The European Organisation for Astronomical Research in the Southern Hemisphere (ESO) is the foremost intergovernmental astronomy organisation in Europe and the world's most productive astronomical observatory. ESO operates three unique world-class observing sites in the Atacama Desert region of Chile: La Silla, Paranal and Chajnator. The ESO headquarters are located in Garching, near Munich, Germany. ESO is the focal point for Europes participation in the Atacama Large Millimeter Array (ALMA) consortium, which is currently constructing a large submillimetre array in the Chilean Andes. The concept and design of a 42-m European Extremely Large Telescope (E-ELT) is also currently underway at ESO.

For its Engineering Department at the La Silla Paranal Observatory, ESO is inviting Chilean students to participate in our program:

SUMMER STUDENTS

The Engineering Department of the Paranal Observatory provides technical support to the four VLT 8-m telescopes, to the VLT Interferometer with its auxiliary telescopes and to all instruments available for scientific observations. The telescopes and instruments are complex systems that involve many advanced technologies and require a high level of engineering support. The Engineering Department of Paranal has a total workforce of 67 engineers and technicians distributed in five engineering groups.
The six projects for the period January-February 2016 are:

Mechanic Group

1. **Improvement in the lubrication system for the main axes of the VST telescope:** The accessibility to the main bearings of the VST telescope is quite difficult and a better way to perform the periodical lubrication of the bearings must be developed. This will increase the lifetime of the bearings and reduce the time needed for the preventive maintenance. The project involves the definition of the greasing points and the relevant conduits to bring the grease to the bearings. This is in particular needed for the elevation and azimuth bearings.

   For this project, we look for students at their last academic year of Mechanics Engineering or similar, with good command of English, and knowledge on Autocad/Inventor, rotation mechanism, and lubrication.

Software Group

2. **VLT Rapid Diagnosis Database:** The objective of this practice, is to create a self-documented, interactive, scalable diagnosis tool, by combining the power of computational notebooks (Jupyter) and a database repository which contains the most important information used for diagnosing problems affecting Paranal telescopes and their instruments, like vlt logs, problem report tickets or data coming from other monitoring tools and sources.

   For this project we look for Software Engineering or similar students with database design and administration knowledge, as well as good command of English,

Instrumentation Group

3. **Technical CCD troubleshooting:** Several NTCCD ARC controllers are not working properly, presenting different kind of errors, we would like to properly track down the root causes.

   For this project, we look for students at their 4th or 5th academic year of Elect. Engineering, and good command of English.

Electronic Group

4. **Analysis of MIT (Mirror Integration Tool) hydraulic control system:** The MIT consists in a hydraulic system with hardware electronic control in order to provide variable hydraulic pressures to three separate circuits. The tool is used to remove and integrate the 8 meter diameter VLT mirrors. The system has stability problems. The project consists in analyzing the functions of the machine, identifying the problems, and finding a solution.
   For this project we need students of Elect. Engineering or similar, with good command of English. Additional knowledge of control and hydraulics.

Quality Assurance

5. **Creation of tools items in the inventory module at Maximo:** In the frame of the improvement plan for the warehouse operation, we want to create the tools items in the inventory module of Maximo, which currently is based in the concept of spare parts item. The creation of those tools items will help planners, users and warehouse people to separate both spare parts and tools from the inventory control point of view.

6. **Automatization of tool for QA Audits:** In the frame of the improvement for the Audit process, we want to create an automatic data collection system. This tool will help to collect results and related information obtained from audits performed on external support. In addition, it will help the auditors involved for having a quick and better interaction with the tool.

    For these two projects, we look for students of Mechanical or Industrial Engineering or similar, with good command of English and knowledge of Excel and Database.

We Offer:

ESO offers a special allowance during the period you are performing your apprenticeship with us; transportation arrangements from and to Santiago are provided by ESO, with accommodation provided on site.

The Duty Station is Paranal Observatory, in the II Region, 150km South of Antofagasta. Working schedule will be 8 days on duty and 6 days off duty (8x6). The period of the apprenticeship is January-February 2016.

Application:

We invite all students from Chilean Universities in their career´s last period to apply. The apprenticeship should be supported by the University and therefore covered by the accident insurance (Law 16.744).

If you are interested in working in areas of frontline technology and in a stimulating international environment, you are invited to apply online at https://jobs.eso.org/. Applications must be completed in English and should include a motivational letter indicating the project you are interested to apply to, and CV.

Closing date for applications is November 15, 2015.

The post is equally open to suitably qualified male and female applicants.