

Photometric studies for Color magnitude diagram and Mass distribution of Globular cluster

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We present BV Photometry for the globular clusters (GCs) M3 (NGC 5272), M 92(NGC 6341) and M107 (NGC 6171), which are analyzed by Aperture Photometry Tool (APT). All of optical images were taken by 2.4m Telescope at Thai National Observatory in Chiang Mai, Thailand. The magnitudes of stars in three globular clusters were determined. Furthermore, the luminosity of each star was converted based on its BV magnitude, which accordingly relates to color-magnitude diagram (CMD). CMD can describe range of Turn-off point and ages of cluster. In addition, we also use mass-luminosity relation for create mass distribution of three GCs. In this study, CMD of above clusters were analyzed and compared with the result from previous studies by Buonanno, R. et al. (1994), Stetson, Peter B. and Harris William E. (1988) and Ferraro, F. R. et al. (1999). The similar evolution was shown in CMD, although our studies have less point of data. In addition, we used mass-luminosity relation to create mass distribution of three GCs. For M3, M92 and M107 we found that most of stars' population has mass range between 3.81-4.45 solar mass, 0.98-1.59 solar mass and 1.31-2.50 solar mass respectively.

Keyword: Globular cluster, Color magnitude diagram, mass distribution

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