

[ST08] Deep near-IR photometry of eight metal-poor globular clusters
in Galactic bulge and Halo

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High quality J, H, K' images were used to investigate the morphological properties in the near-infrared CMDs of eight metal-poor globular clusters. The obtained near-infrared CMDs are moderately deep to detect the base of the RGB, the SGB and the MSTO for most of the observed clusters. Several photometric parameters to describe the RGB shape and the RGB slope have been measured from the fiducial normal points of the CMDs. The RGB parameters for the observed clusters follow the previous empirical calibrations of the RGB shape parameters to the cluster metallicity. The magnitudes of the RGB bump and tip for the observed clusters also follow the empirical calibrations of previous studies, and are in good agreement with the theoretical prediction of the Yonsei-Yale isochrone. The luminosity functions of horizontal branch stars in the observed bulge clusters, except for NGC 6717, show a trend that the fainter hot HB stars are dominated in the relatively metal-poor clusters. This indicates that NGC 6717 would be an extreme example of the second-parameter phenomenon for the bulge clusters.

[ST09] Relative Ages of Galactic Globular Clusters

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We present relative ages for a sample of Galactic globular clusters (GCs) using their color-magnitude diagrams (CMDs) observed with the HST/WFPC2 camera in the F439W and F555W bands. The ages have been obtained by a differential comparison of the CMDs of GCs with similar chemical composition using $\Delta(B-V)$ method, the color difference between main-sequence turnoff and the lower red-giant branch. All metal-poor GCs with $[Fe/H] < -1.7$ show old (~ 12 Gyr) ages and are coeval. All the metal-rich GCs with $[Fe/H] > -0.8$ are found to be ~ 2 Gyr younger than the most metal-poor ones, with relatively small age dispersion. Intermediate-metallicity clusters ($-1.7 < [Fe/H] < -0.8$) are on average 1.5 Gyr younger than the most metal-poor counterparts, with a large age dispersion and a total age range of ~ 2 Gyr.