



Triangulum Galaxy







Astronomers are honored to be permitted to conduct scientific research on the sacred mountain located in the homelands of the Schuk Toak District within the Tohono O'odham Nation. We honor their past, present, and future generations, who have lived here for time immemorial and will forever call this place home.

## NSF Kitt Peak National Observatory

Founded in 1958, the U.S. National Science Foundation Kitt Peak National Observatory (KPNO), a Program of NSF NOIRLab, is home to more than a dozen optical telescopes and two radio telescopes. The observatory is located a 65-minute scenic drive south-west of Tucson, Arizona, at an altitude of 2100 m (7000 ft) in the Schuk Toak District on the Tohono O'odham Nation. In its seventh decade of operations, the observatory continues to lead scientific research and discovery with its advanced instruments.

The largest optical telescope at KPNO is the Nicholas U. Mayall 4-meter Telescope, which operates the Dark Energy Spectroscopic Instrument (DESI) survey, a project led by the U.S. Department of Energy Office of Science. DESI is creating **the largest and most detailed map of the Universe** to measure the effect of dark energy on the expansion of the Universe.

The second-largest optical telescope at KPNO is the WIYN 3.5-meter Telescope, a partnership between the University of Wisconsin-Madison, Indiana University, Pennsylvania State University, Princeton University, Purdue University (until 2025), NOIRLab, and NASA. The telescope hosts the NEID instrument, a state-of-the-art exoplanet discovery machine. NEID takes its name from the Tohono O'odham word meaning "to see" and is designed to measure the motion of nearby stars with extreme precision.

Throughout its operation, KPNO has changed our understanding of the Universe and pioneered advances in telescope and instrument design. This active and vital observatory has attracted millions of visitors, offering them a chance to experience one of the largest and most diverse collections of research telescopes in the world. The Kitt Peak Visitor Center offers a variety of exhibits, daytime tours, and nighttime public programs for everyone to enjoy.

### NSF Kitt Peak National Observatory Facts

**Tohono O'odham Name:** l'oligam Du'ag, meaning Manzanita Shrub Mountain

**Location:** 84 kilometers (52 miles) southwest of Tucson, Arizona

**Altitude:** 2100 meters (7000 feet)

**Founded:** 1958

**Telescopes:** More than a dozen optical telescopes and two radio telescopes.

**Major Discoveries:** Measurements of the redshifts and brightnesses of supernovae led astronomers to conclude that the expansion of the Universe is accelerating. This discovery led to the theory of the influence of dark energy. Astronomers Vera C. Rubin and W. Kent Ford used the KPNO 2.1-meter Telescope to confirm the existence of dark matter.

**Tours:** Open all days of the week. Daytime and nighttime guided tours can be purchased online at [visitkittpeak.org](http://visitkittpeak.org). Tours are free to members of the Tohono O'odham Nation.

### About the Images

**Front:** The Triangulum Galaxy, otherwise known as Messier 33, lies almost 3 million light-years from Earth, and is a near neighbor of the Andromeda Galaxy. The galaxy is imaged here by the Nicholas U. Mayall 4-meter Telescope, located at KPNO. The Triangulum Galaxy is the third-largest member of the Local Group, a cluster of galaxies that includes our Milky Way and its closest neighbors. The Andromeda Galaxy is the largest member. *Credit: KPNO/NOIRLab/NSF/AURA*

**Back:** The telescopes at KPNO. The high desert climate and mountaintop location make it a great environment for world-class scientific research. The telescopes experience **over 300 clear nights a year**, allowing near year-round observing opportunities. This is great for the many exciting projects at KPNO. *Credit: KPNO/NOIRLab/NSF/AURA/P. Marenfeld*