

Plenary Talk

## GALACTIC ARCHAEOLOGY WITH VERY METAL-POOR STARS

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The first generation of stars was formed 100-200 million years after the birth of the universe. No true First Star made up entirely of the H, He, and Li produced in the Big Bang has yet been discovered, but several second generation stars with exceptionally low iron content, down to as little as 1/1,000,000 of the solar value, have been found both in the Milky Way halo and bulge and in nearby dwarf galaxies. The most chemically pristine stars we know of have supposedly been enriched by only one or few individual supernovae or hypernovae events and their detailed abundance patterns are thus invaluable to constrain the nucleosynthesis of the first stars and Big Bang itself. However, to precisely determine the chemical compositions of very metal-poor stars we must first abandon the standard 1D, LTE models traditionally used to predict synthetic spectra.