X55a A Pristine Look at Extended Globular Cluster Structures

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An exciting recent development in Galactic Astronomy has been the discovery that several Milky Way Globular Clusters (GCs) possess significantly extended structures, sometimes reaching out to a few hundred parsecs (corresponding to many half-mass radii). The number of GCs with extended structures (either in the form of tails or spherical diffuse envelopes) is unknown but has grown since the release of the Gaia Space Mission. The Gaia mission has transformed our view of these low-density structures, enabling member stars to be efficiently and reliably separated from the dominant foreground/background contaminant populations. However, Gaia lacks metallicities for many of the stars found in and around GCs. The Pristine survey provides metallicities for millions of stars, complementing the astrometric data from Gaia, and offers the opportunity to explore the stellar populations at the tidal radius and beyond for many Milky Way GCs. In this contribution, we will explore a selection of GCs with extended structure and present the findings of a survey of [Fe/H] distributions beyond the tidal radii, which we relate to the stellar populations within. We will discuss the origins of the extended structures, and how upcoming instruments such as WEAVE, 4MOST and PSF will significantly advance our understanding of their origin.