



# Rowena Sirey

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ESO



## Who are we?

- European Organisation for Astronomical Research in the Southern Hemisphere (“European Southern Observatory” or ESO)
- The foremost intergovernmental astronomy organisation in Europe
- The world's most productive astronomical observatory

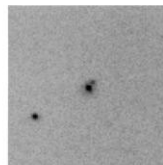


# Purpose

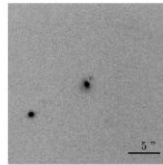
- Mission – set for ESO in the founding charter:
  - Develop and operate world-class observing facilities for astronomical research
  - Organise collaborations in astronomy

# Nobel Prize Physics 2011

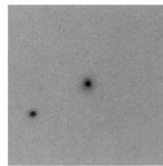
SN 1995 K



3.April 1995  
NTT/EMMI

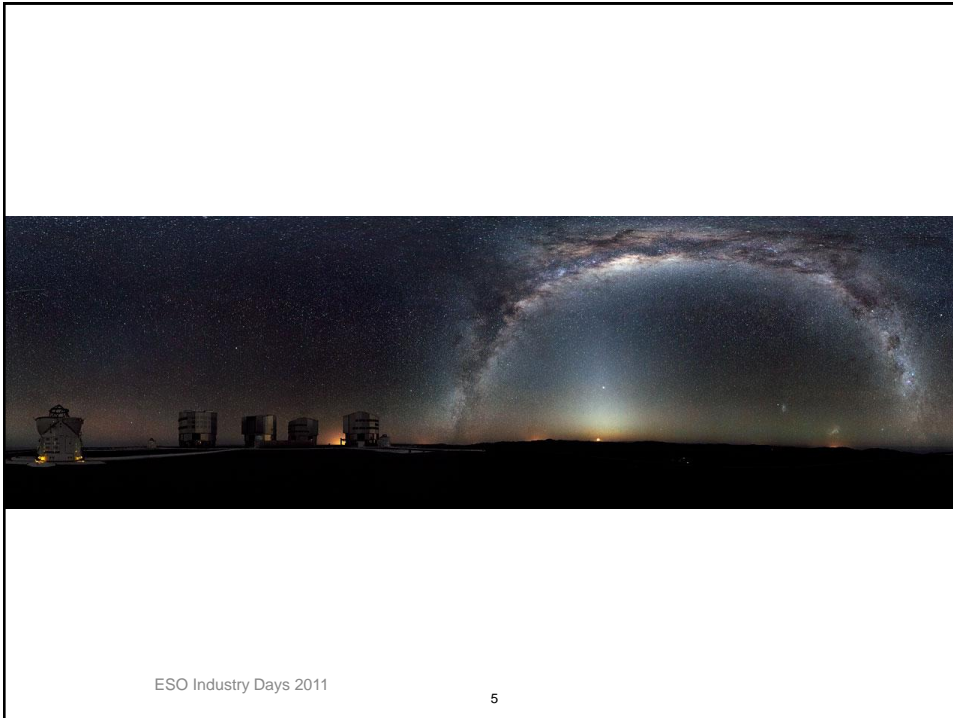


24.April 1995  
NTT/SUSI




28.MAY 1995  
NTT/SUSI

Discovery of the accelerating universe using distant supernovae



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## What do we do?

- Design, construct and operate a suite of the world's most powerful ground-based astronomical telescopes
- Design, construct and operate instruments
- Develop technology to support the programme
- Train scientists and engineers
- Leading to:
  - high technology contract opportunities
  - numerous possibilities for technology spin-off and transfer
  - skilled personnel

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# Facilities

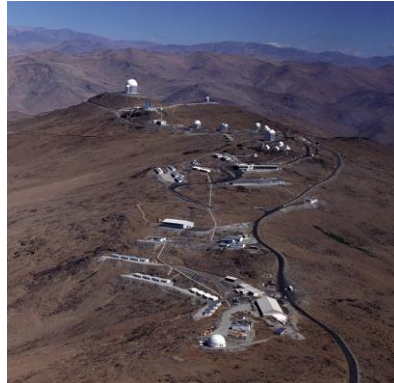
- 4 operating units, spread over 5 sites in Germany and Chile
- HQ in Garching, Germany and Vitacura Office in Santiago, Chile
- Observatories (Chile)
  - Optical/infrared: La Silla and Paranal
  - Submm: APEX and ALMA partnerships on Chajnantor

# ESO in Chile



# La Silla

- The original site of the first ESO telescopes
- Part of La Silla-Paranal Observatory
- Medium-size telescopes
  - 3.6m: focused on exo-planet searches
  - 3.5m NTT: room for visitor instruments
  - 2.2m in partnership with MPG and Brazil



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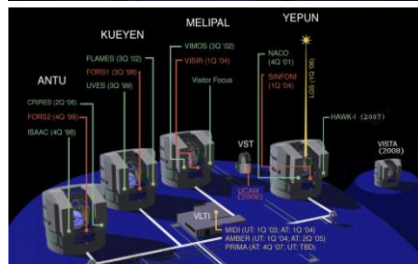


# Paranal

- The VLT: 4 x 8.2m diameter optical/infrared telescopes
- The ATs: 4 x 1.8m diameter auxiliary telescopes

The VLT and the ATs, working together, make up the VLT Interferometer (VLTI)

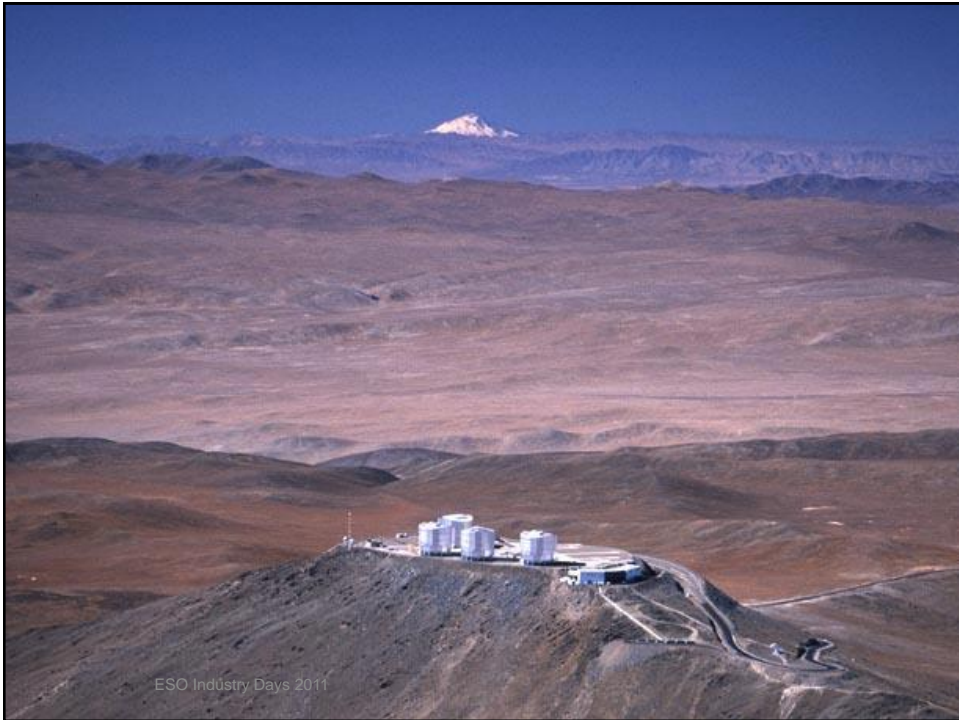
- 2.6m diameter VLT Survey Telescope (VST; optical)
- 4m diameter VISTA Survey Telescope (infrared)




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 **Paranal: View from Space**





Image © 2008 DigitalGlobe

© 2007 Google™

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# Living at Paranal (1)



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# Living at Paranal (2)



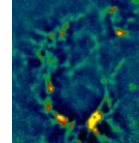
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# Chajnantor

## ■ APEX

- 12m sub-millimeter antenna, operated by ESO @ Sequitor
- MPG (50%), Sweden (23%) and ESO (27%)



## ■ ALMA

- Transformational science
- 66 antennas at 5050m (AOS)
- Operations support at 2950m (OSF)
- Global partnership with North America & East Asia



# ALMA site (AOS)





## ALMA site (OSF and road)



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## Personnel

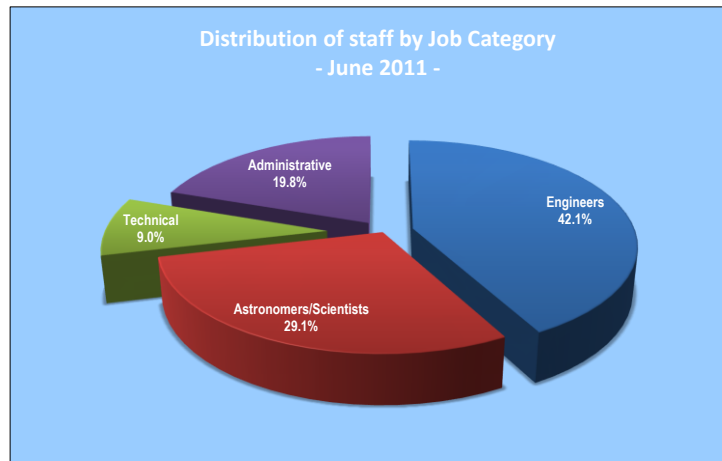
- ~750 staff, split:
  - Garching HQ: ~ 450
  - Chile: 250+, spread over:
    - Vitacura
    - La Silla Paranal Observatory
      - La Silla
      - Paranal
      - Sequitor (near San Pedro de Atacama)
    - ALMA
- Staff comprise astronomers, engineers, technicians, administrators

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## Staff Members by Job Category



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## The Organisation

- Intergovernmental treaty-level organisation (membership normally has to be ratified by Parliament)
- Founded in 1962 by five countries (50<sup>th</sup> anniversary in 2012)
- Currently 15 member states (Brazil in the process of ratification)

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## ESO Member States and Host (Chile)

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  
2010 Brazil  
(in process)

May increase further



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## ESO Governance

### ■ Council

- Two delegates per member state, plus President
- At least one of the two an astronomer
- Approves income and budget, and overall programme
- Appoints DG to lead ESO, and deliver programme

### ■ Advisory to Council

- Finance Committee (one delegate per member state)
- Science and Technical Committee (+ sub-committees)
- Scientific Strategy Working Group
- ELT Standing Review Committee

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## Annual Income

- Annual contributions to the Organisation's budget based on the countries' net national income (NNI)
- 2010 Scale of Contributions: 131 million EUR
  - Germany 22%
  - France 17%
  - United Kingdom 16%
  - Italy 13%
  - Spain 9%
  - other Member States between 1% and 5% each
- In steady state, Brazil will be approximately 13% on current estimates

## Current ESO programme

- Exploit La Silla-Paranal Observatory to obtain best science:
  - Second generation instruments (VLT/VLTI)
  - Key surveys with VST and VISTA
  - Long-term programmes for unique science on La Silla
  - Prepare for ALMA science with APEX
- Complete construction of ALMA and start operations
- Design world-leading ELT, and secure funding for construction and operations