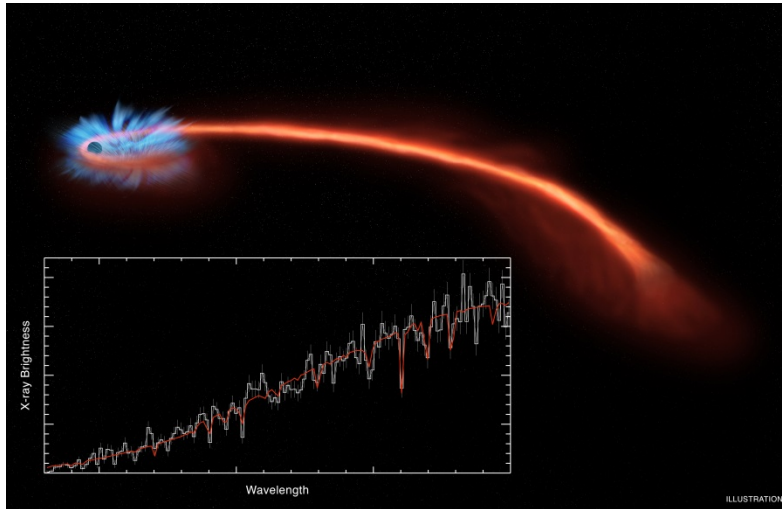




Chandra Science Highlight

ASASSN-14li: Destroyed Star Rains onto Black Hole, Winds Blow it Back



The illustration shows a disk of stellar debris around the black hole in the upper left of the illustration, and a long tail of debris that has been flung away from the black hole. The Inset box shows the X-ray spectrum obtained with Chandra.

- ❑ Tidal disruption of a star by supermassive black hole can cause some stellar debris to be flung outward at high speed, while the rest falls toward the black hole producing an X-ray flare that can last several years.
- ❑ Chandra detected flows of hot, ionized gas in high-resolution spectra of a tidal disruption event.
- ❑ Variability in the absorption-dominated spectra indicates that the gas is relatively close to the black hole.
- ❑ Modest outflow speeds of a few 100 km/s are observed, indicating that the flow is below the escape speed, and is consistent with a rotating wind from the inner region of a nascent accretion disk.

Distance Estimate: 290 million light years

**CXC Operated for NASA by the
Smithsonian Astrophysical Observatory**



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Reference: J. Miller et al 2015 Nature 526, 542-545

Credit: Spectrum: NASA/CXC/U.Michigan/J.Miller et al.;
Illustration: NASA/CXC/M.Weiss

Instrument: HRC/Low Energy Transmission Grating Spectrometer