

COMMISSION 45: STELLAR CLASSIFICATION
(CLASSIFICATION STELLAIRE)

Report of Meetings 20, 21, 22, 23, 25, 26, and 27 November 1985

PRESIDENT: V. Straižys

SECRETARY: N. Houk

I. JOINT DISCUSSION

Evolution in Young Populations in Galaxies (26 November, with Commissions 25, 28, 33, 34, and 37).

II. JOINT MEETINGS

1. Synthetic Spectroscopy and Photometry (20 November, with Commissions 25, 29, and 36).

This meeting was organized by R. Buser. The following papers were presented:

R. Buser, Principles and scope of synthetic photometry.

B. Gustafsson, Present state of the art (Review of the situation with model stellar atmospheres, synthetic spectra, and the calibration of photometric indices).

F. Rufener, Passbands and photometric systems.

D.S. Hayes, Observed stellar energy distributions.

R.L. Kurucz, Theoretical stellar energy distributions.

R. Buser, Calibration of the Hubble Space Telescope.

2. Precision Photometry of Star Clusters (21 November, with Commissions 25, 35, and 37).

This meeting is outlined in the Report of Commission 37.

III. MEETINGS OF WORKING GROUPS

1. WG on Be Stars (21 November, with Commission 29). This meeting was organized by A. Slettebak. The following papers were presented:

Y. Andrillat (with M. and C. Jaschek), The $H\alpha$ line in Ae and A-shell stars.

K. Apparao, V/R variability in Be stars.

D. Baade, Mass loss and nonradial oscillations of Omega Orionis.

P. Barker, $H\alpha$ observations and coordinated IUE spectroscopy of Be stars.

F. Vakili, The angular diameter of the envelope around Gamma Cas.

P. Harmanec and J. Percy, Report on the Be-star photometric campaign.

A. Slettebak, Be stars in open clusters.

The new Organizing Committee of the WG has been elected: D. Baade (Chairman), P. Barker, V. Doazan, J.M. Marlborough, G. Peters, A. Slettebak, and T.P. Snow.

2. WG on Standard Stars (26 November, with Commissions 29 and 30). This meeting was organized by L.E. Pasinetti and chaired by A. Batten. The following papers were presented:

A.G.D. Philip, The microfiche on standard stars.

H. Neckel, The absolute energy distributions of the Sun and of the solar analogs.

M.L. Malagnini, C. Morossi, and L. Rossi, Does a solar twin really exist?

L. Rossi, A. Altamore, and C. Rossi, A study of the solar analogs in the ultraviolet.

M. Fracassini and L.E. Pasinetti, Photometry of the comet Halley: solar analogs selected along the path.

I.N. Glushneva, E.A. Makarova, and A.V. Kharitonov, Energy distribution, photometry and physical characteristics of the Sun and stars - solar analogs.

After the IAU General Assembly Patras meeting the WG publishes "Standard Star Newsletter" (ed. L.E. Pasinetti, Milano). It is distributed to the members of the WG, to the members of the WG on Spectroscopic and Photometric Data and, on request, to all astronomers and institutions interested in the subject. The Newsletter is published twice a year, so far six issues have appeared. The WG participated in organizing the IAU Symposium No. 111 "Calibration of Fundamental Stellar Quantities", held in Como, Italy, in May 1984.

The new Organizing Committee of the WG has been elected: A. Batten (Chairman), S.J. Adelman, R.F. Garrison, I.N. Glushneva, R.F. Griffin, D.S. Hayes, C. Jaschek, P.C. Keenan, H. Neckel, L.E. Pasinetti.

3. WG on Ap Stars (23 November, with Commission 29). The report of this meeting may be found in the Commission 29 Report.

4. WG on Peculiar Red Giants (27 November, with Commission 29). This meeting is outlined in the Commission 29 Report.

5. WG on Spectroscopic and Photometric Data. No meeting of this WG took place during the General Assembly. Its Chairman A.G.D. Philip presented the following report:

1. Twice a year the WG was pulled to obtain a list of newly prepared catalogues and catalogues in preparation. This information has been sent to C. Jaschek for publication in the Bulletin of the Strasbourg Data Center.

2. A microfiche of standard stars was prepared under the editorship of Philip and Egret, containing all the available data concerning standard stars in various systems as well as other stars of particular interest. The first version of the microfiche has been published in IAU Symposium No. 111 "Calibration of Fundamental Stellar Quantities" volume. A revised version is now under preparation.

IV. SCIENTIFIC MEETINGS OF THE COMMISSION

1. Spectral and Photometric Classification of Population II Stars (25 November). The meeting was organized and chaired by A.G. Davis Philip. The following papers were presented:

C. Pilachowski, High resolution spectroscopy of population II stars.
R. Foy, Determination of the atmospheric parameters of late-type stars from low resolution spectra.

D.J. MacConnell, Recognition of low metallicity stars from moderate dispersion plates.

N. Houk, The statistics of weak-lined stars in the Michigan 10° Catalog.

F. Spite, The relation between photometry, spectral classification and high dispersion spectroscopy.

B. Gustafsson, Model atmosphere analysis of population II stars.

D. Hayes, Field horizontal branch stars in the $T_{\text{eff}}, \log g$ plane.

B. Hauck, Population II stars in the Geneva system.

A.G.D. Philip, Field horizontal branch stars.

B. Carney, A new survey of local halo stars.

A. Ardeberg.

F. Fusi-Pecci.

2. Difficulties of Extrapolation of the MK System to Other Spectral Ranges (22 November). The meeting was organized and chaired by:

A. Heck. The following papers were presented:

R.F. Garrison, The MK process.

A. Heck, The IUE ultraviolet classification system.

M.F. McCarthy, Extrapolation of the MK system to the near infrared.

K. Nandy, Luminosity effects on the major ultraviolet stellar lines.

J.C. Rountree, Spectral classification of B-stars in the ultraviolet.

V. ADMINISTRATIVE MEETING (22 November).

1. Report of the President

Since the XVIII General Assembly in Patras, Commission 45 co-sponsored the following meetings: (1) The Workshop "The MK Process and Stellar Classification", held in Toronto, Canada, June 6-10, 1983, (2) IAU Symposium No.105 "Observational Tests of the Stellar Evolution Theory", held in Geneva, Switzerland, September 12-16, 1983, (3) IAU Colloquium No. 78 "Astronomy with Schmidt-Type Telescopes", held in Asiago, Italy, August 30 - September 2, 1983, (4) IAU Symposium No. 108 "Structure and Evolution of the Magellanic Clouds", held in Tübingen, FRG, September 5-8, 1983, (5) IAU Symposium No. 111, Calibration of Fundamental Stellar Quantities, held in Como, Italy, May 24-29, 1984, (6) The Colloquium "Cool Stars with Excess of Heavy Elements", held in Strasbourg, France, July 3-6, 1984, (7) IAU Colloquium No. 90 "Upper Main Sequence Stars With Anomalous Abundances", held in Crimea, USSR, May 14-17, 1985.

Five circular letters were sent by the President to the Commission members during 1982-1985 containing information on the Commission matters. The Commission 45 Report for 1982-1984 was published in the Transactions of the IAU, vol. 19 A. The sections of the report were written by R.F. Garrison, D.J. MacConnell, A. Heck, V. Straižys, and C.Jaschek.

2. Membership

The following Commission 45 members resigned: P. Boyce, A.A. Hoag, J. Landi-Dessy, A. Maeder, S.D. Sinval. The following astronomers asking membership in Commission 45 were accepted: L. Celis, Ch. Corbally, D. Egret, I. Fukuda, L. Labhardt, S.G. Lee, C. Marossi, B. Nicolet, P. North, B.S. Rautela. This brings the total number of the Commission members to 119.

3. Election of Officers and Organizing Committee

The new officers and Organizing Committee members were elected as follows: President R.F. Garrison (Canada), Vice-President M. Golay (Switzerland), OC members J.J. Claria (Argentina), A. Heck (France), N. Houk (USA), T. Lloyd-Evans (South Africa), D.J. MacConnell (USA), E.H. Olsen (Danmark), and V. Straižys (USSR).

4. Reports of Working Groups of the Commission

The Commission was informed about the activity of the following working groups: WG on Be stars, WG on Ap stars, WG on Standard Stars, and WG on Spectroscopic and Photometric Data. It was decided to extend the time of existence of these working groups. Additionally, a new working group, called "Peculiar Red Giants" involving Commissions 29 and 45 has been proposed by P.C. Keenan and C. Jaschek in a letter to the Commission Presidents. The Administrative Meeting expressed the support to the creation of this WG.

5. Future Symposia and Colloquia

The meeting was informed about the future scientific meetings which are in the scope of interests of the Commission members: (1) IAU Colloquium No. 92 "Physics of Be Stars", Boulder, Colorado, August 18-22, 1986; (2) IAU Symposium No. 126 "The Harlow Shapley Symposium on Globular Cluster Systems in Galaxies", to be held in Cambridge, USA, August 25-29, 1986; (3) IAU Colloquium "The Second Conference on Faint Blue Stars", to be held in Tucson, Arizona, Spring of 1987. Dr. A. Slettebak informed that W.K. Bonsack have prepared the Third edition of the "International Register of Stellar Spectroscopists".

6. Resolution

The Commission supported the Resolution proposed by R.F. Garrison and addressed to the Time Allocating Committees for large telescopes. The Resolution recommends that a small fraction of observing time on large telescopes should be allocated for the program establishing a set of faint MK standards. The program proposed by a group of experts is planning to establish MK standards of 9-11 and 14-16 magnitudes in the equatorial belt, within $\pm 10^\circ$ of declination. Astronomers are requested to propose candidate stars suitable as faint MK standards of different spectral types and luminosities.