



**Chandra X-Ray
Observatory Center**

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1E 1207.4-5209: A neutron star located about 7,000 light years from Earth.

Credits: Illustration - CXC/M.Weiss; Graph - NASA/PSU/G.Pavlov et al.

This is an artist's conception of 1E 1207.4-5209, a neutron star with a polar hot spot and a strong magnetic field (purple lines). Chandra's spectrum (see box) of the hot spot of this collapsed star revealed two surprising dips. The graph shows the expected (dashed blue line) and the observed (solid green line) spectra of the X-radiation from the hot spot. The dips are thought to be absorption features caused by helium ions in the atmosphere of the neutron star. This interpretation implies that the strong gravity of the neutron star has reduced the energy of the photons by 17 percent.

Chandra X-ray Observatory ACIS Image