

# Prepared by the U.S. Dept. of Commerce, NOAA, Space Environment Center.  
 # Please send comments and suggestions to sec@sec.noaa.gov

# Annual Verification Statistics for Probability Forecasts of  
 # Next-Day Middle-Latitude Geomagnetic Category

# Total Records: Total number of daily forecast/observation records used to generate statistic  
 # Event Days: Total number of days in the sample within each of four geomagnetic activity  
 # categories: Quiet to Unsettled (Q-U), Active (A), Minor Storm (Mn Stm),  
 # Major to Severe Storm (Mj-Svr Stm). See note below for more information.  
 # Mean (f): Mean forecast  
 # Mean (x): Mean observation  
 # Median (f): Median forecast  
 # Std Dev (f): Standard deviation of forecasts  
 # Std Dev (x): Standard deviation of observations  
 # Std Dev (f-x): Standard deviation of forecasts minus observations  
 # Mean (f|x=1): Mean forecast given the occurrence of an event  
 # Mean (f|x=0): Mean forecast given the non-occurrence of an event  
 # Median (f|x=1): Median forecast given the occurrence of an event  
 # Median (f|x=0): Median forecast given the non-occurrence of an event  
 # Std Dev (f|x=1): Standard deviation of forecasts given the occurrence of an event  
 # Std Dev (f|x=0): Standard deviation of forecasts given the non-occurrence of an event  
 # Discrimination: The difference between [Mean (f|x=1)] and [Mean (f|x=0)]  
 # ME: Mean error  
 # RPSsc: Ranked probability score for sample climatology forecasts (smaller better)  
 # RPS: Ranked probability score for SEC forecasts (smaller better)  
 # REL: Reliability (smaller better)  
 # RES 1: Resolution 1 (larger better). See verification glossary for detailed definition.  
 # RES 2: Resolution 2 (smaller better). See verification glossary for detailed definition.  
 # Missing data: -99999

# Note: The geomagnetic category for the day is determined by the highest  
 # observed k-index for the day. Quiet to Unsettled = k 0 to k 3, *Measures of K*  
 # Active = k 4, Minor Storm = k 5, Major to Severe Storm = k 6 to k 9.  
 # Middle latitude forecasts are verified against Fredericksburg, VA observations.

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year: 2003  
 Start: 1/1/03  
 End: 12/31/03

	Q-U	A	Mn Stm	Mj-Svr Stm
Total Records:	365	365	365	365
Geomag Category:	Q-U 0-3	A K4	Mn Stm	Mj-Svr Stm
Event Days:	15	119	68	22
Mean (f):	0.477	0.303	0.156	0.064
Mean (x):	0.427	0.326	0.186	0.060
Median (f):	0.450	0.300	0.150	0.050
Std Dev (f):	0.206	0.093	0.089	0.076
Std Dev (x):	0.495	0.469	0.390	0.238
Std Dev (f-x):	0.438	0.463	0.374	0.219
Mean (f x=1):	0.589	0.324	0.210	0.185
Mean (f x=0):	0.394	0.292	0.144	0.056
Median (f x=1):	0.600	0.350	0.200	0.100
Median (f x=0):	0.400	0.300	0.150	0.050
Std Dev (f x=1):	0.176	0.072	0.090	0.215
Std Dev (f x=0):	0.186	0.100	0.084	0.047
Discrimination:	0.195	0.032	0.066	0.129
ME:	0.050	-0.023	-0.030	0.003
RPSsc:	0.487	-99999	-99999	-99999
RPS:	0.401	-99999	-99999	-99999
REL:	0.098	-99999	-99999	-99999
RES 1:	0.185	-99999	-99999	-99999
RES 2:	0.303	-99999	-99999	-99999

→ all of 2003 ACTIVE ←

Shows number of DAYS, in 2003, that were K0-3, K4, K5, and K6-9

← K6-9  
← LARGE

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year: 2002  
 Start: 1/1/02  
 End: 12/31/02

	Q-U	A	Mn Stm	Mj-Svr Stm
Total Records:	365	365	365	365
Geomag Category:	Q-U K0-3	A K4	Mn Stm	Mj-Svr Stm
Event Days:	252	76	25	12

→ 2002

K-5  
K6-9

Mean (f):	0.614	0.250	0.100	0.035
Mean (x):	0.690	0.208	0.068	0.033
Median (f):	0.690	0.250	0.100	0.010
Std Dev (f):	0.206	0.110	0.070	0.041
Std Dev (x):	0.463	0.407	0.253	0.179
Std Dev (f-x):	0.445	0.413	0.246	0.172
Mean (f x=1):	0.657	0.266	0.160	0.097
Mean (f x=0):	0.520	0.246	0.096	0.033
Median (f x=1):	0.690	0.250	0.150	0.100
Median (f x=0):	0.500	0.200	0.100	0.010
Std Dev (f x=1):	0.183	0.105	0.076	0.048
Std Dev (f x=0):	0.224	0.111	0.068	0.040
Discrimination:	0.137	0.021	0.064	0.064
ME:	-0.076	0.042	0.032	0.002
RPSsc:	0.337	-99999	-99999	-99999
RPS:	0.314	-99999	-99999	-99999
REL:	0.088	-99999	-99999	-99999
RES 1:	0.111	-99999	-99999	-99999
RES 2:	0.226	-99999	-99999	-99999

Forecast Type: Liklihood (probability) of the occurance of geomagnetic category  
Year: 2001  
Start: 1/1/01  
End: 12/31/01

2001

Total Records:	365	365	365	365
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	246	80	28	11
Mean (f):	0.629	0.228	0.102	0.041
Mean (x):	0.674	0.219	0.077	0.030
Median (f):	0.690	0.200	0.100	0.010
Std Dev (f):	0.203	0.092	0.079	0.074
Std Dev (x):	0.469	0.414	0.266	0.171
Std Dev (f-x):	0.444	0.414	0.262	0.151
Mean (f x=1):	0.677	0.247	0.159	0.238
Mean (f x=0):	0.530	0.222	0.097	0.035
Median (f x=1):	0.740	0.250	0.150	0.200
Median (f x=0):	0.590	0.200	0.050	0.010
Std Dev (f x=1):	0.157	0.100	0.104	0.190
Std Dev (f x=0):	0.247	0.089	0.075	0.058
Discrimination:	0.147	0.025	0.062	0.203
ME:	-0.045	0.008	0.025	0.011
RPSsc:	0.344	-99999	-99999	-99999
RPS:	0.299	-99999	-99999	-99999
REL:	0.102	-99999	-99999	-99999
RES 1:	0.148	-99999	-99999	-99999
RES 2:	0.197	-99999	-99999	-99999

Forecast Type: Liklihood (probability) of the occurance of geomagnetic category  
Year: 2000  
Start: 1/1/00  
End: 12/31/00

2000

Total Records:	366	366	366	366
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	205	108	35	18
Mean (f):	0.574	0.255	0.121	0.050
Mean (x):	0.560	0.295	0.096	0.049
Median (f):	0.640	0.250	0.100	0.010
Std Dev (f):	0.227	0.114	0.092	0.085
Std Dev (x):	0.497	0.457	0.294	0.217
Std Dev (f-x):	0.483	0.455	0.289	0.214
Mean (f x=1):	0.632	0.279	0.180	0.133
Mean (f x=0):	0.501	0.245	0.115	0.046
Median (f x=1):	0.690	0.250	0.150	0.050
Median (f x=0):	0.550	0.200	0.100	0.010
Std Dev (f x=1):	0.197	0.116	0.109	0.195
Std Dev (f x=0):	0.240	0.112	0.088	0.074
Discrimination:	0.131	0.034	0.066	0.088
ME:	0.014	-0.040	0.025	0.001
RPSsc:	0.417	-99999	-99999	-99999
RPS:	0.392	-99999	-99999	-99999
REL:	0.138	-99999	-99999	-99999
RES 1:	0.163	-99999	-99999	-99999
RES 2:	0.254	-99999	-99999	-99999

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

1999

Year:	1999			
Start:	1/1/99			
End:	12/31/99			
Total Records:	365	365	365	365
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	240	83	33	9
Mean (f):	0.652	0.225	0.097	0.027
Mean (x):	0.658	0.227	0.090	0.025
Median (f):	0.690	0.200	0.070	0.010
Std Dev (f):	0.195	0.117	0.072	0.033
Std Dev (x):	0.475	0.420	0.287	0.155
Std Dev (f-x):	0.455	0.418	0.280	0.157
Mean (f x=1):	0.695	0.257	0.148	0.038
Mean (f x=0):	0.569	0.215	0.092	0.026
Median (f x=1):	0.740	0.250	0.100	0.050
Median (f x=0):	0.600	0.200	0.050	0.010
Std Dev (f x=1):	0.173	0.126	0.116	0.031
Std Dev (f x=0):	0.208	0.113	0.064	0.033
Discrimination:	0.126	0.042	0.057	0.012
ME:	-0.006	-0.003	0.006	0.002
RPSsc:	0.351	-99999	-99999	-99999
RPS:	0.326	-99999	-99999	-99999
REL:	0.076	-99999	-99999	-99999
RES 1:	0.101	-99999	-99999	-99999
RES 2:	0.250	-99999	-99999	-99999

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

998

Year:	1998			
Start:	1/1/98			
End:	12/31/98			
Total Records:	365	365	365	365
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	259	64	31	11
Mean (f):	0.696	0.183	0.088	0.032
Mean (x):	0.710	0.175	0.085	0.030
Median (f):	0.790	0.150	0.050	0.010
Std Dev (f):	0.195	0.103	0.080	0.065
Std Dev (x):	0.455	0.381	0.279	0.171
Std Dev (f-x):	0.448	0.387	0.281	0.162
Mean (f x=1):	0.727	0.200	0.120	0.153
Mean (f x=0):	0.621	0.180	0.085	0.029
Median (f x=1):	0.790	0.150	0.100	0.100
Median (f x=0):	0.700	0.150	0.050	0.010
Std Dev (f x=1):	0.167	0.106	0.084	0.185
Std Dev (f x=0):	0.235	0.102	0.079	0.054
Discrimination:	0.106	0.020	0.035	0.124
ME:	-0.013	0.008	0.003	0.002
RPSsc:	0.337	-99999	-99999	-99999
RPS:	0.316	-99999	-99999	-99999
REL:	0.083	-99999	-99999	-99999
RES 1:	0.104	-99999	-99999	-99999
RES 2:	0.233	-99999	-99999	-99999

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

1997

Year:	1997			
Start:	1/1/97			
End:	12/31/97			
Total Records:	365	365	365	365
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	265	70	21	9
Mean (f):	0.757	0.155	0.068	0.021
Mean (x):	0.726	0.192	0.058	0.025
Median (f):	0.790	0.150	0.050	0.010
Std Dev (f):	0.148	0.087	0.049	0.028
Std Dev (x):	0.447	0.394	0.233	0.155
Std Dev (f-x):	0.426	0.388	0.234	0.145
Mean (f x=1):	0.784	0.186	0.086	0.097
Mean (f x=0):	0.684	0.147	0.067	0.019
Median (f x=1):	0.840	0.150	0.050	0.050
Median (f x=0):	0.750	0.100	0.050	0.010
Std Dev (f x=1):	0.114	0.102	0.059	0.093

Std Dev (f x=0):	0.196	0.081	0.048	0.022
Discrimination:	0.100	0.039	0.019	0.078
ME:	0.031	-0.037	0.011	-0.004
RPSsc:	0.298	-99999	-99999	-99999
RPS:	0.270	-99999	-99999	-99999
REL:	0.057	-99999	-99999	-99999
RES 1:	0.085	-99999	-99999	-99999
RES 2:	0.213	-99999	-99999	-99999

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year: 1996  
 Start: 1/1/96  
 End: 12/31/96  
 Total Records: 366 366 366 366  
 Geomag Category: Q-U A Mn Stm Mj-Svr Stm  
 Event Days: 260 79 25 2  
 Mean (f): 0.747 0.148 0.078 0.026  
 Mean (x): 0.710 0.216 0.068 0.005  
 Median (f): 0.800 0.100 0.050 0.010  
 Std Dev (f): 0.166 0.097 0.059 0.025  
 Std Dev (x): 0.454 0.412 0.253 0.074  
 Std Dev (f-x): 0.434 0.410 0.239 0.076  
 Mean (f|x=1): 0.779 0.174 0.152 0.055  
 Mean (f|x=0): 0.669 0.141 0.073 0.026  
 Median (f|x=1): 0.840 0.150 0.150 0.100  
 Median (f|x=0): 0.700 0.100 0.050 0.010  
 Std Dev (f|x=1): 0.148 0.100 0.074 0.064  
 Std Dev (f|x=0): 0.181 0.095 0.054 0.024  
 Discrimination: 0.111 0.033 0.079 0.029  
 ME: 0.037 -0.068 0.010 0.021  
 RPSsc: 0.280 -99999 -99999 -99999  
 RPS: 0.257 -99999 -99999 -99999  
 REL: 0.048 -99999 -99999 -99999  
 RES 1: 0.071 -99999 -99999 -99999  
 RES 2: 0.209 -99999 -99999 -99999

996

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year: 1995  
 Start: 1/1/95  
 End: 12/31/95  
 Total Records: 365 365 365 365  
 Geomag Category: Q-U A Mn Stm Mj-Svr Stm  
 Event Days: 218 83 59 5  
 Mean (f): 0.664 0.193 0.102 0.041  
 Mean (x): 0.597 0.227 0.162 0.014  
 Median (f): 0.700 0.150 0.100 0.050  
 Std Dev (f): 0.196 0.112 0.073 0.044  
 Std Dev (x): 0.491 0.420 0.369 0.116  
 Std Dev (f-x): 0.458 0.419 0.358 0.123  
 Mean (f|x=1): 0.723 0.222 0.143 0.052  
 Mean (f|x=0): 0.577 0.184 0.094 0.041  
 Median (f|x=1): 0.790 0.200 0.150 0.050  
 Median (f|x=0): 0.600 0.150 0.050 0.050  
 Std Dev (f|x=1): 0.174 0.106 0.090 0.032  
 Std Dev (f|x=0): 0.195 0.112 0.067 0.044  
 Discrimination: 0.146 0.038 0.049 0.011  
 ME: 0.067 -0.034 -0.060 0.027  
 RPSsc: 0.399 -99999 -99999 -99999  
 RPS: 0.368 -99999 -99999 -99999  
 REL: 0.102 -99999 -99999 -99999  
 RES 1: 0.133 -99999 -99999 -99999  
 RES 2: 0.266 -99999 -99999 -99999

995

Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year: 1994  
 Start: 1/1/94  
 End: 12/31/94  
 Total Records: 365 365 365 365  
 Geomag Category: Q-U A Mn Stm Mj-Svr Stm  
 Event Days: 166 101 79 19  
 Mean (f): 0.553 0.233 0.151 0.063  
 Mean (x): 0.455 0.277 0.216 0.052  
 Median (f): 0.550 0.250 0.150 0.050

994

\* 166

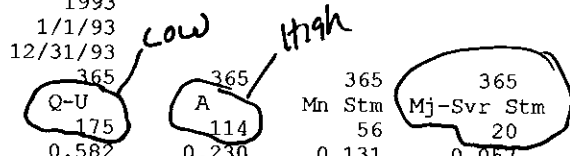
LOW

Std Dev (f):	0.216	0.102	0.099	0.065
Std Dev (x):	0.499	0.448	0.412	0.222
Std Dev (f-x):	0.440	0.444	0.393	0.208
Mean (f x=1):	0.664	0.257	0.209	0.164
Mean (f x=0):	0.460	0.224	0.135	0.057
Median (f x=1):	0.700	0.250	0.200	0.150
Median (f x=0):	0.450	0.200	0.100	0.050
Std Dev (f x=1):	0.177	0.095	0.104	0.122
Std Dev (f x=0):	0.201	0.103	0.091	0.056
Discrimination:	0.204	0.034	0.074	0.107
ME:	0.098	-0.044	-0.065	0.011
RPSsc:	0.494	-99999	-99999	-99999
RPS:	0.412	-99999	-99999	-99999
REL:	0.141	-99999	-99999	-99999
RES 1:	0.223	-99999	-99999	-99999
RES 2:	0.271	-99999	-99999	-99999

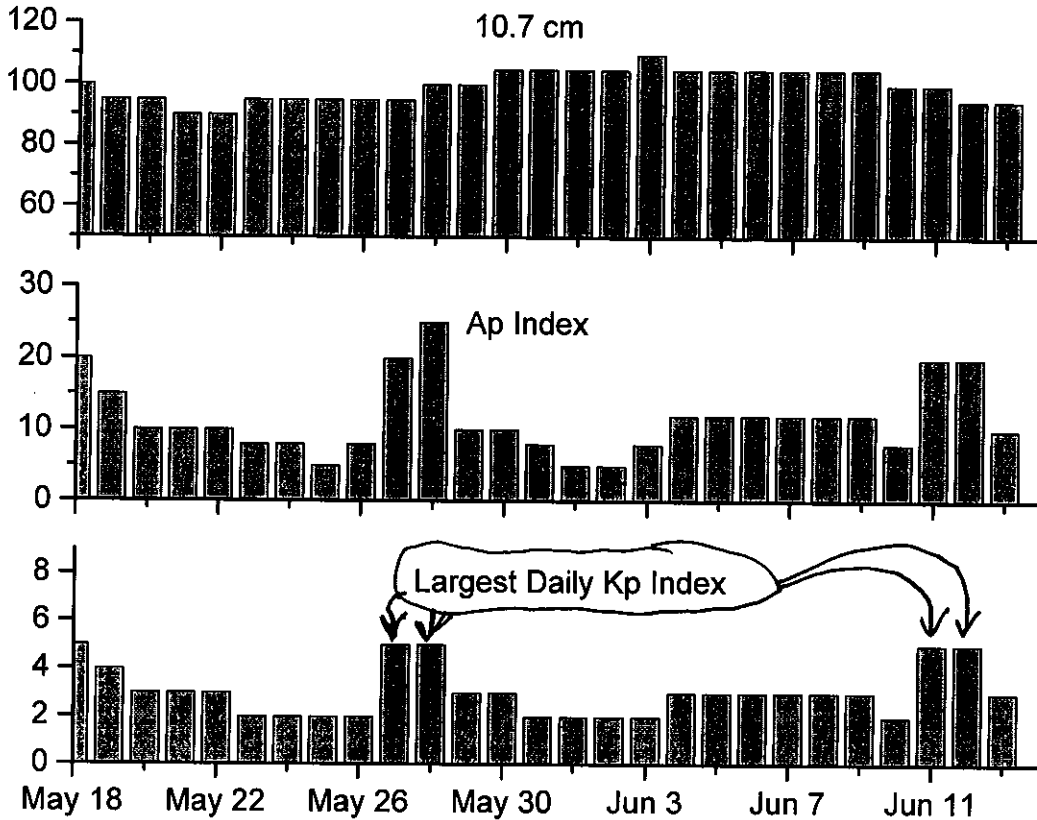
Forecast Type: Likelihood (probability) of the occurrence of geomagnetic category

Year:	1993			
Start:	1/1/93			
End:	12/31/93			
Total Records:	365	365	365	365
Geomag Category:	Q-U	A	Mn Stm	Mj-Svr Stm
Event Days:	175	114	56	20
Mean (f):	0.582	0.230	0.131	0.057
Mean (x):	0.479	0.312	0.153	0.055
Median (f):	0.600	0.250	0.100	0.050
Std Dev (f):	0.212	0.109	0.088	0.064
Std Dev (x):	0.500	0.464	0.361	0.228
Std Dev (f-x):	0.467	0.462	0.353	0.230
Mean (f x=1):	0.662	0.253	0.175	0.087
Mean (f x=0):	0.508	0.220	0.123	0.055
Median (f x=1):	0.700	0.250	0.150	0.050
Median (f x=0):	0.500	0.200	0.100	0.050
Std Dev (f x=1):	0.196	0.101	0.089	0.091
Std Dev (f x=0):	0.198	0.111	0.085	0.062
Discrimination:	0.154	0.033	0.052	0.032
ME:	0.103	-0.082	-0.022	0.002
RPSsc:	0.466	-99999	-99999	-99999
RPS:	0.432	-99999	-99999	-99999
REL:	0.162	-99999	-99999	-99999
RES 1:	0.197	-99999	-99999	-99999
RES 2:	0.270	-99999	-99999	-99999

1993



### 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
18 May	100	20	5	01 Jun	105	5	2
19	95	15	4	02	105	5	2
20	95	10	3	03	110	8	3
21	90	10	3	04	105	12	3
22	90	10	3	05	105	12	3
23	95	8	2	06	105	12	3
24	95	8	2	07	105	12	3
25	95	5	2	08	105	12	3
26	95	8	2	09	105	12	3
27	95	20	5	10	100	8	2
28	100	25	5	11	100	20	5
29	100	10	3	12	95	20	5
30	105	10	3	13	95	10	3
31	105	8	2				

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 Sell Vol



***Energetic Events***

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
10 May	0503	0523	0536	M1.3	.014	Sf	S11W30	758	260	2		
11 May	0611	0641	0656	M1.2	.017			758	160			
11 May	1922	1938	1955	M1.1	.016	1f	S10W47	758				
12 May	0727	0733	0737	M1.6	.005	2b	N11E30	759	55			
12 May	1733	1741	1745	M1.4	.005	1n	N11E21	759	98			
13 May	1613	1657	1728	M8.0	.180	2b	N12E12	759	420	2900	3	3
15 May	2227	2236	2242	M3.5	.019	1n	S15E13	763	290	83		

***Flare List***

Date	Begin	Time		Optical X-ray Class.	Imp/ Brtns	Location Lat CMD	Rgn
		Max	End				
09 May	B0333	0333	0339	C2.8	Sf	S09W09	758
	0957	1008	1032	C1.4			758
	1037	1103	1111	C8.9			758
	1139	1146	1151	C5.6			
	1224	1231	1237	C2.5			
	1843	1846	1848	B9.7		759	
	2059	2109	2127	C3.7		759	
	2302	2305	2307	C2.7	Sf	N12E61	759
	2335	2336	2338	C2.7	Sf	N17E65	759
	10 May	0100	0104	0123	B9.6	Sf	S06W28
0136		0219	0224	C1.7			758
0353		0400	0405	C2.0			758
0517		0520	0532	M1.3	Sf	S11W30	758
0859		0905	0911	C2.2			760
1221		1226	1231	C1.5			758
1411		1421	1424	C1.3	Sf	S09W33	758
1609		1615	1631	C1.1	Sf	N12E51	759
1632		1635	1638	B7.3			
1941		1956	2022	C5.8	1f	N10E47	759
11 May	2358	0002	0009	B8.6			760
	B0128	0132	0154		2n	N13E45	759
	0408	0416	0426	C1.4			758
	0451	0454	0456	C1.0			
	0611	0641	0656	M1.2			758
	0903	0908	0913	C1.7			758
	1030	1033	1035	C1.0			758
	1133	1137	1139	C1.0			758
	1200	1209	1212	C1.0			758
	1254	1308	1316	C1.8			762
1314	1314	1321		1f	S11E04	762	
1659	1700	1715	C6.9	Sf	N13E37	759	

***Flare List – continued.***



Date	Time			Optical X-ray Class.	Imp / Brtns	Location Lat CMD	Rgn	
	Begin	Max	End					
11 May	1904	1906	1908		Sf	S09W47	758	
	1921	1939	2016	M1.1	1f	S10W47	758	
	2332	2334	2343	C5.9	Sf	S08W54	758	
12 May	0014	0017	0023	C2.7	Sf	S09W51	758	
	0026	0029	0035	C4.2	Sf	S08W55	758	
	0107	0113	0120	C9.4	2b	N12E31	759	
	0143	0147	0149	C1.9			758	
	0257	0309	0324	C2.0			759	
	0511	0512	0514	C1.0	Sf	S09W56	758	
	0641	0651	0653		Sf	S09W57	758	
	0704	0704	0714	C1.4	Sf	N12E28	759	
	0730	0733	0907	M1.6	2b	N11E30	759	
	1021	1028	1033	B9.5			759	
	1113	1118	1121	C1.4			758	
	1250	1251	1255		Sf	S16E64	763	
	1316	1319	1322	C1.2			758	
	1342	1345	1413	C3.0	Sf	N16E29	759	
	1701	1703	1717	C1.6	Sf	N11E23	759	
	1736	1740	1819	M1.4	1n	N11E21	759	
	1823	1826	1827		Sf	N09E22	759	
	1953	1953	1956	C2.4	Sf	S10W63	758	
	2138	2148	2156	C2.0			763	
	2247	2248	2311	C2.1	Sf	N17E24	759	
13 May	0259	0259	0350	B8.7	Sf	N12E17	759	
	0317	0324	0333	C1.6			759	
	0351	0351	0353		Sf	N12E16	759	
	0656	0701	0707	B6.9			759	
	0817	0820	0825	B6.8			758	
	1255	1304	1331	C1.5	Sf	N16E16	759	
	1539	1546	1555	B7.1			758	
	1631	1641	1946	M8.0	2b	N12E12	759	
	14 May	0202	0203	0222		Sf	S16E38	763
		0509	0511	0522		Sf	S16E36	763
15 May	1128	1131	1134	B9.9			758	
	1321	1326	1330	C1.1			758	
	1459	1506	1513	C4.0			758	
	1551	1557	1603	C3.5			758	
	2018	2058	2236	C2.8			758	
	0007	0011	0015	C2.5			758	
	0237	0240	0251	C1.4			758	
	0604	0615	0627	C1.2			758	
	0702	0708	0713	C1.0			758	
	0920	0934	1002	B8.4			758	







**Region Summary – continued.**

Date	Location		Sunspot Characteristics				Flares							
	° Lat ° CMD	Helio	Area (10 <sup>-6</sup> hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical			
		Lon						C	M	X	S	1	2	3

*Region 760*

09 May	S06W14	126	0040	14	Esi	013	B											
10 May	S06W29	128	0050	08	Dso	008	B	1										
11 May	S07W42	128	0040	05	Cso	004	B											
12 May	S08W59	132	0080	01	Bxo	002	B											
13 May	S08W72	132																
14 May	S08W85	132																
									1	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 126

*Region 761*

09 May	N04E61	051	0030	01	Hrx	001	A											
10 May	N03E48	051	0010	02	Axx	002	A											
									0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 051

*Region 762*

10 May	S08E18	081	0040	08	Dro	007	B											
11 May	S11E04	082	0080	08	Dai	012	B	1				1						
12 May	S12W12	084	0130	09	Dao	011	B											
13 May	S12W24	084	0150	08	Dso	013	B											
14 May	S12W37	083	0090	08	Dao	013	B											
15 May	S13W53	086	0060	06	Dao	006	B											
									1	0	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 082

*Region 763*

11	S14E70	016	0110	05	Dao	004	B											
12	S14E57	016	0150	09	Dao	008	B	1				1						
13	S15E45	015	0200	10	Dao	014	B											
14	S16E31	015	0130	10	Dao	013	B					2						
15	S15E16	017	0140	09	Dai	019	B	5	1			1	1					
								6	1	0	4	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 017



**Region Summary – continued.**

Date	Location		Sunspot Characteristics				Flares				
	° Lat	° CMD	Area (10 <sup>-6</sup> hemi)	Extent (heli)	Spot Class	Spot Count	Mag Class	X-ray		Optical	
								C	M	X	S

*Region 764*

11 May	S07E01	085	0020	01	Hrx	002	A										
12 May	S06W12	085	0060	03	Cso	004	B										
13 May	S06W25	085															

0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 085



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

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value
<b>2003</b>									
May	89.6	55.2	0.62	118.3	67.8	129.3	133.1	26	21.0
June	118.4	77.4	0.65	113.6	65.2	129.4	130.2	24	21.5
July	132.8	85.0	0.64	106.9	62.0	127.8	127.2	19	22.0
August	114.3	72.7	0.64	102.8	60.3	122.1	125.2	23	22.2
September	82.6	48.8	0.59	100.7	59.8	112.3	123.7	18	21.8
October	118.9	65.5	0.55	96.6	58.4	153.1	121.8	35	21.1
November	118.9	67.3	0.57	93.6	57.0	153.1	120.1	28	20.0
December	75.4	46.5	0.62	91.4	55.0	115.1	118.0	16	18.6
<b>2004</b>									
January	62.3	37.7	0.61	87.9	52.0	114.1	116.3	22	18.1
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			113.2		26	
December	34.7	17.9	0.52			94.6		11	
<b>2005</b>									
January	52.0	31.3	0.60			102.4		22	
February	45.4	29.1	0.64			97.3		11	
March	41.0	24.8	0.60			90.0		12	
April	41.5	24.4	0.59			85.9		12	

**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.

