

Abstract Submitted
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Long Period Variable Stars in Globular Cluster NGC 6553 ELISABETH KAGER, Bowling Green State University — Long period variable stars (LPVs) are red giants or supergiants that vary in brightness as they pulsate radially. Their periods range from months to several years, and amplitudes can be many magnitudes. Studying these pulsation properties of LPVs as a function of position on the giant branch helps to constrain models of stellar structure, evolution, and pulsation. Studying LPVs in environments with known metallicity, age, and distance allows us to control these variables; globular clusters are an excellent environment. This study targets the metal-rich ($[Fe/H] = -0.2$) bulge globular cluster NGC 6553 in which variables have not been studied very thoroughly. Over the past year, 49 nights worth of data have been taken with PROMPT 4, a motorized telescope positioned at Cerro Tololo, Chile. Images have been processed, combined, and photometered and the stars' (X,Y) positions and brightness values were determined. The variability indices of the magnitudes of the stars between nights were used to find LPVs and plot their brightness as a function of time. These light curves will be characterized for their amplitude, period, and regularity; these can be used to compare to LPVs in other clusters at the same/other metallicities. A color-magnitude diagram will be created onto which the LPVs' position can be plotted to understand how far they are up the red giant branch to get a better understanding of their evolutionary state.

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