



3D Print

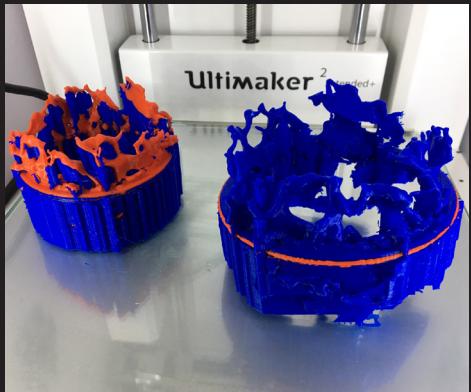
YOUR OWN SUPERNOVA

On February 23, 1987, astronomers noticed a new source of light in the Large Magellanic Cloud (LMC), a small satellite galaxy of the Milky Way. Soon, scientists realized that this new beacon was, in fact, a spectacular explosion caused by the death of a massive star. It was a supernova, and became known as Supernova 1987A, or SN 1987A for short.

The 3D printable file depicts SN 1987A at its current observed age of 30 years, based on 3D simulations by Salvatore Orlando. The blast wave from the supernova has crashed into a pre-existing ring of gas, throwing blobs of this gas upwards and downwards.

How to create your own supernova

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



Select the 3D printer of your choice. For this example (shown left) two colors were used, and support structures were manually removed. The remaining parts of the ring are clearly visible in red in the print on the right. Using the Ultimaker 2 printer this model took about ten hours to print.

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 blobs. 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. This print required about an hour of finish work to remove the support structures manually. *Note: Small blobs of the gas that were disconnected from other blobs or from the ring were removed from the printable model using software in order to improve the ease of 3D printing.*