

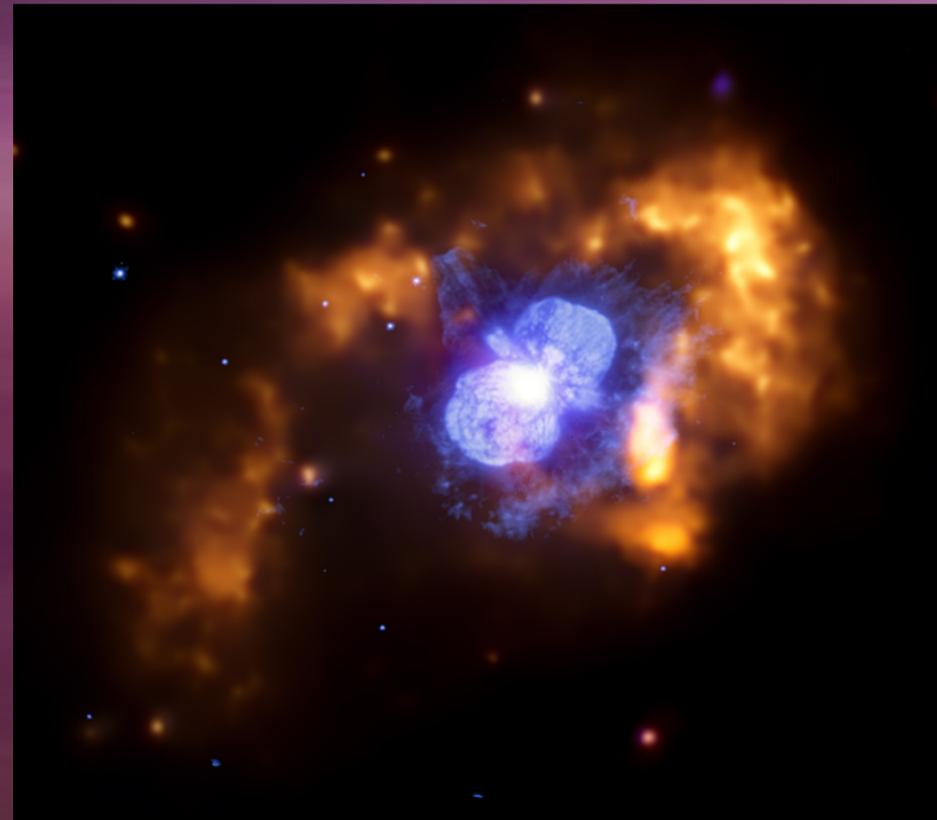
# STARS

A star is born when a cloud of gas and dust collapses to the point where the material in the center of the clump is so dense that nuclear fusion can occur. The Sun is the nearest star to Earth. Astronomers use telescopes including Chandra to study the millions and billions of stars that exist in our Milky Way galaxy and beyond.



Even though scientists understand the basics of star birth, they continue to investigate exactly how the process works. Chandra's X-ray data from young stars and their environments, like this region in the nearby Small Magellanic Cloud, provide important clues.

X-ray: NASA/CXC/Univ.Potsdam/L.Oskinova et al; Optical: NASA/STScI; Infrared: NASA/JPL-Caltech



Stars do not live forever. When the most massive stars run out of fuel, they can explode as supernovas. Eta Carinae is an intriguing star system, containing one star weighing at least 90 times more than the Sun, that could explode at any time. Chandra and other telescopes observe it regularly.

X-ray: NASA/CXC/GSFC/M.Corcoran et al.; Optical: NASA/STScI



Chandra and other telescopes found evidence that within this star cluster, a white dwarf star—the dense core of a star like the Sun—may have ripped apart a planet as it came too close. Gravity on the surface of a white dwarf is over 10,000 times higher than on the surface of the Sun.

X-ray: NASA/CXC/IASF Palermo/M.Del Santo et al; Optical: NASA/STScI