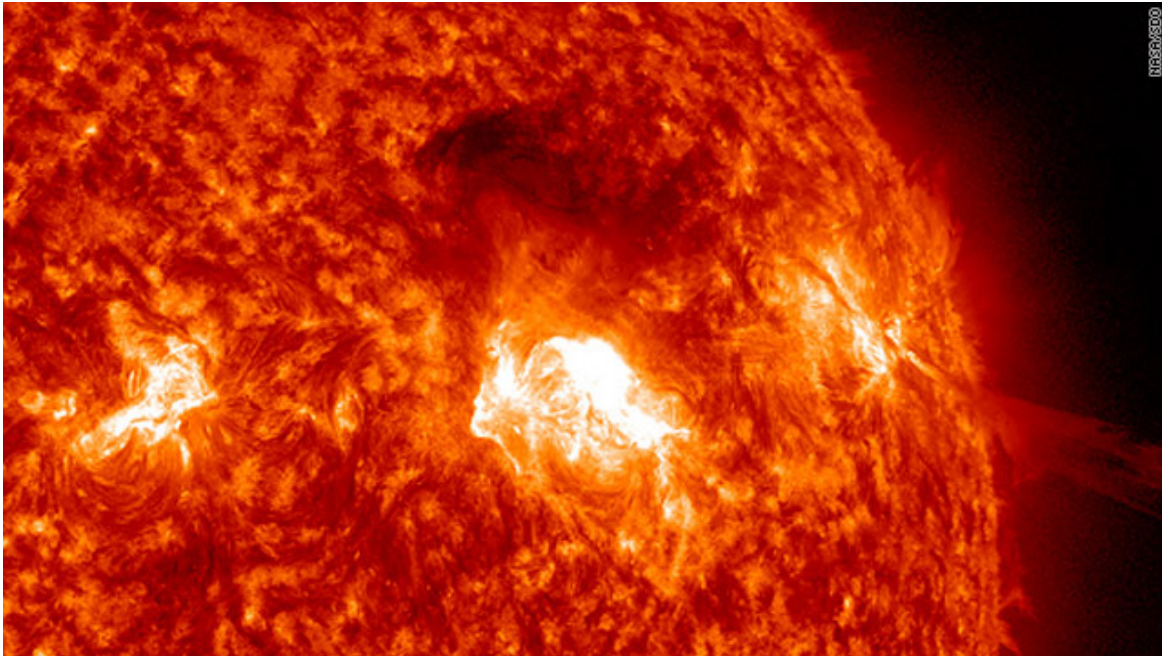


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August 9th, 2011
11:36 AM ET

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[Solar explosions could impact Earth](#)

[The National Oceanic and Atmospheric Administration \(NOAA\)](#) is keeping an eye on a set of solar storms and explosions that could disrupt satellite, telecommunications and electric equipment here on Earth in the next few days.

While activity had reportedly returned to somewhat normal levels when solar winds calmed Monday morning, another explosion Tuesday was three times larger than the February 15 flare, which, until now, was the most significant flare of this solar cycle.

[Solar flare may disrupt your GPS](#)

[The real forecast worth taking a look at, however, is the one for 2013](#), when solar activity levels are expected to peak with the next "solar maximum" within the 11-year activity cycle. Electric and magnetic interference from solar storms blasting electrically charged particles into the Earth's magnetic field can cause major interferences on earth. Already this year, there have been reports of lost high-frequency radio communication with aircraft near the Arctic, along flight paths where pilots depend on such communication for flight safety and guidance.

Pilots and commercial aircraft are not the only ones at risk, either. NOAA cautions that many systems humans use every day are vulnerable to changes in space weather, including GPS applications in mobile phones and in cars, power grids and military satellites.

“We now know how powerful space weather can be and how events that begin on the surface of the Sun can end up wreaking havoc here on Earth,” said Tom Bogdan, SWPC director in Boulder, Colorado. “This is why NOAA has a Space Weather Prediction Center — to forecast when space weather is coming our way, so we can avoid or mitigate damages.”

People in 1859 didn't have that advantage though, when a solar eruption essentially charged the air on Earth with electricity, taking out telegraph offices across the globe. Some telegraph operators received electric shocks and papers within offices caught fire. The interference even caused telegraph equipment to continue distributing signals once the equipment had been turned off. According to a 2008 report by the National Research Council, an eruption of comparable magnitude today could cause \$1 trillion to \$2 trillion in damage worldwide.

NOAA officials are working closely with Britain on developing an updated facility to improve forecasting abilities and our understanding of how weather, in space or on Earth, can affect technology systems.

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Glossary

[CME](#) - coronal mass ejection: a burst of solar winds, plasma and magnetic fields released into space. Not the same as a solar flare.

[Lightyear \(ly\)](#) - As defined by the International Astronomical Union: the distance that light travels in a vacuum in one Julian year.

[MECO](#) - main-engine cutoff, the point at which a space craft's main engines stop firing.

[Stringer](#) - A vertical strip of metal, 108 of which surround the Shuttle's external tank and provide structural support.

[SRB](#) - solid rocket booster, one of the twin rockets that flank the space shuttle and provide extra thrust to achieve