

Abstract Submitted
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Rejuvenated or Young? What is the Origin of These Ostensibly Old Stars? DAN FILLER, INESE IVANS, The University of Utah — We have investigated a unique class of stars known as blue metal-poor (BMP) stars. These stars have been found in globular clusters (GC), where they are known as “blue stragglers” as well as in the halo of the Milky Way Galaxy (MW). There are two likely origins for these unlikely stars. In GCs, where stellar densities are 1000 times higher than the stellar density of the solar neighborhood, the crowded conditions lead to close encounters and stellar collisions, and in some cases, coalescence. The resulting more massive star is hotter and bluer. While this phenomenon explains the presence of blue stragglers, it does not account for the presence of BMP in the sparsely populated regions in the halo of the MW. It is possible that we are observing relatively younger stars that originated in dwarf galaxies captured by the MW. Stars in dwarf galaxies are often found to possess low abundances of elements formed in supernovae. In contrast, blue stragglers are often rich in elements produced by slow-neutron capture processes in intermediate mass stars. In this talk, I will present the status of this study: the stellar chemical compositions we have derived, the BMP categorizations, and the implications that these have on the construction/evolution of the stellar populations in the MW.

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