

Solar activity was at predominately very low levels with an isolated C2/Sf flare observed at 21/0115 UTC from Region 2715 (N08, L=231, class/area Dac/120 on 23 Jun). This region, as well as Region 2713 (N05, L=289, class/area Dao/070 on 23 Jun), also produced numerous B-class flares during the period. No Earth-directed CMEs were observed during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels on 18 and 23 Jun and moderate levels on 19-22 Jun. High levels were reached on 24 Jun in response to an enhanced solar wind environment.

Geomagnetic field activity generally ranged from quiet to active levels with an isolated G1 (Minor) storm period observed early on 18 Jun. The period began under the influence of a waning, positive polarity CH HSS. Wind speeds peaked at 525-540 km/s early to midday on 18 Jun with the Bz component variable between +16 nT to -9 nT. On 18 Jun through midday on 19 Jun, field conditions ranged from quiet to isolated G1 geomagnetic storm conditions. From midday 19 Jun through early on 23 Jun, solar wind parameters were at mostly nominal levels with a quiet geomagnetic field.

Early on 23 Jun, solar wind parameters indicated a weak CIR signature in advance of another positive polarity CH HSS. Wind speeds gradually increased from about 325 km/s to a peak of near 515 km/s by the end of 23 Jun. Total field strength peaked at 15 nT midday on 23 Jun while the Bz component varied between +12 nT to -15 nT through midday on the 23rd before relaxing to a variable +/-9 nT through the summary end. Field conditions responded with quiet to active conditions on 23 Jun and quiet to isolated unsettled conditions on 24 Jun.

Space Weather Outlook **25 June - 21 July 2018**

Solar activity is expected to be at predominately very low levels with a chance for C-class flare activity on 25-28 Jun until Region 2715 rotates off the visible disk. Very low levels are expected from 29 Jun - 10 Jul. With the return of old Region 2715 on 11 Jul, very low levels, with a chance for C-class flare activity, is expected through the remainder of the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 25-26 Jun and 28 Jun - 10 Jul due to CH HSS influence. Normal to moderate levels are expected for the remainder of the outlook period.

Geomagnetic field activity is expected to be at unsettled to active levels on 25-30 Jun, 15 Jul and 20-21 Jul with G1 (Minor) storm levels expected on 27-28 Jun, all due to recurrent CH HSS



activity.



Daily Solar Data

Date	Radio	Sun	Sunspot	X-ray		Flares							
	Flux	spot	Area	Background		X-ray			Optical				
	10.7cm	No.	(10 ⁻⁶ hemi.)	Flux		C	M	X	S	1	2	3	4
18 June	74	28	20	A3.5	0	0	0	1	0	0	0	0	0
19 June	77	41	80	A5.1	0	0	0	2	0	0	0	0	0
20 June	82	54	180	A8.1	0	0	0	9	0	0	0	0	0
21 June	82	41	190	A8.5	1	0	0	1	0	0	0	0	0
22 June	80	41	180	A9.3	0	0	0	0	0	0	0	0	0
23 June	77	34	190	A9.3	0	0	0	4	0	0	0	0	0
24 June	75	16	100	B1.0	0	0	0	2	0	0	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
18 June	6.3e+05	1.8e+04	3.4e+03		1.6e+06	
19 June	3.7e+05	1.8e+04	3.4e+03		5.1e+06	
20 June	3.9e+05	1.8e+04	3.2e+03		6.5e+06	
21 June	3.8e+05	1.8e+04	3.9e+03		8.1e+06	
22 June	5.8e+05	1.9e+04	3.8e+03		1.0e+07	
23 June	6.0e+05	1.8e+04	3.4e+03		9.9e+05	
24 June	7.4e+05	1.8e+04	3.5e+03		3.3e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
18 June	20	5-4-4-4-2-3-1-2	33	4-3-5-6-6-2-1-2	19	5-4-4-4-3-2-2-2
19 June	6	2-2-2-2-2-1-2-1	11	2-2-3-4-4-0-1-1	6	2-2-3-2-2-1-1-1
20 June	7	1-2-3-3-2-1-1-1	6	1-2-3-3-1-1-0-1	5	1-2-2-2-1-1-1-1
21 June	4	1-1-1-1-2-1-1-1	2	1-1-1-1-0-0-1-0	3	1-1-1-1-1-0-1-0
22 June	4	0-1-1-2-2-1-1-1	1	0-1-1-0-0-0-1-0	4	0-1-1-1-1-1-1-1
23 June	15	2-3-2-4-3-2-3-4	24	1-4-2-5-5-4-3-3	16	2-3-2-4-4-3-2-4
24 June	8	2-2-3-2-2-1-2-2	11	3-2-3-3-4-1-1-1	7	2-2-3-2-2-1-1-2

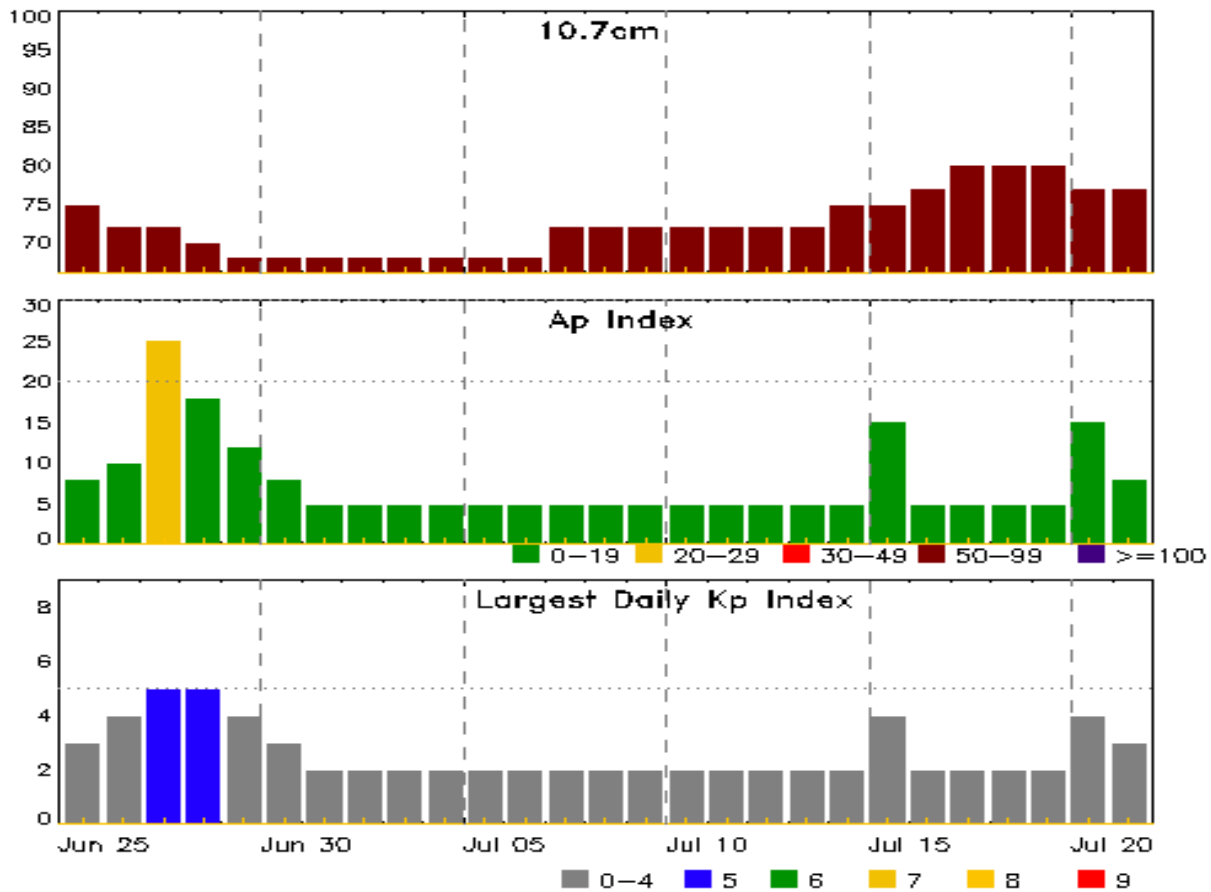


Alerts and Warnings Issued

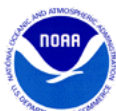
Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
18 Jun 0126	WARNING: Geomagnetic K = 4	18/0126 - 1200
18 Jun 0159	ALERT: Geomagnetic K = 4	18/0159
18 Jun 0220	WARNING: Geomagnetic K = 5	18/0220 - 0900
18 Jun 0256	ALERT: Geomagnetic K = 5	18/0256
23 Jun 1024	WARNING: Geomagnetic K = 4	23/1024 - 1800
23 Jun 1040	ALERT: Geomagnetic K = 4	23/1040
23 Jun 2234	WARNING: Geomagnetic K = 4	23/2233 - 24/1200
23 Jun 2308	ALERT: Geomagnetic K = 4	23/2208
24 Jun 1844	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	24/1800
24 Jun 2030	WATCH: Geomagnetic Storm Category G1 predicted	



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
25 Jun	75	8	3	09 Jul	72	5	2
26	72	10	4	10	72	5	2
27	72	25	5	11	72	5	2
28	70	18	5	12	72	5	2
29	68	12	4	13	72	5	2
30	68	8	3	14	75	5	2
01 Jul	68	5	2	15	75	15	4
02	68	5	2	16	77	5	2
03	68	5	2	17	80	5	2
04	68	5	2	18	80	5	2
05	68	5	2	19	80	5	2
06	68	5	2	20	77	15	4
07	72	5	2	21	77	8	3
08	72	5	2				



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		II	IV
									245	2695		

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
18 Jun	0840	0844	0847	B1.0			2713
18 Jun	1225	1237	1240		SF	N06W04	2713
19 Jun	0223	0226	0228	B1.0			2714
19 Jun	1515	1517	1521		SF	N08E37	2715
19 Jun	1549	1549	1554		SF	N09E37	2715
20 Jun	0000	0006	0011	B1.8			2714
20 Jun	0356	0425	0433	B1.8	SF	N07E30	2715
20 Jun	0936	0938	0947		SF	N09E28	2715
20 Jun	0948	1003	1016		SF	N07E27	2715
20 Jun	1017	1018	1019		SF	N09E28	2715
20 Jun	1139	1139	1141		SF	N07E26	2715
20 Jun	1157	1202	1205	B1.8			2713
20 Jun	1237	1242	1309		SF	N07E25	2715
20 Jun	1356	1402	1414		SF	N07E25	2715
20 Jun	1928	1935	1939	B6.3	SF	N08E20	2715
20 Jun	2258	2303	2307	B2.6	SF	N08E16	2715
21 Jun	0109	0115	0118	C2.1	SF	N08E15	2715
22 Jun	0331	0335	0338	B1.4			2715
22 Jun	0836	0840	0845	B2.5			2713
22 Jun	1808	1810	1814	B1.1			2715
22 Jun	2200	2204	2207	B1.7			
23 Jun	0506	0516	0524	B3.2			2715
23 Jun	0818	0828	0831	B1.8	SF	N08W11	2715
23 Jun	0958	1003	1011	B1.9			2715
23 Jun	1435	1438	1440	B4.7	SF	N03W78	2713
23 Jun	1512	1515	1525		SF	N03W78	2713
23 Jun	1806	1809	1811	B2.4	SF	N03W78	2713
23 Jun	2137	2140	2143	B1.3			2713
24 Jun	0131	0145	0151	B8.6	SF	N08W24	2715
24 Jun	0552	0558	0603	B3.3			2713
24 Jun	0838	0842	0849	B3.2			2713



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
24 Jun	1355	1403	1419	B2.9			2713
24 Jun	1745	1752	1757	B3.5	SF	N10W31	2715
24 Jun	2138	2143	2146	B2.5			2713



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	4
Region 2713															
12 Jun	N03E69	286	10	5	Bxo	2	B								
13 Jun	N06E56	285	60	6	Bxo	6	B								
14 Jun	N05E43	285	30	7	Bxi	6	B								
15 Jun	N05E30	286	10	4	Bxo	3	B				1				
16 Jun	N05E15	288	10	1	Axx	3	A								
17 Jun	N05E02	287	20	6	Bxo	5	B								
18 Jun	N05W13	289	10	6	Bxo	6	B				1				
19 Jun	N05W24	287	10	6	Bxo	2	B								
20 Jun	N05W38	288	40	6	Dso	9	B								
21 Jun	N05W52	288	70	8	Cso	5	B								
22 Jun	N05W64	287	70	9	Dao	6	B								
23 Jun	N05W79	289	70	10	Dao	6	B				3				
								0	0	0	5	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 287

Region 2714

18 Jun	N08W41	317	10	4	Bxo	2	B								
19 Jun	N08W54	317	40	5	Cao	5	B								
20 Jun	N08W67	317	30	6	Cro	3	B								
21 Jun	N08W80	316	10	5	Axx	1	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 317

Region 2715

19 Jun	N07E32	231	30	3	Cro	4	B				2				
20 Jun	N08E20	230	110	6	Dai	12	B				9				
21 Jun	N08E06	230	110	6	Dao	5	B	1			1				
22 Jun	N08W08	231	110	5	Dac	15	B								
23 Jun	N08W21	231	120	5	Dac	8	BD				1				
24 Jun	N07W34	231	100	5	Dac	6	B				2				
								1	0	0	15	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 230

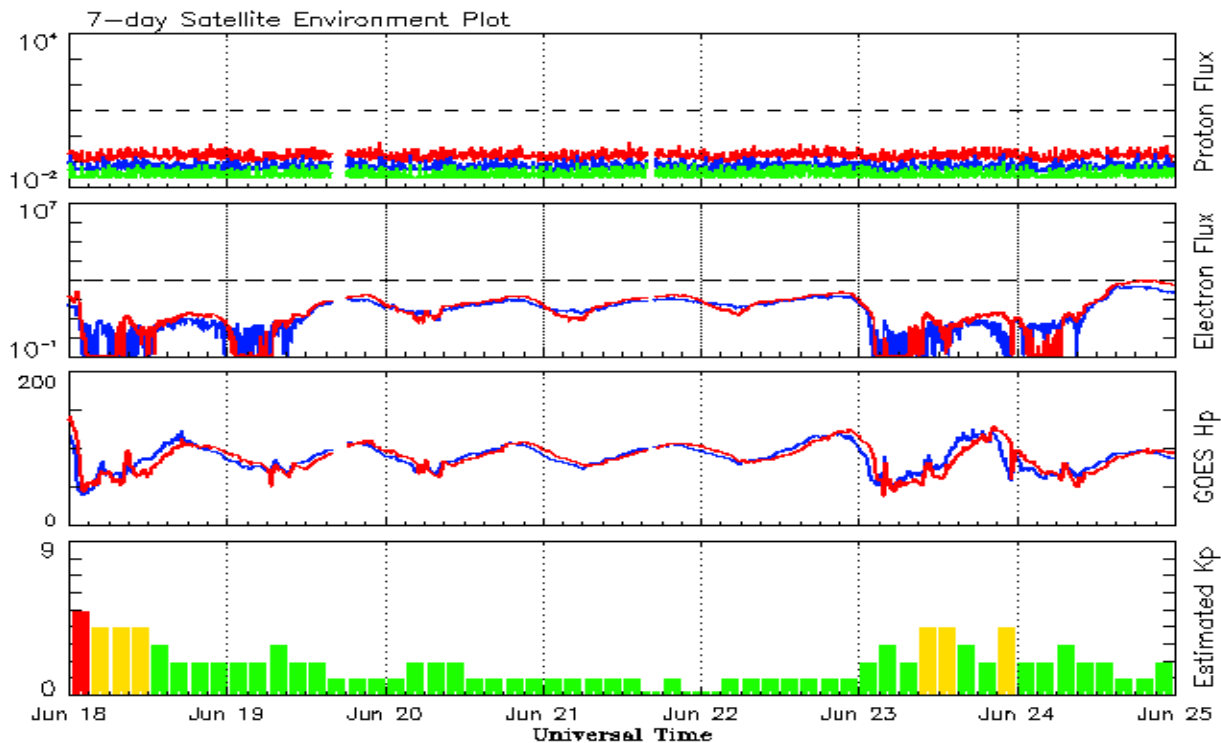


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2016									
June	19.3	12.3	0.65	39.0	24.9	81.9	90.4	9	11.4
July	36.8	19.4	0.53	36.5	23.1	85.9	87.7	10	11.2
August	50.4	30.1	0.60	34.2	21.6	85.0	85.5	10	11.2
September	37.4	26.8	0.72	32.1	19.9	87.8	83.7	16	11.3
October	30.0	20.0	0.67	31.1	18.9	86.1	82.5	16	11.6
November	22.4	12.8	0.57	29.4	17.9	78.7	81.1	10	11.6
December	17.6	11.1	0.64	28.1	17.1	75.1	80.0	10	11.4
2017									
January	28.1	15.7	0.55	27.3	16.7	77.4	79.4	10	11.3
February	22.0	15.8	0.71	25.5	15.9	76.9	78.7	10	11.3
March	25.4	10.6	0.42	24.6	15.4	74.6	78.6	15	11.5
April	30.4	19.4	0.64	24.3	14.9	80.9	78.4	13	11.5
May	18.1	11.3	0.62	23.1	14.0	73.5	77.7	9	11.3
June	18.0	11.5	0.64	22.0	13.3	74.8	77.3	7	11.3
July	18.8	10.7	0.59	20.8	12.6	77.7	76.8	9	11.0
August	25.0	19.6	0.80	19.7	11.7	77.9	76.3	12	10.7
September	42.2	26.2	0.62	18.6	10.9	92.0	75.9	19	10.3
October	16.0	7.9	0.49	16.8	10.0	76.4	75.1	11	9.8
November	7.7	3.4	0.44	15.7	9.2	72.1	74.6	11	9.5
December	7.6	4.9	0.64			71.5		8	
2018									
January	7.8	4.0	0.51			70.0		6	
February	16.0	6.4	0.40			72.0		7	
March	6.0	1.5	0.25			68.4		8	
April	7.0	5.3	0.76			70.0		7	
May	15.0	7.9	0.53			70.9		8	

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 18 June 2018*

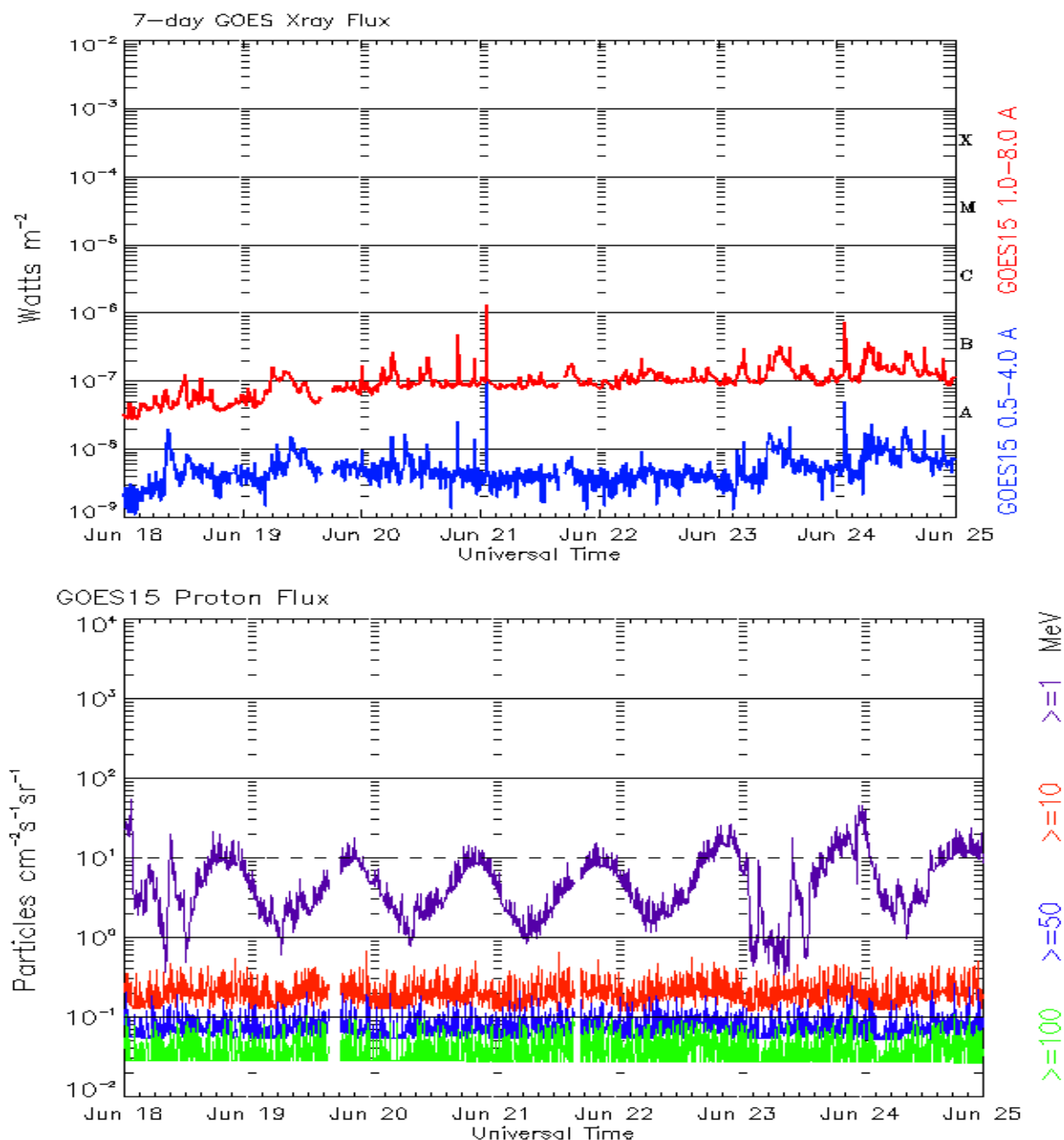
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 18 June 2018*

The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) 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^2 -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

The Weekly has been published continuously since 1951 and is available online since 1997.

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<http://spaceweather.gov/SolarCycle/> -- Solar Cycle Progression web site

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