

3D models of cosmic explosions

by: Dr Shazrene Mohamed

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A nova is a very bright, energetic explosion that occurs when the surface layer of gas accreted by a white dwarf is ignited, leading to a thermonuclear runaway. Novae occur in binary systems. The source of the accreted material is typically a close young companion or a more evolved star, for example a red giant. Although novae have been known for hundreds of years, there are still many important unanswered questions. This talk will discuss the latest detailed supercomputer simulations of both the nova explosion and the mass transfer phase that leads up to it. It will also highlight the link between some of these systems and supernova explosions.

Dr Shazrene Mohamed is a computational astrophysicist working at the South African Astronomical Observatory (SAAO) and the University of Cape Town. She completed her undergraduate studies in astronomy, astrophysics and mathematics at Harvard University and obtained her PhD in astrophysics from Oxford University. After two years as an Argelander Fellow in Bonn she moved to Cape Town where she is currently an NRF Research Career Advancement (RCA) fellow.

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