

## X42a Exploring the origin of the mysterious stellar stream “Leiptr” with Galactic Archaeology:II

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In the stellar halo of the Milky Way, more than 100 stellar streamers, which are left behind by orbiting dwarf satellite galaxies and globular clusters, have been found (Mateu 2023). The Leiptr stream is considered a candidate object originating from a disrupted globular cluster of 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 further investigation is needed.

To further investigate the origin of the Leiptr stream, we conducted follow-up observations and analyses. Using high-dispersion spectroscopy with the Subaru Telescope HDS, we measured the chemical composition and dynamical properties of stars associated with the Leiptr stream. Our results show that the chemical abundance pattern of the observed star aligns with typical features of UFD stars, yet it also exhibits characteristics associated with stars in globular clusters. This dual nature raises the intriguing possibility that the Leiptr stream originated from an unknown system bridging the properties of UFDs and globular clusters.

In this presentation, we will discuss our findings from these observations and their implications for a new understanding of the progenitor system of the Leiptr stream.