THE DISTANCE AND AGE OF THE GLOBULAR CLUSTER M5

Bruce W. Carney
University of North Carolina

David W. Latham
Center for Astrophysics

Rodney V. Jones
University of North Carolina

Judy A. Beck
University of North Carolina

Abstract. Using optical and infrared photometry and echelle spectroscopy of variable V8 in the globular cluster M5, we derive a cluster distance of 6.8 kpc using the Baade-Wesselink method. This agrees with the prediction obtained for the cluster's metallicity using a sample of 19 field stars studied by us and by Liu and Janes (this volume). It also agrees well with estimates for M_V obtained from statistical parallaxes of field stars. It agrees as well with the main sequence fitting procedure where we have used only HD 103095, the field halo dwarf with the most accurate trigonometric parallax (3% error), and which has a metallicity almost identical to that of M5. The star is also cool, hence unevolved, and is not a binary. Using the luminosity of the cluster's main sequence, both Yale and Victoria isochrones yield a cluster age of 18 ± 3 Gyrs.