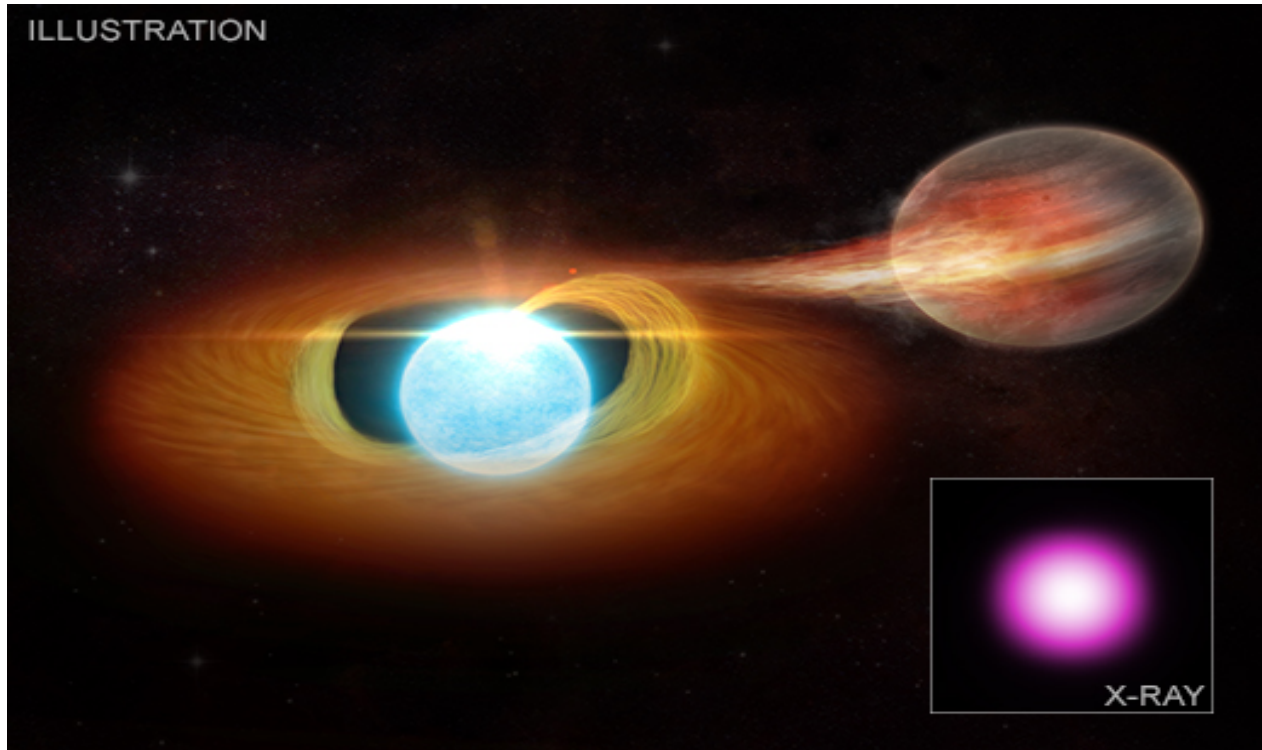




Chandra Science Highlight

Roasted and Shredded by a Stellar Sidekick



- Astronomers used NASA's Chandra X-ray Observatory and ESA's XMM-Newton to identify unusual X-ray activity from a white dwarf called KPD 0005+5106.
- Astronomers think the white dwarf is blasting a companion object, which is either a low-mass star or a planet, with heat and radiation.
- The white dwarf is also steadily pulling material from the companion object.
- If this companion is a planet the size of Jupiter, it would only survive this process for a few hundred million years.

Distance estimates: About 1,300 light-years.

Credits: Illustration: NASA/CXC/M. Weiss; X-ray (Inset): NASA/CXC/ASIAA/Y.-H. Chu, et al.

Instrument: ACIS

Reference: Chu, Y-H., et al., 2021, *ApJ*, 910, 119; [arXiv:2102.05035](https://arxiv.org/abs/2102.05035).

Caption: An artist's illustration depicts what a team of Astronomers think is happening with KPD 0005+5106. The data suggest the white dwarf (blue sphere) is blasting a companion object (brown and red object on right), which is either a low-mass star or planet, with waves of heat and radiation. The white dwarf is also pulling material from the companion into a disk around itself (orange), before it slams into its poles. The concentration of material hitting the white dwarf's poles is creating two bright spots of high-energy X-ray emission. As the white dwarf and its companion orbit around each other the hot spot facing more towards Earth goes in and out of view, causing the high-energy X-rays observed by Chandra to regularly increase and decrease in brightness. <https://chandra.si.edu/photo/2021/kpd0005/>

The CXC is operated for NASA by the Smithsonian
Astrophysical Observatory



November 2021