

VARIABLES IN NGC 4590

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A photoelectric sequence has been set up in the Oosterhoff Type II cluster NGC 4590 (M68) and UBV photographic photometry has been secured for all the uncrowded stars using the Radcliffe 1.9 m telescope. A series of 40 plates in each of UBV have enabled light and colour curves to be obtained for all the uncrowded RR Lyrae variables. For most of these, periods were found very similar to those found by Oosterhoff. One star, however, showed variable amplitude from night to night and great difficulty was encountered in fitting a single period. Subsequent p.e. photometry with the 1.0 m SAAO reflector has indicated that this RR Lyrae variable is pulsating in at least two modes. The mean colour is that of the transition from fundamental to first overtone pulsators, as shown by the other *ab* and *c* type variables in the cluster. The two periods found are 0.526 and 0.392 days with amplitudes 0.39 and 0.47 mag indicating a ratio $P_1/P_0 \sim 0.745$. Further observations are planned to give an accurate value for this ratio and to obtain simultaneous radial velocities to give mass and radius information.