

# ESO Conference on Optical Telescopes of the Future

This conference took place in Geneva between 12 and 15 December 1977.

The time seemed ripe for a conference on this subject, for many ideas are in the air and certain projects in the United States which deviate markedly from the conventional telescope are already completed or in active study.

The conference opened with a review of the astronomical case for large telescopes, an overview of the technological possibilities and the possibilities from space.

A session followed on conventional large telescopes in which technical aspects of a number of existing large telescopes and the possible extension of conventional telescopes to larger sizes were presented.

The following day was devoted entirely to Incoherent Arrays and Multi-Mirror Telescopes. In the sense that most effort deviating from the conventional large telescope has so far gone in this direction, the neutral observer had the feeling that this represented the centre of gravity of the conference. A wide variety of interesting solutions were presented with a collecting area up to the equivalent of a 25 m telescope and arrays with up to 100 telescopes.

A session on special techniques fitting into no clear group was followed by sessions on Coherent Arrays and Interferometers. This gave a broad review of current techniques and future possibilities and a comparison of optical and radio techniques.

The last morning of the conference, concerned with image processing and live optics, showed clearly the tremendous gain to be obtained in overcoming the effects of seeing even without increase in instrumental size. A clear distinction emerged at this conference between the terms "active optics" and "active structure". The latter implies, for example, the active control of tilt or position of several mirrors to combine images; the former the control of the form of, say, a thin mirror. The importance of both possibilities became increasingly clear throughout the conference.

The final session included a review of trends in detector developments. (Detectors were considered too vast a subject to be dealt with in detail but an overview was necessary to underline the essentially complementary nature of progress in telescope design and detectors.) The rest of the session was devoted to a review of the astronomical implications of the contributions and discussions, followed by a panel discussion. The latter developed into a most lively general discussion with numerous participants representing very many (often healthily conflicting!) viewpoints. While the consensus viewpoint seemed to support the view that the emphasis for post-conventional telescopes should lie in the

incoherent addition of more photons from bigger systems, a strongly vocal minority was clearly convinced that techniques using phase information should not be neglected. The discussion also inevitably brought up the vexed question of how an astronomer should or would like (not necessarily the same thing) to work with future instruments—the visit to the CERN installations had provoked considerable thought on this subject!

Thus ended a conference which seemed to have largely fulfilled its purpose: to encourage the debate on how instrumental funds in the future should be spent to best effect. The organizers thank all participants for making it such a stimulating event. Our thanks are due particularly to all the speakers who have enabled us to produce a virtually complete volume of Proceedings within two months of the Conference—see the notice.

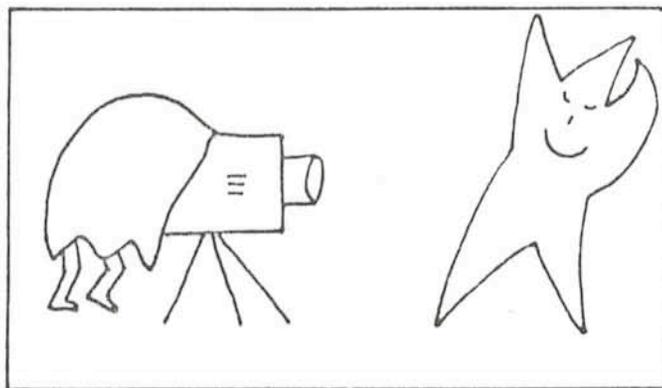
*R.N. Wilson*

## Forthcoming ESO Workshops

Two ESO workshops have been planned during 1978 on the subjects of astronomical photography and infrared astronomy. As in the case of earlier ESO workshops, attendance is limited and by invitation only.

### "Modern Techniques in Astronomical Photography"

This workshop will take place in Geneva on the CERN premises during May 16–18, 1978. About 50 participants are expected, mostly from European countries, but also from North and South America and Asia. The two principal sub-



jects to be discussed are sensitization and calibration of photographic plates. There will also be a discussion about the copying of plates and use of colour photography in astronomy. Several participants will talk about the photographic work at their observatories and a number of new techniques will be reported.

The proceedings will appear shortly after the conference. Further information may be obtained from R.M. West, ESO, c/o CERN, CH-1211 Geneva 23, Switzerland.

### "Infrared Astronomy"

By invitation of the Stockholm Observatory, the ESO workshop on infrared astronomy will be held on the island of Utö

## Proceedings of Conference Optical Telescopes of the Future

The Proceedings of this conference which contain nearly all the papers presented and the essential part of the discussions are now available.

Please send your order together with a cheque payable to ESO for Sfr. 40.— (price of copy including postage) to:

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