



**Chandra X-ray  
Observatory Center**

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**Vela Pulsar Jet:** A jet of high-energy particles associated with the Vela pulsar, a rapidly rotating neutron star about 1,000 light years from Earth in the constellation Vela.  
(Credit: NASA/CXC/Univ of Toronto/M.Durant et al)

**Caption:** This deep image from NASA's Chandra X-ray Observatory shows the Vela pulsar, a neutron star that was formed when a massive star collapsed. In the upper right is a fast moving jet of particles produced by the pulsar. The pulsar is about 1,000 light years from Earth, and makes over 11 complete rotations every second. As the pulsar spins, it spews out a jet of charged particles that race out along the pulsar's rotation axis at about 70% of the speed of light. A movie shows dramatic changes in the jet, suggesting that the pulsar may be slowly wobbling, or precessing, as it spins. If this evidence is confirmed, it would be the first time that a neutron star has been found to be precessing. In this image the jet's shape is blurred because images at different times have been added together.

**Scale:** Movie is 4.8 x 3.6 arcmin (1.4 x 1.0 light years)

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*

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