

National Aeronautics and Space Administration

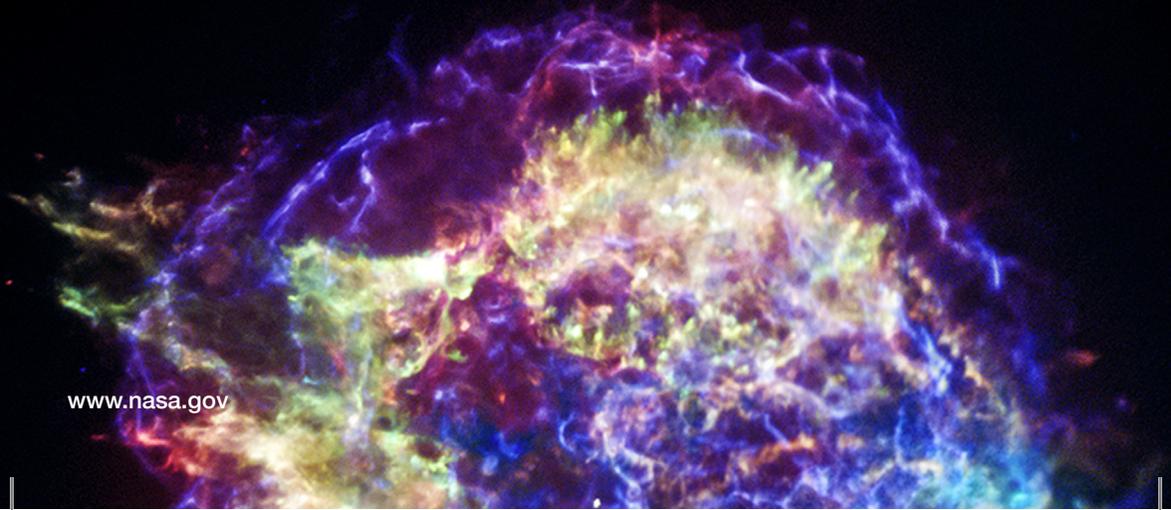


# 3D Print

## YOUR OWN SUPERNOVA

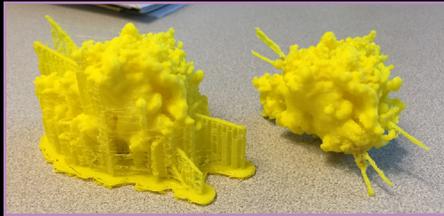
One of the most famous bodies in the night sky is the Cassiopeia A supernova remnant. This object was created when a massive star ran out of fuel and exploded, hurtling its outer layers into space at millions of miles per hour. Because this material has been superheated, it glows brightly in X-ray light that is more energetic than what humans can see with their eyes. This data of Cassiopeia A was captured by NASA's Chandra X-ray Observatory and combined with infrared and visible light to make the first ever 3D model of an exploded star.

[www.nasa.gov](http://www.nasa.gov)



3D files and instructions are available at

**[chandra.si.edu/3dprint](http://chandra.si.edu/3dprint)**



Select the 3D printer of your choice. This example (shown left) was printed at 0.2mm layer height, 10% in-fill, 2 shells with MakerBot PLA filament at an extruder temperature of 215 C with a raft and supports.

To make your 3D printed model more accurate, you will want to remove as much of the supporting material and raft as possible. Great care should be taken when performing this task to avoid breaking the jets. Most of the material will break off easily by hand, but you can get more accurate results enlisting the help of a few tools. If you have access to a heat gun, or hair drier, the plastic wisps left over from the supports can be removed by quickly applying a blast of heat. Be careful not to overheat, and melt the plastic. Additionally, you can use a Dremel or other similar rotary tool to sand away rough spots and carve out some of the interior gaps. As a final tip, you could use a soldering iron to weld some extra plastic to the base of the jets to reinforce them.

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