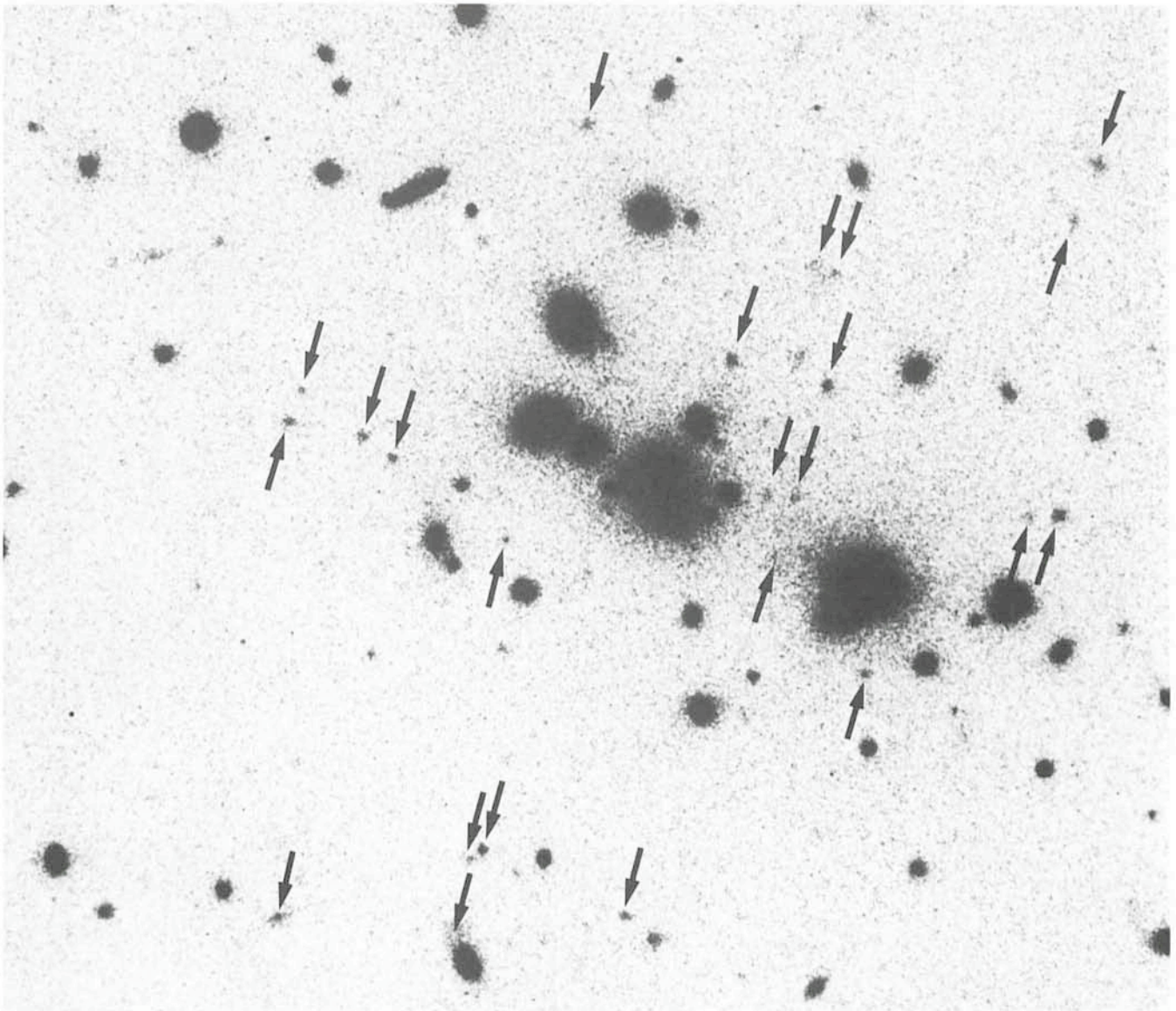

Fig. 4: *By means of the amplification method, a number of faint objects is revealed including some which cannot be determined as objects on the original plate. The tendency for the larger objects to "grow" is due to the limited exposure latitude of the high contrast copy film.*

density differences in brighter objects. Nevertheless, the method has proved to be quite effective when it comes to the reproduction of faint object images. An example of what can be achieved by this technique is shown in Fig. 3 and 4.

Conclusion

Masking as well as image amplification can be applied without big investments in sophisticated equipment. Without requiring unreasonable time, both methods still provide excellent opportunities to extract a maximum of information from the astronomical plates through individual treatment of each plate.

References

Malin, D. F., *AAS Photo-Bulletin* No. 16, 1977.
Malin, D. F., *Anglo-Australian Observatory Preprint, 1981.*
Saxby, R. and Dumoulin, B., *The Messenger,* December 1977.

ESO Workshop on "Ground-based Observations of Halley's Comet"

The ESO Workshop on "Ground-based Observations of Halley's Comet" took place at the Institut d'Astrophysique de Paris on 29 and 30 April 1982.

The aim of the workshop was to encourage cooperation between theoreticians and observers to get the best from all available observing facilities during the next apparition of comet Halley in 1985–1986 and especially of the optical telescopes on La Silla.

Comet Halley will indeed be best observable from the southern hemisphere and a large proportion of all telescopes in the south are concentrated at the ESO observatory in Chile.

The need for good astrometric measurements and accurate

ephemerides for space probe navigation as well as for "blind" infrared, radio and radar observations were stressed. Ground-based observations necessary to complement the observations by the Japanese, USSR and European space probes have been discussed. Emphasis has been put on the need of a close cooperation between astronomers observing with different techniques to optimize the scientific output of these observations. Finally, a lively discussion showed that it was the general feeling that a close cooperation between the European astronomers and the NASA International Halley Watch would be beneficial for all.

The proceedings of the workshop will be published by ESO in a few weeks. *P. V.*

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, D-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.

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KAZIMIERZAK, Bohumil (B), Mechanical Engineer, 1.3.1982
MACFARLANE, Penelope (GB), Scientific Reports Typist, 24.5.1982
TKANY, Sylvia (D), Receptionist, 1.6.1982
BRISTOW, Pamela (GB), Scientific Reports Typist, 1.7.1982

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HEUBES, Hannelore (D), Clerk-Typist (Telephone and telex operations), 30.6.1982

Chile

LUB, Jan (NL), Astronomer, 31.5.1982
HESSENMÜLLER, Egon (D), Optical Technician, 30.6.1982

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Near Infrared Observations of O Stars

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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 λλ 4634–4640 in the Of 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 1μ 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 I 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 ζ 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