



Chandra X-ray  
Observatory Center

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Earth Aurora: Auroral X-ray emission observed from Earth's north polar region.  
(Credit: NASA/MSFC/CXC/A.Bhardwaj & R.Elsner, et al.; Earth model:  
NASA/GSFC/L.Perkins & G.Shirah)

Caption: The bright arcs in these Chandra images show low-energy X-rays (0.1 - 10 kilo electron volts) generated during auroral activity. The images - seen here superimposed on a simulated image of Earth - are from an approximately 20-minute scan during which Chandra was pointed at a fixed point in the sky while the Earth's motion carried the auroral region through the field of view. Auroras are produced by solar storms that disturb Earth's magnetic field and accelerate electrons which speed along the magnetic field into the polar regions. There the electrons collide with atoms high in Earth's atmosphere and emit X-rays.

Scale: Distance from the North pole to the black circle is 3,340 km (2,075 miles).

Chandra X-ray Observatory HRC Images

CXC operated for NASA by the Smithsonian Astrophysical Observatory