

Sixteenth Marcel Grossmann Meeting



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The curious case of Betelgeuse

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Betelgeuse is the nearest red supergiant, one of the brightest stars in our sky, and statistically speaking it would be expected to be “typical”. Yet it exhibits many features that seem “curious”, to say the least. For instance it has a high proper motion. It rotates fast. It has little dust. It dimmed unexpectedly. Is any of these, and other, phenomena atypical, and taken together does it make Betelgeuse atypical? This is important to know, because we need to know whether Betelgeuse might be a prototype of red supergiants in general, or certain subclasses of red supergiants, since we can study it in such great detail. It is also important to know as it may be a link to understanding other, apparently atypical cases such as supernova 1987A, and maybe even such exotica as Thorne-Zytkov objects. Studying this question in itself helps us understand how we deal with rarity and coincidence in understanding the Universe we live in.

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