

*CLOSE TO HEAVEN:
THE VERY LARGE TELESCOPE
IN THE ATACAMA DESERT
IN CHILE.*

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PHOTO: M. CLARO/ESO



ON LOCATION



They are called Antu, Kueyen, Melipal and Yepun – in the language of the indigenous Mapuche people, the names of the Sun, the Moon, the Southern Cross, and Venus. These four telescopes form the heart of the most advanced observatory in the world, at an elevation of 2,635 meters on the Cerro Paranal in the middle of the Atacama desert in Chile. From here, the astronomers probe the depths of the universe with the main mirrors, each with a diameter of 8.2 meters, and the four movable 1.8 meter auxiliary telescopes. This telescope facility, the Very Large Telescope of the European Southern Observatory (VLT), can be connected to an interferometer that produces images of the sky with an angular resolution of thousandths of an arc second. This level of precision would enable the two headlights of a car on the moon to be distinguishable from one another.

However, the telescope is only as good as its instruments. Max Planck scientists have helped to invent some of these, such as the GRAVITY and MATISSE interferometers, the SPIFI spectrograph and the SPHERE planet hunter. Recently, researchers under the direction of the Max Planck Institute for Extraterrestrial Physics succeeded in getting a clearer view into the heart of the Milky Way with their hi-tech optics. There they were able to observe that a star does not orbit the supermassive black hole at the heart of our Milky Way along a closed path, but rather describes an open curve in the form of a rosette. Albert Einstein predicted this effect more than a hundred years ago.