The ESO/Uppsala Survey of the ESO (B) Atlas

by Andris Lauberts (ESO/Uppsala)

A systematic search for certain objects (NGC + IC galaxies, all galaxies with a diameter larger than about 1.0 arcmin, all disturbed galaxies, all star clusters in the Budapest Catalogue, and all listed planetary nebulae) has been carried out by means of the ESO(B) Atlas, covering the southern sky from -90 to -17.5 degrees. A total of 18,438 objects is listed; of these, about 60% for the first time. Magnitudes and radial velocities are also given for a total of 2,102 galaxies.

Copies of the printed version are available for sale at the European Southern Observatory, Karl-Schwarzschild-Str. 2, 0-8046 Garching bei München. The price of the volume is DM 40,-.

Copies of the magnetic tape version may be ordered from the Centre de Données Stellaires, 11, rue de l'Université, F-67000 Strasbourg.

Near Infrared Observations of O Stars

Y. Andrillat, Observatoire de Haute-Provence

Introduction

During the last two decades, one could note an increasing interest for the O stars because the far ultraviolet observations had an important impact on the study of these objects, displaying principally mass loss phenomena.

In the visible region, the spectrum of the O stars is characterized by the presence of absorption lines of H, and ionized He, C, N and Si. A few of these lines appear in emission in some stars, exhibiting the presence of an extended atmosphere around them. These emissions are due to:

- N III λ 4634–4640 in the OI stars where other emissions can also be present, for example He II λ 4686 and C III λ 5696
- H lines in the Oe stars which are not exhibiting other emissions (no N III...).

The O stars have been observed in a very large spectral range from ultraviolet up to the red region. Photographic plates were used, but since their sensitivity is faint beyond λ 8750, they were exceptionally employed in the near infrared region.

As far as O stars are concerned, the published data available in the 1 μm region are quite scarce. Although it is poor in features, the spectral interval λλ 8700–11000 is very important because it presents new helium lines, principally He II λ 10830 and He II λ 10123.

For O stars, helium is the fundamental element. The classification criteria are deduced from the value of the intensity ratio He I/He II.

Fig. 1 shows the spectrum of η Pup (O4f I(n)) obtained by M. Dennefeld at La Silla. It is characterized by a few faint lines: the hydrogen Paschen lines are visible in absorption from P7 to P15. Some emissions are present: He II λ 10123, N IV, N V and Hα. Several absorption bands are due to the earth atmosphere.

Observations

For approximatively twenty years, the development of modern detectors has allowed us to reach the near infrared region, but there are still few observational data in this region.

Since 1975, in collaboration with J.M. Vreux, we have studied O stars in the λλ 8000–11000 interval. We have used a