



# 3D PRINT YOUR OWN NEBULA

## Jellyfish Nebula IC 443

The Jellyfish Nebula, also known by its official name IC 443, is the remnant of a supernova lying 5,000 light years from Earth. Chandra X-ray observations show that the explosion that created the Jellyfish Nebula may have also formed a peculiar object located on the southern edge of the remnant, likely a rapidly spinning neutron star, or pulsar.

When a massive star runs out of thermonuclear fuel, it implodes, forming a dense stellar core called a neutron star. The outer layers of the star collapse toward the neutron star then bounce outward in a supernova explosion. A spinning neutron star that produces a beam of radiation is called a pulsar. The radiation sweeps by like a beacon of light from a lighthouse and can be detected as pulses of energy.



# 3D Printing: Print Your Own Jellyfish (IC 443)

3D files and instructions are available at [chandra.si.edu/3dprint](http://chandra.si.edu/3dprint)

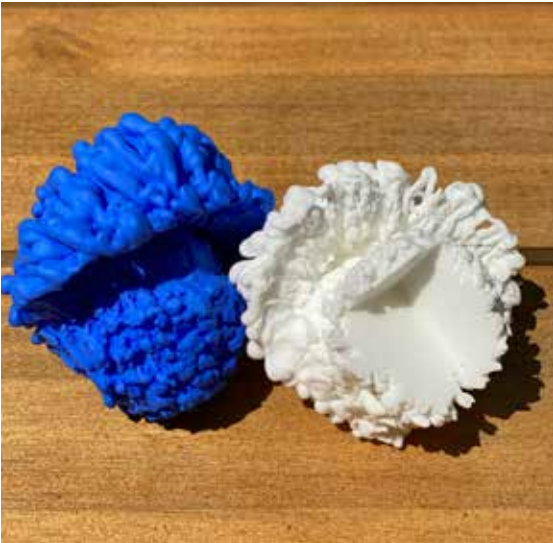


Photo: NASA/CXC/SAO/K.Arcand

These 3D printable files were created by the Chandra team from the scientific 3D model, showing the ejecta in cross-section (printed here in blue (left), and also in white (right) with an option for you to color the point of the cutout for the pulsar wind nebula with a marker or nailpolish after printing).

Select the 3D printer of your choice to make your own IC 443/Jellyfish nebula. Download the files at our site. For our 3D-printed example shown here, one color of PLA filament was used for each example model. If support structures are required, they can be removed after printing by using a dissolvable substrate with minimal hand-cleaning, or be filed/sanded off.

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