

## 24. COMMISSION DES PARALLAXES STELLAIRES ET DES MOUVEMENTS PROPRES

### Report of Meeting, 16 August 1961

PRESIDENT: K. Aa. Strand.

SECRETARY: H. L. Giclas.

The meeting was called to order by the President.

The first order of business was the organization of the Commission under the new Statutes of the Union.

The nomination by the Executive Committee of A. N. Deutsch as President and W. J. Luyten as Vice-President was approved. The nomination of the Organizing Committee consisting of V. V. Lavdovski, W. W. Morgan, K. Aa. Strand, P. van de Kamp, and S. Vasilevskis was also approved with the recommendation that A. Hunter be also nominated to this committee.

The next order of business was the additions or corrections to the *Draft Report*, which was approved without changes.

The President then invited the members of the Commission to report on their work.

van de Kamp said that he was continuing his investigation into the systematic errors of parallaxes as determined with the refractor. He was studying the effect of ventilation of the telescope tube and dome, and the effect on the seeing of using apertures of 12 and 18 inches, which, however, could only be used on the brighter stars.

Miss Lippincott spoke of the extension of the telescope tube to some 6 feet beyond the dome, with holes cut near the objective end of the tube to aid the flow of the air through the full length of the 15-foot extension.

Vasilevskis described a new double-slide camera built for the 36-inch refractor of the Lick Observatory, and enumerated some of the programs which could be carried out with this new camera.

V. Osvalds reported that he would very much like to modernize the Leander McCormick telescope but that he found it difficult to get the support of the authorities of the University of Virginia for a sustained astrometric program, which did not have the appeal that the more spectacular space-age programs did.

The President said that the Leander McCormick telescope had made very valuable contributions to the field of trigometric parallaxes and proper motions, and that it was of extreme importance to keep the telescope active in this field. He hoped that the telescope could be remounted and furnished with electro-mechanical controls similar to the 26-inch Naval Observatory refractor, which has become a very effective instrument.

van de Kamp wished to emphasize that the Leander McCormick telescope had a magnitude range in which very effective contributions could be made.

Osvalds then remarked that the University was not against a remodeling of the telescope, but that the general consensus was that an astrometric program on parallaxes and proper motions was not considered particularly suited for graduate research.

Several others spoke on behalf of continuing the astrometric programs at the University of Virginia and, at the suggestion of van de Kamp, it was agreed upon to request Professor Oort, as President of the Union, and the General Secretary to write to the University of Virginia and emphasize the importance to astronomy of continuing the astrometric work at the Leander McCormick Observatory.

H. K. Eichhorn reported that the parallax program was being continued at the Van Vleck Observatory, and that a high-speed electronic computer was used for the reduction of the data. Since a grating was used to compensate for magnitude differences possible errors introduced by the grating images were being investigated, in addition to errors arising from coma, colour and magnitude differences. The grating had a magnitude difference of 2.5 between central image and first-order spectrum and their separation was 0.4 mm.

W. W. Morgan reported on the determination of spectroscopic parallaxes.  $U, B, V$  narrow-band photometry makes it possible to obtain the equivalence of spectral type, and thereby the luminosities and distances of the early-type stars. He said that simple line equivalents and abundances of the elements have now become useful and he would like to know from D. L. Crawford how efficient this method was for determining absolute magnitudes. Crawford replied that his work was in progress. From narrow-band photometry of 50 Å band width on the CN and G bands, both of which depend upon composition and luminosity of the star, the absolute magnitudes could be determined at the present time with the same precision as those of the standard stars. There appeared to be no cosmic scattering.

D. Brouwer reported that parallax plates are still being taken with the 26-inch refractor at Mount Stromlo, but that it would be necessary to discontinue the program after the 20-inch astrograph would go into operation which he hoped would happen within the next 2 or 2½ years. The new telescope would be located about 100 miles from San Juan in Argentina.

The President reported that the contract for the mounting of the 60-inch astrometric reflector to be located at the U.S. Naval Observatory, Flagstaff Station, would soon be awarded. The observatory building is under construction and the quartz disks for the primary and secondary mirrors had been delivered by Corning Glass Works. Both disks were found to have bubble content and strains well below the limits set by the specifications, so that figuring could start shortly.

H. L. Giclas gave an account of the photographic proper motion survey at the Lowell Observatory: The results from the first 100 plates had been published in *Lowell Bulletins* Nos. 102 and 112. Up to the present 110 plates have been measured, which constitutes approximately 40% of all the plates to be examined in the Northern Hemisphere. From these plates a total of 5579 stars have been found with proper motions larger than 0".27 per year. Of these, 2207 have no previous proper-motion history. 28 stars have proper motions larger than 1".0 per year, and 345 have motions larger than 0".5 per year. A total of 66 new pairs with common proper motion have been found as well as 37 companions to already known proper motion stars.

The President reported that the Luyten proper motion catalogue (LTT) for the Northern Hemisphere had been published with the support of the IAU upon the recommendation of the Commission.

W. J. Luyten then asked the Commission to vote on the following resolution: "The Commission on Parallaxes and Proper Motions expresses the wish that the complete catalogue of proper motions found in the Bruce Proper Motion Survey be fully published and distributed to all observatories. The catalogue has up to the present time been published in mimeographed form and only in a limited edition."

By unanimous vote it was agreed upon to present the resolution to the General Assembly. [This was not accepted by the Resolutions Committee, but it is included in the collected Resolutions in Part 2.]

S. Vasilevskis reported on the progress of the automatic measuring machine for the Lick Observatory. He felt that the machine would be completed within a year. He also mentioned that he knew of several other automatic machines which were being manufactured at the present time.

The President mentioned that he had followed closely the machine developed by the Link Division of the General Instrument Co., which he found especially promising.

V. Osvalds asked whether, if several of these automatic machines were being built, it would be possible for small institutions, which could not afford to purchase them, to get access to them.

The President replied that he was hopeful this could be arranged informally and on an individual basis.

The President said that the proceedings of the double-star symposium (IAU Symposium No. 17), which had just been held, would be published in *PASP*. He also called attention to the announced Joint Discussion No. 1 "Stellar Motions and Stellar Dynamics."

There being no further business, the meeting was adjourned.