

Space Weather Highlights
26 June - 02 July 2000

SWO PRF 1296
04 July 2000

Solar activity ranged from low to moderate levels. Activity was low during 26 - 30 June due to isolated to occasional subflares from a variety of regions. Events of interest during this period included an optically uncorrelated Type II radio sweep at 26/0144UT and a C3 x-ray flare at 28/1910UT with an associated eruptive prominence and a Type II radio sweep from Region 9051 (N16, L = 236, class/area Bxo/010 on 22 June). Activity increased to moderate levels on 01 July due to an optically uncorrelated M1 x-ray flare at 01/2325UT. Activity decreased to low levels on the final day of the period due to isolated C-class subflares. Region 9070 (N19, L = 027, class/area Hax/030 on 02 July) produced a subflare at 02/1541UT with an associated Type II radio sweep.

Real-time solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the period. A negative-polarity coronal hole signature was evident during 26 - 28 June with increased velocities, which peaked at 600 km/sec on 27 June, and increased IMF Bz variability (on 26 June) with readings in the plus 14 to minus 12 nT (GSM) range. No significant changes were noted in the solar wind flow during the remainder of the period.

There were no proton events at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit briefly reached high levels on 30 June. Normal to moderate fluxes occurred during the remainder of the period.

The geomagnetic field was disturbed during 26 - 28 June due to coronal hole effects. Quiet to active periods occurred at middle latitudes during this time frame with brief minor to major storm periods detected at high latitudes. Quiet to unsettled conditions occurred during the rest of the period.

Space Weather Outlook
05 July - 31 July 2000

Solar activity is expected to vary between low and moderate levels during most of the period, with occasional C-class and isolated M-class flares expected.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels through most of the period. However, there will be a chance for high flux levels during 7 - 8, 13, and 25 - 26 July.

The geomagnetic field is expected to be at quiet to unsettled levels during most of the period, barring an Earth-directed CME. However, there will be a chance for active levels during 6 - 7, 12, and 23 - 24 July due to 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
26 June	177	180	1440	C1.1	12	0	0	18	0	0	0	0
27 June	179	206	1620	B7.9	8	0	0	4	0	1	0	0
28 June	175	166	1720	B7.3	3	0	0	1	0	0	0	0
29 June	163	189	1780	B6.2	7	0	0	2	0	0	0	0
30 June	160	159	1640	B7.2	5	0	0	3	0	0	0	0
01 July	164	175	1380	B7.4	8	1	0	13	0	0	0	0
02 July	162	185	1300	B6.7	4	0	0	12	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
	26 June	1.4E+7	9.6E+4	2.5E+3		1.4E+6
27 June	1.1E+6	1.5E+4	2.7E+3		1.3E+7	
28 June	5.5E+5	1.2E+4	2.5E+3		1.6E+7	
29 June	1.6E+6	1.4E+4	2.7E+3		1.5E+7	
30 June	2.1E+5	1.2E+4	2.8E+3		4.3E+7	
01 July	1.6E+5	1.2E+4	2.9E+3		8.7E+6	
02 July	1.0E+5	1.1E+4	2.8E+3		3.3E+7	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	26 June	22	3-2-3-4-4-4-4-4	*	3-4-4-5-6-*-7-3	33
27 June	14	3-3-3-2-3-2-2-4	27	4-3-5-4-5-3-2-4	18	4-3-3-3-3-3-4-4
28 June	11	3-3-1-2-2-2-3-3	18	4-5-2-4-2-3-2-2	14	4-4-2-3-2-3-2-4
29 June	7	3-2-3-1-2-1-1-1	12	4-3-4-1-3-1-1-1	12	4-2-4-2-2-2-3-3
30 June	3	0-0-0-2-1-1-2-2	5	1-0-0-4-1-1-1-1	7	2-1-0-3-2-2-2-2
01 July	7	2-1-2-1-1-1-3-3	*	3-1-2-4-*-0-2-2	9	3-2-3-2-2-2-3-2
02 July	3	1-2-1-0-1-1-1-1	3	1-1-1-1-0-1-2-1	6	2-1-1-2-2-2-2-2

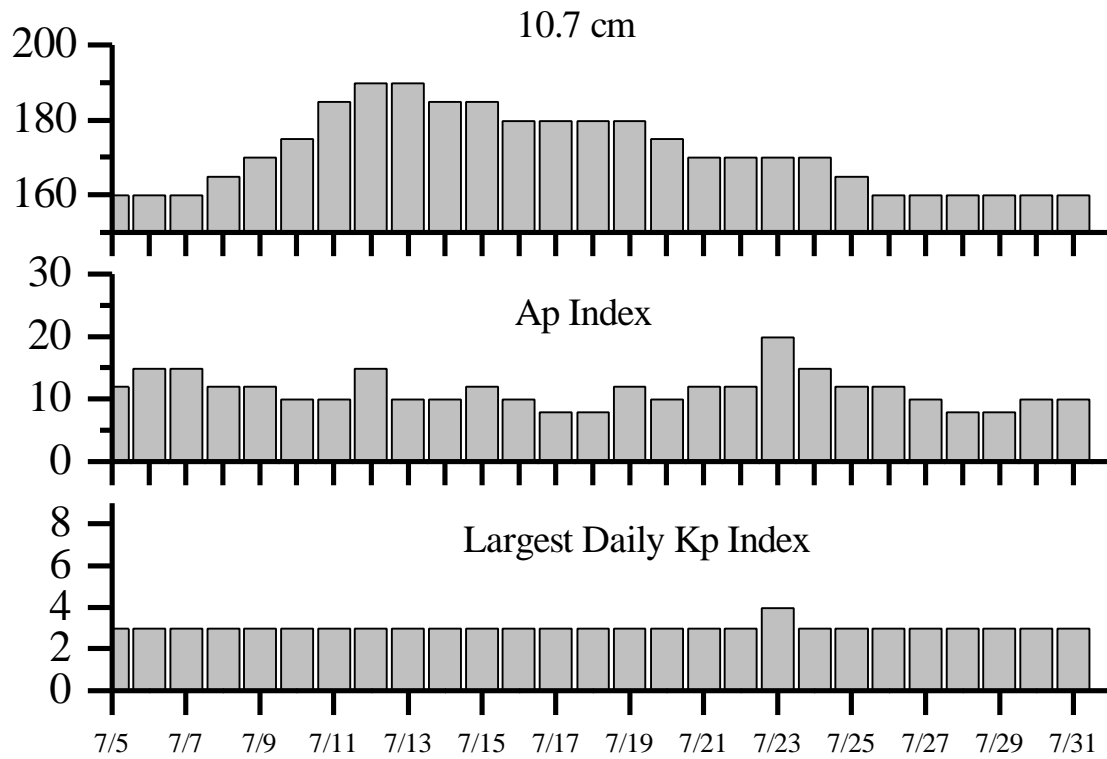


Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
26 Jun 0021	1 - 245 MHz Burst	25 Jun
26 Jun 0853	K= 4 Warning	26 Jun 0900 - 1500
26 Jun 0902	K= 4 Observed	26 Jun 0600 - 0900
26 Jun 1248	K= 5 Warning	26 Jun 1300 - 1800
26 Jun 1256	EXTENDED K = 4 Warning	26/0900 – 27/1500 Jun
26 Jun 1745	EXTENDED K = 5 Warning	26/1300 – 27/0000 Jun
26 Jun 1802	A ≥ 20 Observed	26 Jun 1800
26 Jun 2114	Type II Radio Emission	26 Jun 0144
27 Jun 0129	1 - 245 MHz Burst	26 Jun
27 Jun 0129	245 MHz Noise Storm	26 Jun
27 Jun 1801	ENDED A ≥ 20 Observed	26 Jun 1800
27 Jun 2004	K= 4 Warning	27 Jun 2005 - 28 Jun 1500
27 Jun 2103	K= 4 Observed	27 Jun 1800 - 2100
28 Jun 0137	2 - 245 MHz Bursts	27 Jun
28 Jun 0137	245 MHz Noise Storms	27 Jun
28 Jun 1802	K= 4 Observed	28 Jun 1500 -1800
28 Jun 2015	Type II Radio Emission	28 Jun 1903
29 Jun 0300	K= 4 Observed	29 Jun 00- 03
29 Jun 0752	K= 4 Warning	29 Jun 0800 - 1500
29 Jun 0857	K= 4 Observed	29 Jun 06- 09
30 Jun 0155	4 - 245 MHz Bursts	29 Jun
30 Jun 1426	Electron Event >2MeV ≥1000pfu	30 Jun 1355
01 Jul 0116	CONTINUED Electron Event >2MeV ≥ 1000pfu	30 Jun 1355
02 Jul 0019	1 - 245 MHz Bursts	01 Jul
02 Jul 1659	Type II Radio Emission	02 Jul 1544



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
05 July	160	12	3	19 July	180	12	3
06	160	15	3	20	175	10	3
07	160	15	3	21	170	12	3
08	165	12	3	22	170	12	3
09	170	12	3	23	170	20	4
10	175	10	3	24	170	15	3
11	185	10	3	25	165	12	3
12	190	15	3	26	160	12	3
13	190	10	3	27	160	10	3
14	185	10	3	28	160	8	3
15	185	12	3	29	160	8	3
16	180	10	3	30	160	10	3
17	180	8	3	31	160	10	3
18	180	8	3				



Energetic Events

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	½	Class	Integ Flux	Imp/ Brtns	Location		Radio Flux		Intensity	
			Max				Lat	CMD	245	2695	II	IV
01 Jul	2317	2325	2333	M1.5	.008							

Flare List

Date	Time			X-ray Class.	Imp / Brtns	Optical		Rgn
	Begin	Max	End			Lat	CMD	
26 June	0004	0004	0009		SF	N12W06	9054	
	0029	0030	0054		SF	N12W06	9054	
	0058	0059	A0107	C2.4	SF	N11W04	9054	
	B0111	U0111	A0126		SF	N11W06	9054	
	B0112	U0115	A0129	C2.4	SF	S14W44	9058	
	0150	0157	0207	C4.1				
	0427	0434	0443	C1.8				
	0634	0643	A0700	C3.2	SF	N12W08	9054	
	0705	U0706	A0729		SF	N11W06	9054	
	1035	1039	1041	C1.8				
	1204	1204	1207	C1.6	SF	N11W11	9054	
	1443	1445	1507		SF	N12W11	9054	
	1508	1513	1531	C1.7	SF	N16W06	9059	
	1511	1511	1516	C1.7	SF	N21W71	9046	
	1706	1709	1712		SF	N23W74	9046	
	1838	1844	1846	C5.6				
	1908	1913	1917		SF	N13E25	9057	
	2034	2034	2037		SF	S16W52	9058	
	B2056	U2101	A2113		SF	N13W16	9054	
	2149	2151	2201		SF	S16W53	9058	
2313	2317	2321	C2.0					
2330	2340	2346		SF	S16W55	9058		
2340	2353	0009	C1.7	SF	N11W17	9054		
27 June	B0015	U0017	A0022		SF	S15W55	9058	
	0057	0100	0104	C1.1				
	0325	0331	0345	C1.9				
	0650	0655	0659	C1.8				
	0754	0817	0853		SF	S15W61	9058	
	1023	1031	1047	C1.3				
	1249	1254	1342	C9.3	2N	S17E48	9062	
	1430	1432	1436	C1.9	SF	N23W86	9046	
	1625	1649	1702	C1.7			9046	
	1739	1740	1743		SF	N13W25	9054	
2101	2105	2107	C3.2			9046		



Flare List – continued.

Date	Time			X-ray	Optical		Rgn Lat CMD	
	Begin	Max	End		Imp / Class.	Location Brtns		
28 June	0755	0800	0807		SF	S21W70	9064	
	1215	1219	1224	C6.1				
	1647	1653	1700	C2.4				
	1848	1910	1939	C3.7			9051	
29 June	0754	0757	0802	C6.2	SF	S21W89	9064	
	0944	0959	1005	C1.5				
	1024	1034	1047	C4.8				
	1211	1217	1224	C1.6				
	1523	1523	1529		SF	N12W57	9051	
	1809	1815	1830	C1.6				
	1935	1945	2015	C2.8				
30 June	2144	2149	2158	C1.8				
	0854	0901	0909	C1.7				
	0952	1006	1018	C1.6				
	1520	1531	1558	C1.1				
	1659	1702	1706		SF	N16W27	9057	
	2042	2042	2046		SF	N15W68	9054	
	2048	2050	2053		SF	N15W69	9054	
	2101	2107	2110	C1.5				
	2333	2337	2342	C2.7				
	01 July	0023	U0031	A0046	C2.3	SF	S19E65	9067
0417		0422	0425	C1.5				
1157		1158	1202		SF	N17W71	9054	
1236		1238	1254	C6.0	SF	N15W75	9054	
1333		1339	1345	C1.2				
1348		1350	1356		SF	S19E71		
1516		1517	1520		SF	N15W77	9054	
1528		1533	1542	C1.1				
1638		1640	1644	B9.5	SF	S12E75	9069	
1809		1809	1817		SF	S20E74	9068	
2054		2100	2110	C1.5				
2136		2137	2139	C1.1	SF	S18E49	9067	
2138		2138	2142		SF	S19E71	9068	
2220		2221	2251	C1.5	SF	S19E67	9068	
2234		2234	2238		SF	N14E56	9066	
2317		2325	2333	M1.5				
2344		2346	2358		SF	N15E56	9066	
2349		2350	2353		SF	S18E47	9067	
02 July		0453	0454	0457	C1.3	SF	S21E67	9068
		0914	0915	0917	C1.3	SF	S24E70	9068



Flare List – continued.

Date	Time			X-ray	Optical		Rgn Lat CMD
	Begin	Max	End		Imp / Class.	Location Brtns	
02 July	0932	0942	0949	C3.8			
	1256	1258	1305		SF	S21E57	9068
	1405	1410	1415	C1.4			
	1539	1541	1551		SF	N14E74	9070
	1641	1642	1651		SF	S22E56	9068
	1719	1720	1722		SF	S19E57	9068
	1758	1804	1819		SF	S20E58	9068
	2034	2048	2057		SF	S20E57	9068
	2124	2124	2136		SF	S20E57	9068
	2314	2323	2331		SF	N19E71	9070
	2332	2338	0105		SF	N19E72	9070
	2337	2338	2348		SF	S18E53	9068

Region Summary

Date	Location		Sunspot Characteristics					Flares										
	(° Lat ° CMD)	Helio Lon	Area (10 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
<i>Region 9046</i>																		
14 Jun	N15E82	255	0090	02	HSX	001	A											
15 Jun	N18E69	255	0370	08	DKO	005	B					1						
16 Jun	N18E57	254	0570	08	DKI	017	BG											
17 Jun	N19E44	254	0540	10	DKO	011	B						2					
18 Jun	N19E31	254	0580	09	DKI	030	BG						1					
19 Jun	N21E19	253	0570	09	DKI	026	B											
20 Jun	N21E06	252	0540	10	DHI	026	B	1				2						
21 Jun	N21W07	251	0390	10	DKO	029	BG	1				2						
22 Jun	N20W21	252	0310	14	EKO	019	BG	1				7						
23 Jun	N21W34	252	0220	12	EAO	018	BG		1			2			1			
24 Jun	N21W48	253	0150	10	DSO	013	B					1						
25 Jun	N21W61	252	0110	07	CSO	008	B		1			2			1			
26 Jun	N20W75	253	0090	02	HSX	001	A	1				2						
27 Jun	N20W90	255	0070	03	HSX	001	A	3				1						
								7	2	0	23	0	2	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 252



Region Summary-continued

Date	Location		Sunspot Characteristics				Flares																
	(° Lat ° CMD)	Helio Lon	Area (10 ⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical												
								C	M	X	S	1	2	3	4								
<i>Region 9049</i>																							
16 Jun	S40E65	246	0050	04	BXO	004	B																
17 Jun	S38E52	246	0040	07	CRO	004	B														1		
18 Jun	S38E41	244	0040	07	CSO	008	B																
19 Jun	S36E25	247	0020	07	CSO	004	B																
20 Jun	S36E09	249	0020	01	HSX	002	A																
21 Jun	S36E00	244	0000	00	AXX	001	A																
22 Jun	S37W08	239	0030	04	DRO	007	B																
23 Jun	S37W21	239	0080	08	DSO	012	B			1											7		
24 Jun	S36W34	239	0110	12	ESI	016	B			1											1		
25 Jun	S35W48	239	0080	13	CAO	010	B			1											2 1		
26 Jun	S35W64	242	0050	09	CSO	002	B																
27 Jun	S35W77	242	0030	01	HSX	001	A																
28 Jun	S35W90	242																					
																						2 1 0 11 1 0 0 0	

Crossed West Limb.

Absolute heliographic longitude: 244

Region 9051

17 Jun	N16E61	237	0010	00	HRX	001	A																
18 Jun	N16E49	236	0010	00	HRX	001	A																
19 Jun	N18E37	235	0010	00	AXX	001	A																
20 Jun	N17E24	234	0000	00	AXX	001	A															1	
21 Jun	N18E10	234	0000	00	AXX	001	A			1												1	
22 Jun	N16W05	236	0010	04	BXO	006	B			1												1	
23 Jun	N13W18	236																					
24 Jun	N13W31	236																					
25 Jun	N13W44	236																					
26 Jun	N13W57	236																					
																							2 0 0 3 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 236



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 9053</i>																		
19 Jun	N04E48	224	0010	03	BXO	002	B											
20 Jun	N04E34	224	0010	01	HRX	001	A											
21 Jun	N04E20	224	0000	00	AXX	001	A											
22 Jun	N04E07	224																
23 Jun	N04W06	224																
24 Jun	N04W19	224																
25 Jun	N04W32	224																
26 Jun	N04W45	224																
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 224

<i>Region 9054</i>																		
20 Jun	N09E64	194	0030	07	CSO	002	B											
21 Jun	N11E47	197	0030	01	HSX	001	A											
22 Jun	N11E32	199	0030	01	HSX	001	A											
23 Jun	N11E21	197	0030	08	BXO	008	B											
24 Jun	N12E11	194	0040	08	DSO	010	B							2				
25 Jun	N12W04	195	0130	06	DAO	017	B	1						6				
26 Jun	N12W18	196	0260	10	DAO	017	BG	4						10				
27 Jun	N12W32	197	0210	11	EAI	022	BG							1				
28 Jun	N14W46	198	0290	12	EAI	018	B											
29 Jun	N14W58	197	0250	13	EAO	018	B											
30 Jun	N13W72	198	0250	13	EAO	011	B							2				
01 Jul	N13W81	193	0130	03	DSO	002	B	1						3				
02 Jul	N14W92	191	0060	01	HSX	001	A											
								6	0	0	24	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 195



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 9055</i>																		
21 Jun	N19E70	174	0080	01	HSX	001	A											
22 Jun	N20E56	175	0090	02	HSX	001	A											
23 Jun	N19E44	174	0080	02	HSX	001	A						1					
24 Jun	N19E30	175	0110	02	HSX	001	A											
25 Jun	N19E17	174	0070	02	HSX	002	A											
26 Jun	N19E05	173	0050	02	HSX	002	A											
27 Jun	N20W08	173	0060	02	HSX	002	A											
28 Jun	N21W21	173	0080	02	HSX	001	A											
29 Jun	N21W34	173	0050	01	HSX	001	A											
30 Jun	N22W47	173	0050	01	HSX	001	A											
01 Jul	N23W58	170	0040	02	HSX	001	A											
02 Jul	N22W73	172	0020	01	HRX	001	A											

0 0 0 1 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 173

<i>Region 9056</i>																		
21 Jun	S15E68	176	0130	02	HSX	001	A											
22 Jun	S14E54	177	0180	03	HSX	001	A											
23 Jun	S15E42	176	0250	03	HAX	001	A											
24 Jun	S14E28	177	0250	04	HAX	002	A											
25 Jun	S14E15	176	0230	03	HSX	001	A											
26 Jun	S14E02	176	0260	03	HHX	001	A											
27 Jun	S13W11	176	0220	04	HSX	001	A											
28 Jun	S12W25	177	0210	03	HSX	001	A											
29 Jun	S12W37	176	0210	03	HSX	001	A											
30 Jun	S12W50	176	0200	03	HSX	001	A											
01 Jul	S12W64	176	0170	02	HSX	001	A											
02 Jul	S11W77	176	0160	02	HSX	001	A											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 176



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 9057</i>																		
22 Jun	N14E72	159	0140	04	HSX	001	A											
23 Jun	N14E60	158	0180	04	HAX	001	A											
24 Jun	N13E46	159	0240	03	HHX	001	A											
25 Jun	N13E33	158	0200	03	HSX	001	A											
26 Jun	N13E20	158	0250	03	HHX	001	A							1				
27 Jun	N14E07	158	0260	05	CHO	003	B											
28 Jun	N14W06	158	0290	05	CHO	004	B											
29 Jun	N15W19	158	0230	04	CHO	004	B											
30 Jun	N15W34	160	0230	04	CHO	003	B							1				
01 Jul	N16W46	158	0180	02	HSX	001	A											
02 Jul	N16W59	158	0150	02	HAX	001	A											
										0	0	0	2	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 158

<i>Region 9058</i>																		
23 Jun	S14W15	233	0020	03	CRO	005	B											
24 Jun	S14W29	234	0050	05	DSO	007	B											
25 Jun	S14W41	232	0140	07	DAO	016	B							7				
26 Jun	S14W55	233	0220	09	DAO	016	B	1						4				
27 Jun	S13W68	233	0320	11	EKO	012	B							2				
28 Jun	S13W81	233	0310	15	EKO	005	B											
29 Jun	S13W94	233	0220	05	DAO	002	B											
										1	0	0	13	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 233

<i>Region 9059</i>																		
23 Jun	N14E30	188	0010	04	BXO	004	B											
24 Jun	N15E17	188	0040	05	DSO	007	B											
25 Jun	N15E04	187	0020	05	CRO	007	B											
26 Jun	N16W09	187	0020	05	BXO	004	B	1						1				
27 Jun	N16W22	187	0010	04	BXO	003	B											
28 Jun	N16W38	190	0000	00	AXX	002	A											
29 Jun	N16W51	190																
30 Jun	N16W64	190																
01 Jul	N16W77	190																
										1	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 187



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 9063

26 Jun N24E41	137	0030	03	CRO	003	B											
27 Jun N25E29	136	0080	08	DAO	008	BG											
28 Jun N25E16	136	0090	10	DSO	016	B											
29 Jun N26E02	137	0060	11	EAO	015	B											
30 Jun N26W10	136	0070	12	EAO	013	B											
01 Jul N26W22	134	0040	11	CSO	009	B											
02 Jul N26W38	137	0020	10	BXO	004	B											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 137

Region 9064

27 Jun S20W67	232	0030	05	DRO	005	B											
28 Jun S19W79	231	0020	04	BXO	004	B						1					
29 Jun S21W90	229	0030	01	CRO	002	B	1					1					

1 0 0 2 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 232

Region 9065

29 Jun N20E75	064	0060	01	HSX	001	A											
30 Jun N20E63	063	0080	03	HSX	001	A											
01 Jul N20E50	062	0050	02	HSX	001	A											
02 Jul N21E39	060	0040	04	CSO	003	B											

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 060

Region 9066

29 Jun N10E75	064	0100	07	HSX	001	A											
30 Jun N13E63	063	0110	05	CAO	005	B											
01 Jul N13E55	057	0090	14	CSO	011	B						2					
02 Jul N12E39	060	0070	07	DSO	009	B											

0 0 0 2 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 060



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 9067</i>																	
29 Jun	S22E73	066	0130	02	HSX	001	A										
30 Jun	S20E60	066	0180	02	HSX	001	A										
01 Jul	S20E47	065	0210	03	HSX	001	A	2				3					
02 Jul	S20E35	064	0200	02	HSX	001	A										
								2	0	0	0	3	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 064																	
<i>Region 9068</i>																	
01 Jul	S19E63	049	0070	05	DSO	005	B	1				3					
02 Jul	S19E51	048	0160	10	DAO	013	B	2				9					
								3	0	0	0	12	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 048																	
<i>Region 9069</i>																	
01 Jul	S13E70	042	0040	02	HSX	001	A					1					
02 Jul	S14E59	040	0050	01	HSX	001	A										
								0	0	0	0	1	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 040																	
<i>Region 9070</i>																	
02 Jul	N19E72	027	0030	01	HAX	001	A					3					
								0	0	0	0	3	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 027																	

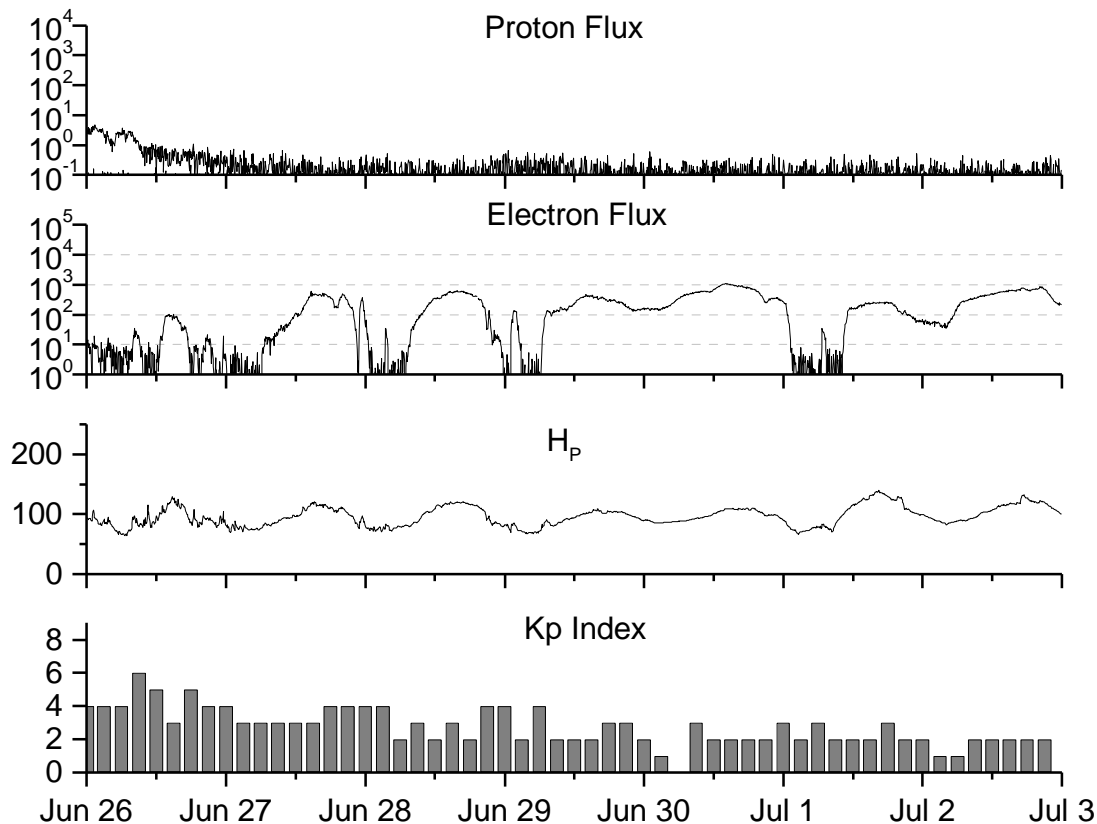


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed values SWO	Ratio RI	Ratio RI/SWO	Smooth values SWO	Smooth values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
1998									
July	98.3	66.6	0.68	90.3	65.5	114.0	120.3	11	12.2
August	118.6	92.2	0.78	93.7	67.8	136.0	124.1	18	12.4
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			158.1		13	
February	161.9	112.3	0.69			173.2		15	
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	

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 26 June 2000

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.

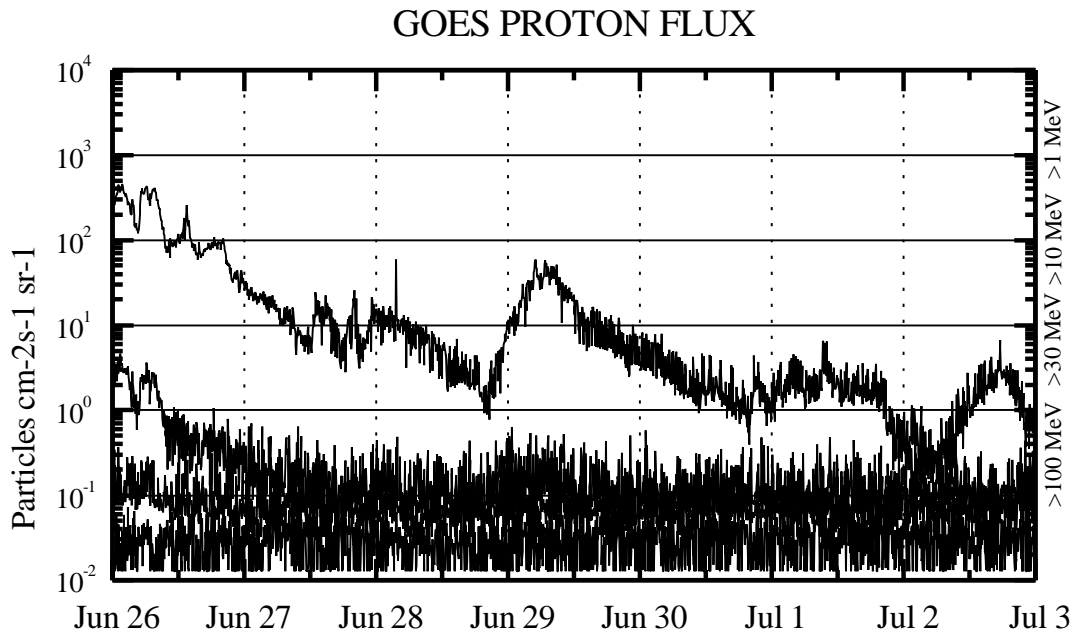
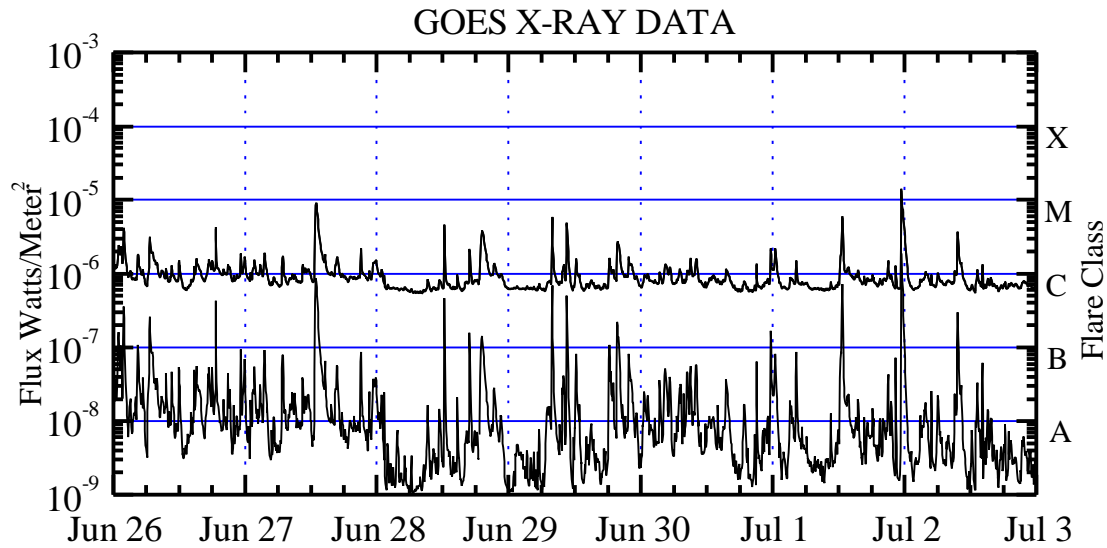
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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.



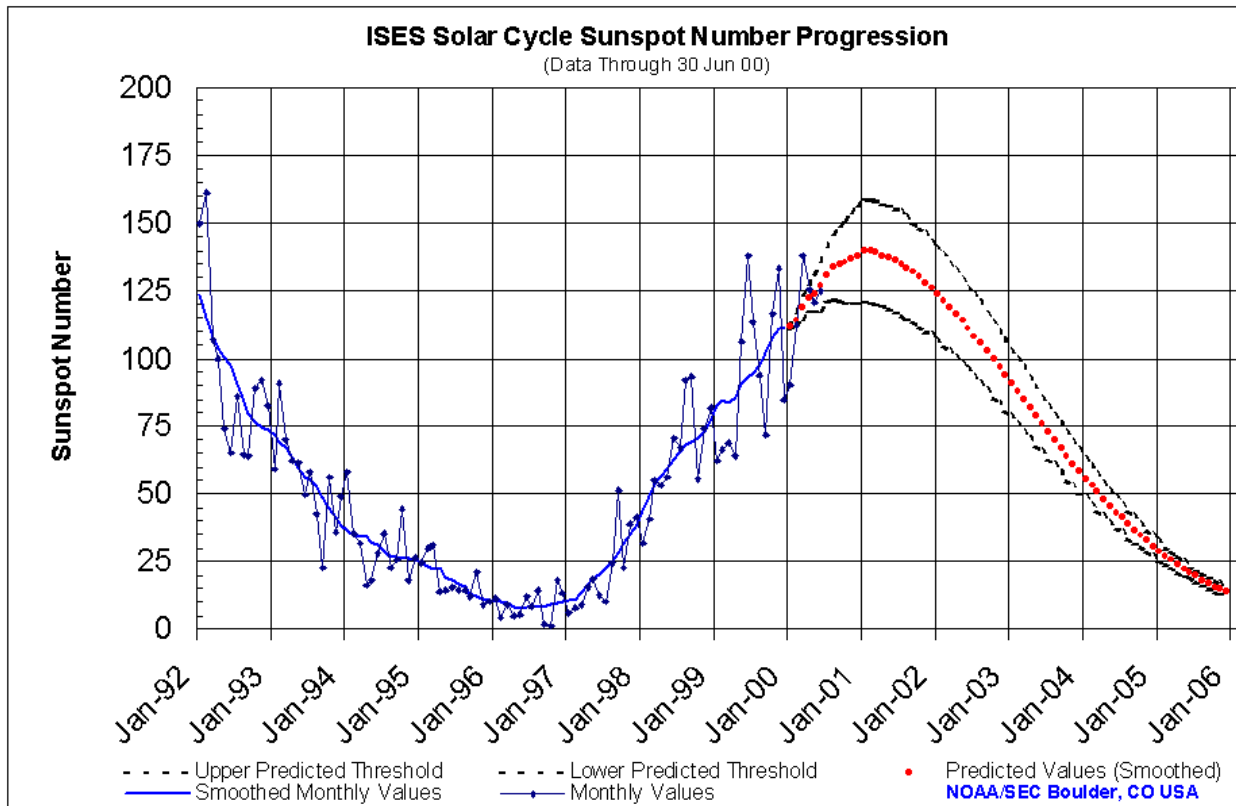


Weekly GOES Satellite X-ray and Proton Plots

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.

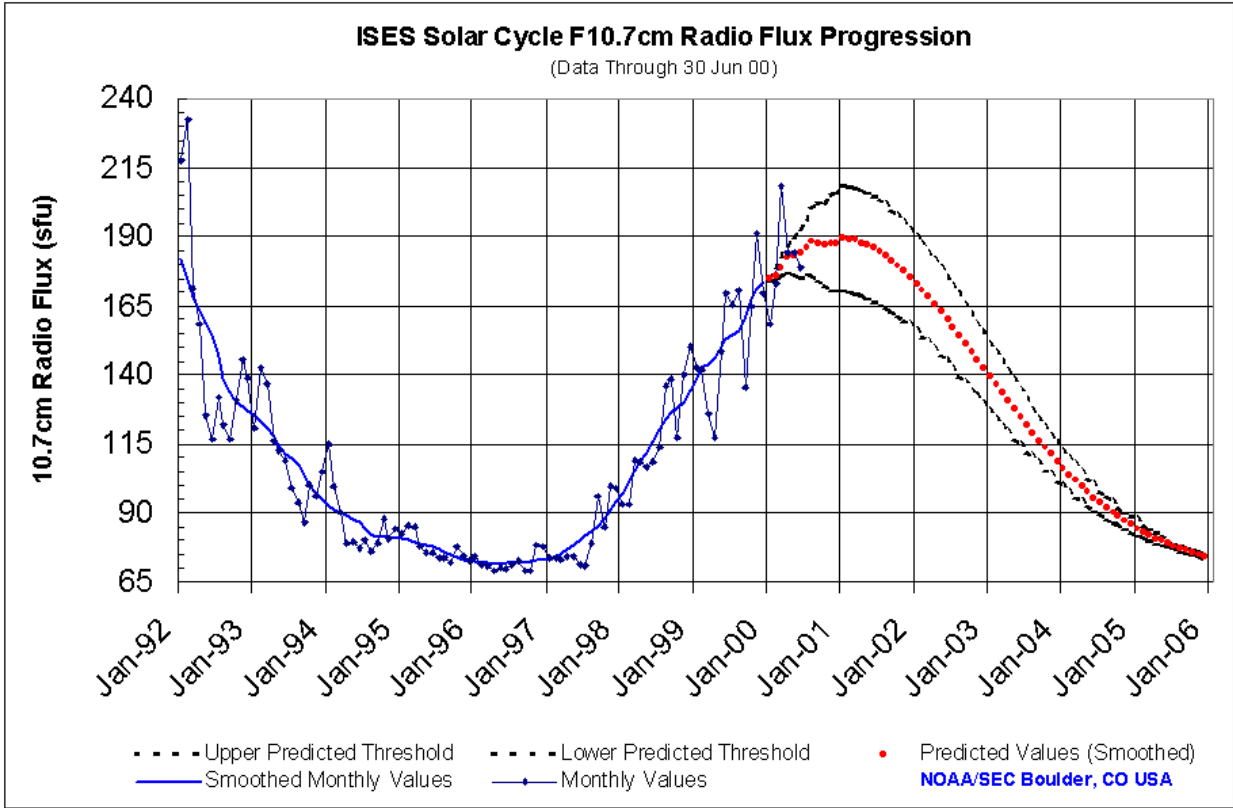




SEC Prediction of Smoothed Sunspot Number

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	111	114	119	123	124	127	131	134	135	136	137	138
	(1)	(2)	(4)	(5)	(7)	(9)	(10)	(12)	(14)	(15)	(17)	(18)
2001	140	140	139	138	137	136	135	133	132	130	128	126
	(19)	(19)	(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 (1)	176 (2)	179 (4)	182 (5)	183 (7)	184 (9)	186 (10)	188 (12)	188 (14)	187 (15)	188 (17)	188 (18)
2001	190 (19)	189 (19)	189 (19)	188 (19)	187 (19)	186 (19)	185 (19)	183 (19)	181 (18)	180 (18)	178 (18)	175 (17)
2002	173 (17)	171 (17)	168 (16)	166 (16)	163 (16)	160 (15)	157 (15)	155 (15)	152 (14)	149 (14)	146 (13)	143 (13)
2003	139 (12)	136 (12)	133 (12)	131 (11)	128 (11)	125 (10)	122 (10)	119 (8)	116 (8)	114 (8)	111 (7)	109 (7)
2004	106 (6)	104 (6)	102 (6)	100 (5)	98 (5)	96 (5)	94 (4)	92 (4)	90 (4)	89 (3)	87 (3)	86 (3)
2005	85 (3)	83 (2)	82 (2)	81 (2)	80 (2)	79 (1)	78 (1)	77 (1)	77 (1)	76 (1)	75 (1)	75 (1)



