[ST10] Deep near-IR photometry of eight meral-poor globular clusters in the Galactic bulge and halo

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High quality J, H, and K′ images are used to investigate the morphological properties of the near-infrared color-magnitude diagrams for five metal-poor bulge globular clusters and three halo clusters. Photometric parameters to describe the RGB shape, i.e., the colors at fixed magnitudes of $M_K=M_H=\{-5.5, -5, -4 \text{ and } -3\}$, the magnitudes at fixed colors of $(J-K)_o=(J-H)_o=0.7$, and the RGB slope, have been measured from the fiducial normal points of the CMDs. We also measured the near-infrared magnitudes of the RGB bump and tip on the luminosity function of the RGB stars for each cluster. The RGB parameters of the observed metal-poor bulge and halo clusters are consistent with the previous empirical relationships between the RGB parameters and the cluster metallicity for metal-rich bulge clusters and halo clusters. The near-infrared magnitudes of the RGB bump and tip are in good agreement with the theoretical prediction of the Yonsei-Yale isochrone.

[ST11] Age Distribution of Galactic Globular Clusters using HST Snapshot photometry

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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 using △(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 ~0.8 Gyr younger than the most metal-poor ones. Intermediate-metallicity clusters (-1.7 < [Fe/H] < -0.8) are on average 2 Gyr younger than the most metal-poor counterparts, with a large age dispersion and a total age range of ~2 Gyr. We also discuss the correlation of relative ages with the horizontal-branch morphologies of GCs.