

Space Weather Highlights
23 - 29 January 2006

SEC PRF 1588
07 February 2006

Solar activity was at very low levels as the disk was spotless the entire period.

No greater than 10 MeV proton events were observed this period.

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

The geomagnetic field was quiet to unsettled at all latitudes. Solar wind speed ranged from a low of about 300 km/s early on 01 February to a high of near 380 km/s early on 04 February. The Bz component of the IMF was generally weak, not varying much beyond +/- 3 nT through 31 January and +/- 7 nT for the remainder of the summary period.

Space Weather Outlook
08 February - 06 March 2006

Solar activity is expected to be at very low to low levels during the forecast period.

No greater than 10 MeV proton events are expected.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 23 – 27 February.

The geomagnetic field is expected to range from quiet to minor storm levels. Active to minor storm periods are possible on 19 - 23 February due to effects from a recurrent coronal hole wind stream. Otherwise, quiet to unsettled conditions are expected.



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	
30 January	79	0	0	A1.2	0	0	0	0	0	0	0	0	0
31 January	78	0	0	<A1.0	0	0	0	0	0	0	0	0	0
01 February	78	0	0	<A1.0	0	0	0	0	0	0	0	0	0
02 February	77	0	0	<A1.0	0	0	0	0	0	0	0	0	0
03 February	79	0	0	<A1.0	0	0	0	0	0	0	0	0	0
04 February	77	0	0	<A1.0	0	0	0	0	0	0	0	0	0
05 February	76	0	0	<A1.0	0	0	0	0	0	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day-sr)			Electron Fluence (electrons/cm ² -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>.6 MeV	>2MeV	>4 MeV
	30 January	2.9E+6	1.4E+4	3.5E+3		3.8E+8
31 January	4.3E+6	1.4E+4	3.6E+3		2.4E+8	
01 February	3.2E+6	1.5E+4	3.6E+3		3.1E+7	
02 February	2.2E+6	1.6E+4	3.7E+3		3.6E+6	
03 February	1.2E+6	1.5E+4	3.7E+3		1.1E+6	
04 February	8.1E+5	1.5E+4	3.7E+3		1.5E+6	
05 February	1.4E+6	1.6E+4	3.7E+3		2.9E+6	

Daily Geomagnetic Data

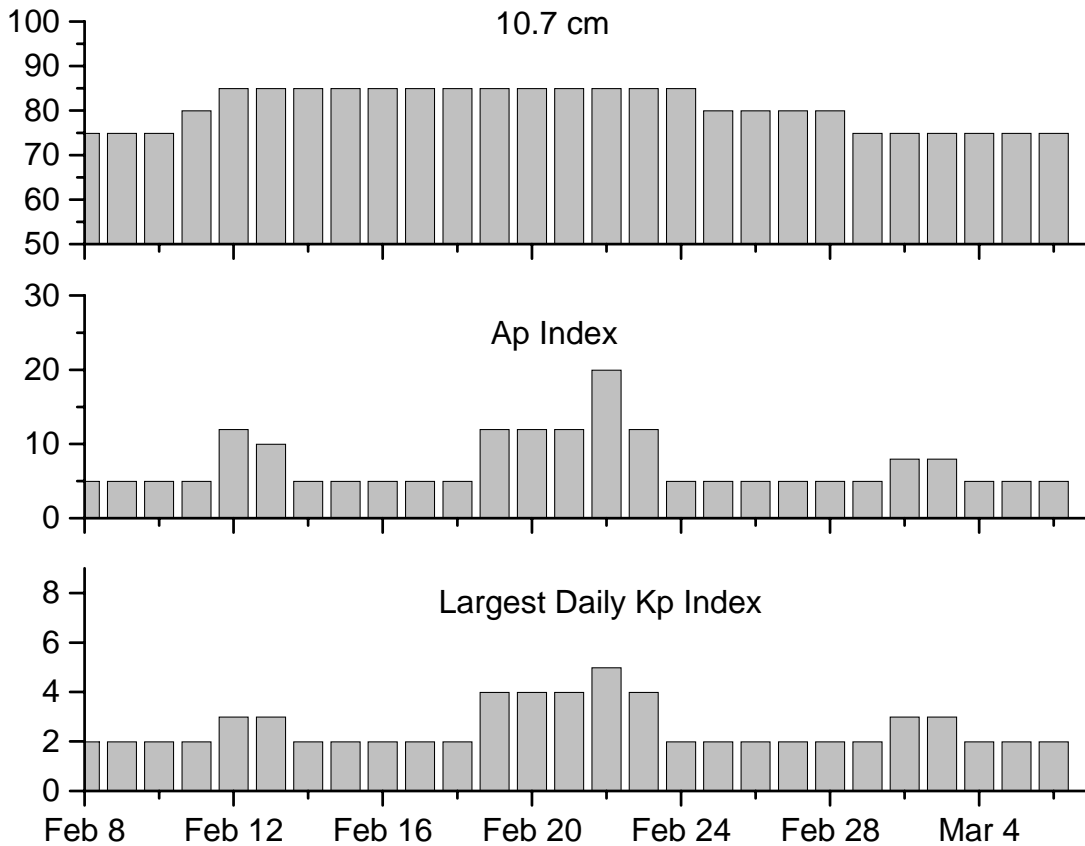
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	30 January	0	0-0-0-0-0-0-0	0	0-0-0-0-0-0-0	1
31 January	1	0-0-0-0-1-1-1-0	1	0-0-0-0-1-1-0-0	2	0-0-0-0-1-1-0-1
01 February	3	0-1-2-1-1-1-0-1	3	0-1-2-2-2-0-0-1	4	0-0-2-1-2-1-0-2
02 February	1	1-0-0-1-0-0-1-1	3	0-0-0-3-2-0-1-0	3	1-0-0-1-1-0-1-2
03 February	3	0-0-1-2-0-1-2-1	4	0-0-0-3-2-0-2-1	4	0-0-0-1-0-1-2-1
04 February	3	1-3-1-1-1-0-0-0	6	1-1-2-3-3-1-0-0	4	1-2-2-1-1-0-0-1
05 February	3	1-0-2-0-0-0-2-1	1	0-0-1-0-0-0-1-0	3	1-0-2-0-0-0-1-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
30 Jan 515	ALERT: Electron 2MeV Integral Flux > 1000pfu	30 Jan 0500
31 Jan 515	ALERT: Electron 2MeV Integral Flux > 1000pfu	31 Jan 0500



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
08 Feb	75	5	2	22 Feb	85	20	5
09	75	5	2	23	85	12	4
10	75	5	2	24	85	5	2
11	80	5	2	25	80	5	2
12	80	12	3	26	80	5	2
13	85	10	3	27	80	5	2
14	85	5	2	28	80	5	2
15 Feb	85	5	2	01 Mar	75	5	2
16	85	5	2	02	75	8	3
17	85	5	2	03	75	8	3
18	85	5	2	04	75	5	2
19	85	12	4	05	75	5	2
20	85	12	4	06	75	5	2
21	85	12	4				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	1/2		Integ		Imp/	Location		Radio Flux		Intensity		
	Begin	Max	Max	Class	Flux	Brtns	Lat	CMD	#	245	2695	II

No Events Observed

Flare List

Date	Time			Optical	Imp /	Location	Rgn
	Begin	Max	End	X-ray			
				Class.	Brtns	Lat	CMD
30 January	No Flares Observed						
31 January	No Flares Observed						
01 February	No Flares Observed						
02 February	No Flares Observed						
03 February	No Flares Observed						
04 February	No Flares Observed						
05 February	No Flares Observed						

Region Summary

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

Region 849

22 Jan	S07E44	262	0010	01	Hsx	001	A										
23 Jan	S07E31	223	0010	01	Hsx	001	A										
24 Jan	S07E16	263	0010	01	Hsx	002	A										
25 Jan	S08E03	263															
26 Jan	S08W10	263															
27 Jan	S08W23	263															
28 Jan	S08W36	263															
29 Jan	S08W49	263															
30 Jan	S08W62	263															
31 Jan	S08W75	263															
01 Feb	S08W88	263															

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 263

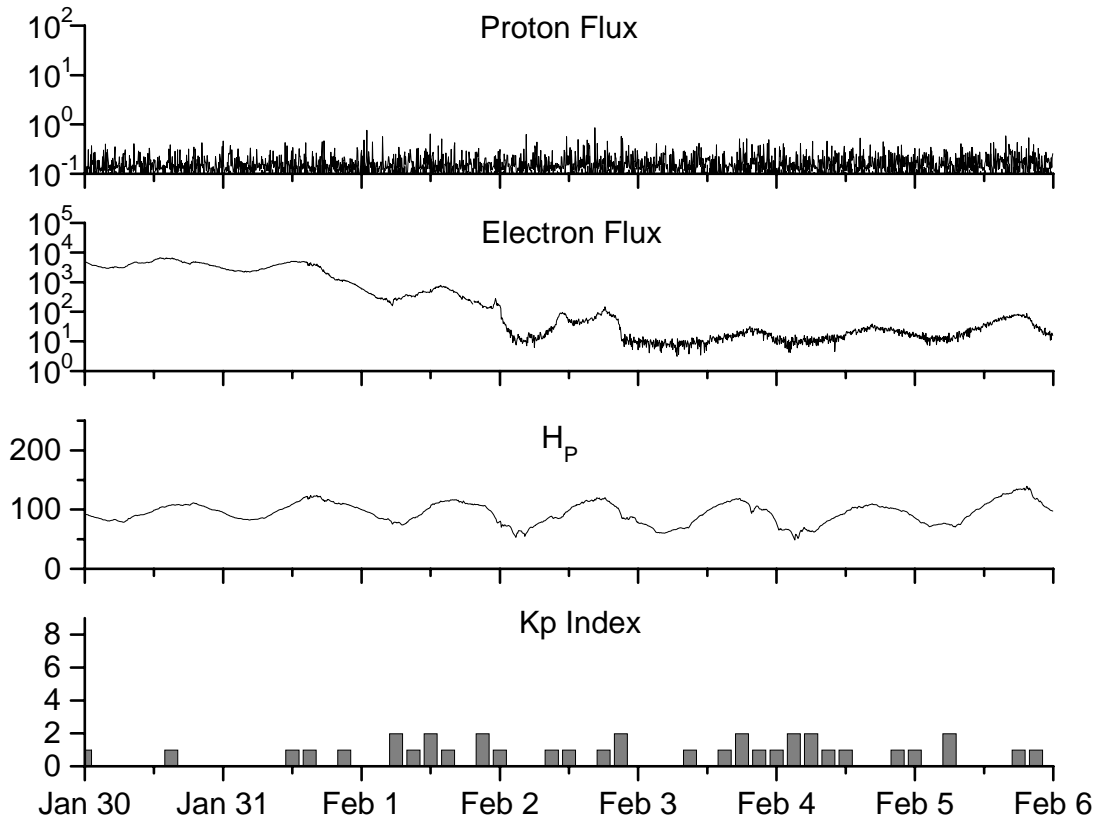


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SEC	Ratio RI	Ratio RI/SEC	Smooth values SEC	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2004									
February	75.6	45.8	0.61	84.2	49.4	107.0	115.5	13	17.7
March	81.0	49.1	0.61	80.9	47.2	112.2	114.6	14	16.9
April	59.3	39.3	0.66	77.9	45.6	101.2	112.3	11	15.5
May	77.3	41.5	0.54	74.1	43.9	99.8	109.2	8	14.3
June	78.9	43.2	0.55	70.4	41.7	97.4	107.2	8	14.0
July	87.8	51.0	0.58	68.3	40.2	118.5	105.9	23	13.8
August	69.5	40.9	0.59	66.6	39.3	110.1	105.0	11	13.8
September	50.0	27.7	0.55	63.7	37.6	103.1	103.7	10	13.6
October	77.9	48.4	0.62	61.3	35.9	105.7	102.1	9	13.5
November	70.5	43.7	0.62	60.0	35.4	113.2	101.5	26	14.1
December	34.7	17.9	0.52	58.8	35.3	94.6	101.3	11	14.8
2005									
January	52.0	31.3	0.60	57.3	34.7	102.4	100.3	22	14.7
February	45.4	29.1	0.64	56.4	34.0	97.3	98.5	11	14.6
March	41.0	24.8	0.60	55.8	33.6	90.0	97.2	12	15.3
April	41.5	24.4	0.59	52.6	31.7	85.9	95.5	12	15.7
May	65.4	42.6	0.65	48.3	29.0	99.5	93.2	20	14.8
June	59.8	39.6	0.66	47.9	28.9	93.7	91.9	13	13.9
July	71.0	39.9	0.56	48.1	29.2	96.6	90.9	16	13.1
August	65.6	36.4	0.55			90.7		16	
September	39.2	22.1	0.56			90.8		21	
October	13.0	8.5	0.65			76.7		7	
November	32.2	18.0	0.56			86.3		8	
December	62.6	41.2	0.66			90.8		7	
2005									
January	28.0	15.4	0.55			83.8		6	

NOTE: All smoothed values after September 2002 and monthly values after March 2003 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 23, RI= 120.8, occurred April 2000. *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 30 January 2006

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-11 (W107) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

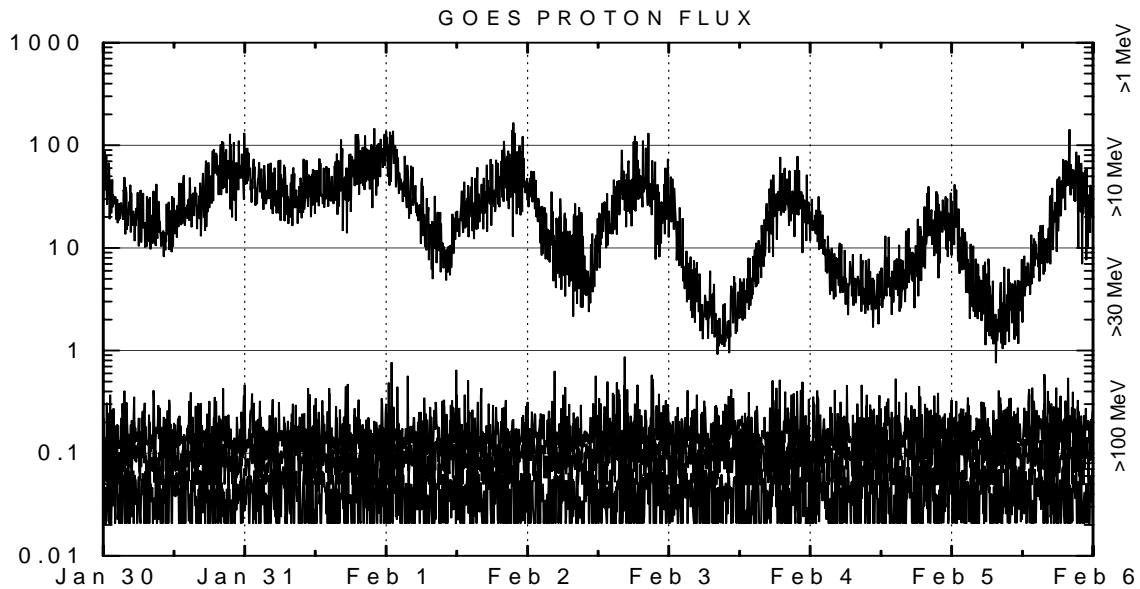
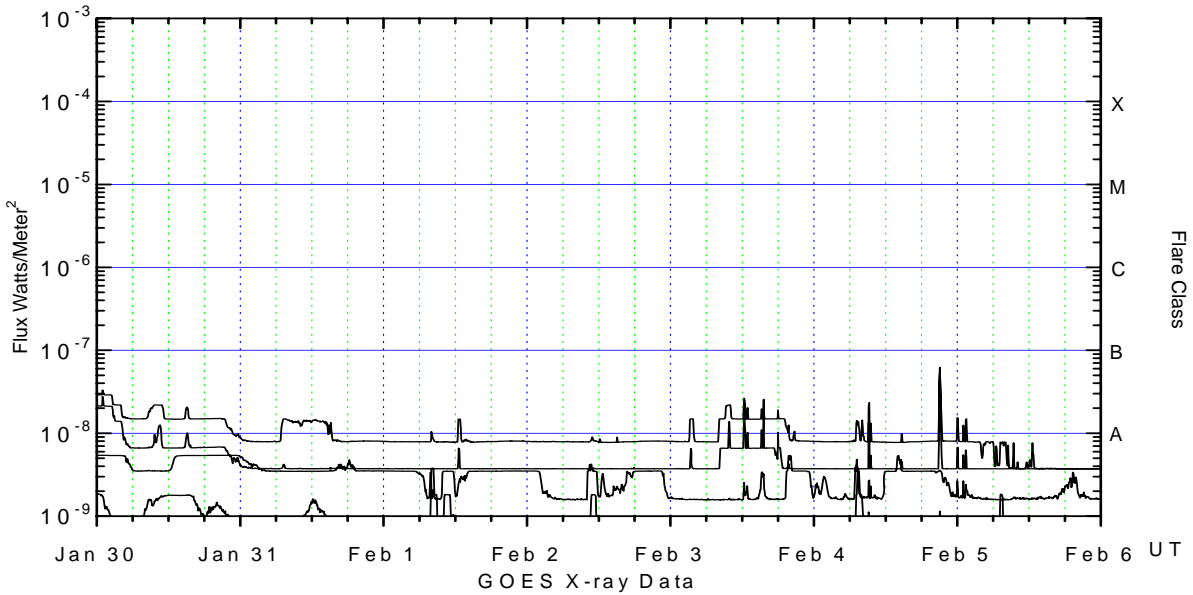
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W75).

H_p plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-12. 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 Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) 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 SEC 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 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

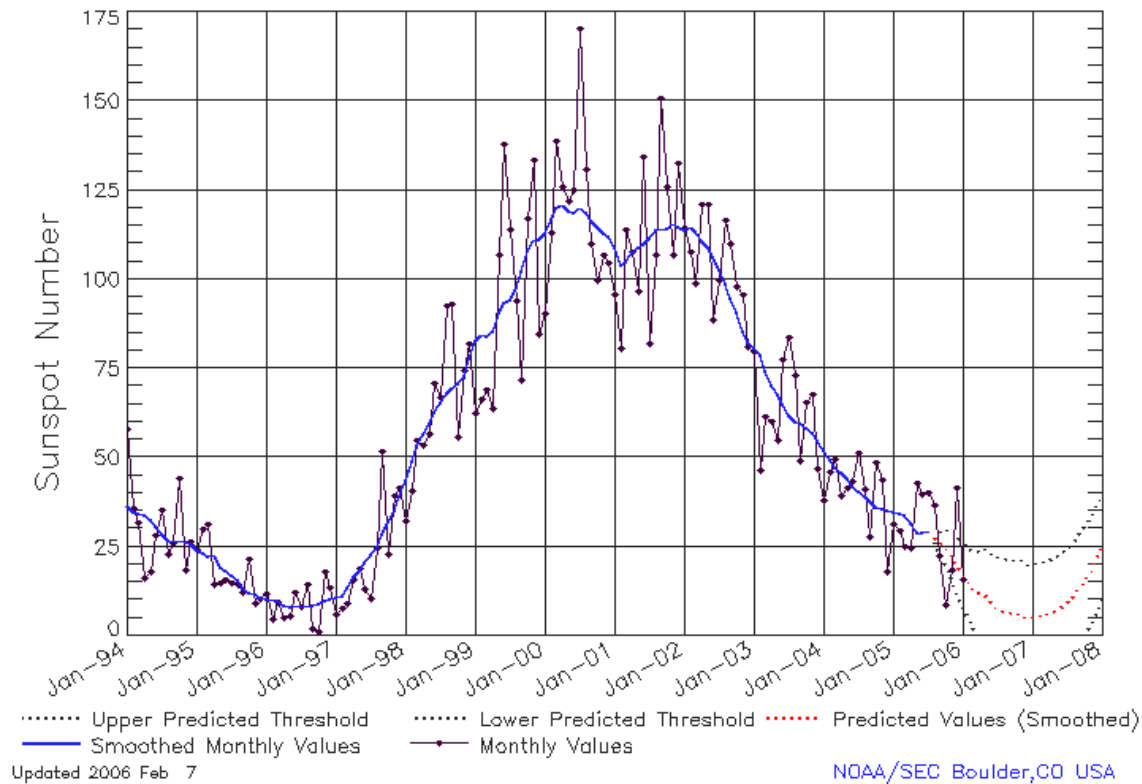
X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 12 (W75) and GOES 10 (W135) in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W107) 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.



ISES Solar Cycle Sunspot Number Progression

Data Through 31 Jan 06



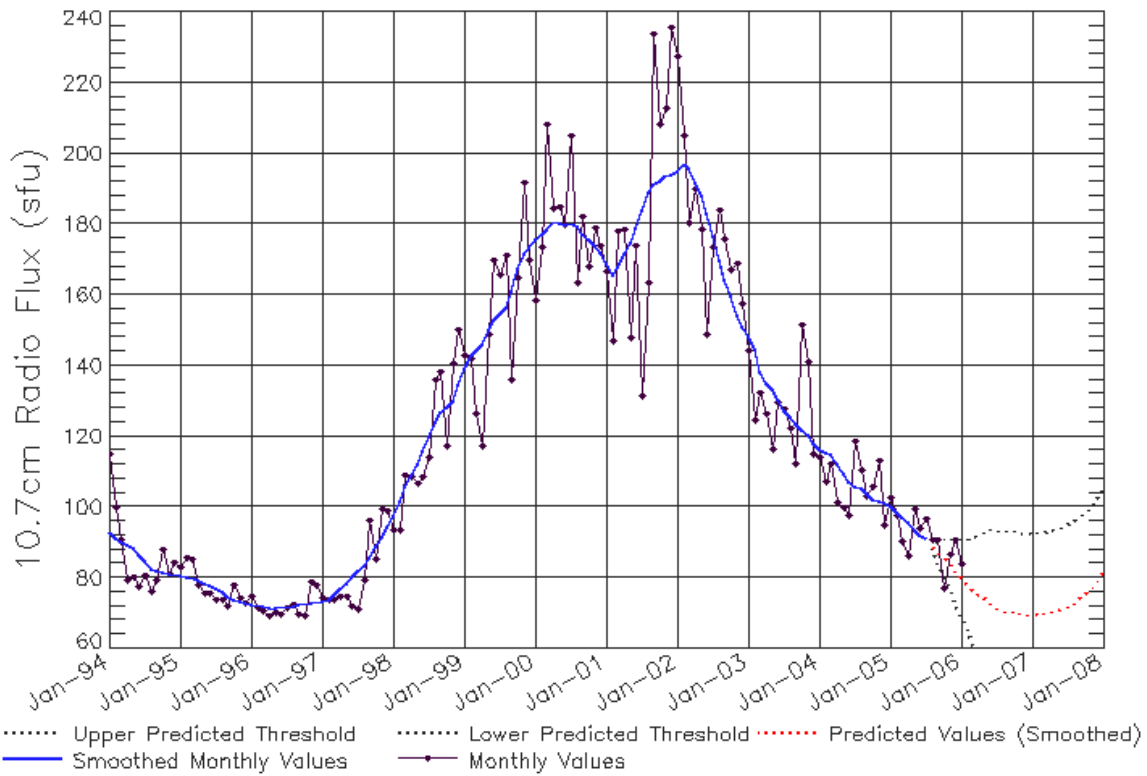
SEC Prediction of Smoothed Sunspot Number

	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 (***)	98 (***)	102 (***)	108 (***)	111 (***)	111 (***)
2000	113 (***)	117 (***)	120 (***)	121 (***)	119 (***)	119 (***)	120 (***)	119 (***)	116 (***)	115 (***)	113 (***)	112 (***)
2001	109 (***)	104 (***)	105 (***)	108 (***)	109 (***)	110 (***)	112 (***)	114 (***)	114 (***)	114 (***)	116 (***)	115 (***)
2002	114 (***)	115 (***)	113 (***)	111 (***)	109 (***)	106 (***)	103 (***)	99 (***)	95 (***)	91 (***)	85 (***)	82 (***)
2003	81 (***)	79 (***)	74 (***)	70 (***)	68 (***)	65 (***)	62 (***)	60 (***)	60 (***)	58 (***)	57 (***)	55 (***)
2004	52 (***)	49 (***)	47 (***)	46 (***)	44 (***)	42 (***)	40 (***)	39 (***)	38 (***)	36 (***)	35 (***)	35 (***)
2005	35 (***)	34 (***)	34 (***)	32 (***)	29 (***)	29 (***)	29 (***)	28 (1)	26 (3)	25 (5)	23 (7)	20 (8)
2006	17 (9)	15 (10)	13 (11)	12 (12)	11 (13)	9 (14)	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)



ISES Solar Cycle F10.7cm Radio Flux Progression

Data Through 31 Jan 06



Updated 2006 Feb 7

NOAA/SEC Boulder, CO USA

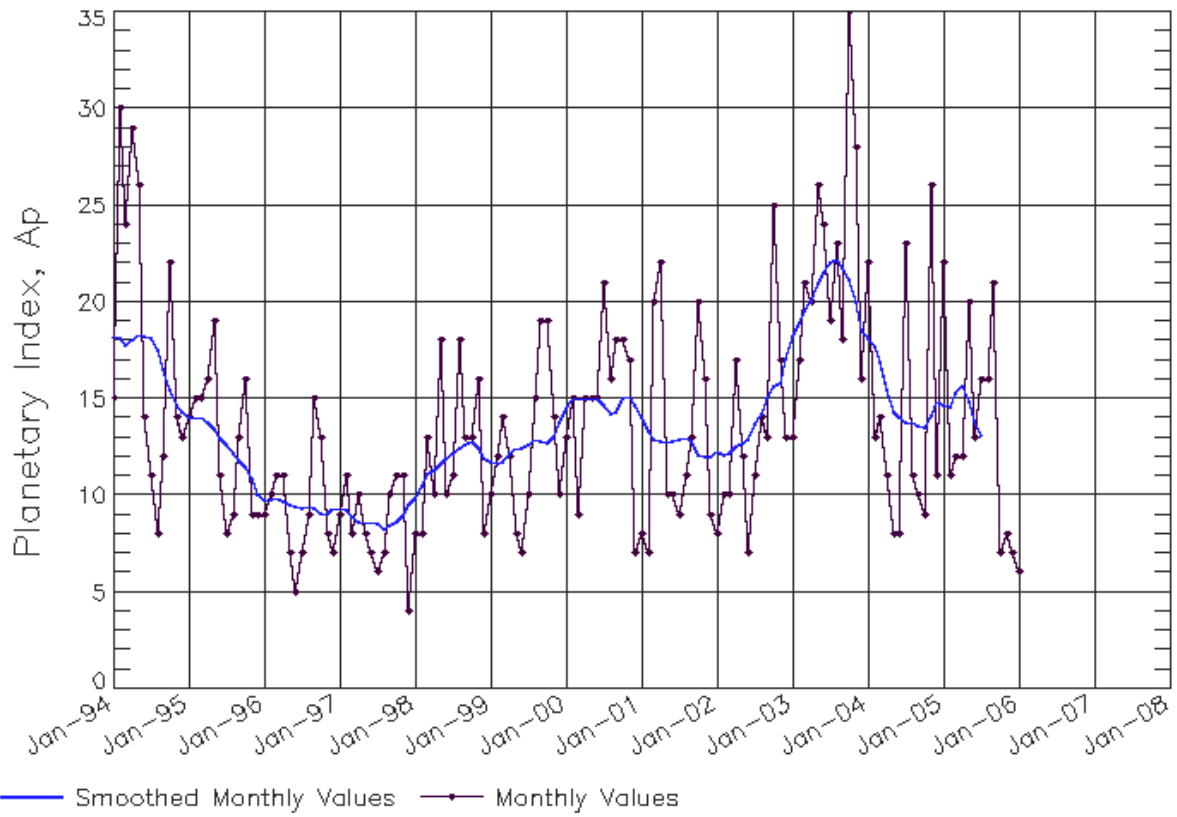
SEC Prediction of Smoothed F10.7cm Radio Flux

	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	176 (***)	177 (***)	178 (***)	181 (***)	180 (***)	180 (***)	180 (***)	179 (***)	177 (***)	176 (***)	174 (***)	172 (***)
2001	169 (***)	166 (***)	168 (***)	172 (***)	175 (***)	179 (***)	184 (***)	189 (***)	191 (***)	192 (***)	194 (***)	194 (***)
2002	195 (***)	197 (***)	196 (***)	192 (***)	188 (***)	183 (***)	176 (***)	170 (***)	164 (***)	159 (***)	154 (***)	151 (***)
2003	148 (***)	145 (***)	138 (***)	135 (***)	133 (***)	130 (***)	127 (***)	125 (***)	124 (***)	122 (***)	120 (***)	118 (***)
2004	116 (***)	116 (***)	115 (***)	112 (***)	109 (***)	107 (***)	106 (***)	105 (***)	104 (***)	102 (***)	102 (***)	101 (***)
2005	100 (***)	99 (***)	97 (***)	96 (***)	93 (***)	92 (***)	91 (***)	89 (1)	87 (3)	86 (5)	84 (7)	82 (9)
2006	80 (11)	78 (13)	76 (15)	75 (15)	74 (14)	73 (13)	71 (11)	71 (11)	70 (10)	70 (10)	70 (10)	70 (10)
2007	70 (10)	70 (10)	70 (10)	70 (10)	71 (11)	71 (11)	72 (12)	73 (13)	74 (14)	76 (16)	77 (17)	79 (19)



ISES Solar Cycle Ap Progression

Data Through 31 Jan 06



Updated 2006 Feb 7

NOAA/SEC Boulder, CO USA

