

Prof. Lindblad stated that from the theoretical point of view, exact measurements of the forms of the nebulae are sufficient.

The surface brightness is to be determined from microphotometer tracings on standardized plates.

For the determination of proper motions of galactic clusters, Dr Mineur's proposal was divided into two parts. The determination of relative proper motions remains within the competence of the present Commission.

As to the absolute proper motions, Dr A. Vyssotsky introduced the motion:

"That the consideration of the methods of reduction of absolute proper motions of galactic clusters should be referred to the Commission 24, on Proper Motions and Parallaxes."

COMMISSION 29 (STELLAR SPECTRA)

PRESIDENT: Prof. H. N. RUSSELL.

Mr Stratton, for the sub-commission on novae, exhibited a specimen sheet of the Atlas of the spectrum of Nova Herculis, which will consist of 16 plates showing the changes with time in the spectrum from $\lambda 3600$ to $H\alpha$.

In view of the importance of obtaining good light curves of the early stages of novae, the following resolution was unanimously adopted:

"That Commission 29 would welcome the assistance of Commission 27 in the organization of the early distribution of charts of comparison stars for bright novae and in the extension of the scheme of the A.A.V.S.O. for securing novae at the earliest possible stage."

Mrs Gaposchkin recommended (1) that photometric measures of the bright bands in the spectra of novae be made at as early stages as possible, (2) that observers employ a green screen in the determination of visual magnitudes.

Mr Adams reported on the spectra of recent supernovae. The bands are wide, and shift progressively. No identifications have yet been made, except a doubtful one with the forbidden line of OI at $\lambda 6300$. The spectra appear to be of an entirely new type.

The report of the sub-commission was then adopted. The report of the sub-commission on the classification of Wolf-Rayet stars was discussed at length with special reference to the convenience of various alternative forms of notation as regards typewriting, printing and the preparation of manuscript for the printer. A notation with two capital Roman letters (e.g. WN 6) was adopted by six votes to three; and the report of the sub-commission was adopted.

Mr Merrill's suggestion that forbidden lines should be described as of "nebular type" or "auroral type" rather than simply by the adjectives "nebular" or "auroral" was unanimously adopted. Lines of the nebular type arise from transitions from the lowest metastable level to the ground state; those of the auroral type from higher metastable levels to this metastable level; while those from such levels to the ground state are of the "transauroral type". (This is the usage originally suggested by Boyce, Menzel and Payne.)

The suggestion of Mr Struve regarding the rotational velocity of stars was commended to the attention of spectroscopists, without formal recommendation.

Time being available towards the close of the hour, Mr Abbot reported briefly on new thermo-electric measures of the energy distribution in stellar spectra; Mr Merrill recommended caution in the use of the letter *s* in describing spectra of the hotter stars (since, like *c* and *n*, it is doubtful if it has a definite physical significance); and Mr Wildt reported on calculations which show that continuous absorption by negative atomic ions of hydrogen may have a significant part in producing opacity in the atmospheres of stars of the solar type.

The Commission then adjourned.

COMMISSION 30 (RADIAL VELOCITIES)

PRESIDENT: Dr W. S. ADAMS.

SECRETARY: Prof. B. J. BOK.

Six members of the Commission were present when the President opened the meeting. The first matter on the agenda was the consideration of the reports of the three sub-commissions. The members of the Commission were unanimous in their praise for the excellent work done by the members of these sub-commissions. It was decided unanimously that the three reports be accepted unchanged and that the sub-commissions be continued for another period of three years.

The report of the President of the Commission was accepted without changes. Special attention was called to the four recommendations at the end of the report. Harper and Adams emphasized the importance of the recommendation referring to the need for further observations for the brighter stars with uncertain radial velocities.

After the completion of the formal part of the meeting the members exchanged views on several specific problems. The President read a letter from Hagihara which mentioned that work on radial velocities would probably be undertaken in Japan after the completion of the 26-inch telescope at Tokyo. Freundlich and Mohr requested further observations of radial velocity for faint B stars. They pointed out that, even in the northern hemisphere, a great deal of work remained to be done. It appeared that some of the stars to which Freundlich and Mohr referred were already on the programmes of Beals and Merrill. In a brief discussion on the K-effect Plaskett drew attention to a recent paper by himself in the *M.N.R.A.S.*

A discussion of the work on objective-prism radial velocities of the Harvard Observatory brought out the desirability of checks on the system of velocities by means of slit velocities of three to five stars in each field. The President pledged the co-operation of the members of the Commission.

Redman brought up the matter of the measurement of radial velocities for stars with hazy lines. It appeared that attempts to measure such velocities from microdensitometer tracings had not been very successful. Merrill mentioned that higher accuracy could probably be obtained through the use of Evershed's method of superposition of a positive and negative.