Contribution ID: 70

Homogeneous abundances in the LMS-1 dwarf galaxy stream and its globular clusters: extreme Ba spreads in the galaxy and remarkable chemical consistency in Eu

Thursday 12 June 2025 17:50 (20 minutes)

The LMS-1/Wukong stream represents the only chance locally to study a low-mass dwarf galaxy and globular cluster system. As a low mass dwarf galaxy, it also offers insight into the extreme chemical abundances and rare nucleosynthesis now synonymous with these objects. Currently on a polar orbit, just north of the Galactic Bulge, LMS-1 was likely a major contributor to the build up of the inner Milky Way at early times and given the close proximity in phase space and metallicity to the globular clusters, NGC 5024 and NGC 5053, it is likely these clusters were accreted alongside LMS-1. For the first time, we have performed homogeneous abundance measurements of stars in LMS-1, NGC 5024 and NGC 5053 using high resolution spectroscopy to understand the chemical similarities and differences between the galaxy and its clusters. We find a large >1 dex spread in Ba in LMS-1 driven by two extremely s- and r-process deficient stars. This spread is not seen in the two clusters and the dwarf galaxy, suggesting that Eu remains a promising tag linking clusters to their host galaxies. The nucleosynthetic implications of this finding and further results from this remarkable system will be presented in this talk, linking back to the formation of low-mass dwarf galaxy/globular cluster systems and extreme nucleosynthesis at early times.

Authors: MONTY, Stephanie (University of Cambridge); MATSUNO, Tadafumi (ARI, Heidelberg University); Dr YUAN, Zhen (Nanjing University)

Presenter: MONTY, Stephanie (University of Cambridge)