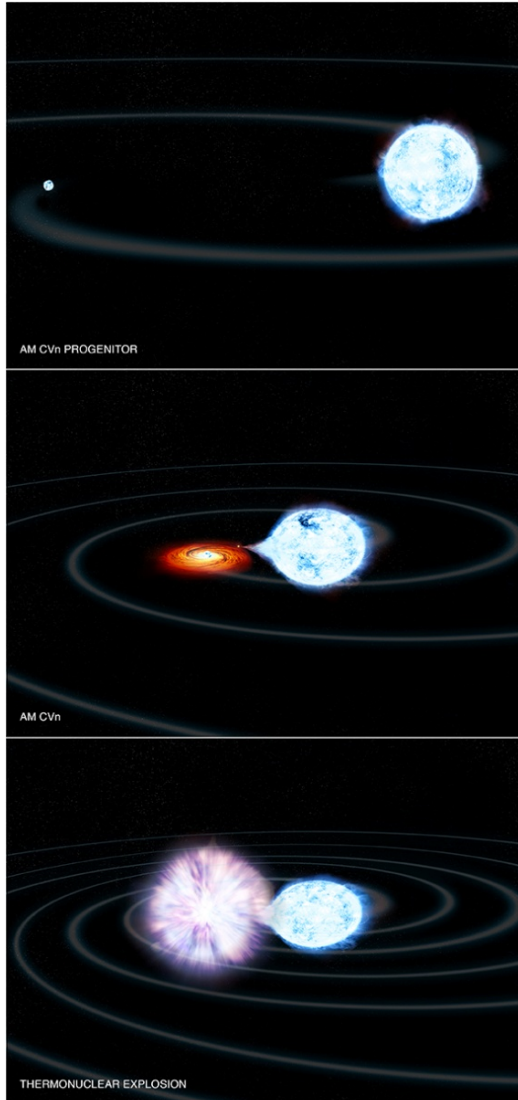




Chandra Science Highlight

J075141 and J174140: Doubling Down With Rare White Dwarf Systems



Top Panel:
The current state.

Middle Panel:
Matter is accreted from lower mass white dwarf onto its companion.

Bottom Panel:
The accumulation of matter on the more massive white dwarf triggers a thermonuclear explosion.

The illustration shows stages in the evolution of a close binary system consisting of two white dwarf stars of unequal masses.

- ❑ Chandra X-ray observations of two close binary systems, J075141 and J17410 set upper limits on the X-ray emission from these objects.
- ❑ The upper limits are strong evidence that these systems do not contain neutron stars.
- ❑ When combined with optical observations, the data suggest that they are double white dwarf systems, and may produce thermonuclear supernovae in ~ 100 Myr.

Reference: Kilic, M. et al, 2013, MNRAS Letters (in press); arxiv:1310.6359

Illustration: NASA/CXC/M.Weiss

Instrument: Chandra ACIS Observation

CXC Operated for NASA by the Smithsonian Astrophysical Observatory



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