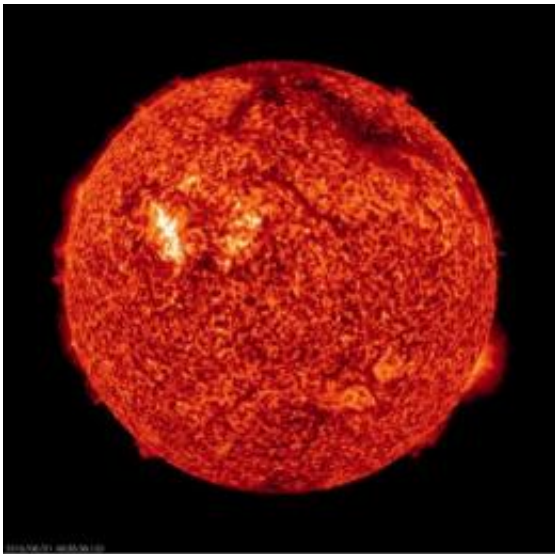


## Aurora alert: The Sun is waking up (w/ Video)

August 2 2010

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NASA's Solar Dynamics Observatory snapped this X-ray photo of the Sun early in the morning of Sunday, August 1. The dark arc near the top right edge of the image is a filament of plasma blasting off the surface -- part of the coronal mass ejection. The bright region is an unassociated solar flare. When particles from the eruption reach Earth on the evening of August 3/4, they may trigger a brilliant auroral display known as the Northern Lights. Credit: NASA

Sky viewers might get to enjoy some spectacular Northern Lights, or aurorae, tomorrow. After a long slumber, the Sun is waking up. Early Sunday morning, the Sun's surface erupted and blasted tons of plasma (ionized atoms) into interplanetary space. That plasma is headed our way, and when it arrives, it could create a spectacular light show.

"This eruption is directed right at us, and is expected to get here early in the day on August 4th," said astronomer Leon Golub of the Harvard-Smithsonian Center for Astrophysics (CfA). "It's the first major Earth-directed eruption in quite some time."

The eruption, called a coronal mass ejection, was caught on camera by NASA's Solar Dynamics Observatory (SDO) - a spacecraft that launched in February. SDO provides better-than-HD quality views of the Sun at a variety of wavelengths.

"We got a beautiful view of this eruption," said Golub. "And there might be more beautiful views to come, if it triggers aurorae."

When a coronal mass ejection reaches Earth, it interacts with our planet's magnetic field, potentially creating a geomagnetic storm. [Solar particles](#) stream down the field lines toward Earth's poles. Those particles collide with atoms of nitrogen and oxygen in the atmosphere, which then glow like miniature neon signs.

Aurorae normally are visible only at high latitudes. However, during a [geomagnetic storm](#) aurorae can light up the sky at lower latitudes. Sky watchers in the northern U.S. and other countries should look toward the north on the evening of August 3rd/4th for rippling "curtains" of green and red light.

The Sun goes through a regular activity cycle about 11 years long on average. The last [solar maximum](#) occurred in 2001. Its latest minimum was particularly weak and long lasting. This [eruption](#) is one of the first signs that the [Sun](#) is waking up and heading toward another maximum.

Provided by Harvard-Smithsonian Center for Astrophysics

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