

REPORT ON THE CAPE PHOTOGRAPHIC SURVEY

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Since the last report (Clube, 1970), the Cape fourfold overlapping survey of the southern hemisphere has been completed. Approximately one half of the ~ 6000 plates have now been transferred to Herstmonceux for measurement. The measurement procedure is two staged: initially some 300 of the brightest stars on each of one non-overlapping set of these plates are picked out visually and paper tape listings of rough (x, y) co-ordinates are produced with a D-Mac machine. After some computer editing, these tapes are used to generate search tapes for measuring all the plates on a GALAXY machine. Some 1100 plates have now been measured this way, but the advance to GALAXY measurement has not yet been made on any significant scale. This is because of two difficulties which it is hoped to resolve in the near future, namely the existence of a small astrometric magnitude equation in GALAXY, and the presence on some of the plates of small glass splinters which can damage the 'nose cone' of the measurement optics as the plate is tracked beneath it. The technique of reduction and analysis is not described here, but it may be mentioned that the anticipated relative positional accuracy of $\sim 0''.05$ is being achieved over fairly wide areas of the sky.

DISCUSSION

Strand: It seems difficult to believe that a star position is obtained with a mean error of $0''.05$, which means 0.5μ on the plate, in view of the fact that the overlapping plates do not contain the same reference stars.

Clube: The typical external error of one 'plate-star' averaged from two exposures on each plate, after local smoothing of the system with the overlaps, is of the order of one micron. With each star appearing on at least four separate plates, the mean error approaches $0''.05$.

Reference

Clube, S. V. M.: 1970, *Trans. IAU XIV*A, 43.