

# THE NEON SCHOOL ENTERS A NEW ERA

MICHEL DENNEFELD (IAP, FRANCE),  
FOR THE NEON CONSORTIUM

**T**HE NEON SCHOOL, a school on astronomical observations organised by a collaboration of observatories (Asiago, Calar Alto, ESO, La Palma and OHP) is well known by PhD students in astronomy all over Europe. It runs tutorial observations directly at the telescope for students in small groups, under the supervision of an experienced astronomer. This way, the participants can execute a real scientific program with all the steps needed in professional life: preparation of the program with selection of targets and feasibility estimates; set-up of the instrument and calibrations; running of the observations, in general both imaging/photometry and spectroscopy; data reductions; and, finally, the presentation of the results at the end of the school.

The first series, financed by a contract from the European Union under the Marie Curie program in FP5, held schools in Calar Alto Observatory, Spain (2000), in Haute-Provence Observatory, France (2001), and Asiago Observatory, Italy (2002). These observatories, while still at the forefront of research, are more easily accessible than the latest, largest telescopes like the VLT, where the pressure factor is higher, and they have a big advantage: one can still enter the telescope, open the camera if needed, or adjust the grating angle directly at the spectrograph. This hands-on experience gives good training: only those with good knowledge of an instrument are able to exploit its ultimate performance. Such experience is difficult to acquire on telescopes like the VLT where observations are conducted by the local staff (even in “visitor” mode) with the help of advanced software, and of course, not at all in service mode or with space observatories like Hubble or Spitzer. This first series finished with the end of the EU FP5 financing.

In the meantime it was also realised that many interesting projects can now be done with the wealth of archival data becoming available all over the world. Doing science with those archives is in fact not so different from the approach at the telescope: one still needs good preparation to define objectives

and the instruments needed, and good analysis once the data are in hand. The first *Neon Archive Observing school* was therefore held last summer, following those lines, at ESO/ST-EcF in Garching, with generous support from both organizations. The *Opticon* network also sponsored some of the experts. Twenty students, coming from 11 different European countries, attended this school at ESO-Garching from July 14 to 24, to conduct small scientific projects in an exciting environment, using both ground and space data: such a multi-wavelength, multi-instrument approach is the modern way to do astrophysics! Introductory lectures were given in various topics by experts in the field: optical quality analysis of astronomical images (R. Hook from ST/Baltimore), photometric techniques (G. Piotto from Padova), tools for multi-wavelength archival data and virtual observatories (P. Padovani, ESO), etc. Other lectures presented the observatories accessible to young astronomers in Europe (those of the NEON consortium, and wider) and some of the future large projects (ALMA, OWL). The full program can be seen on ESO’s web site: <http://www.eso.org/gen-fac/meetings/neon-2004/>.

The science projects dealt with evaluating star formation in merging galaxies (tutor: A. Pasquali, ETH Zurich); finding the galaxies responsible for the Lyman alpha absorption lines in the spectra of quasars (tutor: J. Liske, ESO); measuring the properties of globular clusters in M87 (tutor: S. Larsen, ESO); constructing the H-R diagram and derive metallicities of stars in the nearby Cetus Dwarf galaxy (tutor: M. Rejkuba, ESO); and measuring line strength indices and derive age and metallicities of globular clusters in NGC 3585 (Tutor: N. Cardiel, Calar Alto). Very interesting results were presented, demonstrating (if needed...) the value of modern archives: you can also find the full scientific presentations on ESO’s Web page. Thanks to a very efficient organisation (particular thanks are due to co-organiser Harald Kuntschner and to Britt Sjoeborg!), this school was again a great

success. When asked whether they would have preferred a school at the telescope, most of the students said they preferred the archive school! Reasons for that preference are to be attributed to the lively scientific environment of an institution like ESO, but probably also to the proximity of the town, compared with an isolated observatory!

So, what comes next? Schools on archival data are clearly needed, as AVO tools certainly have to be mastered by future astronomers. But that does not mean that schools with real observations should be discontinued: it is difficult to replace direct experience at the telescope, and it may well be that two different paths are now emerging in an astronomer’s career. Those experienced astronomers needed to execute service observations probably need different skills than those sitting in their office making quality checks: but if the latter do not know how the observations have to be conducted, interaction will be difficult! So both type of schools should be conducted in the future. Fortunately, an FP6 proposal submitted by the NEON consortium to finance such schools has received a favourable evaluation, and negotiations are under way at the time of writing. The NEON schools will continue with EU support for another four years. It may well be that in some years, two schools will be scheduled in the same summer, one at the telescope, and one with archives, to satisfy the growing demand. Full information will, as usual, be available on the web pages of the European Astronomical Society (<http://www.iap.fr/eas/>) and on those of the participating observatories (Asiago, Calar Alto, ESO, La Palma and OHP). In the meantime further ideas to develop the interests and skills of students in astronomy are being considered also within the Opticon network ([www.astro-opticon.org](http://www.astro-opticon.org)). We hope that we can count on many of you to act as lecturers or tutors during the coming NEON schools. Do not hesitate to contact us; it is a truly enriching experience, not only for the students.