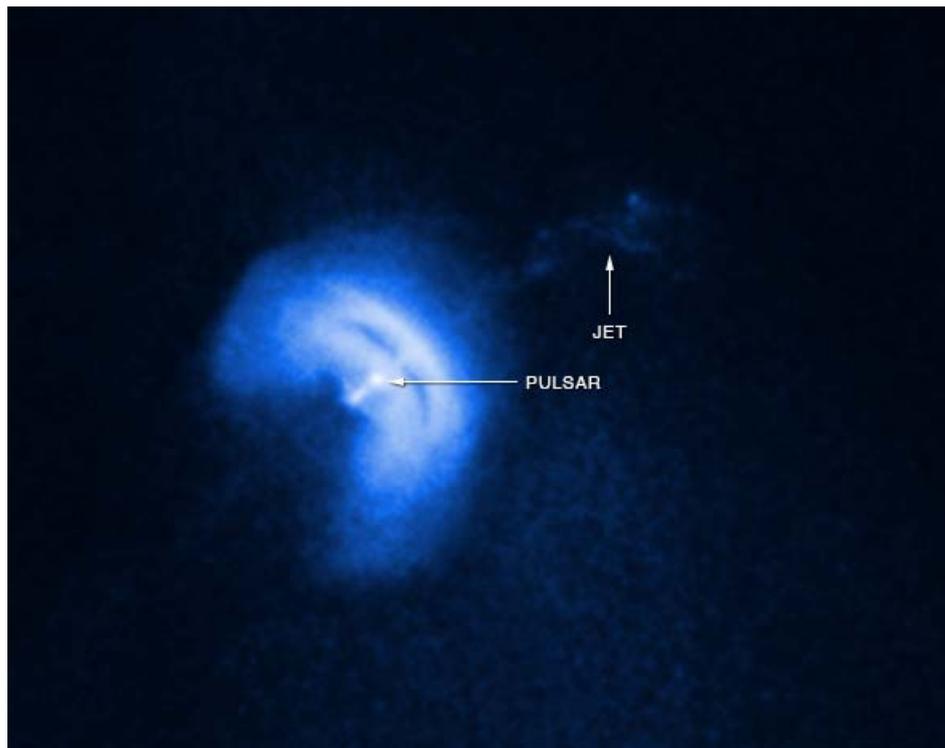




Chandra Science Highlight

The Vela Pulsar Jet



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

Instruments: ACIS

Distance Estimate: 1000 light years

Chandra image showing helical jet from Vela pulsar. Also shown are tilted rings of X-ray emission from shock waves produced by high energy particles flowing away from the central neutron star.

- The dynamics of the nearby Vela pulsar's nebula were studied in a campaign comprising eleven 40 ks observations with Chandra.
- The deepest yet images revealed the shape, structure, and motion of the pulsar jet.
- The jet's shape and dynamics are consistent with that of a steadily turning helix projected on the sky.
- Two possible interpretations of the jet structure and dynamics are free precession of the neutron star or MHD kink-instability.

Reference: M. Durant, et al. arXiv:1211.0347v1

Credit: NASA/CXC/Univ of Toronto/M.Durant et al.)