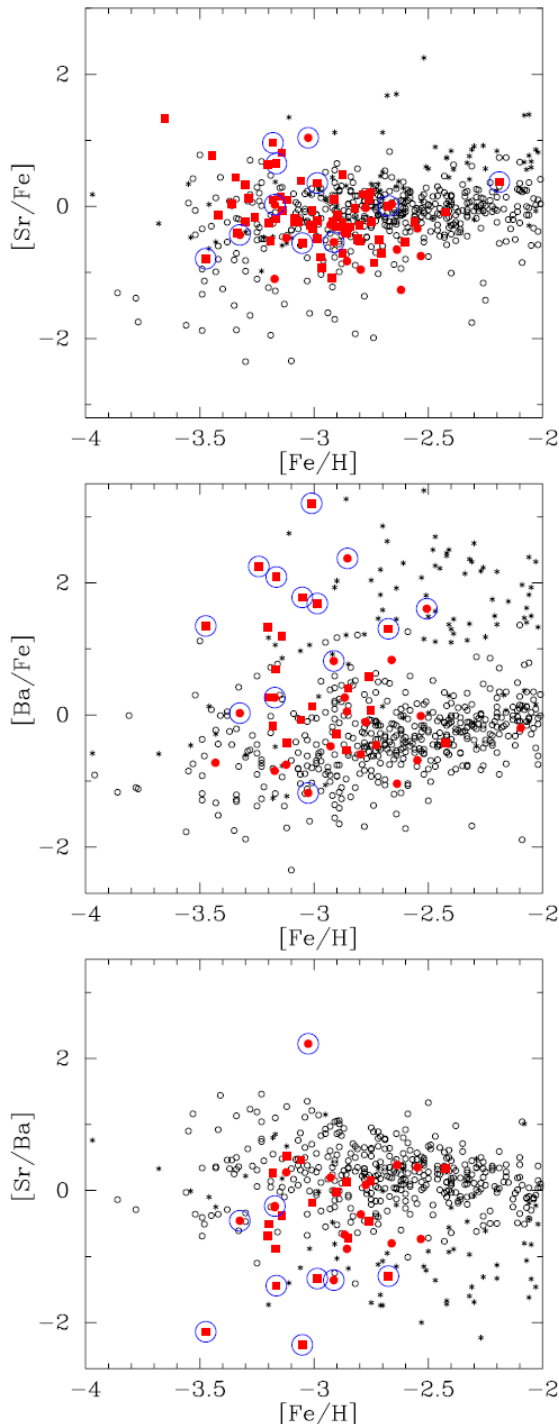


High-Resolution Spectroscopic Observations of a Large Sample of VMP Stars from SDSS/SEGUE



Abundance ratios of neutron-capture elements ($[Sr/Fe]$, $[Ba/Fe]$, and $[Sr/Ba]$) as a function of $[Fe/H]$, for the large sample of VMP/EMP stars. CEMP stars ($[C/Fe] > +0.7$) are over-plotted by large open circles (blue).

JINA researchers and colleagues have recently determined chemical compositions, based on high-resolution spectroscopy, for 137 candidate very metal-poor (VMP) and extremely metal-poor (EMP) stars selected from the Sloan Digital Sky Survey (SDSS) and its first stellar extension, the Sloan Extension for Galactic Understanding and Exploration (SEGUE). Most of the sample (approximately 80%) are main-sequence turnoff stars, including dwarfs and subgiants. **Four cool main-sequence stars, the most metal-deficient such stars known, are included in the remaining sample.**

These abundance measurements reveal that 70 stars in the sample have $[Fe/H] < -3$, adding a significant number of EMP stars to the currently known database. Our analyses determine the abundances of eight elements (C, Na, Mg, Ca, Ti, Cr, Sr, and Ba) in addition to Fe. The fraction of carbon-enhanced metal-poor (CEMP) stars ($[C/Fe] > +0.7$) among the 25 giants in our sample is as high as 36%, while only a lower limit on the fraction (9%) is estimated for turnoff stars.

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