

Workshop

Stellar End Products: The Low Mass - High Mass Connection

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Akashi, Muhammed

Title:

Forming equatorial rings around dying stars

Abstract:

We suggest that clumpy-dense outflowing equatorial rings around evolved giant stars, such as in supernova 1987A and the Necklace planetary nebula, are formed by bipolar jets that compress gas toward the equatorial plane. The jets are launched from an accretion disk around a stellar companion. Using the FLASH hydrodynamics numerical code we perform 3D numerical simulations, and show that bipolar jets expanding into a dense spherical shell can compress gas toward the equatorial plane and lead to the formation of an expanding equatorial ring.