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Exploring Neutron Capture Elements in Globular Clusters with the GALAH Survey

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Contrary to the traditional view of globular clusters as single stellar populations, some ancient star clusters exhibit remarkable diversity in their neutron capture process element abundances. The Galactic Archaeology with HERMES (GALAH) Survey provides detailed measurements of key neutron capture process elements, including Sr, Y, Zr, Mo, Ru, Ba, La, Ce, Nd, Sm, and Eu. Recent observational campaigns have expanded the number of globular cluster stars included in the survey, providing an opportunity to significantly enhance our understanding of these relics of the early Universe. In this talk, I will present the quantity, quality, and scientific potential of the globular cluster spectra obtained by the GALAH survey. I will also address critical caveats and limitations in interpreting GALAH-derived neutron capture element abundances, informed by insights from globular cluster analyses. Lastly, I will highlight ongoing efforts to investigate the third s-process peak in anomalous star clusters, focusing on lead (Pb) abundances, through high-resolution observations with the Magellan MIKE spectrograph.

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