

*December 1988:* Madsen/West, Bernacca/Massone/Lattanzi.

*January 1989:* Aniol/Seitter/Duerbeck/Tsvetkov, Scardia.

*February 1989:* Scardia, Debehogne/Machado/Mourao/Caldeira/Vieira/Netto/Zappala/De Sanctis/Lagerkvist/Protitch-B./Javanshir/Woszczyk.

### 1.5-m Danish Telescope

*October 1988:* Olsen, Gyldenkerne, Hansen, Møller/Kjaergaard Rasmussen/Møller, Olsen, Magain/Remy/Surdej/Swings.

*November 1988:* Johansson/Bergvall, de Boer/Richtler/Sagar, Bergvall/Jörsäter/Olofsson, Balkowski/Arimoto/Durret/Proust, Liller/Alcaino, Baade/Krautter, Storm/Andersen.

*December 1988:* Storm/Anderson, Reiz/Pirola, Reipurth, Ardeberg/Lindgren/Lundström, Häfner/Schoembs.

*January 1989:* Naylor/Charles/Smale/Callanan, West, Duerbeck/Vogt/Leibowitz, Augusteijn/Schwarz/van Paradijs, Andersen/Nordström, Reipurth, Knude.

*February 1989:* Knude, Hansen, Knude, Andersen/Nordström/Mayor/Olsen, Nord-

ström/Andersen, Griffin R.F./Griffin R.E.M./Mayor/Clube, Mayor/Duquenooy/Andersen/Nordström.

*March 1989:* Meylan/Mayor, Fusi Pecci/Buonanno/Ortolani/Renzini/Ferraro, de Jong/van den Broek/van Driel/Lub, de Jong/Hu/Slijkhuis, Andersen/Nordström, Gammelgaard/Kristensen.

### 50-cm Danish Telescope

*October 1988:* Olsen, Rodriguez/Lopez/Rolland.

*November 1988:* Rodriguez/Lopez/Rolland, Group for Long Term Photometry of Variables.

*December 1988:* Lampens, Lampens/Dommangot.

*January 1989:* Lampens, Lampens/Dommangot, Ardeberg/Lindgren/Lundström, Lodén K.

*February 1989:* Clausen.

*March 1989:* Clausen, Group for Long Term Photometry of Variables.

### 90-cm Dutch Telescope

*October 1988:* Van Genderen/Hadiyanto,

*November 1988:* van Genderen/Hadiyanto, van Paradijs/Winget/Wamer/Augusteijn, v. Amerongen/v. Paradijs.

*December 1988:* de Loore/Hensberge/Verschueren/David/Blaauw.

*January 1989:* Greve/van Genderen/Laval, v. Amerongen/v. Paradijs.

*February 1989:* Schneider/Weiss.

*March 1989:* Schneider/Weiss, van Genderen/v.d. Hucht/Schwarz/de Loore, Thé/Hu.

### 61-cm Bochum Telescope

*October 1988:* Seggewiss/Moffat.

*January 1989:* Schneider/Jenkner/Maitzen.

### SEST

*November 1988:* Tacconi, Mebold, Gredel, Brand, Reipurth.

*January 1989:* Israel, Dupraz, Radford, Huchtmeier, Becker, Israel, Cernicharo, Pottasch, Reipurth.

*March 1989:* Bajaja, Dahlem, Israel, Armstrong, Le Bertre, Boulanger, Bel, Cerin, Gredel, Bronfman, Omont, Tapia, Haikala, Loup.

## The First ESO-OHP School in Astrophysical Observations Blessed by Clear Skies!

A. CHALABAEV, *Observatoire de Haute-Provence, C. N. R. S., France, and*  
S. D'ODORICO, *ESO*

In the last decades, the search for better conditions for astronomical observations as well as the need to cover the southern sky led many countries to develop observatories at relatively remote sites. Among many positive consequences, this move also has a negative one. Because of the cost of travelling, the training of European students in astronomy is too often limited to data reduction or, if the students are sent overseas, they lack the guidance of a senior astronomer during their first observing run. As a consequence, sophisticated and expensive facilities are often not used in the most efficient way, since the gathering of accurate and reliable data in a minimum of telescope time – while not an impossible art to learn quickly – greatly benefits from experience.

The aim of the Summer School in Astrophysical Observations, organized jointly by ESO and the Observatoire de Haute-Provence (OHP) with the support of the C. N. R. S. of France, was to fill this gap in the professional preparation of young European astronomers. The OHP has a number of characteristics which makes it a unique place in Europe to fill this role. It is placed at a relatively cen-

tral location with good observing weather during summer and autumn. Besides classical instrumentation, still using

photographic plates, the observatory is equipped with CCD-based modern spectrographs. The data-acquisition sys-

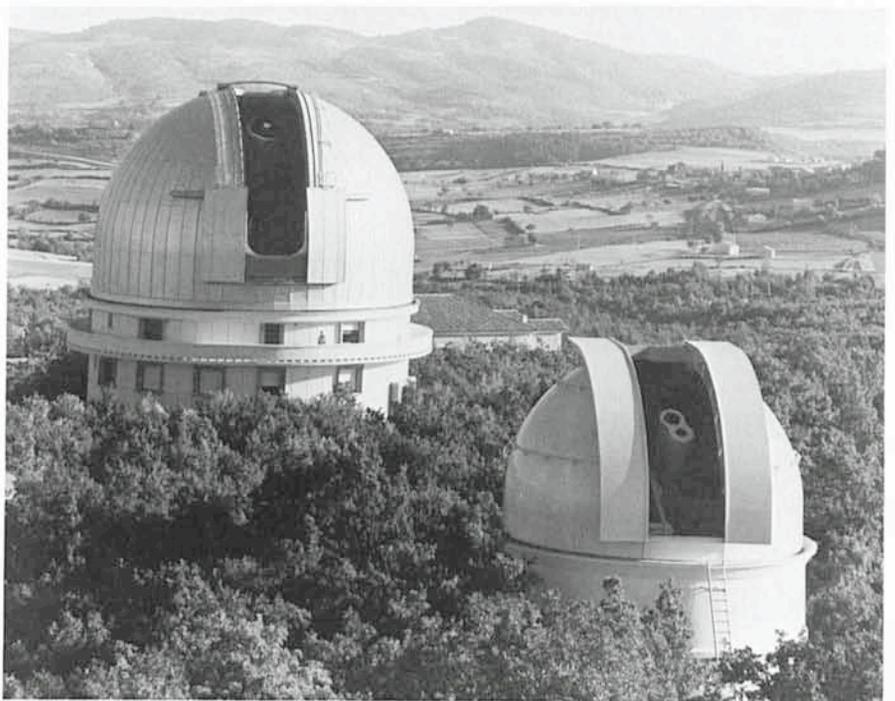


Figure 1: View of the 1.93-m and 1.52-m telescopes at OHP.

tem and the data reduction software (IHAP and MIDAS) are identical to those used at ESO. Autoguider and the remote controlled spectrograph functions are also very similar to the ones astronomers face in the observatories overseas.

The school offered a number of courses on different subjects of observational astronomy. The courses, given by scientists with sound observational experience, dealt with the scientific background, the theory and the practice of observations. The emphasis was on the preparation of an observing programme, on the evaluation of parameters which determine the signal-to-noise ratios of the final data and on the practical problems to be faced at the telescope. Finally, an introduction was given to the IHAP and MIDAS data reduction systems. The speakers made an effort to cover all those points that you hardly ever find in textbooks or that are hidden between the lines of user's manuals (anyway, did you ever meet an astronomer who carefully reads user's manuals?).

Besides the theoretical courses, and this is the particularity of the School, four nights were reserved at the 1.93-m, the 1.2-m and at the Schmidt telescopes in order to offer the students a chance to obtain astrophysical data "in real time". While the work at the smaller telescopes was limited to obtaining photographic plates under the guidance of an astronomer (a spectrum at the 1.2-m and an objective prism plate at the Schmidt), the spectroscopy at the 1.93-m with the CARELEC spectrograph and a CCD detector had a more ambitious character. The students were divided in groups of two or three, each with a tutoring astronomer. The latter proposed a programme of spectroscopic observations, guided the students through data reduction with IHAP or MIDAS software and helped with the presentation of the results on the last

### List of courses

Modern and future telescopes  
Optical and imaging instrumentation  
Detectors in astronomy  
Photometry in the visible  
Photometry with CCD's  
Photometry in the infrared  
Low resolution spectroscopy  
High resolution spectroscopy  
Polarimetry  
Interferometric observations  
Observations at the 120-cm telescope  
Observations at the Schmidt telescope  
IHAP  
MIDAS

M. Tarenghi (ESO)  
S. D'Odorico (ESO)  
M. Dennefeld (Paris)  
F. Rufener (Geneva)  
S. Ilovaisky (OHP)  
P. Bouchet (ESO)  
S. Cristiani (Padova)  
D. Gillet (OHP)  
H. Schwarz (ESO)  
J.M. Mariotti (Meudon)  
E. Maurice (Marseille)  
R. Burnage (OHP)  
M.-P. Véron-Cetty (OHP)  
A. Richichi (ESO)

**Tutoring astronomers:** A. Chalabaev, C. Chevalier, D. Gillet, S. Ilovaisky, Ph. Véron, M.-P. Véron-Cetty (all OHP), M. Dennefeld (IAP, Paris), and S. D'Odorico (ESO)

**Students:** H. Boffin (Bruxelles, Belgium), A. Cappi (Bologna, Italy), Ph. Chanry (Meudon, France), J.-G. Cuby (Meudon, France), B. Cunow (Münster, FRG), M. Deleuil (Marseille, France), P. Dubath (Genève, Switzerland), J. Egonsson (Lund, Sweden), M. Jensen (Copenhagen, Denmark), M. Franchini (Trieste, Italy), A. Fruscione (Paris, France), A. Lèbre (Montpellier, France), F. Leone (Catania, Italy), P. Petitjean (Paris, France), R. Plötzel (Heidelberg, FRG), H. Röttgering (Leiden, the Netherlands), Thou Xu (OHP, France).

day of the School. Measuring redshifts of a number of extragalactic sources and classifying them, monitoring the spectroscopic variation of an X-ray source are examples of the work done by students.

The perfect observing weather greatly contributed to the smooth and successful progress of the school. The atmosphere of the Observatory, with its peculiar working schedules, and the excitement of collecting real and interesting astronomical data, made the contacts among the participants easy and stimulated the initiative of the students, who played an active role in conducting their mini research programmes. Sure, an OHP staff astronomer was always present in a corner of the control room, ready to provide help or advice, but we can say, without exaggeration, that after the 10 days of intensive training we

would feel confident to leave our ex-students to perform an observing run fully on their own. Well, at least most of them. The school was hard work, too. Towards the end, the pleasures and the frustrations of reducing and analysing the CCD data on a crowded computer overlapped with the observing, leaving little time for regular sleep. The students passed this familiar "astronomer stress" test as well and on the final day gave remarkable final presentations of their work.

We feel that the school fully accomplished its task. This was due to the motivated and active cooperation of several persons at OHP and ESO. We would like, in particular, to address a special word of thanks to our colleagues who gave the spoken and practical courses and/or played the role of the tutors.

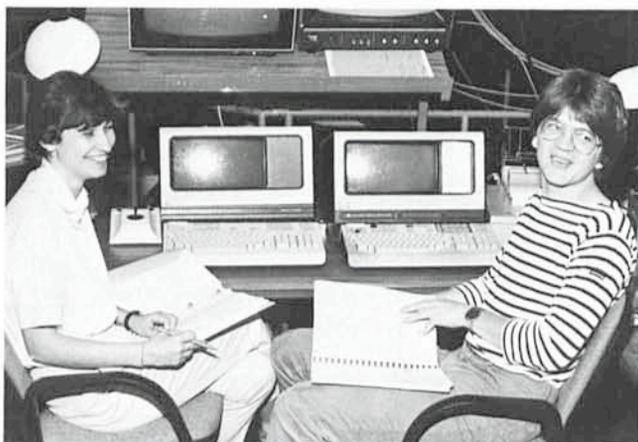


Figure 2: Students M.G. Franchini and H. Boffin enjoying a moment of relax during a long CCD integration at the 1.93-m telescope.

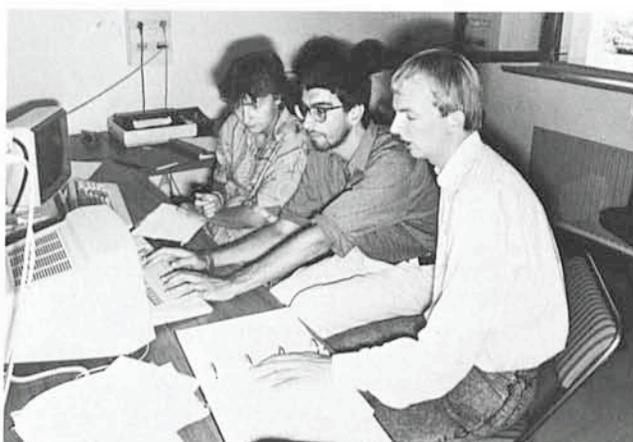


Figure 3: Students A. Lèbre, F. Leone and H. Röttgering working on the reduction of a CCD spectrum at a MIDAS station.