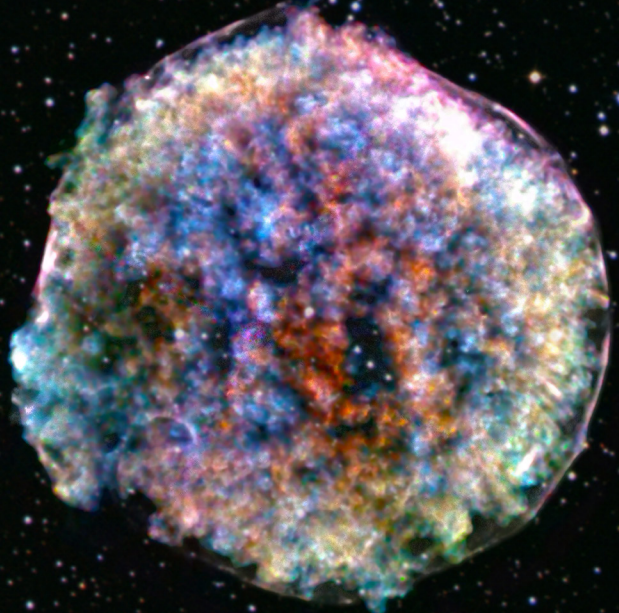


3D Print

TYCHO'S SUPERNOVA REMNANT

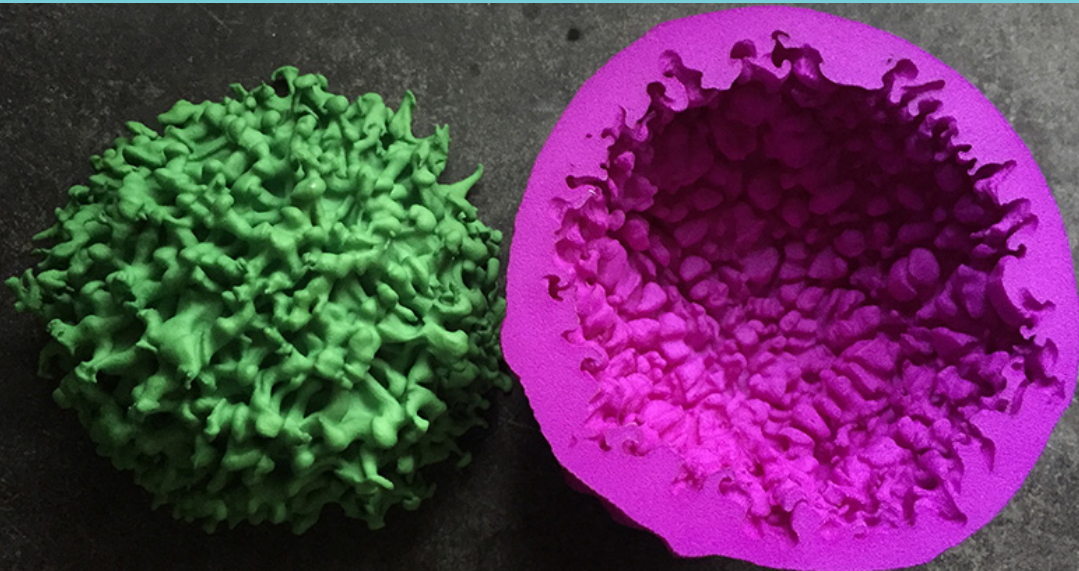
A supernova is an explosion so bright that it can outshine the light from an entire galaxy. Tycho's supernova was a Type Ia, which occurs when a white dwarf star pulls material from, or merges with, a nearby companion star until a violent explosion is triggered. The white dwarf star is obliterated, sending its debris hurtling into space.

Astronomers constructed a 3-D computer model of such a Type Ia supernova remnant as it changes with time, matched to the Chandra X-ray information of Tycho.



How to create your own supernova

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



3D model: RIKEN/G. Ferrand, et al; 3D print: NASA/CXC/SAO/A. Jubett, N. Wolk & K. Arcand

This model consists of two similar halves, with two parts to each half (the ejecta, and the outer shockwave). Select the 3D printer of your choice to make your own Tycho.

[Download the files from chandra.si.edu/3dprint/](http://chandra.si.edu/3dprint/)

For this example (shown above) two colors were used on an Ultimaker 5, with stellar ejecta (inside material) in green, and the interstellar medium swept-up by the blast wave in purple. No support structures were required as the angle is gradual enough to build up onto itself.