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THE NATURE OF THE VARIABLES IN M13

Osborn and Rosenzweig (IBVS No 1126, 1976) recently suggested that available photometry of variable No. 1 in M13 shows the presence of a bump in the light curve at a phase which when correlated with theoretical models (Stobie, Observatory 93, 111, 1973) would imply a mass of  $0.2M_{\odot}$ . In view of the importance of such a result for understanding the evolution of globular cluster stars we have obtained improved photographic photometry of this and other variables in M13.

The observational material consists of a series of B & V plates taken with the 100" Mt Wilson reflector and kindly loaned to us by Dr Margaret Penston. We have calibrated the plates using the photometry of Cathey (A.J. 79, 1370, 1974). The analysis of the V plates is now complete and the descending branch of the light curve of variable 1 is well covered by the observations but shows no evidence for the suggested bump. On the other hand the curve appears to show a bump on the rising branch which according to the precepts of Stobie gives  $R = 8.7R_{\odot}$  and  $M = 0.55M_{\odot}$ . These are more in line with the values normally associated with the later stages of evolution in globular clusters.

Our data have further us to estimate the mean magnitudes of the RR Lyrae stars, variables Nos. 5, 8 and 9 which we find to be significantly fainter than the values adopted by Sandage (Ap.J., 162, 841, 1970). These stars therefore do occur at the magnitude level of the horizontal branch in M13 and it is no longer necessary to consider them as extraordinary in this respect.

Reduction of the data to obtain colours for the variables is in progress and full details will be published elsewhere.

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