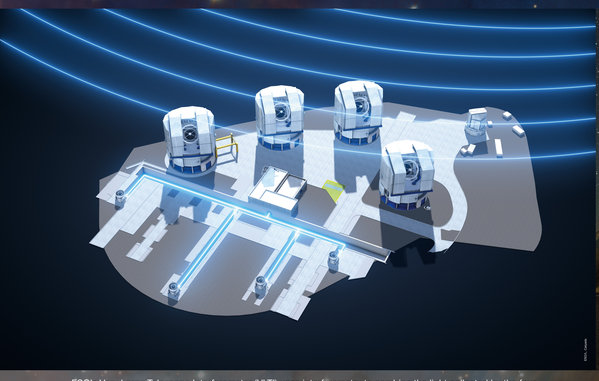

ESO/L. Calçada

ESO/C. Malin

ESO's Very Large Telescope Interferometer (VLTI) uses interferometry to combine the light collected by the four VLT 8.2-metre Unit Telescopes (UTs) or the four movable 1.8-metre Auxiliary Telescopes (ATs). This creates a larger 'virtual' telescope with a diameter equivalent to the distance (baseline) between the individual telescopes, allowing the VLTI to pick up much finer details of the cosmos than would be possible with the ATs or the UTs alone.

At present, the VLTI is operated with baselines of up to 140 metres, depending on the position of the ATs. This allows astronomers to see details up to about 17 times finer than with a single UT, a sharpness equivalent to distinguishing the front and rear lights of a car, as viewed from the side, parked on the Moon.

At an altitude of 5000 metres, on the Chajnantor Plateau in the Chilean Andes, ESO, together with its international partners, operates the Atacama Large Millimeter/submillimeter Array (ALMA) — a state-of-the-art telescope to study light from some of the coldest objects in the Universe. This light has wavelengths of around a millimetre, between infrared light and radio waves, and is therefore known as millimetre and submillimetre radiation. ALMA comprises 66 high-precision antennas, spread over distances of up to 16 kilometres.

This global collaboration is the largest ground-based astronomical project in existence. ALMA is a partnership of ESO, the US National Science Foundation (NSF) and the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Republic of Chile. ALMA is funded by ESO on behalf of its Member States, by NSF in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC) and by NINS in cooperation with the Academia Sinica (AS) in Taiwan and the Korea Astronomy and Space Science Institute (KASI).

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