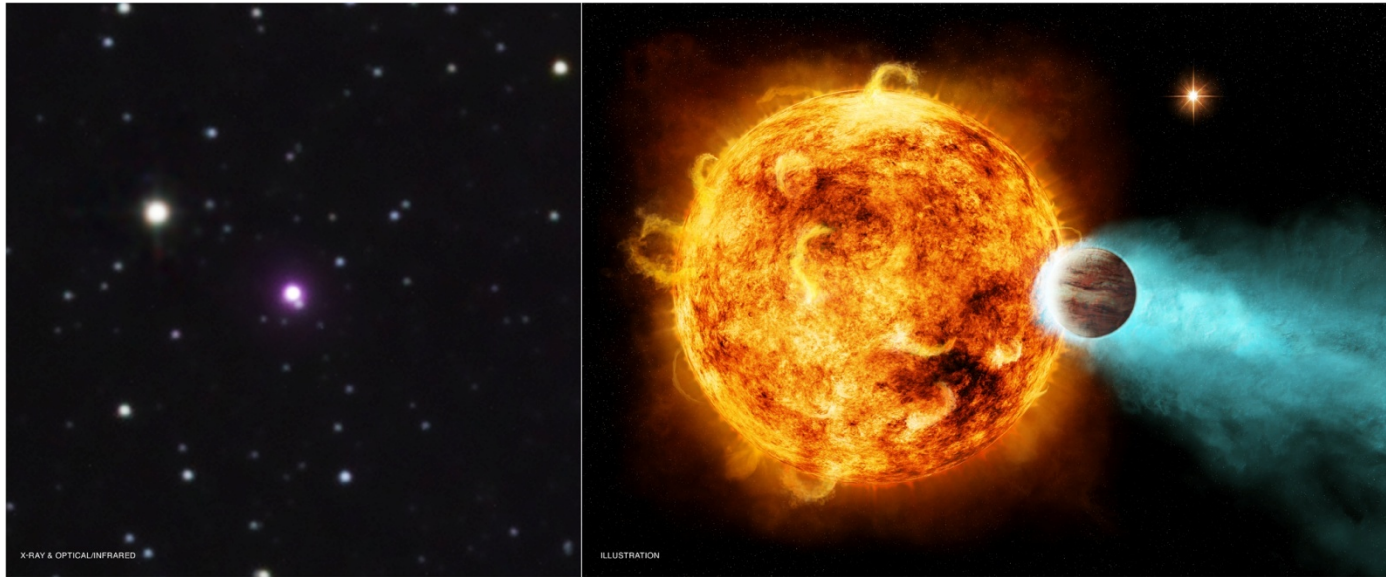




Chandra Science Highlight

CoRoT-2: A Planetary System with a Hot Jupiter-like Planet and An Exceptionally Active host Star

Chandra X-ray Observatory ACIS image



Distance Estimate: 880 light years

Scale: image is 4.5 arcmin across (1.15 light years)

The image shows X-ray data from Chandra (purple) from the star CoRoT-2A, along with optical infrared data from the Panchromatic Robotic Optical Monitoring and Polarimetry Telescopes (PROMPT) and the Two Micron All Sky Survey (2MASS).

- The X-ray luminosity of CoRoT-2A is 1.9×10^{29} erg/s.
- Optical observations and models indicate that the companion planet, CoRoT-2b, has an unusually large radius for its mass, which is 3 times that of Jupiter.
- The high-energy radiation from CoRoT-2A is likely eroding the planet's atmosphere, with an estimated mass-loss rate of 4.5×10^{12} g/s.
- The relatively strong X-ray luminosity of CoRoT-2A may be due to the interaction with the planet, which could have spun the star up, or enhanced its magnetic activity.

References: S. Schröter et al. 2011 A&A 53A A3; arXiv:1106.1522

Credit: X-ray: NASA/CXC/Univ of Hamburg/S.Schröter et al; Optical: NASA/NSF/IPAC-Caltech/UMass/2MASS, UNC/CTI PROMPT; Illustration: NASA/CXC/M.Weiss