

UBVI CCD Photometry of M11

II. New Photometry and Surface Density Profiles

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Extensive UBVI CCD photometry has been obtained for the intermediate-age open cluster M11 (NGC 6705). From this new photometry we derived the cluster parameters ($V_o - M_V = 11.^m55 \pm 0.^m10$, $E(B-V) = 0.^m428 \pm 0.^m027$, and radius = 16'), and age ($\log t_{\text{age}} = 8.4 \pm 0.1$). We also derived density profiles and confirmed the mass segregation in M11. The slope of the mass function increases systematically with increasing radius from the centre. We also confirmed the existence of main sequence (MS) field stars having similar photometric characteristics to M11. A large population of field red giant stars were also found in the observed fields.

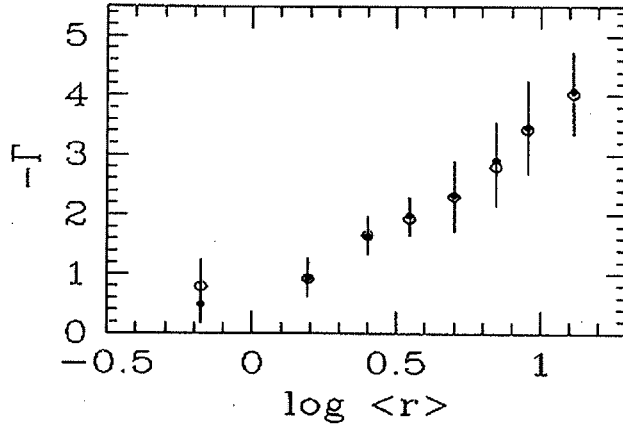


Fig. 1. The radial variation of the mass function slope. The filled symbols represent the slope calculated from the incompleteness-uncorrected data, while the open symbol denotes the slope from incompleteness-corrected data. The completeness correction affects the slope at the cluster centre, however the trend of systematic variation of the slope is lessened, but not changed.