

Solar activity was at very low levels. No sunspots were observed on the visible disk and there was an absence of significant flare activity. A disappearing solar filament (DSF), centered near S05E52, was observed in GONG optical imagery at 03/0715 UTC but was not observed in LASCO imagery. This CME was believed to have impacted Earth midday on 08 June. An additional DSF, centered near S05E13, was observed at 07/2145 UTC and is expected to have a possible geoeffective component with an anticipated arrival of 12 June.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 03 June and moderate levels on 04-08 June in response to elevated wind speeds from a negative polarity, coronal hole high-speed stream (CH HSS). The peak electron flux during the reporting period was 2,270 pfu at 03/1755 UTC.

Geomagnetic field activity reached G1 (Minor) storm levels on 08 June and unsettled levels on 09 June as a result of the aforementioned 03 June CME. Quiet conditions were observed throughout the remainder of the period.

Space Weather Outlook **10 June - 06 July 2019**

Solar activity is expected to be at very low levels throughout the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 11-13 and 26-30 June, with moderate levels expected on 10, 14-20, 25 June and 01-03 July in response to elevated wind speeds associated with recurrent CH HSS activity.

Geomagnetic field activity is expected to reach active levels on 12 and 25 June, unsettled levels on 10-11, 13, 24, 26 June and 06 July due to CH HSS influence. Quiet conditions are expected throughout the remainder of the outlook period.



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
03 June	70	0	0	A7.3	0	0	0	0	0	0	0	0	0
04 June	70	0	0	A7.3	0	0	0	0	0	0	0	0	0
05 June	70	0	0	A7.3	0	0	0	0	0	0	0	0	0
06 June	69	0	0	A7.1	0	0	0	0	0	0	0	0	0
07 June	69	0	0	A7.1	0	0	0	0	0	0	0	0	0
08 June	68	0	0	A7.1	0	0	0	0	0	0	0	0	0
09 June	68	0	0	A6.8	0	0	0	0	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
03 June	7.3e+05	1.9e+04	3.9e+03		7.4e+07	
04 June	4.8e+05	1.9e+04	3.8e+03		1.4e+07	
05 June	2.5e+05	2.0e+04	4.1e+03		5.0e+06	
06 June	2.8e+05	2.0e+04	3.8e+03		5.4e+06	
07 June	3.1e+05	1.9e+04	3.8e+03		6.1e+06	
08 June	9.1e+05	2.0e+04	4.0e+03		2.6e+06	
09 June	2.5e+05	2.0e+04	3.9e+03		4.0e+05	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
03 June	5	1-0-1-2-2-2-2-2	3	1-0-0-2-2-1-0-1	4	1-1-0-2-1-1-1-1
04 June	8	2-1-2-2-2-2-3-2	11	2-2-4-3-2-3-2-1	7	2-2-2-2-2-2-2-2
05 June	5	2-1-1-1-2-1-2-1	2	2-1-1-1-0-0-0-0	4	2-1-1-0-1-1-1-1
06 June	4	0-1-1-1-2-1-2-1	1	1-0-1-0-0-0-0-0	3	1-1-1-1-1-0-1-0
07 June	6	1-0-1-1-3-2-2-2	2	0-0-2-1-0-1-0-0	4	1-1-1-1-2-1-1-1
08 June	14	1-1-0-2-3-4-4-4	10	1-1-0-1-2-4-4-2	18	1-1-0-2-3-4-5-4
09 June	8	4-2-1-2-2-1-1-1	5	2-3-2-1-2-0-1-0	18	3-2-2-1-1-1-1-1

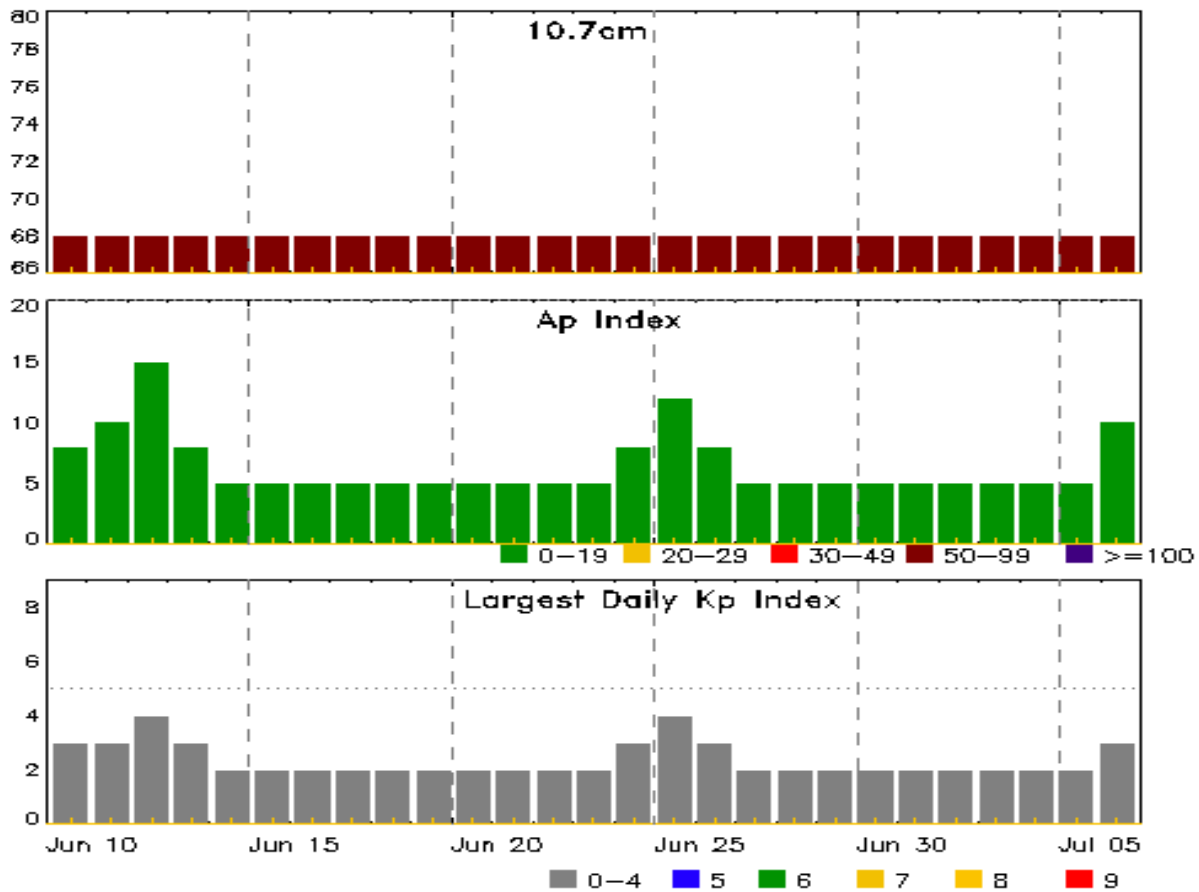


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
03 Jun 1352	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	30/1535
08 Jun 1500	WARNING: Geomagnetic K = 4	08/1500 - 2100
08 Jun 1535	WARNING: Geomagnetic K = 5	08/1534 - 1800
08 Jun 1721	ALERT: Geomagnetic K = 4	08/1713
08 Jun 1744	EXTENDED WARNING: Geomagnetic K = 4	08/1500 - 09/0600
08 Jun 1757	WATCH: Geomagnetic Storm Category G1 predicted	
08 Jun 1825	WARNING: Geomagnetic K = 5	08/1824 - 09/0600
08 Jun 1847	ALERT: Geomagnetic K = 5	08/1840
09 Jun 1327	CANCELLATION: 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
10 Jun	68	8	3	24 Jun	68	8	3
11	68	10	3	25	68	12	4
12	68	15	4	26	68	8	3
13	68	8	3	27	68	5	2
14	68	5	2	28	68	5	2
15	68	5	2	29	68	5	2
16	68	5	2	30	68	5	2
17	68	5	2	01 Jul	68	5	2
18	68	5	2	02	68	5	2
19	68	5	2	03	68	5	2
20	68	5	2	04	68	5	2
21	68	5	2	05	68	5	2
22	68	5	2	06	68	10	3
23	68	5	2				

Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray	Optical		
	Begin	Max	End		Class	Imp/ Brtns	Location Lat CMD
06 Jun	1220	1221	1222		A1.1		



Region Summary

Location		Sunspot Characteristics					Flares								
	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical					
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4

No Active Regions

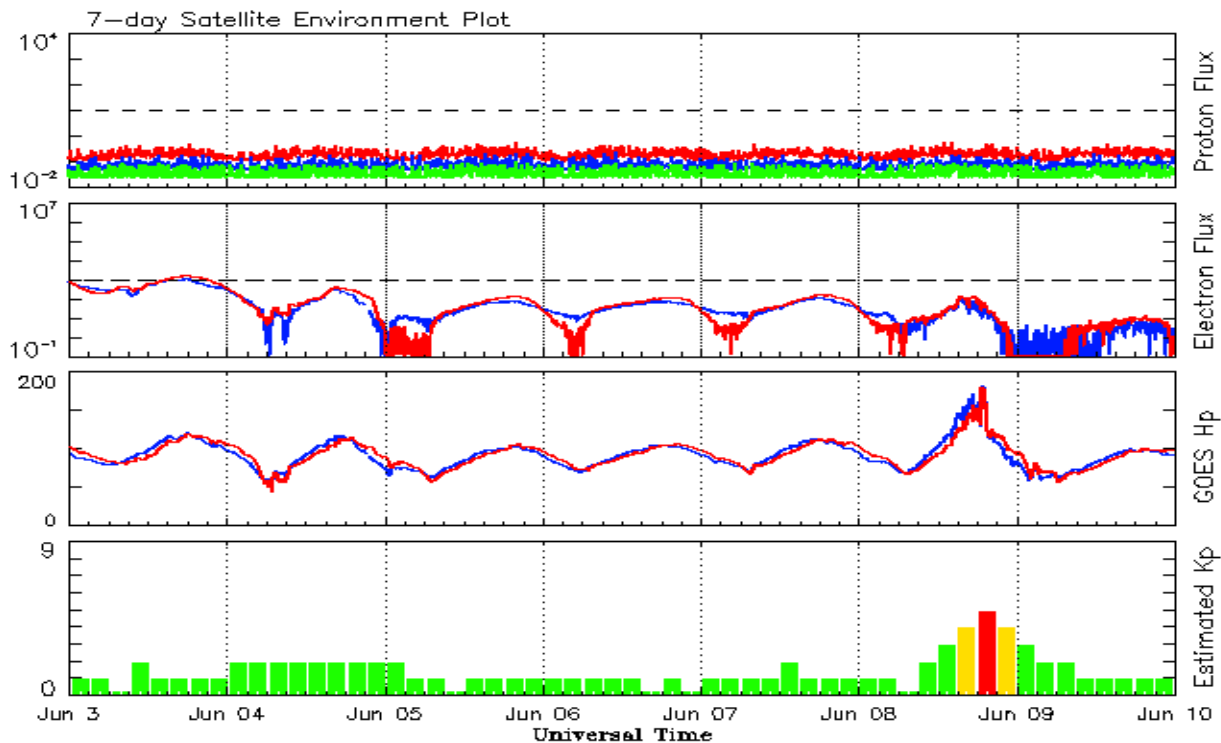


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2017									
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	11.8	77.9	76.3	12	10.7
September	42.2	26.2	0.62	18.6	11.0	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	15.7	9.1	71.5	74.4	8	9.4
2018									
January	7.8	4.1	0.51	15.0	8.5	70.0	74.0	6	9.3
February	16.0	6.4	0.40	13.7	7.6	72.0	73.3	7	9.1
March	6.0	1.5	0.25	11.5	5.9	68.4	71.9	8	8.6
April	7.0	5.3	0.76	9.6	4.7	70.0	70.6	7	8.0
May	15.0	7.9	0.53	9.2	4.5	70.9	70.2	8	7.6
June	19.7	9.4	0.48	9.1	4.3	72.5	70.0	7	7.4
July	1.3	1.0	0.77	9.4	4.3	69.7	70.0	6	7.3
August	10.0	5.2	0.53	9.0	4.0	69.1	70.0	10	7.3
September	5.7	2.0	0.35	8.7	4.0	68.3	70.1	9	7.3
October	6.9	2.9	0.42	9.2	4.1	69.5	70.3	7	7.1
November	7.3	2.9	0.48	9.5	4.0	68.9	70.4	6	7.0
December	5.6	1.9	0.34			70.0		7	
2019									
January	16.0	4.7	0.29			71.6		6	
February		0.5				70.6		7	
March	14.8	5.7	0.39			71.5		6	
April	11.5	5.5	0.48			72.4		6	
May	18.1	6.1	0.34			71.3		7	

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 03 June 2019*

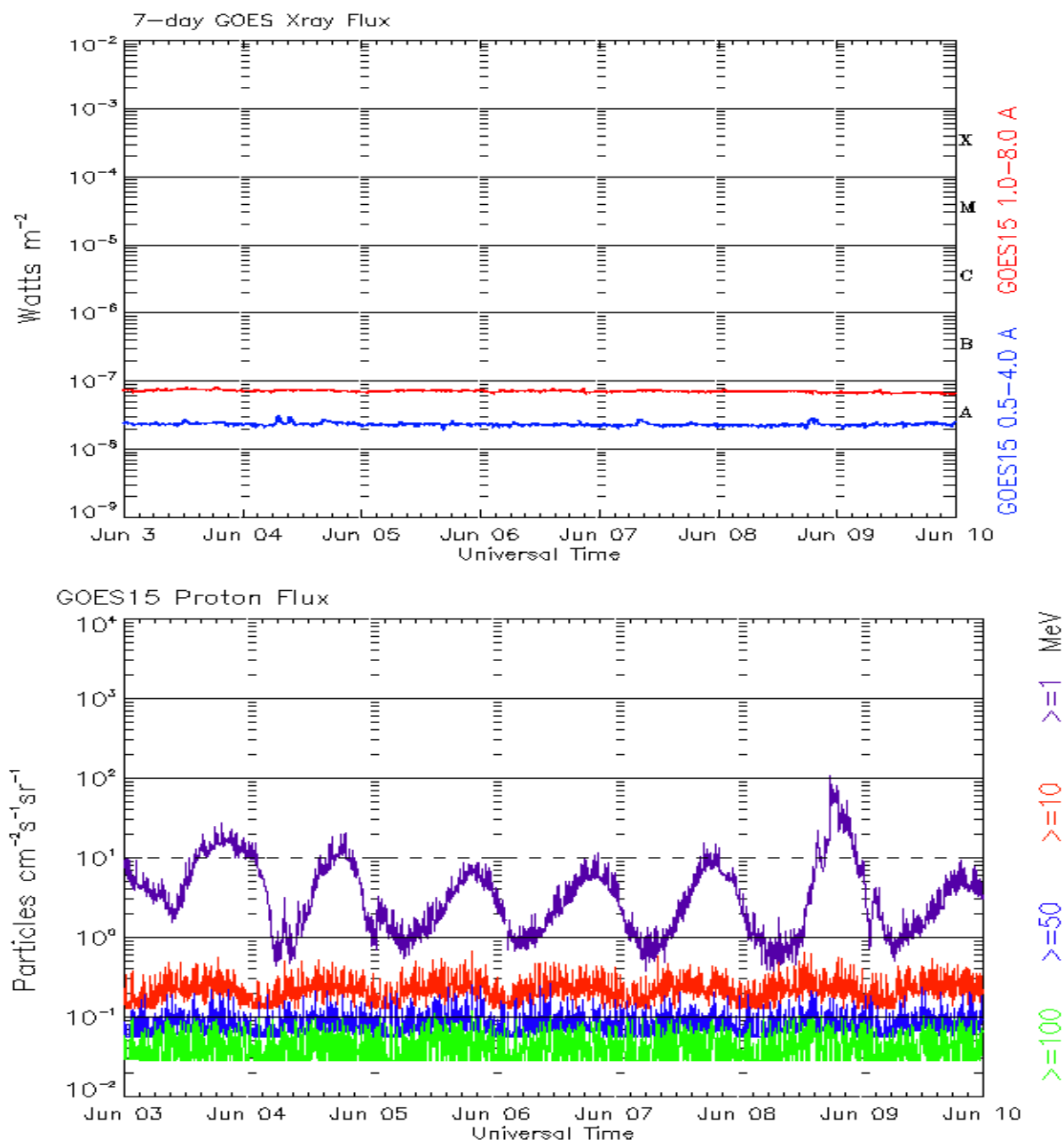
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 03 June 2019*

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.



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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

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