Determining the Ages and Distances of Open Clusters

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This study evaluates the age and distances of four open cluster targets: NGC 2509, NGC 2483, NGC 2482, and NGC 6705, in order to reevaluate previous published ages and distances using modern CCD photometric methods. Images of the targets were taken from December 2016 to April 2017 using the Las Cumbres Observatory. Images were stacked according to filter color and spatially filtered allowing only the stars within the limits of cluster to be used for analysis. Photometry was performed on each stacked image and color-magnitude diagrams of the clusters were created. Color magnitude diagrams for several varying ages of ages were generated with the CMD 2.9 program and fit to defining features of the clusters. The ages of the four targets are calculated. Distances were derived using the distance modulus, found by graphing apparent magnitudes and overlaying the determined best fit isochrone. Apparent magnitudes were transformed from instrumental magnitudes using standard star magnitudes taken before and after the target images. The distances of the four targets are calculated.

Awards Won:
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