

Modelling carbon-enhanced metal-poor stars

A surprisingly large fraction of metal-poor stars are found to be carbon-rich. In addition, many of these display enhancements of neutron capture elements which give clues to their origin. I will discuss what we think we know about these so-called carbon-enhanced metal-poor (CEMP) stars, with a focus on those that display barium enrichments. These CEMP stars are thought to be formed in binary star systems that formerly contained an asymptotic giant branch (AGB) star, which polluted its companion through mass transfer. I will review our picture of AGB nucleosynthesis at low metallicity, how we think mass transfer happens and what happens to material once it is accreted by the secondary. This will highlight the problems we have when we try to confront observed CEMP star abundances with predictions from increasingly detailed stellar models.

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