

SURFACE BRIGHTNESS PROFILES OF 68 GLOBULAR CLUSTERS
DERIVED FROM ELECTRONIC CAMERA RECORDINGS

Gerald E. Kron and Katherine C. Gordon
Pinecrest Observatory
416 N. Bertrand Street
Flagstaff, Arizona 86001

Anthony V. Hewitt
U.S. Naval Observatory
Flagstaff, Arizona 86001

Images of 68 globular clusters have been recorded in 125 exposures made with the electronic camera of the U.S. Naval Observatory on the 24-inch, 40-inch and 61-inch reflecting telescopes at the Flagstaff Station. The images were electronically malfocussed to allow the integration of light from the fainter cluster stars without saturation of the central portions of the brighter star images. Spacial information thus lost was partly regained by subsequent linear deconvolution of the cluster profiles by means of a star profile used as the point spread function.

The cluster images, generally recorded on Ilford L-4 nuclear track emulsion, were scanned with a square raster by means of the PDS microdensitometer of the Lowell Observatory. The density data were reduced with the Hewlett Packard 9825A computer system of the Pinecrest Observatory.

The method used here has the advantage over real-time photoelectric photometry of recording all of the data simultaneously and of using all of the data contained in the cluster. In addition, the data are permanently available in the laboratory for subsequent important procedures such as centering, setting background level, and editing for eliminating the effects of bright field stars.

Although over 90% of the data have been transferred to tape, the data for only 13 clusters have so far been reduced. For these objects we have found that agreement with the single mass models of King (1966) is generally quite good.

REFERENCE

King, I.R.: 1966, *Astron. J.* 71, 64.