Mystery Of Quintuplet Stars In Milky Way Solved

ScienceDaily (Aug. 18, 2006) -- For the first time, scientists have identified the cluster of quintuplet stars in the Milky Way's galactic center, next to the super massive black hole, as massive binary stars nearing the end of their life cycle, solving a mystery that had dogged astronomers for more than 15 years.

The study captures the Quintuplet stars just before disintegrating in supernova explosions.

Using advanced imaging techniques on the world’s biggest telescope at the W.M. Keck Observatory in Hawaii, the scientists captured the stars at the highest attainable resolution for the instrument, far exceeding the capability of the Hubble Space Telescope, which maged the cluster a decade ago. The extra-resolution gives scientists a new glimpse of the dust plumes surrounding the stars and the swirling winds that likely triggered the first explosion.

"Only a few pinwheels are known in the galaxy," Figer says. "The point is, we’ve found five all next to each other in the same cluster. No one has seen anything like this before."

According to Figer, the swirling dust in pinwheel stars is key to understanding if they are forming alone or if they have partners, "If you want to understand star formation, you have to understand if they are forming alone or with companions."

"The only way that pinwheels can form is if they have two stars, swirling around each other. The stars are so close that their winds collide, forming dust in a spiral shape, just like water sprayed from a garden hose of a twirling sprinkler," Figer says.

"A single star wouldn’t be able to produce the dust and wouldn’t have the spiral shape."

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