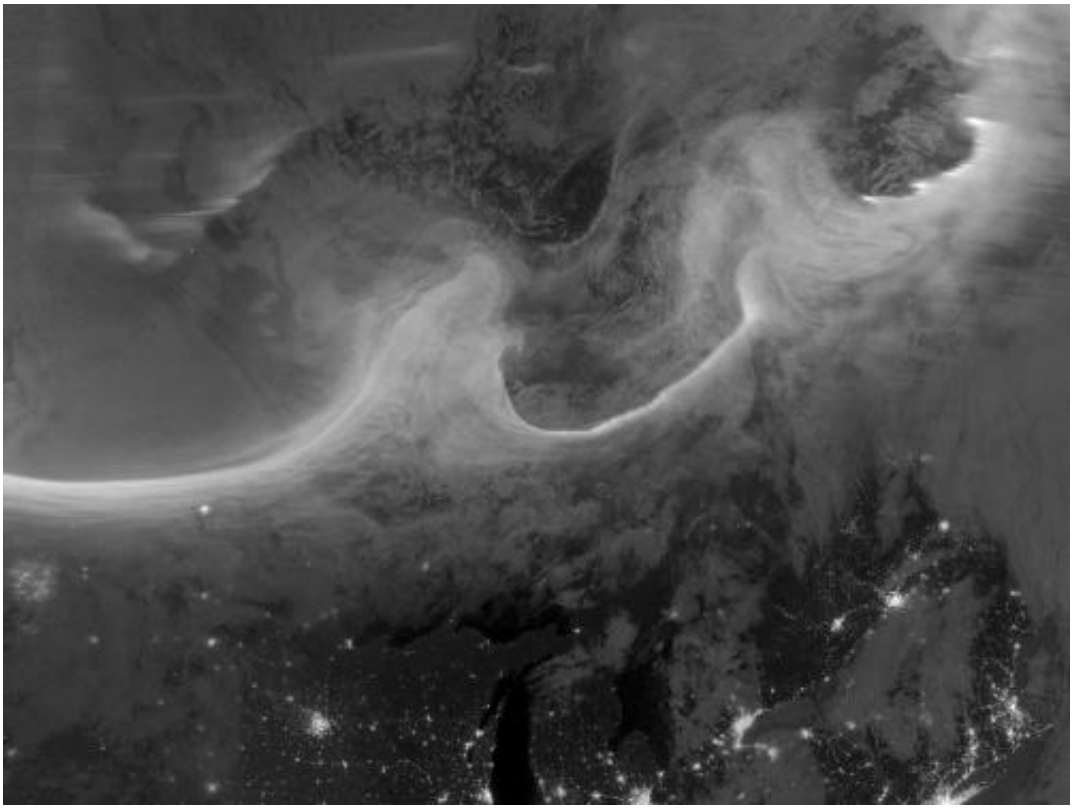
Night-time view of Aurora

November 6 2012



Credit: NASA/Suomi NPP

(Phys.org)—Overnight on October 4-5, 2012, a mass of energetic particles from the atmosphere of the Sun were flung out into space, a phenomenon known as a coronal mass ejection. Three days later, the storm from the Sun stirred up the magnetic field around Earth and produced gorgeous displays of northern lights. NASA satellites track such storms from their origin to their crossing of interplanetary space to

their arrival in the atmosphere of Earth.

Using the "day-night band" (DNB) of the Visible Infrared Imaging Radiometer Suite (VIIRS), the Suomi National Polar-orbiting Partnership (Suomi NPP) satellite acquired this view of the aurora borealis early on the morning of October 8, 2012. The northern lights stretch across Canada's Quebec and Ontario provinces in the image.

Auroras typically occur when solar flares and coronal mass ejections—or even an active solar wind stream—disturb and distort the magnetosphere, the cocoon of space protected by Earth's magnetic field. The collision of solar particles and pressure into our planet's magnetosphere accelerates particles trapped in the space around Earth (such as in the radiation belts). Those particles are sent crashing down into Earth's upper atmosphere—at altitudes of 100 to 400 kilometers (60 to 250 miles)—where they excite oxygen and nitrogen molecules and release photons of light. The results are rays, sheets, and curtains of dancing light in the sky.

Provided by NASA