MSc-Student Activities at ESO

Workshop on Designing Innovation Ecosystems

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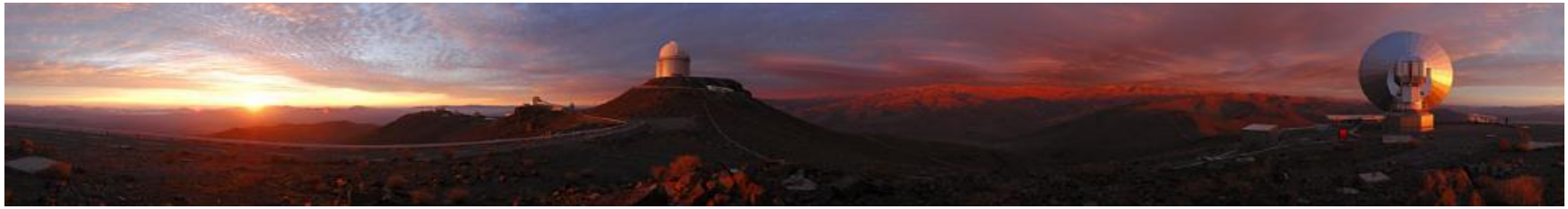
Example of the Facilities or Research Instruments



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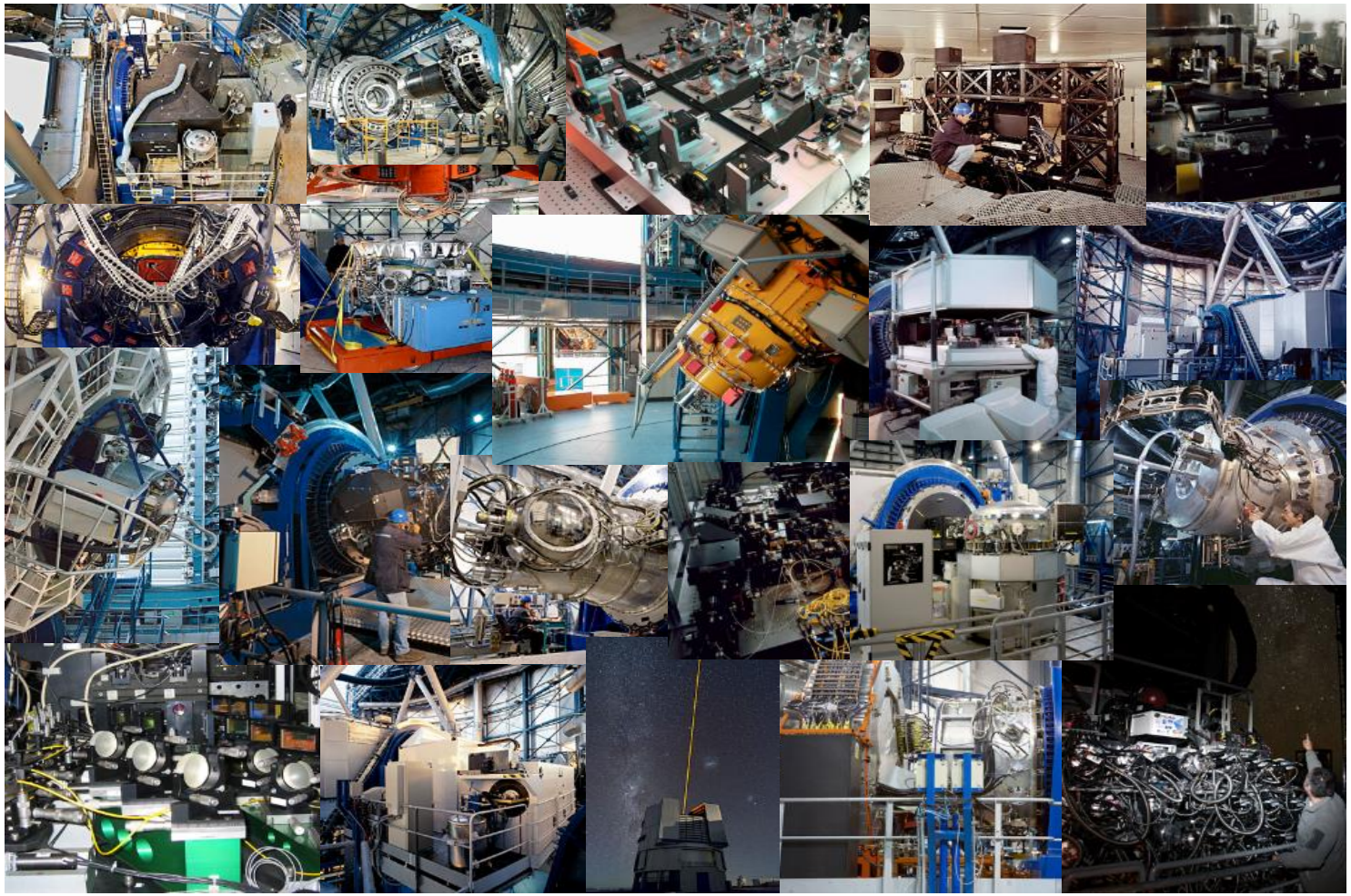
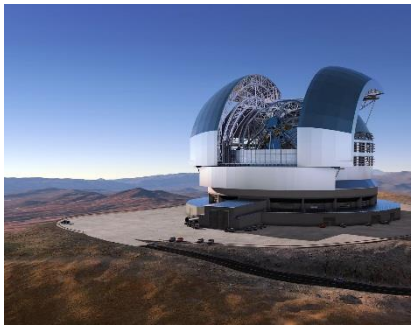


ESO in Short

– **Our Mission as an inter-governmental research organisation**
  - Provide facilities for ground-based astronomical research for the member states
  - Foster collaboration in astronomy in Europe

– **Our Facilities**
  - Paranal and La Silla observatories in northern Chile (Atacama desert)
  - ALMA observatory on the Chajnantor Plateau (5000m), with North America and East Asia
  - Headquarters in Garching, Munich
  - Chile headquarters in Santiago
  - New telescope, the ELT, is under construction on Cerro Armazones



ESO in Short

- **Our Sources of Funding and Resources**
  - Annual subscription from our member states, proportional to GDP. All member state scientists treated equally.
- **Example(s) of R&D projects with connections with industry or society at large**
  - Currently dominated by ELT with major industrial contracts to European industry
    - Construction of the dome and main mechanical structure
    - Manufacture and polishing of 798 precision hexagonal segments to make 39m mirror
  - Instruments for the ELT
    - Contracted to universities and institutes
    - ESO pays for all industrial costs. Institutes supply teams of scientists and engineers, including students (mainly PhD).

MSc-Student Activities

- **Rationale for ESO to support/host students**
  - PhD students focus on astronomical research topics
  - Masters students are usually more technically oriented
- **Volume of students per year (on average)**
  - 10 new PhD students per year
  - One or so new MSc students per year
- **Types of MSc student activities/programs**
  - Tackle well-defined technical task/problem fitting in available timescale
  - Assist with advancement of overall project
- **Location of the students**
  - Located at ESO, but official supervisor in academic institution

An Example of a MSc-student Assignment

- **Nature of the Assignment and its length in time**
  - Configure and commission a lab test bench for advancing performance of adaptive optics systems eg. studying major errors sources
  - Approximately 12 month assignment
- **Type(s) of students and the geographical location of their universities**
  - USA. Students may come from any academic institution, especially the member states but not restricted to them. In principle anywhere in the world.
- **Funding of the students comes from**
  - The budgets of the project itself. Students may be hired as
    - Unpaid associate
    - Paid associate
- **Role of ESO personnel (local supervisor) in the Assignment**
  - Day-to-day supervision of the student
  - Setting goals for the work and liasing with external academic supervisor

Plans for the Future related to Student Activities

- **Evolution in scope?**
  - Currently no plans to enlarge scope of student activities
  - ESO resources and activities currently under strain
  - However lot of work going into improving the student environment
    - specialist discussion groups
    - Formal and informal talks
    - Social activities