

## 29. COMMISSION DES SPECTRES STELLAIRES

Report of Meetings held on 24, 28 and 29 August 1967

PRESIDENT: J. Sahade.

SECRETARY: M. K. V. Bappu.

### Business Meeting

(a) The President asked the audience to stand in memory of the Commission members Drs Mc Laughlin, Nassau and Rozis-Saulgeot, who passed away since the Hamburg meeting.

(b) The following astronomers were proposed as members of the new Organizing Committee: V. Bappu, Herbig, Houziaux, Kopylov, Przybylski and Sahade.

(c) The Draft Report as presented, was accepted with minor corrections.

(d) *Miss A. B. Underhill* reported on the conclusions of the Working Group appointed to examine the need of an Atlas of high dispersion tracings. She considered it a useful aid for teaching purposes. The Atlas could either be a compilation of tracings or be available in digitized form. At least 55 stars would be required for such a purpose and the provision of tracings for each would be very expensive. The Working Group prefers the use of digitization from the standpoint of low cost of production of such an atlas. Since such a publication would be most useful for teaching purposes, Miss Underhill was requested to continue her efforts on the feasibility of such an enterprise in close collaboration with Commission 46.

(e) *J. B. Oke* presented the report of the Working Group on spectrophotometry. A considerable amount of absolute spectrophotometry of stars has been carried out since the Hamburg meeting, the references to which are given in the Draft Report, Appendix I. A list of stars suitable for absolute standards was published by Oke in 1964. These are all near the celestial equator, but not all of them have been measured from 6000 Å to 11 000 Å. These standards are too bright for use with large telescopes and pulse counting techniques. Fainter standards near the celestial equator are now being measured at Palomar.

Further work on the comparison of standard stars with laboratory sources is continuing. Work on this aspect is currently in progress at the Lick Observatory by Hayes and at the Mount Wilson and Palomar Observatories by Schick and Oke.

During the IAU meetings at Praha a meeting was held by all interested in the problems of absolute spectrophotometry. *Oke's* report of this meeting follows: '*Willstrop* outlined his recent work using a 10 channel narrow band system which covered the range 3300 Å to 10000 Å. Reductions are not yet completed. *Kienle* reported that Labs has compared the energy distribution of the Sun and of stars of the same spectral class. The agreement is extremely good. *Stecher* outlined the calibration methods used for far ultra-violet work from rockets. At 1216 Å the ionization effects in gases are known and can be used for calibration. At 2537 Å a calibrated mercury lamp is used. *Oke* outlined briefly the methods being used at Palomar to compare stars and laboratory sources. *Davis* discussed the work which has been done on radii and effective temperatures of stars using the Hanbury Brown stellar interferometer in Australia. They have completed work on 15 B, A and F type stars. *Kienle* strongly urged that absolute fluxes of stars be presented in the form  $\log f$ , versus  $1/\lambda$  ( $\mu$ ). *Divan* indicated that  $\epsilon$  Persei is an excellent absolute standard star since the Balmer jump is small'.

(f) *Mme Cayrel* briefly outlined the report of the Committee on Line Intensity Standards. She reported that only the coude intensity calibration systems at Kitt Peak, Haute-Provence, Mount Wilson and Palomar, and Mount Stromlo have been calibrated against the standard Kienle step filter. Many other high dispersion facilities await similar calibration check with the standard. The measured equivalent widths are in better agreement when step calibrations are used instead of a continuous calibration system.

It was decided by the Commission that the committee, as presently constituted, would continue to function until the next General Assembly.

(g) It was also decided by the Commission that the Working Group on Be stars be incorporated as an official Working Group of Commission 29.

### Scientific Meetings

The following papers were presented:

- P. Swings*: Remarks and Recollections of a Stellar Spectroscopist.  
*A. B. Underhill*: Some Problems Concerning the He I Lines in B Type Spectra.  
*L. Houziaux*: Quelques problèmes relatifs aux étoiles des premiers types à raies d'émission.  
*P. S. Conti, A. J. Deutsch*: Colour Anomalies and Metal Deficiencies in Solar Type Disk-Population Stars.  
*J. P. Swings*: The Ultra-violet Spectrum of CH Cygni.  
*Y. Fujita*: Some Problems in Connection with High Dispersion Spectra of Carbon Stars.  
*T. P. Stecher*: Stellar Spectrophotometry from a Pointed Rocket.  
*D. C. Morton*: Stellar Spectra in the Far Ultra-violet.  
*K. G. Henize*: Ultra-violet Objective Prism Spectra from Gemini XI and XII Manned Space Flights.  
*J. B. Oke, A. Vaughan*: High Resolution Scanning.  
*C. Fehrenbach*: The Spectrum of Nova Delphini 1967.  
*J. D. McGee*: Image Tubes for Stellar Spectroscopy.  
*A. Vaughan, H. Zirin*: The He I 10830 Line in Late Type Stars.  
*A. V. Hewitt*: Spectrometry with a Cascade Intensifier.  
*W. Kent Fort, V. Rubin, P. B. Boyce*: Image Tube Spectroscopy.  
*M. Walker*: Electron Spectroscopy with the Lallemand Electronic Camera and McGee Spectracon.  
*G. E. Kron*: The Electronic Camera and Spectrum Scanning.  
*R. Herman*: Profils de raies à haute résolution obtenues avec la caméra électronique.  
*W. Livingston*: High Dispersion Stellar Spectroscopy and the Role of the Image Tube at the McMath Solar Telescope (read by *A. K. Pierce*).  
*G. Münch, G. Neugebauer*: The Spectra of Cool Stars in the PbS Infra-red.  
*P. Connes*: High Resolution Infra-red Stellar Spectra.