

PROPER MOTION STUDIES OF GLOBULAR CLUSTERS

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Yerkes refractor plates of M3, M5, M13, M15, and M92 have yielded proper motions for a few hundred stars in each cluster with typical standard errors $\sim 0.02 \text{ cent}^{-1}$. Membership probabilities have been derived, leading to color-magnitude diagrams essentially free of field star contamination.

Marginal detections of the internal proper motion dispersions in M15 and M92 indicated isotropic velocity dispersions, but improved measurements are planned in the near future to check this. The dispersions in M3 and M13 are isotropic near the cluster centers but become anisotropic at larger radii. Internal motions were detected in M5 and are probably isotropic but this cluster could not be measured at large radii.

Plates from Yerkes and other observatories are now being obtained to derive membership, but probably not internal motions, in M2, M22, M71 and possibly additional clusters.

REFERENCES

- M3: Cudworth, K.M.: 1979, *Astron. J.* 84 (Sept.).
M5: Cudworth, K.M.: 1979, *Astron. J.* (submitted).
M13: Cudworth, K.M. and Monet, D.G.: 1979, *Astron. J.* 84, 774.
Cudworth, K.M.: (in preparation).
M15: Cudworth, K.M.: 1976, *Astron. J.* 81, 519.
M92: Cudworth, K.M.: 1976, *Astron. J.* 81, 975.