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Wonderful" Stars

Tuesday, 9 July 2019 09:00 (1 hour)

As stars like the Sun age they undergo various dramatic changes. I will review what we know about the last stage of stellar evolution that is powered by nuclear fusion; know as the Asymptotic Giant Branch (AGB) phase. These extraordinary stars can be intrinsically a thousand times brighter than the Sun, and are a major source of elements, such as carbon, that will form new planets and even contribute to living creatures. The mass-loss process by which this material leaves the star is still poorly understood and is a focus of new theory and a variety of observations using telescopes around the world, including those in South Africa, and in space. A subgroup of these AGB Stars, the Miras (Latin for wonderful), are strongly variable, regularly changing their visual light output by a factor as much as a thousand times, on time scales ranging from one hundred to several thousand days. These Miras also have properties that make them useful distance indicators, as observations from SAAO have demonstrated. They will potentially be important to future studies of the distance scale of the universe using the James Webb Space Telescope and the next generation of extremely large ground-based telescopes.

Apply to be
 considered for a student
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No

Level for award
 (Hons, MSc,
   PhD, N/A)?

N/A

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