

Old metal-poor stars: observations and implications on the GCE

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I summarize recent observational progress on measurement of the elemental abundances of early generation stars, which have recorded (and preserved) the first episodes of nucleosynthesis in the Galaxy. I discuss two major recent surveys, one just completed, one just beginning. The first, the Hamburg/ESO R-process-Enhanced Star (HERES) survey has obtained “snapshot” high-resolution spectroscopy of nearly 400 giants with $[Fe/H] < -2.0$, and is providing strong constraints not only on elemental abundance patterns for metal-poor stars, but also on the absolute frequency of various patterns, which must be accounted for in models of Galactic Chemical Evolution. The second survey, the Sloan Extension for Galactic Understanding and Exploration (SEGUE) will obtain medium-resolution spectroscopy of some 250,000 stars in the Milky Way, and is likely to detect some 20,000 stars with $[Fe/H] < -2.0$.

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