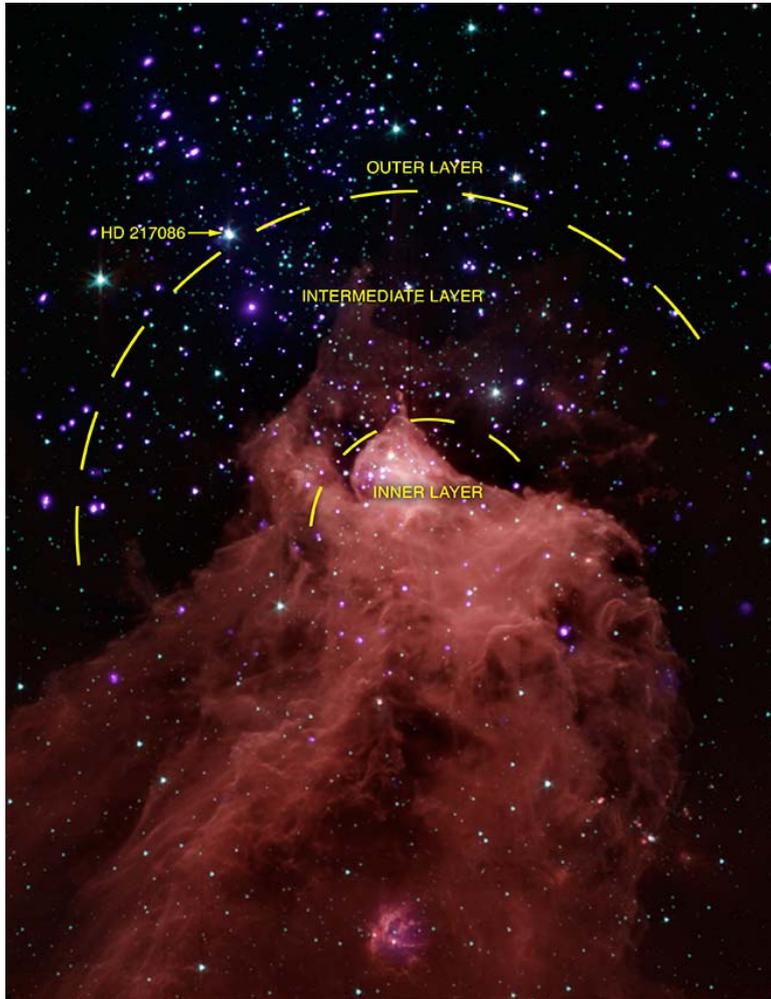




Chandra Science Highlight

Cepheus B: An Active Star-Forming Region 2,400 Light Years from Earth



This composite image shows a portion of the Cepheus B molecular cloud and a nearby association of young, massive stars. The image combines data from the Chandra X-ray Observatory, which selects young stars (violet) identified by their strong X-ray emission, and the Spitzer Space Telescope (red, green and blue), which can determine whether young stars have protoplanetary disks around them.

- The "inner layer" shows the Cepheus B region itself, where the stars are mostly about one million years old. About 70-80% of these stars have protoplanetary disks.
- The "intermediate layer" shows the area immediately next to Cepheus B, where the stars are two to three million years old. About 60% of these stars have disks.
- In the "outer layer," the stars are about three to five million years old and about 30% of them have disks.
- The increase of the ages of stars with distance from Cepheus B is consistent with a model in which radiation from one or more massive stars (e.g., HD 217086) drives a compression wave into the cloud and triggers star formation while evaporating the cloud's outer layers.

Reference: K. Getman et al. (2009), *Astrophys. J.*, 699, 1454

Credit: X-ray (NASA/CXC/PSU/K. Getman et al.);
IR (NASA/JPL-Caltech/CfA/J. Wang et al.)

Scale: Image is 15 arc min across

Chandra X-ray Observatory ACIS/High Energy Transmission Grating image

CXC operated for NASA by the Smithsonian Astrophysical Observatory

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