

CEMP Stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly



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CEMP Stars – Past Perspectives and Future Objectives

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It has been over a quarter century that the class of metal-poor stars known as carbon-enhanced metal-poor (CEMP) stars was first recognized. In that time, astronomers have recognized a number of sub-classes, apparently due to a variety of nucleosynthesis pathways. Most recently, the sub-class formerly referred to as CEMP-r/s has been shown to be due to the so-called intermediate neutron-capture process, one not appearing in the seminal work of B²FH (1957) and Cameron (1957). After a brief review of our current state of understanding of the CEMP stars, I will comment on objectives for future study that are still required -- including understanding the effects of NLTE/3D corrections to the apparent frequency of CEMP stars as a function of declining metallicity, identification of the likely environments in which various sub-classes of CEMP stars formed, and identification of the progenitors (and binary nature) associated with each sub-class.

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