The European Southern Observatory

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Director of Administration

Dublin, 17.09.2018
Intergovernmental treaty signed in 1962 by 5 countries

ESO: Intergovernmental Organization for Astronomy
1962  Belgium, France, Germany, The Netherlands, Sweden
1967  Denmark
1982  Switzerland, Italy
2001  Portugal
2002  United Kingdom
2004  Finland
2006  Spain
2007  Czech Republic
2008  Austria
2015  Poland
2018  Ireland

Germany hosts HQ near Munich

Chile hosts the Observatories but is not a Member State
Mission

• Develop, construct and operate world-class observatories for astronomical research

• Foster cooperation within its Member States
Access of scientists to ESO facilities

- **Observing proposals**
  - Some ~900 proposals per semester (plus ~40 DDT)
  - Plus ~1600 proposals per year to ALMA by EU, NA and EA
  - Time allocated on scientific merit (10% to Chile)
    - Oversubscription factor ranges from 3 to 5

- **Archive**
  - Open to the world, includes pipeline reduction software
  - Also contains advanced data products
Science enabled by ESO

1085 science publications using ESO data in 2017

Publications of major observatories by year

- ESO total
- HST
- NRAO
- VLT/VLTI
- Spitzer
- XMM
- Chandra
- ALMA (all)
- Keck
- La Silla
- Gemini
- ALMA (ESO)
- ESO survey tel.
- Subaru
- APEX (all)
- APEX (ESO)
Governance model

- **Council:**
  - 2 delegates per Member State + President

- **Director General,** supported by a team of 5 directors

- **Advisory to Council**
  - Finance Committee + Science and Technical Committee

- **Advisory to Director General**
  - Observing Programs Committee + Users Committee
ESO’s Sites

- Santiago
- La Silla
- Paranal
- Chajnantor
- Garching bei München
Headquarters in Garching

- HQ built in 1981
  - Expanded a few times
- HQ Extension 2012/13
  - Design: Auer & Weber
  - Office building + auditorium
  - Technical building
2018 Opening of the ESO Supernova
ALMA and APEX
Height: 5100 m

VLT and ELT
Height 2635 m + 3046 m

La Silla:
Height: 2400 m

Santiago
(Offices)

ESO in Chile
Atacama Desert: high
dry and
...very dark!...
Very clear skies even with naked eye
ESO programmes

- Visual/infrared light
  - La Silla telescopes
  - VLT/VLTI, VISTA, VST
  - ELT (under construction)

- Submillimeter radio waves (partnership)
  - APEX
  - ALMA
La Silla

and many hosted telescope projects...
Paranal Residencia
Most instruments built in partnership with consortia of R&D institutes from the ESO member states

- Effort from the consortia compensated in Guaranteed Time Observations

Infrastructure upgrades mostly carried out by ESO

- Interferometer, adaptive optics facility, combined focus
APEX (Atacama Pathfinder EXperiment)
- Single-dish sub-mm antenna
- Operated by ESO on behalf of a partnership involving MPG (DE) and OSO (SE)
- Project extended until 2022

Novel instruments under development
Largest sub/mm radio interferometer

Global partnership: ESO, NSF (USA) and NINS (JP)

Array Operations Site in Chajnantor (5050m)
- 66 (movable) antennas, over a 16 km plateau
- Back end and correlator

Operations Support Facility at 3000m, near San Pedro de Atacama
ALMA on the Chajnantor plateau, at 5050m altitude
The future – The Extremely Large Telescope
Armazones and Paranal
Extremely Large Telescope (ELT)

- **Largest optical/infrared telescope in the world**
  - 39m segmented primary mirror & adaptive optics
  - Transformational science objectives
    - Including exo-earths, galaxies and first light

- **Construction 2014-2025 (~1100 MEUR)**
  - On Cerro Armazones, as part of the Paranal system
  - Operations costs secured in ESO’s budget
Construction activities underway
Thank you!

Questions?