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Laser Star Trails, Gemini North

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"Laser Star Trails, Gemini North"

This long-duration fish-eye view of the Gemini North telescope facility shows the propagation of the laser guide star (LGS) laser on the night of May 21, 2010.

Featuring the sky over Mauna Kea (looking north), the glow of both dusk and dawn, as well as star trails, fill the sky and provide a backdrop for the orange glow of the Gemini LGS laser as it tracks through the sky. The LGS laser from the W.M. Keck Observatory and the peak of Haleakalā on Maui can be seen on close examination of the image. The bright streak on the left is the setting moon.

From left to right, the observatories are; Subaru, Keck (twin domes), NASA IRTF, and CFHT (just behind Gemini).

The images used to create this single image were captured as part of a time-lapse movie and then stacked in Photoshop®. This movie is available on the Gemini Image Gallery at: www.gemini.edu/gallery/v/Special-Images/Video/20100521_laser_star_trails.jpg.html

Image by Joy Pollard.

Gemini Observatory – Facts and Figures:

Primary Mirror:
- Diameter: 8.1 meters/26.58 feet/319 inches
- Mass: 22.22 metric tonnes/24.5 U.S. tons
- Composition: Corning Ultra-Low Expansion (ULE) Glass
- Surface Accuracy: 15.6 nm RMS (Between 1/1000 – 1/10,000 thickness of human hair)

Telescope Structure:
- Height: 21.7 meters/71.2 feet/7 stories (from "Observing Floor")
- Weight: 380 metric tonnes/418 U.S. tons
- Optomechanical Design: Alt-azimuth/Cassegrain

Dome:
- Height: 46 meters/151 feet/15 stories (from ground)
- Weight: 780 metric tonnes/858 U.S. tons (moving mass)
- Rotation: 360 degrees in 2 minutes
- Thermal Vents: 10 meters/32.8 feet (width – fully open)

Other Data:
- Elevation: Gemini North: 4,214 meters/13,824 feet
  Gemini South: 2,737 meters/8,980 feet
- Location: Gemini North: 19º49.4'N/155º28.1'W
  Gemini South: 30º14.5'S/70º44.8'W

Go to: www.gemini.edu/images to see this and other images.

http://www.gemini.edu