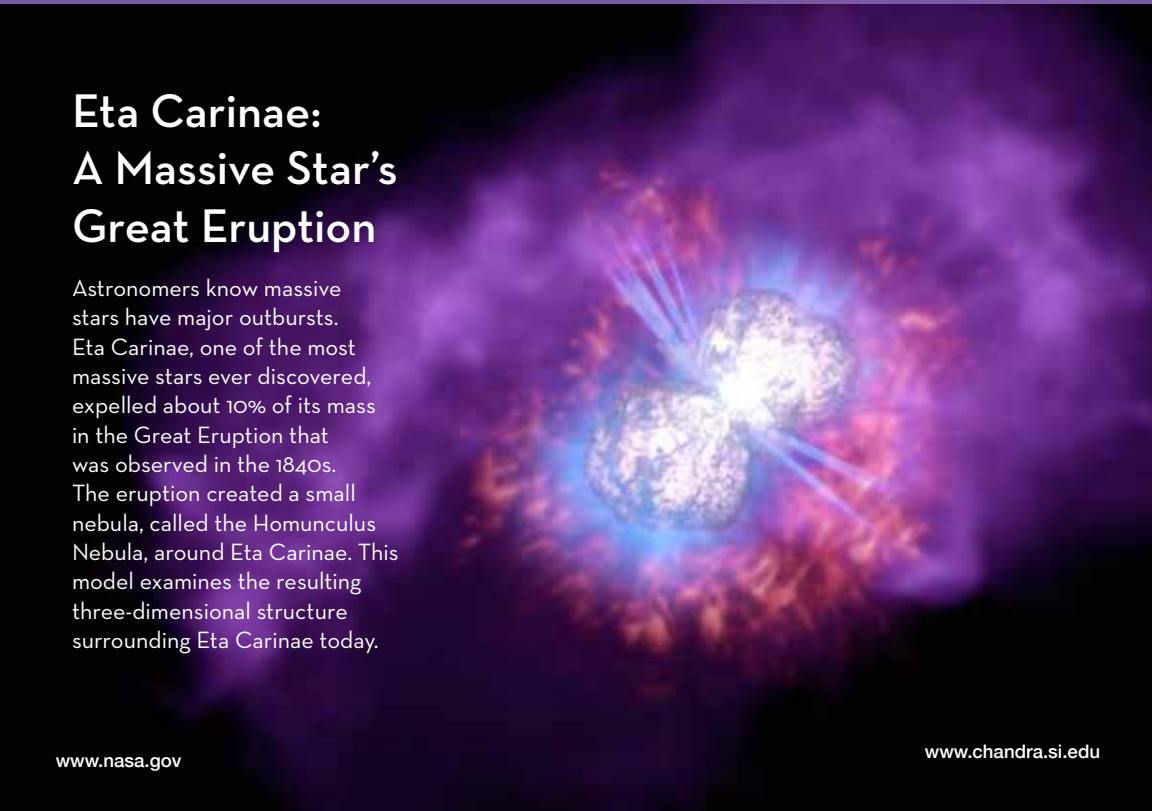
National Aeronautics and Space Administration

3D PRINT
A HOMUNCULUS NEBULA



Eta Carinae: A Massive Star's Great Eruption

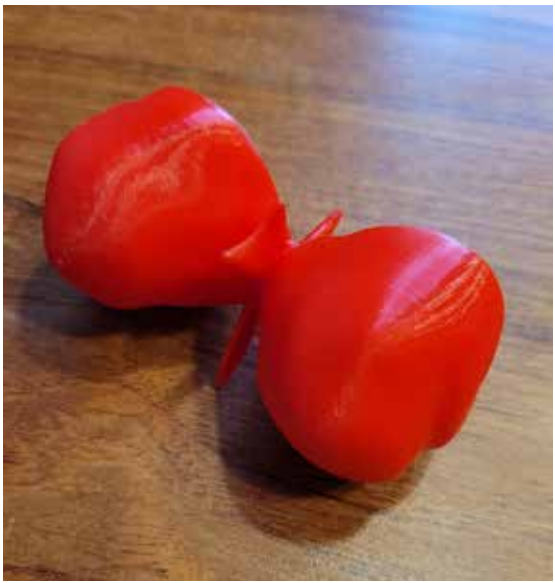
Astronomers know massive stars have major outbursts. Eta Carinae, one of the most massive stars ever discovered, expelled about 10% of its mass in the Great Eruption that was observed in the 1840s. The eruption created a small nebula, called the Homunculus Nebula, around Eta Carinae. This model examines the resulting three-dimensional structure surrounding Eta Carinae today.

www.nasa.gov

www.chandra.si.edu

How to Create Your Own Homunculus Nebula

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



**To view a 3D visualization of the outer layers of gas and material from NASA's Chandra X-ray Observatory that are not included in this 3D print, visit chandra.si.edu/3dprint/etacar.*

The three-dimensional (3D) printable model of Eta Carinae's Homunculus Nebula is based on data from NASA's Hubble Space Telescope. Eta Carinae was once one of the brightest stars in the heavens, easily visible to mariners navigating by the southern sky in the mid-1840s. However, Eta Carinae quickly faded into obscurity after its brief outburst. Over a century and a half later, NASA space observatories have enabled astronomers and artists to assemble a three-dimensional model of the Homunculus Nebula and accompanying clouds of dust and gas enshrouding the petulant star*.

Select the 3D printer of your choice to make your own Eta Carinae. Download the files from chandra.si.edu/3dprint/ For our 3D-printed example one color of PLA filament was used. Support structures were required and removed after printing by using a dissolvable substrate with minimal hand-cleaning required.