

Joint Discussion 13: Eta Carinae in the Context of the Most Massive Stars (and followup workshop)

13, 14 August with followup 15, 16 August

IAU General Assembly in Rio de Janeiro with followup workshop

Motivation:

Eta Car, with its historical outbursts and visible ejecta, continues to challenge both observers and modelers. Just in the past five years over 100 papers have been published. We now know it to be a massive binary system with a 5.54-year period. In January 2009, Eta Car entered periastron and is being followed by an intensive multi-wavelength campaign ranging from X-rays to radio. A large amount of data will be collected and used to test a number of working models, including 3-D models of the massive interacting winds.

Within a few days of Eta Carinae's event, WR140 also passed through periastron. Comparison of its properties, and that of HD5980 and other massive binaries - and isolated massive stars - with that of Eta Car will be very informative, providing many clues as to the fate of the most massive stars. What are the effects of binarity, of the interacting winds, of individual stellar rotation, and of the circumstellar material on what we see? Does this provide insight on hypernovae, supernovae and gamma ray bursters?

Contributed talks and posters are strongly encouraged by the organizing committee. Abstracts shall be submitted through the IAU General Assembly website: <http://www.astronomy2009.com.br/abstract.html>

The JD is allocated up to thirty pages in the proceedings of the IAU. Short summaries of invited and abstracts of contributed talks and posters will be included with space allocated in advance proportionate to the number of participants. Because of the very short time allocated to publication, published contributions will be due at the end of the joint discussion with no extensions.

Topics

- Eta Carinae: the 2009.0 event: Monitoring campaigns in X-rays, optical, radio, interferometry
- WR140 and HD5980: similarities and differences to Eta Carinae
- LBVs and Eta Carinae: What is the relationship?
- Massive binary systems, wind interactions and 3-D modeling
- Shapes of the Homunculus and Little Homunculus: what do we learn about mass ejection?
- Massive stars: the connection to supernovae, hypernovae and gamma ray bursters
- Where do we go from here? (future directions)

Follow up meeting at Observatoria Nacional August 15-16:

The 1.5 days allocated for the Joint Discussion will not cover all topics. More focused sessions addressing specific topics of interest to JD13 participants will continue on these systems after closing of the IAU General Assembly. A one to two day workshop will immediately follow the IAU General Assembly devoted to specific topics defined organized by request from attendees of the Joint Discussion. Orbital parameters, wind-wind collision physics and spectroscopic needs are three planned topics for this workshop. We encourage suggestions of additional topics well in advance of the IAU General Assembly. These might include discussion of molecular and dust formation in massive binary systems and future observational opportunities.

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