

Imaging dense globular clusters like M3 and M15

During the Society for Astronomical Sciences 29th Annual Symposium on Telescope Science (held May 11-13, 2010 at Big Bear Lake, CA) the following work was published:

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Abstract

The objective for this study will be to explore new photometric methods for amateur telescope observations of 'cluster variables' and globular clusters using CCD photometry. Amateur telescope photometric observations of 'cluster variables' in globular clusters are limited because of dense, crowded star fields. However, with improvements in CCD photometric methods, there are opportunities to observe cluster variables, such as RR Lyrae and SX Phoenicis type stars, through time series analysis of multiple exposures of whole cluster images. Traditional methods for determining light curves in 'field' RR Lyrae and SX Phoenicis type stars require selection of comparison and perhaps check stars to perform differential photometry; i.e. subtraction of flux density measures between a non-variable (comparison star) and the variable star as they change in magnitudes over time. We explore the possibility of measuring the variable star's periodicity in areas, or sections of a globular cluster, to sort different stellar type 'cluster variables' within each

section of the cluster. There are areas or regions of a globular cluster which 'pulsate' at a variable rate which is representative of 'cluster variables' that make up that region. For example: we have detected different variability periods within the 'core' of a cluster compared to the outer circumference areas of the cluster.

A link to the work can be found to NASA/ADS: [2010SASS...29..129H](#)