

# « Enhancement » activity in N6.3

« Enhancing the efficiency of research »

## Scope:

- Concerns, within the frame of an I3 like Opticon, researchers having a degree allowing them to start a PhD (not before!), or more advanced in their career (« life-long training »)
- Set-up of a WG to identify the needs
- Set-up, and Support of Workshops, Schools, etc...



# « Enhancement » activity within Opticon

## Summary of activities during FP6

- First archival school (low cost!) in Garching in 2004
- Successful submission of Marie-Curie program (Neon schools: 6 planned 2005-8)
- 2 Meetings of the WG (Padova 05, Bucarest 07)
- Established plans for specialised training workshops in « new observing techniques » (towards end of program)
- With modest budget from Opticon (66 kE = 0.3 % )



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# The NEON schools (**Marie Curie**)

- **Work-horse of the program, exist since 2000**
- New Marie-Curie program 2005-2008, to « Enhance » skills in observationnal astronomy
- Participants: Asiago, Calar Alto, Eso, OHP, LaPalma
- OPTICON now supports lecturers and experts
- Schools either at the telescope, or using archival data (or combination of both)
- Principally for PhD students (or post-docs)
- Work in small groups (4 students), each supervised by an experienced « tutor »
- Around real research program, with results!



# Typical agenda for a school



- Days 1-4    Introductory lectures, preparation of the observations
- Nights 2-7    Observations
- Days 3-12    Data reduction and analysis  
                  Complementary lectures
- Day 13        Public Presentation of the results



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# Topics usually covered in lectures

## A: basics for observations

- Telescopes and optics (C. Barbieri, R. Hook, R. Wilson, ....)
- Photometry (S. Ortolani, G. Piotto, H.J. Roeser, ...)
- Spectroscopy (M. Dennefeld, D. Gillet, R. Gratton, H. Korhonen, ...)
- Detectors ( R. Dorn, Ph. Feautrier, G. Finger, ...)
- Basics for Archive retrieval (much enhanced in archival schools, of course!)



# Topics usually covered in lectures

## B: larger than 4m and towards the future...

- VLT instrumentation (S. D'Odorico, A. Morwood,...)
- Adaptive optics (R. Gredel, R. Rutten, ....)
- Ground-Space complementarities (HST, JWST, Alma, ...)
- Local specialities (polarimetry, interferometry, pastis, ...)
- History of telescopes, towards the E-ELT (M. Dennefeld, Ph. Diericks)
- European facilities ( R. Gredel, M. Dennefeld, ...)
- Job situation in Astronomy in Europe ( H. Kuntschner)

General discussion and wrap-up



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# Presentation of the scientific results

- Last day of the school
- Each group presents the results in presence of the staff of the observatory
- Every student has to talk (in english)
- Some results lead to publications
- Collaboration sometimes continues with the tutors (also post-docs opportunities...)



# Accomplished schools

(during FP6)

- **Calar-Alto Observatory (2005, August 7-20)**  
16 students, 12 different nationalities ( 1 Bulgar, 1 Greek, 1 Turk)  
2 telescopes, pressure factor  $\sim 4$
- **Haute-Provence Obs. (2006, 23/7—6/8)**  
22 students, 13 nationalities (3 Bulgarians, 1 Turk, 1 Croatian, 1 Serb), 4 telescopes
- **ESO Archive school (no fresh telescope data)**  
2006 (30/8—9/9), 20 students, 12 nationalities  
(2 Bulgars, 1 Greek, 1 Turk)

Good gender distribution ( $\sim 50/50$ )





## And more Neon schools....

- Asiago Observatory in 2007 (Sept. 4 -18)  
Pressure factor again above 4....we added one more group in last moment (20 students in total, 14 different nationalities)
- This year (2008):
  - La Palma school (June 23—July 5), with NOT and INT, 16 students, 11 nationalities  
(US demand! and more UK demand...)
  - Archive school at ESO ( August 27—Sept. 6), 20 students, 16 nationalities
    - And the IFU school (May 19—24) ...



## And more events .....

- Participation in the observing school in Armenia (Byurakan, Sept. 06)
- Participation in the spectroscopic school in Bulgaria (Rozhen, Oct.07)
- School on 3D spectroscopy in Potsdam in May (19-28) 2008, 30 seats

**First of a new series (« modern techniques »),** not only for students, but also for more senior astronomers (6 postdocs, 2 seniors out of 30 participants)

Specific SOC constituted (J. Allington-Smith, M.D., E. Emsellem, H. Kuntschner, M. Roth, )

Coordinated with ESO « 3D Science » workshop (June 08)



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# Lessons to be learned

- Hands-on experience unique
- Work in small groups essential
- Quality of tutors is the key for success
- Diversity of origins and nationalities favours interactions and future collaborations



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# Objectives of Enhancement for FP7 (before funding cuts !!)

Strengthen and Develop the program further,  
with support to observing schools of various types

AND:

- More emphasis on life-long training (workshops)
- Better use of archives (demos...)
- Organise more events in the East of Europe  
(e.g. data reduction schools, with or without observations)
- Organise instrumentation oriented schools/workshops
- Develop synergies (e.g. interferometry/radioastronomy)
- Raise awareness to the great questions in astrophysics

In close link with the Telescope Director's Forum



# Enhancement: pending questions

- Relations between I3's and lower levels ?  
Awareness to Astronomy has to be raised much earlier!
- Cost issue: **Marie-Curie program will not exist anymore in FP7**  
Typical cost of a Neon school is ~ 60kE (telescopes) or ~ 40kE (archives)  
among which ~ 20 kE for telescopes, and ~20 kE to pay student's  
travel, board and lodging
- How to integrate astronomers from FSU? (Russia,  
Ukraine, etc... have an old tradition in astronomy!)
- How to send/pay young researchers to telescopes without  
paying user's fees ? (are the Access rules rigid?)
- How to recruit/train instrumentalists (ground or space) ?



# Enhancement: what remains after funding cuts?

- Difficult choice between « just do the same old stuff » (total budget just enough for one Neon school per year)  
or develop the (much needed!) new activities!
- We will concentrate on our « basic skills »
  - One Neon observing school every 2 years only (telescope time cannot be obtained for free!) unless national agencies provide more money ...Not paying the students costs...
  - Bring some students individually to the telescopes, with the help of the Telescope Director's forum ( LaCaille scheme)
  - Start the awareness conferences in eastern EU countries, eventually in conjunction with local « archive schools »
  - Develop workshops on « new techniques »(e.g. photometry with AO)



and see after 2 years...

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# Proposed timetable of schools/workshops/deliverables

Type	2009	2010	2011	2012
• Observing schools*	45 (60)	X	45 (60)	X
• Archive schools		25 (40)		25 (40)
• Training workshops on specific instruments		25 (AO) (40)	(VLTI)	(IFU)
• Instrumentation		X		X
• Awareness Conf.	X	15(25)	X	15 (25)
• LaCaille exchange Scheme ( 12.5 (Paid from the Access + TDF, down from 80)		12.5	12.5	12.5)
• Gran Total	195 kE + 7% overheads = 208.7 kE, (+ 50 kE from Access/TDF)			

Solar events not included, nor interferometry

RED = Cancelled!



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# Organisation

- Proposed Steering Committee

Joao Alves (Almeria) (or R. Gredel); Michel Dennefeld (Paris); Bruno Leibundgut (or represent., ESO); Teresa Lago (Porto); Kiril Panov (Sofia); Alessandro Pizzella (Padova); Magda Stavinschi (Bucarest); Grazina Tautvaisiene (Vilnius); Martin Ward (Durham)

+ representative from the Telescope Director's Forum

- Specific Committee for the LaCaille exchange scheme

( being constituted : MD, B. Nordstroem, somebody from the Access Office , etc...)





## A more optimistic note to finish...

- NEON schools have built up a good reputation, and the demand is high...So we continue...BUT telescopes have to remain available!
- The scheme is attractive enough that some countries are willing to develop it locally with our help (Armenia, Bulgaria, Lithuania, India, China !)
- The real challenge is to bring new users to the well developed observatories, to train them in modern techniques, and to bring young scientists to work on the forefront questions!



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# Questionnaire for students

**7th NEON Observing School**  
**LaPalma, June 23 –July 05, 2008**

## QUESTIONNAIRE FOR STUDENTS

- We would appreciate your input and help to improve this school. Please feel free to comment on any aspect you think is important (scientific, technical, logistics, etc.) but consider at least the following :
- **A** In the present arrangement, are you satisfied (or not) with:
  - The size of the school and of the groups?
  - The number of observing nights and the duration of the school?
  - The lectures
    - their number (less or more?)
    - their level (too high, or too low?)
    - their topics (too technical? too scientific?)
    - other topics to be included?

### **B Other comments**

(organisation, practical matters, etc...)



- **C** - What is good in general?  
What needs improvement?  
What is missing?
- **D** - Would you recommend this school to other students?  
Would you later on accept to be a tutor in such a school?  
How did you learn about this school? (is our advertising satisfactory?)
- **E** During your regular physics / astrophysics studies, did you receive (some) similar teaching:  
lectures?  
practical work?  
(please tell us where (country, university, etc...) and at which level)
- Your name:  
Thank you for your contribution
- (Note you will also have to fill in an independent EU questionnaire at <http://webgate.ec.europa.eu/sesam/>) Details will be given to you separately.



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