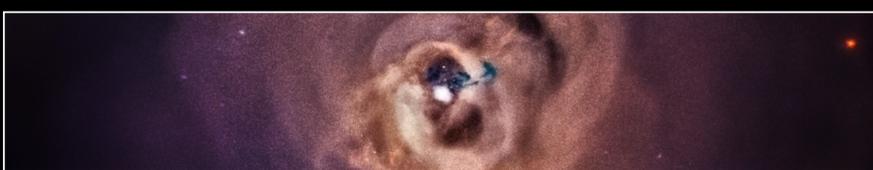


# 15 YEARS OF CHANDRA



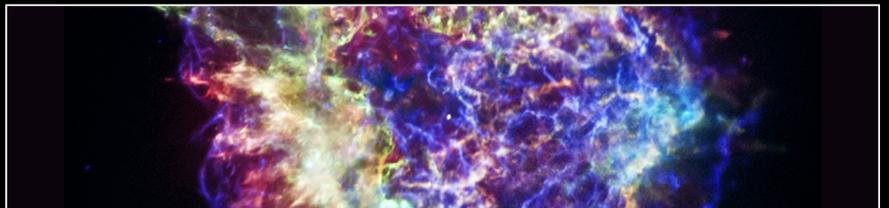
In 15 years of operation, NASA's Chandra X-ray Observatory has given us a view of the Universe that is largely hidden from telescopes sensitive only to visible light.

Chandra has captured galaxy clusters—the largest gravitationally bound objects in the Universe—in the process of forming, and provided the best evidence yet that the cosmos is dominated by a mysterious substance called dark matter.



Chandra has observed gas circling near a black hole's event horizon. The atoms of this gas are doomed to destruction by the extreme gravity of the black hole.

Most of the elements necessary for life are forged inside stars and blasted into interstellar space by supernovas. Chandra has tracked these elements with unprecedented accuracy.



Young stars are crackling with X-ray flares and other energetic radiation. By monitoring clusters of young stars, Chandra can give us a sense of what our young Sun was like when life was evolving on Earth.

## Chandra: Taking us on a unique voyage into the big and beautiful Universe.



NASA's Marshall Space Flight Center in Huntsville, Alabama, manages the Chandra program for NASA's Science Mission Directorate in Washington. The Smithsonian Astrophysical Observatory in Cambridge, Massachusetts, controls Chandra's science and flight operations.

Credits: Top Launch – NASA; FIRST ROW left to right: Tycho Supernova Remnant – NASA/CXC/Rutgers/J.Warren & J.Hughes et al.; Galactic Center – NASA/CXC/UMass/D.Wang et al.; Centaurus A – X-ray: NASA/CXC/U.Birmingham/M.Burke et al.; SECOND ROW: 1E 0657-56 – X-ray: NASA/CXC/CfA/M.Markevitch et al., Optical: NASA/STScI, Magellan/U.Arizona/D.Clowe et al., Lensing Map: NASA/STScI, ESO WFI, Magellan/U.

Arizona/D.Clowe et al.; THIRD ROW: Perseus Cluster – X-ray: NASA/CXC/SAO/E.Bulbul, et al.; FOURTH ROW: Cassiopeia A – NASA/CXC/SAO; FIFTH ROW: Orion Nebula – X-ray: NASA/CXC/Penn State/E.Feigelson & K.Getman et al., Optical: NASA/ESA/STScI/M. Robberto et al.; LAST ROW left to right: ESO 137-001 – X-ray: NASA/CXC/UAH/M.Sun et al, Optical: NASA, ESA, & the Hubble Heritage Team (STScI/AURA); M51 – X-ray: NASA/CXC/Wesleyan Univ./R.Kilgard, et al, Optical: NASA/STScI; NGC 602 – X-ray: NASA/CXC/Univ.Potsdam/L.Oskinova et al, Optical: NASA/STScI, Infrared: NASA/JPL-Caltech

[HTTP://CHANDRA.SI.EDU/15TH](http://chandra.si.edu/15th)