)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)
2004	41	39	37	35	33	31	30	28	27	25	24	22
	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)
2005	21	20	18	17	16	15	14	13	12	12	11	10
	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)
2006	10	9	8	8	8	7	7	7	7	6	6	5
	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)
2007	5	6	6	6	7	8	10	11	13	16	18	21
	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)





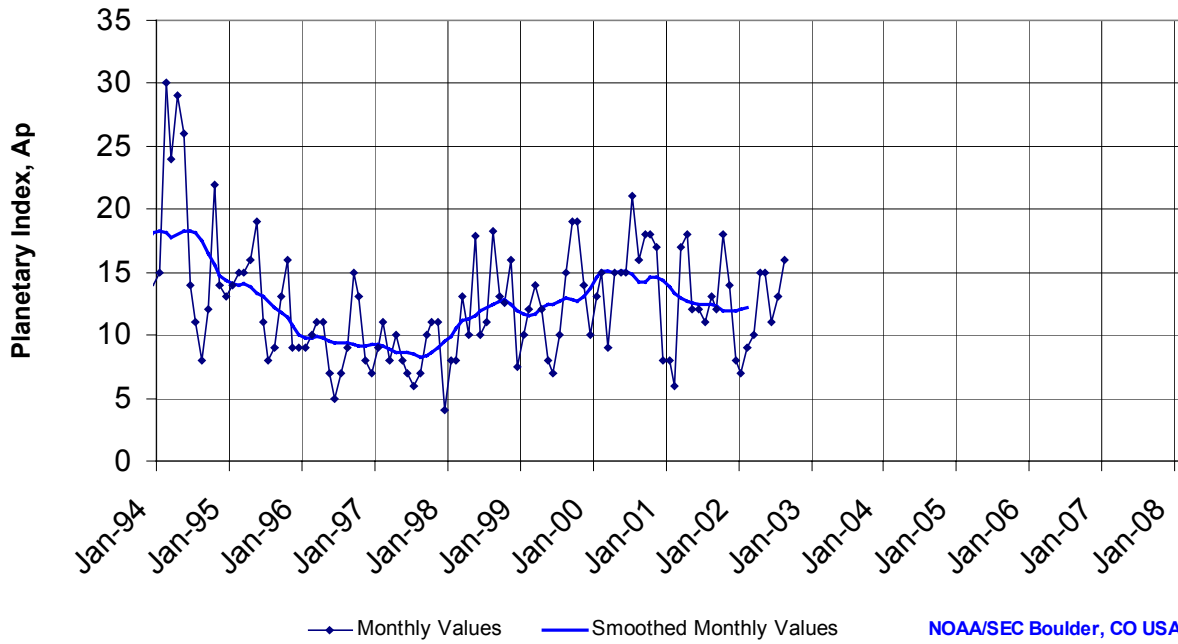
SEC Prediction of Smoothed F10.7cm Radio Flux

	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	194
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
2002	195	197	194	186	178	170	160	152	146	139	133	129
	(***)	(***)	(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)
2003	124	118	113	111	109	107	104	103	101	99	97	95
	(21)	(22)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)
2004	94	92	91	89	88	87	85	84	83	82	81	80
	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)
2005	79	78	78	77	76	75	75	74	74	73	73	73
	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)
2006	72	72	71	71	71	71	71	71	70	70	70	70
	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)
2007	70	70	70	70	71	71	72	73	74	76	77	79
	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)	(23)



ISES Solar Cycle Ap Progression

(Data Through 31 Aug 02)



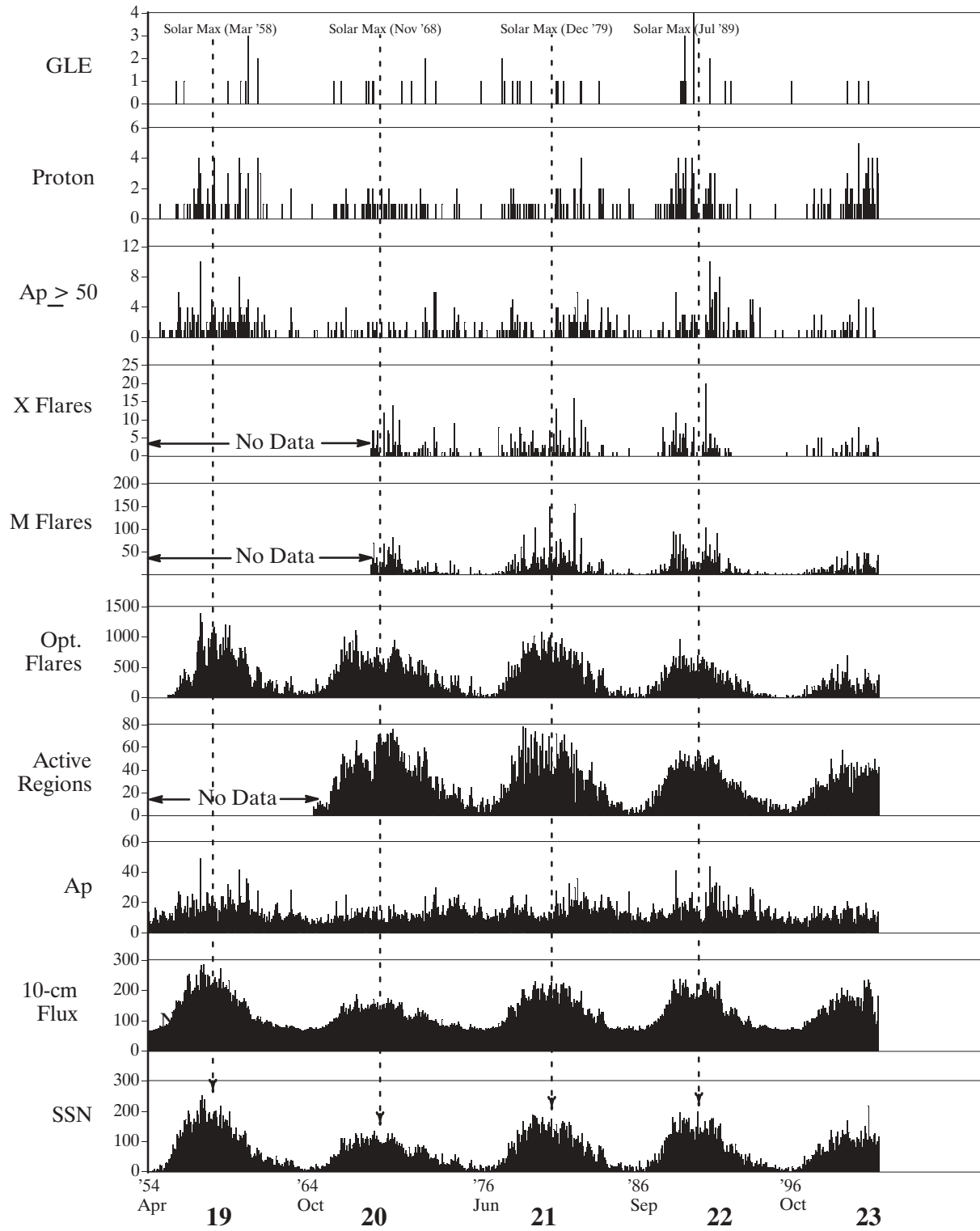


Space
Environment
Center

Solar-Terrestrial Indices

Monthly Values

August 2002 Month 71



Solar Cycle

K. Tegnell