



# SPACE WEATHER REPORT

## SPRINGFIELD-GREENE COUNTY OFFICE OF EMERGENCY MANAGEMENT

### Emergency Operations Center Partner Agencies

11/30/2023 | 1120 hrs

Hazard Event #: 23-042

### Update:

Next update as warranted.

### Current Watches/Warnings:

Geomagnetic Storm Watch



### SCALES

#### Geomagnetic Storm



#### Radio Blackouts



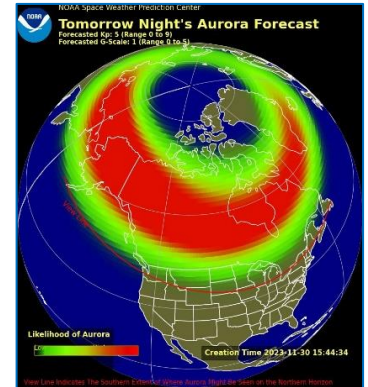
#### Solar Radiation Storms



NOAA Space Weather Scale descriptions can be found at: <https://www.swpc.noaa.gov/noaa-scales-explanation>

### HAZARDS EXPECTED

- Areas Affected:** Area of impact primarily poleward of 50 degrees Geomagnetic Latitude.
- Induced Currents:** Power system voltage irregularities possible, false alarms may be triggered on some protection devices.
- Spacecraft:** Systems may experience surface charging; increased drag on low Earth-orbit satellites and orientation problems may occur.
- Navigation:** Intermittent satellite navigation (GPS) problems, including loss-of-lock and increased range error may occur.
- Radio:** HF (high frequency) radio may be intermittent.
- Aurora:** Aurora may be seen as low as Pennsylvania to Iowa to Oregon.



### DISCUSSION

Multiple eruptions from the Sun have prompted a strong Geomagnetic Storm Watch for Friday, which could cause vibrant aurora lights across the Northern U.S. NOAA's Space Weather Prediction Center (SWPC) said at least three coronal mass ejections, or CMEs, happened on Sunday, sending clouds of plasma from the Sun toward Earth. On Wednesday, SWPC said a fourth CME, known as a full halo CME, prompted forecasters to upgrade the G2 watch to a G3-level geomagnetic storm watch for Friday. Full halo CMEs send out solar material away from the Sun in all directions, appearing halo-like, and usually result in geomagnetic storms at Earth. This faster-moving halo CME is progged to merge with 2 of the 3 upstream CMEs, all arriving at Earth on December 1<sup>st</sup>. CMEs can take between 1 and 3 days to reach Earth's atmosphere. When multiple eruptions from the Sun happen, one event can overtake the other, producing back-to-back solar storms.

### EMERGENCY MANAGEMENT ISSUES

The Office of Emergency Management will continue to monitor this issue. If partner agencies experience problems that could be related to the watch, such as power spikes and communications outages (to include loss of GPS signals), please call OEM Operations at (417) 869-6040 as soon as possible.

### OEM ONLINE



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