

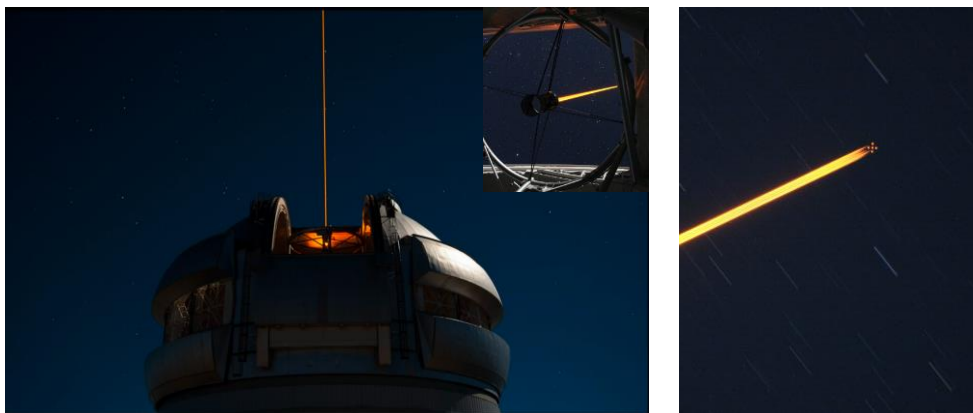
ALPAO signs a consortium agreement for the design of a laser tomographic adaptive optics (LTAO) bench for the Gemini North telescope in Hawaii

Grenoble (France) – January 5, 2023 – ALPAO, world leader in the field of deformable mirrors and adaptive optics, are partnering together with Australian Astronomical Optics (AAO) and ONERA to conduct a competitive Phase A study for the design of a Laser Tomographic Adaptive Optics (LTAO) bench for the Gemini North telescope in Hawaii. This study is funded via an agreement between AAO and the American consortium AURA¹ who operate Gemini for the NSF² (National Science Foundation).

The international consortium led by the Australian Astronomical Optics (Macquarie University, Australian National University and University Sydney) brings together the expertise of ONERA and ALPAO, with the support of the Laboratoire d'Astrophysique de Marseille (LAM). This 12-month project includes the dimensioning, the analysis of the performances of the adaptive optics and the development of the calibration and operation procedures of the laser tomographic adaptive optics system for the Gemini North Telescope in Hawaii.

This adaptive optics bench is a key element to provide the Gemini³ North telescope with a unique set of observing capabilities combining high spatial, spectral and temporal resolution. This will open up a wide range of new possibilities, including the ability to target distant galaxies to study their formation and evolution, and thus reach back to the early universe where galaxies first formed. It will also allow astronomers to better understand the physics of star formation in the Milky Way.

"ALPAO is honored to have been selected to take part in this consortium to bring its expertise in design and manufacturing of components, subsystems and control software for adaptive optics in astronomy, as already proven on large ground-based telescopes such as the W.M. Keck Observatory, the Subaru Telescope or the ESO - Very Large Telescope. In this first phase, ALPAO will be in charge of selecting the best adaptive optics components and their implementation to reach the scientific objectives of the project. Our experience in the manufacturing of deformable mirrors with a very high number of actuators will be a significant asset at this stage", said Piero BRUNO, ALPAO Sales and Marketing Director.



Gemini telescope and its powerful laser allowing to generate 5 artificial guide stars ©B. Neichel

¹ Association of Universities for Research in Astronomy (AURA)

² This material is based upon work supported by the National Science Foundation. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

³ Gemini Observatory is an astronomical observatory consisting of two 8-meter telescopes, one for each hemisphere. The telescopes were funded by a consortium of institutions from seven countries: the United States, the United Kingdom, Canada, Brazil, Argentina, Chile and Australia. These two telescopes allow astronomers from the partner countries to observe the entire sky. These telescopes are among the largest astronomical observatories observing in the visible and infrared.



About ALPAO

The aim of ALPAO, leader in optical wavefront control, is to revolutionize optics by removing aberrations. ALPAO has been designing and marketing a full range of adaptive optical products for research and industry since 2008. ALPAO markets deformable mirrors, wavefront sensors and software. ALPAO products are tailor-made for various applications such as astronomy, ophthalmology, microscopy, wireless optical communications and laser technologies. ALPAO has developed many products over the years, such as deformable mirrors (DM), its own wavefront sensor for closed loop operations, the DM97-08 dedicated to ophthalmology, a large size (DMX) and a modal (DMM) deformable mirror for industry. It also delivered the largest European deformable mirror at the end of 2018, which includes 3,228 actuators. With over 10 years of experience in adaptive optics, ALPAO deformable mirrors offer large strokes, high dynamic motion, high resolution images and very good optical quality. ALPAO is an international company with customers over 4 continents in more than 20 countries. Over 90% of its turnover comes from export.

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