







### *Gemini North & South Montage*

Gemini's twin 8-meter optical/infrared telescopes are located on two of the best sites on our planet for observing the universe. Together these telescopes can access the entire sky.

The Gemini South telescope (at right on image) is located at an elevation of 2,737 meters on a mountain in the Chilean Andes named Cerro Pachón. Cerro Pachón shares resources with the adjacent SOAR Telescope and the nearby telescopes of the Cerro Tololo Inter-American Observatory. It is expected that the Large Synoptic Survey Telescope (LSST) will join Gemini on Cerro Pachón during the second half of this decade.

The Frederick C. Gillett Gemini North Telescope (at left on image) is located on Hawaii's Mauna Kea as part of the international community of observatories built to take advantage of the superb atmospheric conditions on this long dormant volcano which rises 4,214 meters into the dry, stable air of the Pacific. The Gemini Observatory's international headquarters is located in Hilo, Hawai'i at the University of Hawai'i at Hilo's University Park.

Both of the Gemini telescopes are designed to excel in a wide variety of optical and infrared capabilities. By incorporating technologies such as laser guide star adaptive optics and multi-object spectroscopy, astronomers in the Gemini partnership explore the universe in unprecedented depth and detail.

Gemini is operated by an international partnership that includes the United States, United Kingdom, Canada, Chile, Australia, Brazil and Argentina. Any astronomer in each partner country can apply for time on Gemini with is allocated in accordance with the amount of financial support provided by each country. The Gemini telescopes have been integrated with the latest networking technologies to allow remote operations from control rooms at the base facilities in Hilo, Hawai'i and La Serena, Chile. With the flexibility of "Queue Scheduling" and remote participation, researchers anywhere in the Gemini partnership will be assured the best possible match between observations, instruments and observing conditions.

#### 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: 19°49.4'N/155°28.1'W  
Gemini South: 30°14.5'S/70°44.8'W

Go to: [www.gemini.edu/images](http://www.gemini.edu/images) to see this and other images.