

Space Weather Highlights
14-20 Jun 1999

Solar activity ranged from low to moderate levels during the week. Activity was low through 16 June with isolated C-class subflares and a weak, optically uncorrelated Type II radio sweep at 16/0328UT. Activity increased to moderate levels on 17 June due to an M3 X-ray flare at 17/1730UT with an associated weak Type II radio sweep. Space-based sensors indicated that Region 8569 (N19, L = 189, class/area Eki/370 on 14 Jun) produced this flare as it was crossing the west limb. Activity dropped back to low levels during 18 - 19 June although the frequency of C-class flares increased. Space-based images showed that most of these originated from beyond the west limb including a C5 at 18/1657UT with an associated Type II radio sweep. Activity again increased to moderate levels on the last day of the period by virtue of an M2/SB flare at 20/1535UT from Region 8592 (N23, L=346, class/area Fao/200 on 20 June) with minor radio emission. Region 8592 also produced a long-duration C5/SF flare at 20/2007UT. This appeared to herald the return of old Region 8552 (N19, L=346) which produced a proton event during its previous rotation.

Real-time solar wind data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. Phi data indicated a shift to an away (positive polarity) sector on 15 June accompanied by increased IMF Bz variability (maximum southerly deflections to minus 08 nT (GSM), enhanced densities, and a slight increase in velocities.

There were no proton enhancements at geo-synchronous orbit during the period.

The greater than 2 MeV electron flux at geo-synchronous altitude was at normal levels during most of the period.

The geomagnetic field was at quiet levels during most of the period.

Space Weather Outlook
23 June - 19 July 1999

Solar activity is expected to range from low to moderate levels. Isolated M-class flares may occur at any time during the period. There will also be a slight chance for a major flare sometime during the period.

There will be a slight chance for a proton event at geo-synchronous altitude.

The greater than 2 MeV electron flux at geo-synchronous altitude is expected to be at normal levels during most of the period.

Geomagnetic field activity is expected to be quiet to unsettled, barring any Earth-directed CME occurrences.



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	
14 June	168	210	1540	B8.5	2	0	0	15	0	0	0	0
15 June	159	240	1270	B7.0	2	0	0	7	0	0	0	0
16 June	153	201	940	B6.9	3	0	0	5	1	0	0	0
17 June	147	167	820	B6.8	4	1	0	3	0	0	0	0
18 June	147	109	530	C1.0	13	0	0	5	1	0	0	0
19 June	139	117	620	B9.3	2	0	0	0	0	0	0	0
20 June	152	102	1040	B9.0	11	1	0	5	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
14 June	1.4E+5	2.1E+4	4.5E+3		4.8E+6	
15 June	3.8E+5	2.1E+4	4.3E+3		5.6E+6	
16 June	4.3E+5	2.0E+4	4.2E+3		5.0E+5	
17 June	1.8E+5	1.7E+4	3.9E+3		3.6E+5	
18 June	2.0E+5	1.7E+4	3.6E+3		3.6E+5	
19 June	1.9E+5	1.7E+4	3.5E+3		6.5E+5	
20 June	1.5E+5	1.5E+4	2.9E+3		9.2E+5	

Daily Geomagnetic Data

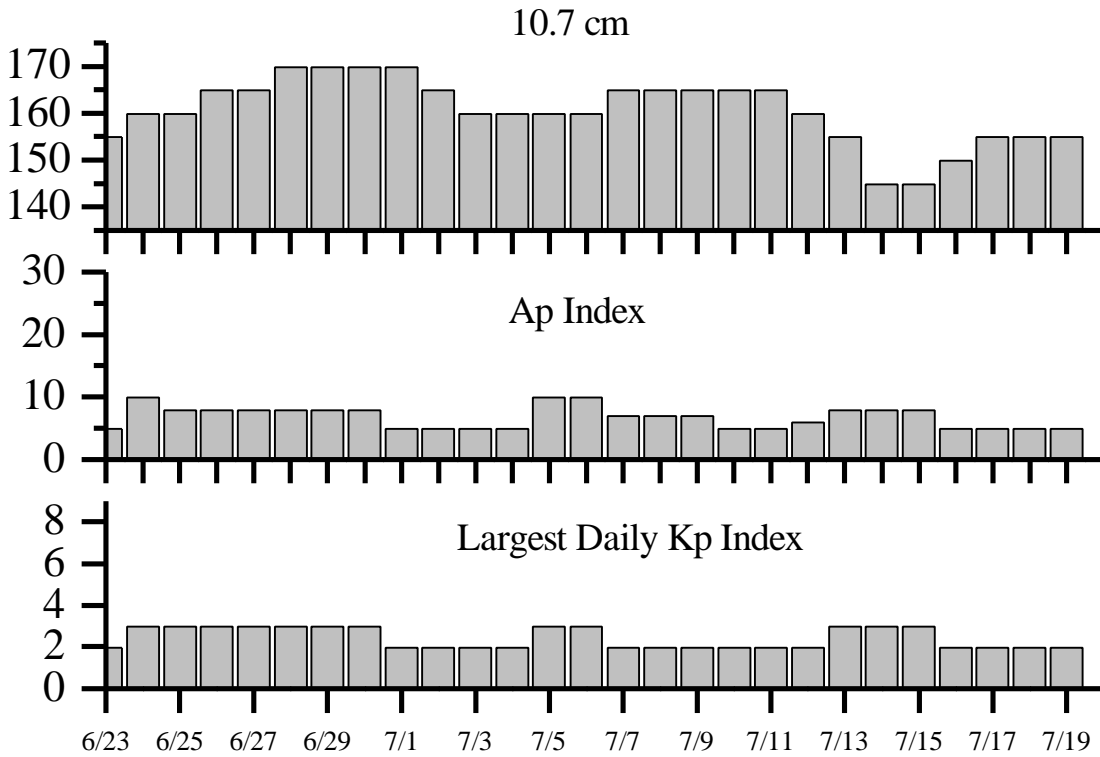
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	14 June	2	1-1-1-0-0-1-0-0	3	1-1-3-1-0-0-0-0	4
15 June	4	1-0-1-1-2-2-2-1	5	1-0-0-1-1-3-3-1	8	2-2-0-2-3-4-2-2
16 June	5	1-0-2-2-2-1-2-2	11	1-1-2-2-5-2-2-1	7	1-1-2-3-2-2-2-2
17 June	6	2-2-2-1-2-1-1-2	9	3-3-4-1-1-1-1-1	7	2-2-3-1-2-2-2-2
18 June	7	1-2-1-2-2-2-2-3	7	1-3-2-1-2-1-2-2	7	1-2-2-2-2-2-2-3
19 June	4	2-1-2-1-1-1-1-1	3	2-2-1-0-1-1-1-0	7	2-1-1-1-2-3-2-3
20 June	2	0-0-0-1-1-2-1-0	1	1-1-0-0-0-0-0-0	4	1-1-0-1-2-2-2-1

Alerts and Warnings Issued

Date and Time of Issue (UT)	Type of Alert or Warning	Date and Time of Event (UT)
14 Jun 0317	Type II Radio Emission	13 Jun 2345
15 Jun 1800	K= 4 Observed	15 Jun 15 - 18
16 Jun 0400	Type II Radio Emission	16 Jun 0328
17 Jun 1803	Type II Radio Emission	17 Jun 1733
18 Jun 1724	Type II Radio Emission	18 Jun 1648
19 Jun 0018	1-245 MHz Radio Burst	18 Jun



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
23 Jun	155	5	2	07 Jul	165	7	2
24	160	10	3	08	165	7	2
25	160	8	3	09	165	7	2
26	165	8	3	10	165	5	2
27	165	8	3	11	165	5	2
28	170	8	3	12	160	6	2
29	170	8	3	13	155	8	3
30	170	8	3	14	145	8	3
01 Jul	170	5	2	15	145	8	3
02	165	5	2	16	150	5	2
03	160	5	2	17	155	5	2
04	160	5	2	18	155	5	2
05	160	10	3	19	155	5	2
06	160	10	3				



Energetic Events

Date	Time (UT)			X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	1/2 Max	Class	Integ Flux	Imp/ Brtns	Location		Rgn #	Radio Flux		Intensity	
							Lat	CMD		245	2695	II	IV
17 Jun 99	1647	1730	1739	M3.6	.031					62		1	
20 Jun 99	1525	1535	1545	M2.9	.020	SB	N22E71	8592		60			

Flare List

Date	Time			X-ray Class.	Optical Imp / Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
14 June	No Flares Observed						
	0012	0029	0054		SF	N26E05	8582
	0304	0307	0315	C1.4	SF	N22W44	8569
	0404	0404	0407		SF	S12E43	8583
	0457	0459	0506		SF	N26E01	8582
	0547	0549	0601		SF	N26E01	8582
	0636	0637	0647		SF	N24E00	8582
	0658	0701	0703		SF	N24E00	8582
	B1133	U1133	A1207		SF	N24W04	8582
	B1217	U1221	A1230	C1.1	SF	N26W01	8582
	1258	1258	1304		SF	S27W49	8576
	1435	1436	1450		SF	N26W03	8582
	1517	1522	1528		SF	N26W05	8582
	1703	1704	1707		SF	S29W48	8576
	1714	1714	1722		SF	N17W59	8569
	1800	1833	1851		SF	N17W70	8578
15 June	0030	0031	0036	C1.0	SF	S11E30	8583
	0034	0037	0041		SF	N26W10	8582
	0054	0102	0124		SF	N25W09	8582
	0440	0442	0445		SF	N25W13	8582
	1103	1114	1150	C1.2			
	1310	1311	1319		SF	S19W04	8580
	1637	1639	1644		SF	N18W69	8569
	1647	1647	1650		SF	S12E22	8583
16 June	0145	0145	0151		SF	N39E40	8585
	0151	0159	0216		SF	N39E40	8585
	0455	0515	0550	C3.9	1F	N39E38	8585
	1358	1401	1405		SF	S24W16	8580
	1739	1809	1821	C1.9			
	2036	2036	2045		SF	N22W87	8584
	2046	2048	2052		SF	N25W34	8582
	2240	2243	2246	C1.0			



Flare Lis-continued

Date	Time			X-ray Class.	Optical		Rgn #
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
17 June	0022	0036	0050	C5.3			8569
	0257	0258	0308	C1.1	SF	N40E28	8585
	0609	0615	0621	C1.4			
	0622	0622	0625		SF	N25W37	8582
	0837	0840	0850		SF	N40E24	8585
	0914	0930	0944	C3.2			
	1647	1730	1739	M3.6			
18 June	0250	0256	0314	C2.0			
	0437	0442	0445	C1.6			
	0454	0457	0501	C1.2			
	0535	0539	0543	C1.5			
	B0644	0645	0701	C2.8	SF	N35E14	8585
	0708	0714	0716	C5.8			
	0723	0726	0729	C3.0			
	0905	U0909	A0918		SF	S21W11	8588
	1104	1120	1145	C4.4			
	1356	1401	1405	C1.4			
	1444	1449	A1511	C2.2	SF	N26W53	8582
	1638	1657	1744	C5.8			
	1941	1942	A1948		SF	N27W55	8582
	1957	2009	2040	C7.0	1N	N39E05	8585
	2044	2048	2052	C1.9			
	19 June	2257	2258	2318		SF	N40E04
1342		1355	1417	C5.1			8592
20 June	2228	2241	2253	C4.0			
	0056	0100	0105	C1.9			
	0433	0436	0438	C1.4			
	0454	0501	0506	C4.2			
	0711	0716	0723	C1.8			
	0747	0752	0755	C1.3			
	0833	0840	0847	C5.5			
	1155	1159	1203	C1.5			
	1355	1403	1407	C2.8			
	1454	1454	1500		SF	N14W23	8591
	1529	1530	A1614	M2.9	SB	N22E71	8592
	1720	1727	1737	C3.8			
	B1912	2020	2039	C5.1	SF	N24E67	8592
	2008	2014	2021		SF	N23E32	
	2104	2109	2115	C3.8			
2312	2315	2322		SF	S12W49	8583	



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 8566

02 Jun	N23E74	213	0010	00	HSX	001	A												
03 Jun	N23E63	211	0020	01	HRX	001	A												
04 Jun	N22E50	211	0010	00	AXX	001	A												
05 Jun	N22E37	211	0000	00	AXX	001	A												
06 Jun	N24E26	208	0000	03	BXO	003	B												
07 Jun	N24E14	207	0000	00	AXX	001	A												
08 Jun	N24E01	207																	
09 Jun	N24W1	207																	
10 Jun	N24W2	207																	
11 Jun	N24W3	207																	
12 Jun	N24W5	207																	
13 Jun	N24W6	207																	
14 Jun	N24W77	207																	
0 0 0 0 0 0 0 0 0																			

Crossed West Limb.

Absolute heliographic longitude: 207

Region 8569

04 Jun	N18E73	188	0060	05	CAO	002	B												
05 Jun	N21E59	189	0100	07	CAO	005	B												
06 Jun	N18E47	187	0090	09	CSO	008	B						1						
07 Jun	N18E35	186	0120	09	CAO	009	B												
08 Jun	N18E20	188	0080	11	ESO	006	B						2						
09 Jun	N19E06	189	0130	11	EAO	014	B												
10 Jun	N19W0	188	0220	14	EAI	029	BG						4						
11 Jun	N19W2	188	0260	17	FAC	038	BG	2					3	1					
12 Jun	N20W3	186	0310	17	FAI	040	BG	2					4						
13 Jun	N19W4	186	0360	15	EKI	029	BG	4					10						
14 Jun	N19W59	187	0370	15	EAC	021	BG	1					2						
15 Jun	N19W72	187	0230	14	EAI	012	B						1						
16 Jun	N18W85	187	0080	10	CSO	005	B												
9 0 0 27 1 0 0 0																			

Crossed West Limb.

Absolute heliographic longitude: 189



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 8570

04 Jun	S14E74	187	0040	01	HSX	001	A												
05 Jun	S14E60	188	0050	01	HSX	001	A												
06 Jun	S14E48	186	0050	02	HSX	001	A												
07 Jun	S14E34	187	0040	02	HAX	001	A												
08 Jun	S13E21	187	0050	02	HSX	001	A												1
09 Jun	S13E08	187	0060	02	HSX	002	A												
10 Jun	S13W05	186	0050	01	HSX	002	A												
11 Jun	S13W18	186	0030	01	HSX	002	A												
12 Jun	S15W34	188	0030	01	HSX	002	A												
13 Jun	S14W45	186	0020	01	HSX	002	A												
14 Jun	S14W58	186	0030	01	HSX	001	A												
15 Jun	S14W72	187	0020	01	HSX	001	A												
16 Jun	S06W85	187	0010	01	AXX	001	A												
																			0 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 186

Region 8571

05 Jun	S19E60	188	0030	02	HRX	003	A												2
06 Jun	S19E48	186	0150	07	CAO	011	B												
07 Jun	S19E36	185	0230	06	CAO	010	B												
08 Jun	S19E23	185	0210	06	DAO	015	B												2
09 Jun	S19E09	186	0130	06	DSO	013	B												
10 Jun	S20W05	186	0050	04	CSO	008	B												
11 Jun	S19W17	185	0040	06	CSO	003	B												1
12 Jun	S19W31	185	0030	03	CSO	004	B												
13 Jun	S19W44	185	0020	03	CSO	004	B												1
14 Jun	S20W57	185	0000	00	AXX	001	A												
15 Jun	S20W71	186	0000	00	AXX	001	A												
16 Jun	S18W84	186	0000	00	AXX	001	A												
																			0 0 0 6 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 186



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 8576

06 Jun	S29E52	182	0010	06	BXO	004	B											
07 Jun	S29E40	181	0010	06	BXO	007	B											
08 Jun	S29E26	182	0010	08	BXO	007	B											
09 Jun	S29E10	185	0010	07	BXO	003	B											
10 Jun	S28W07	188	0000	00	AXX	001	A											
11 Jun	S29W18	186	0010	04	BXO	003	B											
12 Jun	S28W29	183	0060	08	DRO	014	B											
13 Jun	S28W40	181	0080	09	DAI	016	B	1				1						
14 Jun	S28W54	182	0110	08	DAO	013	B						2					
15 Jun	S29W66	181	0100	08	DSO	005	B											
16 Jun	S29W78	180	0090	10	DSO	003	B											
17 Jun	S27W91	179	0060	03	CSO	003	B											
										1	0	0	3	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 188

Region 8578

08 Jun	N19E04	204	0020	03	CRO	005	B											
09 Jun	N19W0	204	0070	07	DAO	010	B	1				1						
10 Jun	N19W2	204	0150	08	DAO	014	B						3					
11 Jun	N19W3	205	0130	09	DSO	008	B											
12 Jun	N20W4	203	0110	09	DSO	008	B											
13 Jun	N20W6	203	0140	09	CAO	007	B						1					
14 Jun	N21W73	201	0120	06	CAO	005	B						1					
15 Jun	N20W85	200	0090	02	HAX	001	A											
16 Jun	N22W99	202	0040	02	HAX	001	A											
										1	0	0	6	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 204

Region 8579

09 Jun	N12E10	185	0010	04	BXO	003	B											
10 Jun	N12W0	187	0000	00	AXX	001	A											
11 Jun	N10W1	187	0000	00	AXX	001	A											
12 Jun	N10W3	187																
13 Jun	N10W4	187																
14 Jun	N10W58	187																
15 Jun	N10W71	187																
16 Jun	N10W84	187																
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 187



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 8580

09 Jun	S19E67	128	0240	03	HAX	002	A											
10 Jun	S19E54	127	0260	04	HKX	004	A											
11 Jun	S20E42	126	0300	03	HKX	002	A											
12 Jun	S20E28	126	0250	03	HKX	002	A											
13 Jun	S20E15	126	0270	04	CKO	006	B											
14 Jun	S20E02	126	0230	04	CAO	007	B											
15 Jun	S21W11	126	0230	04	CAO	010	B											1
16 Jun	S20W24	126	0230	05	CAO	006	B											1
17 Jun	S21W37	125	0270	05	CAO	008	B											
18 Jun	S21W51	126	0220	02	HSX	002	A											
19 Jun	S21W63	125	0180	02	HSX	001	A											
20 Jun	S20W76	125	0170	03	HSX	001	A											
																		0 0 0 2 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 126

Region 8581

10 Jun	S38W02	183	0000	00	AXX	001	A											
11 Jun	S38W15	183																
12 Jun	S38W28	183																
13 Jun	S38W41	183																
14 Jun	S38W54	183																
15 Jun	S35W72	187	0000	00	AXX	001	A											
16 Jun	S35W85	187																
																		0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 183

Region 8582

11 Jun	N26E31	137	0010	06	BXO	007	B											1
12 Jun	N26E18	136	0020	07	BXO	010	B											1
13 Jun	N26E06	135	0060	07	DAI	012	B	1										8 1
14 Jun	N27W07	135	0210	08	DAC	024	B	1										9
15 Jun	N26W20	135	0220	11	EAI	027	B											3
16 Jun	N27W31	133	0150	11	EAI	024	B											1
17 Jun	N27W46	134	0130	11	ESO	021	B											1
18 Jun	N27W59	134	0090	11	CAO	015	B	1										2
19 Jun	N27W71	133	0060	09	DSO	010	B											
20 Jun	N29W83	132	0030	00	AXX	001	A											
																		3 0 0 26 1 0 0 0

Still on Disk.

Absolute heliographic longitude: 135



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 8583

11 Jun	S12E68	100	0080	02	HSX	002	A											
12 Jun	S13E56	098	0150	09	DSO	008	B	1	1		6	1	1					
13 Jun	S13E44	097	0140	10	DAO	012	B				4							
14 Jun	S13E31	097	0210	10	DAI	015	B				1							
15 Jun	S12E17	098	0150	10	DSI	019	B	1			2							
16 Jun	S13E03	099	0130	08	DSO	016	B											
17 Jun	S13W10	098	0090	07	DSO	013	B											
18 Jun	S13W23	098	0020	07	CAO	006	B											
19 Jun	S13W36	098	0020	06	CSO	003	B											
20 Jun	S11W51	100	0000	02	BXO	002	B					1						
								2	1	0	14	1	1	0	0			

Still on Disk.

Absolute heliographic longitude: 99

Region 8584

12 Jun	N25W2	176	0010	03	BXO	005	B											
13 Jun	N25W3	176																
14 Jun	N25W48	176																
15 Jun	N25W61	176																
16 Jun	N25W74	176									1							
17 Jun	N25W87	176																
								0	0	0	1	0	0	0	0			

Crossed West Limb.

Absolute heliographic longitude: 176

Region 8585

12 Jun	N38E77	077	0090	07	DSO	003	B											
13 Jun	N38E67	074	0140	08	DAO	004	B											
14 Jun	N39E54	074	0190	08	DAO	007	B											
15 Jun	N38E40	075	0140	09	DSO	007	B											
16 Jun	N37E28	074	0180	07	DSO	006	B	1			2	1						
17 Jun	N37E16	072	0190	08	CAO	006	B	1			2							
18 Jun	N38E04	071	0140	06	CSO	004	B	2			2	1						
19 Jun	N38W09	071	0170	10	ESO	008	B											
20 Jun	N38W19	068	0150	07	CSO	005	B											
								4	0	0	6	2	0	0	0			

Still on Disk.

Absolute heliographic longitude: 71



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 8586

15 Jun	N34W18	133	0000	00	AXX	001	A										
16 Jun	N31W31	133	0010	03	BXO	002	B										
17 Jun	N34W44	132	0000	00	AXX	001	A										
18 Jun	N34W57	132															
19 Jun	N34W70	132															
20 Jun	N34W83	132															

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 133

Region 8587

15 Jun	N19E05	110	0000	00	AXX	001	A										
16 Jun	N18W10	112	0000	00	AXX	001	A										
17 Jun	N18W23	112															

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 110

Region 8588

15 Jun	S22E20	095	0000	01	AXX	002	A										
16 Jun	S21E06	096	0010	04	BXO	004	B										
17 Jun	S22W06	094	0030	05	CSO	006	B										
18 Jun	S22W17	092	0010	01	AXX	002	A					1					
19 Jun	S21W28	090	0010	03	BXO	003	B										
20 Jun	S21W41	090															

0 0 0 1 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 96

Region 8589

16 Jun	N28E04	098	0010	00	AXX	001	A										
17 Jun	N27W13	101	0030	03	CAO	003	B										
18 Jun	N27W25	100	0040	06	CAO	008	B										
19 Jun	N27W37	099	0080	07	DSO	009	B										
20 Jun	N28W51	100	0090	08	DAO	004	B										

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 98



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 8590</i>																	
17 Jun	S22W15	103	0010	03	BXO	003	B										
18 Jun	S22W28	103															
19 Jun	S22W41	103															
20 Jun	S22W54	103															
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 103																	
<i>Region 8591</i>																	
17 Jun	N12E14	074	0010	02	BXO	003	B										
18 Jun	N13W01	076	0010	03	BXO	002	B										
19 Jun	N15W14	076	0000	01	AXX	001	A										
20 Jun	N15W27	076										1					
								0	0	0	0	1	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 76																	
<i>Region 8592</i>																	
19 Jun	N23E71	351	0100	03	HSX	002	A	1									
20 Jun	N22E63	346	0200	20	FAO	006	B	1	1		2						
								2	1	0	2	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 346																	
<i>Region 8593</i>																	
20 Jun	N19W61	110	0000	03	BXO	002	B										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 110																	
<i>Region 8594</i>																	
20 Jun	N14E84	325	0400	03	HHX	001	A										
								0	0	0	0	0	0	0	0	0	0
Still on Disk.																	
Absolute heliographic longitude: 325																	



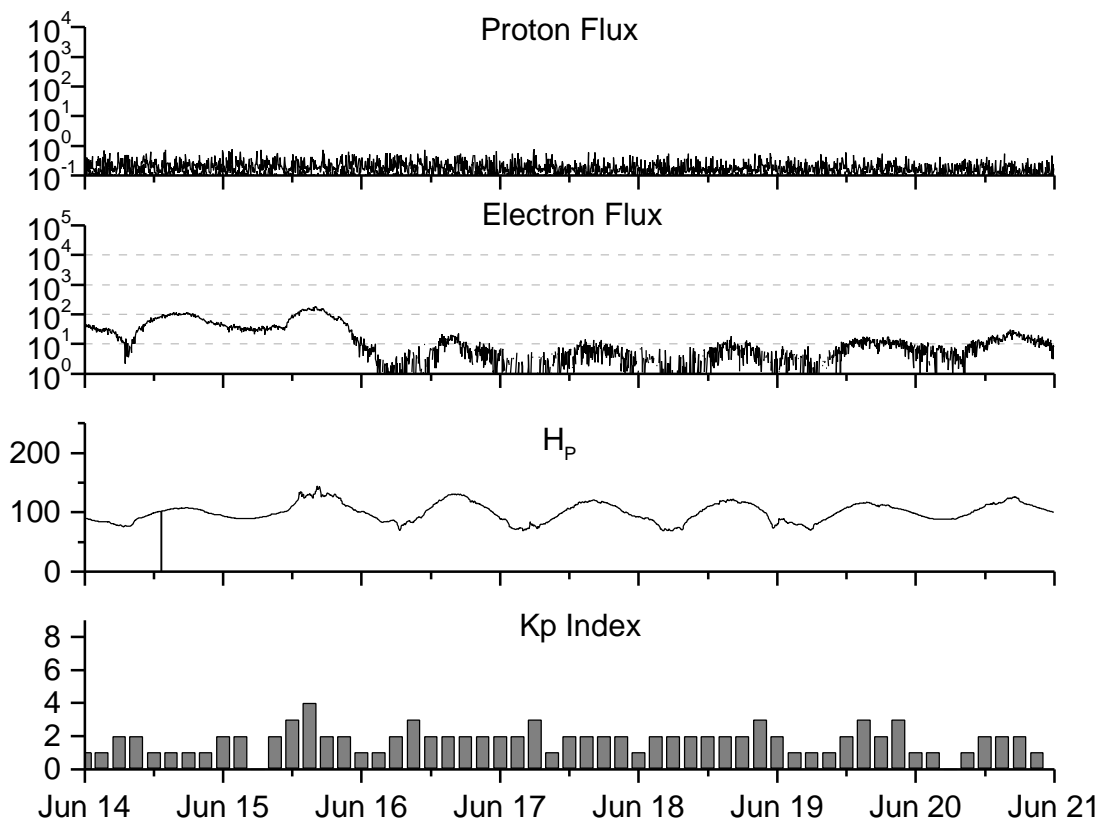
**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	<u>Observed values</u> SWO	<u>Ratio</u> RI	<u>Ratio</u> RI/SWO	<u>Smooth values</u> SWO	<u>Smooth values</u> RI	<u>*Penticton</u> 10.7 cm	<u>Smooth</u> Value	<u>Planetary</u> Ap	<u>Smooth</u> Value
1997									
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	73.3	53.4	109.1	105.8	13	11.1
April	73.6	53.4	0.73	77.7	56.5	108.3	109.1	10	11.3
May	74.3	56.3	0.76	81.4	59.3	106.7	112.4	18	11.6
June	93.6	70.7	0.76	85.9	62.4	108.4	116.2	10	11.9
July	98.3	66.2	0.67	90.3	65.4	114.0	120.3	11	12.2
August	118.6	91.7	0.77	93.7	67.8	136.0	124.1	18	12.4
September	119.0	92.9	0.78	96.1	69.4	138.4	126.8	13	12.5
October	77.0	55.6	0.72	97.7	70.5	117.3	127.9	13	12.5
November	99.5	73.6	0.74	101.3	73.0	140.2	130.0	16	12.3
December	120.8	81.6	0.68			150.1		08	
1999									
January	94.3	62.4	0.66			142.6		10	
February	93.4	66.1	0.70			142.0		11	
March	100.5	69.1	0.70			126.3		13	
April	92.9	63.9	0.69			117.3		12	
May	140.5	106.3	0.76			148.4		10	

NOTE: All smoothed values after January 1998 and monthly values after September 1998 are 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. * 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 14 June 1999*

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.

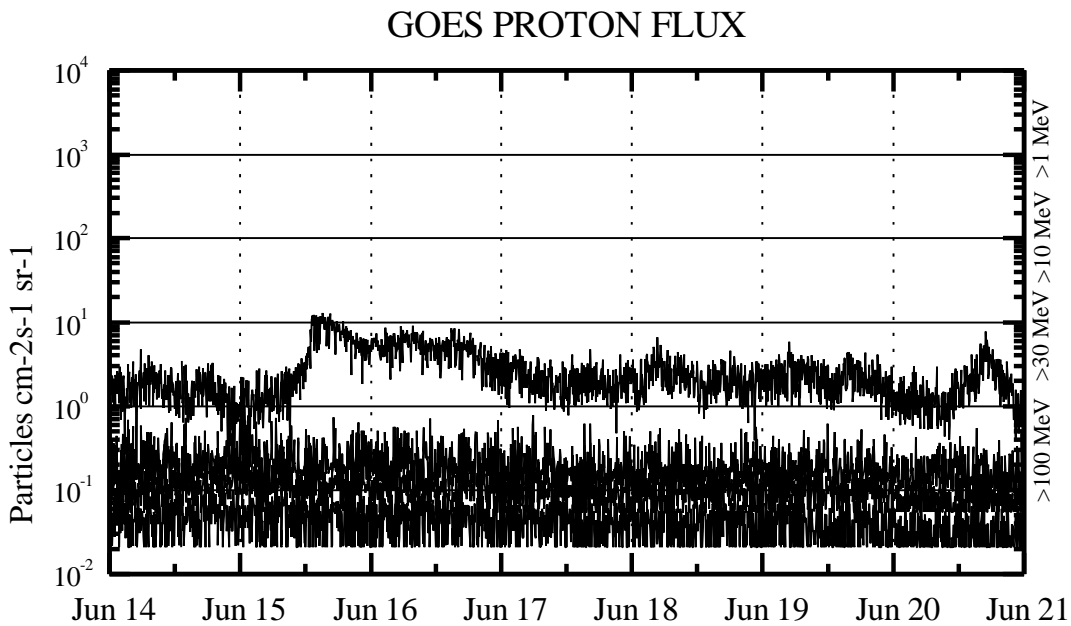
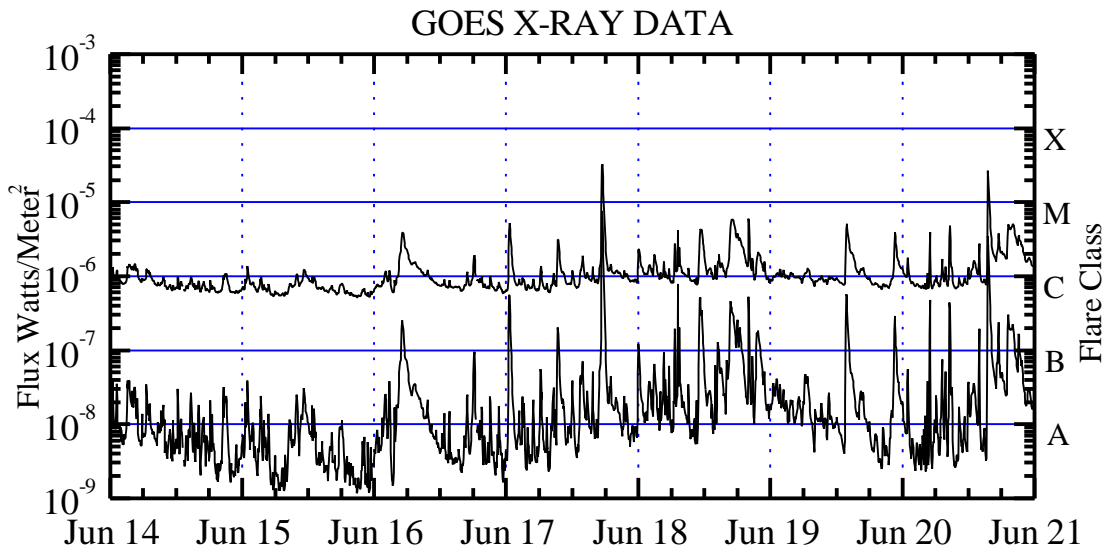
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

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.

