

V_Rc Photometry of Dwarf Cepheids

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Abstract

In this paper, we present V_Rc photometric observations of four dwarf cepheids : YZ Boo (P=0.^d104, V=0.^m5), AD CMi (P=0.^d123, V=0.^m5), XX Cyg (P=0.^d135, V=0.^m5), EH Lib (P=0.^d088, V=0.^m7). The light curves were obtained at west Mountain Observatory, Provo, Utah on 14 nights from 1983 through 1986 and contain 589 points in each of the Vand R bands in the Cousin photometric system. We derived empirical relationship between stellar surface brightness parameter(F_v) and (V-R_c) colour in Cousins system appropriate to dwarf cepheids. Also theoretical counterpart to this relation has been calculated from model atmospheres. The theoretical relation is in reasonable agreement with the empirical relation but reveals small but significant sensitivities to surface gravity and metallicity. Both relations and the observed V_Rc data were used to apply the surface brightness method to estimate radius of four dwarf cepheids.