8 February 2008

London (UK)

Royal Astronomical Society Specialist Discussion Meeting

Depending on its initial mass, a star may end as a white dwarf or explode as a supernova. The dividing boundary is however ill-defined, and depends on the treatment of convection and mass loss. Asymptotic Giant Branch (AGB) stars do not ignite carbon and end up as carbon-oxygen white dwarfs. But if mass loss is weak the core may grow to reach the Chandrasekhar mass limit and explode as a thermonuclear supernova. Slightly more massive stars ignite carbon and, like AGB stars, they also undergo thermal pulses. These super-AGB stars may leave an oxygen-neon white dwarf, but their fate is unclear. They will either produce an oxygen-neon white dwarf or explode in an electron capture supernova and produce a neutron star. Red supergiants of initial mass as low as 8 solar masses have now been identified directly as the progenitors of type IIP supernovae. With the Initial Mass Function favouring the low mass end of the supernova progenitors, massive AGB stars contributing to nitrogen enrichment on timescales as short as tens of million years, and both supernovae and AGB stars competing for the title of most prolific dust factory in the early Universe, it is crucial to gain a better understanding of the boundary between massive AGB stars and the progenitors of core-collapse supernovae.

The meeting will start at 10:00 and lasts until 15:30. Besides contributed talks and discussion time, the meeting will be based around three keynote lectures: "Understood, uncertain and unknown physics of super-AGB stars", Richard Stancliffe, Cambridge University (UK) "Observational constraints on the most massive white dwarf progenitors", Kurtis Williams, University of Texas (USA) "Observational constraints on the masses of supernova progenitors", Stephen Smartt, Queen's University Belfast (UK) with an opening speech and closing remarks provided by Alvio Renzini, Universit'a di Padova (Italia).

Please register by 30 November 2007, especially (with a title and abstract) if you want to propose a talk. Ample space is available for posters.

The meeting is free to all Fellows of the RAS, but make sure you bring along your RAS member card! A small entry fee is charged for non-fellows, collected on the door: 15 pounds Sterling (or 5 pounds with a valid student card).

There will be no traditional proceedings, and hence no burden on your time after the meeting. However, we aim to place all electronic contributions (talks, posters, additional material if appropriate) on the web, and will announce this via the AGB Newsletter, Massive Stars Newsletter and arXiv.org. We also plan to write a summary article for publication in the RAS journal "Astronomy & Geophysics" shortly after the meeting, which we hope will also capture the essence of the discussions that took place.

See you in London!

Jacco van Loon (Keele University) and John Eldridge (Cambridge University) on behalf of the UK Working Group on Evolved Stars

Weblink: http://www.astro.keele.ac.uk/e-stars/ras2008/ras2008.html Email: jacco@astro.keele.ac.uk