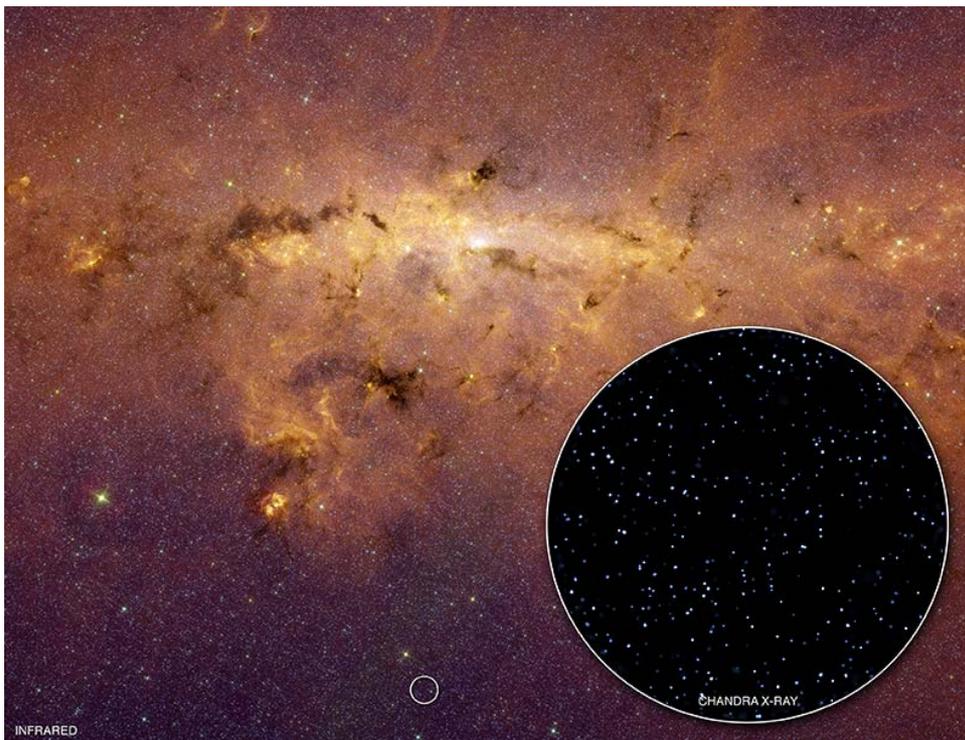




Chandra Science Highlight

Galactic X-ray Ridge: Resolving a Galactic Mystery



Chandra X-ray Observatory ACIS image

Inset Image is 5.1 arcmin across.

Distance: About 26,000 light years

Credit: X-ray (NASA/CXC/TUM/M.Revnivtsev et al.);

IR (NASA/JPL_CalTech/GLIMPSE Team)

This image shows an infrared view from the Spitzer Space Telescope of the central region of the Milky Way, with a pullout showing a Chandra image of a region – shown by the small white circle near the bottom – located only 1.4 degrees away from the center of the Galaxy.

- A 250-hour Chandra X-ray Observatory observation of a region near the center of our Galaxy has resolved a long-standing mystery about the so-called Galactic Ridge X-ray emission, an X-ray glow observed to extend about two degrees above and below the plane of the Galaxy and about 40 degrees along the plane of the galaxy on either side of the galactic center.
- The glow in the region covered by the Chandra image was discovered to be caused by hundreds of point-like X-ray sources, implying that the glow along the plane of the Galaxy is due to millions of such sources.
- These sources are believed to be mostly white dwarfs pulling matter from companion stars and double stars with strong magnetic activity that are producing X-ray outbursts or flares that are similar to, but more powerful than the flares seen on the Sun.

Reference: M. Revnivtsev et al. 2009, Nature 458, 1142