

# *Gemini North Under a Milky Bow*



*Gemini Observatory Legacy Image*



The Gemini Observatory is operated by the Association of Universities for Research in Astronomy, Inc., under a cooperative agreement with the National Science Foundation on behalf of the Gemini Partnership.



United States



Canada



Brazil



Argentina



Chile

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This remarkable photograph shows the Gemini North and Canada-France-Hawai'i Telescope domes in the pre-dawn twilight. The image, taken during the COLOSSOS Large and Long program program studying the colors of of Solar System objects, shows the Milky Way arching over the domes like a snow-laden trestle. The crescent Moon (the bright object at right) is being caressed by the delicate band of zodiacal light — a belt of dust in the plane of the inner Solar System illuminated by the Sun.

Skywatchers can see the zodiacal light only from the darkest sites in the world, attesting to the remarkable clarity of the night sky over Maunakea, where Gemini North is located. If you look carefully, you can see the zodiacal light overlapping the Milky Way and extending ever so delicately above and beyond it. The Milky Way itself carries on to the right of the zodiacal light where it arcs down into the early morning twilight.

Gemini North is part of the international community of observatories built to take advantage of the superb atmospheric conditions on this long dormant volcano which rises more than 4,200 meters into the dry, stable air of the North Pacific. The Gemini Observatory's international headquarters is located in Hilo, Hawai'i, at the University of Hawai'i at Hilo's University Park.

## Gemini Observatory Facts

### PRIMARY MIRRORS:

Diameter: 8.1 meters; 26.57 feet; 318.84 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 STRUCTURES:

Height: 21.7 meters; 71.2 feet; 7 stories (from "Observing Floor")  
 Weight: 380 metric tonnes; 419 U.S. tons  
 Optomechanical Design: Cassegrain ; Alt-azimuth

### DOMES:

Height: 46 meters; 151 feet; 15 stories (from ground)  
 Weight: 780 metric tonnes; 860 U.S. tons (moving mass)  
 Rotation: 360 degrees in 2 minutes  
 Thermal Vents: 10 meters; 32.8 feet (width – fully open)

### GEOGRAPHICAL DATA:

Elevation: Gemini North: 4,214 meters; 13,824 feet  
 Gemini South: 2,737 meters; 8,980 feet  
 Location: Gemini North: 19°49.4'N; 155°28.1'W  
 Gemini South: 30°14.5'S; 70°44.8'W

To see this, and many other images, please visit:  
<http://www.gemini.edu/legacyph>

