

Tycho's Supernova Remnant

A long Chandra observation of the Tycho supernova remant has revealed a pattern of X-ray "stripes." The stripes, which were discovered in the high-energy X-ray band (blue), are found to the lower right of this image. They may provide the first direct evidence that a supernova shock wave can accelerate particles to energies a hundred times higher than the most powerful accelerator on Earth. High-energy X-rays produced by a shell of extremely energetic electrons behind the supernova shock wave can also be seen. Lowenergy X-rays (red) reveal expanding debris from the supernova explosion in this composite image that also includes optical data from the Digitized Sky Survey.

February 2012

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