

Star Formation History of the Sextans Dwarf Spheroidal Galaxy

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We present a study of the stellar populations and star formation history of Sextans dwarf spheroidal(dSph) galaxy, based on the deep photometry that reaches below $V \sim 24$ mag. Our photometry were obtained with the wide-field mosaic CFH12K CCD with $42' \times 28'$ field coverage and BVI filters at CFHT (3.6m telescope), and were calibrated using the data obtained with 2K CCD at the 1.8m telescope of the BOAO in Korea. VI Color-magnitude diagram of the Sextans reveals a main sequence (MS) turnoff at $V \sim 23.5$ mag, a prominent population of blue stragglers (BS), a well-defined red giant branch (RGB), and a combination of predominant red horizontal branch (RHB) and weak blue horizontal branch (BHB). Two bright red giant bumps in the RGB are clearly seen. In addition, there are found to be about 90 variable star candidates most of which are probably RR Lyraes. Population gradients are also seen: e.g., the RHB is more strongly centrally concentrated than the BHB. The distance to this galaxy is estimated from the I-band magnitude of the tip of the RGB, and the metallicity is measured from the color of the red giant branch. We have investigated the star formation history of this galaxy using the population synthesis models.