W49B: Rare Explosion May Have Created Our Galaxy’s Youngest Black Hole

The remnant appears to be the product of a rare explosion in which matter is ejected at high speeds along the poles of a rotating star.

* The mean metal abundances are consistent with the predicted yields in models of bipolar/jet driven supernovas produced by the collapse of the core of the pre-supernova star.

* Strict upper limits on the X-ray luminosity of any undetected point source exclude the presence of a neutron star in W49B, and suggest that the supernova left behind a black hole.

* The estimated age of W49B is 1,000 years, which would make the remnant black hole the youngest black hole in the Galaxy.


Scale: Image is 8.5 arcmin across (60 light years)

Instruments: ACIS

Distance Estimate: 25,000 light years