

Scientists: 2012 solar storms could be unprecedented

The State Column | Staff | Thursday, December 29, 2011

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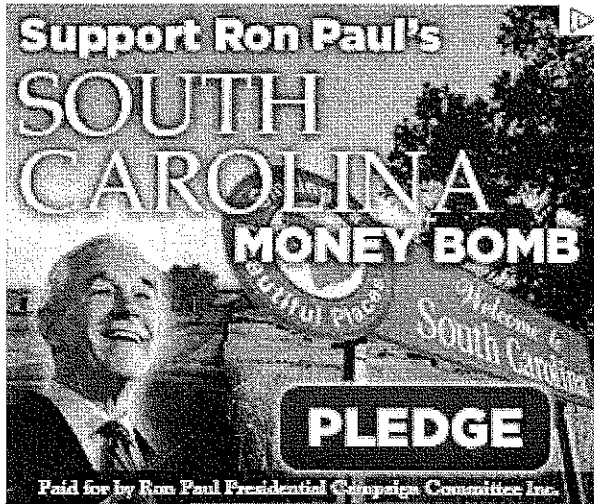


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NASA officials said Wednesday that Earth is likely to face a barrage of increasingly common solar storms over the course of 2012 and 2013.

The solar storm, which is technically known as a coronal mass ejection (CME), is a massive eruption of solar plasma into space. The storm is expected spark major and moderate geomagnetic storms at high latitudes on Wednesday and Thursday, said officials on Wednesday.



The storm could interrupt cell phone use in a number of countries, however, it remains unclear what effect the solar storm will have on everyday life. Experts says the storm is likely to cause temporary radio blackouts in some areas. Scientists at NASA and NOAA say they have provided warnings to electric companies, spacecraft operators, and airline pilots before a CME comes to Earth so that these groups can take proper precautions.

An avalanche of blackouts carried across continents by long-distance power lines could last for weeks to months as engineers struggle to repair damaged transformers, NASA officials say. Planes and ships could face problems with GPS, and banking and financial networks might go offline.

The Sun often ejects billions of tons of hot plasma, at speeds up to 5 million miles per hour, bathing the solar system in large doses of radiation. Scientists say they upcoming solar storm is just one of many upcoming flares that are part of a larger increase in activity in the Sun, which runs in 11-year cycles. The latest storm is expected to peak around 2013, say experts.

That said, the storm is likely to put on quite a show for stargazers. Officials at NASA said the solar storm would produce some unprecedented auroras, noting that astronomers should be on the look out.

“There’s a 20-40 percent chance of geomagnetic storms!” tweeted NASA’s Solar Dynamics Observatory team today. “If you live at a high latitude, look out for #auroras today.”

The space agency has taken an interest in reports of solar storms in recent months. In a statement released earlier this year, NASA downplayed fears of an increase in solar storm activity, saying internet reports were little more than hype.

NASA officials have long prepared for the increased solar activity. Speaking at the annual Space Weather Enterprise Forum earlier this year, NASA officials said they have conducted a number of tests to research the impact of a major solar storm, noting that an increased dependency on technology could present challenges for millions around the world.

“A similar storm today might knock us for a loop,” said Lika Guhathakurta, a solar physicist at NASA headquarters. “Modern society depends on high-tech systems such as smart power grids, GPS, and satellite communications—all of which are vulnerable to solar storms.”

Space agency officials say they often coordinate with companies maintaining electric grids and other major systems that could be impacted by massive solar flares.

“We can now track the progress of solar storms in 3 dimensions as the storms bear down on Earth,” noted Michael Hesse, chief of the GSFC Space Weather Lab. “This sets the stage for actionable space weather alerts that could preserve power grids and other high-tech assets during extreme periods of solar activity.”

While NASA officials said the solar storm poses little danger to planet earth, it remains unclear how Mars will handle the situation. While Earth’s magnetic field is able to absorb the incoming charged particles, Mars does not have currently have such a global geomagnetic field to deflect the energy.

In a statement released Tuesday, NASA officials said the upcoming solar storm may be on par with a massive storm in September of 1859. On the eve of a below-average solar cycle, the sun unleashed one of the most powerful storms in centuries. The underlying flare was so unusual, researchers note they still remain unsure how to categorize it.

It remains unclear whether astronauts working at the International Space Station will be required to take precautions. “Astronauts are routinely exposed to four times as much radiation as industrial radiation workers on Earth,” he says. “It’s a serious occupational hazard.”

NASA keeps careful track of each astronaut’s accumulated dosage throughout their careers. Every launch, every space walk, every solar flare is carefully accounted for. Astronauts are routinely exposed to four times as much radiation as industrial radiation workers on Earth.