

The Origin of CEMP-no Groups in the Milky Way: Connection to the Satellite Dwarf Galaxies

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One of the primary goals of Galactic Archaeology is to understand the nature of the first generations of stars, their chemical enrichment, and their contribution to Galactic halo formation. However, only their direct descendants, the CEMP-no stars, are available for indirect studies of their properties. Yoon et al. (2016) claimed that there could be multiple pathways to form the halo CEMP-no stars, due to the complex morphology present in their A(C)-[Fe/H] space, comprising at least two distinctly different groups (Group II and Group III).

In this talk, I will provide two important recent results regarding the origin of the CEMP-no groups, along with a new discovery of a CEMP-no Group III star in an ultra-faint dwarf galaxy, Canes Venatici. First, I demonstrate that the bifurcated behavior of the CEMP-no stars into Group II and Group III stars is also present among stars in satellite dwarf galaxies, consistent with the idea that the field CEMP-no stars are the disrupted remains of numerous low-mass mini-halos. Secondly, I will show that understanding this morphology requires not only various nucleosynthetic pathways, but also relies on knowledge of the masses of their host mini-halos, i.e., the dilution of the yields from the first stars.

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Talk/Poster

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