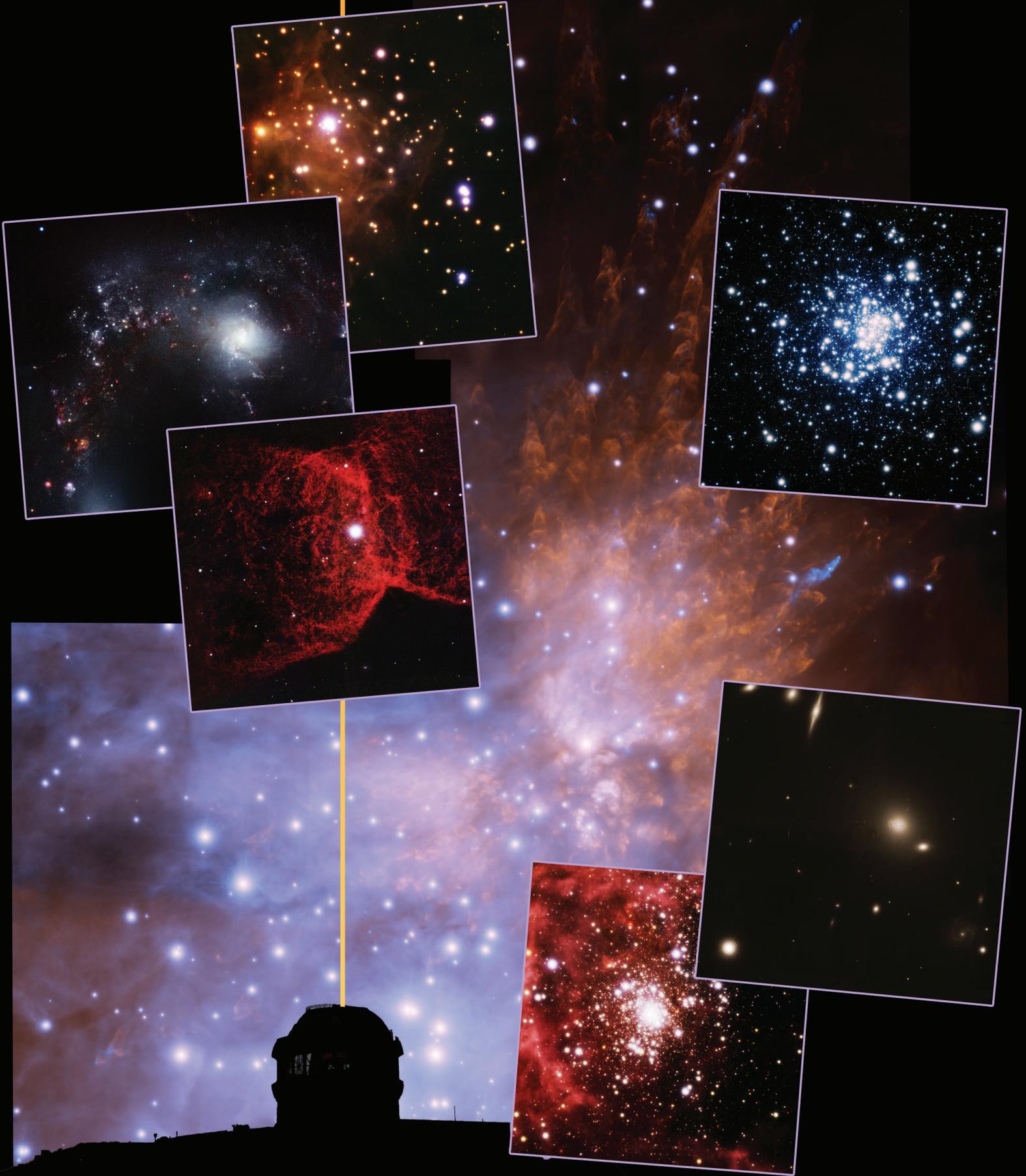


Every Picture Tells a Story





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 montage is a tribute to a unique instrument at Gemini South known as the Gemini Multi-conjugate adaptive optics System (GeMS). When coupled to the Gemini South Adaptive Optics Imager (GSAOI), GeMS can make Gemini's 8-meter mirror significantly more efficient by focusing light more precisely — allowing astronomers using Gemini to probe objects more deeply and study them in finer detail.

The image at bottom shows the Gemini South dome with the GeMS laser propagating into the sky. We see the dome silhouetted against a GeMS image of the Orion Bullets; these wake-like features in the Orion Nebula are clumps of gas violently ejected from a cluster of new and massive stars. The six other images (insets; all seen in unprecedented detail) are identified below, counterclockwise from left:

NGC 2346: The gaseous remnant of a Sun-like star, known as a planetary nebula. **NGC 4038:** One of the components of the Antennae Galaxies — probably the most recognized pair of interacting disk galaxies in the sky. **RCW 41:** A star-forming region harboring a massive star cluster surrounded by dust and gas. **NGC 1851:** An ancient globular star cluster some 40,000 light years from our Sun. **Abell 780:** A deep look into a cluster of galaxies 840 million light years distant. And **R 136:** A star cluster and nebula, and a local analog to starburst clusters in distant galaxies.

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>