

Light from Dark



Image Credit: Gemini Observatory/AURA

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.



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Millions of years ago, a dark cloud of dust about 5,500 light years from the Sun coalesced to begin the process of star birth. Today, some 190 million years later, the region is ablaze with hot, massive young stars arrayed in a dandelion-seed-shaped cluster, which we now call NGC 6520. Not far away lies (with a little imagination) the gecko-shaped dark remains of what may be the cluster's birth cloud, Barnard 86 (B 86).

This image, taken using the Gemini Multi-Object Spectrograph (GMOS) on the Gemini South telescope in Chile, shows only a small section of a larger and highly populated region in the Sagittarius star cloud. It provides the clearest optical view of the cluster and its nearby dark-cloud companion. The close proximity of the two disparate objects in the sky suggests a physical relationship. If so, then the tale of NGC 6520's birth begins with B 86, most likely the remnant of a once-larger cloud of gas and dust.

B 86 is one of many such dense, dark gas and dust collections in our Galaxy. These nebulae appear dark because they're so dense they don't permit much, if any, visible light to pass through. The total mass of the stars in NGC 6520 is roughly equivalent to 300-400 times the mass of the Sun, while the dark cloud contains enough material to make about 3,000 more stars like the Sun.

Gemini Observatory Facts

PRIMARY MIRRORS:

Diameter: 8.1 meters; 26.57 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 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>

