

## CLASSIFICATION BASED ON 102/Å/mm OBJECTIVE PRISM SPECTRA

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Equipped with a 15° F2 objective prism the (45/77/150)cm Schmidt telescope of the Copenhagen University Observatory, Brorfelde yields spectra of 102 Å/mm at H<sub>γ</sub> to a limit of approximately  $m_{pg} = 9.5$ .

Plates have been obtained for two projects:

1.) A study of quantitative classification based on objective prism spectra compared to MK classification and uvby photometry. Four color photometry (Kitt Peak, unpublished) exists for about 1900 stars in the declination zone +25° to +30°. 20 fields (diameter 5.92) were selected in this zone, and four IIa-0 plates have been obtained for each field, using exposure times of 20 and 5 minutes, respectively. For calibration purposes, exposures with the prism crossed by a grating were obtained and developed together with the field exposures. The fields contain 1100 HD stars, and uvby photometry exists for 400 of these. The project has entered the measuring-phase.

2.) A study of visual classification of O-GO stars. An attempt is made to classify visually the O-GO HD stars of the above mentioned fields. The classification will be in the MK system, and spectra of 119 O-GO MK standard stars, chosen from the list by Johnson and Morgan (1953) and Morgan and Keenan (1973), have been obtained. The emulsion used is IIa-0 and the spectra are widened to 0.60 mm. The accuracy will be judged by comparing the results with uvby photometry (see above) and existing MK classifications in the fields.

An atlas of the standard stars, much like the Bonn Spectral Atlas I by W.C. Seitter (1970), has been produced (for internal use) as a help in the procedure of selecting suitable criteria and possibly also for use directly in the classification. The atlas consists of 22 sheets showing stars of different luminosities within the same spectral type (three examples shown at the poster session) and 18 sheets showing stars of different spectral type within the same luminosity class (two examples shown at the poster session). The contrast in the atlas is kept as close as possible to that of the original spectra. The actual classification work started in August, 1978.

#### REFERENCES

- Johnson, H.L. and Morgan, W.W. (1953). Astrophys. J. 117, 313.  
Morgan, W.W. and Keenan, P.C. (1973). Ann. Rev. Astron. Astrophys. 11, 29.  
Seitter, W.C. (1970). Bonn Spectral Atlas I. Dummler: Bonn.