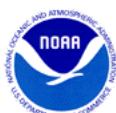


Solar activity was at low to high levels. The period began at high levels when Region 2371 (N13, L=302, class/area Fkc/1180 on 21 June) produced an M6/2b flare at 22/1823 UTC with an associated Castelli-U spectral burst, Type II radio sweep (1480 km/s), 1000 sfu Tenflare, and a full halo coronal mass ejection (CME) with an approximate speed of 1047 km/s. Solar activity returned to high levels again on 25 June as Region 2371 produced a long-duration M7/3b flare at 25/0816 UTC with associated Type II (2056 km/s) and Type IV radio sweeps, 3800 sfu Tenflare, and an asymmetric full halo CME with an approximate speed of 1500 km/s. Region 2371 remained relatively quiet and stable after 25 June, only producing low-level C-class flaring for the rest of the period.

A greater than 10 MeV proton event was in progress at the beginning of the period. The event began at 21/2135 UTC, likely associated with an M2/1n flare at 21/0142 UTC from Region 2371, reached a maximum flux value of 1070 pfu at 22/1900 UTC and ended 24/0705 UTC. A brief enhancement to the S3 (Strong) levels was observed due to a shock enhancement from the arrival of the 21 June CME. Another greater than 10 MeV proton event began at 26/0350 UTC in association with an M7/3b flare at 25/0816 UTC from Region 2371, reached a maximum of 22 pfu (S1-Minor) at 27/0030 UTC and ended at 27/0755 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was high levels through the period with the exception of 23 June. A maximum flux of 26,376 pfu was observed at 24/1620 UTC.

Geomagnetic field activity ranged from quiet to severe storm conditions. At 22/0451 UTC, a small shock was observed at the NASA/ACE spacecraft. Total field increased from 8 nT to 17 nT with a corresponding solar wind increase from 360 km/s to 431 km/s. The shock was associated with the arrival of the 19 June CME caused by a filament eruption in the SE quadrant observed in SDO/AIA imagery beginning at 19/0500 UTC. A geomagnetic sudden impulse (SI) of 19 nT (Guam) was observed at 22/0545 UTC. The geomagnetic field responded with unsettled to active levels. At 22/1759 UTC, another shock was observed in ACE data from the 21 June CME associated with a double peak M2 flare from Region 2371 at 21/0142 UTC. Total field increased to a maximum of 41 nT at 22/1935 UTC, solar wind speed increased to 737 km/s and the Bz component went negative to -39 nT at 22/1850 UTC. A prolonged period of mostly southward Bz occurred between 23/0013 UTC and 23/1246 UTC reaching as high as -25 nT. An SI of 48 nT (Hartland) was observed at 21/1650 UTC. The geomagnetic field responded with minor to major storm levels with severe storm periods observed between 22/1800-2100 UTC and 23/0000-0600 UTC. At 24/1258 UTC, the 22 June CME associated with the M6/2b flare on 22 June was observed in ACE data. Solar wind speeds increased from approximately 550 km/s to around 760 km/s with a relatively weak increase in total field from 5 nT to 13 nT. The Bz component was mostly positive during this event with negative values reaching a maximum of -11 nT between 25/0547 UTC and 25/1357 UTC. The geomagnetic field responded with only quiet to active periods on 24 June, but increased to minor to major storm levels mid-period on 25 June. Another CME associated with the M7/3b flare on 25 June arrived at 27/0223 UTC at the ACE spacecraft. Solar wind speeds increased from near 475 km/s to 860 km/s before slowly



decreasing to 480 km/s by the end of the day. Total field reached a maximum of 13 nT at 27/0304 UTC and the Bz component was variable between +9 nT and -7 nT. As a result, the geomagnetic field never increased beyond unsettled conditions.

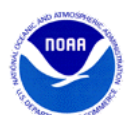
## **Space Weather Outlook 29 June - 25 July 2015**

Solar activity is expected to be at low levels with a chance for M-class flare (R1-R2, Minor-Moderate) activity from 30 June through 24 July with the return of old Regions 2365 (S13, L=079) on 30 June, 2367 (S20, L=002) on 05 July, and 2371 (N13, L=302) on 11 July.

There is a chance for a greater than 10 MeV proton event from 11 July through 24 July with the return of old Region 2371 to the visible disk.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels from 29-30 Jun and again from 08-19 July due to residual CME effects and recurrent coronal hole high speed streams (CH HSS).

Geomagnetic field activity is expected to be at active to minor storm (G1-Minor) levels from 06-08 July and again from 11-12 July due to recurrent CH HSS activity.



### *Daily Solar Data*

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
22 June	135	77	1320	B6.3	4	1	0	10	1	1	0	0
23 June	116	61	1070	B5.0	2	0	0	5	0	0	0	0
24 June	110	39	740	B4.4	4	0	0	4	1	0	0	0
25 June	102	33	580	B4.2	1	1	0	3	0	0	1	0
26 June	101	28	550	B3.5	3	0	0	10	0	0	0	0
27 June	97	25	430	B3.3	1	0	0	0	0	0	0	0
28 June	97	39	220	B4.1	2	0	0	3	0	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)			Electron Fluence (electrons/cm <sup>2</sup> -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	22 June	1.0e+09	1.9e+07	2.7e+03		8.0e+07
23 June	1.9e+08	2.7e+06	2.0e+03		2.7e+07	
24 June	1.2e+08	7.1e+05	2.4e+03		6.5e+08	
25 June	2.3e+07	3.2e+05	2.4e+03		7.1e+07	
26 June	1.0e+07	1.1e+06	3.0e+03		1.1e+08	
27 June	1.1e+07	7.2e+05	2.6e+03		2.7e+08	
28 June	9.2e+06	4.4e+05	2.5e+03		2.3e+08	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	22 June	57	1-4-5-3-4-5-8-5	81	1-4-5-4-6-7-8-6	55
23 June	47	6-7-5-4-4-3-4-3	66	6-7-7-5-6-3-3-2	75	7-8-6-5-6-3-4-3
24 June	0	4-0-0-0-0-0-0-0	35	3-4-6-6-5-3-2-2	17	4-3-4-3-3-3-2-2
25 June	19	0-0-0-0-0-3-4-3	42	2-2-6-6-6-5-3-3	33	2-2-6-5-5-4-4-4
26 June	9	3-3-2-3-2-0-1-2	13	3-3-4-4-1-1-0-3	10	3-3-2-3-2-1-1-3
27 June	8	2-3-2-2-2-1-1-3	12	3-3-3-3-3-1-2-2	9	2-2-3-2-2-1-2-3
28 June	12	2-3-3-3-3-2-3-2	22	2-4-4-4-5-4-2-1	13	3-3-3-2-3-2-3-2



## *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
22 Jun 0208	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	21/1930 - 22/2300
22 Jun 0417	ALERT: Proton Event 10MeV Integral Flux >= 100pfu	22/0350
22 Jun 0552	WARNING: Geomagnetic K = 5	22/0552 - 1600
22 Jun 0631	SUMMARY: Geomagnetic Sudden Impulse	22/0545
22 Jun 0638	ALERT: Type IV Radio Emission	22/0349
22 Jun 0640	ALERT: Type II Radio Emission	22/0558
22 Jun 0851	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	15/1320
22 Jun 1534	EXTENDED WARNING: Geomagnetic K = 5	22/0552 - 2200
22 Jun 1534	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 22/2300
22 Jun 1615	ALERT: Geomagnetic K = 5	22/1612
22 Jun 1812	WARNING: Geomagnetic Sudden Impulse expected	22/1835 - 1935
22 Jun 1812	ALERT: X-ray Flux exceeded M5	22/1800
22 Jun 1813	WARNING: Geomagnetic K = 6	22/1815 - 2200
22 Jun 1813	WARNING: Geomagnetic K >= 7	22/1815 - 2200
22 Jun 1833	ALERT: Type II Radio Emission	22/1805
22 Jun 1839	SUMMARY: Geomagnetic Sudden Impulse	22/1837
22 Jun 1842	ALERT: Geomagnetic K = 7	22/1841
22 Jun 1842	ALERT: Geomagnetic K = 6	22/1840
22 Jun 1850	SUMMARY: 10cm Radio Burst	22/1820 - 1830
22 Jun 1854	SUMMARY: X-ray Event exceeded M5	22/1739 - 1851
22 Jun 1858	ALERT: Geomagnetic K = 8	22/1852
22 Jun 1912	ALERT: Proton Event 10MeV Integral Flux >= 1000pfu	22/1900
22 Jun 2116	WATCH: Geomagnetic Storm Category G3 predicted	
22 Jun 2133	EXTENDED WARNING: Geomagnetic K >= 7	22/1815 - 23/0300
22 Jun 2133	EXTENDED WARNING: Geomagnetic K = 6	22/1815 - 23/0600
22 Jun 2133	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 23/2100
22 Jun 2133	EXTENDED WARNING: Geomagnetic K = 5	22/0552 - 23/1200
22 Jun 2133	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	21/1930 - 23/2300



## *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
22 Jun 2136	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 1000pfu	22/1900 - 1905
22 Jun 2144	ALERT: Geomagnetic K = 5	22/2144
23 Jun 0113	ALERT: Geomagnetic K = 5	23/0106
23 Jun 0124	ALERT: Geomagnetic K = 6	23/0122
23 Jun 0218	ALERT: Geomagnetic K = 7	23/0217
23 Jun 0218	EXTENDED WARNING: Geomagnetic K = 6	22/1815 - 23/1300
23 Jun 0218	EXTENDED WARNING: Geomagnetic K $\geq$ 7	22/1815 - 23/0700
23 Jun 0218	EXTENDED WARNING: Geomagnetic K = 5	22/0552 - 23/1900
23 Jun 0327	ALERT: Geomagnetic K = 5	23/0326
23 Jun 0335	ALERT: Geomagnetic K = 6	23/0334
23 Jun 0347	ALERT: Geomagnetic K = 7	23/0346
23 Jun 0514	ALERT: Geomagnetic K = 8	23/0513
23 Jun 0642	EXTENDED WARNING: Geomagnetic K $\geq$ 7	22/1815 - 23/1100
23 Jun 0647	ALERT: Geomagnetic K = 5	23/0647
23 Jun 0851	ALERT: Geomagnetic K = 6	23/0850
23 Jun 1155	ALERT: Geomagnetic K = 5	23/1149
23 Jun 1220	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 23/2300
23 Jun 1220	EXTENDED WARNING: Geomagnetic K = 6	22/1815 - 23/1900
23 Jun 1220	EXTENDED WARNING: Geomagnetic K = 5	22/0552 - 23/2200
23 Jun 1333	ALERT: Geomagnetic K = 5	23/1327
23 Jun 1355	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 100pfu	22/0350 - 23/0055
23 Jun 1409	ALERT: Geomagnetic K = 6	23/1405
23 Jun 1603	WATCH: Geomagnetic Storm Category G3 predicted	
23 Jun 2108	EXTENDED WARNING: Geomagnetic K = 5	22/0552 - 24/0500
23 Jun 2108	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 24/1100
23 Jun 2109	EXTENDED WARNING: Proton 10MeV Integral Flux $>$ 10pfu	21/1930 - 24/2300
24 Jun 0735	WARNING: Geomagnetic K = 5	24/0735 - 1400



## *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
24 Jun 0745	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 24/1400
24 Jun 0945	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	24/0935
24 Jun 1143	ALERT: Type IV Radio Emission	24/1054
24 Jun 1309	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 25/0600
24 Jun 1311	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	21/2135 - 24/0705
24 Jun 1941	WATCH: Geomagnetic Storm Category G1 predicted	
24 Jun 2306	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	21/2135 - 24/0705
25 Jun 0536	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 25/1400
25 Jun 0728	WARNING: Geomagnetic K = 5	25/0730 - 1400
25 Jun 0732	ALERT: Geomagnetic K = 5	25/0730
25 Jun 0804	WARNING: Geomagnetic K = 6	25/0805 - 1400
25 Jun 0819	ALERT: X-ray Flux exceeded M5	25/0815
25 Jun 0824	ALERT: Geomagnetic K = 6	25/0813
25 Jun 0835	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	24/0935
25 Jun 0850	ALERT: Type II Radio Emission	25/0816
25 Jun 0854	ALERT: Type IV Radio Emission	25/0821
25 Jun 0917	SUMMARY: 10cm Radio Burst	25/0812 - 0903
25 Jun 0944	SUMMARY: 10cm Radio Burst	25/0926 - 0926
25 Jun 1056	SUMMARY: X-ray Event exceeded M5	25/0802 - 0905
25 Jun 1115	ALERT: Geomagnetic K = 5	25/1059
25 Jun 1227	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 26/0300
25 Jun 1322	EXTENDED WARNING: Geomagnetic K = 5	25/0730 - 1800
25 Jun 1330	ALERT: Geomagnetic K = 5	25/1048
25 Jun 1438	ALERT: Geomagnetic K = 5	25/1433
25 Jun 1749	WATCH: Geomagnetic Storm Category G2 predicted	
25 Jun 1944	WARNING: Geomagnetic K = 5	25/1945 - 2300
25 Jun 2341	WARNING: Proton 10MeV Integral Flux $>$ 10pfu	25/2345 - 26/2300

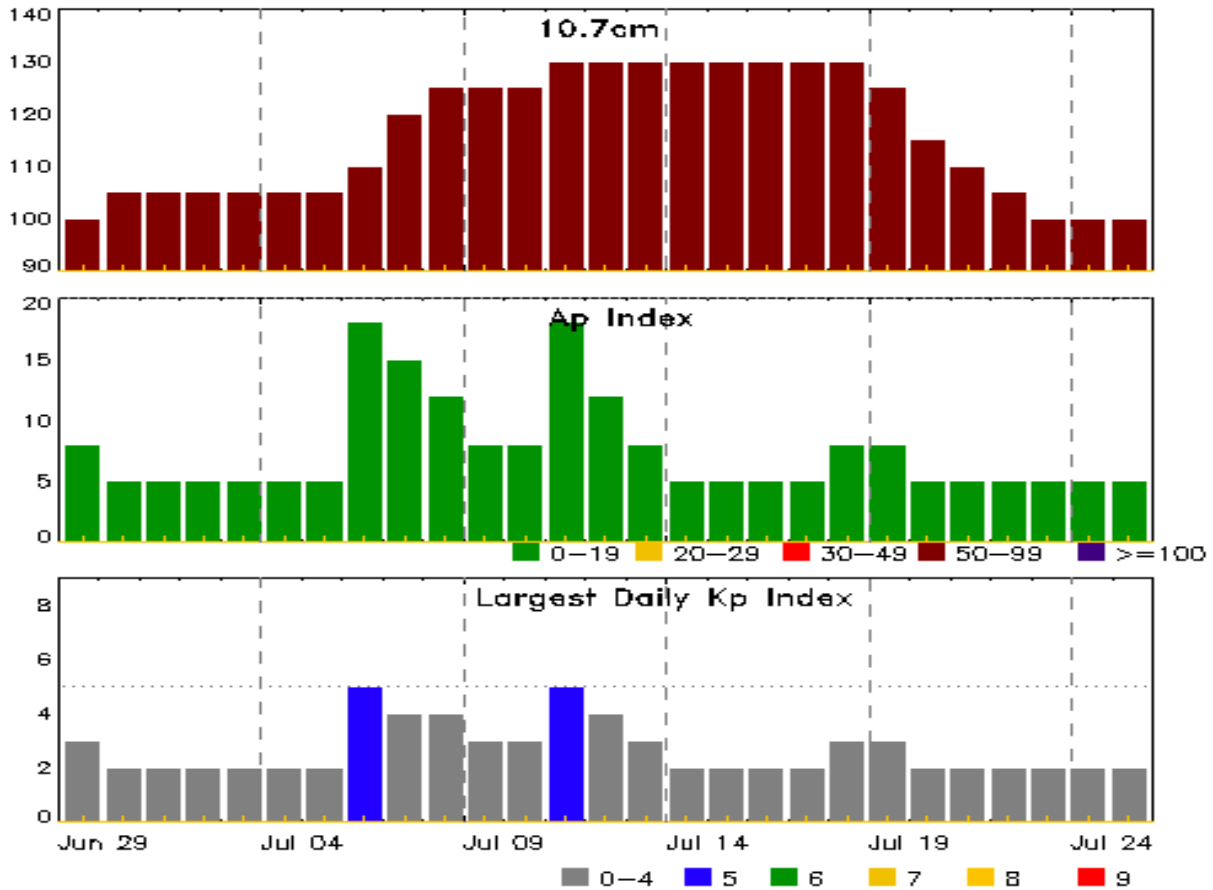


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
26 Jun 0227	EXTENDED WARNING: Geomagnetic K = 4	21/1656 - 26/1300
26 Jun 0253	ALERT: Proton Event 10MeV Integral Flux $\geq$ 10pfu	26/0230
26 Jun 1012	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1005
26 Jun 2108	EXTENDED WARNING: Proton 10MeV Integral Flux > 10pfu	25/2345 - 27/2300
27 Jun 0338	WARNING: Geomagnetic K = 4	27/0338 - 2300
27 Jun 0344	WARNING: Geomagnetic Sudden Impulse expected	27/0345 - 0445
27 Jun 0425	WARNING: Geomagnetic K = 5	27/0424 - 1500
27 Jun 0505	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1005
27 Jun 1651	SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu	26/0230 - 27/0755
27 Jun 1651	CANCELLATION: Proton 10MeV Integral Flux > 10pfu	
27 Jun 1847	CANCELLATION: Geomagnetic Storm Category G2 predicted	
27 Jun 2254	EXTENDED WARNING: Geomagnetic K = 4	27/0338 - 28/1300
28 Jun 0504	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	26/1005



## 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
29 Jun	100	8	3	13 Jul	130	8	3
30	105	5	2	14	130	5	2
01 Jul	105	5	2	15	130	5	2
02	105	5	2	16	130	5	2
03	105	5	2	17	130	5	2
04	105	5	2	18	130	8	3
05	105	5	2	19	125	8	3
06	110	18	5	20	115	5	2
07	120	15	4	21	110	5	2
08	125	12	4	22	105	5	2
09	125	8	3	23	100	5	2
10	125	8	3	24	100	5	2
11	130	18	5	25	100	5	2
12	130	12	4				



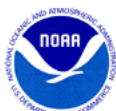


### *Energetic Events*

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux 245	Radio Flux 2695	Intensity II	Intensity IV
22 Jun	1739	1823	1851	M6.5	0.190	2B	N12W08	2371	10000	1000	1	
25 Jun	0802	0816	0905	M7.9	0.170	3B	N09W42	2371	1000	3800	1	1

### *Flare List*

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
22 Jun	0215	0242	0311	C3.2	SF	N10W17	2371
22 Jun	0233	0236	0244		SF	N15W11	2371
22 Jun	0509	0519	0540	C7.5	1N	S19W69	2367
22 Jun	0609	0611	0620		SF	N14E02	2371
22 Jun	0735	0740	0749	C1.6	SF	N14E02	2371
22 Jun	B0802	U0802	0813		SF	N09W02	2371
22 Jun	1449	1450	1454		SF	N11W05	2371
22 Jun	1522	1524	1536		SF	N10W06	2371
22 Jun	1619	1619	1643		SF	N06W13	2371
22 Jun	1620	1620	1637		SF	N09W09	2371
22 Jun	1700	1700	1702		SF	N13W05	2371
22 Jun	1720	1727	1733	C3.9			2371
22 Jun	1723	1810	2053	M6.5	2B	N12W08	2371
23 Jun	0316	0330	0342	C1.3	SF	N14W10	2371
23 Jun	0758	0759	0812		SF	N15W10	2371
23 Jun	1209	1219	1238	C1.9	SF	N13W19	2371
23 Jun	1515	1519	1523	B8.2	SF	N10W19	2371
23 Jun	1716	1719	1735		SF	N13W20	2371
24 Jun	0109	0114	0121	C1.1	SF	N12W24	2371
24 Jun	0244	0247	0250	B8.3			
24 Jun	0254	0302	0309	B9.7			
24 Jun	0310	0320	0334	C1.0	SF	N10W25	2371
24 Jun	0440	0452	0456	C1.0			2371
24 Jun	0506	0515	0527		SF	N10W26	2371
24 Jun	B0535	U0535	A0625		SF	N10W27	2371
24 Jun	0959	1002	1004	B9.4			
24 Jun	1512	1529	1540	C5.6	1F	N15W34	2371
25 Jun	0113	0120	0125	C1.3	SF	N13W37	2371
25 Jun	0740	0744	0753		SF	N10W42	2371



## *Flare List*

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
25 Jun	0802	0814	1235	M7.9	3B	N09W42	2371
25 Jun	2103	2106	2108	B7.4	SF	N09W45	2371
26 Jun	0432	0436	0439	B6.1			2371
26 Jun	0511	0514	0520	B7.9			2371
26 Jun	0513	0527	0537	C1.5	SF	N10W53	2371
26 Jun	0542	0606	0659	B7.4	SF	N10W53	2371
26 Jun	0549	0605	0628	C1.7	SF	N09W55	2371
26 Jun	0617	0620	0622	B8.7			
26 Jun	B0636	U0642	0651	C1.2	SF	N09W55	2371
26 Jun	0835	0836	0839		SF	N10W55	2371
26 Jun	0842	0845	0847	B5.9			2371
26 Jun	0842	0849	0915		SF	N10W55	2371
26 Jun	0844	0849	0914		SF	N09W56	2371
26 Jun	0858	0903	0905	B8.6			2371
26 Jun	1247	1255	1307		SF	N09W45	2371
26 Jun	1321	1322	1328		SF	N14W57	2371
26 Jun	1559	1604	1608	B7.9	SF	N13W57	2371
26 Jun	2007	2010	2013	B6.1			2371
26 Jun	2032	2035	2038	B5.3			2371
27 Jun	0901	0905	0907	B5.5			2371
27 Jun	1052	1104	1124	C1.4			2371
28 Jun	0221	0225	0228	B7.9			2371
28 Jun	0458	0458	0502		SF	N10W77	2371
28 Jun	0530	0530	0532		SF	N10W77	2371
28 Jun	0607	0612	0616	C1.1			2371
28 Jun	0812	0815	0817	B5.8	SF	N13W78	2371
28 Jun	1504	1508	1511	B6.8			2373
28 Jun	1707	1714	1718	C1.9			2373



## Region Summary

Date	Location		Sunspot Characteristics					Flares												
	Lat	CMD	Helio Lon	Area 10 <sup>6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical								
									C	M	X	S	1	2	3	4				
<b>Region 2367</b>																				
10 Jun	S19E84		5	plage								3								
11 Jun	S19E70		5	30	5	Dro	5	B	14	1		9	1							
12 Jun	S18E58		3	200	9	Dao	9	B	5			7	2							
13 Jun	S20E44		4	300	11	Eki	12	B				4								
14 Jun	S20E34		1	340	11	Ekc	15	BG	1											
15 Jun	S20E20		2	400	12	Ekc	29	B				1								
16 Jun	S20E05		2	360	11	Ehc	22	BG												
17 Jun	S20W07		2	340	11	Ekc	21	BG	2			3	2							
18 Jun	S20W21		3	300	14	Eki	23	BG	3			6								
19 Jun	S20W35		4	300	14	Eki	23	BG				5								
20 Jun	S20W49		5	290	12	Eki	34	BG	1			5								
21 Jun	S18W64		6	230	8	Dac	17	BG	4	2		14		1						
22 Jun	S19W77		6	240	11	Eac	9	BG	1				1							
23 Jun	S20W92		7	120	12	Eac	7	B												
									34	3	0	54	6	1	0	0				

Crossed West Limb.  
Absolute heliographic longitude: 2

<b>Region 2369</b>																				
13 Jun	N06E55		353	0	1	Axx	1	A												
14 Jun	N06E40		355	plage																
15 Jun	N06E33		349	10	1	Bxo	2	B												
16 Jun	N06E16		351	60	3	Hsx	6	A												
17 Jun	N07E03		352	10	4	Bxo	5	B												
18 Jun	N06W12		354	10	2	Bxo	3	B												
19 Jun	N06W27		356	plage																
20 Jun	N06W42		358	plage																
21 Jun	N06W57		359	plage																
22 Jun	N06W72		360	plage																
23 Jun	N06W87		2	plage																
									0	0	0	0	0	0	0	0	0			

Crossed West Limb.  
Absolute heliographic longitude: 352





**Region Summary - continued**

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

**Region 2373**

28 Jun	N15E67	143	80	5	Dso	3	B	1									
								1	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 143

**Region 2374**

28 Jun	N08W01	211	10	3	Bxo	3	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 211

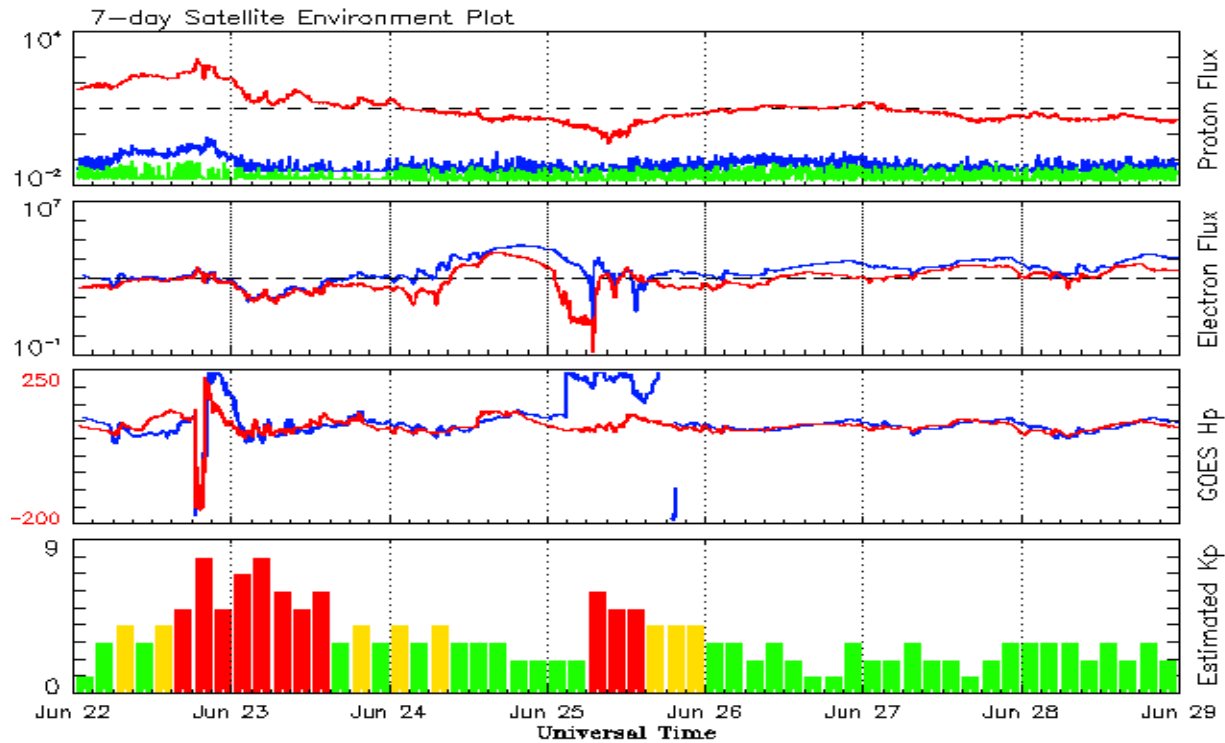


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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
<b>2013</b>									
June	80.1	52.5	0.66	94.4	62.6	110.2	120.9	13	7.1
July	86.1	57.0	0.66	97.9	65.5	115.6	123.9	9	7.3
August	90.2	66.0	0.73	103.7	68.9	114.7	127.9	9	7.6
September	55.0	37.0	0.67	111.0	73.0	102.7	132.3	5	7.8
October	127.1	85.6	0.67	114.3	74.9	132.3	134.7	7	7.8
November	125.7	77.6	0.62	114.6	75.3	148.4	135.4	5	7.9
December	118.2	90.3	0.76	115.4	75.9	147.7	135.9	5	7.5
<b>2014</b>									
January	125.9	81.8	0.65	117.7	77.3	158.6	137.3	6	7.1
February	174.6	102.3	0.59	119.5	78.3	170.3	138.6	12	6.9
March	141.1	91.9	0.65	123.2	80.8	149.9	140.8	6	7.2
April	130.5	84.7	0.65	124.8	81.9	144.3	143.5	9	7.5
May	116.8	75.2	0.64	122.3	80.5	130.0	144.7	7	7.9
June	107.7	71.0	0.66	121.4	79.7	122.2	145.5	7	8.4
July	113.6	72.4	0.64	120.4	78.5	137.3	145.2	5	8.8
August	106.2	74.6	0.70	115.1	75.5	124.7	142.8	9	8.9
September	127.4	87.6	0.69	107.4	70.8	146.1	140.1	11	9.3
October	92.0	60.6	0.66	101.7	67.3	153.7	138.4	10	9.9
November	101.8	70.2	0.69	97.9	65.4	155.3	137.4	10	10.1
December	120.0	76.7	0.65			158.7		12	
<b>2015</b>									
January	101.2	67.0	0.66			141.7		10	
February	70.6	44.8	0.63			128.8		10	
March	61.7	38.4	0.62			126.0		17	
April	72.5	54.4	0.75			129.2		12	
May	83.0	58.8	0.71			120.1		9	

**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 22 June 2015*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-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.

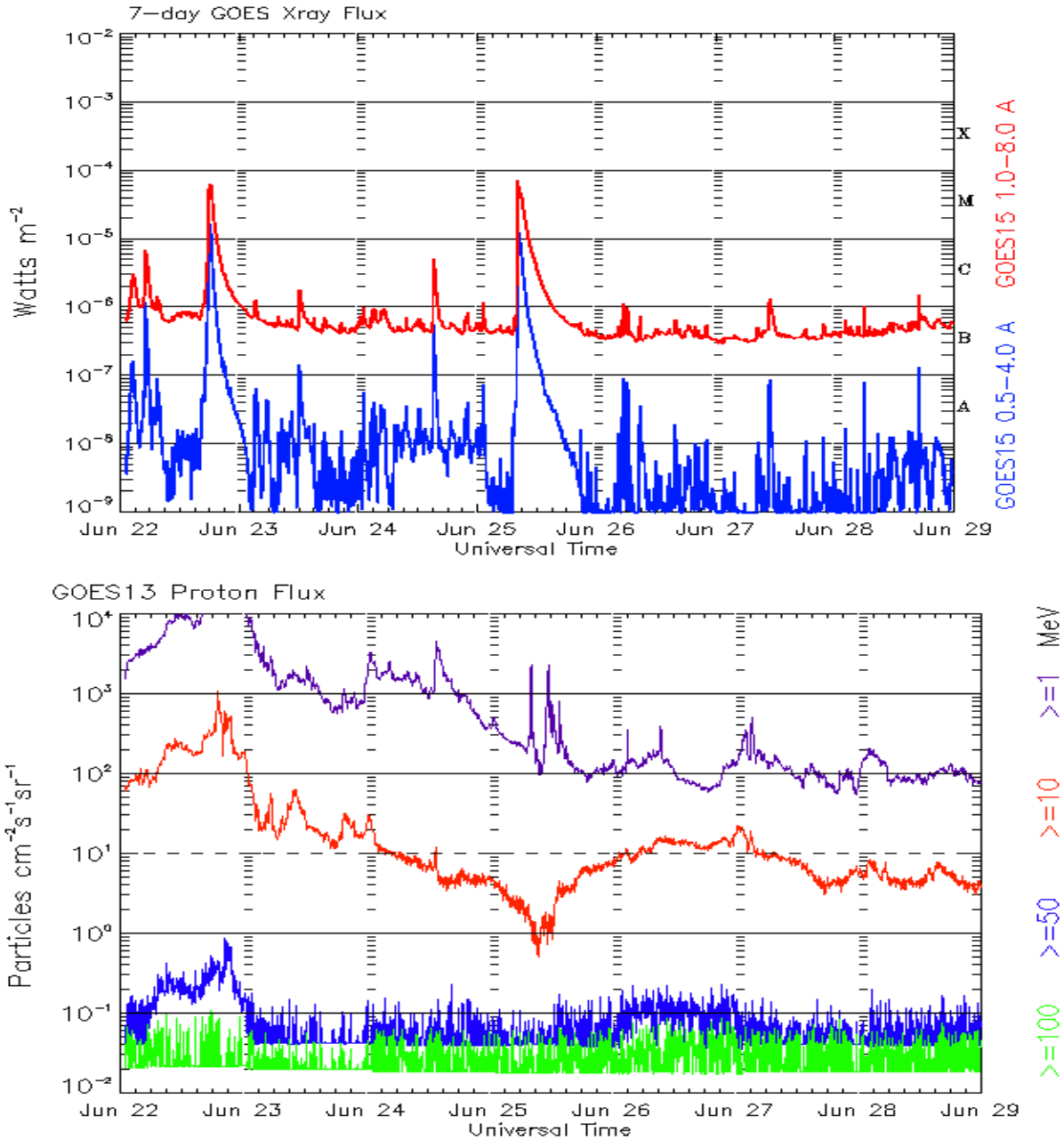
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 22 June 2015*

The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) 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 integral flux units (pfu = protons/cm<sup>2</sup> -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)***

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

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