International effort to develop world's biggest telescope gains NSF as planning partner

EurekAlert!

Powerful new Thirty Meter Telescope will transform the study of the universe

The Thirty Meter Telescope, supported by the Gordon and Betty Moore Foundation and an international collaboration of research institutions and governments, gained support today from the National Science Foundation. Support from NSF—$250,000 per year for the next five years—will allow the broader US astrophysical community to explore a potential partnership for the development of what will be the most powerful telescope ever constructed, literally enabling astronomers to peer to the farthest edges of the observable universe, near the beginning of time.

"The Thirty Meter Telescope represents the Moore Foundation's long-term commitment to ask–and answer–the biggest questions about our world and beyond," Steve McCormick, president and CEO of the Gordon and Betty Moore Foundation, said. "NSF's award will push us closer to those answers, because it helps ensure that our country's best astrophysicists will shape the project and keep us at the leading edge of new discoveries in astronomy."

TMT started with an early investment from the Moore Foundation in 2003, and the foundation has continued to pledge support through design completion and the start of construction. The telescope will allow astronomers to detect and study light from the earliest stars and galaxies, analyze the formation of planets around nearby stars and test many of the fundamental laws of physics. For some types of observations, the TMT will have 81 times the sensitivity of the today's largest, land-based optical/infrared telescopes.

"The Moore Foundation invests in projects like the Thirty Meter Telescope, because we believe in the need for basic scientific research," added Vicki Chandler, chief program officer for Science at the Moore Foundation. "Despite tight budgets in Washington, NSF has recognized the learning opportunity linked to the project and is showing a commitment to the kind of scientific exploration that may yield discoveries we can't even imagine today."

Started by Intel founder Gordon Moore and his wife, Betty, the foundation commits roughly $75 million to scientific research each year. Much of this funding goes to support early stage, basic research—the kind of investigations that can transform or even create entire fields.

With this award, NSF joins domestic and international organizations collaborating to support the telescope's broad use by the scientific community. Other collaborators include California Institute of Technology, University of California, the Association of

Canadian Universities for Research in Astronomy, the National Astronomical Observatory of Japan, a consortium of Chinese institutions led by the National Astronomical Observatories of the Chinese Academy of Sciences, the Indian TMT Coordination Center and institutions in India supported by the Department of Science and Technology of India.

"NSF's award to the Thirty Meter Telescope paves the way for an unprecedented partnership with the broader community of US astronomers," said Ed Stone, vice-chair of the TMT board. "Leaders from the field of astrophysics will enhance the potential for scientific discovery and help answer some of the most longstanding questions in astrophysics."

The telescope will be located on Mauna Kea, Hawaii and is scheduled to begin scientific operations in 2021.

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