
The ESO Survey Telescopes — Mapping the Sky in the Finest Detail

The Visible and Infrared Survey Telescope for Astronomy (VISTA) and the VLT Survey Telescope (VST) are arguably the most powerful dedicated imaging survey telescopes in the world and will produce far more data every night than all the other instruments on the VLT together, hugely increasing the scientific discovery potential of the Paranal Observatory. VISTA has a main mirror 4.1 metres across, is the largest survey telescope in the world and works at near-infrared wavelengths. The VST is a state-of-the-art 2.6-metre telescope and surveys the visible-light sky.



La Silla — ESO's First Observatory

Located 600 kilometres north of Santiago de Chile, at the edge of the Atacama Desert and at an altitude of 2400 metres, La Silla has been an ESO stronghold since the 1960s. Here, ESO operates some of the most productive 4-metre-class telescopes in the world. The ESO 3.6-metre telescope is home to the world's foremost exoplanet hunter: HARPS (High Accuracy Radial velocity Planet Searcher). The 3.58-metre New Technology Telescope (NTT) broke new ground for telescope engineering and design and was the first in the world to have a computer-controlled main mirror (active optics).



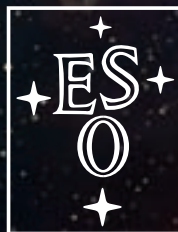
ESO

The European Southern Observatory — Reaching New Heights in Astronomy

ESO, the European Southern Observatory, is the foremost intergovernmental astronomy organisation in Europe. Created in 1962, ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities.

Visit us during your next trip to the Atacama Desert!
Info on weekend tours to La Silla and Paranal available at:
www.eso.org

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ESO/NAF-VST/OmegaCAM

VST image of the star-forming region Messier 17

The Atacama Pathfinder Experiment — Reaching New Heights in Submillimetre Astronomy

The Atacama Pathfinder Experiment, APEX, is a 12-metre diameter telescope, operated by ESO at one of the highest observatory sites on Earth, at an elevation of 5100 metres, on the Chajnantor plateau in Chile's II region. APEX is the largest submillimetre-wavelength telescope operating in the southern hemisphere and is a pathfinder for ALMA. APEX is a collaboration between the Max-Planck Institute for Radio Astronomy (MPIfR), the Onsala Space Observatory (OSO) and ESO.



The Very Large Telescope — The World's Most Advanced Visible-light Astronomical Observatory

With four Unit Telescopes with main mirrors 8.2 metres in diameter and four movable 1.8-metre Auxiliary Telescopes, the Very Large Telescope array (VLT) is the flagship facility for European ground-based astronomy. Each of the Unit Telescopes can see objects that are four billion times fainter than those visible to the naked eye. The Unit Telescopes can also work together to form a giant VLT Interferometer (VLTI) allowing astronomers to see details up to 16 times finer than with the individual telescopes. The VLT is the most productive astronomical observatory in the world and its instrumentation programme is the most ambitious ever conceived for a single observatory.



ESO/S. Rossi

The first European antenna for the Atacama Large Millimeter/submillimeter Array (ALMA)

ALMA — In Search of our Cosmic Origins

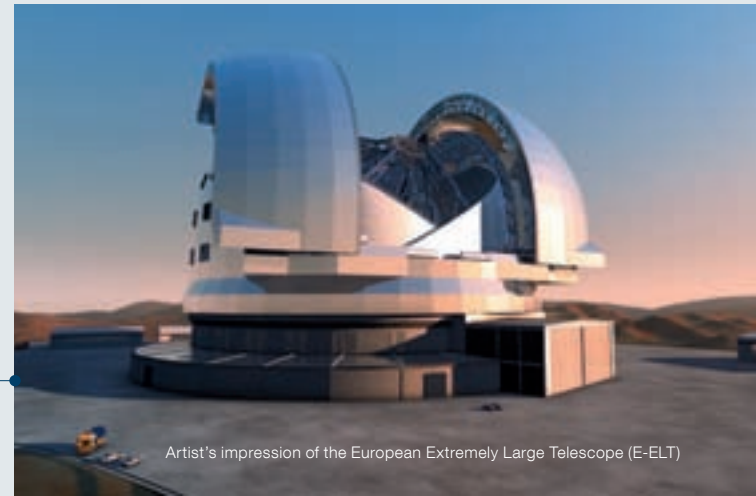
High on the Chajnantor plateau, at 5000 metres altitude in the Chilean Andes, some 50 kilometres east of San Pedro de Atacama, ESO, together with its international partners, is operating and building the Atacama Large Millimeter/submillimeter Array, ALMA — the largest astronomical project in existence. ALMA will be a single telescope of revolutionary design, composed initially of 66 high-precision antennas. Its main array will have fifty antennas, 12 metres in diameter, acting together as a single telescope — an interferometer. An additional compact array with 16 antennas will complement this. ALMA is the largest radio telescope in the world designed to study millimetre and submillimetre radiation, the light coming from some of the coldest objects in the Universe. ALMA is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile.

The European Extremely Large Telescope — The World's Biggest Eye on the Sky

Since 2005, ESO and more than 100 astronomers from all over Europe have collaborated to define the European Extremely Large Telescope, E-ELT. With a 40-metre-class main mirror, the E-ELT will be able to gather 15 times more light than the largest optical telescopes operating today and will be the largest optical/near-infrared telescope in the world. The E-ELT will tackle the biggest scientific challenges of our time, and may, eventually, revolutionise our perception of the Universe as much as Galileo's telescope did 400 years ago. Start of operations for the E-ELT is planned for early in the next decade.



Izlok Boncinina/ESO



Artist's impression of the European Extremely Large Telescope (E-ELT)