Space Weather Highlights **SWO PRF 1305**
28 August – 03 September 2000 **06 September 2000**

Solar activity was at low levels during the period. Isolated to occasional C-class subflares occurred during much of the period from a number of mostly small, simply-structured sunspot groups. The largest event was a C9/1N at 01/1820 UTC from Region 9140 (N11, L = 079, class/area Dao/130 on 01 September). Region 9149 (N14, L = 356, class/area Eai/240 on 03 September) was the largest region on the disk at the end of the period. However, this region has shown no significant changes and has produced only isolated C-class subflares. Region 9154 (S21, L = 328, class/area Bxo/020 on 03 September) was in a growth phase at the end of the period and produced C-class subflares. The remaining regions were mostly small and stable at the end of the period.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. Velocity was moderately high and density was low for most of the period. These conditions were consistent with the high-speed coronal hole stream that was the dominant solar wind event during the period.

There were no proton events detected at geosynchronous orbit during the period.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels (greater than 1000 pfu) during the period 30 August to 02 September. The greater than 2 MeV electron flux was at normal levels for the rest of the period.

The geomagnetic field was at quiet or unsettled to active levels during most of the period. Major storm conditions occurred on 29 August and a brief period of minor storming occurred on 02 September. These conditions were caused by a high-speed, positive-polarity, coronal hole stream. Geomagnetic activity declined to quiet to unsettled on the last day of the period.

Space Weather Outlook
06 September - 02 October

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

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to high levels during 07 September - 09 September. Otherwise, normal to moderate levels are expected.

Geomagnetic field activity is expected to be at unsettled to minor storm levels, with possible major storming during 07 - 08 September due to a 32-degree filament eruption (last seen near N13 W38) on 04/0500 - 0600 UTC. Quiet to unsettled levels are expected during the remainder of the period, barring an Earth-directed CME.

Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background	Flares: X-ray Flux C	M	X	Flares: Optical S	1	2	3	4
28 August	160	165	1040	B8.8	4	0	0	13	1	0	0	0
29 August	163	175	1130	B7.1	3	0	0	8	0	0	0	0
30 August	165	187	990	C1.7	4	0	0	2	0	0	0	0
31 August	163	214	970	B5.2	1	0	0	5	0	0	0	0
01 September	158	195	910	B4.5	3	0	0	2	1	0	0	0
02 September	154	177	760	B6.3	1	0	0	0	0	0	0	0
03 September	154	181	570	B4.6	3	0	0	2	1	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm^2-day-sr) >1MeV	>10MeV	>100MeV	Electron Fluence (electrons/cm^2-day-sr) >.6MeV	>2MeV	>4MeV
28 August	2.8E+5	1.0E+4	2.8E+3		3.3E+5	
29 August	5.0E+5	1.0E+4	2.5E+3		1.8E+7	
30 August	5.2E+5	1.0E+4	2.6E+3		1.0E+8	
31 August	2.4E+5	1.0E+4	2.7E+3		1.2E+8	
01 September	1.1E+6	1.0E+4	2.8E+3		3.1E+8	
02 September	5.0E+5	9.9E+3	2.2E+3		4.3E+7	
03 September	1.5E+5	9.3E+3	2.1E+3		2.7E+7	

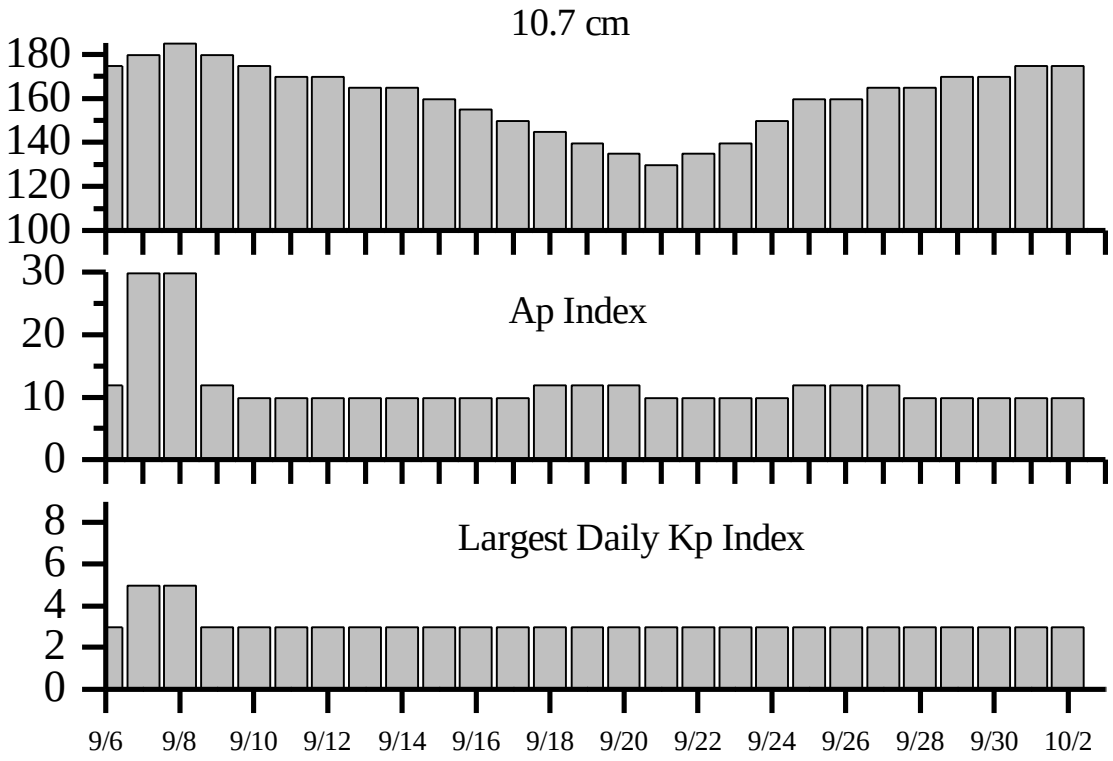
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg A	K-indices	High Latitude College A	K-indices	Estimated Planetary A	K-indices
28 August	17	3-1-2-3-4-4-3-4	36	1-1-2-5-5-6-6-3	21	2-2-2-4-4-4-4-5
29 August	21	5-4-4-3-3-3-3-2	58	4-5-7-6-4-6-5-3	31	5-5-5-4-4-4-4-3
30 August	12	4-3-2-2-2-2-2-3	21	3-2-3-6-4-2-2-2	13	3-3-3-3-3-3-2-3
31 August	12	3-3-2-3-3-2-2-3	26	3-2-3-6-5-4-2-2	15	4-3-3-4-3-3-3-3
01 September	12	3-2-4-3-3-1-2-2	29	3-3-6-6-3-2-3-2	17	3-3-4-4-3-3-3-3
02 September	18	4-4-4-3-4-2-1-2	40	4-4-6-6-5-5-1-2	23	4-3-4-5-4-3-3-3
03 September	6	1-3-1-1-1-1-2-2	5	1-3-0-0-1-2-2-2	9	2-3-1-2-2-2-3-3

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
28 Aug 1308	K = 4 Warning	28 /1315 - 29 /1500 Aug
28 Aug 1500	K = 4 Observed	28 Aug 12 -15
28 Aug 1755	Type II Radio Emission	28 Aug 1713
29 August 0037	1- 245 MHz Bursts	28 Aug
29 Aug 0153	K= 5 Warning	29 Aug 02 - 15
29 Aug 0300	A = 20 Observed	29 Aug 0300
29 Aug 0300	K= 5 Observed	29 Aug from 00- 03
29 Aug 0900	A = 30 Observed	29 Aug 0900
29 Aug 0925	K= 6 Observed	29 Aug 06 - 09
29 Aug 1448	A = 20 Watch	30 Aug
29 Aug 1451	EXTENDED K= 4 Warning	28 /1315 - 30 /1500
29 Aug 2016	K= 5 Warning	29 /2030 - 30 /1500
30 Aug 0039	2- 245 MHz Bursts	29 Aug
30 Aug 0900	ENDED A = 30 Observed	29 Aug 0900
30 Aug 1150	Electron Event >2MeV = 1000pfu	30 Aug 1135
30 Aug 1503	ENDED A = 20 Observed	29 Aug 0300
31 Aug 0028	1- 245 MHz Bursts	30 Aug
31 Aug 0300	K= 4 Observed	31 Aug 00 - 03
31 Aug 0300	K= 4 Warning	31 Aug 0305 - 1500
31 Aug 1140	Electron Event >2MeV =1000pfu	31 Aug 1120
01 Sep 0100	CONTINUED Electron Event >2MeV =1000pfu	31 Aug 1120
01 Sep 0745	K= 4 Warning	01 Sep 0745 - 1800
01 Sep 0854	K= 4 Observed	01 Sep 06 - 09
01 Sep 1935	Type II Radio Emission	01 Sep 1827
01 Sep 1936	Type II Radio Emission	01 Sep 1847
02 Sep 0100	CONTINUED Electron Event >2MeV =1000pfu	31 Aug 1120
02 Sep 0219	K= 4 Warning	02 Sep 0220 - 1200
02 Sep 0300	K= 4 Observed	02 Sep 00 - 03
02 Sep 1159	EXTENDED K= 4 Warning	02 Sep 0220 - 2359
02 Sep 1159	A = 20 Observed	02 Sep 1200
02 Sep 1200	K= 5 Observed	02 Sep 09 - 12
03 Sep 0038	5 - 245 MHz Bursts	02 Sep
03 Sep 0100	CONTINUED Electron Event >2MeV = 1000pfu	31 Aug 1120
03 Sep 0419	Sudden Impulse observed at Boulder	03 Sep 0415
03 Sep 0905	ENDED A = 20 Observed	02 Sep 1200

Twenty-seven Day Outlook



Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
06 Sept	175	12	3	20 Sept	135	12	3
07	180	30	5	21	130	12	3
08	185	30	5	22	135	10	3
09	180	12	3	23	140	10	3
10	175	10	3	24	150	10	3
11	170	10	3	25	160	12	3
12	170	10	3	26	160	12	3
13	165	10	3	27	165	12	3
14	165	10	3	28	165	10	3
15	160	10	3	29	170	10	3
16	155	10	3	30	170	10	3
17	150	10	3	01 Oct	175	10	3
18	145	12	3	02	175	10	3
19	140	12	3				

Energetic Events

Date	Time			X-ray		Optical Information			Rgn	Peak Radio Flux		Sweep Freq Intensity	
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location Lat	CMD	#	245	2695	II	IV

No Events Observed

Flare List

Date	Time Begin	Max	End	X-ray Class.	Optical Imp / Brtns	Location Lat CMD	Rgn
28 August	1142	1143	1150	C1.1	SF	S21E24	9143
	1211	1226	1308		SF	S18E24	9143
	1308	1311	1313		SF	S19E30	9143
	1314	1314	1320	C2.2	SF	S19E30	9143
	1631	1631	1634	C1.7	SF	S19E23	9143
	1658	1658	1706		SF	S29E44	9146
	1659	1703	A1733	C3.3	1N	S17E24	9143
	2001	2003	2012		SF	S20E20	9143
	2013	2015	2018		SF	S20E20	9143
	2020	2021	2024		SF	S19E20	9143
	2024	2027	2145		SF	S19E20	9143
	2055	2102	2111		SF	N09W13	9140
	2153	2154	2200		SF	S19E19	9143
	2201	2204	2208		SF	S19E19	9143
29 August	B1349	1351	1403		SF	S18E14	9143
	1435	1436	1439		SF	N11W21	9140
	1444	1445	1449		SF	N10E63	9149
	1511	1512	1522	C1.7	SF	S20E14	9143
	1517	1519	1530	C3.3	SN	N01E68	9147
	1715	1737	1746		SF	S20E14	9143
	1752	1758	1803		SF	N10E62	9149
	1757	1757	1801		SF	N08W24	9140
	2235	0008	0028	C4.2			
30 August	0801	0804	0812	C1.8			
	0852	0857	0901	C1.3			
	1154	1220	1237	C1.2			
	1610	1632	1701	C1.0	SF	N10W30	9140
	1815	1816	1821		SF	S19W06	9143
31 August	0032	0041	0054	B9.0			
	B0242	U0243	A0304		SF	S14W06	9143
	0653	0659	0706	C1.6	SF	S18W09	9143
	1235	1237	1310	B8.7	SF	S16W12	9143
	1518	1519	1524		SF	S18W14	9143
	2025	2029	2036	B8.4			
	2326	2326	2339		SF	S21E60	

Flare List – continued.

Date	Begin	Time Max	Time End	Class.	X-ray Brtns	Optical Imp / Lat CMD	Optical Location	Rgn
01 September		0425	0505	0525	C1.1			
		0542	0545	0555	C1.6	SF	S20W18	9143
		1215	1219	1222	B8.4			
		1320	1321	1325		SF	S20W27	9143
		1810	1816	1851	C9.1	1N	N10W60	9140
02 September		0205	0340	0411	C2.3			
03 September		0239	0244	0256	C1.0			
		1331	1349	1410		SF	S21E26	9154
		1751	1752	1757		SF	S10E36	9155
		2240	2246	2253	C3.7			
		B2321	U2336	A0030	C4.2	1F	S22E19	9154

Region Summary

Date	Location (° Lat ° CMD)	Location Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9137														
19 Aug	N23E45	139	0010	01	BXO	002	B								
20 Aug	N24E33	138	0010	01	BXO	002	B								
21 Aug	N24E20	138													
22 Aug	N24E07	138													
23 Aug	N24W06	138													
24 Aug	N24W19	138													
25 Aug	N24W32	138													
26 Aug	N24W45	138													
27 Aug	N24W58	138													
28 Aug	N24W71	138													
29 Aug	N24W84	138													
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 138

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9138														
19 Aug	S32E64	120	0030	01	HRX	001	A								
20 Aug	S31E51	120	0040	02	HSX	001	A								
21 Aug	S32E38	120	0040	01	HSX	001	A								
22 Aug	S32E26	119	0050	01	HSX	001	A								
23 Aug	S31E14	118	0060	01	HSX	001	A								
24 Aug	S32E01	117	0030	01	HSX	001	A								
25 Aug	S31W11	116	0040	01	HSX	001	A								
26 Aug	S30W24	116	0040	02	HSX	001	A								
27 Aug	S29W37	116	0040	02	HSX	001	A								
28 Aug	S28W50	116	0020	01	HSX	001	A								
29 Aug	S27W63	115	0020	01	AXX	001	A								
30 Aug	S28W76	114	0000	00	AXX	001	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 117

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9139														
20 Aug	S11E23	148	0070	04	DSO	005	B								
21 Aug	S10E09	149	0170	06	DAO	007	B								
22 Aug	S10W04	149	0190	07	DAO	010	B	1			1				
23 Aug	S10W17	149	0210	07	DSO	009	B				1				
24 Aug	S10W31	149	0150	07	DAO	006	B								
25 Aug	S08W44	149	0130	07	CAO	003	B								
26 Aug	S09W59	151	0110	07	CAO	004	B								
27 Aug	S09W73	152	0100	02	HSX	001	A								
28 Aug	S08W86	152	0110	02	HAX	001	A								
								1	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 149

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9140														
22 Aug	N08E69	076	0000	00	AXX	001	A								
23 Aug	N08E53	079	0010	00	HRX	001	A								
24 Aug	N09E41	077	0030	10	CRO	006	B								
25 Aug	N09E27	078	0030	07	CRO	008	B				1				
26 Aug	N09E12	080	0030	07	CRO	009	B								
27 Aug	N09W01	080	0060	07	DSO	009	B	1			2				
28 Aug	N09W14	080	0100	09	DAO	018	B				1				
29 Aug	N10W27	079	0180	08	DAO	016	B				2				
30 Aug	N12W39	077	0140	12	ESO	023	BG	1			1				
31 Aug	N10W51	076	0170	12	EAO	019	B								
01 Sep	N11W67	079	0130	10	DAO	009	B	1				1			
02 Sep	N09W82	081	0100	10	DAO	006	B								
03 Sep	N09W95	081													
								3	0	0	7	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 080

	Region 9141														
23 Aug	N16W08	140	0010	02	CRO	002	B								
24 Aug	N16W21	140													
25 Aug	N16W34	140													
26 Aug	N16W47	140													
27 Aug	N16W60	140													
28 Aug	N16W73	140													
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 140

	Region 9142														
24 Aug	N16E71	047	0030	01	HSX	001	A				1				
25 Aug	N15E59	046	0030	01	HSX	001	A								
26 Aug	N15E47	045	0050	02	HSX	001	A								
27 Aug	N15E33	046	0040	01	HSX	001	A								
28 Aug	N16E21	045	0020	01	HSX	001	A								
29 Aug	N15E09	043	0020	02	HSX	001	A								
30 Aug	N16W05	043	0020	01	HSX	001	A								
31 Aug	N16W18	043	0020	01	HSX	001	A								
01 Sep	N16W32	044	0020	01	HSX	001	A								
02 Sep	N16W45	044	0010	01	HSX	001	A								
03 Sep	N16W63	049	0020	10	BXO	002	B								
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 043

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	M	X	Optical S	1	2	3	4
	Region 9143														
24 Aug	S18E70	048	0060	05	CSO	002	B	1			2				
25 Aug	S19E59	046	0160	08	DAO	004	B	1	1		3	1			
26 Aug	S19E46	046	0180	09	DSO	009	B				1				
27 Aug	S20E33	046	0290	11	EAO	012	B	3			9				
28 Aug	S19E20	046	0310	12	EAO	016	B	4			11	1			
29 Aug	S19E08	044	0290	12	EAI	021	B	1			3				
30 Aug	S18W07	045	0190	11	EAI	020	B				1				
31 Aug	S18W20	045	0120	11	EAO	014	B	1			4				
01 Sep	S18W32	044	0080	09	DSO	009	B	1			2				
02 Sep	S19W47	046	0050	04	DSO	002	B								
03 Sep	S19W62	048	0020	04	BXO	002	B								
								12	1	0	36	2	0	0	0

Still on Disk.
Absolute heliographic longitude: 045

	Region 9144														
25 Aug	N25E14	091	0010	05	BXO	009	B				5				
26 Aug	N25E02	090	0140	07	DAI	020	B	2			4	1			
27 Aug	N22W12	091	0210	09	DAI	015	B	1			2				
28 Aug	N26W24	090	0220	11	EAO	015	B								
29 Aug	N26W38	090	0170	12	EAO	013	B								
30 Aug	N27W51	089	0120	13	EAO	014	B								
31 Aug	N26W65	090	0100	12	EAO	007	B								
01 Sep	N26W80	092	0070	07	CAO	005	B								
02 Sep	N24W91	090	0050	01	HSX	001	A								
								3	0	0	11	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 090

	Region 9145														
27 Aug	S10E60	019	0040	03	CRO	003	B								
28 Aug	S10E47	019	0060	07	DAO	005	B								
29 Aug	S10E34	018	0050	06	DAO	005	B								
30 Aug	S11E20	018	0080	06	CAO	005	B								
31 Aug	S10E07	018	0050	07	CSO	005	B								
01 Sep	S09W08	020	0040	04	CSO	006	B								
02 Sep	S10W21	020	0040	05	CAO	007	B								
03 Sep	S09W35	021	0070	02	HAX	004	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 018

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9146												
27 Aug	S26E51	028	0010	04	BXO	002	B								
28 Aug	S26E38	028	0000	00		000		1			1				
29 Aug	S28E26	026	0010	05	BXO	002	B								
30 Aug	S28E13	026													
31 Aug	S28E00	026													
01 Sep	S28W13	026													
02 Sep	S24W31	030	0010	01	AXX	001	A								
03 Sep	S23W45	031	0010	01	HRX	001	A								
								1	0	0	1	0	0	0	0
			Region 9147												
28 Aug	N04E67	359	0080	02	HAX	002	A								
29 Aug	N04E53	359	0090	02	HAX	003	A	1			1				
30 Aug	N05E39	359	0110	02	HSX	002	A								
31 Aug	N05E26	359	0110	03	CSO	005	B								
01 Sep	N05E14	358	0100	03	CSO	005	B								
02 Sep	N05E01	358	0090	04	CSO	003	B								
03 Sep	N07W12	358	0100	05	CAO	008	B								
								1	0	0	1	0	0	0	0
			Region 9148												
28 Aug	S20E47	019	0010	01	BXO	002	B								
29 Aug	S19E32	020	0020	01	HSX	001	A								
30 Aug	S19E19	019	0000	00	AXX	001	A								
31 Aug	S18E06	019	0000	00	AXX	002	A								
01 Sep	S18W07	019													
02 Sep	S18W20	019													
03 Sep	S18W33	019													
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 026

Still on Disk.
Absolute heliographic longitude: 358

Still on Disk.
Absolute heliographic longitude: 019

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9149														
28 Aug	N10E70	356	0110	07	CAO	004	B								
29 Aug	N10E57	355	0280	12	EAI	012	B				2				
30 Aug	N11E44	354	0330	11	EAI	019	B								
31 Aug	N12E32	353	0310	11	EAI	022	BG								
01 Sep	N12E18	354	0380	12	EKI	027	BG								
02 Sep	N12E06	353	0350	12	EKI	025	B								
03 Sep	N14W10	356	0240	13	EAI	028	B								
								0	0	0	2	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		353													
	Region 9150														
30 Aug	N11E64	334	0000	01	AXX	001	A								
31 Aug	N11E51	334	0010	01	HRX	001	A								
01 Sep	N11E38	334	0000	00	AXX	001	A								
02 Sep	N12E25	334	0000	00	AXX	001	A								
03 Sep	N12E12	334													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		334													
	Region 9151														
31 Aug	N05E42	343	0020	02	CRO	004	B								
01 Sep	N05E28	344	0020	04	CAO	006	B								
02 Sep	N06E15	344	0010	04	BXO	004	B								
03 Sep	N09E06	340	0010	03	BXO	004	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		340													
	Region 9152														
31 Aug	N17E75	310	0020	02	HRX	001	A								
01 Sep	N17E61	311	0040	02	HSX	001	A								
02 Sep	N18E47	312	0040	01	HSX	001	A								
03 Sep	N18E34	312	0040	01	HSX	002	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		312													

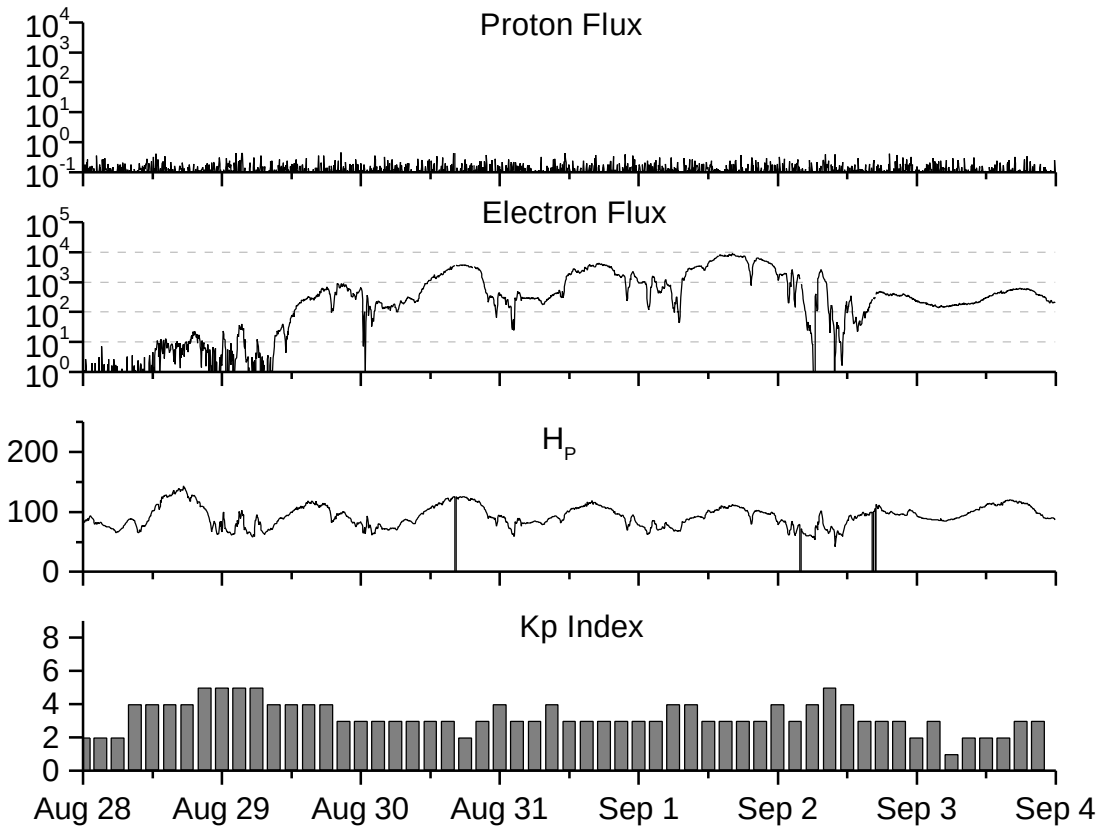
Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9153														
31 Aug	S33E27	358	0020	02	HRX	002	A								
01 Sep	S33E16	356	0030	05	CRO	003	B								
02 Sep	S33E03	356	0010	06	BXO	005	B								
03 Sep	S33W11	357	0020	06	BXO	006	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		356													
	Region 9154														
31 Aug	S22E57	328	0020	01	HRX	001	A								
01 Sep	S21E44	328	0000	00	AXX	002	A								
02 Sep	S21E31	328	0000	00		000									
03 Sep	S21E18	328	0020	07	BXO	009	B	1			1	1			
								1	0	0	1	1	0	0	0
Still on Disk.															
Absolute heliographic longitude:		328													
	Region 9155														
03 Sep	S11E32	314	0020	04	BXO	005	B				1				
								0	0	0	1	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		314													

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

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
Month	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value
				1998					
September	119.0	92.9	0.78	96.1	69.5	138.3	126.8	13	12.6
October	77.0	55.5	0.72	97.7	70.5	117.3	127.9	13	12.8
November	99.5	74.0	0.74	101.3	73.0	140.2	130.0	16	12.4
December	120.8	81.9	0.68	108.8	77.9	150.1	134.3	08	11.9
				1999					
January	94.3	62.0	0.66	116.5	82.6	142.6	139.0	10	11.7
February	93.4	66.3	0.71	120.2	84.6	142.0	142.6	12	11.6
March	100.5	68.8	0.68	120.5	83.8	126.3	144.0	14	11.7
April	92.9	63.7	0.69	123.8	85.5	117.2	145.8	12	12.2
May	140.5	106.4	0.76	131.7	90.5	148.6	149.9	08	12.4
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	94.4	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	0.66	150.0	102.3	135.7	161.0	19	12.8
October	167.7	116.7	0.69	158.5	107.7	164.8	167.2	19	12.7
November	199.3	133.2	0.67	164.7	110.9	191.5	171.5	14	13.2
December	123.5	86.4	0.70	165.9	110.9	169.8	173.4	10	13.9
				2000					
January	140.8	90.2	0.64	168.0	112.7	158.1	175.2	13	14.7
February	161.9	112.3	0.69	172.1	116.6	173.2	176.3	15	15.3
March	203.6	138.2	0.68			208.2		09	
April	193.4	125.3	0.65			184.2		15	
May	188.8	120.8	0.64			184.5		16	
June	190.3	124.9	0.66			178.8		16	
July	236.7	169.1	0.71			200.0		21	
August	166.6	130.5	0.78			163.1		18	

NOTE: All smoothed values after June 1999 and monthly values after December 1999 are preliminary estimates. The lowest smoothed sunspot index number for Cycle 22, RI = 8.0, occurred in May 1996. The highest smoothed sunspot number for Cycle 22, RI= 158.5, occurred July 1989. * After June 1991, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.



Weekly Geosynchronous Satellite Environment Summary
Week Beginning 28 August 2000

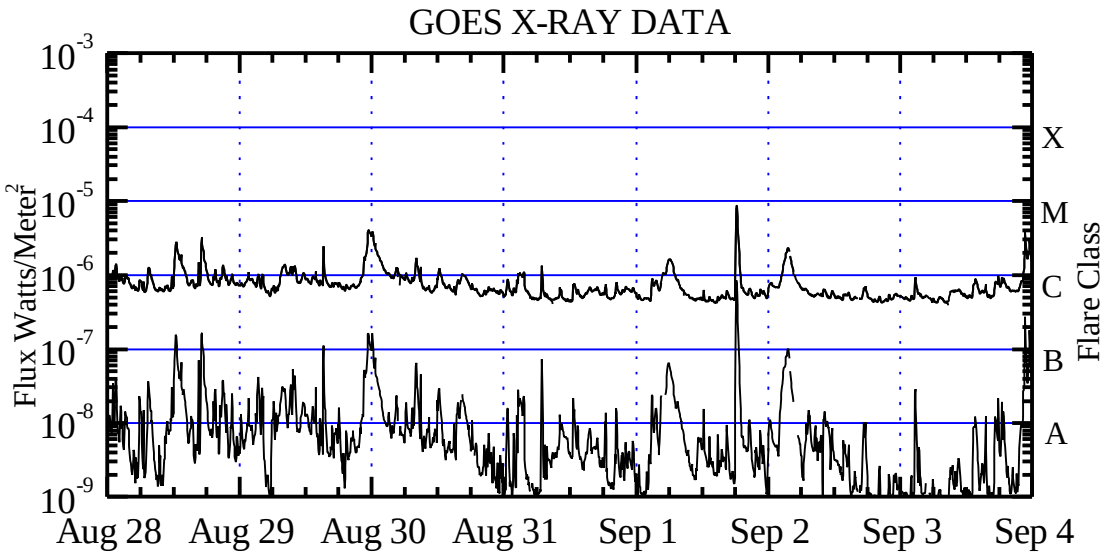
Protons plot contains the five-mine averaged integral proton flux (protons/cm^2 –sec –sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

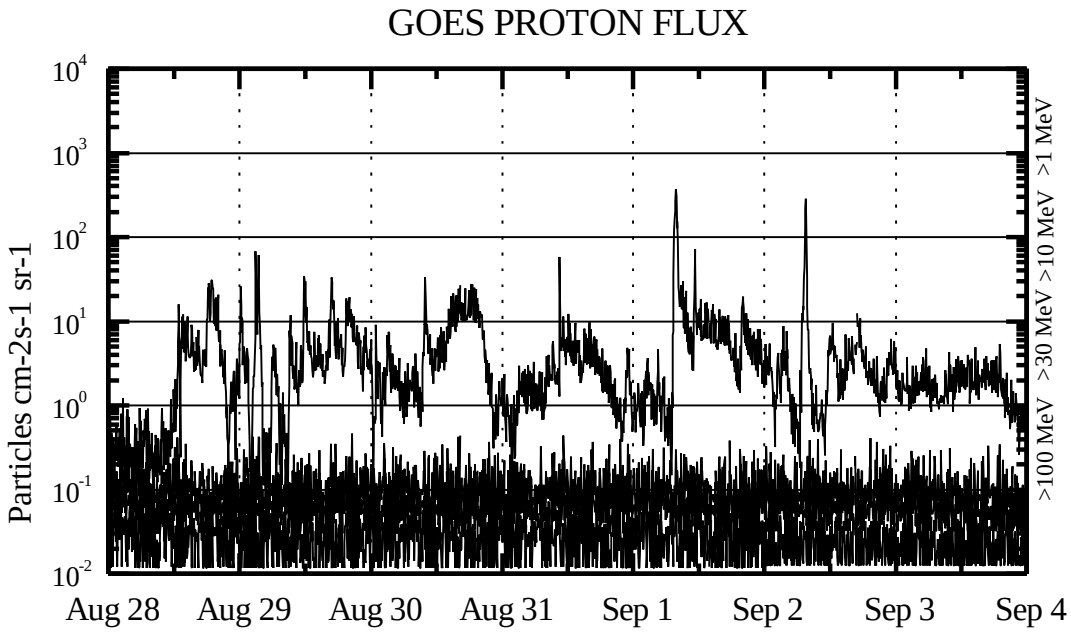
Electrons plot contains the five-mine averaged integral electron flux (electrons/cm^2 –sec –sr) with energies greater than 2 MeV at GOES-8.

Hp plot contains the five mine 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.

Kp 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 Kp 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 Kp are " global " parameters that are applicable to a first order approximation over large areas. Hparallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.

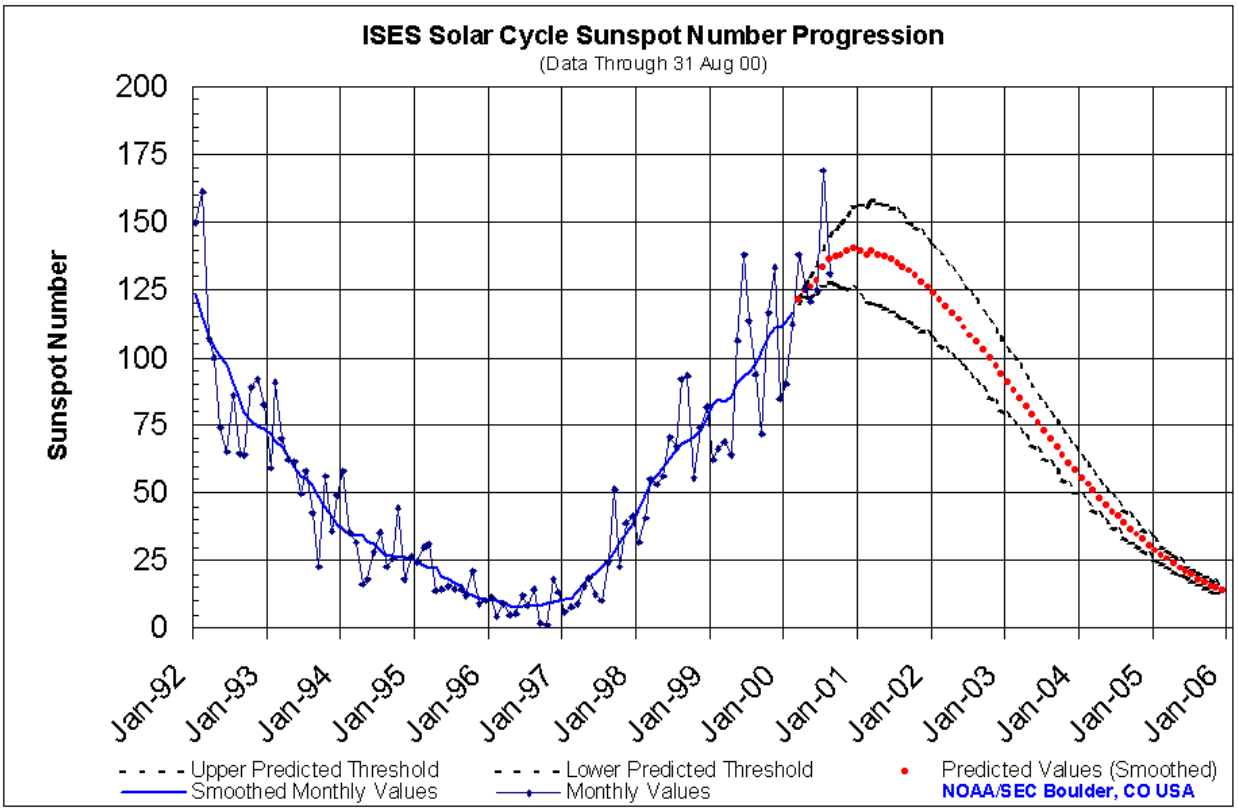




Weekly GOES Satellite X-ray and Proton Plots

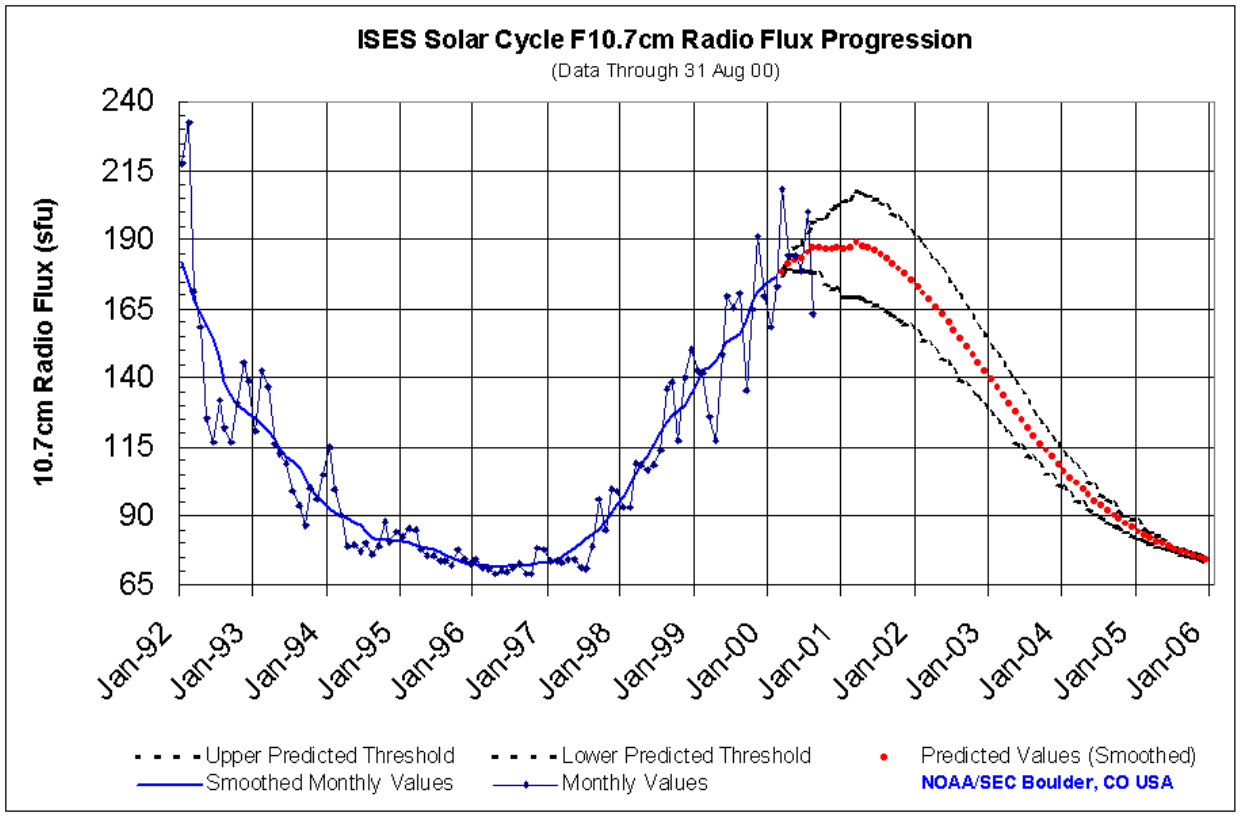
X-ray plot contains five mine averaged x-ray flux (watts/m$^{2)}$ as measured by GOES 8 and 10 in two wavelength bands, .05 -. 4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five mine averaged integral proton flux (protons/cm^2 –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/cm^2-sec-sr) at greater than 10 MeV.



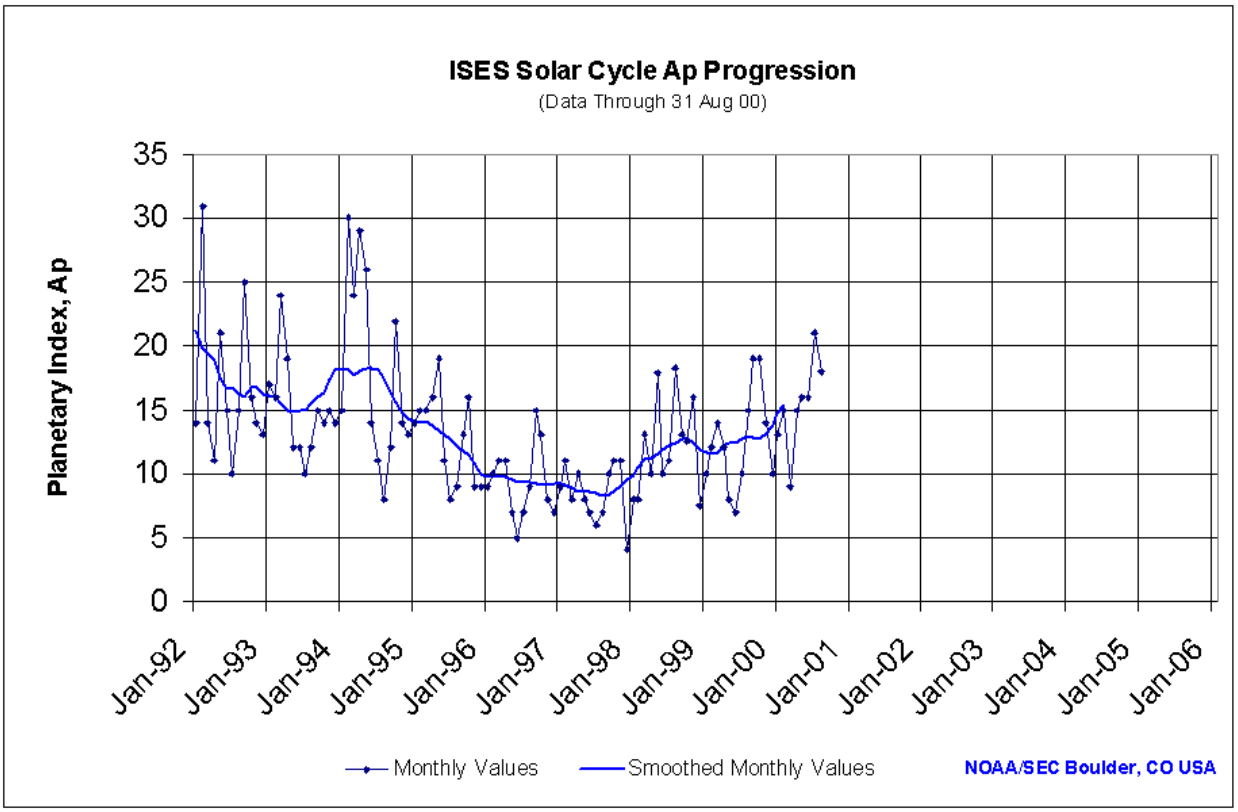
SEC Prediction of Smoothed Sunspot Number

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1996	10	10	10	9	8	9	8	8	8	9	10	10
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
1997	11	11	14	17	18	20	23	25	28	32	35	39
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
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	**121**	**125**	**126**	**129**	**133**	**136**	**137**	**138**	**139**	**140**
	(***)	(***)	(1)	(2)	(4)	(5)	(7)	(9)	(10)	(12)	(14)	(15)
2001	**139**	**138**	**139**	**138**	**137**	**136**	**135**	**133**	**132**	**130**	**128**	**126**
	(17)	(18)	(19)	(19)	(19)	(19)	(19)	(19)	(18)	(18)	(18)	(17)
2002	**124**	**121**	**119**	**116**	**114**	**111**	**108**	**106**	**103**	**100**	**97**	**94**
	(17)	(17)	(16)	(16)	(16)	(15)	(15)	(15)	(14)	(14)	(13)	(13)
2003	**91**	**88**	**85**	**82**	**79**	**76**	**73**	**70**	**67**	**64**	**61**	**58**
	(12)	(12)	(12)	(11)	(11)	(10)	(10)	(9)	(9)	(9)	(8)	(8)
2004	**56**	**53**	**51**	**48**	**46**	**43**	**41**	**39**	**37**	**35**	**33**	**31**
	(7)	(7)	(7)	(6)	(6)	(6)	(5)	(5)	(5)	(4)	(4)	(4)
2005	**29**	**27**	**25**	**24**	**22**	**21**	**20**	**18**	**17**	**16**	**15**	**14**
	(4)	(3)	(3)	(3)	(3)	(2)	(2)	(2)	(2)	(2)	(2)	(1)



SEC Prediction of Smoothed F10.7cm Radio Flux

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1996	72	72	72	72	71	72	72	72	72	73	73	73
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
1997	73	74	75	77	78	80	82	83	86	89	91	94
	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)	(***)
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**	**182**	**183**	**185**	**187**	**187**	**186**	**187**	**187**
	(***)	(***)	(1)	(2)	(4)	(5)	(7)	(9)	(10)	(12)	(14)	(15)
2001	**187**	**187**	**189**	**188**	**187**	**186**	**185**	**183**	**181**	**180**	**178**	**175**
	(17)	(18)	(19)	(19)	(19)	(19)	(19)	(19)	(18)	(18)	(18)	(17)
2002	**173**	**171**	**168**	**166**	**163**	**160**	**157**	**155**	**152**	**149**	**146**	**143**
	(17)	(17)	(16)	(16)	(16)	(15)	(15)	(15)	(14)	(14)	(13)	(13)
2003	**139**	**136**	**133**	**131**	**128**	**125**	**122**	**119**	**116**	**114**	**111**	**109**
	(12)	(12)	(12)	(11)	(11)	(10)	(10)	(8)	(8)	(8)	(7)	(7)
2004	**106**	**104**	**102**	**100**	**98**	**96**	**94**	**92**	**90**	**89**	**87**	**86**
	(6)	(6)	(6)	(5)	(5)	(5)	(4)	(4)	(4)	(3)	(3)	(3)
2005	**85**	**83**	**82**	**81**	**80**	**79**	**78**	**77**	**77**	**76**	**75**	**75**
	(3)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)


ISES Solar Cycle Ap Progression
(Data Through 31 Aug 00)
Planetary Index, Ap
35
30
25
20
15
10
5
0
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Monthly Values
Smoothed Monthly Values
NOAA/SEC Boulder, CO USA