

The Commission, after a discussion of the results given by Seares, received communications from Dr Lundmark, Dr Hertzsprung and Prof. Shapley; it was agreed to publish these also in the appendix of the report.

Commission 26. (DOUBLE STARS.)

PRESIDENT: Prof. E. Hertzsprung.

SECRETARY: Prof. G. Van Biesbroeck.

It was agreed to send a message of congratulation to Dr R. G. Aitken on the occasion of the completion of the *A.D.S.*, a copy of which was for inspection on the table of the chairman.

Aside from minor alterations and additions which were discussed in reading the Draft Report, the Committee adopted this report as printed and designated a sub-committee for the purpose of working out a short list of double stars situated between $+10^\circ$ and -10° declination for the investigation of personal errors. C. P. Olivier, who initiated this proposal, will act as chairman of the sub-committee, which will include R. G. Aitken, H. N. Russell, and G. Van Biesbroeck.

Commission 27. (VARIABLE STARS.)

PRESIDENT: Prof. Harlow Shapley.

SECRETARY: M. Felix de Roy.

The Draft Report was adopted without modification.

The following resolutions were referred to the General Assembly:

1. The Commission recommends that the yearly subsidy granted by the Union to the Cracow Observatory for the publication of the *Ephemerides of Eclipsing Binaries* be continued (and increased) to the amount of 1000 gold francs.

2. The Commission suggests that, in view of the urgent need for comparison stars for Variables, more especially those requiring international co-operation, a small sub-committee under Dr Shapley be empowered to canvass the needs of observers and to take steps to encourage systematic work on sequences.

3. The Commission endorses the proposal made by Prof. Grouiller to compile a list of unpublished observations of Variable Stars, and recommends that this compilation be published by the Union.

In addition, the following proposals were adopted:

4. The Commission heartily welcomes the photovisual work on sequences for Variable Stars inaugurated at the Harvard College Observatory by Miss Cecilia Payne. It notes with approval that the photographic magnitudes of the same stars are also to be determined, so that the Colour Indices, which are essential in any filter work, will be available.

5. The Commission suggests that, previous to the extension of photovisual work on sequences which, in the end, may integrate them into a homogeneous system, visual observers should take up as many variable stars as possible of Series VIII of the *Atlas Stellarum Variabilium*, when it is published by the Vatican Observatory.

6. The Commission strongly urges the prompt preparation and publication of visual sequences for those stars of Prof. Nijland's List A for which no comparison

stars have yet been measured. It suggests that observers, or observing organizations, should all use the same magnitudes for work on stars of List A.

In connection with the Report, the President's proposal, that the systematic investigation of Cepheids in ten fields, taken up by the Commission after the Leiden meeting of 1928, be continued at least till the following meeting under the same conditions, met with unanimous approval.

Prof. Danjon offered the collaboration of the Strasbourg Observatory for sequence work, and this announcement was received with gratification.

Prof. Dugan recommended that observers using the Argelander step method should not content themselves with deducing their light scale from the observations, but should also tie the comparison stars together by estimates made for this sole purpose on several nights. They should use several comparison stars, six if possible, when the Variable is faint.

Mr de Roy suggested that visual observations with colour filters be kept in the experimental stage for the present, some well-tried observers taking them upon the basis of Minnaert and Van der Bilt's preliminary results. Prof. Grouiller recommended colour filter observations of red stars of small amplitude, some of which (R Scu, U Mon, etc.) are bright, and Prof. Lundmark proposed to add bright Novae to the suggested list.

Prof. Mitchell stated that, in his extensive work on sequences, he found little difference between visual and photovisual magnitudes.

On the President's proposal, the Commission delegated Dr Schilt to approach Commission 28, with the request that it should urge observers to record more frequently the epochs of variable stars in globular clusters.

Commission 28. (NEBULAE AND STELLAR CLUSTERS.)

ACTING PRESIDENT: Dr K. Lundmark.

SECRETARY: Mr F. D. Miller.

Dr Lundmark called attention to the deaths of two members of the Commission, Miss Adelaide Ames and Father J. G. Hagen, and of a past member and former chairman, Dr G. Bigourdan, and outlined their contributions to the subject.

The secretary read a letter from the chairman, Dr Hubble, suggesting that the meeting be devoted primarily to informal discussion of relevant problems.

Dr Lundmark, as an introduction, read the recommendations adopted by the Commission in 1928. This was followed by the reading of the first part of the acting chairman's report on the advance and present state of knowledge of the anagalactic nebulae.

A communication from Dr Hubble was also read, in which he outlined the progress of the co-operative survey of the bright nebulae, which had been recommended at the 1928 meeting of the Union. With the exception of a single zone, the whole northern sky down to Declination -15° is assigned. A synopsis of the procedure to be followed in the survey was included.

Dr Shapley outlined the extensive programmes, complete and projected, for Harvard surveys of the extra-galactic nebulae, with particular reference to the recently published photometric catalogue complete to the thirteenth magnitude. Attention was also drawn to Dr Hubble's suggestion of a nebular magnitude scale independent of the stellar.

The meeting adjourned.

The second meeting opened with the reading of the second part of the report of