

Spectra of globular clusters in the Sombbrero galaxy: evidence for spectroscopic metallicity bimodality

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We present a large sample of over 200 integrated-light spectra of confirmed globular clusters (GCs) associated with the Sombbrero (M104) galaxy taken with the DEIMOS instrument on the Keck telescope. A significant fraction of the spectra have signal-to-noise levels high enough to allow measurements of GC metallicities using the method of Brodie & Huchra (1990). We find a distribution of spectroscopic metallicities ranging from $-2.2 < [\text{Fe}/\text{H}] < +0.1$ that is bimodal, with peaks at $[\text{Fe}/\text{H}] \sim -1.4$ and -0.6 . Thus the GC system of the Sombbrero galaxy, like a few other galaxies now studied in detail, reveals a bimodal spectroscopic metallicity distribution supporting the long-held belief that colour bimodality reflects two metallicity subpopulations. This further suggests that the transformation from optical colour to metallicity for old stellar populations, such as GCs, is not strongly non-linear. We also explore the radial and magnitude distribution with metallicity for GC subpopulations but small number statistics prevent any clear trends in these distributions.

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