The Science and Technology of the European Extremely Large Telescope

Jochen Liske
European Southern Observatory, Garching

Abstract

Over the past two decades, astronomy, astrophysics and cosmology have arguably experienced a "golden era" that was largely driven by the continued development of telescope technology. This development is set to accelerate yet again as the European Southern Observatory embarks on one of the most ambitious astronomical telescope projects in the world: with a diameter of 39 m the European Extremely Large Telescope will be by far the largest optical and infrared telescope ever constructed. As such it will revolutionise many areas of astronomy and astrophysics in the coming decades. In this talk I will provide an overview of the project, both from a technological as well as from a scientific perspective. I will describe the design of the telescope, present the current status of the project and discuss a selection of science cases.