OPTICON

The Optical Infrared Co-ordination Network for Astronomy.

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«Ερευνητικές Υποδομές», 21/12/2004

What is OPTICON?

In FP5 (2000-2004) OPTICON was an EU funded thematic network bringing together national funding agencies and users with common interests in optical-infrared astronomy.

PI. Gerry Gilmore, Institute of Astronomy, Cambridge

PS. John Davies, UK Astronomy Technology Centre, Edinburgh

FP5 OPTICON
Objectives/Deliverables

- Very large telescopes
- Virtual Observatories
- Access to large databases
- Common data standards
- Future of 1-4m telescopes
- co-ordinated Instrumentation developments
- Exploitation of spacecraft data

•Lasting integration of EU Astronomers.

•Create opportunities for mobility.

•Remove duplicated or obsolescent facilities to release funding for new initiatives.

•Rationalise use of existing facilities

•Use astronomy as an educational tool

OPTICON Accomplishments

- AVO contract from EU
- Astrowise contract from EU
- EURO-3D contract from EU
- EU funds for feasibility study of elite fellowship scheme
- A coherent and widely supported approach to FP6 (including co-ordination with Radionet and AVO).

The OPTICON I3
Integrated Infrastructure Initiative

- Contract : 19.2 M Euro (from 255 total)

- Networking via working groups similar to OPTICON FP5
- Transnational access to 22 Night-time and solar telescopes (combining activities such as COMET and FP5 ENO)
- 6 Joint Research Projects in Technology

Management

- OPTICON Board (18 partners) sets overall strategy and priorities at annual meeting **(Εθνική Αστρονομική Επιτροπή)**
- Oversight committee (~9 agencies) make the detailed decisions, especially about money, ~ 6 monthly.
- Cambridge (Gerry Gilmore) is co-ordinator and finance office.
- Project Office (John Davies, UKATC) supports board, runs some networks, attends board, proposes budgets etc
- Access Office (Jesus Burgos, IAC) runs telescope grants **(ΑΡΙΣΤΑΡΧΟΣ τηλεσκόπιο, ΕΑΑ)**
- JRA's and some networks have internal management

Projects funded under the FP6 1st call for Transnational Access and Integrated Infrastructure Initiative (FP6-2002-Infrastructures-1).

Transnational access:

- OASIS: Optimising Access to SPOT Infrastructure for Science (RITA-CT-2004-001709)
- High Field research: Access to research in very high magnetic fields (RITA-CT-2003-505474)
- CoSTaR: Coal Mine Sites for Targeted Remediation Research (RITA-CT-2003-506069)
- WISSMC: Access to the Braun Submicron Center for Research on Semiconductor Materials, Devices and Structures (RITA-CT-2003-506095)
- ALOMAR eaRI: Arctic Lidar Observatory for Middle Atmospheric Research (RITA-CT-2003-506208)
- ENGAS: Environmental Gas Management Research Infrastructure(RITA-CT-2003-506502)
- SOLFACE: High Flux SOLar FACilities for Europe (RITA-CT-2003-507091)
- ULTI: Ultra Low Temperature Installation (RITA-CT-2003-505313)
- IHÉS Euro-programme 2: European Visitors Programme at the Institut des Hautes Études Scientifiques to Conduct Advanced Research in Mathematics, Theoretical Physics and other theoretical sciences (RITA-CT-2004-505493)

Integrated Infrastructure Initiatives (I3):

- **RadioNet: Advanced Radio Astronomy in Europe (RII3-CT-2003-505818)**
- ILIAS: Integrated Large Infrastructures for Astroparticle Science (RII3-CT-2004-506222)
- NMI3: Integrated Infrastructure Initiative for Neutron Scattering and Muon Spectroscopy (RII3-CT-2003-505925)
- HadronPhysics: Study of strongly interacting matter (RII3-CT-2004-506078)
- HPC-Europa: Pan-European Research Infrastructure on High Performance Computing (RII3-CT-2003-506079)
- SYNTHESYS: Synthesis of Systematic Resources (RII3-CT-2003-506117)
- LASERLAB-EUROPE: Integrated European Laser Laboratories (RII3-CT-2003-506350)
- CARE: Coordinated Accelerator Research in Europe (RII3-CT-2003-506395)
- **OPTICON: Optical Infrared Co-ordination Network for Astronomy (RII3-CT-2004-001566)**
- EUROCHAMP: Integration of European Simulation Chambers for Investigating Atmospheric Processes (RII3-CT-2004-505968)
- EU-ARTECH: Access Research and Technology for the conservation of the European Cultural Heritage (RII3-CT-2004-506171)
- IA-SFS: Integrating Activity on Synchrotron and Free Electron Laser Science (RII3-CT-2004-506008)
- EMM inf: European Mouse Mutant Archive Infrastructure (RII3-CT-2004-506455)

Co ion Actions - ENSCONET: European Native Seed Conservation Network

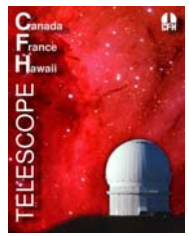
D studies, Construction of new infrastructures, Accompanying Measures (under negotiation)

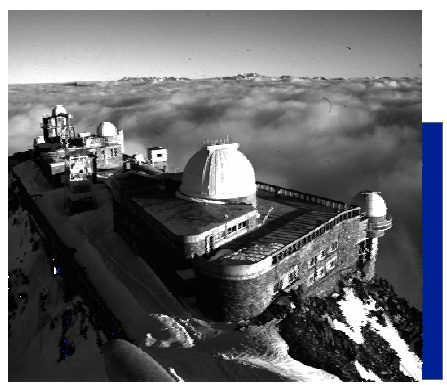
OPTICON I3 Networking

- Structuring European Astronomy (J.Davies). This includes ELT science working group (Hook), AVO/Interoperability (Quinn), **HTRA (Spruit**), NUVA (Gomez de Castro) , Key Technologies (Cunningham) , Software (Grosbol)
- Interferometry working group (A. Quirrenbach, Andrzej Niedzielski, Romain Petrov, Jean Surdej)
- **Telescope Directors Forum (J .Davies)**
- Fellowships and large scale projects (J-LPuget/M. Kessler)
- **NEON** Research Experience (M. Dennefeld, IAP)
- Structuring the ENO (ORM + Izana)
- Round tables with **Radionet**, ALMA, NGST etc_

The Telescope Network

Anglo Australian Observatory	3.5m Telescope
Anglo Australian Observatory	Schmidt Telescope
UK Infrared Telescope, Hawaii	3.8m Telescope
Canada France Hawaii Telescope	3.5m Telescope
La Silla, ESO, Chile	3.6m Telescope
La Silla	3.5m Telescope
La Silla	2.2m Telescope
Isaac Newton Group, Canary Islands	4.2m Telescope
Isaac Newton Group	2.5m Telescope
TNG	3.5m Telescope
Nordic Optical Telescope	2.5m Telescope
Centro Astron. Hispano Aleman, Spain	3.5m Telescope
Centro Astronomico Hispano Aleman	2.2m Telescope
Aristarchos, NOA, Greece	**2.3m Telescope**
Observatoire Haute Provence, France	1.9m Telescope
Telescope Bernard Lyot, France	2m Telescope
Telescopio Carlos Sancez, Canary Islands	1.52m Telescope
THEMIS,	Solar Telescope
Swedish Solar Telescope	Solar Telescope
Vacuum Tower Telescope	Solar Telescope
Liverpool Telescope	2m Telescope
Dutch Open Telescope	Solar Telescope





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The 2.3m ARISTARCHOS telescope at a new ground-based station at the 2.3 km “Neraidorahi” peak of Chelmos mountain, Peloponese, South Greece (see arrow on map).

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The Challenge

- Create a mechanism for improving access to non-national observing time
- Provide resources for operation of the telescopes and support of observing runs
- Implement common R & D projects for infrastructure improvements
- Calls to non-national users.
- Same peer review committee, same standards (no special OPTICON TAC).
- Successful qualifying applicants will get travel support.
- Telescopes receive audited ‘user fee’

Joint Research Projects

- VPH Gratings (I)
- Optical Detectors for HTRA (D)
- Fast Detectors for AO (F)
- Smart Focal Planes (UK)
- Interferometry (NL)
- Adaptive Optics. (ESO)

•Details of each JRA is linked from the OPTICON web page

•In general they are not open to new partners as the contract is signed

•However, several of them have associated network activities to provide science input

Greece participates in 3 activities:

- N5: European-wide astronomy (GNCA)
- N9: OPTICON Telescope Network (GNCA)
  (Budget: 10 kEuro)
- A9: Aristarchos telescope (NOA)

  (Estimated budget: 50 kEuro/year for 20% of telescope time as European time)

Conclusion

- Εθνική Αστρονομική Επιτροπή στο Managerial Board του μεγαλύτερου I3
- Open to networking and JRAs for local groups
- A wide range of EU optical-IR-night-solar telescopes are wide open for new users (T&S for Greek observers)
- ARISTARCHOS operation fees (20% European time), EAA → international visibility
- Possibility to use Greek telescopes for teaching schemes (eg NEON- Dennefeld)
- Greece has entered the European family for R&T in astronomy and participates in a project aiming toward the integration of European astronomical infrastructure