Contributed Talk

Splinter Populations

Uncovering metal-poor stars in the Galactic bulge with the Pristine survey

A. Arentsen[1], E. Starkenburg[1], N. Martin[2,3], K. Venn[4]

[1] *Leibniz-Institut für Astrophysik Potsdam (AIP), Germany*
[2] *Université de Strasbourg, CNRS, Observatoire astronomique de Strasbourg, France*
[3] *Max-Planck-Institut für Astronomie, Heidelberg, Germany*
[4] *Dept. of Physics and Astronomy, University of Victoria, Canada*

The oldest and most metal-poor stars are crucial for our understanding of the early universe, because they likely carry the imprint of the first supernovae. Studying these stars in detail helps our understanding of (early) star formation, supernovae and the early period of galaxy formation. It is predicted by several N-body and hydrodynamical simulations that the fraction of stars that are metal-poor and old is highest towards the centers of galaxies. Therefore, it appears that the Galactic bulge is an interesting location to search for the oldest and most metal-poor stars in our Galaxy, even though in general it is a relatively metal-rich environment.

The Pristine survey is a metal-poor targeted survey, which uses the narrow-band Ca H&K filter on CFHT MegaCam to find candidate metal-poor stars in the Galactic halo. Metal-poor stars are expected to have weak Ca H&K features, which makes it possible to select metal-poor candidates among stars of the same colour using dereddened (broadband) photometry. The most metal-poor candidates are then followed up with spectroscopy. This method has been shown to work excellently for the main Pristine survey, focussing on the Galactic halo.

Here, we present the first results of a pilot survey testing the capabilities of Pristine in the Galactic bulge. Compared to the halo, the bulge is a much more crowded region and has significantly higher extinction. The first results are promising, and we hope to significantly extend the sample of bulge metal-poor stars with Pristine.