

COMMISSION 42: PHOTOMETRIC DOUBLE STARS (ÉTOILES DOUBLES PHOTOMÉTRIQUES)

Report of Meetings, 19, 20 and 24 August 1970

PRESIDENT: F. B. Wood.
SECRETARY: M. W. Ovenden.

Business Sessions

The business meetings of Commission 42 at the XIV General Assembly of the IAU were held on 1970 August 19 and 24, Dr F. B. Wood presiding. This summary has been compiled from the minutes of the separate meetings.

The present arrangements for the preparation and distribution of the 'Bibliography and Program Notes for Eclipsing Binaries' (B.P.N.) will continue under the direction of Dr G. Larsson-Leander. The Commission agreed that present and past numbers could be made available to libraries and other institutions, at Dr Larsson-Leander's discretion, an adequate charge being made for the services involved.

The work of the 'Times of Minima' Committee, under Dr T. Herczeg, will continue to be based on the Plavec list, which is, however, being updated; a revised list will be circulated to Commission members in due course. It was agreed that a selected list of those stars suitable for visual observation be also made and maintained.

Dr Katherine Kron reported on the coordinated programmes for GL Car and AR Cas. A composite light-curve of AR Cas produced at Catania was exhibited. The Committee on Coordinated Programmes recommended several stars for coordinated observation (see Appendix). The Commission gave unanimous approval to the proposal that it authorize the request for reservation of special nights far in advance at observatories with guest-investigator facilities.

It was agreed that the Joint Working Group of Commissions 30 and 42 be continued for a further three years, with a view to completing the list of binaries in need of observation.

It was agreed to re-establish the Committee for 'Observations from Outside the Earth's Atmosphere'. While recognizing that the IAU already has such a Commission, it was felt that a sub-committee of Commission 42 was required to bring their special needs to attention.

The Commission passed the following resolution:

"While appreciating the financial difficulties of publishing extensive tabular matter, Commission 42 believes that the individual original observations of eclipsing variables are frequently the most important contributions to new knowledge in papers in this field, and should always be published in full. The deposit of observations in some central store does not appear, to this Commission, to be a fully satisfactory alternative, and it therefore urges the editors of all journals to accept, and even request, for publication the complete lists of individual photometric and/or radial-velocity observations."

The Commission voted to approve a request for IAU subvention to the amount of \$ 200 towards partial support for the B.P.N.

It was voted to accept the Draft Report, as published.

The Commission approved the nominations of Dr M. Plavec as President and Dr T. Herczeg as Vice-President for 1970-73.

The Commission elected the following Organizing Committee for 1970-73: A. H. Batten, M. G. Fracastoro, K. Gyldenkerne, M. Kitamura, G. Larsson-Leander, D. M. Popper, V. P. Tsesevich, F. B. Wood.

The Commission elected the following Sub-committees for 1970-73, the Chairman having power to co-opt:

1. *Cooperative Programmes*: K. Gyldenkerne (Chairman), M. Kitamura (Vice-chairman), M. G. Fracastoro, G. F. G. Knipe, N. L. Magalashvili, J. Sahade, K. Serkowski, F. B. Wood.

2. *Times of Minima*: T. Herczeg (Chairman), B. Cester, G. F. G. Knipe, A. Landolt, Mrs. M. W. Mayall, R. Szafranec.

3. *Bibliography*: G. Larsson-Leander (Chairman), B. Cester, J. Grygar, O. Gunther, D. Hall, M. Kitamura, K. K. Kwee, J. Sahade, A. R. Shulberg, S. D. Sinvhal.

4. *Observations from Outside the Earth's Atmosphere*: Y. Kondo (Chairman), J. Grygar, D. Ya. Martynov, J. Sahade, S. Sobieski.

5. *Working Group, Commissions 30 + 42*: From Commission 42, A. H. Batten, M. Plavec, D. M. Popper, J. Sahade.

The business sessions concluded with a brief description, by Dr Fracastoro, of his Catalogue of the Light-curves of Eclipsing Variable Stars.

Scientific Sessions

The following papers were read:

R. H. Koch: 'New Graded Photometric Catalogue of Eclipsing Binaries'.

R. E. Wilson (and E. S. Devinney): 'Synthetic Light Curves'.

J. B. Hutchings: 'Reflection and Other Effects on Light Curves'.

J. E. Merrill: 'Comments on Solution Procedures'.

K. Serkowski: 'Polarization.'

D. Lauterborn: 'Evolution with Mass Loss from System'.

J. Hazlehurst: 'Contact Binaries'.

K. O. Wright: 'Ultraviolet Spectra of VV Cephei'.

Additional short contributions were also made by E. G. Reuning, K.-Y. Chen, A. D. Thackeray, H. Mauder, K.-C. Leung, J.-P. Zahn and Y. Sobouti.

APPENDIX. REPORT OF THE COMMITTEE ON COORDINATED PROGRAMMES

The following stars are recommended for observation in a coordinated campaign:

1. HD 35921, 6th. mag, 09.5III dbl-lined sp. binary, dec. = +34°, and above all P=4.0025 d. At present there is half a light curve, obtained by Dr Mayer, and some sp. observations by Dr Batten.

2. Beta Lyrae. Drs Sahade and Batten recommended good coverage of two, not necessarily successive, cycles by coordinated spectroscopic and photometric observations with interference filters or scanner observations. All orders for filters should be placed at the same time as they will be expensive.

3. γ_2 Velorum at dec. = -60° and a period of 78 days was recommended for sponsorship in a coordinated programme of photometric observations only. These would be in 6 narrow-band regions, 3 emission-rich and 3 emission-poor. Dr Sahade has already corresponded with Infrared Industries and hopes to place a wholesale order soon. The European Southern Obs. has pledged cooperation and it is expected that telescope time at Cerro Tololo will be obtainable.

4. The long-period eclipsing binaries 31 Cyg, 32 Cyg and Zeta Aur have been put into one campaign because the common denominator is telescope time on critical nights. (See resolution under Business Sessions.)

The Sub-committee felt that there was still a deplorable lack of coordination between observers of eclipsing binaries in general, and recommended increased use of and attention to the reports of programmes planned and in progress as published in the semi-annual bibliography.

The Sub-committee discussed former coordinated programmes and the problem of how to make the best use of the data obtained. It recommends that the coordinator of each campaign follow up on the publication of results and their evaluation and make a status report to Commission 42 at appropriate intervals.

KATHERINE G. KRON, Chairman