

Space Weather Highlights
31 Aug – 06 Sep 1998

Solar activity declined to moderate levels during the period. Region 8307 (N31, L = 038, class/area Dko/570 on 22 August) produced an impulsive M1/SF flare at 31/1539UT with Types II and IV radio sweeps and moderate discrete frequency bursts in the 245 - 606 MHz range. It also produced an impulsive M1/1F at 01/0459UT with weak radio emission. This region was in gradual decline as it crossed the west limb on 02 September. Region 8319 (N19, L = 010, class/area Eko/740 on 31 August) produced an M2/SF flare at 02/1707UT associated with minor radio emission. Region 8319 had stabilized as a large, structurally simple spot group a day prior to the M-flare and remained stable for the rest of its time on the visible disk. Region 8323 (S22, L = 271, class/area Fkc/1460 on 03 September) also produced an M1/SF flare at 03/1608UT and a C3/SF at 03/1430UT associated with Types II and IV sweeps and minor discrete radio emissions. This region was generally stable through the period despite its large size and magnetic complexity. An M1 X-ray flare occurred at 03/0421UT and was optically tied (via YOJKOH SXT observations) to Region 8326 (N20, L = 196, class/area Eso/160 on 04 September), which was beginning to rotate into view at the time of the flare. Region 8326 remained stable for the rest of the period.

Real-time solar wind data were available from the Advanced Composition Explorer (ACE) spacecraft during most of the period. Solar wind velocities were relatively high early in the period (peak around 570 km/sec on 31 August), then gradually decreased to 300 km/sec by the end of the period. Bz was predominantly southward through 03 September with a maximum deflection of minus 8 nT (GSM) detected on 02 September. Otherwise, Bz hovered around zero. There were no remarkable changes observed in particle densities. Solar sector orientation was variable during the period.

No significant proton enhancements occurred at geosynchronous altitude.

The greater than 2 MeV electron flux at geosynchronous altitude was at moderate to high levels.

The geomagnetic field was disturbed during 31 August - 01 September with active periods detected at middle latitude stations and active to minor storm levels at high latitudes. The field declined to quiet to unsettled levels for the remainder of the period.

Space Weather Forecast
09 Sep - 05 Oct 1998

Solar activity is expected to be low to moderate. Regions 8323 may produce isolated M-class flares before departing the disk on 10 September. There is also a slight chance for a major flare from this region, given its size and complexity. Region 8307 is expected to return to the visible disk around 16 September. Chances for major flare activity may increase upon its return.

Proton flare probabilities may increase after 16 September with the return of old Region 8307.

The greater than 2 MeV electron flux at geosynchronous altitude is expected to be at moderate to high levels during 19 - 22 September. Otherwise, normal to moderate fluxes are expected.

The geomagnetic field is expected to be at quiet to unsettled levels during most of the period. However, active periods are possible during 18 - 19 September due to a recurrent high-speed (coronal hole) wind stream.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No. (10^6 hemi.)	Sunspot Area	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
31 August	179	133	1820	C1.2	8	1	0	18	1	0	0	0
01 September	177	129	2010	C1.5	9	1	0	31	1	0	0	0
02 September	163	116	2250	C1.1	6	1	0	5	0	0	0	0
03 September	163	117	1860	C1.0	6	2	0	11	0	0	0	0
04 September	155	73	1640	B8.7	3	0	0	3	0	0	0	0
05 September	154	101	1530	C1.1	9	0	0	10	0	0	0	0
06 September	165	142	1740	B5.8	7	0	0	13	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
31 August	2.4E+6	1.1E+5	2.8E+3		2.7E+8	
01 September	9.1E+5	3.5E+4	3.3E+3		7.4E+7	
02 September	4.6E+5	3.6E+4	3.4E+3		7.4E+7	
03 September	4.0E+5	2.7E+4	6.0E+3		6.8E+7	
04 September	7.5E+5	2.1E+4	6.1E+3		1.7E+8	
05 September	8.0E+5	1.9E+4	6.7E+3		2.4E+8	
06 September	6.5E+5	4.0E+4	7.1E+3		2.6E+7	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	31 August	12	3-2-3-3-3-2-2	38	3-2-6-5-5-5-2	22
01 September	14	3-4-2-2-2-3-3-3	42	5-4-1-5-5-7-3-2	18	3-4-2-3-4-4-3-3
02 September	7	2-1-1-2-3-2-2-2	6	1-1-1-3-2-2-2-2	8	2-1-1-2-2-3-3-3
03 September	5	2-2-1-0-1-1-0-2	*	2-1-1-2-4-*. *-1	9	3-3-1-1-2-3-2-3
04 September	4	1-1-1-1-1-1-2-2	10	2-1-2-4-4-0-1-1	7	2-2-2-2-2-2-2-2
05 September	4	1-0-0-2-0-2-2-3	*	1-0-*.2-0-0-1-2	6	1-1-0-2-2-2-2-3
06 September	5	2-3-0-1-2-0-1-1	*	*-2-0-4-*.0-0-0	6	2-2-1-2-2-2-1-2

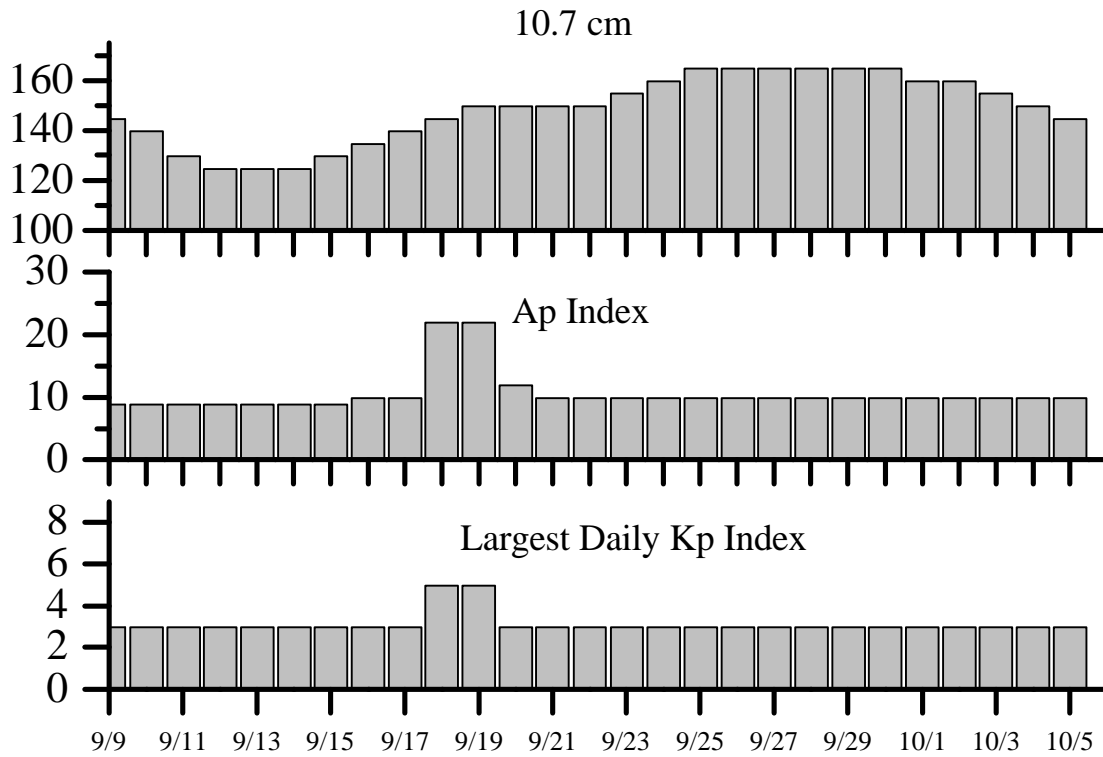


Alerts and Warnings Issued

Date and Time of Issue (UT)	Type of Alert or Warning	Date and Time of Event (UT)
31 Aug 0708	Type II Radio Emission	31 Aug 0634
31 Aug 0710	Type IV Radio Emission	31 Aug 0643
31 Aug 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
31 Aug 0900	K= 4 Observed	31 Aug 06-09
31 Aug 1730	Type II Radio Emission	31 Aug 1541
31 Aug 1730	Type IV Radio Emission	31 Aug 1604
31 Aug 1808	K= 4 Observed	31 Aug 15-18
01 Sep 0057	4- 245 MHz Radio Bursts	31 Aug
01 Sep 0057	245 MHz Radio Noise Storm	31 Aug
01 Sep 0600	$A \geq 20$ Observed	01 Sep 0600
01 Sept 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
01 Sep 1810	K= 4 Observed	01 Sep 15-18
02 Sep 0029	2- 245 MHz Radio Bursts	01 Sep
02 Sep 0029	245 MHz Radio Noise Storm	01 Sep
02 Sep 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
03 Sep 0023	2- 245 MHz Radio Bursts	02 Sep
03 Sep 0023	245 MHz Radio Noise Storm	02 Sep
03 Sep 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
03 Sep 1436	10cm Radio Burst 170 F.U.	03 Sep 1413
03 Sep 1441	Type IV Radio Emission	03 Sep 1444
03 Sep 1949	Type II Radio Emission	03 Sep 1417
04 Sep 0030	5- 245 MHz Radio Bursts	03 Sep
04 Sep 0030	245 MHz Radio Noise Storm	03 Sep
04 Sep 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
05 Sep 0049	8- 245 MHz Radio Bursts	04 Sep
05 Sep 0049	245 MHz Radio Noise Storm	04 Sep
05 Sep 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105
06 Sep 0102	7- 245 MHz Radio Bursts	05 Sep
06 Sep 0102	245 MHz Radio Noise Storm	05 Sep
06 Sep 0324	10cm Radio Burst 180 F.U.	06 Sep 0323
06 Sep 0351	10cm Radio Burst 180 F.U.	06 Sep 0212
06 Sep 1200	>2MeV Electron Event ≥ 1000 pfu Continued	27 Aug 2105



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
09 Sep	145	9	3	23 Sep	155	10	3
10	140	9	3	24	160	10	3
11	130	9	3	25	165	10	3
12	125	9	3	26	165	10	3
13	125	9	3	27	165	10	3
14	125	9	3	28	165	10	3
15	130	9	3	29	165	10	3
16	135	10	3	30	165	10	3
17	140	10	3	01 Oct	160	10	3
18	145	22	5	02	160	10	3
19	150	22	5	03	155	10	3
20	150	12	3	04	150	10	3
21	150	10	3	05	145	10	3
22	150	10	3				



Energetic Events

Date	Time (UT)			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	½ Max	Class	Integ Flux	Imp Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
31 Aug 98	1529	1539	1547	M1.5	.010	SF	N32W69	8307	860	51	3	2
01 Sep 98	0449	0459	0506	M1.5	.010	1F	N32W78	8307		58		
02 Sep 98	1644	1707	1718	M2.2	.021	SF	N17W79	8319				
03 Sep 98	0345	0421	0440	M1.3	.028							
03 Sep 98	1526	1608	1641	M1.1	.037	SF	S20E06	8323				

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
31 August	0037	0041	A0044		SF	S22E46	8323	
	0055	0056	0058		SF	S19W63	8323	
	0215	0217	0227		SF	S21E56	8323	
	0258	0307	0316		SF	N19W43	8319	
	0444	0445	0449		SF	S23E52	8323	
	0522	0524	0555	C5.7	1F	N29W78	8307	
	0625	0629	0637	C3.8	SF	N29W79	8307	
	0727	0728	0732		SF	S23E50	8323	
	0825	0826	0836		SF	N29W80	8307	
	0900	0901	0908		SF	S23E49	8323	
	1022	1028	1033		SF	S23E49	8323	
	1529	1541	1609	M1.5	SF	N32W69	8307	
	1759	1806	1808	C3.8				
	1815	1825	1848		SF	S21E47	8323	
	1827	1827	1848		SF	N22W38	8322	
	1835	1836	1843		SF	N21W53	8319	
	1855	1904	1911		SF	N21W53	8319	
	1954	1957	2006	C4.4	SF	N21W54	8319	
	2039	2041	2046		SF	N21W54	8319	
	2051	2101	2111	C7.8				
2139	2141	2217		SF	S20E47	8323		
2315	2318	2324	C2.9					
01 September	0145	0145	0151	C3.1	SF	S23E40	8323	
	0151	0156	0158		SF	N19W55	8319	
	0219	0223	0232	C3.4	SF	N19W55	8319	
	0325	0329	0336	C2.1				
	0448	0449	0452		SF	S23E39	8323	
	0452	0453	0514	M1.5	1F	N32W78	8307	
	0453	0500	0504		SF	S23E39	8323	
	0519	0521	0527		SF	N19W57	8319	
	0614	0616	0621		SF	N19W57	8319	
	0626	0627	0630		SF	N19W57	8319	



Flare List-continued

Date	Time			X-ray Class.	Optical		Rgn #
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
01 September	0649	0704	0735	C2.8	SF	S23E38	8323
	0856	0900	0902		SF	N19W59	8319
	0928	0931	0942		SF	S21E36	8323
	0929	0935	0944	C2.0	SF	N19W59	8319
	1009	1052	1138	C4.9	SF	S21E36	8323
	B1126	U1127	1138		SF	S21E35	8323
	1147	1148	1151		SF	N18W63	8319
	1234	1238	1243	C4.4	SF	S20E36	8323
	1411	1412	1416		SF	N15W63	8319
	1434	1434	1439		SF	N18W65	8319
	1439	1517	1540		SF	S21E36	8323
	1548	1608	1629		SF	N21W65	8319
	1630	1644	1704		SF	N16W62	8319
	1807	1816	1834	C3.8	SF	N15W64	8319
	1856	1858	1905		SF	N16W65	8319
	1940	1940	1943		SF	N21W67	8319
	2107	2109	2113		SF	S21E31	8323
	2245	2245	2249	C4.7	SF	S21E31	8323
	2306	2306	2310		SF	S21E32	8323
	02 September	0158	0207	0213	C3.3		
0404		0439	A0442	C2.0			
0632		0632	0639	C1.6	SF	S21E24	8323
0829		0836	0851		SF	S20E25	8323
0856		0936	1004	C4.7			
1218		1223	1230	C2.4			
1304		1305	1308		SF	S23E22	8323
1503		1506	1527	C2.2	SF	S22E20	8323
1650		1705	1731	M2.2	SF	N17W79	8319
03 September	0027	0034	0040	C1.8			
	0111	0117	0124	C3.5			
	0228	0233	0236	C3.7			
	0345	0421	0440	M1.3			
	0542	0545	0549	C3.4			
	B1158	U1200	A1206		SF	N16W90	8319
	1410	1430	1515	C3.9			8323
	1420	1422	1427		SF	N21W90	8315
	1516	1517	A1534	M1.1	SF	S20E06	8323
	1807	1807	1812		SF	S20E06	8323
	1831	1831	1835		SF	S21E05	8323
2303	2307	2310	C1.3				



Flare List-continued

Date	Time			X-ray Class.	Optical		Rgn #
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
04 September	0939	0948	1020	C2.2			
	B1312	U1315	A1326		SF	S18E78	
	1454	1454	1459	C1.2	SF	N20E83	8326
	1700	1701	1704		SF	S17E73	
05 September	2322	2331	0006	C3.2			
	0554	0555	0559		SF	S22W83	8323
	0626	0626	0631	C1.3	SF	S22W22	8323
	B0755	U0803	0814	C2.2	SF	N21E64	8326
	1053	1056	1059	C1.3			
	B1258	U1301	1311	C2.1	SF	N21E60	8326
	1407	1425	1430	C1.5	SF	N14E56	8326
	1434	1452	1501	C1.6	SF	S23W27	8323
	1456	1456	1502		SF	N13E55	8326
	1727	1731	1737	C2.0	SF	S19W26	8323
	1907	1907	1922	C1.5	SF	N16E53	8329
	2206	2208	2221	C1.3	SF	N22E53	8326
	06 September	0019	0019	0023	C2.6	SF	S22W32
0211		0213	0226	C2.3	SN	S22W35	8323
0322		0322	0326		SF	S22W23	8323
0330		0330	0345		SF	S22W23	8323
0359		0359	0404		SF	S18W33	8323
0456		0456	0506	B9.7	SF	S21W36	8323
0556		0624	0710	C2.6			
1100		1107	1120	C1.3	SF	S22W40	8323
1113		1119	1133		SF	S29W04	8325
1559		1603	1622	C1.1	SF	N22E44	8326
1915		1917	1922	C2.5	SF	N23E47	8326
1949		2018	2058	C3.9			
1954		1955	2016		SF	N23E46	8326
2036		2037	2051		SF	S14E47	8328
2100		2101	2107		SF	N23E42	8326



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 8313

21 Aug	S18E43	043	0000	00	AXX	001	A										
22 Aug	S18E30	043															
23 Aug	S18E17	043															
24 Aug	S18E04	043															
25 Aug	S18W09	043															
26 Aug	S18W22	043															
27 Aug	S18W35	043															
28 Aug	S18W48	043															
29 Aug	S18W61	043															
30 Aug	S18W74	043															

0 0 0 0 0 0 0 0

Died on Disk.

Absolute heliographic longitude: 043

Region 8314

21 Aug	N17E77	009	0010	01	AXX	001	A										
22 Aug	N16E67	006	0020	08	BXO	003	B										
23 Aug	N17E55	004	0020	10	BXO	006	B										
24 Aug	N17E41	005	0020	09	BXO	005	B										
25 Aug	N14E27	006	0020	08	BXO	006	B										
26 Aug	N17E15	005	0020	06	BXO	005	B										
27 Aug	N16E03	004	0020	04	BXO	004	B										
28 Aug	N16W11	004	0010	06	BXO	003	B										

0 0 0 0 0 0 0 0

Died on Disk.

Absolute heliographic longitude: 004

Region 8315

23 Aug	N25E57	002	0000	00	AXX	001	A										
24 Aug	N25E44	002															
25 Aug	N22E24	009	0000	00	AXX	001	A										
26 Aug	N20E11	009	0030	02	AXX	002	A										
27 Aug	N20W02	009															
28 Aug	N26W05	358	0010	01	BXO	003	B										
29 Aug	N26W18	358															
30 Aug	N26W31	358															
31 Aug	N26W44	358															
01 Sep	N26W57	358															
02 Sep	N26W70	358															
03 Sep	N26W83	358															

1
0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 009



Region Summar-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 8316

24 Aug	N28E78	328	0060	01	HSX	001	A												
25 Aug	N25E66	327	0030	01	AXX	001	A												
26 Aug	N28E53	327	0020	01	HRX	001	A												
27 Aug	N25E40	327	0000	00	AXX	001	A												
28 Aug	N25E27	327																	
29 Aug	N25E14	327																	
30 Aug	N25E01	327																	
31 Aug	N25W12	327																	
01 Sep	N25W25	327																	
02 Sep	N25W38	327																	
03 Sep	N25W51	327																	
04 Sep	N25W64	327																	
05 Sep	N25W77	325																	
06 Sep	N25W90	325																	
																			0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 327

Region 8318

26 Aug	S21E03	017	0020	03	BXO	004	B												
27 Aug	S21W13	020	0020	04	BXO	004	B												
28 Aug	S21W26	020																	
29 Aug	S21W39	020																	
30 Aug	S23W58	025	0000	00	AXX	002	A												
31 Aug	S23W71	025																	
01 Sep	S23W84	025																	
																			0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 017

Region 8319

26 Aug	N21E10	010	0040	06	BXO	011	B												
27 Aug	N19W03	010	0080	07	DSI	022	B	1											
28 Aug	N18W15	008	0180	09	DAO	044	BG	1											
29 Aug	N19W29	009	0270	10	DAI	032	BG	6	2					4					
30 Aug	N18W41	008	0570	11	EKI	027	BG	6	2					4					
31 Aug	N19W54	008	0740	12	EKO	026	B	1											
01 Sep	N19W68	009	0670	14	EKI	024	B	2						15					
02 Sep	N19W81	009	0710	17	FKO	013	B			1				1					
03 Sep	N21W89	003	0190	07	DKC	003	A							1					
																			17 5 0 17 8 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 010



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 8321

27 Aug	N33E74	293	0020	01	HRX	001	A										
28 Aug	N32E61	292	0020	01	HSX	001	A										
29 Aug	N31E50	290	0020	01	HSX	001	A										
30 Aug	N31E37	290	0020	01	HSX	001	A										
31 Aug	N31E25	289	0010	01	AXX	002	A										
01 Sep	N31E12	289	0010	04	BXO	005	B										
02 Sep	N32W01	289	0020	03	BXO	003	B										
03 Sep	N31W13	287	0010	00	AXX	002	A										
04 Sep	N31W26	287															
05 Sep	N31W39	287															
06 Sep	N31W52	287															

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 289

Region 8322

28 Aug	N21E02	351	0030	06	BXO	009	B										
29 Aug	N22W12	352	0020	07	BXO	009	B										
30 Aug	N22W26	353	0070	07	DAO	011	B										
31 Aug	N23W40	354	0090	08	DAO	011	B										
01 Sep	N23W52	353	0060	07	DAO	006	B										
02 Sep	N22W66	354	0090	07	DSO	006	B										
03 Sep	N22W79	353	0050	07	CAO	005	B										
04 Sep	N22W92	353															

0 0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 351

Region 8323

28 Aug	S21E82	271	0050	02	HSX	001	A										
29 Aug	S23E65	275	0270	11	EHO	005	B	2									
30 Aug	S21E54	273	0780	13	EKC	009	B	2									
31 Aug	S22E42	272	0890	14	EKC	029	BG	4	1								
01 Sep	S23E11	290	1230	16	FKC	041	BG	6	1		12						
02 Sep	S22E16	272	1430	16	FKI	043	BGD	2			4						
03 Sep	S22E03	271	1460	18	FKC	033	BG	1	1		3						
04 Sep	S22W13	274	1400	15	EKC	027	BG										
05 Sep	S22W23	271	1180	15	EKI	031	BG	3			4						
06 Sep	S22W36	271	1180	17	FKI	035	BG	3			7						

23 3 0 30 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 271



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 8324

30 Aug	N22W12	339	0010	01	AXX	002	A											
31 Aug	N23W24	338	0000	01	AXX	001	A											
01 Sep	N23W37	338																
02 Sep	N23W50	338																
03 Sep	N23W63	338																
04 Sep	N23W76	338																

Died on Disk.

Absolute heliographic longitude: 339

Region 8325

02 Sep	S28E47	241	0000	00	AXX	001	A											
03 Sep	S31E32	242	0000	00	AXX	001	A											
04 Sep	S31E19	242																
05 Sep	S31E06	242																
06 Sep	S31W07	242																

Still on Disk.

Absolute heliographic longitude: 242

Region 8326

03 Sep	N19E73	201	0100	09	DSO	002	B											
04 Sep	N18E60	201	0160	13	ESO	003	B	1			1							
05 Sep	N21E50	198	0070	10	DSO	006	B	4			5							
06 Sep	N22E39	196	0080	10	DSO	011	B	2			4							

Still on Disk.

Absolute heliographic longitude: 196

Region 8327

03 Sep	N30E78	196	0050	02	HSX	001	A											
04 Sep	N28E64	197	0070	03	HSX	001	A											
05 Sep	N30E52	196	0030	01	HSX	003	A											
06 Sep	N30E39	196	0030	03	CSO	003	B											

Still on Disk.

Absolute heliographic longitude: 196

Region 8328

04 Sep	S18E72	189	0010	01	AXX	002	A											
05 Sep	S17E58	190	0100	02	HSX	002	A											
06 Sep	S16E45	190	0120	03	CSO	005	B											

Still on Disk.

Absolute heliographic longitude: 190



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 8329</i>																						
05 Sep	N15E52	196	0150	10	DSO	009	B	1				1										
06 Sep	N15E38	197	0200	09	DAO	014	B															
									1	0	0	1	0	0	0	0	0	0	0	0	0	
Still on Disk.																						
Absolute heliographic longitude: 197																						
<i>Region 8330</i>																						
06 Sep	S20E68	167	0050	07	CRO	003	B															
									0	0	0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																						
Absolute heliographic longitude: 167																						
<i>Region 8331</i>																						
06 Sep	N25E74	161	0080	01	HSX	001	A															
									0	0	0	0	0	0	0	0	0	0	0	0	0	
Still on Disk.																						
Absolute heliographic longitude: 161																						



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

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	<u>Observed values</u> SWO	RI	Ratio RI/SWO	<u>Smooth values</u> SWO	RI	**Penticton 10.7 cm	Smooth Value	<u>Planetary</u> Ap	<u>Smooth</u> Value
1996									
September	02.9	01.6	0.55	13.3	08.4	69.4	72.3	15	09.3
October	02.3	00.9	0.39	14.0	08.8	69.2	72.6	13	09.1
November	26.7	17.9	0.67	15.4	09.8	78.7	73.0	08	09.1
December	21.1	13.3	0.63	16.2	10.4	77.8	73.3	07	09.3
1997									
January	09.0	05.7	0.63	16.5	10.5	74.0	73.4	09	09.3
February	11.3	07.6	0.67	17.4	11.0	73.8	73.7	11	09.2
March	14.4	08.7	0.60	20.4	13.5	73.5	75.1	08	08.9
April	24.5	15.5	0.63	24.0	16.5	74.5	76.8	10	08.6
May	28.6	18.5	0.65	26.4	18.3	74.6	78.4	08	08.6
June	22.1	12.7	0.57	29.0	20.3	71.7	80.1	07	08.6
July	17.0	10.4	0.61	32.4	22.6	71.1	81.8	06	08.5
August	36.7	24.4	0.66	35.9	25.0	79.0	83.4	07	08.3
September	52.8	51.3	0.88	40.5	28.3	96.2	85.7	10	08.4
October	33.6	22.8	0.68	45.4	31.8	84.9	88.6	11	08.6
November	53.5	39.0	0.73	49.3	35.0	99.5	91.3	11	09.0
December	57.9	41.2	0.71	54.2	39.0*	98.8	94.2*	05	09.5
1998									
January	51.8	31.9	0.62	60.6	43.7*	93.4	97.5*	08	09.9*
February	54.4	40.3	0.74	67.4	48.8*	93.4	101.7*	08	10.5*
March	81.8	54.8	0.67			109.1		13	
April	73.6	53.4	0.73			108.3		10	
May	74.3	56.3	0.76			106.7		18	
June	93.6	70.7*	0.76*			108.4*		10	
July	98.3	66.2*	0.67*			114.0*		11*	
August	118.6	91.7*	0.77*			136.0*		18*	

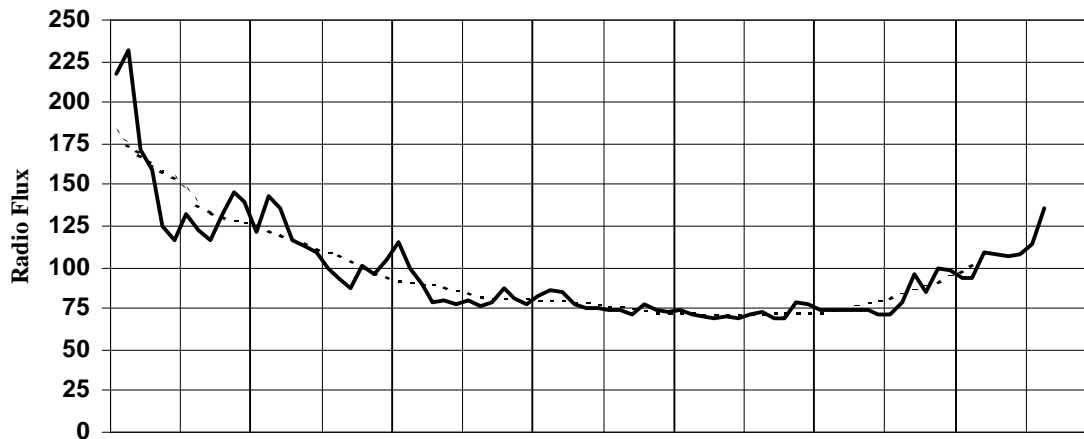
*Preliminary estimates.

The lowest smoothed sunspot indices 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.

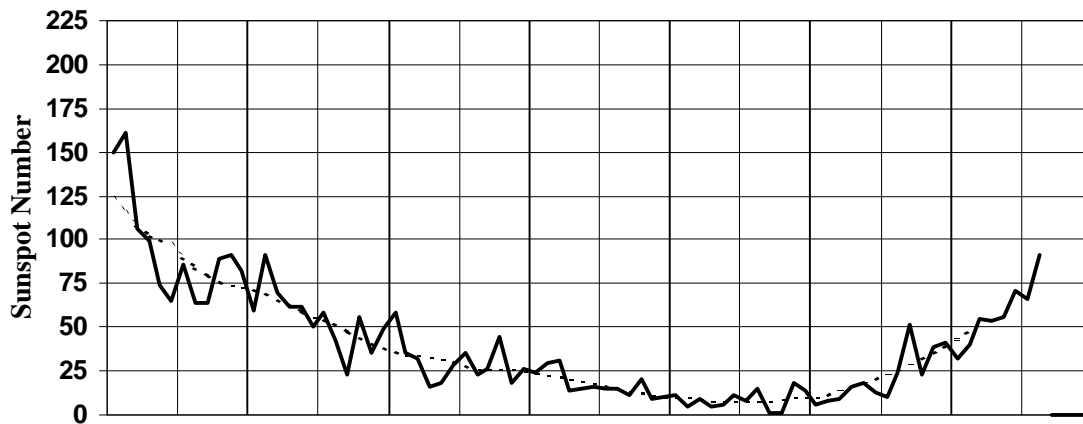
** From June 1991 onward, the 10.7-cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.



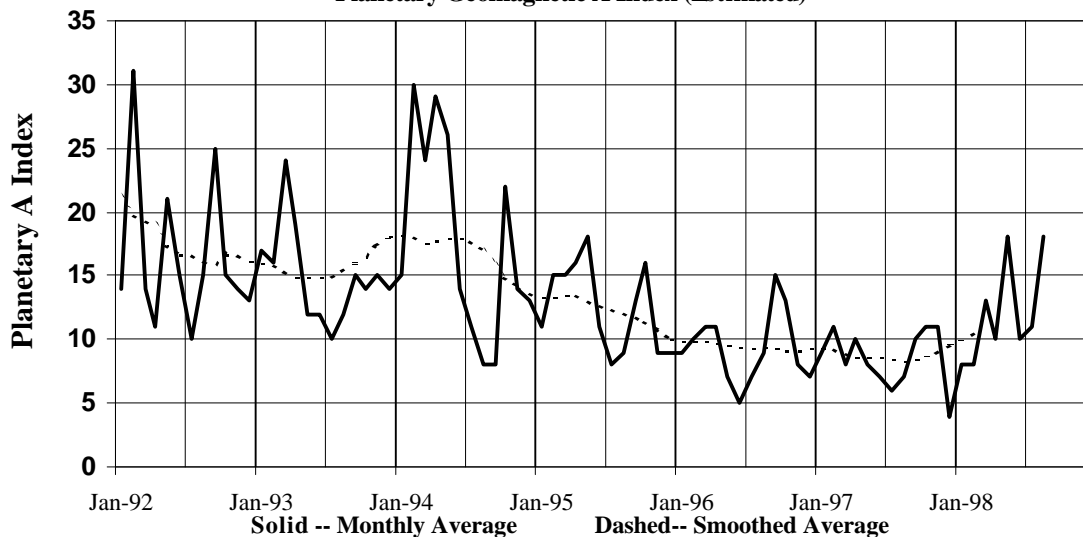
Penticton (DRAO) Radio Flux 2800MHz (10.7cm)
 (With data through 1 Sep 98 for all 3 graphs)

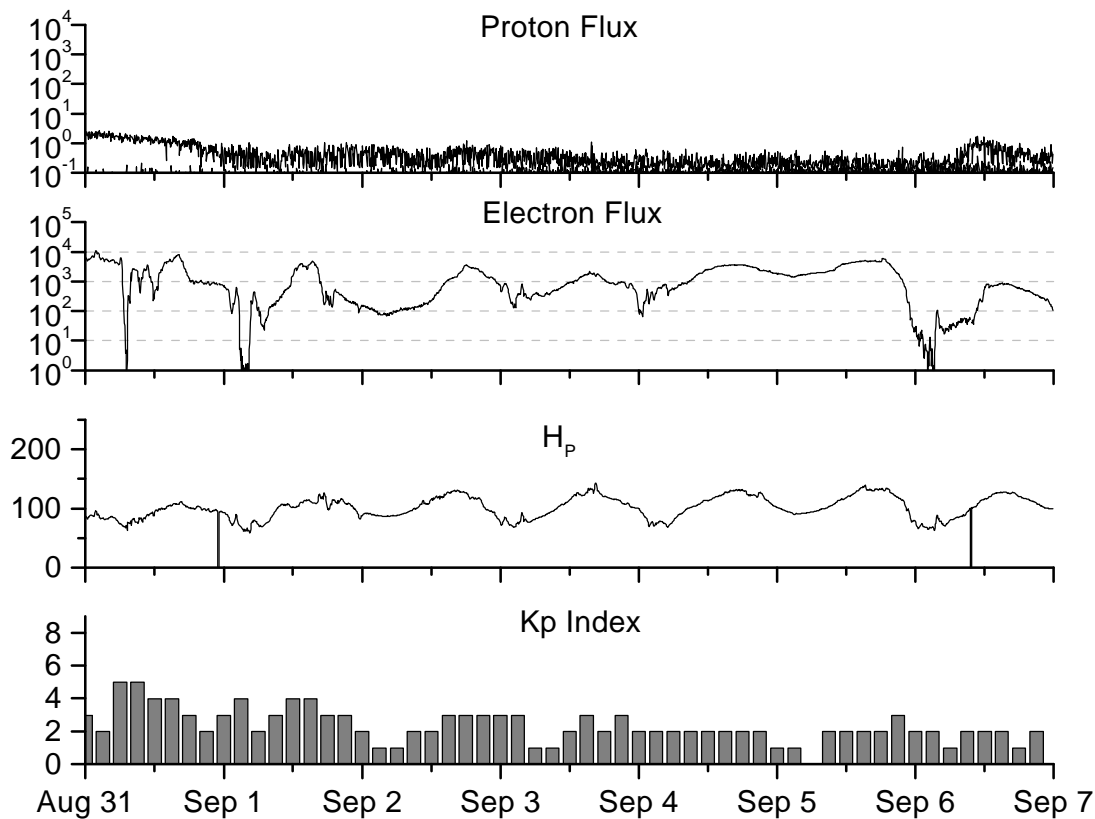


International Sunspot Number



Planetary Geomagnetic A Index (Estimated)





Weekly Geosynchronous Satellite Environment Summary
Week Beginning 31 August 1998

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

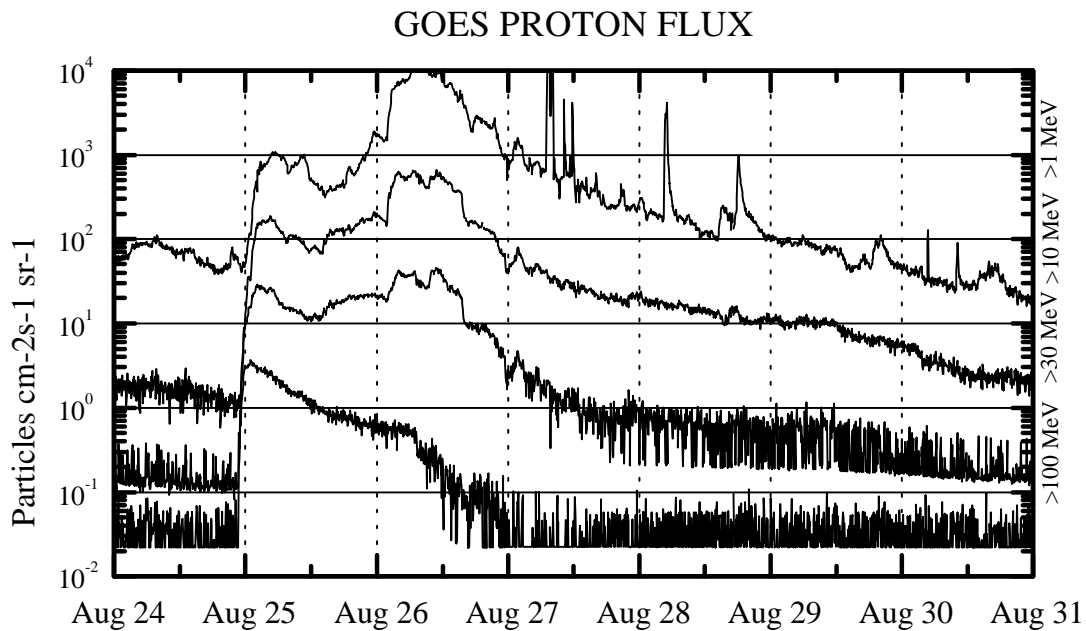
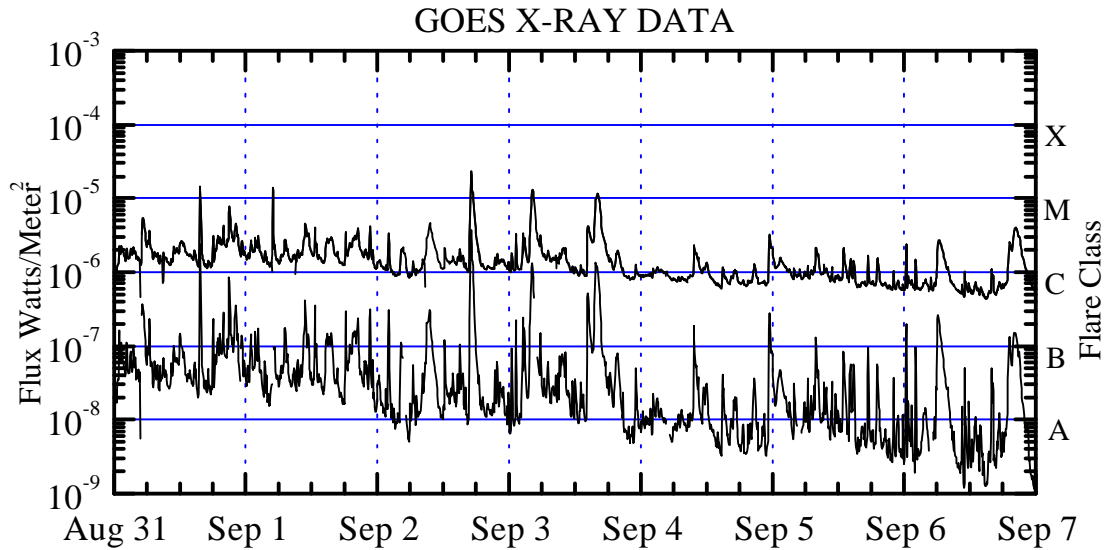
Electrons plot contains the five-minute averaged integral electron flux (electrons/ cm²-sec-sr) with energies greater than 2 MeV at GOES-8.

H_p plot contains the five minute averaged magnetic field H component in nanoteslas (nT) as measured by GOES-8. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

K_p plot contains the estimated planetary 3-hour K-index (derived by the USAF 55th Space Weather Squadron) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Heartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC) and the US Geological Survey. These may differ from the final K_p values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWO and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and K_p are " global " parameters that are applicable to a first order approximation over large areas. H_{parallel} is subject to a more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





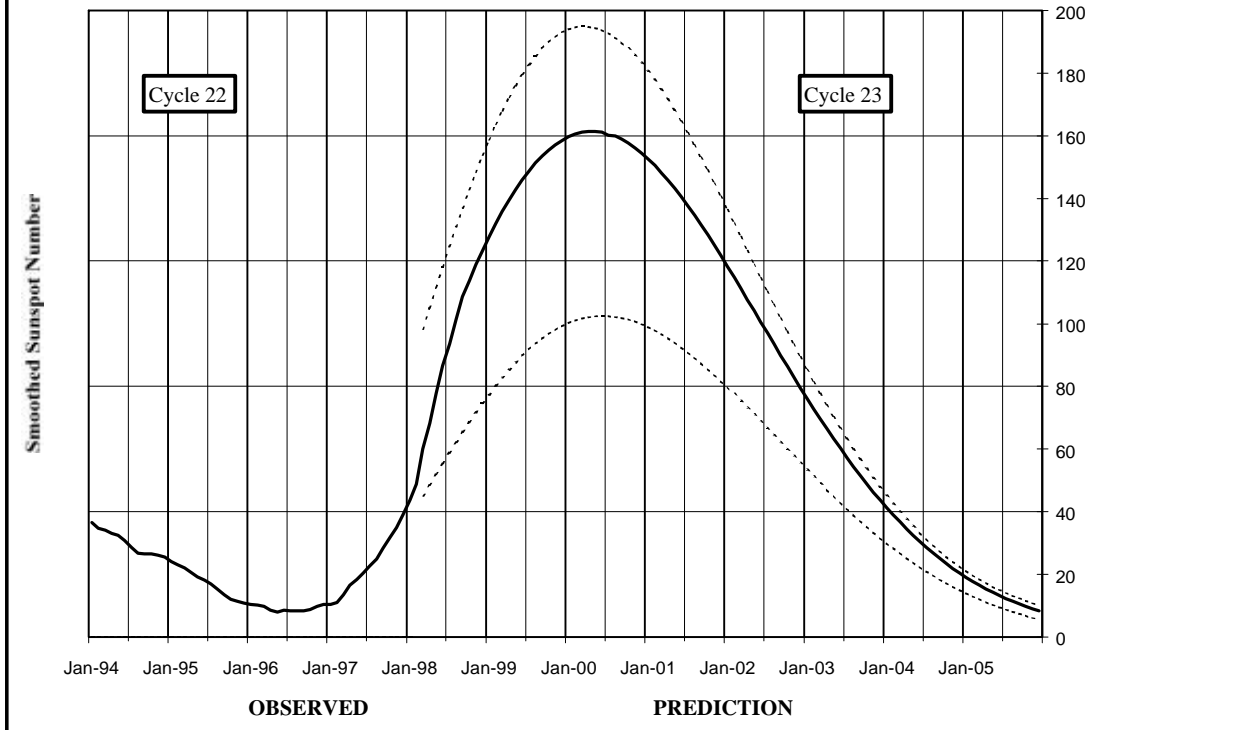
Weekly GOES Satellite X-ray and Proton Plots

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
(With data through 1 Sep 98)

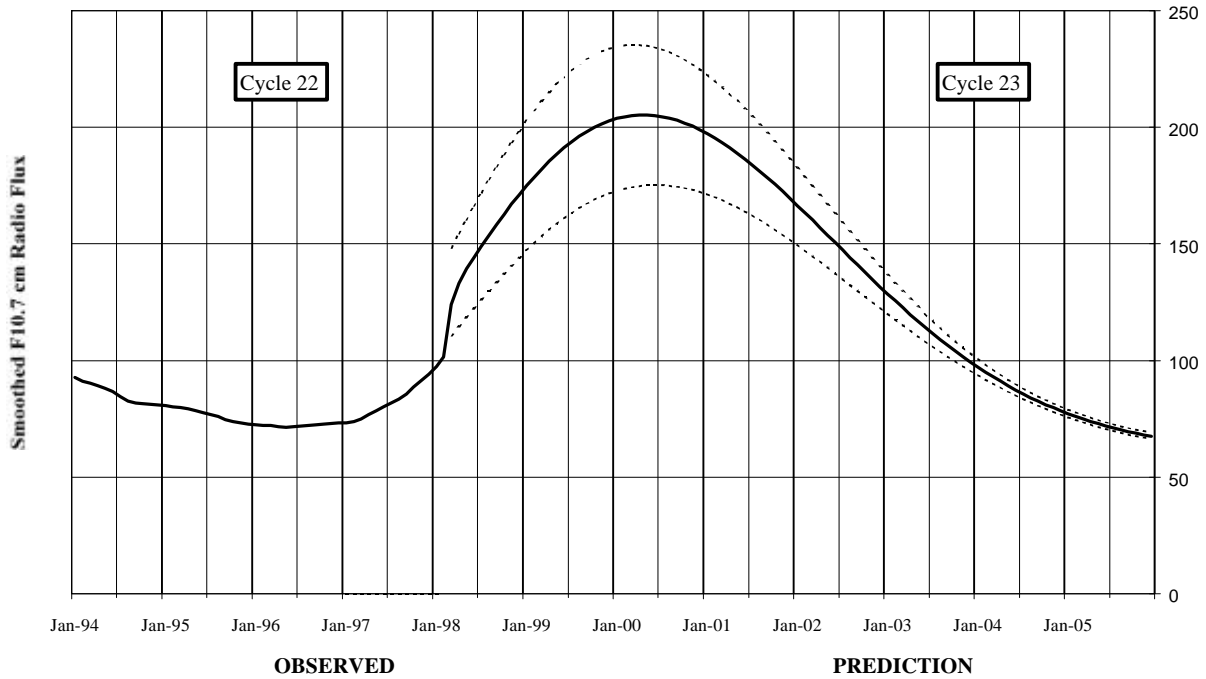


SEC Prediction of Smoothed Sunspot Number

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1996	10 (***)	10 (***)	10 (***)	9 (***)	8 (***)	9 (***)	9 (***)	8 (***)	9 (***)	9 (***)	10 (***)	11 (***)
1997	11 (***)	11 (***)	14 (***)	17 (***)	18 (***)	20 (***)	23 (***)	25 (***)	29 (***)	32 (***)	35 (***)	34 (***)
1998	44 (***)	49 (***)	60 (22)	68 (23)	78 (24)	87 (24)	94 (25)	101 (25)	109 (26)	114 (26)	119 (27)	124 (27)
1999	128 (27)	132 (28)	136 (28)	139 (29)	143 (29)	146 (29)	149 (29)	151 (29)	154 (29)	156 (29)	157 (29)	159 (29)
2000	160 (30)	161 (30)	161 (30)	161 (30)	161 (29)	161 (29)	160 (29)	160 (29)	159 (29)	158 (29)	156 (29)	155 (28)
2001	153 (28)	151 (28)	148 (28)	146 (27)	143 (27)	141 (27)	138 (27)	135 (26)	132 (26)	128 (26)	125 (25)	122 (25)
2002	119 (24)	115 (24)	111 (24)	108 (23)	104 (23)	101 (22)	97 (22)	94 (21)	90 (21)	86 (21)	83 (20)	80 (20)
2003	76 (19)	73 (19)	70 (18)	66 (18)	63 (17)	60 (17)	57 (17)	54 (16)	52 (16)	49 (15)	46 (15)	44 (14)
2004	41 (14)	39 (14)	37 (13)	35 (13)	32 (12)	31 (12)	29 (11)	27 (11)	25 (11)	23 (10)	22 (10)	20 (9)
2005	19 (9)	18 (9)	17 (8)	15 (8)	14 (8)	13 (8)	12 (7)	11 (7)	11 (7)	10 (6)	9 (5)	8 (4)



SEC Prediction of Smoothed F10.7 cm Radio Flux
(With data through 1 Sep 98)



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 (***)	124 (20)	133 (20)	139 (21)	144 (21)	149 (22)	154 (22)	158 (23)	163 (23)	167 (23)	171 (24)
1999	175 (24)	179 (25)	182 (25)	186 (25)	189 (25)	191 (26)	194 (26)	196 (26)	198 (27)	200 (27)	202 (28)	203 (28)
2000	204 (30)	205 (30)	205 (30)	205 (30)	205 (30)	205 (28)	205 (27)	204 (27)	203 (26)	202 (26)	201 (26)	199 (26)
2001	197 (25)	195 (25)	193 (25)	191 (25)	189 (24)	186 (24)	184 (24)	181 (24)	178 (23)	175 (23)	173 (23)	170 (22)
2002	166 (22)	163 (22)	160 (21)	157 (21)	154 (21)	151 (21)	147 (20)	144 (20)	141 (19)	138 (19)	135 (18)	132 (18)
2003	129 (17)	126 (17)	123 (17)	120 (16)	117 (16)	114 (15)	112 (15)	109 (15)	106 (14)	104 (14)	102 (14)	99 (13)
2004	97 (13)	95 (13)	93 (12)	91 (12)	89 (11)	87 (10)	86 (9)	84 (9)	83 (8)	81 (7)	80 (9)	78 (9)
2005	77 (8)	76 (8)	75 (8)	74 (7)	73 (7)	72 (7)	71 (7)	70 (6)	70 (6)	69 (2)	68 (2)	68 (2)

