

Coronet: A Star Formation Neighbor

September 13 2007



Image credit: X-ray: NASA/CXC/CfA/J. Forbrich; Infrared: NASA/Spitzer/CfA/L. Allen

While perhaps not quite as well known as its star formation cousin of Orion, the Corona Australis region (containing, at its heart, the Coronet Cluster) is one of the nearest and most active regions of ongoing star formation.

At only about 420 light years away, the Coronet is over three times closer than the Orion Nebula is to Earth. The Coronet contains a loose cluster of a few dozen young stars with a wide range of masses and at

various stages of evolution, giving astronomers an opportunity to observe "protostars" simultaneously in several wavelengths.

This composite image shows the Coronet in X-rays from Chandra (purple) and infrared emission from Spitzer (orange, green, and cyan). The Spitzer image shows young stars plus diffuse emission from dust. In the Chandra data only (see inset), many of these young stars appear as blue objects, revealing their output of high-energy X-rays and the amount of obscuring dust and gas in the region.

The reason for the blue appearance is that lower energy X-rays, which are depicted as red and green, are absorbed by this veil of material and hence are not seen.

The Chandra data also support the idea that X-rays from very young stars are generated largely from magnetic activity in the outer atmospheres. Due to the host of young stars in different life stages in the Coronet, astronomers can use these data to pinpoint details of how the youngest stars evolve.

Source: NASA

Citation: Coronet: A Star Formation Neighbor (2007, September 13) retrieved 23 April 2024 from <https://phys.org/news/2007-09-coronet-star-formation-neighbor.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.