dal-Madjar/Lagrange-Henri/Beust/Ferlet/Foing/Char, Giard/Bernard/Dennefeld/Sales, Le Bertre et al. – 5-006-45K, Arlot/Descamps/Thuillot/Colas/Vu, Le Bertre et al. – 5-006-45K.

Jan. 1991: Le Bertre et al. – 5-006-45K, Courvoisier/Bouchet/Blecha, Pols/Waters/Verbunt/van Paradijs/Coté/van Kerkwijk/van den Heuvel, Sterken/Longo/Busarello, Arlot/Descamps/Thuillot/Colas/Vu, Le Bertre et al. – 5-006-45K, Foing/Collier-Cameron/Vilhu/Gustafsson/Ehrenfreund, Le Bertre et al. – 5-006-45K.

Feb. 1991: Le Bertre et al. – 5-006-45K, Courvoisier/Bouchet/Blecha, Hoffmann/Geyer, Groenewegen/de Jong T./Hu, Arlot/Descamps/Thuillot/Colas/Vu, Lorenzetti/Molinari, Courvoisier/Bouchet/Blecha, Thé/de Winter/Hu.

March 1991: Thé/de Winter/Hu, Robberto/Busso/Guarnieri/Scaltriti/Silvestro/Persi, Manfroid/Vreux, Arlot/Descamps/Thuillot/Colas/Vu, Catalano F.A./Leone/Kroll, Courvoisier/Bouchet/Blecha.

50-cm ESO Photometric Telescope

Oct. 1990: Char/Jankov/Foing/Neff/Fernandez/Rodono/Crivellari/Walter, Surdej/Detal/Hainaut/Pospieszalska-Surdej, Catalano F.A./Schneider H./Leone.

Nov. 1990: Catalano F.A./Schneider H./Leone, Schober, Maceroni/van't Veer/Vilhu, Char/Jankov/Foing/Neff/Fernandez/Rodono/Crivellari/Walter, Arlot/Thuillot/Descamps/Vu/Colas, Char/Jankov/Foing/Neff/Fernandez/Rodono/Crivellari/Walter.

Dec. 1990: Char/Jankov/Foing/Neff/Fernandez/Rodono/Crivellari/Walter, Gochermann/Grothues, Mantegazza/Antonello/Poretti, Arlot/Thuillot/Descamps/Vu/Colas, Mantegazza/Antonello/Poretti.

Jan. 1991: Mantegazza/Antonello/Poretti, Kohoutek, Arlot/Thuillot/Descamps/Vu/Colas, Kohoutek, Arlot/Thuillot/Descamps/Vu/Colas, Kohoutek, Schmutz/Nussbaumer/Vogel, Arlot/Thuillot/Descamps/Vu/Colas, Schmutz/Nussbaumer/Vogel, Foing/Collier-Cameron/Vilhu/Gustafsson/Ehrenfreund.

Feb. 1991: Foing/Collier-Cameron/Vilhu/Gustafsson/Ehrenfreund, Char/Jankov/Foing/Neff/Fernandez/Rodono/Crivellari/Walter, Debehogne/Di Martino/Zappalà/Lagerkvist/Hahn/Magnusson/de Campos/Cuypers/Cutispoto, Arlot/Thuillot/Descamps/Vu/Colas, Debehogne/Di Martino/Zappalà/Lagerkvist/Hahn/Magnusson/de Campos/Cuypers/Cutispoto, Arlot/Thuillot/Descamps/Vu/Colas, Debehogne/Di Martino/Zappalà/Lagerkvist/Hahn/Magnusson/de Campos/Cuypers/Cutispoto.

March 1991: Thé/de Winter/Bibo/Hu, Arlot/Thuillot/Descamps/Vu/Colas, Thé/de Winter/Bibo/Hu, Cutispoto/Giampapa/Pasquini/Leto/Pagano, Arlot/Thuillot/Descamps/Vu/Colas, Cutispoto/Giampapa/Pasquini/Leto/Pagano, Peres/Cutispoto/Reale/Serio/Leto/Pagano.

GPO 40-cm Astrograph

Nov. 1990: Elst/Hoffmann/Shkodrov.

Dec. 1990: Vidal-Madjar.

Feb. 1991: Munari/Lattanzi/Massone, Massone.

March 1991: Debehogne/Machado/Caldeira/Vieira/Netto/Zappalà/de Sanctis/Lagerkvist/Mourao/Protitch-Benishek/Javanshir/Wosczcyk.

1.5-m Danish Telescope

Oct. 1990: Ardeberg/Lundström/Lindgren, Caon/Capaccioli, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Capaccioli/Bresolin/Ortolani/Piotto, Mazure et al. – 1-014-43K, Athanassoula/Bosma/Buta/Crocker, Saust, Andersen/Nordström/Mayor/Olsen.

Nov. 1990: Danish time, Mayor et al. – 5-001-43K.

Dec. 1990: Mayor et al. – 5-001-43K, Lortet/Lindgren/Martin N., Vio/Cristiani/Della Valle/La Franca, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Surdej et al. – 2-003-43K, Quintana/Ramirez, Vidal-Madjar, Prugniel/Bhatia/McGillivray/Piotto, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Danish time.

Jan. 1991: Danish time, Mayor et al. – 5-001-43K.

Feb. 1991: Mayor et al. – 5-001-43K, Gahm/Lodén K., West, Bender et al. – 1-004-43K, Caon/Capaccioli/Ferrario, Groenewegen/de Jong T./Hu, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Waelkens/Mayor, Mermilliod/Mayor.

March 1991: Mermilliod/Mayor, Danish Time, Ardeberg/Lundström/Lindgren.

50-cm Danish Telescope

Oct. 1990: Group for Long Term Photometry of Variables, Ardeberg/Lundström/Lindgren, Group for Long Term Photometry of Variables.

Nov. 1990: Group for Long Term Photometry of Variables, Danish time, Einicke/Fabricius/Helmer, Group for Long Term Photometry of Variables.

Dec. 1990: Group for Long Term Photometry of Variables.

Jan. 1991: Group for Long Term Photometry of Variables, Danish time, Group for Long Term Photometry of Variables.

Feb. 1991: Group for Long Term Photometry of Variables, Olsen, Maitzen/Leone/Catalano F.A./Jenkner.

March 1991: Franco, Ardeberg/Lundström/Lindgren, Catalano F.A./Leone/Kroll.

90-cm Dutch Telescope

Oct. 1990: van Genderen.

Nov. 1990: van Genderen, Dutch time.

Dec. 1990: Dutch time, van Genderen, Lub/de Ruiter.

Jan. 1991: Dutch time.

Feb. 1991: Ferrari/Bucciarelli/Massone/Koornneef/Lasker/Postman/Siciliano/Lattanzi, van Genderen/van der Hucht/Schwarz.

March 1991: Dutch time.

SEST

Nov. 1990: Chini, Casoli, Bresolin, Combes, Becker, Kazes, Dettmar.

Jan. 1991: Wielebinski, Loiseau, Oosterloo, Huchtmeier, Dennefeld, Wild/Eckart, van der Hulst, Israel, Rothermel, de Graauw, Israel.

March 1991: Tacconi, Beckman, Cameron, Gérin, Wild, Cox, Lequeux, Cox, Stark, Henkel, Arnal, Groenewegen, Hu, Foing.

During 2nd ESO/OHP Summer School in Astrophysical Observations:

Observatoire de Haute-Provence Becomes a European Northern Observatory

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D. BAADE, ESO

There is a strong trend towards an ever tighter correlation between the quality of the equipment of an astronomical observatory and the remoteness of its site. There are good reasons for this. But it has the negative side effect that students find it more and more difficult to get adequate training in the usage of up-to-date instruments and the handling of the data they provide. This simple recognition led the European Southern Observatory and the Ob-

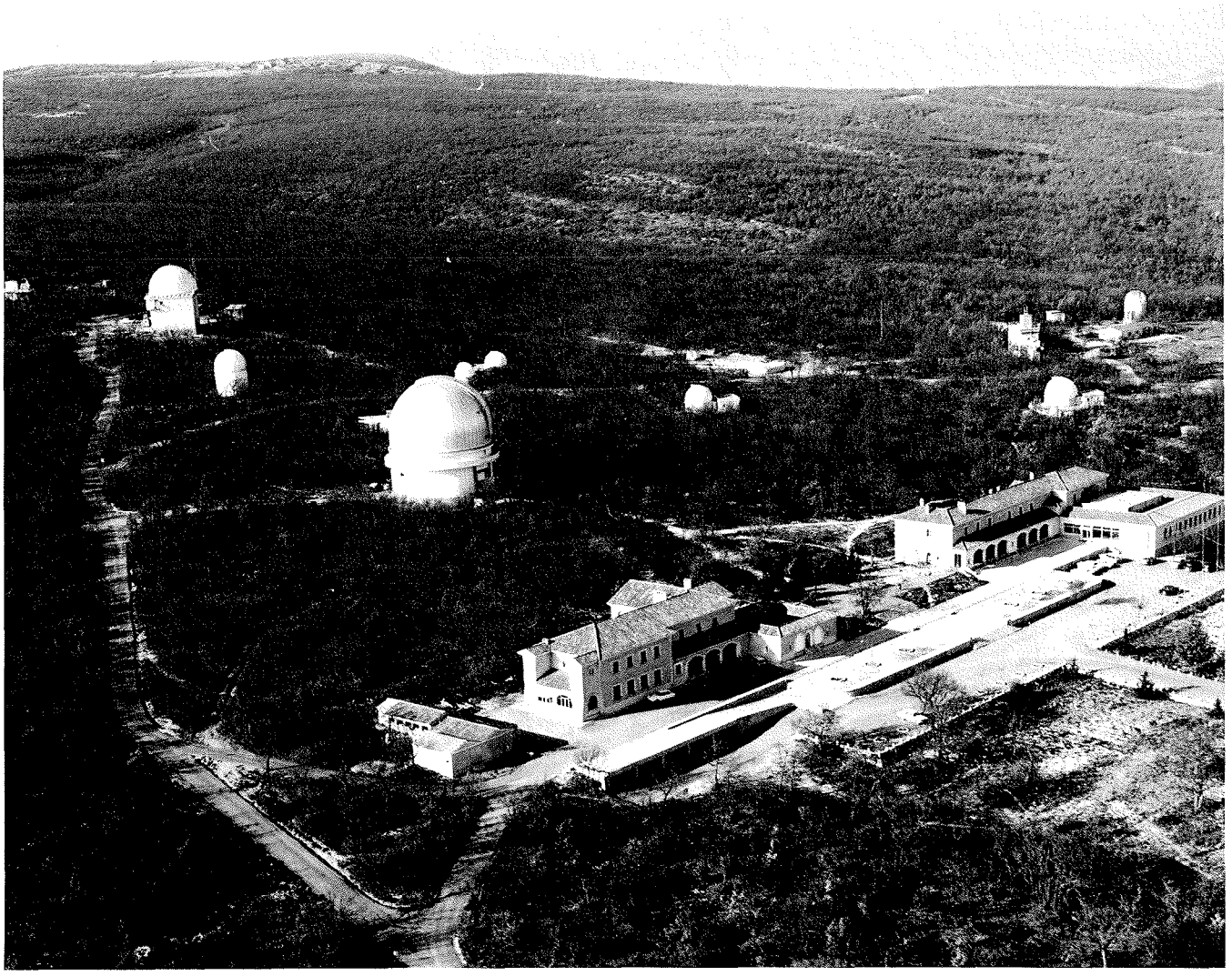

Figure 1: *General view of OHP: in front are the workshops and administrative buildings. The two biggest telescopes are the 1.93 m and 1.52 m telescope.*

servatoire de Haute-Provence (OHP) to organize a first joint Summer School in Astrophysical Observations which was held in July 1988 at OHP (see the report by A. Chalabaev and S. D'Odorico in the *Messenger* No. **53,** p. 11).

Since all involved felt that this first experiment was very successful, it was decided that now, 2 years later, organizing a second Summer School was very timely. In fact, the number of more than 50 applications convincingly confirmed this view. Unfortunately, the capacity of the facilities of OHP and the intended character of the Summer School limited the number of participants to eighteen. The selection process was, therefore, a very difficult one because we could accept only a fraction of the candidates which we should have liked to invite.

All participants arrived at OHP in the morning of July 16. After lunch, they met to form six teams of three students and one tutor each (their names are given in the separate box accompanying this article) and to plan and prepare the work to be done during the next ten days. For the Summer School, the OHP had set aside three nights at the 1.93-m telescope for low-resolution spectroscopy with the CARELEC spectrograph, three nights at the 1.52-m telescope with its high-resolution spectrograph AURELIE, and 6 nights for direct imaging with the 1.20-m telescope. All three instruments are equipped with CCD detectors. Three groups observed with the 1.93-m and

List of courses:

R. Wilson (ESO):	Modern telescope layout
M. Dennefeld (IAP, Paris):	High-sensitivity detectors
J. Wampler (ESO):	High-throughput optical instruments
F. Rufener (Geneva):	Photo-electric photometry
S. Ilovaisky (OHP):	Photometry with CCDs
D. Gillet (OHP):	High-resolution spectroscopy
F. Merkle (ESO):	High-resolution imaging
C. Vanderiest (Meudon):	Low-resolution and multi-channel spectroscopy
F. Sibille (Lyon):	Infrared observations
D. Baade (ESO):	Introduction to MIDAS
M. Véron (OHP):	Introduction to IHAP

Tutoring astronomers: D. Baade (ESO), E. Brocato (ESO), M. Dennefeld (IAP), D. Gillet (OHP), S. Ilovaisky (OHP) and P. Véron (OHP).

Students: J.-L. Beuzit (ESO), N. Caon (Padova, Italy), M. Cassiano (Göttingen, Germany), P. Cruzalèbes (Nice, France), R. den Hartog (Leiden, the Netherlands), J. Eislöffel (Heidelberg, Germany), F. Guglielmo (Meudon, France), F. G. Jensen (Arhus, Denmark), L. Kaper (Amsterdam, the Netherlands), A. Klotz (Toulouse, France), A. Lançon (Paris, France), X. Liu (ESO), J. Meijer (Münster, Germany), O. Moreau (Paris, France), C. Pichon (Meudon), France), A. Smette (ESO), M. Vestergaard (Copenhagen, Denmark), T. Zwitter (Trieste, Italy).

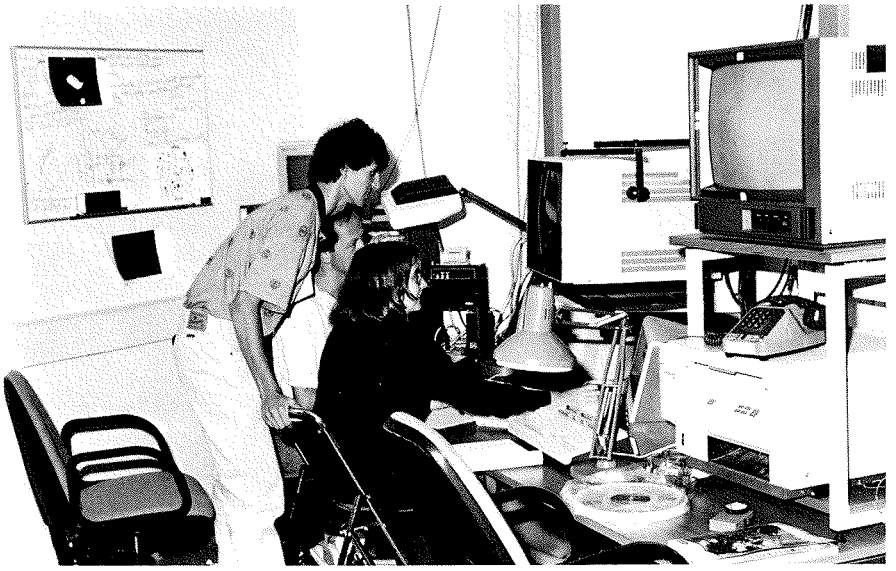

Figure 2: *A group of students (A. Lançon, N. Caon and J. Eislöffel) reducing CCD direct images at the IHAP station of the 1.20-m telescope.*

the other three with the 1.52-m telescope for one night each whereas all groups had one night at the 1.20-m telescope. With only minor exceptions, the weather cooperated during all nights.

The observing programmes had mostly been worked out by the group tutors but in some cases also included proposals made by the students. The targets ranged from IRAS galaxies over open star clusters to β Cephei stars, close X-ray binaries, OB supergiants, and FU Ori stars. The scientific subjects helped to provide a realistic background to the practical work done. But the main emphasis was on the latter: How does one select targets? Where do coordinates and finding charts come from? What other information is needed at the telescope? How does one estimate exposure times? What calibration sources are available; which ones are required for a given programme? How many different instrument set-ups can I handle in one night? In short, all the do's and don'ts of astronomical observations on which standard text books but also many user guides quit. Most programmes were on purpose not very ambitious in order to leave sufficient room for (minor) errors which so often are the most efficient teachers.

One of the lessons which every student learned (and even some of the tutors were reminded of it) is that the time required for the proper reduction of data exceeds the time for their acquisition by a large factor. The students responded to this challenge with considerable diligence. All computers were given a hard time, often nearly round the clock. The observations were tested for instrumental defects, calibrated and counter-checked, compared to literature data, and eventually put into the form of scientifically meaningful and esthetically pleasing viewgraphs. In this way, the students were exposed to a fairly broad range of applications software in MIDAS as well as IHAP.

The only major break was on Sunday, July 22, when an excursion to the nearby town of Forcalquier and its citadelle and a picnic close to the old monastery of Ganagobie provided a welcome opportunity to rest for a while.

On the last day, July 26, each group presented their work and results in a short talk of about 20 minutes duration to the other participants. Although rumours had it that some groups hardly saw their beds in the preceding night, the presentations made were without exception of a very high standard and well reflected the intense learning process of the past ten days.

Since OHP could provide state-of-the-art instruments with modern computer-based user interfaces plus both MIDAS and IHAP for data reduction, every student should now be in a good position to conduct observing programmes at La Silla or elsewhere on his/her own. This we had defined as the primary scope of the Summer School.

As stated above, the tutors guided and supervised the work of their respective groups. But there should also be a more systematic introduction to the physical basis and the practical design and operating principles of the types of facilities the students were using. This was provided by a series of eleven one-and-a-half hour lectures which were given by various renowned experts (see box). The students interacted with the speakers in lively conversations, and most lecturers kindly spent some extra days at OHP for in-depth discussions. Indisputable highlight was a joint, unscheduled presentation by Joe Wampler and Ray Wilson (both from ESO) which they had offered in order to bring the students up to date on the symptoms and interpretation of the optical anomalies of the Hubble Space Telescope.

The programme was rounded of by a visit of Ray Wilson to one of the telescopes where he explained what can be inferred about the aberrations of a telescope from the image of its pupil. Finally, through the kind invitation of Prof. Michel Mayor of the Observatoire de Genève, the students had the opportunity to complement their experience with modern instruments by watching CORAVEL being used at the Swiss 1-m telescope.

In many of the applications received for the Summer School, a strong interest was expressed in working with colleagues from other countries in an international environment. With nearly a dozen different nationalities, this desire was well satisfied. So, at least for the duration of the Summer School, one could speak of the OHP as a European Northern Observatory. The enthusiasm and good spirit of the students, the untiring efforts of the tutors, the helpfulness of numerous OHP technical staff, and the skill of the lecturers in explaining complex subjects made this Summer School a very rewarding experience for the organizers. We cordially thank them all.