

ESO and Israel: Industry Day



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Head of Cabinet
Head of Legal and International Affairs

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- Establishment of ESO
- (14+1) Member States
- Host State Chile
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1. Establishment of ESO

■ Mission

- Construct and operate powerful observatories beyond capabilities of individual Member States (MS)
- Foster astronomical cooperation within its MS

■ Intergovernmental organisation

- Founded in 1962 by 5 MS
- Currently 14 MS
- Brazil: Accession Agreement signed 29.12.2010
 - Ratification pending

2. ESO Member States

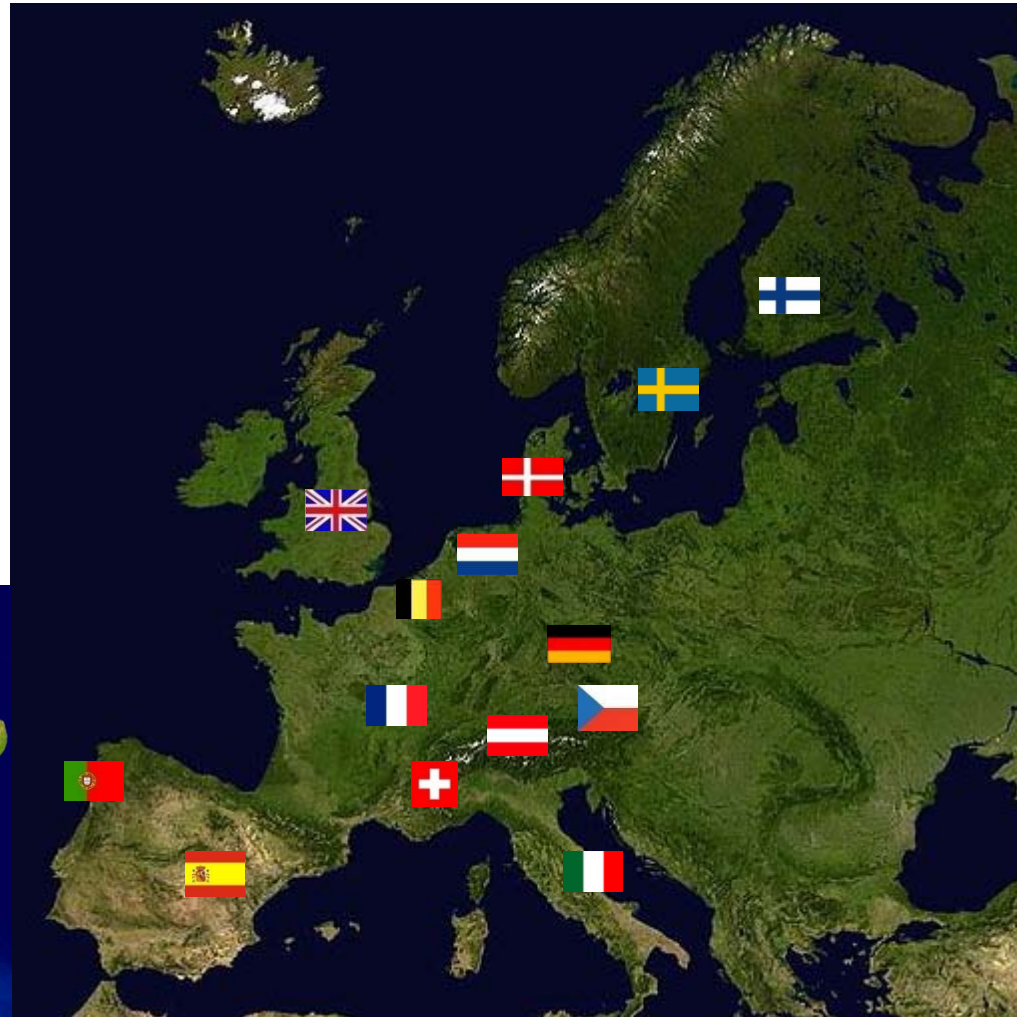
- 1962 Belgium, France, Germany, The Netherlands, Sweden
- 1967 Denmark
- 1982 Switzerland, Italy
- 2001 Portugal
- 2002 United Kingdom
- 2004 Finland
- 2006 Spain
- 2007 Czech Republic
- 2008 Austria
- 2010 Brazil (ratification pending)

Will increase further

Germany hosts HQ

Chile hosts

Observatories but is not a MS

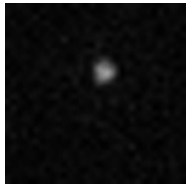


3. ESO's sites



Why Chile?

- Excellent conditions in Atacama desert
 - Dry climate
 - 90% clear skies
 - Low turbulence
 - No light pollution



Poor site

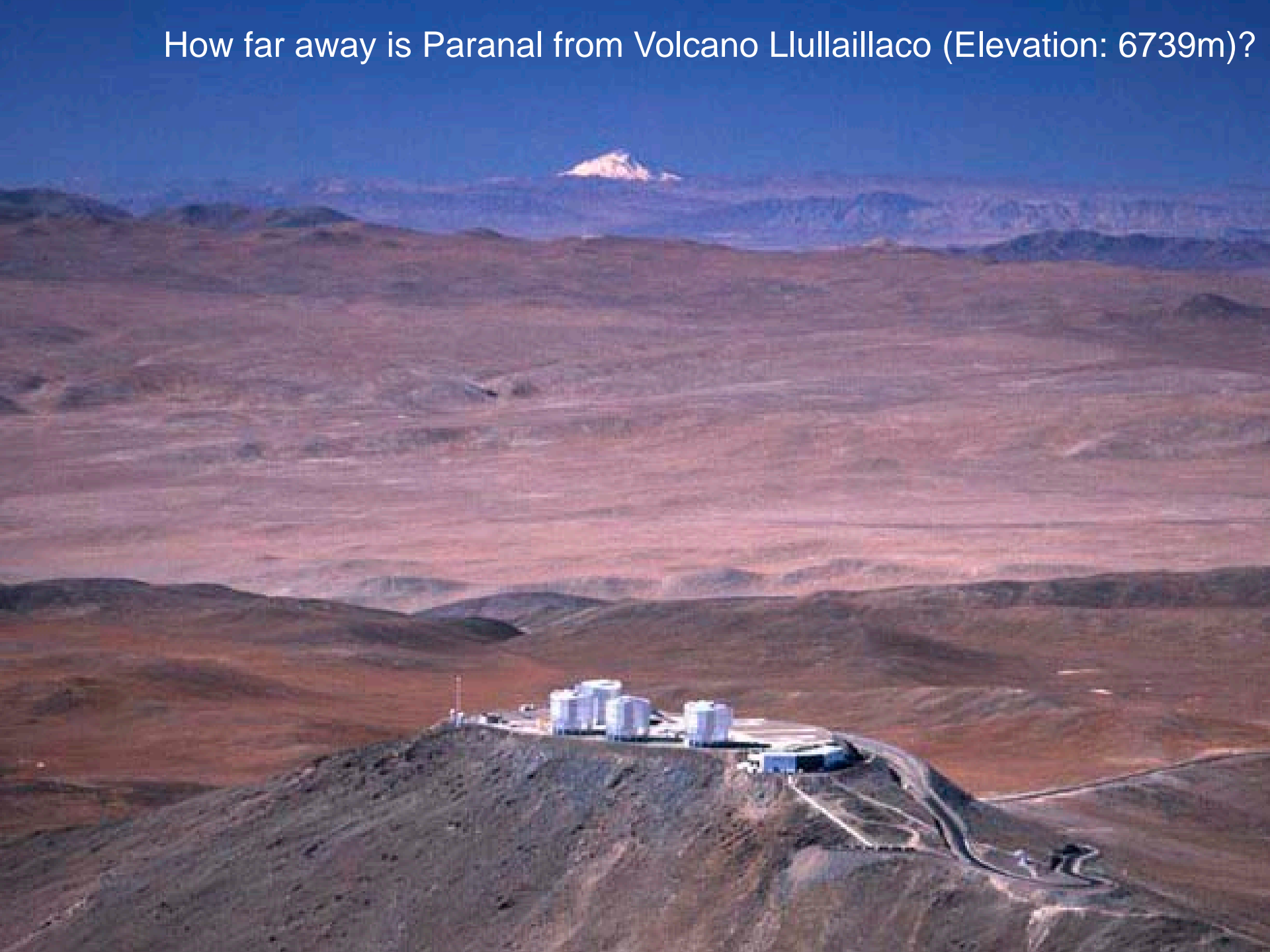


Chile

- Excellent view of Southern Sky



How far away is Paranal from Volcano Lulluillaco (Elevation: 6739m)?



Atacama desert: high,



dry and ...



...very dark!!!

Paranal & Armazones
La Silla
Santiago
Chajnantor

HQ (near Munich)

Very clear skies even with naked eye



4. ESO multiple programmes

■ Visual/infrared light

- La Silla telescopes
- VLT, VLTI, VISTA and VST on Paranal
- E-ELT to come, on Armazones

■ Submillimeter radio waves

- APEX
- ALMA
- Both at Chajnantor, in partnerships



Headquarters in Germany

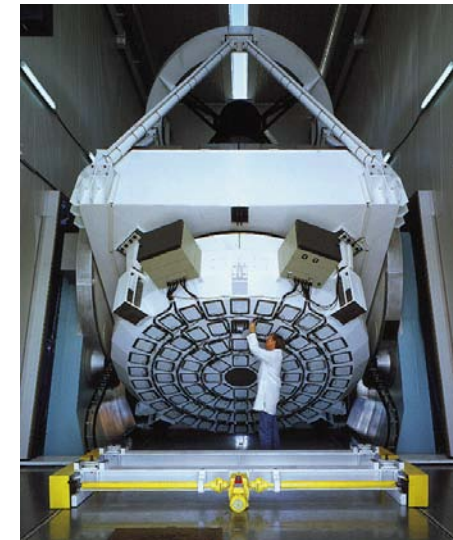
- HQ built in 1981
 - Expanded a few times
- HQ Extension
 - Technical Building
 - Office/Conference building
 - Inauguration on 04.12.2013
- Visitor Centre
 - To be donated soon



La Silla, where it all started



3.6m



3.5m NTT

Since 1969:

More than a dozen telescopes (50cm-3.6m mirror diameter), many of which no longer in use or operated in robotic mode

Two 3.6m telescopes still heavily used today



Elevation:
2400m

Very Large Telescope (VLT) at Paranal



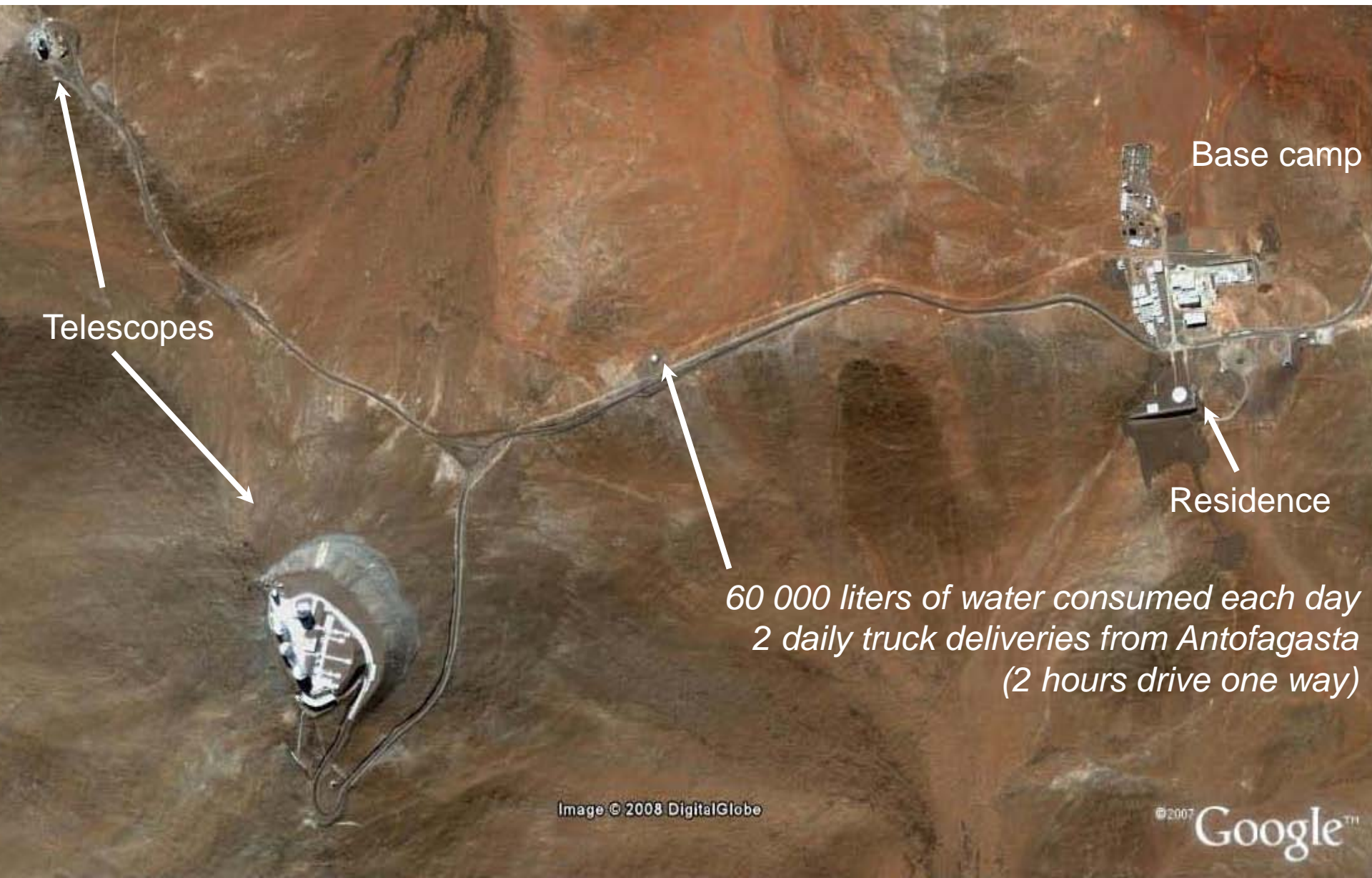
Elevation:
2640m



Since 1999:

- 4 telescopes of 8.2m, with very powerful arsenal of instrumentation
- Can be used *together* for ultra-sharp images (interferometry)
- VSTA and VISTA: Special telescopes dedicated to surveys

View from space



Telescopes

Base camp

Residence

*60 000 liters of water consumed each day
2 daily truck deliveries from Antofagasta
(2 hours drive one way)*

Paranal Residence



Chajnantor

- Detect submillimeter radio waves
 - Requires minimal water vapour: 5050m altitude
- APEX
 - 12m antenna in partnership with Sweden and Germany
- ALMA
 - 66 antennas: tremendous resolution and sensitivity
 - Global partnership with North America and East Asia



APEX



ALMA

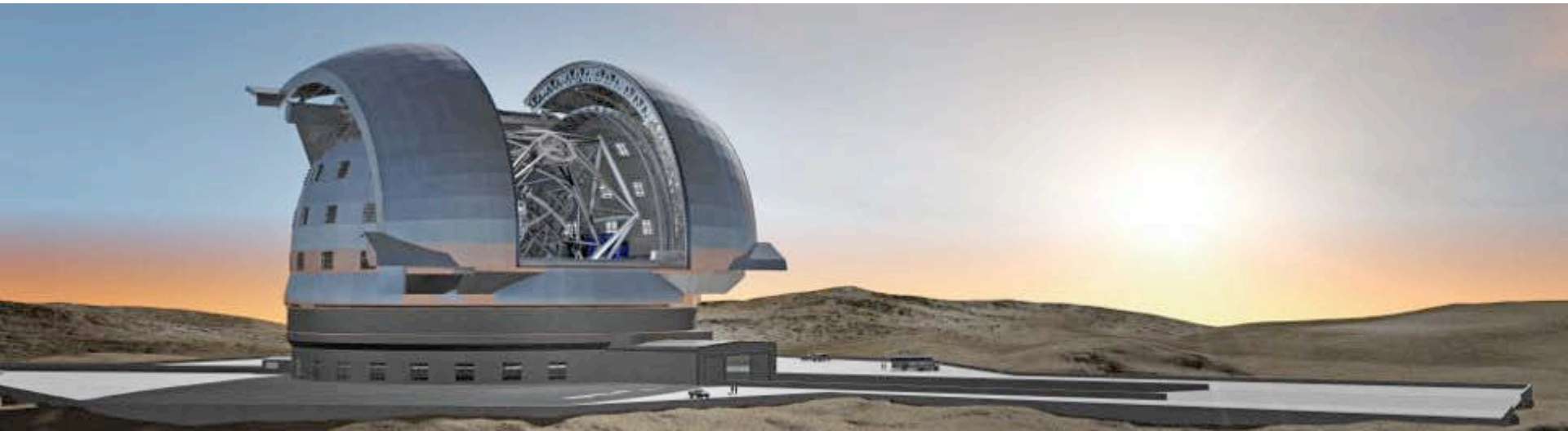


Antenna transport



E-ELT

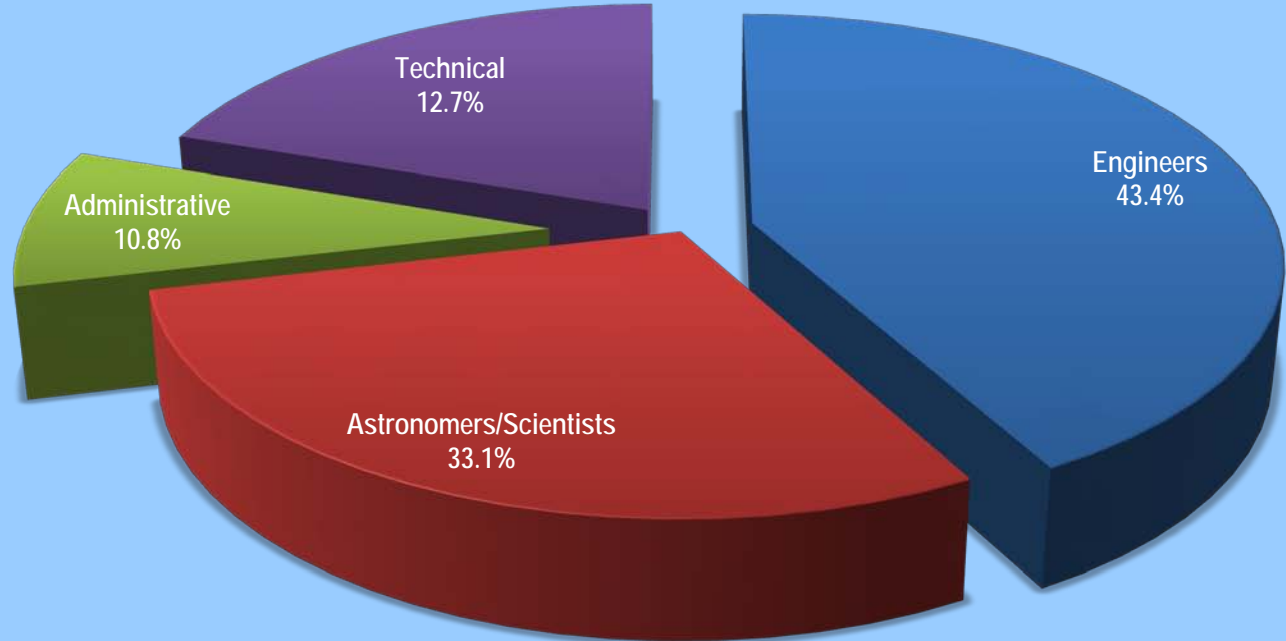
- Largest optical/infrared telescope in the world
- Dedicated presentation from E-ELT Project Manager Alistair McPherson to follow



5. Funding

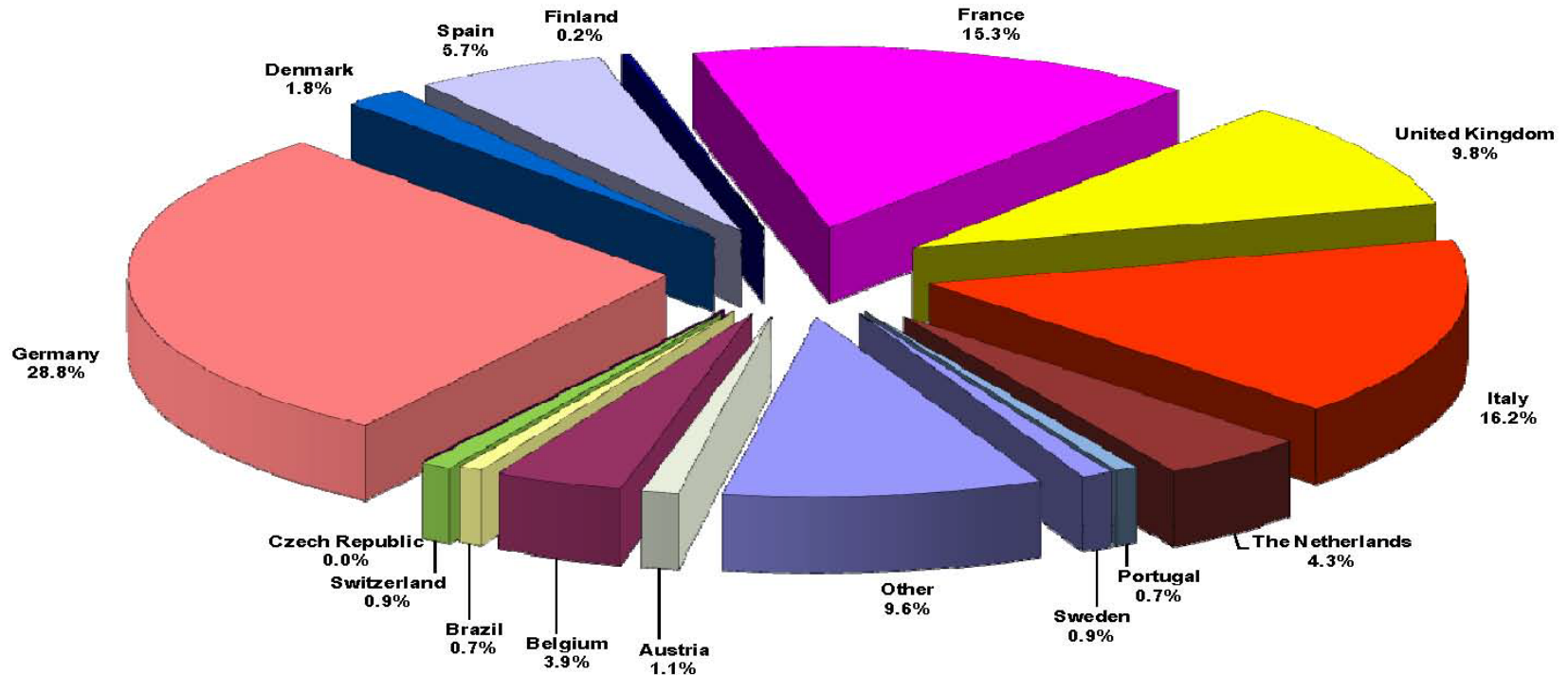
- ESO is a non-profit organization
 - National contributions proportional to Net National Income
 - 2013 Budget
 - 151 M€ without E-ELT
 - 217 M€ with E-ELT

6. Distribution of staff skills



Distribution by nationalities

Distribution of International Staff Members by Nationality (= 438)
- December 2012 -



7. Main governing bodies

■ Council

- Two delegates per MS, plus President
- At least one of the two an astronomer
- Approves income, budget and overall programme

■ Finance Committee

- One delegate per MS, plus Chair
- Makes recommendation to Council on financial matters
- Approves the award of contracts in excess of
 - 500 KEUR for competitive tendering
 - 250 KEUR for single source procurements
- Meets two to three times a year
 - Procurement strategy aligned with Finance Committee schedule

Thank you very much!
Any questions?

