

In the last three years considerable advances have been made toward a better understanding of the kinematical properties of stars in terms of their physical characteristics, such as their age and their initial chemical composition.

These advances have been made possible because of the increase in the number of stars thoroughly analysed (Cf. IAU Symposium no. 26) and because of the number of accurate space velocities which have been recently obtained (Eggen, 1962, 1964). A third important factor for progress has been the calibration of photometric indices ($\delta(U - B)$, Strömgen m_1 index, etc.) on the basis of high-dispersion work (Wallerstein, 1962).

It is now clear that all stars with metal deficiency exceeding a factor of 5 are stars with very eccentric orbits and small angular momentum with respect to the galactic centre, and conversely (Eggen, Lynden-Bell, Sandage, 1962).

The situation for stars with no or smaller metal deficiency is not so sharply defined. Pagel (1964) has remarked that really all stars with orbital eccentricities between 0.35 and 0.5 are mildly metal poor, whereas stars with orbital eccentricities smaller than 0.35 may be either normal or mildly metal poor.

The fact that most of the heavy elements have been synthesized in a very short period of time contemporary with the formation of the halo population is very stimulating and suggests that the physics of star formation were in the early stages very different from those at the present conditions.

References

- Eggen, O. J. *R.Obs. Bull.* no. 51, 1962.
 Eggen, O. J. *R.Obs. Bull.* no. 84, 1964.
 Eggen, O. J., Lynden-Bell, D., Sandage, A. R. *Astrophys. J.*, **136**, 748, 1962.
 Pagel, B. E. J. Communication at the IAU Symposium no. 24, 1964.
 Wallerstein, G. *Astrophys. J. Suppl.*, **6**, 407, 1962.

O. J. Eggen spoke on the 'Observed correlations between the kinematical properties and the chemical composition for G-type dwarfs and for orbiting visual binaries'; his paper will appear in the October 1964 issue of the *Astronomical Journal*.

COMMITTEE OF 'SELECTED AREAS'

Report of Meeting, 26 August 1964

CHAIRMAN: T. Elvius

SECRETARY: S. van den Bergh

Draft Report

The Draft Report, as presented, was accepted with some minor corrections.

Concerning the form of future reports B. J. Bok suggested that no radical change be made. It is valuable to have access to reports which keep together information on actual activities within the Selected Area plan and bibliographic references to such work. It was agreed that in the future the reports should include references to work performed also within other schemes than the Kapteyn Plan for systematic investigations of galactic structure by combined efforts, cf. the proposal by Kharadze under desiderata in the Report to the meeting (*Trans. IAU*, **12A**, p. 553).

Committee of 'Selected Areas'

Kharadze's above-mentioned proposal was further discussed. There was a general agreement that the scope of the Committee should be extended to include co-ordination of work within fields for galactic research supplementing the Kapteyn Plan.

It was announced by Bok, President of Commission 33, that for the next period the Selected Area Committee should consist of T. Elvius (chairman), Kharadze, McCuskey and Plaut.

Discussion of current and future work

Photometry. A discussion arose as how to obtain, without a tremendous amount of work, good magnitudes and colours of faint stars in wide fields. Bok suggested that objective gratings be applied for photographic extension of scales when photoelectric determinations will be too time-consuming. He also advocated the use of long-focus wide-field reflectors (e.g. Ritchey-Chrétien type) for crowded areas. To obtain good colour indices he recommended measurement of image-pairs exposed in different colour regions and located close together on the plate. At Mount Stromlo the following plate-filter combinations had been used with advantage,

for $U - B$: 103a-O plates with GG 13 for B and UG 2 for U

„ $B - V$: 103a-D „ „ GG 14 „ V „ GG 13 + Wr 47 for B

For stars of type A0 the U exposures have to be four times the B exposures to obtain equal images.

Elvius pointed out that in order to get good photographic photometry over wide-field plates it is necessary to supplement the usual photoelectric sequence at the centre by standards also in the outer parts of the plates. He also suggested that photoelectric photometry in Selected Areas be placed on the ESO programme.

W. Becker demonstrated that the RGU system separates stars with ultra-violet excess in range $0.8 < B - V < 1.0$, when such separation is not discernible with UBV photometry. Results down to V abt. 19 magn. were shown for SA 51 ($l^{\text{II}} = 189^\circ$, $b^{\text{II}} = +21^\circ$), where population variations with level over the galactic plane were revealed. Such features will be investigated in the run of the Basel programme for Selected Areas situated in a plane through the galactic poles, centre and anticentre.

Information was obtained that E. Rybka has hopes that the same instrumental equipment as has been used at the Crimean Observatory for Selected Area photometry, will be transferred to the U.S.S.R. station in Chile.

Proper motions. Oort urged that the proper motions in the Kapteyn Selected Areas be improved, and expressed the hope that the London Observatory continuation of the Radcliffe proper motion work should be carried on.

Supplementary information on the Bonn-Vienna programme, mentioned in the Report, was given by Hopmann. Abraham referred to the possible continued proper-motion determinations for southern Selected Areas by means of the 'Yale-Columbia-refractor' which will remain in Australia as the property of the Mount Stromlo Observatory.