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CERES metal-poor accreted star candidates: novel approaches to Galactic archaeology

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The Milky Way is a living mosaic of stars of different origins: some were formed *in-situ*, while others were accreted from dwarf galaxies that have since been disrupted. To reconstruct the galaxy's formation history, these accreted populations must therefore be identified and characterized. These ancient relics are mainly located in the stellar halo, but the debris from different progenitors often overlaps in dynamic space, making it difficult to disentangle their individual contributions.

We have therefore turned to the **CERES** (Chemical Evolution of R-process Elements in Stars) sample, comprising 52 metal-poor giant stars with metallicities between $-3.6 \leq [\text{Fe}/\text{H}] \leq -1.5$, to search for accreted members using a chemodynamical approach. We determined precise abundances for light elements, including alpha-elements, as well as neutron-capture species up to Eu. By combining this rich chemical inventory with Gaia-based orbital parameters, we were able to assign some CERES stars to known merger remnants such as Gaia-Enceladus, Sequoia, and Thamnos. This chemodynamical analysis enables us to identify additional candidate members of these progenitors and to reconstruct their disruption histories, even when their kinematic signatures overlap.

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