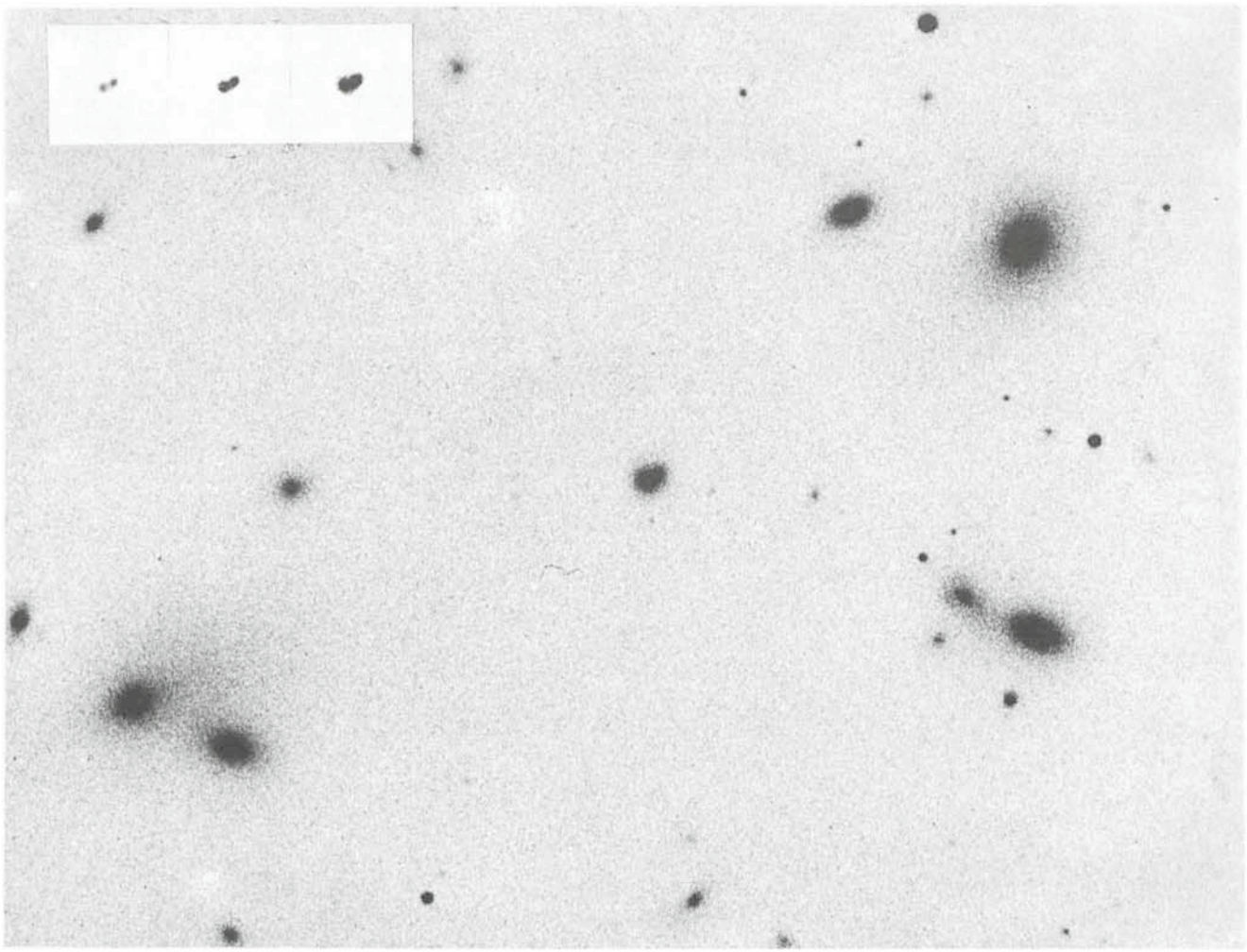

Fig. 1. — *This plate of the cluster of galaxies Klemola 44 was obtained by Dr. Danks at the prime focus of the 3.6 m telescope on IIa-O emulsion behind an ultraviolet-cutting filter GG385. Plate No. 985; exposure time 10 minutes. It is here reproduced in negative, i.e. as the original plate looks like, in order to bring out better the halos around the galaxy pairs. Note that the central object is a very close pair of galaxies, cf. the insert of that object printed at various central densities (from the same original plate).*

must await radio observations of the region. However, this is clearly a very exciting subject that brings together all fields of astronomy.

References:

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Maccacaro T., Cooke, B. A., Ward M. J., Penston M. V., Hayes R. F., 1977, M.N.R.A.S. **180,** 465.

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Reference Positions of Southern Stars: PERTH70

A new catalogue, *Perth70,* containing one star per square degree has appeared: E. Høg and J. von der Heide, 1976, Abhandl. aus der Hamburger Sternwarte IX, and also available on magnetic tape from the Strasbourg Data Centre. The catalogue was observed about 1970 with a mean error 0.″17 and contains approximate proper motions giving positional accuracy of ± 0.″3 at the epoch 1980. The accuracy of the widely used SAO catalogue is about ± 1″.

Perth70 is part of an international effort to determine positions of a Southern Reference System (SRS). Altogether 12 observatories have taken part in the meridian-circle observations, and all observations are being compiled to a SRS catalogue by the US Naval Observatory in Washington and by the Pulkovo Observatory. Perth70 was observed by the Hamburg Observatory expedition to Perth, West Australia, from 1967 to 1972, directed by J. von der Heide. The meridian circle was equipped with a novel photoelectric slit micrometer developed at Hamburg and it had an automatic data-acquisition system so that reductions could keep up with observations with only a few days delay—quite a new situation for meridian techniques. The instrument has given 180,000 observations during its ten years at the Perth Observatory, where it continues to be used by I. Nikoloff.

The Perth70 catalogue contains 4,800 stars with $m < 8$ and $\delta < +35°$ and 20,100 faint SRS stars about $m = 9$ and $\delta < +5°$. This is 98 per cent of all SRS stars. The coordinate system is a smoothed FK4 system since some local systematic errors of FK4 have been removed.

There are 8,000 bright stars in the catalogue common with Boss' General Catalogue. For these stars improved proper motions are being derived at Copenhagen with errors about ± 0.″004 per year. This is part of a joint effort by Danish astronomers obtaining photometric data and radial velocities of bright stars. The improved space velocities will be used to study galactic structure. Erik Høg