

# Space Weather Safety

Know Your Risk

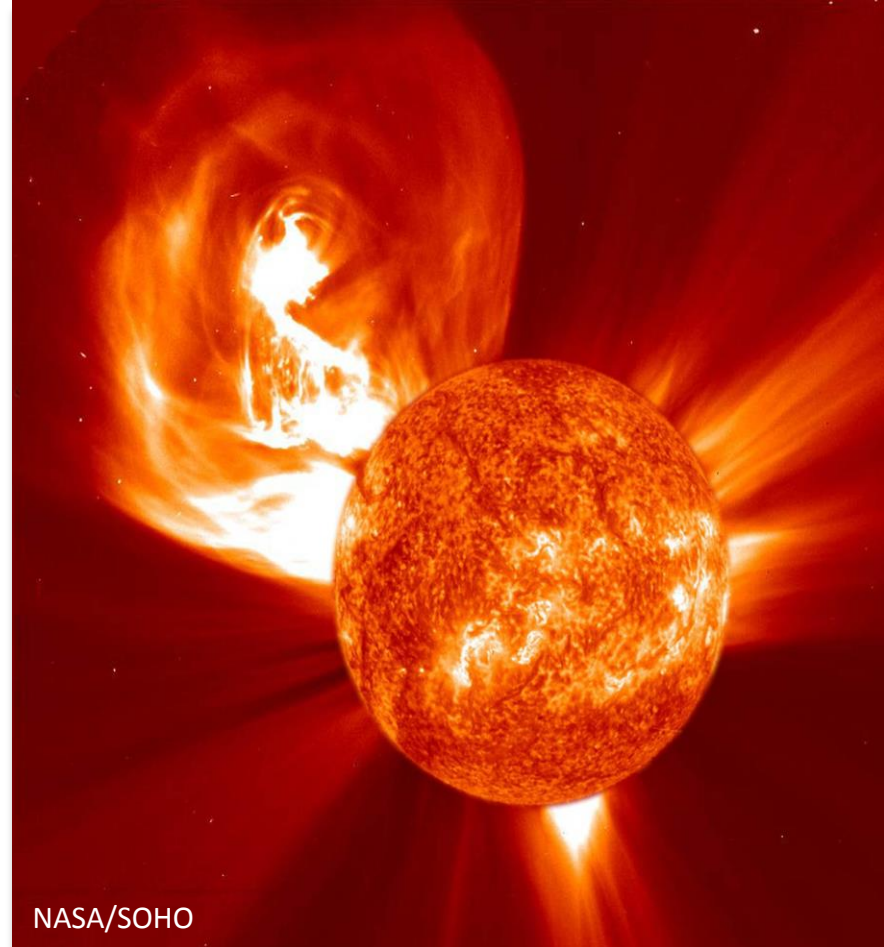
Take Action

Be a Force of Nature



# Understanding Space Weather

- The sun is the main source of space weather.
- Bursts of plasma called coronal mass ejections (CMEs) can be directed towards the Earth.
- CMEs can produce large geomagnetic storms, potentially causing disruptions and anomalies to satellites, power grids, and air traffic communications.
- An important thing to remember; Earth's magnetosphere, ionosphere, and atmosphere do a great job of protecting us from the most hazardous effects.
- Storms large enough to cause the disruptions listed above are very rare.



# Impacts are Potential Loss of:

- Water and wastewater distribution systems
- Perishable foods and medications
- Heating/air conditioning and electrical lighting systems
- Computer systems, telephone systems, and communications systems
- Public transportation systems
- Fuel distribution systems and fuel pipelines
- All electrical systems that do not have back-up power





# During an Extreme Space Weather Storm

- Follow the [Emergency Alert System \(EAS\)](#) instructions.
- Follow energy conservation measures.
- Restrict telephone usage to emergency situations only.
- Avoid using elevators.
- Review evacuation plans, supply lists (including medication), and family contact list.
- Avoid unnecessary travel. Power outages can affect public transportation as well as traffic signals.



Photo courtesy Wordpress.com

# Following an Extreme Space Weather Storm

- Listen to Local Officials.
- Follow any emergency plans established by [state and local government](#).
- Monitor emergency broadcast radios for EAS updates.
- Inventory supplies, medications, water levels, etc.
- Follow evacuation orders.
- Replenish (if needed) to prepare for future use.
- Maintain energy conservation efforts until power can be restored.



Photo courtesy Lean Sigma Supply Chain

# Amazing Side Effect: The Aurora!

- Aurora Borealis, or Northern Lights, are more perceptible in the winter months in the northern hemisphere, due to longer periods of darkness.
- They are a result of collisions between atmospheric gases and precipitating charged particles.
- Each gas (oxygen, nitrogen molecules, and atoms) emits a particular color depending on the energy of the precipitating particles.
- The patterns and forms of the aurora include quiescent arcs, rapidly moving rays, curtains, patches, and veils.
- Check the [Aurora 30 minute forecast](#) to see if viewing is favorable in your area



Photo: SWPC webpage