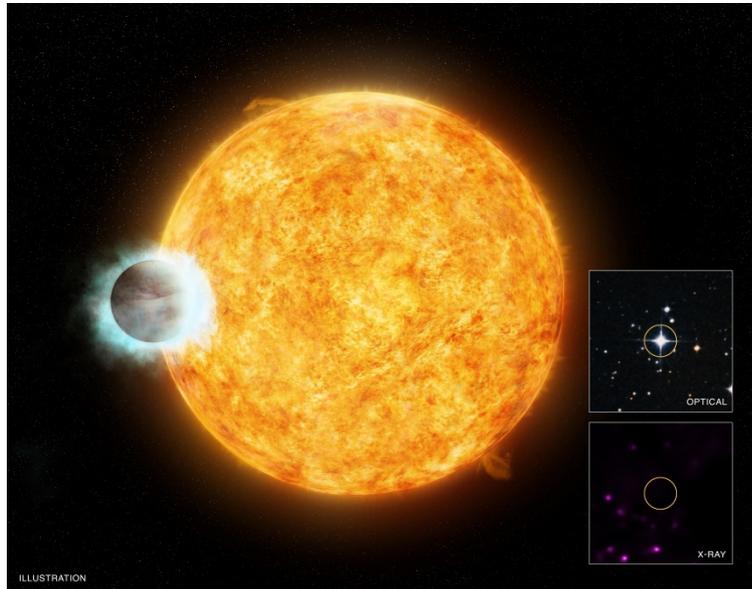




Chandra Science Highlight

WASP 18: IS A PLANET MAKING A STAR ACT OLD BEFORE ITS TIME?



A long (23 h 43m) Chandra observation reveals no X-rays being emitted from WASP-18, as shown in the lower inset box. The same field-of-view in the upper inset box shows that in optical light WASP-18 is a bright source.

- ❑ Using established relations between the magnetic activity and X-ray emission of stars and their age, the researchers concluded that WASP-18 is about 100 times less active than it should be at its age.
- ❑ WASP-18 is orbited by a planet, called WASP-18b, which has a mass more than ten times Jupiter's mass but is so close to its parent star--1/50 the distance of Earth from the Sun-- that it completes an orbit in less than a day.
- ❑ The extreme tidal forces caused by WASP -18b are apparently changing the internal structure of the star, and disrupting the magnetic dynamo that would normally produce conditions for X-ray emission.

Scale:

Inset image is about 5.3 arcmin across (about 0.5 light years)

Distance Estimate:

326 light years

Reference: Pillitteri, I et al 2014 A&A 567,128 arXiv:1406.2620

Credit: X-ray: NASA/CXC/SAO/I.Pillitteri et al; Optical: DSS; Illustration: NASA/CXC/M.Weiss

Instrument: Chandra ACIS Observation

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



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