Space Weather Highlights **SWO PRF 1303**
14 - 20 August 2000 **22 August 2000**

Solar activity was low. Isolated C-class flares occurred during the period. By and large, sunspot groups were small and simply-structured. One exception was Region 9125 (N25, L = 235, class/area Dai/320 on 15 August), which was of moderate size and magnetic complexity. This region was in a state of gradual decay as the period ended.

ACE SWEPAM data were not available during 16/1800 - 18/2000UTC and IMF data were not available during 17/0200 - 2200UTC due to a station-keeping maneuver. A transient passed the spacecraft early on 15 August accompanied by a velocity increase (490 to 610 km/sec) and increased densities. IMF Bz was north during most of the period.

There were no proton events detected at geosynchronous orbit during the period.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels.

The geomagnetic field was disturbed during 14/2100 - 15/0600UTC with unsettled to brief minor storm levels. Unsettled to active levels occurred during 17/0600 - 1200UTC. Quiet to unsettled conditions occurred during the remainder of the period.

Space Weather Outlook
23 August - 18 September 2000

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

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.

Geomagnetic field activity is expected to be at quiet to unsettled levels during most of the period, barring an Earth-directed CME. However, active periods will be possible during 01 - 02 September.

Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background	Flares: X-ray Flux C	M	X	Flares: Optical S	1	2	3	4
14 August	190	266	970	B9.3	5	0	0	13	2	0	0	0
15 August	194	209	940	B9.0	6	0	0	20	0	0	0	0
16 August	186	244	820	C1.4	4	0	0	3	0	0	0	0
17 August	177	252	800	B6.7	6	0	0	9	1	0	0	0
18 August	170	231	940	B5.1	3	0	0	6	1	0	0	0
19 August	157	209	720	B5.5	3	0	0	13	1	0	0	0
20 August	152	150	610	B5.0	3	0	0	18	1	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm^2-day-sr) >1MeV	>10MeV	>100MeV	Electron Fluence (electrons/cm^2-day-sr) >.6MeV	>2MeV	>4MeV
14 August	1.1E+7	6.2E+4	1.9E+3		5.4E+6	
15 August	3.1E+6	1.7E+4	2.0E+3		2.5E+6	
16 August	1.2E+6	1.1E+4	2.0E+3		9.1E+6	
17 August	3.8E+5	1.0E+4	2.3E+3		1.1E+7	
18 August	3.4E+5	1.0E+4	2.5E+3		2.4E+7	
19 August	2.5E+5	1.1E+4	2.7E+3		2.2E+7	
20 August	2.6E+5	1.1E+4	2.7E+3		2.0E+7	

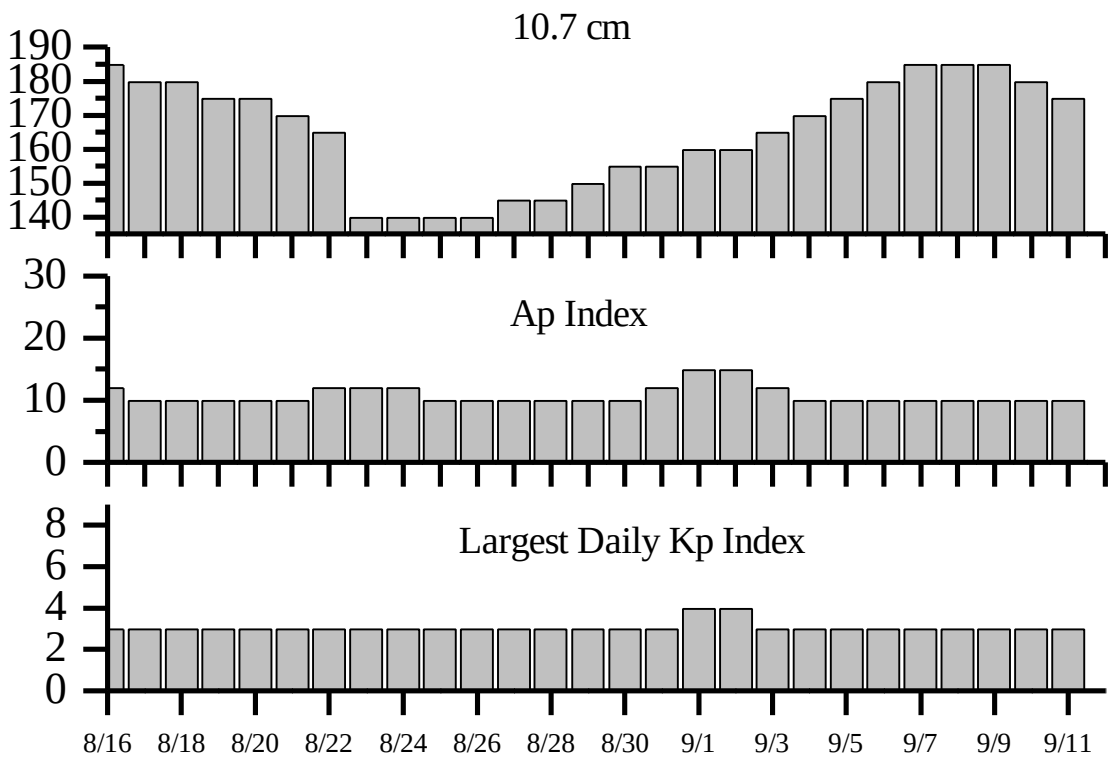
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg A	K-indices	High Latitude College A	K-indices	Estimated Planetary A	K-indices
14 August	11	1-1-1-1-2-2-3-5	9	1-1-0-1-2-4-3-3	12	2-2-2-2-3-3-3-4
15 August	9	3-4-1-2-1-2-2-1	18	3-4-2-5-2-1-2-4	12	4-4-2-3-2-3-2-2
16 August	9	2-3-3-1-2-1-2-3	11	2-2-3-3-4-2-1-1	11	2-3-3-2-3-3-2-3
17 August	9	2-3-2-2-2-1-2-3	15	2-2-5-5-1-1-1-1	11	2-4-4-4-2-3-3-2
18 August	3	2-2-0-1-1-0-1-1	*	1-1-0-0-3-*-*-0	6	2-2-2-2-2-2-2-2
19 August	3	1-1-0-0-2-2-1-1	2	1-1-0-0-0-1-1-1	6	2-1-1-2-2-3-2-2
20 August	3	0-0-0-1-1-2-2-1	2	0-0-0-1-0-2-2-0	7	2-1-1-2-2-3-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
15 Aug 0000	K = 4 Observed	14 Aug 21 - 24
15 Aug 0600	K = 4 Observed	15 Aug 03 - 06
15 Aug 0602	K = 4 Warning	15 Aug 0610 - 1200
15 Aug 1338	K = 4 Warning	15 Aug 1400 – 2359
16 Aug 0015	1 – 245 MHz Radio Burst	15 Aug
17 Aug 0008	1 – 245 MHz Radio Burst	16 Aug
17 Aug 0825	K = 4 Warning	17 Aug 0830 – 1200
17 Aug 0859	K = 4 Observed	17 Aug 06 – 09
18 Aug 0031	1 – 245 MHz Radio Burst	17 Aug
19 Aug 0012	7 – 245 MHz Radio Bursts	18 Aug

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 Aug	140	12	3	06 Sept	180	10	3
24	140	12	3	07	185	10	3
25	140	10	3	08	185	10	3
26	140	10	3	09	185	10	3
27	145	10	3	10	180	10	3
28	145	10	3	11	175	10	3
29	150	10	3	12	170	12	3
30	155	10	3	13	170	10	3
31	155	12	3	14	170	10	3
01 Sept	160	15	4	15	165	10	3
02	160	15	4	16	160	10	3
03	165	12	3	17	155	10	3
04	170	10	3	18	150	12	3
05	175	10	3				

Energetic Events

Date	Time			X-ray		Optical Information				Peak Radio Flux		Sweep Freq Intensity	
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location Lat	CMD	Rgn #	245	2695	II	IV

No Events Observed

Flare List

Date	Time Begin	Time Max	Time End	X-ray Class.	Optical Imp / Brtns	Optical Location Lat CMD	Rgn
14 August	0012	0014	0029		SF	N21E25	9125
	0018	0018	0021		SF	N07W73	9126
	0226	0227	0238		SF	N07W74	9126
	0458	0503	0530	C8.1	1F	N06W75	9126
	0738	0743	0750	C5.5	1F	S06E47	9129
	1254	1254	1302	C2.2	SF	S05E56	9129
	1333	1333	1339		SF	N26E24	9125
	1431	1431	1436		SF	N23E21	9125
	1541	1548	1608		SF	N24E21	9125
	1821	1821	1829		SF	S38W14	9127
	1917	1921	1923		SF	S37W13	9127
	1921	1946	2016	C1.6	SF	N22E17	9125
	1959	2013	2045		SF	S23W23	9130
	2326	2326	2332		SF	N20W41	9122
	2334	2334	2342	C1.6	SF	S04E50	9129
15 August	0000	0001	0007		SF	S38W13	9127
	0051	0055	0059	C1.6			
	B0139	0153	0211	C3.3	SF	N21E13	9125
	0200	0201	0204		SF	S06E48	9129
	0526	0526	0530	C1.3	SF	N29E14	9125
	1112	1113	1119		SF	S40W21	9127
	1217	1219	1224		SF	S36W28	9127
	1239	1239	1241		SF	S36W28	9127
	1308	1319	1351		SF	S21W34	9130
	1330	1332	1349		SF	S36W28	9127
	1359	1400	1423	C1.4	SF	N31E08	9125
	1547	1547	1549		SF	N25E07	9125
	1550	1555	1619	C1.6	SF	N24E08	9125
	2013	2015	2018		SF	N22E04	9125
	2023	2023	2042	C1.4	SF	N21E00	9125
	2043	2046	2057		SF	N21E00	9125
	2057	2100	2106		SF	N21E00	9125
	2107	2108	2111		SF	N21E00	9125
	2225	2227	2234		SF	N22E02	9125
	2329	2331	2357		SF	S23W38	9130
	2337	2338	2341		SF	S39W26	9127

Flare List – continued.

Date	Time Begin	Time Max	Time End	X-ray	Optical Imp / Class.	Optical Location Brtns	Rgn Lat CMD
16 August	0042	0046	0048	C4.1			
	0444	0454	0534	C1.8			
	0614	0617	0627		SF	N22W59	9122
	1217	1219	1222		SF	N14E41	9131
	2044	2053	2114	C1.2			
	B2333	U2335	2339	C1.2	SF	N11E32	9131
17 August	0425	0435	0455	C2.4			
	0820	0821	0827		SF	N22W14	9125
	0833	0837	0851	C4.9	1N	N17E28	9131
	0837	0845	0854		SF	S38W47	9127
	0840	0841	0858		SF	S12W18	9124
	1238	1241	1258	C1.2	SF	N22W17	9125
	1302	1308	1313		SF	S37W50	9127
	1515	1516	1521		SF	N17E24	9131
	1627	1708	1739	C1.1	SF	N06W04	9136
	1946	1946	1954		SF	S37W53	9127
	2012	2018	2043	C1.0			
	B2102	U2102	A2108	C1.4	SF	N07W07	9136
18 August	0425	0433	0516	C5.5	1F	S38W58	9127
	1724	1726	1737		SF	N31W35	9125
	1803	1805	1809	C1.1	SF	N23W32	9125
	1836	1836	1845		SF	N29W36	9125
	1901	1902	1909		SF	N29W36	9125
	2122	2123	2128	B7.8	SF	N23W33	9125
	2351	2356	0004	C1.3	SF	N22W34	9125
19 August	0159	0200	0203		SF	N21W01	9132
	0435	0437	0449	C5.0	SF	N22W37	9125
	0527	0551	0624	C2.2	SF	N26W45	9125
	0539	0545	0548		SF	S39W74	9127
	0657	0659	0710	B8.9	SF	N21W04	9132
	0946	0950	0952	B7.7			
	1407	1407	1420		SF	S09W58	9133
	1427	1431	1444		SF	N20W44	9125
	1445	1445	1450		SF	S13W48	9124
	1451	1452	1455		SF	S14W48	9124
	1738	1738	A1818		SF	N22W45	9125
	1922	1924	1949	C4.1	1F	N21W46	9125
	1952	1952	1957		SF	N19W45	9125
	1957	2002	2004		SF	N21W13	9132
	2140	2142	2148		SF	N27W53	9125
20 August	0016	0021	0029		SF	S08E36	
	0045	0048	0055		SF	S08E36	

Flare List – continued.

Date	Time Begin	Time Max	Time End	X-ray	Optical Imp / Class.	Optical Location Brtns	Rgn Lat CMD
20 August	0102	0104	0106		SF	N22W48	9125
	0111	U0111	0115		SF	N22W48	9125
	0858	0858	0916	C2.3	SF	N25W55	9125
	1324	1324	1354	C1.6	SF	N25W58	9125
	1324	1426	1435		1F	N20W58	9125
	1436	1438	1451		SF	N21W59	9125
	1451	1642	1657		SF	N21W60	9125
	1521	1523	1525		SF	N21W59	9125
	1542	1543	1548		SF	N26W57	9125
	1600	1602	1622		SF	N20W60	9125
	1741	1746	1750	C1.2	SF	N21W58	9125
	2000	2002	2009		SF	N21W59	9125
	2131	2133	2145		SF	S14W55	9124
	2216	2221	2229		SF	N21W63	9125
	2232	2238	2245		SF	N21W63	9125
	2252	2256	2300		SF	N19W63	9125
	2316	2322	2345		SF	N20W28	9132

Region Summary

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	M	X	Optical S	1	2	3	4
			Region 9114												
02 Aug	N10E77	332	0060	02	HSX	001	A	1							
03 Aug	N10E64	332	0080	02	HAX	001	A				1				
04 Aug	N13E54	329	0110	11	CSO	007	B				3				
05 Aug	N12E41	329	0230	11	EAO	013	B								
06 Aug	N12E28	329	0250	12	EAO	014	B	2			7				
07 Aug	N12E14	329	0160	12	EAI	022	BG				1				
08 Aug	N11W01	330	0290	13	EKI	021	BG								
09 Aug	N11W16	332	0290	14	EKO	026	BG	1			4				
10 Aug	N11W29	332	0300	15	EAI	019	BG				4				
11 Aug	N11W45	335	0340	12	EKI	018	B	1			3				
12 Aug	N10W58	335	0310	09	DAI	009	BG	3			3				
13 Aug	N12W71	334	0260	09	DAO	007	B	1			1				
14 Aug	N11W82	332	0160	07	CAO	006	B								
18 Aug	N11W68	266													
								9	0	0	27	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 330

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	M	X	Optical S	1	2	3	4
			Region 9115												
03 Aug	N16E77	319	0060	03	HSX	001	A	1			1				
04 Aug	N17E68	315	0170	08	CSO	004	B				1	1			
05 Aug	N16E56	314	0230	11	CSO	006	B				1				
06 Aug	N17E43	314	0170	10	DAO	005	B								
07 Aug	N18E27	316	0120	06	CAO	005	B								
08 Aug	N18E14	315	0170	08	CAO	005	B								
09 Aug	N18E02	314	0130	09	CAO	005	B								
10 Aug	N18W12	315	0110	08	CAO	005	B								
11 Aug	N18W26	316	0130	08	CSO	007	B								
12 Aug	N17W38	315	0120	08	CSO	004	B								
13 Aug	N19W53	316	0110	02	HSX	001	A								
14 Aug	N19W66	316	0100	02	HSX	001	A								
15 Aug	N20W79	316	0110	03	HSX	001	A								
16 Aug	N20W92	316	0030	01	HSX	001	A								
								1	0	0	3	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 314

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9116												
04 Aug	S12E63	320	0050	02	HSX	001	A								
05 Aug	S13E49	321	0050	02	HSX	001	A								
06 Aug	S13E37	320	0050	02	HSX	002	A								
07 Aug	S12E25	318	0010	02	HRX	003	A								
08 Aug	S12E14	315	0010	03	AXX	003	A								
09 Aug	S12W02	318	0000	00	AXX	001	A								
10 Aug	S11W15	318													
11 Aug	S11W28	318													
12 Aug	S11W41	318									2				
13 Aug	S11W54	318													
14 Aug	S11W67	318													
								0	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 318

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9120												
06 Aug	S22E24	333	0020	04	HSX	004	A								
07 Aug	S22E11	332	0020	05	CSO	005	B								
08 Aug	S21W04	333	0010	03	BXO	003	B								
09 Aug	S22W17	333	0010	01	AXX	002	A								
10 Aug	S22W30	333													
11 Aug	S22W43	333													
12 Aug	S22W56	333													
13 Aug	S22W69	333													
14 Aug	S23W82	333													
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 333

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9121												
06 Aug	S35E27	330	0070	06	CSO	005	B								
07 Aug	S35E13	330	0070	07	DAO	004	B								
08 Aug	S34E01	328	0100	09	DAO	003	B								
09 Aug	S34W12	328	0100	09	DSO	002	B								
10 Aug	S34W23	326	0060	10	DSO	002	B								
11 Aug	S34W36	326	0060	11	ESO	002	B								
12 Aug	S33W48	325	0070	10	DSO	002	B								
13 Aug	S33W61	324	0040	11	CSO	003	B								
14 Aug	S33W78	328	0000	00	AXX	001	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 328

			Region 9122												
07 Aug	N21E47	296	0080	06	DSO	008	B	1			1				
08 Aug	N22E35	294	0160	09	DAO	015	BG								
09 Aug	N21E21	295	0140	07	DAI	011	B	1			1				
10 Aug	N21E08	295	0100	07	DSO	009	B								
11 Aug	N21W04	294	0080	07	CSO	010	B								
12 Aug	N22W18	295	0040	05	CAO	008	B								
13 Aug	N22W33	296	0020	01	HAX	002	A								
14 Aug	N22W45	295	0020	03	BXO	005	B				1				
15 Aug	N23W58	295	0020	02	HSX	002	A								
16 Aug	N23W71	295	0000	00	AXX	001	A				1				
								2	0	0	4	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 294

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9123												
08 Aug	N18E72	257	0080	02	HSX	001	A								
09 Aug	N18E60	256	0060	01	HSX	001	A								
10 Aug	N18E47	256	0050	04	DSO	002	B				1				
11 Aug	N18E33	257	0060	03	CAO	004	B								
12 Aug	N20E20	257	0050	03	CAO	006	B								
13 Aug	N20E06	257	0040	03	CSO	004	B								
14 Aug	N17W07	257	0020	04	CSO	004	B								
15 Aug	N20W21	258	0020	02	HSX	002	A								
16 Aug	N19W34	258	0010	02	CRO	003	B								
17 Aug	N21W45	256	0010	04	BXO	003	B								
18 Aug	N21W57	254	0010	04	BXO	004	B								
19 Aug	N21W70	254													
20 Aug	N21W83	254													
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 257

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9124												
10 Aug	S13E64	239	0030	07	CRO	003	B								
11 Aug	S14E52	238	0040	08	CRO	003	B	1			3				
12 Aug	S12E37	240	0020	09	CSO	006	B	2			4				
13 Aug	S12E25	238	0000	08	BXO	003	B	1			2				
14 Aug	S12E20	230	0020	13	BXO	008	B								
15 Aug	S12E07	230	0050	10	CSO	011	B								
16 Aug	S11W09	233	0040	08	DRO	018	B								
17 Aug	S12W24	235	0030	08	CSO	018	B				1				
18 Aug	S13W36	233	0020	05	BXO	013	B								
19 Aug	S12W49	233	0050	05	CRO	011	B				2				
20 Aug	S13W62	233	0000	00	AXX	001	A				1				
								4	0	0	13	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 230

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9125												
10 Aug	N26E69	234	0040	04	CRO	003	B								
11 Aug	N25E55	235	0050	07	DAO	004	B	1			3				
12 Aug	N25E42	235	0090	10	DAI	025	B	4			11				
13 Aug	N25E29	234	0130	10	DAI	026	B	3			12				
14 Aug	N25E15	235	0260	10	DAI	044	BG	1			5				
15 Aug	N25E02	235	0320	10	DAI	034	BG	5			11				
16 Aug	N25W11	235	0280	12	EAI	037	BG								
17 Aug	N26W22	233	0200	12	EAI	035	BG	1			2				
18 Aug	N26W36	233	0180	12	EAI	034	BG	2			6				
19 Aug	N27W49	233	0130	11	EAI	028	BG	2			6	1			
20 Aug	N28W61	232	0090	11	ESO	012	B	3			14	1			
								22	0	0	70	2	0	0	0
			Region 9126												
11 Aug	N06W41	331	0030	04	DSO	005	B				3				
12 Aug	N07W55	332	0050	07	DAO	007	B				1				
13 Aug	N06W70	333	0060	08	CAO	004	B	1			2				
14 Aug	N06W84	334	0050	06	CSO	005	B	1			2	1			
								2	0	0	8	1	0	0	0
			Region 9127												
11 Aug	S40E20	270	0020	06	CRO	003	B				1				
12 Aug	S38E07	270	0020	06	CSO	003	B								
13 Aug	S38W07	270	0000	01	AXX	002	A								
14 Aug	S37W18	268	0040	05	CAO	006	B				2				
15 Aug	S35W31	268	0110	08	DSO	011	B				6				
16 Aug	S36W43	267	0130	09	DAO	008	B								
17 Aug	S36W56	267	0160	09	DAO	007	B				3				
18 Aug	S37W67	264	0140	10	DAO	004	B	1				1			
19 Aug	S38W77	261	0080	01	HSX	001	A				1				
20 Aug	S39W91	262	0060	02	HSX	001	A								
								1	0	0	13	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 235

Crossed West Limb.
Absolute heliographic longitude: 331

Still on Disk.
Absolute heliographic longitude: 270

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9128												
12 Aug	N11E61	216	0040	04	CSO	004	B								
13 Aug	N11E46	217	0040	06	CSO	005	B								
14 Aug	N12E32	218	0030	07	CSO	007	B								
15 Aug	N11E19	218	0030	08	DSO	004	B								
16 Aug	N10E05	219	0030	08	CSO	009	B								
17 Aug	N12W06	217	0010	08	BXO	010	B								
18 Aug	N10W19	216	0030	08	DRO	010	B								
19 Aug	N10W34	218	0030	06	CAO	010	B								
20 Aug	N13W48	219													
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 219

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9129												
12 Aug	S05E72	205	0060	02	HSX	002	A								
13 Aug	S06E60	203	0080	04	CAO	003	B				1				
14 Aug	S06E48	202	0120	04	DAO	003	B	3			2	1			
15 Aug	S07E33	204	0120	05	DSO	005	B				1				
16 Aug	S06E20	204	0120	07	DSO	008	B								
17 Aug	S06E09	202	0150	06	CSO	009	B								
18 Aug	S05W06	203	0190	06	CSO	007	B								
19 Aug	S06W19	203	0150	05	CSO	005	B								
20 Aug	S05W33	204	0170	04	CSO	003	B								
								3	0	0	4	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 203

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9130												
13 Aug	S23W13	276	0020	04	DSO	005	B								
14 Aug	S23W26	276	0020	04	BXO	006	B				1				
15 Aug	S23W39	276									2				
16 Aug	S23W52	276													
17 Aug	S23W65	276													
18 Aug	S23W78	276													
								0	0	0	3	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 276

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9131												
13 Aug	N13E71	192	0070	03	HSX	001	A								
14 Aug	N13E58	192	0090	02	HSX	001	A								
15 Aug	N13E45	192	0070	02	HSX	001	A								
16 Aug	N13E33	191	0070	04	DSO	005	B	1			2				
17 Aug	N14E21	190	0090	04	CSO	005	B	1			1	1			
18 Aug	N14E07	190	0100	05	CSO	005	B								
19 Aug	N15W07	191	0110	06	CSO	004	B								
20 Aug	N16W21	192	0080	06	CSO	003	B								
								2	0	0	3	1	0	0	0
Still on Disk.															
Absolute heliographic longitude:		190													
			Region 9132												
14 Aug	N23E52	198	0020	04	BXO	004	B								
15 Aug	N21E39	198	0030	06	CSO	005	B								
16 Aug	N21E26	198	0030	05	CSO	006	B								
17 Aug	N21E14	197	0010	07	BXO	005	B								
18 Aug	N14E07	190	0090	02	HSX	001	A								
19 Aug	N20W13	197									3				
20 Aug	N20W26	197									1				
								0	0	0	4	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		190													
			Region 9133												
14 Aug	S09E03	247	0010	05	BXO	004	B								
15 Aug	S09W10	247													
16 Aug	S09W23	247	0010	04	BXO	003	B								
17 Aug	S08W40	251	0000	00	AXX	003	A								
18 Aug	S10W50	247	0000	02	BXO	003	B								
19 Aug	S10W64	248	0000	03	BXO	003	B				1				
20 Aug	S10W77	248													
								0	0	0	1	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		247													

Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9134												
14 Aug	N06E65	185	0010	00	HRX	001	A								
15 Aug	N06E53	184	0010	01	HRX	001	A								
16 Aug	N07E40	184	0010	01	HRX	001	A								
17 Aug	N06E29	182	0000	00	AXX	005	A								
18 Aug	N08E15	182	0010	03	BXO	004	B								
19 Aug	N09E02	182	0010	02	AXX	004	A								
20 Aug	N08W12	183	0010	02	BXO	004	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		182													
			Region 9135												
15 Aug	S15E14	223	0050	05	DSO	012	B								
16 Aug	S13E01	223	0060	07	DAO	014	B								
17 Aug	S12W13	224	0120	09	DAO	023	B								
18 Aug	S12W26	223	0110	10	DAO	017	B								
19 Aug	S12W41	225	0050	05	CSO	009	B								
20 Aug	S11W54	225	0040	09	CRO	007	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		223													
			Region 9136												
17 Aug	N07W06	217	0020	05	CSO	009	B	2			2				
18 Aug	N07W20	217	0060	05	DAO	009	B								
19 Aug	N06W33	217	0070	06	DAO	011	B								
20 Aug	N08W48	219	0040	01	HRX	001	A								
								2	0	0	2	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		217													
			Region 9137												
19 Aug	N23E45	139	0010	01	BXO	002	B								
20 Aug	N24E33	138	0010	01	BXO	002	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		138													

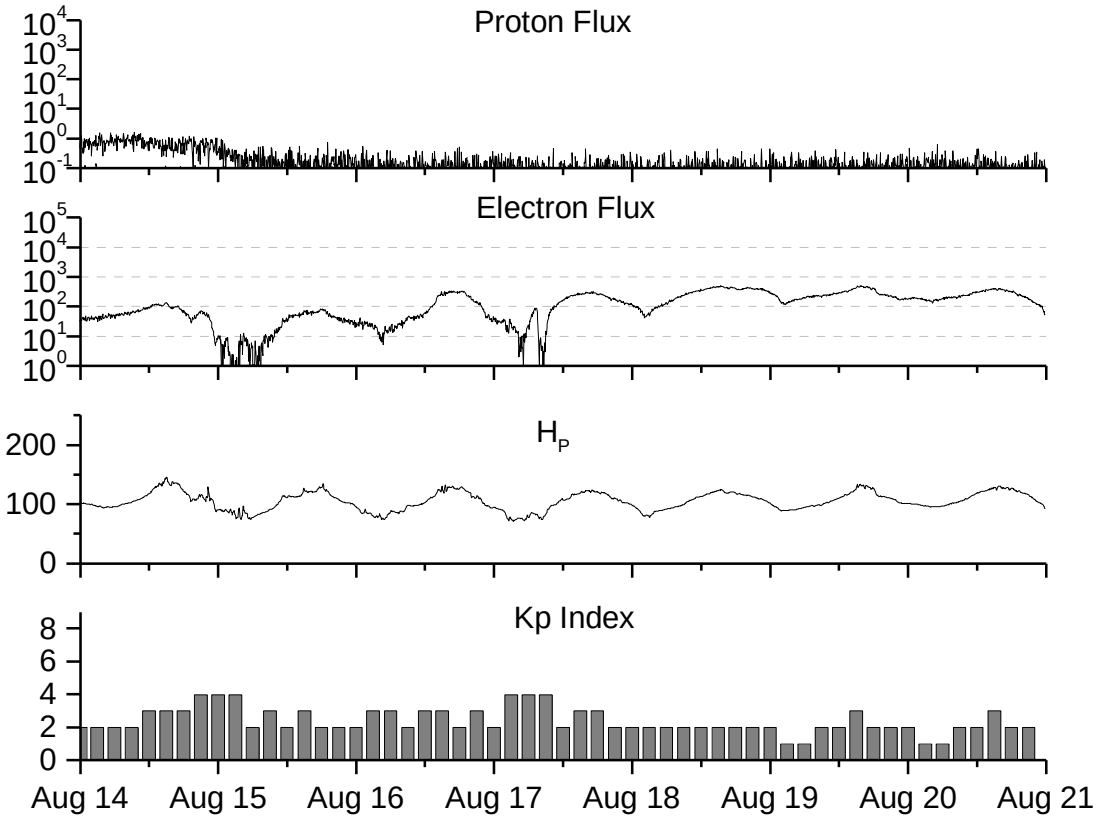
Region Summary – continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics: Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares: X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9138												
19 Aug	S32E64	120	0030	01	HRX	001	A								
20 Aug	S31E51	120	0040	02	HSX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		120													
			Region 9139												
20 Aug	S11E23	148	0070	04	DSO	005	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		148													

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

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
Month	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	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	
July	236.7	169.1	0.71			200.0		21	

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 17 July 2000

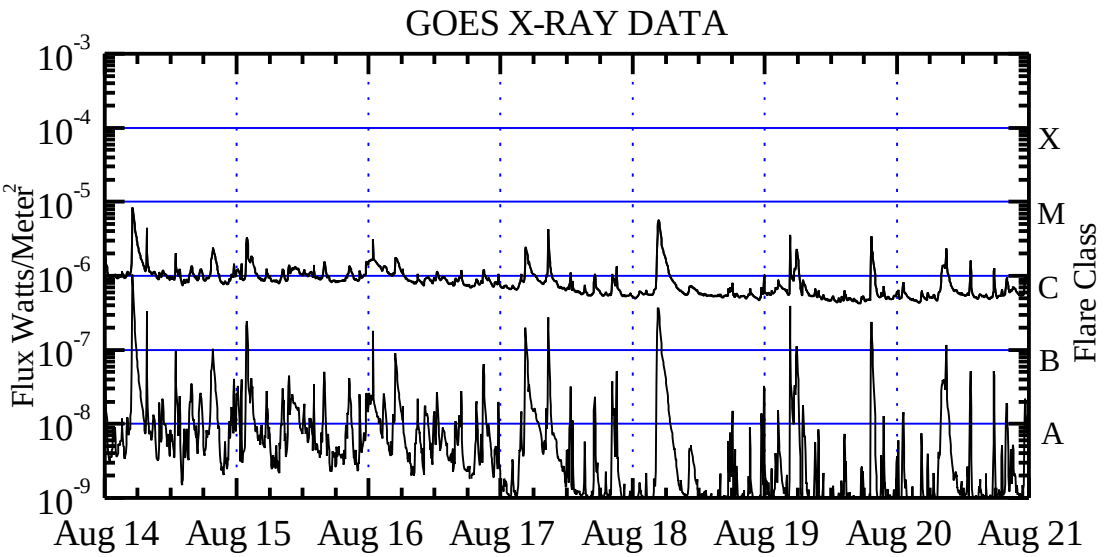
Protons plot contains the five-mine averaged integral proton flux (protons/cm^2–sec –sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

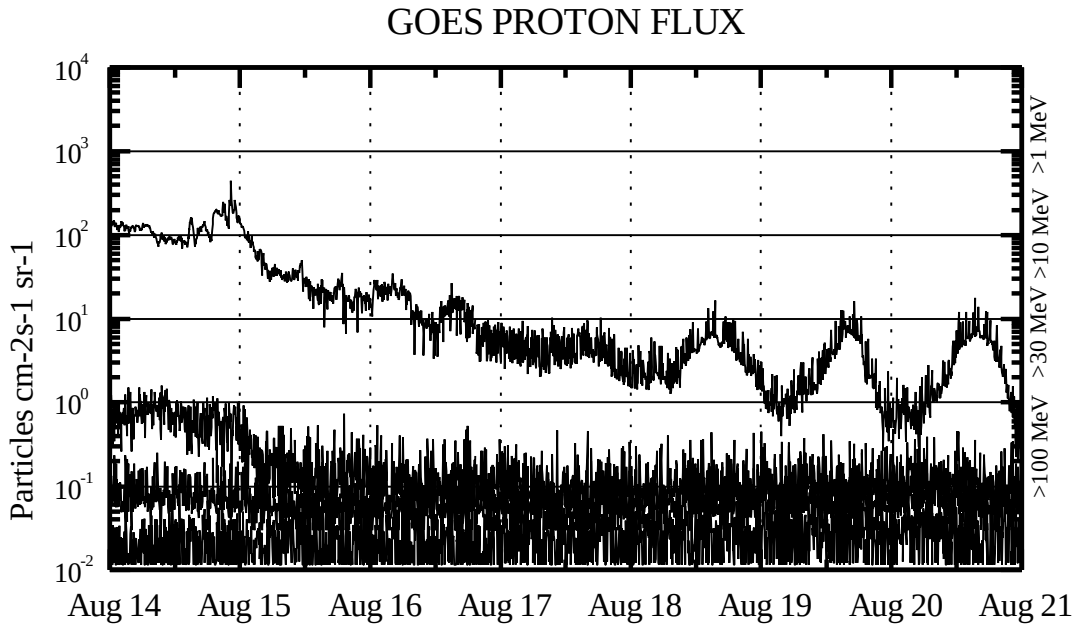
Electrons plot contains the five-mine averaged integral electron flux (electrons/cm^2–sec –sr) with energies greater than 2 MeV at GOES-8.

Hp plot contains the five mine 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.

Kp 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 Kp 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 Kp are " global " parameters that are applicable to a first order approximation over large areas. Hparallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





W*eekly GOES Satellite X-ray and Proton Plots*

X-ray plot contains five mine averaged x-ray flux (watts/m$^{2)}$ 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 mine averaged integral proton flux (protons/cm^2 –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/cm^2-sec-sr) at greater than 10 MeV.