



OPTICON

Optical Infrared Coordination Network for Astronomy
Horizon 2020



What can we do for you?

Heidi Korhonen

DARK, Niels Bohr Institute

University of Copenhagen

With some slides from G. Pebody



What is OPTICON?



HORIZON-2020

“Integrating and opening existing national and regional research infrastructures of European interest”

- **FP5 (2000-2004) Start-up networking**
- **FP6 (2004-2008) 47 partners €19M (5 years)**
- **FP7-1 (2009-2012) 30 partners €10M (4 years)**
- **FP7-2 (2013-2016) 26 partners €8.5M (4 years)**
- **H2020 (2017-2020) 32 partners €10M (4 years)**
- Partners: funding agencies, hardware R&D groups, observatories, industrial partners
- Activities: observing access, technology R&D, networking / community development

Who are we?



HORIZON-2020

Management:

- OPTICON coordinator: Prof. Gerry Gilmore, Cambridge, UK
- OPTICON project manager: Dr. Gudrun Pebody, Cambridge, UK
- OPTICON project scientist: Dr. John Davies, Edinbough, UK

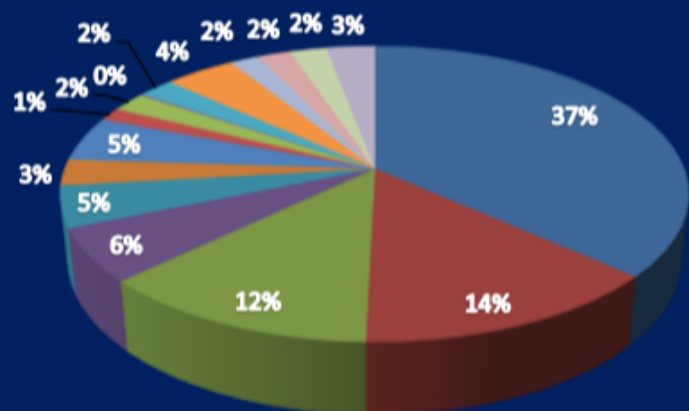


Additionally dozens of people from the 32 OPTICON partners



OPTICON H2020

- 32 Partners
- 15 countries + 1 IO
- Funding agencies (STFC, CNRS, MPG, INAF, CSIC, NOVA, ESO)
- Industry
- University technology groups
- Telescope operators
- € 2.4 Million TNA budget



#	Participant organisation name	Country
1	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	UK
2	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
3	ISTITUTO NAZIONALE DI ASTROFISICA	IT
4	MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	DE
5	SCIENCE AND TECHNOLOGY FACILITIES COUNCIL	UK
6	EUROPEAN SOUTHERN OBSERVATORY	IO
7	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
8	UNIVERSITEIT LEIDEN	NL
9	FIRST LIGHT IMAGING SAS	FR
10	OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES	FR
11	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
12	INSTITUTO DE ASTROFISICA DE CANARIAS	ES
13	MAGYAR TUDOMANYOS AKADEMIA CSILLAGASZATI ES FOLDTUDOMANYI KUTATOKOZPONT	HU
14	UNIwersytet Warszawski	PL
15	NATIONAL OBSERVATORY OF ATHENS	EL
16	NATIONAL UNIVERSITY OF IRELAND, GALWAY	IE
17	KOBENHAVNS UNIVERSITET	DK
18	UNIVERSITE DE LIEGE	BE
19	UNIVERSIDADE DO PORTO	PT
20	LEIBNIZ-INSTITUT FUR ASTROPHYSIK POTSDAM (AIP)	DE
21	POLITECNICO DI MILANO	IT
22	NORDIC OPTICAL TELESCOPE SCIENTIFIC ASSOCIATION	SE
23	DEPARTMENT OF INDUSTRY - AUSTRALIA	AU
24	HERIOT-WATT UNIVERSITY	UK
25	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK
26	LIVERPOOL JOHN MOORES UNIVERSITY	UK
27	UNIVERSITY OF DURHAM	UK
28	THE UNIVERSITY OF EXETER	UK
29	UNIVERSITY OF BATH	UK
30	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	UK
31	THE UNIVERSITY OF SHEFFIELD	UK
32	INSTITUT D'OPTIQUE THEORIQUE ET APPLIQUEE IOTA	FR

Budget distribution by country

UNIVERSITY OF COPENHAGEN



NUI Galway
OÉ Gaillimh



MAX-PLANCK-GESELLSCHAFT



UNIVERSITY OF BATH



INAF

ISTITUTO NAZIONALE DI ASTROFISICA
NATIONAL INSTITUTE FOR ASTROPHYSICS



TNO innovation for life



UNIVERSITY OF CAMBRIDGE



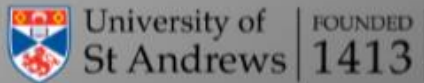
Science & Technology Facilities Council



POLITECNICO MILANO 1863



Durham University



Universiteit Leiden



Australian Government
Department of Industry,
Innovation and Science



„Joint Research Activities“

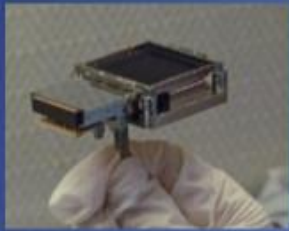
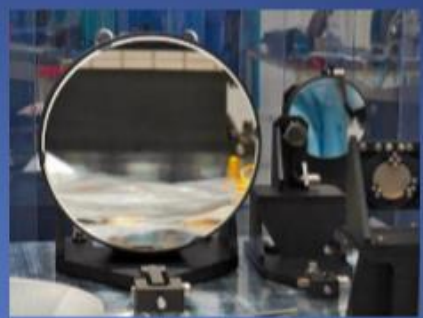


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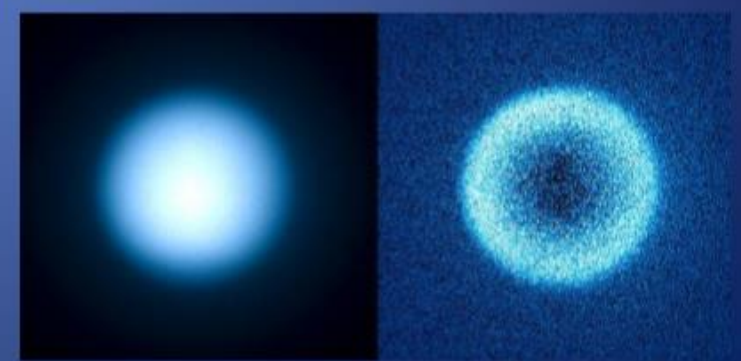
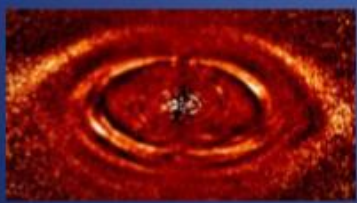
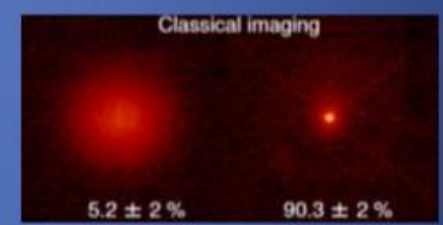
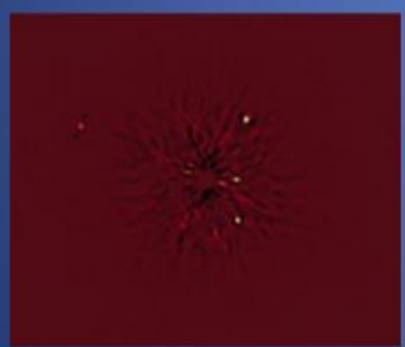
Activity	Title	WP Leader / Contact
WP1	JRA1 - Calibration and Test Tools for Adaptive-Optics E-ELT Instruments	Jean-Luc Beuzit (CNRS) - jean-luc.beuzit@obs.ujf-grenoble.fr
WP2	JRA2 - Fast Detectors and Cameras for Laser Guide Stars	Philippe Feautrier (CNRS) - philippe.feautrier@univ-grenoble-alpes.fr
WP3	JRA3 - Emerging Fast Detectors	Andy Shearer (NUIG) - andy.shearer@nuigalway.ie
WP4	JRA4 - Unlocking The Potential of Freeform Optics for Astronomical Instrumentation	Michiel Rodenhuis (NOVA) - rodenhuis@strw.leidenuniv.nl
WP5	JRA5 - Additive Astronomy Integrated-component Manufacturing (A2IM)	Hermine Schnetler (STFC) - hermine.schnetler@stfc.ac.uk
WP6	Astrophotonics	Roger Haynes (AIP) - rhaynes@aip.de
WP7	Innovative Photosensitive Materials for Diffractive and Reflective Optical Elements	Andrea Bianco - andrea.bianco@brera.inaf.it
WP8	JRA8 - Next Generation Instrument Concepts for VLT Interferometry	Jörg-Uwe Pott (MPIA) - jpott@mpia.de



SPHERE



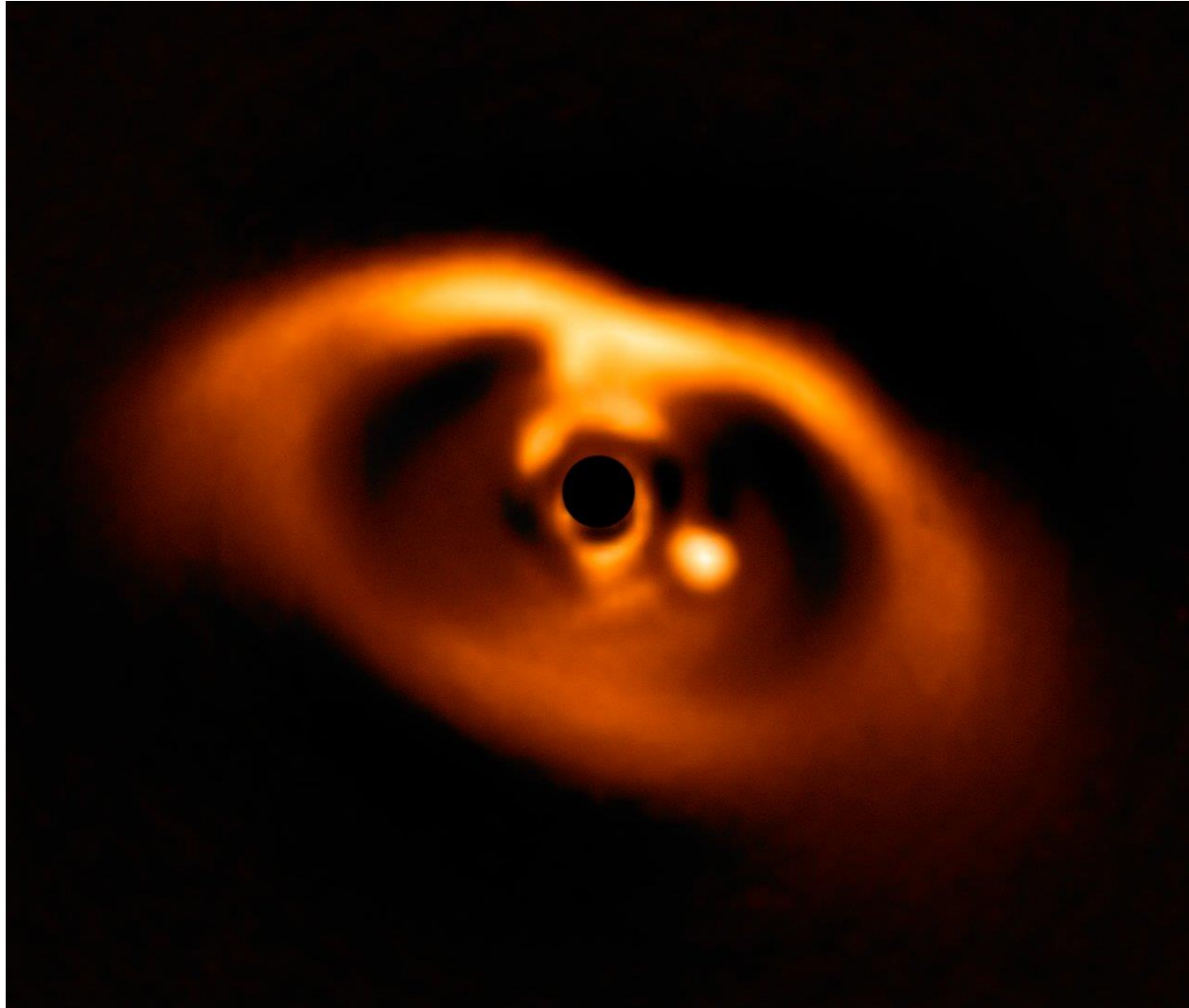
SPHERE @ VLT: OPTICON RTD provided ~30% of the AO technology



SPHERE detects a young planet



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**Young planet in the
disk of PDS70**

**ESO Press Release
1821 (July 2, 2018)**

Keppler et al. 2018
Müller et al. 2018

„Networking Activities and Trans-National Access“



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OPTICON H2020 Networking Activities Work Package List

Activity	Title	WP Leader / Contact
WP9	Management	Gerry Gilmore (UCAM) - gil@ast.cam.ac.uk
WP10	NA1 - Adaptive Optics Networking	James Osborn - james.osborn@durham.ac.uk
WP11	NA2 - VLTI Expertise Centres Network	Paulo Garcia (UPORTO) - pgarcia@fe.up.pt
WP12	NA3 - Enhancing Community Skills, Integrating Communities	Heidi Korhonen (Copenhagen) - heidi.korhonen@nbi.ku.dk
WP13	NA4 - Time Domain Astronomy	Lukasz Wyrzykowski (UNIWARSAW) - wyrzykow@astrouw.edu.pl
WP14	NA5 - Technology & Innovation Network	Wayne Holland (STFC) - wayne.holland@stfc.ac.uk
WP15	NA6 - Strategic Planning	Gerry Gilmore (UCAM) - gil@ast.cam.ac.uk

OPTICON H2020 Transnational Access Work Package List

Activity	Title	WP Leader / Contact
WP16	Trans-National Access	John K. Davies (STFC) - john.davies@stfc.ac.uk



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Trans-national Access Programme



20/opticon-map.jpg

Proposal deadlines: end of February and end of August

Common Telescope Time Allocation Committee



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Time Allocation Committee

TAC Member Information

Name	Organisation	Country
Laura Affer	Palermo Observatory	Italy
Roi Alonso	IAC	Tenerife Spain
Frank Grundahl	Aarhus University	Denmark
Jochen Heidt (Chair)	LSW, Heidelberg	Germany
Renata Minkevičiūtė	University of Vilnius	Lithuania
Annelies Mortier	University of Cambridge	UK
Helene Roussel	Institut Astrophysique de Paris	France

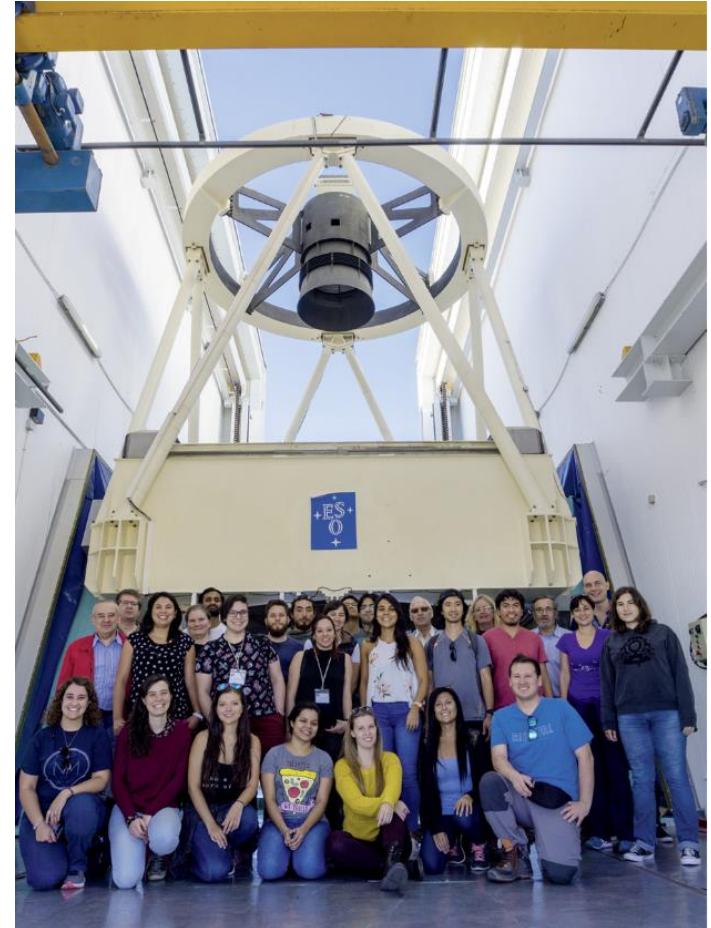
WP12 – „Enhancing community skills, integrating communities“



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Supports different types of schools

- Main school of the year: NEON Observing School
- Also organising other events:
 - life-long training: specialised workshops
 - archival schools
 - 'hot topics' conferences
 - instrumentation oriented schools/workshops
- Also developing synergies: joint ESO/IAU events



NEON Observing Schools



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- Organised yearly in different European observatories
- 16-20 participants
- Student selection striving to achieve diversity of origin and gender
- Meant for people without prior observing experience, but a need to obtain it
- All the steps of observations from planning and observing to data reduction and analysis
- Groups of four students led by an experienced tutor
- Hands-on experience combined with expert lectures

Lectures on „basics“



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How to determine the extinction

- Remember the goal is to compute K in: $\mu = \mu_0 - K \cdot t$
- This can be achieved by observing the same field of stars at different times during the night.
- This is however, not very efficient as observations at most 30 days are needed to cover a whole range in distances.

Emphasis on „hands-on“ experience



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Other OPTICON WP12 Schools



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- Hot Topic events
 - Formerly called Awareness conferences
 - Raising awareness of big questions in astrophysics
 - Have also been organized in collaboration with IAU
- Archival schools
 - Emphasis on EU observing facilities: ESO and OPTICON TNA telescopes
 - Usage of existing archival data
- Schools on specific techniques
 - For example specific techniques/instruments
 - Some schools organized together with ESO
- In many school we also organize career sessions, proposal writing exercises, etc



Instrumentation School



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- The 1st OPTICON Instrumentation School
- July 3-12 2017, in Copenhagen
- Emphasis on Transient Sky
- Same format as for the 'Alpbach school in space instrumentation'
- Instrument Phase A study with a help of an experienced tutor
- 22 participants selected from 58 applicants (from 13 different countries)



Mid-size IFU Spectrograph Investigating Cosmos



ALMOST

A Low-resolution Multi-Object
Spectrograph for Transients

A new polarimeter for the
NOT Transient Explorer

LOST

Low-resolution Spectropolarimeter for Transients

Plans of OPTICON WP12



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- **Yearly NEON Observing Schools**
 - 2018 in Asiago Italy
 - 2019 in Rozhen Bulgaria (combined with a 'Hot Topics' conference)
 - 2020 TBD
- **At least one other event every year:**
 - Proposal writing school in June 2019 (Tatranská Lomnica)
 - Archival school at ESO 2019/2020?
 - Multi-wavelength/messenger school (optical/IR combined with X-ray, UV, sub-mm, gravitational waves, high-energy particles...) planned for 2020
 - Specific techniques, e.g., AO, wide field, etc (TBC)
 - Ideas welcome

Awareness conference on European Astronomy in the Optical and IR domain:

An ESO / Opticon / IAU summer school on modern instruments, their science case, and practical Data Reduction

Brno, Czech Republic
01-11 September 2015

The summer school aims at training advanced MSc's, PhD students and postdocs on how to make use of the cutting edge facilities offered by institutions like ESO or other observatories available through the OPTICON access program (CAHA, La Palma, OHP, TBL, and so on)

The main part of the school will be a scientific project with real data. It will be accompanied by lectures given by experienced astronomers from different areas of astrophysical research.

Local costs will be covered by the school. A contribution to travel expenses can be envisaged on a duly justified case by case basis.

Registration is open until 8 May 2015 (13:00 CET)

Summer school webpage with registration form can be found under:
<http://awareness2015.physics.muni.cz>
http://www.iap.fr/opticon/conferences/AW_Bmo2015.html
awareness2015@physics.muni.cz

Organizing partners:
Academy of Sciences of Czech Republic
European Southern Observatory
IAU
Masaryk University, Brno
OPTICON

Other OPTICON events



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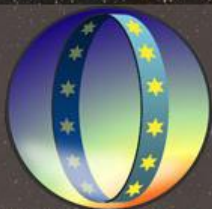
WP12 is not the only OPTICON WP organising schools

Astrophotonics / Adaptive Optics

- At least one summer school
- Possibility of a combined instrumentation/astrophotonics school

Interferometry

- 2018 VLT School, Lisbon
- 2019 or 2020 VLT School, France



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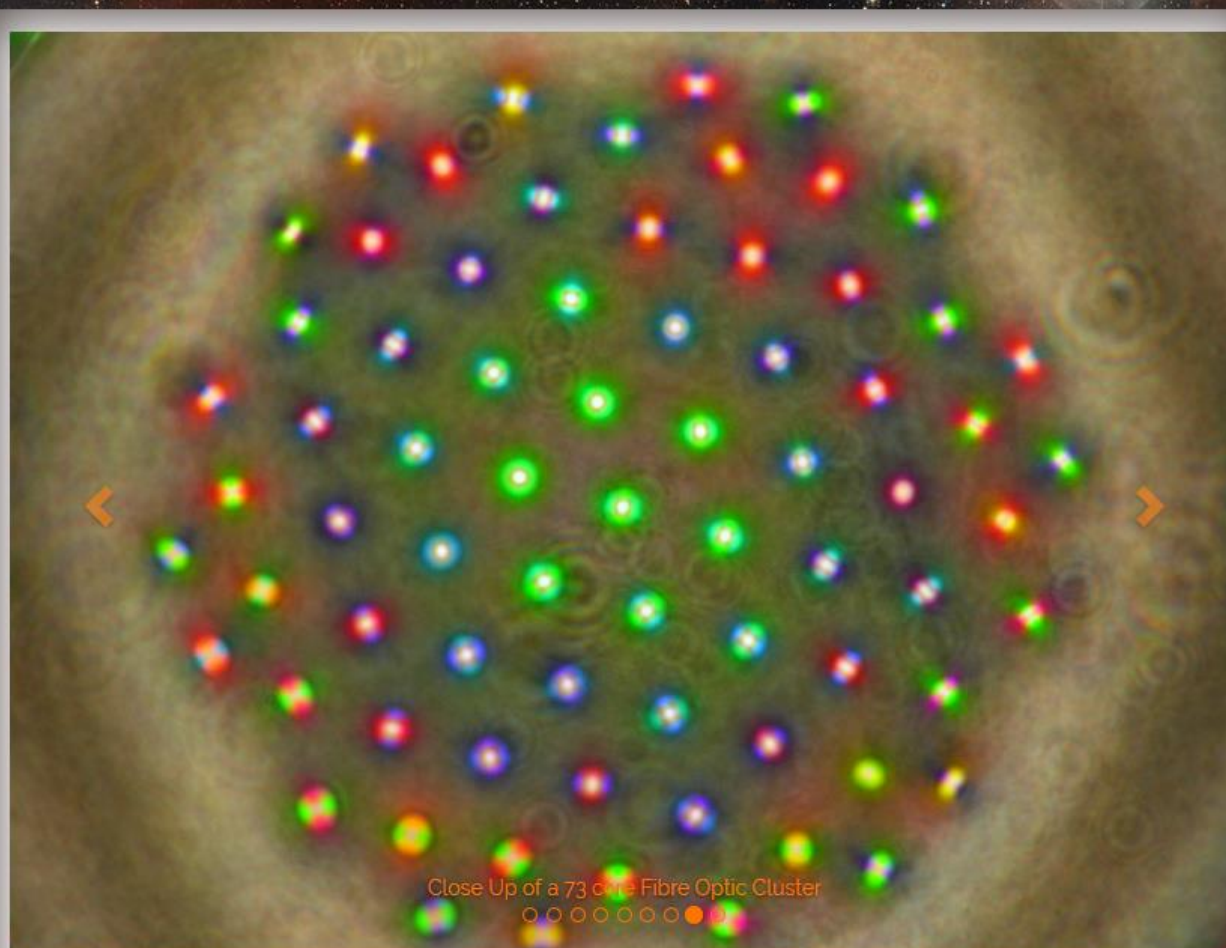
[News](#)

[Original FP6 Website](#)

[FP7 \(2009-2012\)](#)

[FP7II \(2013-2016\)](#)

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Close Up of a 73 core Fibre Optic Cluster





Opticon Schools - Horizon 2020

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OPTICON schools are a community training programme, which delivers expert knowledge in infrastructure use and development, and helps to integrate newer communities. The main programme consists of a yearly NEON Observing school that gives hands-on observing experience to young astronomers at a professional telescope. Additionally, OPTICON organises other schools concentrating on different aspects of observational astronomy, life-long learning, and integrating communities.

Observing Schools



Other Schools



Calendar

3 Jul - 12 Jul 2017

OPTICON Instrumentation School
The first OPTICON Instrumentation School will take place in Copenhagen ... »

About Us



How to Apply



2 Sep - 16 Sep 2017

2017 NEON Observing School
2017 NEON Observing School takes place on La Palma September 3-16, 2017. ... »

[All events](#)