

Solar activity was at very low to high levels through the period. The summary period began at very low to low levels from 23 - 26 July, with multiple low level C-class events observed. An increase to moderate levels was observed on 27 July, as Region 1532 (S22, L= 183, class/area Fho/510 on 28 July) produced an M2/Sf x-ray event at 1726 UTC. Associated with this event were distinct radio frequency bursts as well as a Type II (estimated shock speed of 2099 km/s) and Type IV Radio sweeps, as well as a coronal mass ejection (CME). After careful analysis, the associated CME was determined to not be Earth directed. On 28 July, an increase to high levels was observed as Region 1532 produced an M6/2n x-ray flare at 28/2056 UTC. Associated with this event were both Type II (estimated shock speed of 1387 km/s) and Type IV radio sweeps, discrete radio frequency spikes, and a 370 sfu Tenflare. Imagery supported a CME liftoff with this event, however due to the location of Region 1532, very little effects are expected at Earth. On the last day of the forecast period, 29 July, a return to moderate levels was observed, as Region 1532 produced an M2/1n x-ray event at 29/0622 UTC.

A greater than 10 MeV proton event at geosynchronous orbit began at 23/1545 UTC, reached a maximum flux of 12 pfu at 23/2145 UTC, and ended at 24/1800 UTC. This event was due to flare activity from old Region 1520 (S16, L=086) which was almost 40 degrees beyond the west limb.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels from 23 - 28 July. A decrease to moderate levels was observed on 29 July.

Geomagnetic field activity was at mostly quiet to unsettled levels throughout the summary period with isolated periods of minor storm levels observed at high latitudes on 23, 24, and 28 July. Activity on 23 July was at quiet to unsettled levels with solar wind speeds, as measured by the ACE spacecraft, hovering around 450 km/s. On 24 July, solar wind speeds increased to almost 600 km/s, as a coronal hole high speed stream (CH HSS), became geoeffective. With these elevated solar winds, quiet to unsettled levels were observed with an isolated period at minor storm levels observed at high latitudes. As effects of the CH HSS waned, solar wind speeds declined and remained between 380 and 500 km/s for the remainder of the period. With solar wind speeds around nominal levels, mostly quiet to unsettled levels also prevailed through 29 July.

Space Weather Outlook **30 July - 25 August 2012**

Solar activity is expected to be at low to moderate levels from 30 July - 15 August as Region 1532 and old Region 1520 (S16, L=086) rotate across the visible disk. A decrease to mostly low levels is expected from 16 - 23 August. As Region 1532 rotates back onto the visible disk on 23 August, an increase to low to moderate levels is expected for the remainder of the forecast period.

A greater than 10 MeV proton event at geosynchronous orbit is possible from 30 July - 18 August as Region 1532 and old Region 1520 traverse the visible disk.



The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels throughout the period since most of the coronal hole structures have dissipated.

Geomagnetic field activity is expected to be at predominantly quiet levels from 30 July - 19 August and 22 - 23 August. Quiet to unsettled levels are expected from 20 - 21 August and 24 - 25 August as weak CH HSS become geoeffective.



Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
23 July	97	60	180	B2.8	3	0	0	0	1	0	0	0
24 July	102	66	270	B2.7	4	0	0	1	0	0	0	0
25 July	105	66	310	B3.2	0	0	0	1	0	0	0	0
26 July	115	77	360	B3.5	1	0	0	1	0	0	0	0
27 July	123	91	370	B4.8	8	1	0	11	0	0	0	0
28 July	127	108	780	B5.5	3	1	0	6	0	1	0	0
29 July	131	79	810	B7.0	6	1	0	16	2	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day -sr)			Electron Fluence (electrons/cm ² -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	23 July	6.1e+06	5.0e+05	2.9e+04		6.9e+07
24 July	4.2e+06	7.7e+05	2.8e+04		5.4e+07	
25 July	1.7e+06	6.5e+05	9.8e+03		7.2e+07	
26 July	1.0e+06	3.9e+05	3.3e+03		1.0e+08	
27 July	1.4e+06	1.9e+05	2.5e+03		1.1e+08	
28 July	1.6e+06	1.8e+05	2.8e+03		8.0e+07	
29 July	4.5e+05	1.2e+05	3.2e+03		1.6e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	23 July	8	2-2-1-1-2-3-2-3	15	2-2-1-3-4-5-2-2	9
24 July	10	3-3-2-2-3-2-2-1	18	3-4-3-3-5-2-2-2	10	3-3-2-2-2-2-2-2
25 July	6	3-1-2-1-2-2-1-0	6	2-1-1-4-2-0-0-1	6	3-1-2-2-2-1-1-1
26 July	3	0-0-1-1-2-2-1-0	0	0-0-0-0-0-0-0-0	4	1-1-1-1-2-1-1-0
27 July	5	0-2-1-2-2-2-1-2	2	0-2-1-0-0-1-0-1	5	0-2-1-1-1-2-1-2
28 July	11	1-1-2-2-3-2-3-4	14	1-1-2-1-4-5-2-3	11	1-1-2-2-3-3-3-4
29 July	6	2-2-2-2-2-2-1-0	9	3-2-3-4-2-0-1-0	6	3-2-2-2-1-1-1-1



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
23 Jul 1101	WARNING: Proton 10MeV Integral Flux > 10pfu	23/1100 - 2300
23 Jul 1250	ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
23 Jul 1605	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	23/1545
23 Jul 2255	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	23/1100 - 24/0600
24 Jul 0508	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	23/1545 - 24/0005
24 Jul 0748	WARNING: Proton 10MeV Integral Flux > 10pfu	24/0720 - 1900
24 Jul 0748	ALERT: Proton Event 10MeV Integral Flux >= 10pfu	24/0720
24 Jul 1306	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
24 Jul 1530	SUMMARY: 10cm Radio Burst	24/1343 - 1348
24 Jul 1857	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	24/0720 - 2359
25 Jul 1247	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
26 Jul 0536	SUMMARY: Proton Event 10MeV Integral Flux >= 10pfu	24/0720 - 1800
26 Jul 0946	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
27 Jul 0856	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
27 Jul 1739	SUMMARY: 10cm Radio Burst	27/1720 - 1723
27 Jul 1833	ALERT: Type II Radio Emission	27/1721
27 Jul 1852	ALERT: Type IV Radio Emission	27/1734
28 Jul 1215	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	23/1225
28 Jul 1917	WARNING: Geomagnetic K = 4	28/1917 - 29/0000
28 Jul 2054	ALERT: X-ray Flux exceeded M5	28/2054
28 Jul 2107	SUMMARY: 10cm Radio Burst	28/2049 - 2055
28 Jul 2120	SUMMARY: X-ray Event exceeded M5	28/2044 - 2104
28 Jul 2234	ALERT: Type IV Radio Emission	28/2104
28 Jul 2234	ALERT: Type II Radio Emission	28/2052

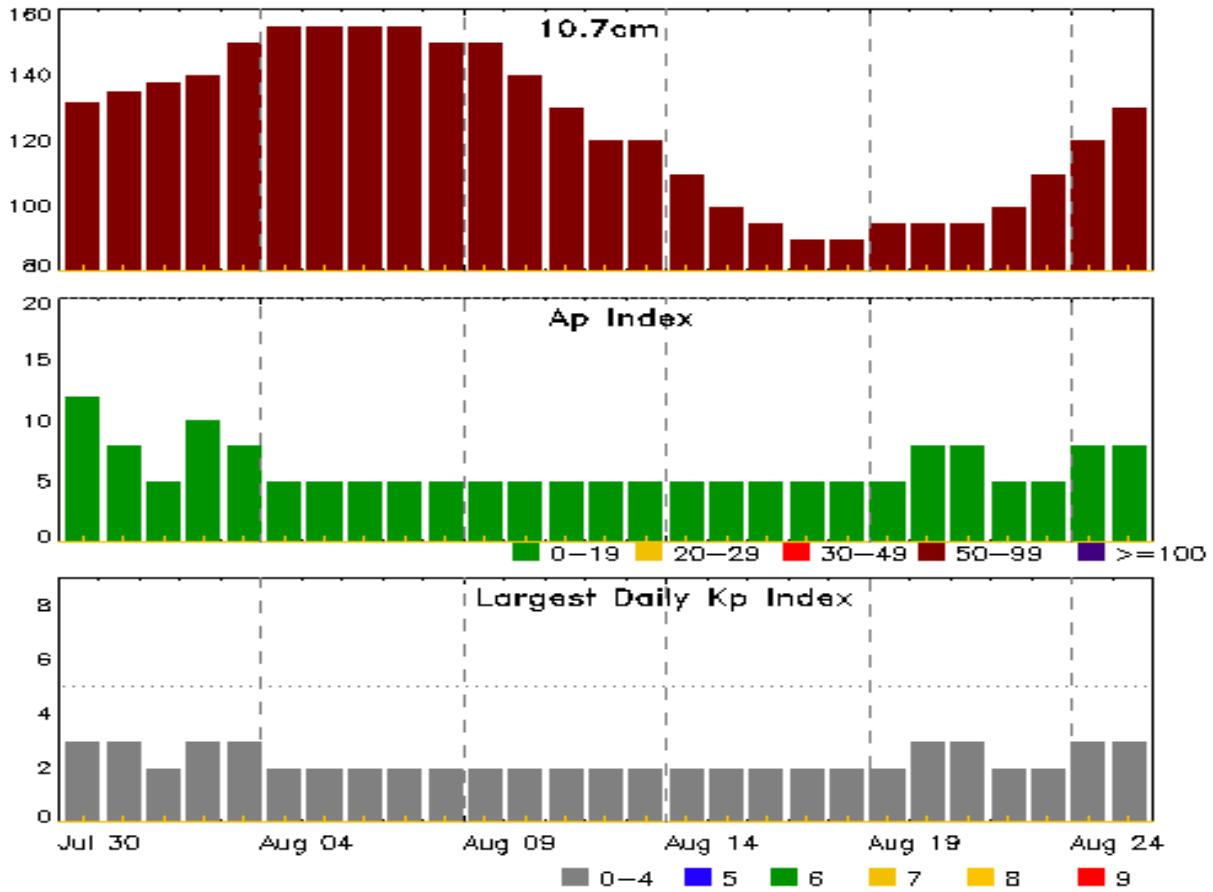


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
28 Jul 2245	ALERT: Geomagnetic K = 4	28/2244
28 Jul 2321	EXTENDED WARNING: Geomagnetic K = 4	28/1917 - 29/0700
29 Jul 0635	SUMMARY: 10cm Radio Burst	29/0618 - 0620
29 Jul 0700	ALERT: Type IV Radio Emission	29/0623



Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
30 Jul	132	12	3	13 Aug	120	5	2
31	135	8	3	14	110	5	2
01 Aug	138	5	2	15	100	5	2
02	140	10	3	16	95	5	2
03	150	8	3	17	90	5	2
04	155	5	2	18	90	5	2
05	155	5	2	19	95	5	2
06	155	5	2	20	95	8	3
07	155	5	2	21	95	8	3
08	150	5	2	22	100	5	2
09	150	5	2	23	110	5	2
10	140	5	2	24	120	8	3
11	130	5	2	25	130	8	3
12	120	5	2				

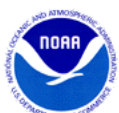


Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
27 Jul	1717	1726	1732	M2.7	0.016	SF	S18E62	1532	290	340	1	
28 Jul	2044	2056	2104	M6.1	0.040	2N	S25E54	1532	56000	370	2	2
29 Jul	0615	0622	0629	M2.3	0.012	1N	S22E49	1532		110		2

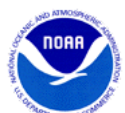
Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
23 Jul	1121	1127	1148	C2.0	1F	N27E78	1527
23 Jul	1529	1539	1550	B7.3			
23 Jul	1640	1700	1706	C1.0			1530
23 Jul	2215	2225	2236	B7.9			
23 Jul	2310	2325	2333	C1.4			1530
24 Jul	0533	0556	0627	C1.4			1530
24 Jul	0854	0913	0932	B4.4			1530
24 Jul	1022	1031	1046	B8.0			1530
24 Jul	1128	1149	1221	C1.6			1530
24 Jul	1343	1355	1415	C1.1			1530
24 Jul	1616	1621	1627	B6.2			
24 Jul	1856	1905	1917	C4.2	SF	S19E75	1530
25 Jul	0558	0602	0607	B5.9	SF	N21E54	1528
25 Jul	1035	1040	1044	B9.9			
25 Jul	1609	1633	1646	B5.9			
25 Jul	2139	2142	2147	B8.1			
26 Jul	0959	1002	1004	B6.8	SF	N19E32	1528
26 Jul	1946	1953	2009	C1.3			1532
26 Jul	2301	2305	2312	B9.5			1532
27 Jul	0017	0024	0028	C1.3			1531
27 Jul	0224	0229	0231	C1.7			1531
27 Jul	0328	0336	0342	C1.3			1532
27 Jul	0355	0357	0403		SF	N14W58	1531
27 Jul	0358	0402	0404	C5.0	SN	N17E22	1528
27 Jul	0415	0417	0426		SF	N15W60	1531
27 Jul	0429	0429	0448		SF	N15W60	1531
27 Jul	0514	0522	0539		SF	N15W61	1531
27 Jul	0524	0533	0553		SF	S18E35	1530



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
27 Jul	0530	0530	0541		SF	N15W61	1531
27 Jul	0754	0802	0810		SF	N17E24	1528
27 Jul	1005	1008	1011	B7.7			
27 Jul	1144	1149	1153	C2.5			
27 Jul	1219	1222	1224	C1.0			
27 Jul	1251	1251	1255		SF	N16E18	1528
27 Jul	1357	1400	1417	C1.5	SF	S20E36	1530
27 Jul	1652	1652	1656	M2.7	SF	S18E62	1532
27 Jul	2018	2027	2040	C2.1			1530
28 Jul	0431	0432	0434		SF	S22E56	1532
28 Jul	0539	0539	0548		SF	S18E56	1532
28 Jul	0721	0729	0742	C1.7			1530
28 Jul	1310	1319	1326	C1.1			
28 Jul	1552	1553	1559		SF	S20E23	1530
28 Jul	1638	1644	1720		SF	S20E22	1530
28 Jul	1702	1708	1722		SF	S23E56	1532
28 Jul	1824	1831	1840	C1.7			
28 Jul	2044	2056	2104	M6.1	2N	S25E54	1532
28 Jul	2139	2140	2145		SF	S21E49	1532
29 Jul	0120	0120	0127		SF	S18E11	1530
29 Jul	0312	0318	0330	C2.3	SF	S25E51	1532
29 Jul	0506	0510	0514		SF	S22E40	1532
29 Jul	0556	0600	0605	C1.4	SF	S26E48	1532
29 Jul	0615	0622	0629	M2.3	1N	S22E49	1532
29 Jul	0732	0740	0746		SF	S24E47	1532
29 Jul	0828	0841	0845		SF	S22E49	1532
29 Jul	0958	1000	1009		SF	S20E13	1530
29 Jul	1010	1010	1013		SF	S22E47	1532
29 Jul	1156	1206	1214	C3.1	SF	S25E48	1532
29 Jul	1322	1325	1327		SF	S24E45	1532
29 Jul	1413	1422	1433		SF	S20E11	1530
29 Jul	1418	1422	1439		SF	S23E47	1532
29 Jul	1424	1427	1432		SF	S21E37	1532
29 Jul	1442	1507	1523	C2.2	1F	S23E47	1532
29 Jul	1514	1517	1519	C1.9			
29 Jul	1900	1903	1908		SF	S20E38	1532
29 Jul	2004	2005	2012		SF	S23E39	1532
29 Jul	2151	2157	2203	C1.9			



Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
29 Jul	2234	2239	2247		SF	S21E37	1532



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		
Region 1524																	
17 Jul	S17E54	317	40	6	Cso	5	B					13					
18 Jul	S16E37	320	50	5	Cso	7	B					1					
19 Jul	S17E24	320	30	4	Cso	3	B	2				2					
20 Jul	S17E10	321	10	4	Bxo	3	B										
21 Jul	S17W01	319	10	2	Axx	3	A										
22 Jul	S17W15	320	plage														
23 Jul	S17W29	320	plage														
24 Jul	S17W43	321	plage														
25 Jul	S17W57	322	plage														
26 Jul	S17W71	323	plage														
27 Jul	S17W85	324	plage														
								2	0	0	16	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 319

Region 1525																	
17 Jul	S22E51	320	30	3	Cso	3	B										
18 Jul	S22E36	320	40	1	Hsx	1	A										
19 Jul	S21E23	321	40	2	Dso	2	B	2				1					
20 Jul	S20E09	322	40	3	Dso	4	B										
21 Jul	S20W05	323	40	3	Cso	3	B										
22 Jul	S21W17	321	60	4	Cso	6	B										
23 Jul	S21W29	320	40	4	Cso	4	B										
24 Jul	S21W43	321	30	1	Hsx	1	A										
25 Jul	S21W58	323	10	1	Hrx	1	A										
26 Jul	S21W72	324	plage														
27 Jul	S21W86	325	plage														
								2	0	0	1	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 323



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			
Region 1526																		
20 Jul	S17E63	268	10	5	Bxo	3	B											
21 Jul	S18E52	266	10	4	Bxo	3	B	1										
22 Jul	S18E39	265	10	3	Bxo	3	B											
23 Jul	S17E26	265	10	3	Bxo	3	B											
24 Jul	S17E11	267	0	1	Axx	1	A											
25 Jul	S17W00	265	10	3	Cro	3	B											
26 Jul	S17W14	266	20	4	Cro	3	B											
27 Jul	S17W28	267	20	4	Cro	3	B											
28 Jul	S17W45	267	plage															
29 Jul	S17W59	270	plage															
									1	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 265

Region 1527																		
23 Jul	N27E64	227	10	1	Axx	1	A	1					1					
24 Jul	N27E53	225	0	1	Axx	1	A											
25 Jul	N27E39	226	plage															
26 Jul	N27E25	227	plage															
27 Jul	N27E11	228	plage															
28 Jul	N27W03	228	plage															
29 Jul	N27W17	229	plage															
									1	0	0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 228

Region 1528																		
23 Jul	N17E67	224	60	3	Hsx	1	A											
24 Jul	N17E53	225	80	3	Hsx	1	A											
25 Jul	N17E39	226	80	3	Cso	6	B						1					
26 Jul	N17E25	227	40	2	Cso	3	B						1					
27 Jul	N17E11	226	30	2	Hsx	2	A	1					3					
28 Jul	N17W02	227	40	2	Hsx	1	A											
29 Jul	N17W15	226	40	2	Hsx	2	A											
									1	0	0	5	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 227



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		
Region 1529																	
23 Jul	S12E71	220	60	3	Hsx	1	A										
24 Jul	S12E57	221	70	2	Hsx	1	A										
25 Jul	S11E43	222	80	2	Hsx	2	A										
26 Jul	S11E30	222	80	2	Hsx	2	A										
27 Jul	S11E16	223	80	2	Hsx	2	A										
28 Jul	S10E03	221	60	2	Hsx	1	A										
29 Jul	S11W10	221	70	2	Hsx	1	A										
								0	0	0	0	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 221

Region 1530																	
23 Jul	S19E82	210	plage					2									
24 Jul	S19E68	210	90	4	Hsx	1	A	4									
25 Jul	S19E54	211	130	4	Cso	4	B										
26 Jul	S19E40	212	140	5	Cso	3	B										
27 Jul	S19E28	209	130	4	Cso	3	B	2				2					
28 Jul	S19E13	211	140	5	Cso	3	B	1				2					
29 Jul	S17W00	212	170	4	Cso	3	B					3					
								9	0	0	7	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 212

Region 1531																	
26 Jul	N15W59	309	20	2	Cro	3	B										
27 Jul	N15W73	312	10	2	Bxo	3	B	2				5					
28 Jul	N16W83	309	10	9	Bxo	3	B										
								2	0	0	5	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 309

Region 1532																	
26 Jul	S20E67	185	60	2	Cao	3	B	1									
27 Jul	S20E53	186	60	2	Cso	3	B	1	1		1						
28 Jul	S22E47	183	510	20	Fho	21	B		1		4			1			
29 Jul	S21E33	180	500	21	Fko	20	B	4	1		13	2					
								6	3	0	18	2	1	0	0		

Still on Disk.
 Absolute heliographic longitude: 180



Region Summary - continued

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

Region 1533

27 Jul	S28E18	220	40	6	Cao	5	B										
28 Jul	S29E05	219	10	6	Bxo	8	B										
29 Jul	S28W07	219	30	8	Cso	3	B										
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 219

Region 1534

28 Jul	N17E55	170	10	1	Axx	1	A										
29 Jul	N17E41	171	plage														
									0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 171

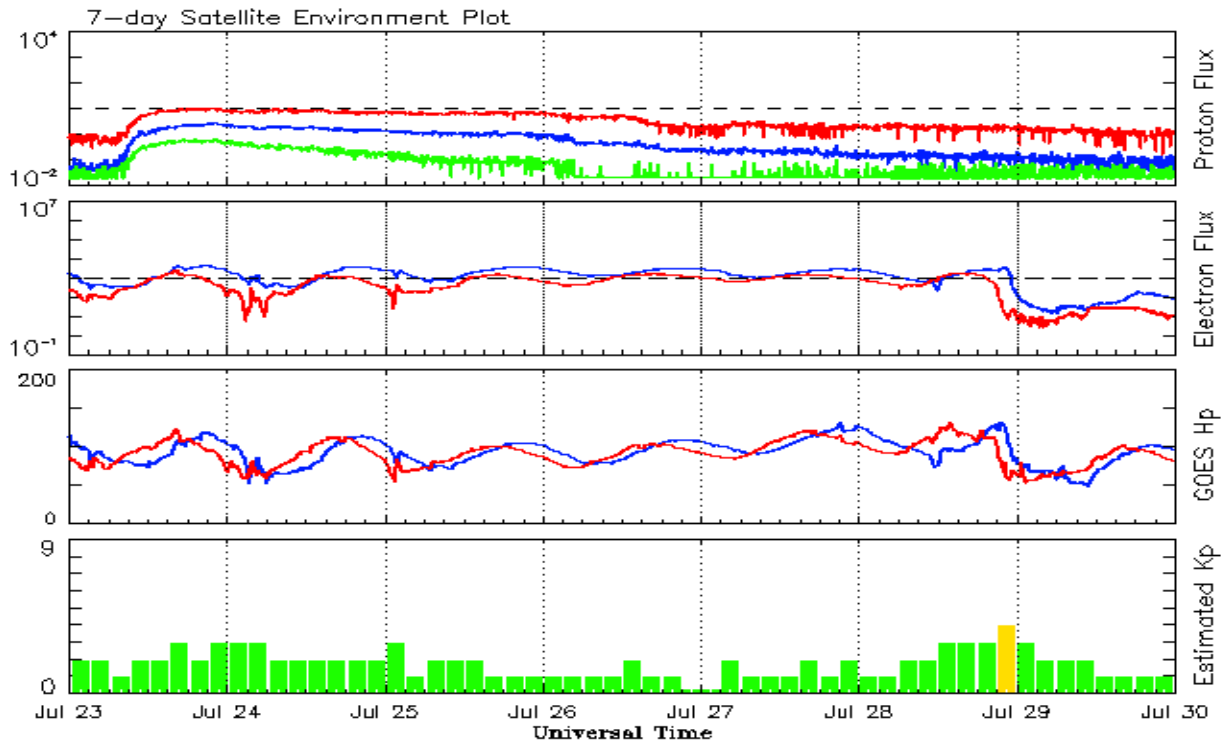


Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2010									
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67	35.9	23.2	81.6	85.3	6	6.4
November	36.1	21.5	0.60	40.5	26.5	82.5	87.7	5	6.4
December	22.0	14.4	0.66	43.8	28.8	84.3	89.6	4	6.5
2011									
January	32.1	18.8	0.59	47.2	30.9	83.7	91.2	6	6.7
February	53.2	29.6	0.55	50.6	33.4	94.5	92.7	6	6.8
March	81.0	55.8	0.69	55.2	36.9	115.3	95.8	7	7.2
April	81.7	54.4	0.67	61.5	41.8	112.6	100.4	9	7.5
May	61.4	41.5	0.68	69.0	47.6	95.9	105.6	9	7.5
June	55.5	37.0	0.67	76.5	53.2	95.8	110.9	8	7.4
July	67.0	43.8	0.66	82.5	57.2	94.2	115.4	9	7.3
August	66.1	50.6	0.77	84.9	59.0	101.7	117.9	8	7.4
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
2012									
January	91.3	58.3	0.64			133.1		6	
February	50.1	33.1	0.66			106.7		7	
March	77.9	64.2	0.82			115.1		14	
April	84.4	55.2	0.65			113.1		9	
May	99.5	69.0	0.69			121.5		8	
June	88.6	64.5	0.73			120.5		10	

Note: Values are final except for the most recent 6 months which are considered preliminary.
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 23 July 2012*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

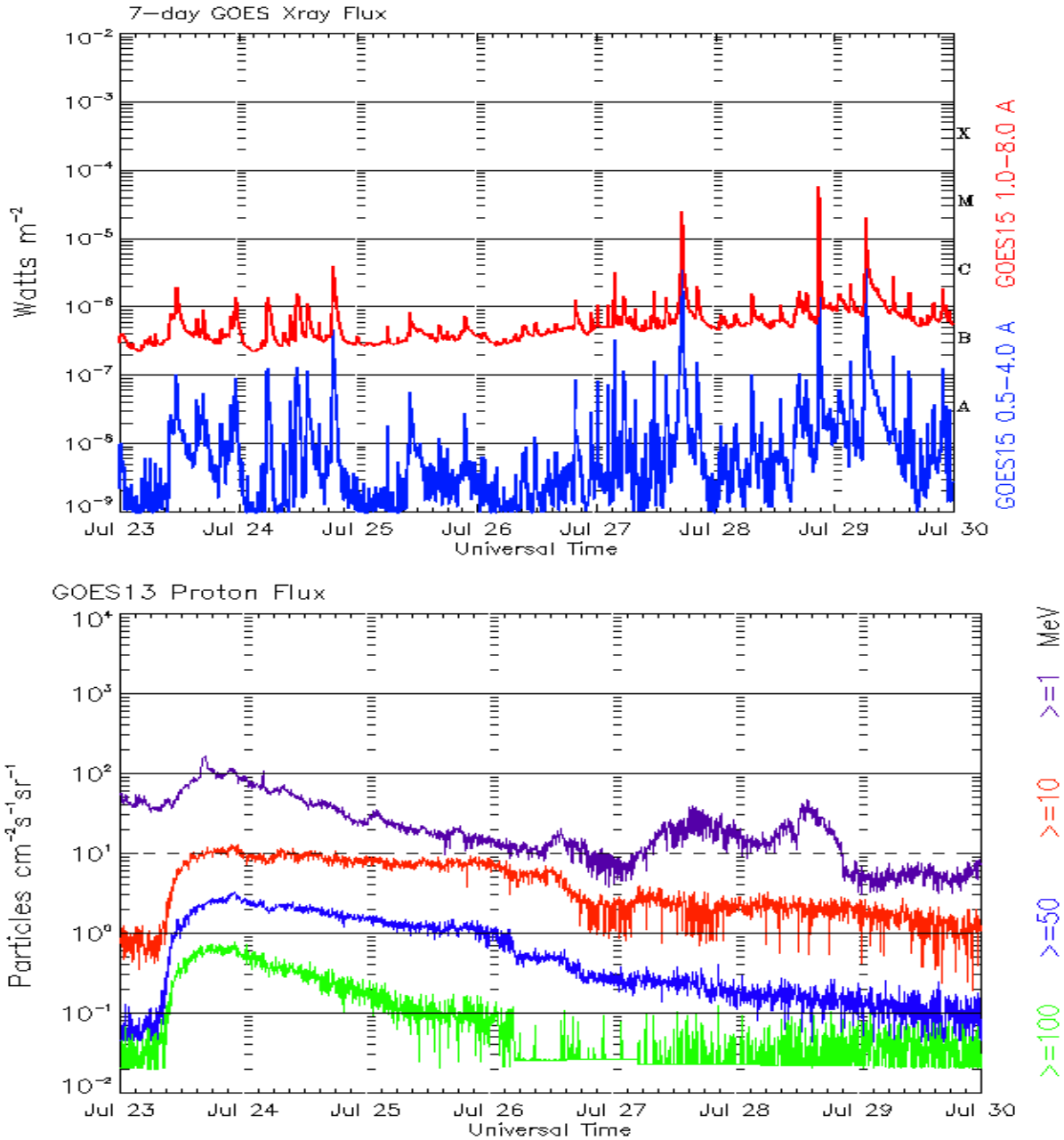
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC 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. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 23 July 2012*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm² -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

Published every Monday by the Space Weather Prediction Center.

U.S. Department of Commerce
NOAA / National Weather Service
Space Weather Prediction Center
325 Broadway, Boulder CO 80305

Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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