

## X15a Exploring the origin of the mysterious stellar stream “Leiptr” with Galactic Archaeology:III

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In the stellar halo of the Milky Way Galaxy, over 100 stellar streams, remnants of orbiting dwarf satellite galaxies and globular clusters, have been identified (Mateu 2023). The Leiptr stream is considered a candidate originating from the disruption of a globular cluster belonging to another galaxy (Ibata et al. 2019; Bonaca et al. 2021). Recently, Atzberger (2024) measured the chemical composition of the Leiptr stream using high-dispersion spectroscopic data, suggesting that its progenitor may have been an ultra-faint dwarf galaxy (UFD). However, this conclusion is based on limited observational data and requires further investigation.

To examine the origin of the Leiptr stream, we conducted follow-up observations and analyses. Using high-dispersion spectroscopy with the Subaru Telescope’s HDS, we measured the chemical composition and dynamical properties of stars associated with the Leiptr stream. Our results show that the chemical abundance patterns of the observed stars are consistent with typical features of UFD stars, while also exhibiting characteristics found in globular cluster stars. Additionally, we explored methods for statistically processing photometric metallicity data from the Pristine survey (Martin et al. 2024) to supplement the limited spectroscopic data.

We present and discuss these results.