[ST-01] Abundances of Neutron-capture Elements of Metal-Poor Stars

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We have derived abundances of heavy neutron-capture elements of metal-poor stars within metallicity range $-3.0 \lesssim$ [Fe/H] $\lesssim -0.5$ adopting newly improved transition probabilities using high resolution and high signal-to-noise ratio spectra obtained by BOES at BOAO. For elements whose absorption lines are very weak or have negligible small hyperfine splitting and isotope shift, we derived elemental abundance directly from equivalent widths and for the elements showing significant hyperfine and isotopic shifts like Ba(Z=56), La(Z=57), and Eu(Z=63), spectrum synthesis method was used for abundance determination. [Ba, La/Fe] is nearly constant ([Ba, La/Fe]$\sim$0) for the metallicity range $-2 \lesssim$[Fe/H]$\lesssim$0, otherwise [Sm, Eu/Fe] show α-element-like trend along [Fe/H]. Hafnium abundances are newly determined and [Hf/Fe] shows similar trend of that of [Eu/Fe].

[ST-02] Globular Clusters with the Extended Horizontal-branch as Remaining Cores of Galaxy Building Blocks

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The relics of building blocks that made stellar halo and bulge are yet to be discovered unless they were completely disrupted throughout the history of the Galaxy. Here we report that about 25% of the Milky Way globular clusters have characteristics of the remaining cores of these early building blocks rather than genuine star clusters. They are clearly distinct from other normal globular clusters in the presence of extended horizontal-branch and multiple stellar populations, in mass (brightness), and most importantly in orbital kinematics. Based on this result, a three-stage formation picture of the Milky Way is suggested, which includes early mergers, collapse, and later accretion.