

STUDIES OF A AND F STARS IN THE REGION OF THE NORTH GALACTIC POLE

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A short account was given of results recently published (Hill *et al.* 1976; Hilditch *et al.* 1976a,b) of a spectroscopic and photometric study of 310 AO-F8 stars within 15° of the north galactic pole. Using these data, it has been found that δm for the programme stars is constant out to 250 pc and corresponds, via Crawford's (1975) calibration, to the solar value of $[Fe/H]$. The distribution of radial velocities of AO-F8 stars is asymmetric and may be interpreted as showing a broad distribution of mean -7 kms^{-1} and dispersion $\sigma \sim 11 \text{ kms}^{-1}$ together with a superposed narrow distribution of mean 0 kms^{-1} and dispersion $\sigma \sim 3 \text{ kms}^{-1}$. The narrow component originates from a group of 37 stars which appear to be kinematically and spatially associated with the Coma cluster. Only 14 of these 37 stars are recognised members of the Coma cluster. Removal of these 37 stars from the sample results in a distribution which matches closely the W component distribution of AO-F8 stars in Gliese's (1969) catalogue. Thus Oort's "well-mixed" hypothesis seems to be confirmed out to 250 pc. Much additional work on the space motions is required before the hypothesis of the 'Coma group' can be thoroughly tested. Results of this analysis and a preliminary value for the total mass density in the solar neighbourhood is expected to be completed during the next few months.

Extension of this programme to 12.5^m at the NGP has already been started at DAO (spectroscopy) and KPNO (photometry). In addition, a similar programme to study the SGP region was started in 1975 at CTIO and Las Campanas. To date, 60% of the $H\beta$ data and 40% of the radial velocities have been obtained. The four-colour observations should start in 1976 September/October at SAAO.

References

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