

[Home](#) / [News](#) / [Article](#)

PARTING ETA CARINAE'S CLOUDS REVEALS MORE CLOUDS

New images show star system's inner beauty

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Web edition : Monday, January 4th, 2010

WASHINGTON—A new view of Eta Carinae, a nearby star system that is expected to explode as a supernova sometime in the next 10,000 years or so, reveals for the first time clouds of gas that were expelled by one of its stars.

Eta Carinae consists of at least two stars, one of which is among the most massive and luminous stars in the galaxy. In 1843, that star was famously observed exploding, and over the next 20 years it ejected 20 times the mass of the sun. The eruption created a nebula of gas and dust around the star known as the Homunculus Nebula.

Previous spectroscopic observations had hinted that the Homunculus Nebula could include an inner cloud beneath the outer layer, but until now, optical observations had eluded astronomers.

John Martin of the University of Illinois at Springfield reported new observations of Eta Carinae January 4 at the meeting of the American Astronomical Society. Astronomers took the new images using the Near-Infrared Coronagraphic Imager, or NICI, at the Gemini South telescope in Chile. NICI, which was designed to find planets around other stars, uses a system called adaptive optics to cancel out blurring from the Earth's atmosphere. This feature allowed Martin and his team to create the first visual images of the inner cloud, called the Little Homunculus Nebula. It shows up as a faint brightening around the central star.

"We were able to peel back and see inside the dusty shell of the nebula," Martin

said.