

# Gemini South telescope captures image of Chamaeleon Infrared Nebula

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Nebula powered by a young star obscured by a circumstellar disk. Credit:  
International Gemini Observatory/NOIRLab/NSF/AURA

The Chamaeleon Infrared Nebula is an outflow of gas that resides in the larger Chamaeleon I dark cloud (one of the closest star-forming regions of the Milky Way), and adjacent to the Chamaeleon II and Chamaeleon III dark clouds. These three dark clouds—a type of nebula so dense that it obscures light—are known collectively as the Chamaeleon Complex, a large area of star formation.

The young, [low-mass star](#) that powers the nebula is obscured by a dark vertical band and streams of gas that tunnel through the interstellar cloud that formed the star. Light from the star bounces off the tunnel walls, creating the wispy appearance of the nebula.

Astronomers have suggested the dark band at the center of the Chamaeleon Infrared Nebula is a reservoir of gas and dust orbiting the star, known as a circumstellar disk. Circumstellar disks are usually associated with [young stars](#) and provide the materials to build planets. Astronomers believe that the nebula's star is a young stellar object embedded within the disk. The nebulous blue background in the image is light reflected from a nearby star.

The image of the nebula was captured by the U.S. National Science Foundation-funded Gemini South telescope located atop Cerro Pachón in Chile, part of the international Gemini Observatory, a program of NSF's NOIRLab. The image was produced by NOIRLab's Communication, Education & Engagement team as part of the NOIRLab Legacy Imaging Program.

"GMOS-South is the perfect instrument to make this observation because of its field of view, which can nicely capture the whole nebula, and because of its ability to capture the emission from the nebula's ionized gas," said NOIRLab instrument scientist German Gimeno.

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