

Seminar: University of Lund
Location: Lund, Sweden
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Title: Eta Carinae: A Box of Puzzles ... Some Solved, Others Await
Presenter: Theodore Gull

Abstract:

In the 1840s, Eta Carinae brightened to rival Sirius, then faded. Today we see a marginally naked-eye binary with an expanding, very dusty bipolar Homunculus. The energetics of the ejected mass (>12 to 40 solar masses at 500-700 km/s plus outer bullets/strings up to 3000 km/s) approach that of a supernova. Extragalactic SN surveys detect near-supernovae thought to be like the Great Eruption of the 1840s. Eta Carinae presents an abundance of puzzles: rich in N, but 1/100th the solar C and O abundances; Ti, V, Sr, Sc persist in atomic states.... yet an abundance of molecules and dust exists in the Homunculus. How did molecules and dust form with low C and O? A near supernova occurred in the 1840s, yet both binary companions, with total mass > 120 solar masses, survive in a very eccentric orbit. What is the near future of this system: a GRB? a SN? or just two WR stars that ultimately become two SNs? These and other puzzles will be presented.