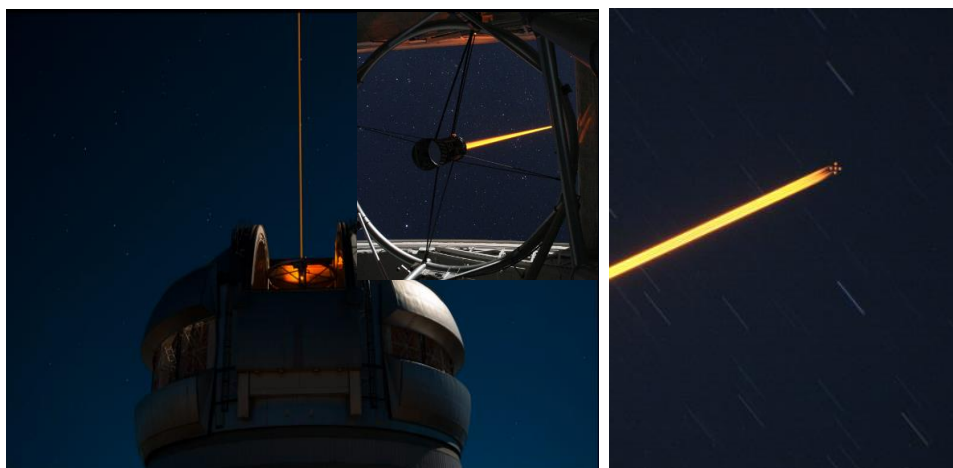


## PRESS RELEASE

31 October 2022

### **ONERA selected to design a laser-assisted tomographic adaptive optics bench for the Gemini North Telescope in Hawaii**



*Gemini telescope and its powerful laser allowing generating up to 5 artificial guide stars @B Neichel*

**At the beginning of October, ONERA (the French Aerospace Lab) signed a consortium agreement with the Australian Astronomical Optics (AAO-Macquarie) and the Grenoble-based company ALPAO. They will participate in a competitive phase A study to design a Laser Tomographic Adaptive Optics (LTAO) bench that will provide the Gemini North telescope in Hawaii with infrared images to observe distant galaxies.**

In the framework of this international consortium led by AAO-Macquarie, ONERA, with the support of the Laboratoire d'Astrophysique de Marseille (LAM), is in charge of the dimensioning, the analysis of the performances of the adaptive optics and the development of the calibration and operation procedures of the LTAO system.

The Laser-Assisted Tomographic Adaptive Optics bench is a key element of the GNAO project which is one of the three components of the [GEMMA](#) (for Gemini in the Era of Multi-Messenger Astronomy) project whose goal is to provide the telescope with a unique set of observing capabilities combining high spatial, spectral and temporal resolution. In this framework, The AO bench will provide the telescope with diffraction-limited near-infrared images over almost the entire sky.

This will open up a wide range of new capabilities, 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.

Three international teams (Franco-Australian, Canadian and Dutch) are competing in this 12-month Phase A study. At the end of the study, the National Science Foundation (NSF) will select a team for the final implementation contract that will lead to first light on the telescope by 2027.

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### **About ONERA, the French Aerospace Lab**

About ONERA, the French aerospace research center ONERA is the French national laboratory for aeronautics and space R&T, staffed by 2000 people. Under the supervision of the French Ministry of Armed Forces, ONERA has an annual budget of 266 million euros, of which more than half comes from commercial contracts. As the French expert in aerospace technologies, ONERA prepares tomorrow's defenses, meets the aerospace challenges of the future, and contributes to the competitiveness of the European aerospace industry. ONERA masters all the disciplines and technologies in its aerospace fields. All major civil and military aerospace programs in France and Europe contain "DNA" from ONERA: Ariane, Airbus, Falcon, Rafale, missiles, helicopters, engines, radars, etc.

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