

Space Weather Highlights
28 May – 03 June 2001

SWO PRF 1344
05 June 2001

Solar activity was low during most of the period, briefly dipping to very low levels on 30 May. Isolated, low-level C-class subflares occurred during most of the period from a few sunspot groups of moderate size and minor magnetic complexity.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. A high speed stream associated with a negative polarity coronal hole commenced late on 01 June and continued through 03 June. Increased velocities (peaks to 620 km/sec on 02 June), low densities, and variable IMF Bz (maximum range plus 17 nT to minus 14 nT (GSM)) were observed during this stream. Solar wind conditions recovered to near nominal values by 04 June.

There were no proton events detected during the period.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels throughout the period.

The geomagnetic field was at quiet to active levels on 28 May due to waning CME effects. Mostly quiet to unsettled conditions occurred during 29 May - 01 June. Activity increased to unsettled to minor storm levels during 02 June due to coronal hole effects. Activity decreased to quiet to unsettled levels during 03 June with active periods at high latitudes as coronal hole effects declined.

Space Weather Outlook
06 June - 02 July 2001

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

No proton events are expected during the period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during most of the period. However, high flux levels will be possible around 08 - 09 and 30 June.

The geomagnetic field is expected to be at quiet to unsettled levels during most of the period, barring an Earth-directed CME. However, active levels will be possible around 07 - 08 and 29 June due to recurrent coronal hole effects.



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
28 May	143	190	870	B3.9	2	0	0	0	0	0	0	0
29 May	139	131	660	B3.5	2	0	0	2	0	0	0	0
30 May	132	105	360	B3.5	0	0	0	1	0	0	0	0
31 May	133	93	300	B4.9	4	0	0	2	0	0	0	0
01 June	133	120	360	B4.8	4	0	0	5	0	0	0	0
02 June	134	141	630	B7.9	5	0	0	5	0	0	0	0
03 June	145	143	940	B4.9	5	0	0	7	1	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
28 May	2.6E+5	9.9E+3	2.0E+3		1.1E+7	
29 May	1.5E+5	9.8E+3	2.1E+3		4.2E+6	
30 May	7.2E+4	1.1E+4	2.3E+3		2.7E+6	
31 May	8.6E+4	1.2E+4	2.5E+3		4.3E+6	
01 June	1.3E+5	1.5E+4	2.4E+3		2.8E+6	
02 June	8.0E+5	3.6E+4	2.5E+3		2.8E+5	
03 June	6.5E+5	2.8E+4	2.5E+3		8.1E+5	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
21 May	3	1-0-1-2-2-0-0-1	9	1-1-1-5-3-0-0-0	8	2-1-1-2-3-3-3-2
22 May	8	2-2-2-1-2-2-3-2	5	1-1-1-3-1-1-2-1	9	2-1-2-3-3-3-3-2
23 May	8	2-2-2-1-2-3-2-2	16	4-2-3-5-2-2-2-2	11	3-2-2-2-3-4-3-3
24 May	7	2-3-2-1-1-1-2-2	10	3-2-1-2-3-0-1-4	9	3-2-1-2-3-3-3-3
25 May	6	2-1-1-2-2-2-2-2	13	0-1-1-3-4-5-2-1	8	2-1-2-2-3-3-3-2
26 May	6	2-2-1-2-2-1-1-2	9	2-3-2-2-4-0-2-1	8	2-2-2-2-2-3-3-2
27 May	8	0-0-0-0-2-4-3-3	6	0-0-0-1-0-4-2-2	9	1-0-0-2-3-4-3-3

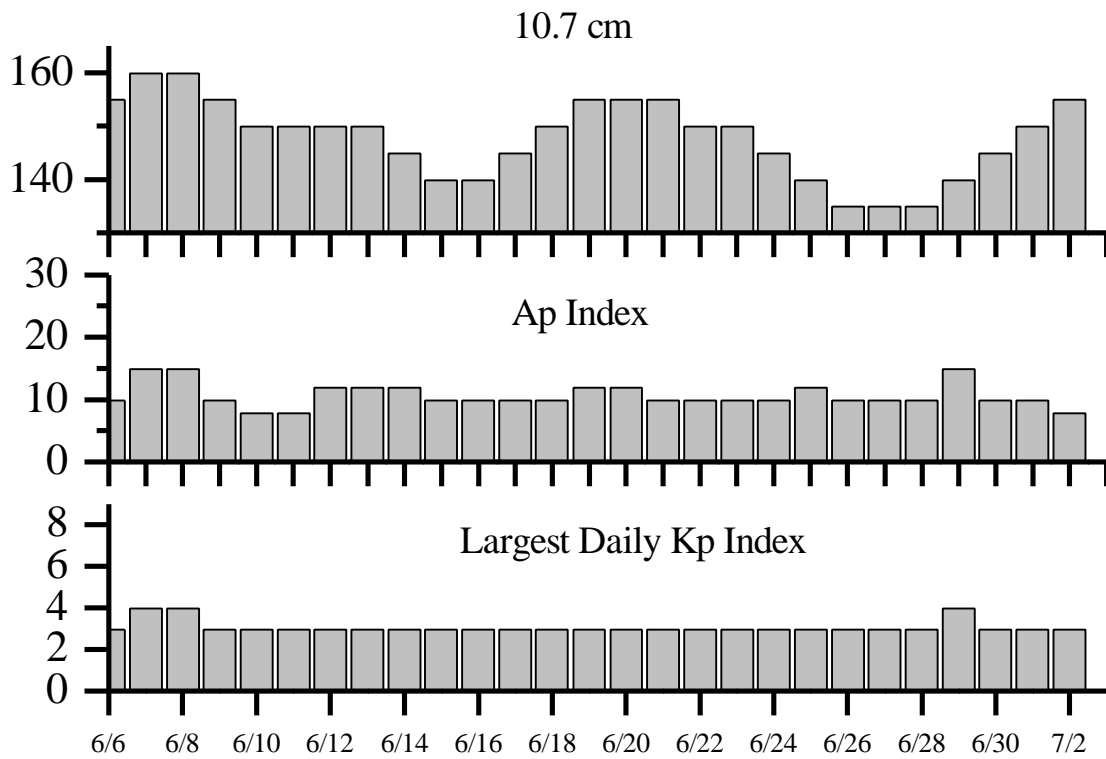


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
28 May 0047	2 – 245 MHz Radio Bursts	27 May
28 May 0047	245 MHz Radio Noise Storm	27 May
28 May 1206	K= 4 Observed	28 May 0900 - 1200
28 May 1214	K= 4 Warning	28 May 1215 - 1800
28 May 1220	K= 5 Warning	28 May 1225 - 1500
28 May 1500	K= 4 Observed	28 May 1200 - 1500
28 May 1757	EXTENDED K= 4 Warning	28 May 1215 - 2359
28 May 2335	EXTENDED K= 4 Warning	28/1215 - 29/1500 May
29 May 0009	1 – 245 MHz Radio Burst	28 May
30 May 0012	3 – 245 MHz Radio Bursts	29 May
30 May 0012	245 MHz Radio Noise Storm	29 May
02 Jun 0008	1 – 245 MHz Radio Bursts	01 Jun
02 Jun 0046	K= 4 Warning	02 Jun 0050 - 1500
02 Jun 0301	K= 5 Observed	02 Jun 0000 - 0300
02 Jun 1204	A \geq 20 Observed	02 Jun 1200
02 Jun 1423	EXTENDED K= 4 Warning	02 Jun 0050 - 2359
03 Jun 0128	1 – 245 MHz Radio Burst	02 Jun
03 Jun 0257	ENDED A \geq 20 Observed	02 Jun 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 June	155	10	3	20 June	155	12	3
07	160	15	4	21	155	10	3
08	160	15	4	22	150	10	3
09	155	10	3	23	150	10	3
10	150	10	3	24	145	10	3
11	150	8	3	25	140	12	3
12	150	8	3	26	135	10	3
13	150	12	3	27	135	10	3
14	145	12	3	28	135	10	3
15	140	10	3	29	140	15	4
16	140	10	3	30	145	10	3
17	145	10	3	01 July	150	10	3
18	150	10	3	02	155	8	3
19	155	12	3				



Energetic Events

Date	Time		X-ray	Optical Information			Peak		Sweep Freq	
	Begin	Max	Class	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	
28 May	1402	1410	1416	B7.2				
	1548	1556	1602	C1.2				
	1822	1848	1856	C1.3				
	2111	2123	2136	B8.0				
29 May	0524	0526	0544	C4.4	SF	N20E43		9475
	0753	0754	0802	C1.5	SF	N19E41		9475
30 May	2350	2350	2353		SF	N17W71		9481
31 May	0026	0036	0052		SF	N17W73		9481
	0437	0444	0449	C1.5				
	1620	1632	1712	C1.0				
	1852	1856	1859	C1.0				
01 June	1907	1911	1915	C1.7				
	2057	2106	2108	B7.7	SF	S16W31		9477
	2212	2216	2219	B7.2				
	0312	0321	0328	B9.0				
	0559	0600	0603		SF	N18W90		9481
	1157	1202	1206	C1.6				
02 June	1500	1502	1507	B9.4	SF	N18E04		9475
	1508	1508	1514	C1.4	SF	S24W57		9483
	1624	1626	1630	C1.1	SF	S24W58		9483
	1813	1813	1819		SF	S24W59		9483
	2116	2121	2137	C1.6				
	0011	0016	0029	C1.3	SF	S08E35		9484
	0044	0049	0051		SF	S08E34		9484
	0429	0433	0436	C1.2				
	0528	0532	0549	B7.9				
	0720	0725	0729	C1.5				
02 June	0815	0825	0844	C1.3				
	B1040	U1041	1048	C1.0	SF	S08E30		9484
	1322	1327	1331	B9.4				
	1337	1341	1348		SF	S07E28		9484
	1350	1351	1354		SF	S08E27		9484
	2006	2009	2013	B5.6				



Flare List – continued.

Date	Time			X-ray Class.	Imp / Brtns	Optical	Rgn
	Begin	Max	End			Location Lat CMD	
03 June	0034	U0037	A0119		SF	S06E21	9484
	0659	0700	0704	C1.1	SF	S16E70	9488
	1354	1355	1400	B7.8	SF	S19E73	9488
	1403	1409	1431	C1.1			
	1900	1902	1911	C1.0	SF	S06E10	9484
	2007	2010	2026	C2.4	SF	S06E09	9484
	2042	2043	2047		SF	N28W20	9486
	2048	2049	2051		SF	N28W20	9486
	2101	2120	2147	C5.6	1F	S19E62	9488

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

Region 9462

17 May N18E73	137	0100	02	HAX	001	A
18 May N20E62	135	0050	02	HSX	001	A
19 May N19E48	136	0050	02	HSX	001	A
20 May N20E36	135	0060	02	HAX	001	A
21 May N22E23	135	0060	02	HSX	002	A
22 May N21E09	135	0080	03	CSO	003	B
23 May N19W03	134	0080	03	CSO	003	B
24 May N18W16	134	0070	02	HSX	001	A
25 May N20W28	133	0060	02	HSX	001	A
26 May N21W40	132	0070	02	HSX	001	A
27 May N21W54	132	0060	02	HSX	001	A
28 May N21W67	132	0060	02	HSX	001	A
29 May N20W80	132	0060	02	HSX	001	A
30 May N20W93	132					

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 134



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 9463</i>																	
18 May	N07E72	125	0050	05	DSO	002	B										
19 May	N07E59	125	0230	09	DAO	006	B										
20 May	N09E46	125	0400	11	EKO	014	B										
21 May	N12E31	127	0500	12	EKI	022	BG										
22 May	N10E18	126	0380	13	EKI	030	BG										
23 May	N07E04	127	0720	15	EKI	033	B										
24 May	N07W09	127	0670	16	FKI	025	B	1									
25 May	N08W23	128	0480	14	EKI	026	B					2					
26 May	N08W38	130	0530	13	EKO	020	BG										
27 May	N08W51	129	0490	15	EKI	013	BG										
28 May	N08W64	129	0420	14	EHO	010	B										
29 May	N08W81	133	0300	04	HKX	001	A										
30 May	N08W94	133															
								1	0	0	2	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 127

<i>Region 9465</i>																	
20 May	S08E63	108	0110	10	DAO	004	B										
21 May	S09E48	110	0080	10	DSO	003	B					1					
22 May	S10E34	110	0040	05	CSO	006	B										
23 May	S10E19	112	0010	03	BXO	005	B										
24 May	S11E10	108	0020	05	BXO	006	B	1				1					
25 May	S13W01	106	0010	03	BXO	006	B	1				1					
26 May	S10W18	110	0020	05	CRO	005	B										
27 May	S11W33	111	0010	08	BXO	007	B										
28 May	S09W47	112	0010	01	HRX	001	A										
29 May	S09W60	112															
30 May	S09W73	112															
31 May	S09W86	112															
								2	0	0	3	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 106



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 9466

21 May S02E40	118	0030	02	HSX	002	B												
22 May S02E26	118	0010	01	AXX	003	A												
23 May S04E14	117	0020	02	AXX	007	A												
24 May S05W02	120	0060	04	DAO	007	B												
25 May S04W12	117	0030	03	CSO	007	B												
26 May S04W25	117	0050	06	BXO	004	B												
27 May S04W38	117																	
28 May S04W51	117																	
29 May S04W64	117																	
30 May S04W77	117																	

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 120

Region 9467

21 May S05E55	103	0060	01	HAX	001	A												
22 May S05E42	102	0060	02	HSX	001	A												
23 May S07E29	102	0080	02	HSX	001	A												
24 May S08E15	103	0080	02	HSX	001	A												
25 May S08E00	105	0060	02	HSX	002	A												
26 May S07W13	105	0070	02	HSX	001	A												
27 May S06W26	104	0050	02	HSX	001	A												
28 May S06W39	104	0060	02	HSX	001	A												
29 May S06W53	105	0040	01	HSX	001	A												
30 May S06W66	105	0050	02	HSX	001	A												
31 May S06W81	107	0030	01	AXX	001	A												

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 105



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 9468</i>																		
21 May	N07E65	093	0070	07	CAO	002	B											
22 May	N07E53	091	0070	08	CAO	004	B											
23 May	N05E39	092	0150	08	DAO	010	B	2				2						
24 May	N05E25	093	0150	08	DAI	020	B		1			1	1					
25 May	N07E12	093	0090	08	DAO	022	B	5				7	1					
26 May	N06W02	094	0150	07	DAO	016	B	2				2						
27 May	N06W16	094	0100	08	DAO	014	B											
28 May	N05W29	094	0100	08	DAO	008	B											
29 May	N05W43	095	0070	07	CSO	004	B											
30 May	N04W58	097	0120	08	CAO	005	B											
31 May	N06W76	102	0080	02	HAX	001	A											
01 Jun	N07W87	100	0050	02	HSX	001	A											
								9	1	0	12	2	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 094

Region 9471

23 May	S13W02	133	0000	00	AXX	001	A											
24 May	S13W16	134	0010	01	BXO	002	B											
25 May	S13W29	134																
26 May	S13W42	134																
27 May	S13W55	134																
28 May	S13W68	134																
29 May	S13W81	134																
30 May	S13W94	134																
								0	0	0	0	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 133



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 9472

23 May N12E61	070	0050	02	HSX	001	A											
24 May N12E47	071	0040	02	HSX	001	A											
25 May N12E34	071	0010	01	HSX	001	A											
26 May N12E21	071	0020	02	HAX	002	A											
27 May N12E08	070	0010	02	AXX	002	A											
28 May N12W05	070	0010	02	AXX	002	A											
29 May N13W17	069	0010	05	BXO	004	B											
30 May N14W31	070	0000	01	AXX	001	A											
31 May N14W44	070	0000	00	AXX	001	A											
01 Jun N14W57	070																
02 Jun N14W70	070																

0 0 0 0 0 0 0 0

Died on Disk.

Absolute heliographic longitude: 070

Region 9473

26 May N12E12	080	0010	03	BXO	003	B											
27 May N12E00	078	0010	02	AXX	002	A											
28 May N12W13	078																
29 May N12W26	078																
30 May N12W39	078																
31 May N12W52	078																
01 Jun N12W65	078																
02 Jun N12W78	078																

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 078

Region 9474

26 May N18E53	039	0030	05	BXO	003	B											
27 May N19E42	036	0050	06	DAO	005	B											
28 May N19E29	036	0060	07	CAO	008	B											
29 May N19E15	037	0060	06	DAO	008	B											
30 May N20E02	037	0030	07	CSO	008	B											
31 May N20W14	040	0020	02	CSO	003	B											
01 Jun N20W27	040	0010	00	AXX	001	A											
02 Jun N21W38	037	0000	05	BXO	003	B											
03 Jun N22W51	037	0010	01	AXX	001	A											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 037



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 9475</i>																	
26 May	N17E71	021	0050	01	HSX	001	A										
27 May	N17E59	019	0030	08	CAO	003	B										
28 May	N17E48	017	0050	10	DSO	004	B										
29 May	N18E34	018	0100	10	DAO	007	BGD	2				2					
30 May	N19E19	020	0130	13	EAI	015	BG										
31 May	N18E06	020	0070	13	EAO	008	BG										
01 Jun	N19W08	021	0060	11	ESO	008	B					1					
02 Jun	N20W19	018	0060	05	CAO	008	B										
03 Jun	N19W29	015	0070	05	DAO	009	B										
								2	0	0	3	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 020

Region 9476

27 May	S22W68	146	0020	01	HRX	001	A										
28 May	S23W82	147	0010	01	AXX	001	A										
								0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 146

Region 9477

27 May	S16E20	058	0040	06	DSO	006	B										
28 May	S16E07	058	0030	06	DSO	005	B										
29 May	S16W08	060	0000	00	AXX	001	A										
30 May	S16W21	060															
31 May	S16W34	060		1													
01 Jun	S16W43	056	0010	02	BXO	002	B										
02 Jun	S17W55	054	0020	03	BXO	004	B										
03 Jun	S17W68	054															
								0	0	0	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 058



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 9478

27 May	N14E15	063	0010	03	BXO	003	B										
28 May	N13E04	061	0010	03	CRO	002	B										
29 May	N13W12	061															
30 May	N13W25	061															
31 May	N13W38	061															
01 Jun	N13W51	061															
02 Jun	N13W64	061															
03 Jun	N13W77	061															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 061

Region 9479

28 May	N26W56	121	0030	03	CSO	003	B										
29 May	N24W71	123	0020	01	BXO	003	B										
30 May	N18W72	111	0000	01	AXX	001	A										
								0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 121

Region 9480

28 May	S14E52	013	0010	01	AXX	002	A										
29 May	S13E36	016	0000	00	AXX	001	A										
30 May	S13E23	016															
31 May	S13E10	016															
01 Jun	S13W03	016															
02 Jun	S13W16	016															
03 Jun	S13W29	016															
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 016

Region 9481

28 May	N17W44	109	0010	02	AXX	002	A										
29 May	N17W57	109															
30 May	N17W70	109				1											
31 May	N18W84	110	0060	09	CSO	004	B					1					
01 Jun	N18W98	111	0060	03	DAO	003	B					1					
								0	0	0	3	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 109



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 9482

30 May	S16E48	351	0030	04	BXO	004	B											
31 May	S16E32	354	0040	09	CSO	005	B											
01 Jun	S13E16	357	0020	06	CSO	004	B											
02 Jun	S12E05	354	0010	03	BXO	003	B											
03 Jun	S16W04	350	0010	01	AXX	001	A											
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 350

Region 9483

01 Jun	S22W59	072	0060	06	DAO	007	B	2			3							
02 Jun	S22W73	072	0060	08	DAO	004	B											
03 Jun	S22W84	070	0020	08	BXO	002	B											
								2	0	0	3	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 072

Region 9484

01 Jun	S08E36	337	0030	03	CSO	003	BG											
02 Jun	S06E22	337	0090	07	DAO	015	BG	2			5							
03 Jun	S06E08	338	0110	09	DAI	020	BG	2			3							
								4	0	0	8	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 338

Region 9485

01 Jun	S23E75	298	0060	02	HAX	001	A											
02 Jun	S21E64	295	0170	12	ESO	002	B											
03 Jun	S23E46	300	0030	01	HRX	001	A											
								0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 300

Region 9486

02 Jun	N28W08	007	0040	04	DAO	008	B											
03 Jun	N28W22	008	0070	05	DAO	009	B				2							
								0	0	0	2	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 007



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 9487

02 Jun	N20E75	284	0180	03	CAO	004	B											
03 Jun	N19E60	286	0340	06	CKO	004	B											
								0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 286

Region 9488

03 Jun	S18E61	285	0280	08	CAO	006	B	2			2	1						
								2	0	0	2	1	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 285

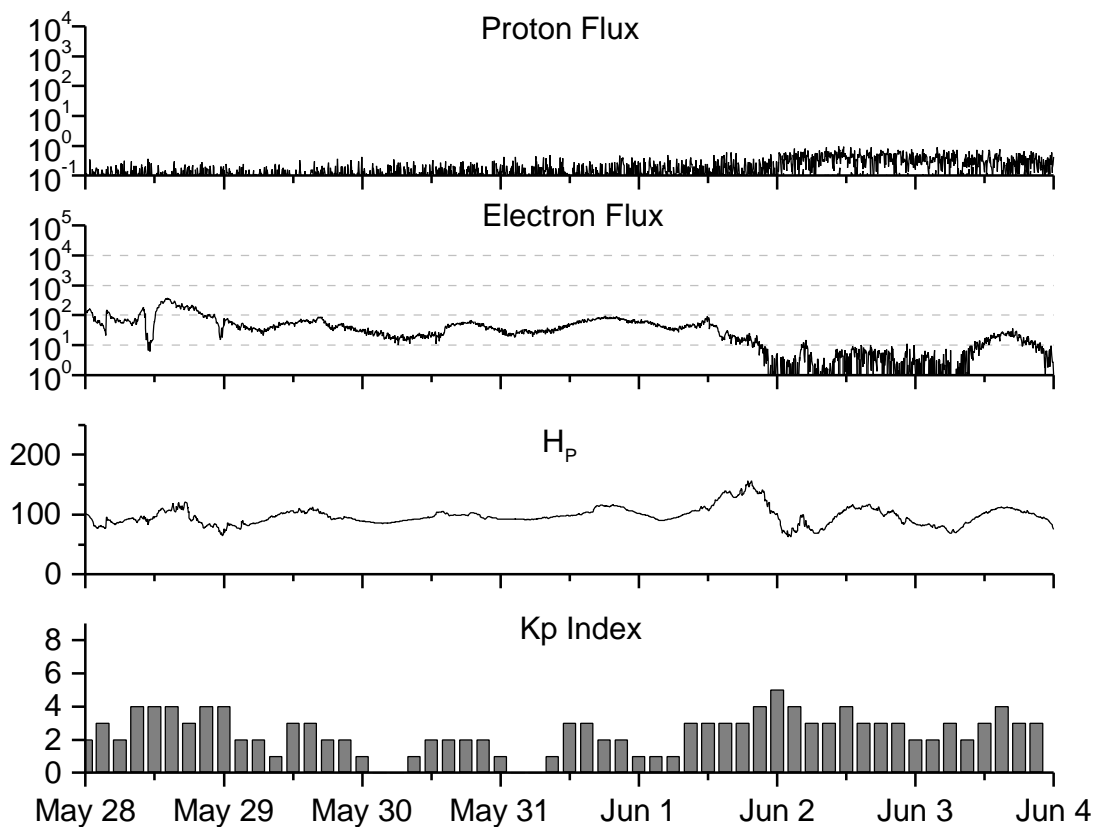


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers				Radio Flux		Geomagnetic		
	Observed values SWO	RI	Ratio RI/SWO	Smooth values SWO	RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
1999									
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	94.3	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	0.67	150.0	102.3	135.7	161.0	19	12.8
October	167.7	116.7	0.70	158.5	107.8	164.8	167.2	19	12.7
November	199.3	133.2	0.67	164.7	110.0	191.5	171.5	14	13.1
December	123.5	86.4	0.69	165.9	111.1	169.8	173.4	10	13.8
2000									
January	140.8	90.1	0.64	168.0	112.9	158.1	175.5	13	14.5
February	161.9	112.9	0.70	172.1	116.7	173.2	176.8	15	15.0
March	203.6	138.5	0.68	175.4	119.9	208.2	178.4	09	15.0
April	193.4	125.5	0.65	176.3	120.8	184.2	180.5	15	15.0
May	188.8	121.6	0.64	173.1	119.0	184.5	180.0	15	15.0
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			173.6		08	
2001									
January	142.7	95.1	0.67			166.7		08	
February	131.0	80.1	0.61			147.3		06	
March	166.7	114.2	0.69			177.7		17	
April	163.6	108.2	0.66			178.3		18	
May	135.1	97.3	0.72			148.7		12	

NOTE: All smoothed values after December 1999 and monthly values after June 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 28 May 2001

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.

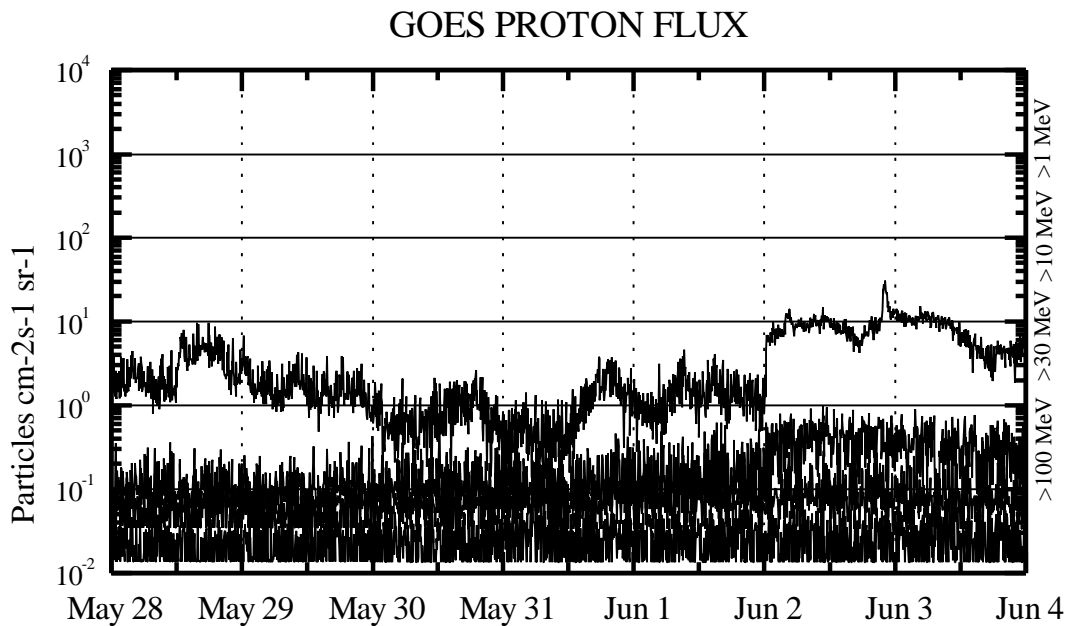
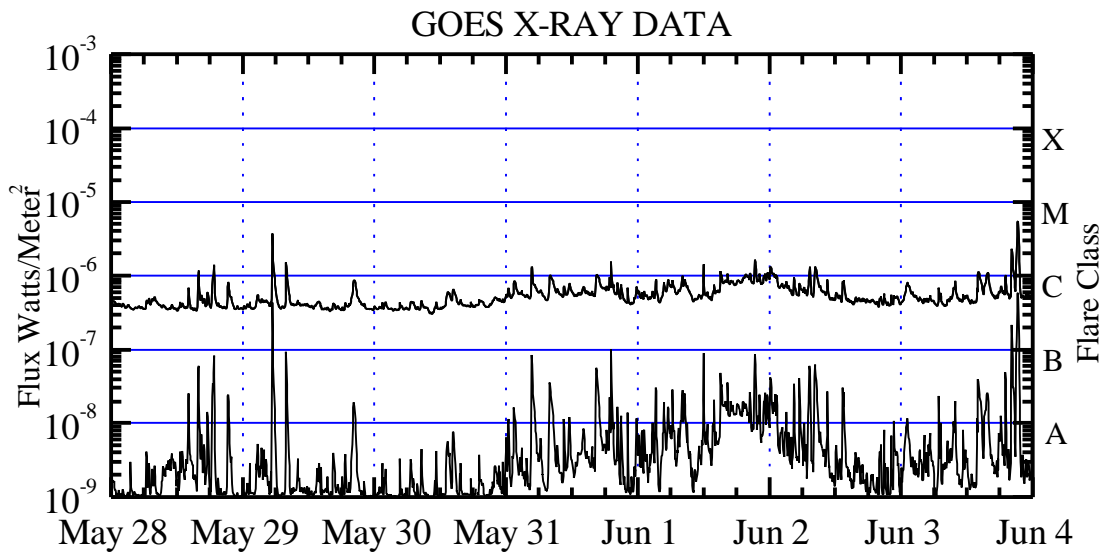
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm² -sec -sr) with energies greater than 2 MeV at GOES-8.

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_p is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.



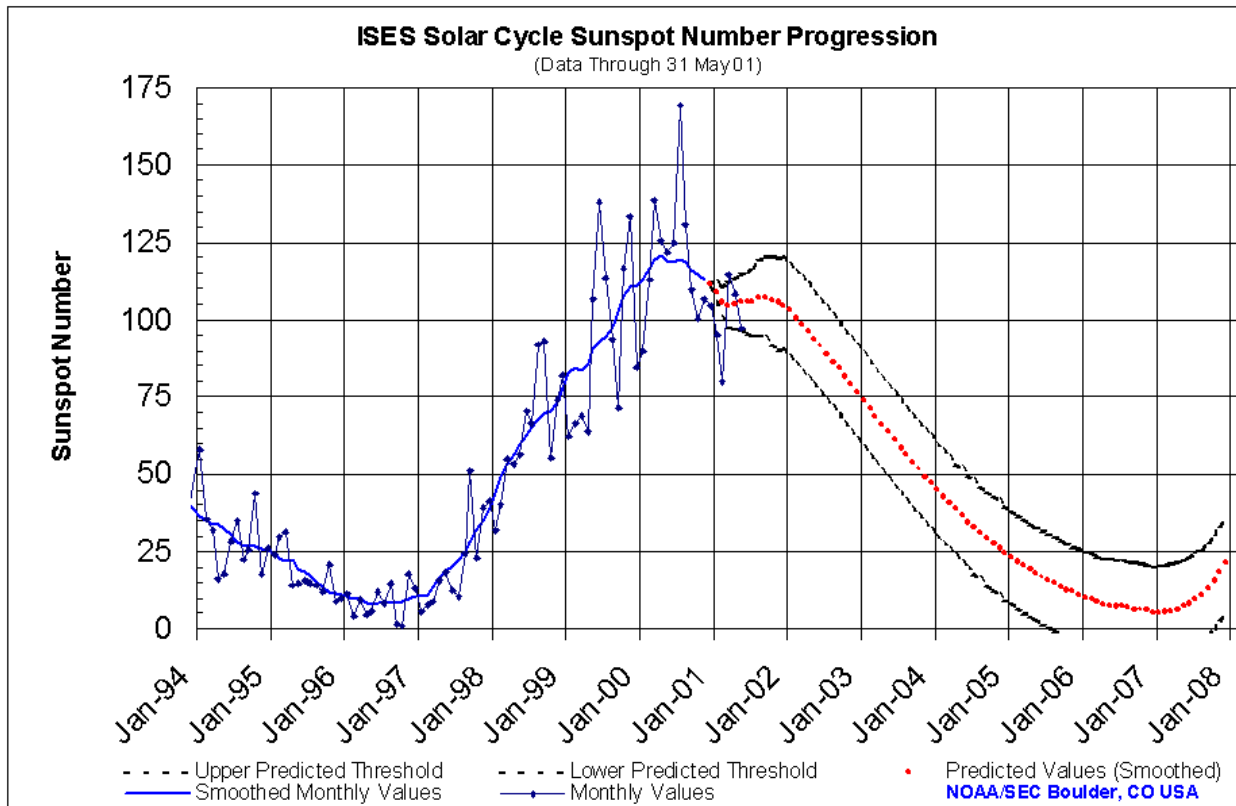


Weekly GOES Satellite X-ray and Proton Plots

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.

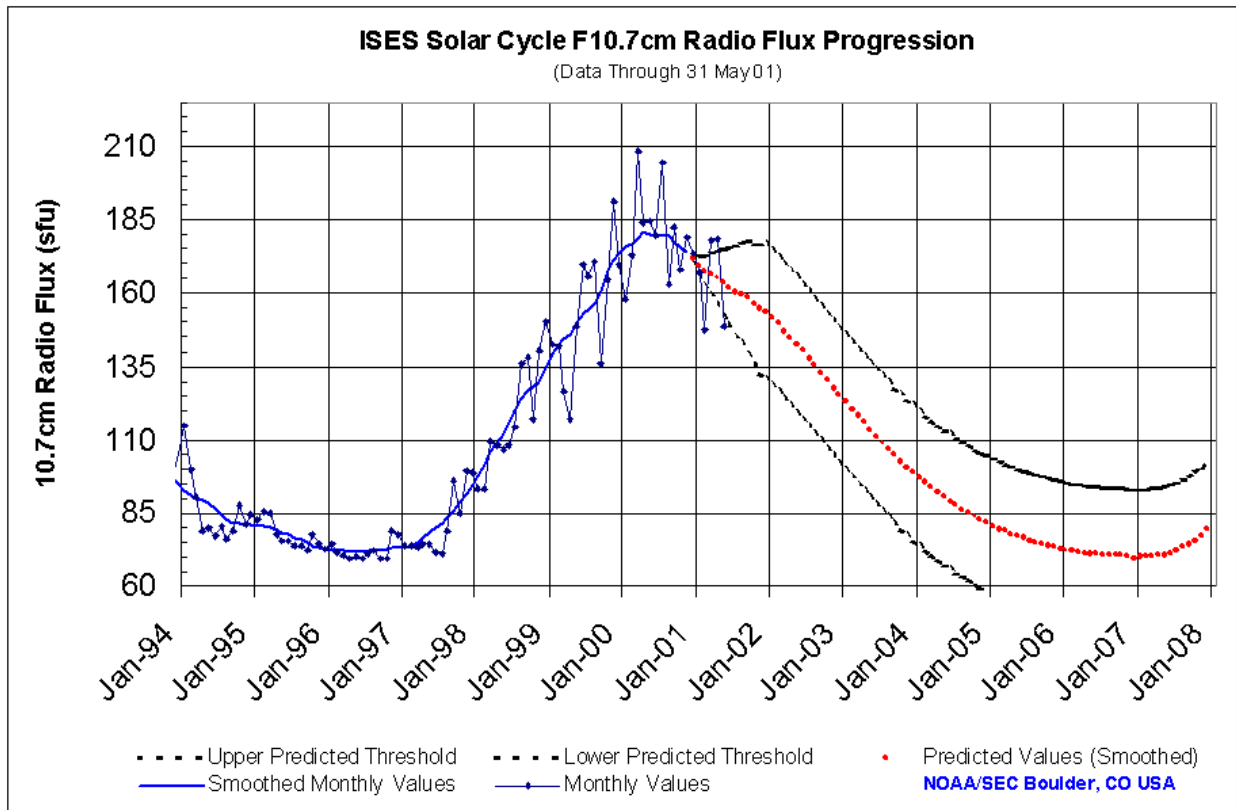




SEC Prediction of Smoothed Sunspot Number

	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 (***)	111 (1)
2001	109 (3)	106 (5)	105 (7)	105 (8)	105 (9)	106 (10)	106 (11)	107 (12)	107 (13)	106 (14)	105 (15)	105 (15)
2002	103 (15)	101 (15)	98 (15)	96 (15)	94 (15)	91 (15)	89 (15)	86 (15)	84 (15)	81 (15)	79 (15)	76 (15)
2003	74 (15)	71 (15)	69 (15)	66 (15)	64 (15)	61 (15)	59 (15)	56 (15)	54 (15)	52 (15)	49 (15)	47 (15)
2004	45 (15)	43 (15)	41 (15)	39 (15)	37 (15)	35 (15)	33 (15)	31 (15)	29 (15)	28 (15)	26 (15)	25 (15)
2005	23 (15)	22 (15)	20 (15)	19 (15)	18 (15)	17 (15)	16 (15)	15 (15)	14 (15)	13 (15)	12 (15)	11 (15)
2006	10 (15)	9 (15)	9 (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)

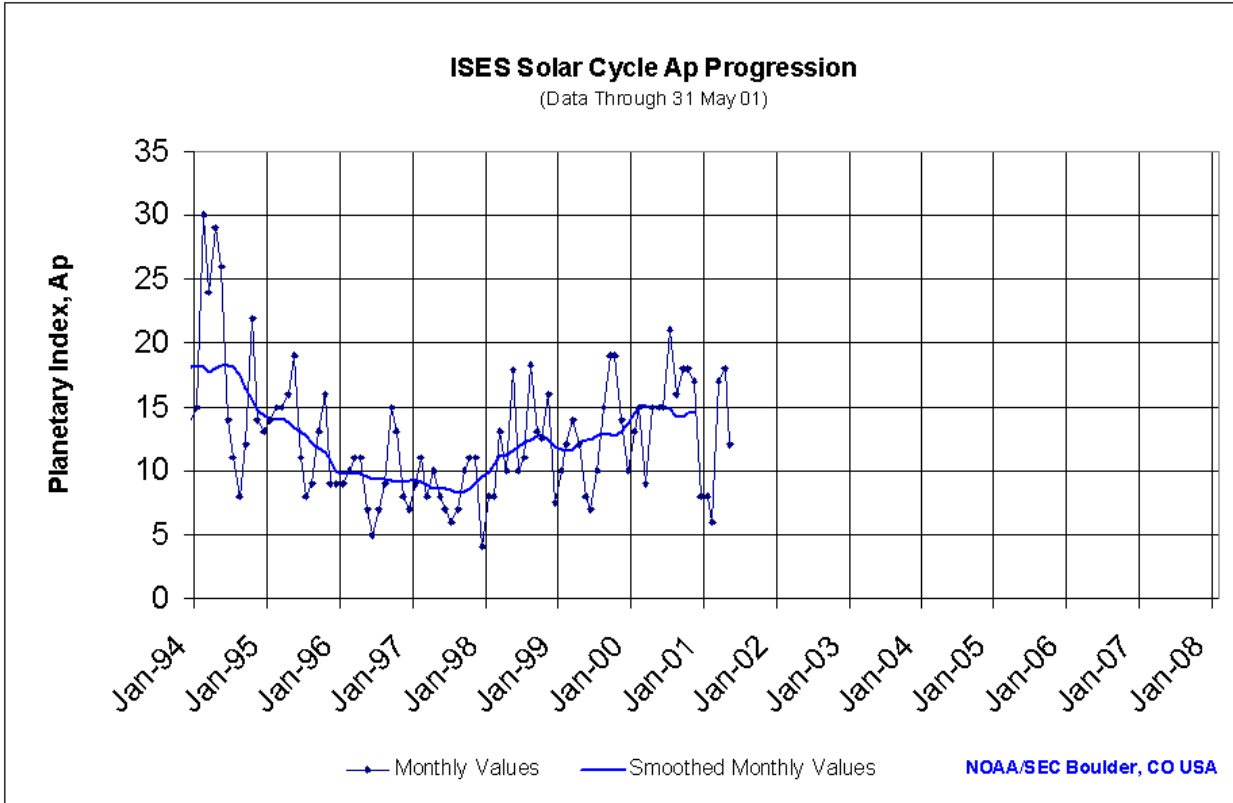




SEC Prediction of Smoothed F10.7cm Radio Flux

	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 (1)
2001	169 (3)	168 (5)	167 (7)	165 (9)	164 (11)	162 (13)	161 (15)	160 (17)	159 (19)	156 (21)	154 (22)	154 (23)
2002	152 (23)	149 (23)	147 (23)	145 (23)	143 (23)	140 (23)	138 (23)	135 (23)	133 (23)	130 (23)	128 (23)	125 (23)
2003	123 (23)	120 (23)	118 (23)	116 (23)	113 (23)	111 (23)	109 (23)	107 (23)	105 (23)	103 (23)	101 (23)	99 (23)
2004	97 (23)	95 (23)	94 (23)	92 (23)	90 (23)	89 (23)	88 (23)	86 (23)	85 (23)	84 (23)	83 (23)	82 (23)
2005	81 (23)	80 (23)	79 (23)	78 (23)	77 (23)	76 (23)	76 (23)	75 (23)	75 (23)	74 (23)	73 (23)	73 (23)
2006	72 (23)	72 (23)	72 (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)



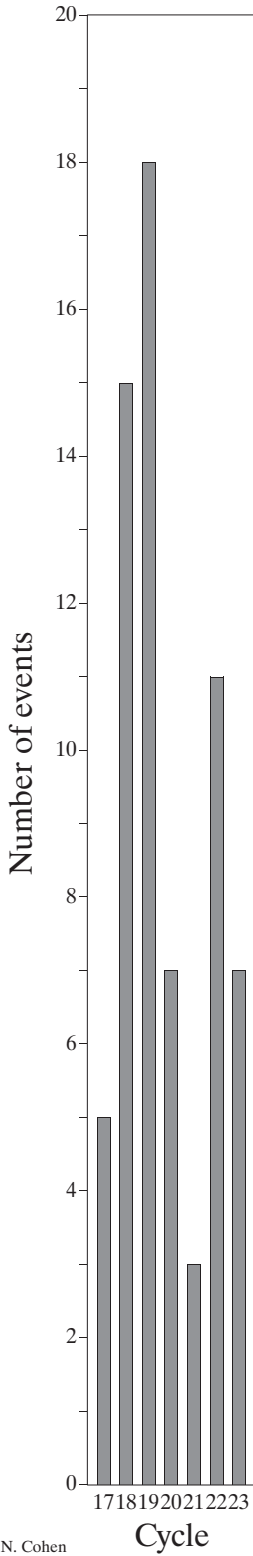


Severe Storm ($A_p \geq 100$) Geomagnetic Conditions



Space Environment Center

Comparison of Cycles at current month in cycle



N. Cohen

