



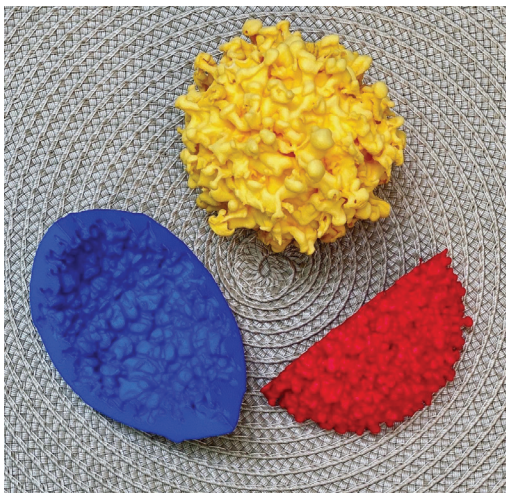
3D PRINT YOUR OWN SUPERNOVA

SN1006: A Cosmic Tapestry

Over 1,000 years ago, ancient observers were treated to the celestial fireworks display of this exploded star without understanding its cause or implications. Astronomers now understand that SN (Supernova) 1006 was caused by a white dwarf star that captured mass from a companion star until the white dwarf became unstable and exploded. Recent observations of the remnant of SN 1006 reveal the release of elements such as iron that were previously locked up inside the star.

How to Create Your Own Supernova

3D files and instructions are available at chandra.si.edu/3dprint



*Credit: Model:
INAF-Osservatorio
Astronomico di
Palermo/S.Orlando;
3D print: NASA/CXC/
SAO/A. Jubett, et al.*

This 3D model of SN 1006 was created by constraining mathematical models of the object with X-ray observational data from Chandra to help explore how the clumping of material after the explosion and the acceleration of high-energy particles affects the structure of the remnant. A ball of fiery-looking stellar debris and heavy elements has been shot into the interstellar medium with speeds of tens of thousands of miles per hour. The material is heated up to temperatures of tens of millions of degrees that Chandra observes in X-ray light.

These 3 printable files were created by the Chandra team from the 3D model, showing the whole remnant (printed here in yellow), and cut outs of the blast wave and ejecta. The stellar ejecta (inside material) was printed in red in this example, while the blast wave (outer shell) was printed in blue.

Select the 3D printer of your choice to make your own SN 1006. Download the files below. For our 3D-printed example shown here, one color of PLA filament was used for each piece. Support structures were required, and removed after printing by using a dissolvable substrate with minimal hand-cleaning required.