

Solar activity was very low. The solar disk was spotless during the reporting period. No Earth-directed CMEs were observed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 07-10 Jan and moderate levels on 11-13 Jan. The peak flux was 2,970 pfu observed at 07/2040 UTC.

Geomagnetic field activity ranged from quiet to active levels. Solar wind parameters began the period under waning negative polarity coronal hole high speed stream (CH HSS) effects. Solar wind speed began the period near 535 km/s, but diminished to near 345 km/s by 10/0720 UTC. Total field remained at 6 nT or less during this time. The geomagnetic field responded with quiet to unsettled levels on 07 Jan followed by quiet levels on 08-10 Jan. By late on 10 Jan, solar wind speed once again increased to near 515 km/s by 11/0435 UTC while total field only increased briefly to a maximum of 8 nT at 11/0635 UTC. The Bz component deflected southward for approximately 3 hours to near -6 nT. The geomagnetic field responded with an isolated active period on 11 Jan. By 12 and 13 Jan, solar wind speed had decreased to below 400 km/s. The geomagnetic field was once again quiet on 12-13 Jan.

Space Weather Outlook **14 January - 09 February 2019**

Solar activity is expected to be at very low levels on 14-19 Jan and 03-09 Feb. A slight chance for C-class flares is expected on 20 Jan-02 Feb due to the return of old Region 2732 (N09, L=215).

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 25-27 Jan and 02-06 Feb due to recurrent CH HSS influence.

Geomagnetic field activity is expected to be at unsettled levels on 15-16 Jan. Unsettled to active levels are expected on 24-26 Jan and 31 Jan - 03 Feb with G1 (Minor) storm levels likely on 24 Jan due to recurrent CH HSS effects.



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
07 January	72	0	0	A1.6	0	0	0	0	0	0	0	0	0
08 January	71	0	0	A0.0	0	0	0	0	0	0	0	0	0
09 January	72	0	0	A0.0	0	0	0	0	0	0	0	0	0
10 January	70	0	0	A0.0	0	0	0	0	0	0	0	0	0
11 January	68	0	0	A0.0	0	0	0	0	0	0	0	0	0
12 January	70	0	0	A0.0	0	0	0	0	0	0	0	0	0
13 January	69	0	0	A0.0	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
07 January	9.3e+05	1.7e+04	3.8e+03	1.1e+08		
08 January	9.4e+05	1.7e+04	3.9e+03	9.1e+07		
09 January	7.2e+05	1.6e+04	3.9e+03	5.5e+07		
10 January	8.7e+05	1.8e+04	3.9e+03	4.9e+07		
11 January	6.7e+05	1.7e+04	3.9e+03	1.6e+07		
12 January	5.9e+05	1.7e+04	3.8e+03	1.3e+07		
13 January	1.1e+06	1.7e+04	3.8e+03	2.0e+07		

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
07 January	6	2-2-2-2-2-1-1-1	7	2-1-2-4-3-0-0-0	7	2-3-2-2-2-1-1-2
08 January	5	2-2-1-2-2-1-1-1	4	1-1-1-3-1-0-1-0	6	2-2-2-2-2-1-1-1
09 January	3	2-0-1-2-1-1-0-1	6	0-0-3-4-0-0-1-1	4	2-0-1-2-1-0-1-1
10 January	3	1-1-1-1-1-1-1-1	4	0-1-1-2-3-1-0-0	4	1-1-1-1-2-0-0-1
11 January	5	2-2-3-1-1-1-1-0	5	0-0-4-1-2-0-0-0	7	2-1-4-1-1-1-1-1
12 January	2	1-0-0-0-2-1-0-0	1	0-0-0-0-2-0-0-0	3	1-1-0-0-1-1-1-1
13 January	3	1-2-0-1-1-1-0-1	1	0-1-0-1-0-0-0-1	2	0-2-1-1-0-0-1-1

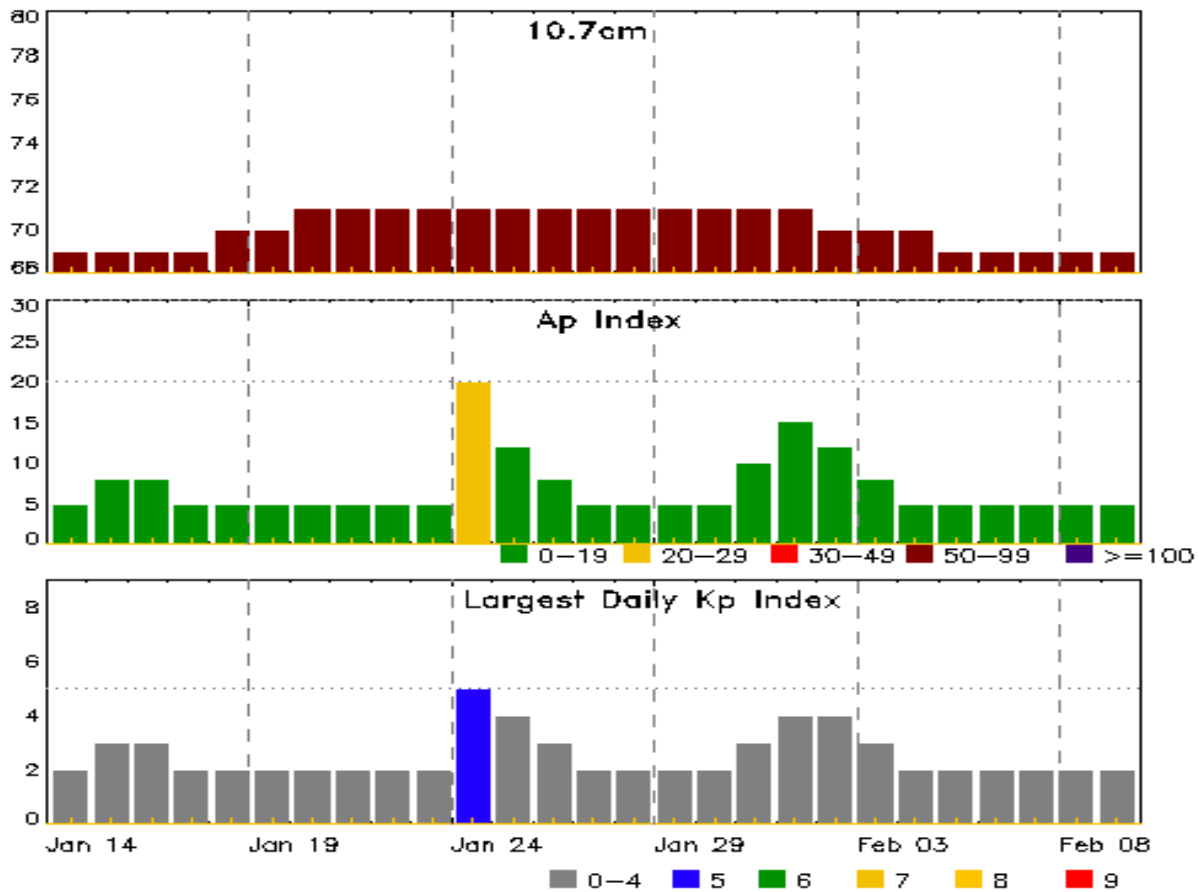


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
07 Jan 1253	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	06/1830
08 Jan 1402	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	06/1830
09 Jan 1856	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	06/1830
10 Jan 1701	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	06/1830
11 Jan 0817	WARNING: Geomagnetic K = 4	11/0820 - 1200
11 Jan 0859	ALERT: Geomagnetic K = 4	11/0859



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
14 Jan	69	5	2	28 Jan	71	5	2
15	69	8	3	29	71	5	2
16	69	8	3	30	71	5	2
17	69	5	2	31	71	10	3
18	70	5	2	01 Feb	71	15	4
19	70	5	2	02	70	12	4
20	71	5	2	03	70	8	3
21	71	5	2	04	70	5	2
22	71	5	2	05	69	5	2
23	71	5	2	06	69	5	2
24	71	20	5	07	69	5	2
25	71	12	4	08	69	5	2
26	71	8	3	09	69	5	2
27	71	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	Imp/	Location	Rgn
	Begin	Max	End				
07 Jan	1019	1023	1026	B1.1			2732
12 Jan	1905	1906	1907	A1.1			



Region Summary

Location		Sunspot Characteristics						Flares							
Date	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
		Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 2732															
01 Jan	N10W20	215	10	4	Bxo	3	B								
02 Jan	N09W33	214	30	6	Dro	6	B				1				
03 Jan	N09W47	215	90	8	Cao	6	B								
04 Jan	N10W59	215	50	8	Cao	3	B								
05 Jan	N09W74	216	10	9	Bxo	3	B								
06 Jan	N09W85	213	10	5	Bxo	2	B	1							
								1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 215

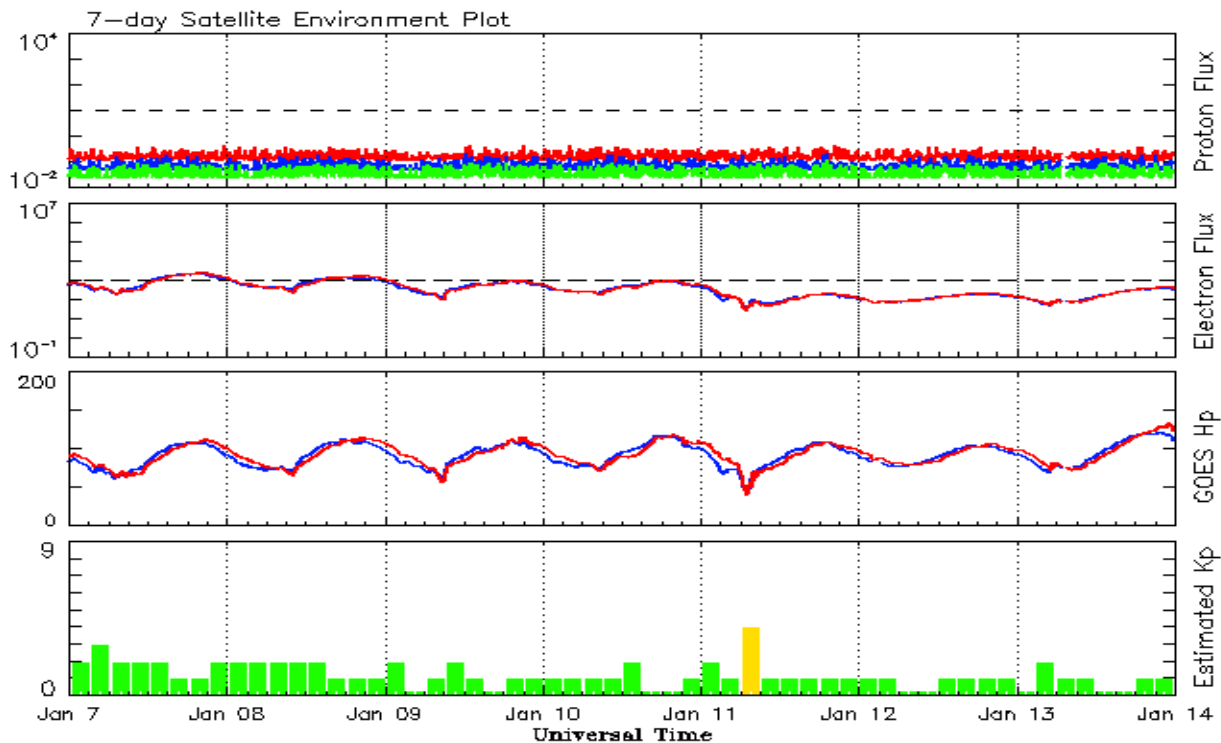


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
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	11.8	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	4.4	72.5	70.0	7	7.4
July	1.3	1.0	0.77			69.7		6	
August	10.0	5.2	0.53			69.1		10	
September	5.7	2.0	0.35			68.3		9	
October	6.9	2.9	0.42			69.5		7	
November	7.3	3.5	0.48			68.9		6	
December	5.6	1.9	0.34			70.0		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 07 January 2019*

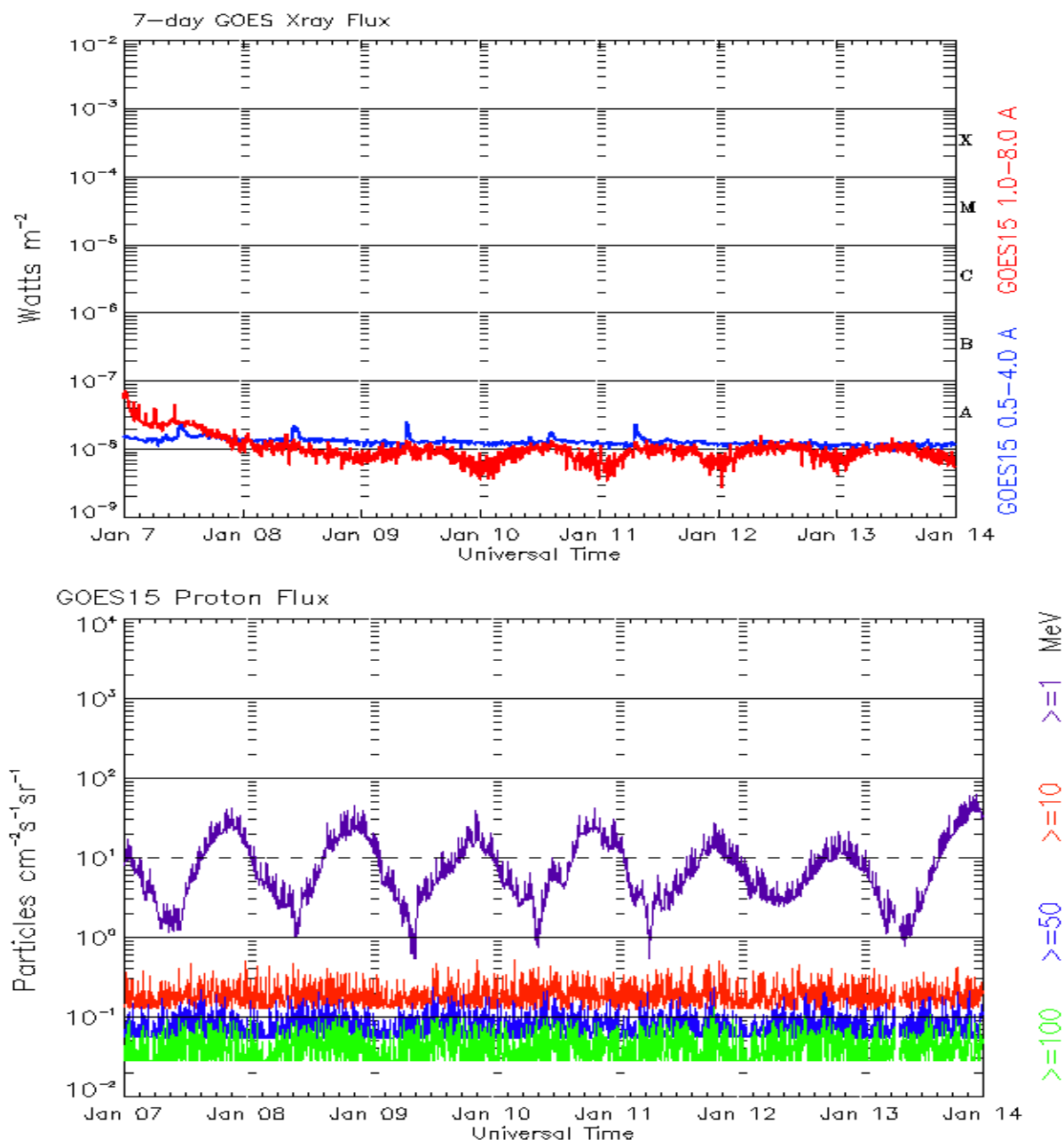
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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. Hp 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 07 January 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 intergral 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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