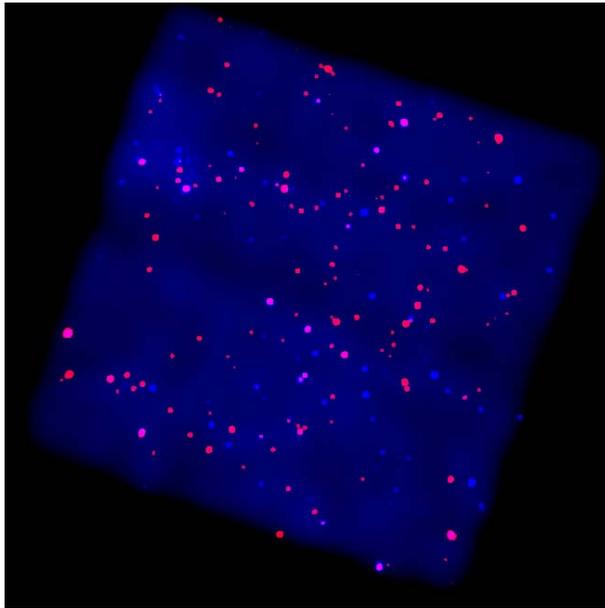




Chandra Science Highlights

Galactic Plane in the Constellation Scutum: A Portion of the Plane of the Milky Way Galaxy



Chandra's image of an area of our galaxy where dense clouds of dust and gas block out visible radiation reveals a ridge of hot gas in our galaxy, as well as X-rays from distant galaxies. The pink, red and blue dots in this image represent different X-ray energies (pink and red for low, blue for high energy). Most of the pink and red dots are stars within the Milky Way, while the blue dots are individual galaxies that lie far beyond our galaxy. The blue X-ray glow comes from diffuse hot gas concentrated along the plane of our galaxy.

(Credit: NASA/GSFC/K. Ebisawa et al.)

Reference: Ebisawa, K., Maeda, Y., Kaneda, H., Yamauchi, S., Origin of the hard X-ray Emission from the Galactic Plane
Science 2001 0:10635291-1 (Science Express Reports)

Chandra X-ray Observatory ACIS image; total exposure time: 90,000 seconds

Scale: Black square is 22.5 arc minutes on a side

- Deepest X-ray look at the “zone of avoidance” - a region opaque to optical observations because of thick clouds of dust and gas.
- A ridge of hot ($T \sim 10$ MK) gas along the galactic plane detected, solving a long-standing debate about the nature of the ridge of X-ray emission along the galactic plane.
- The observed gas is too hot to be confined to galactic plane, so must be constantly replenished.
- At least 26 background point sources that are presumably active galactic nuclei were detected.

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