
Detailed Abundances of Red Clump Stars in Old Open Clusters

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Abstract

The chemical composition of stars is one of the most important parameters in stellar astrophysics and a precise determination can test the theory of stellar evolution. We obtained high-resolution spectra for a red clump star in the old open cluster NGC 6819 with the FIES spectrograph at the Nordic Optical Telescope. This open cluster was observed with the Kepler spacecraft, allowing asteroseismic analyses and a precise surface gravity determination. This aids the determination of stellar parameters from spectroscopy, which in turn will give a more precise determination of the chemical composition. To test our analyses procedures, we have also obtained spectra for two additional red clump stars in the two well-studied old open clusters, M67 and NGC 188. Here we present our preliminary results for the stellar parameters and metallicities.

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