Chandra Science Highlight

Arp 299: Galactic Goulash

Composite image of Arp 299, a system containing two interacting galaxies, NGC 3690 and IC 694. Chandra X-ray data (0.5-7 keV) is shown in pink, NuSTAR X-ray data in the 6-40 keV energy range is shown in purple, and optical data from the Hubble Space Telescope is shown in white and faint brown.

- Arp 299 is the site of intense star formation, most likely triggered by the galaxy interactions.
- The star formation rate in Arp 299 is estimated to be as high as 90 solar masses/yr, and it is the second most luminous galaxies in X-rays within 150 million light years of Earth.
- Chandra observations have revealed 25 bright, discrete sources that are likely associated with binary star systems in which a black hole is accreting matter from a massive companion star.
- A diffuse X-ray component is also observed. An estimated 80% of this comes from unresolved X-ray binary systems containing accreting black holes and neutron stars, and 20% from hot interstellar gas with a temperature ~10 MK.

Scale: Image is 2.8 arcmin across (about 117,000 light years).
Distance estimate: 140 million light years

Credits: Chandra X-ray: NASA/CXC/Univ. of Crete/ Anastasopoulou, K. et al.; NuSTAR X-ray: NASA/NuSTAR /GSFC/Ptak, A. et al; Optical: NASA/STScI
Instrument: ACIS
References: Anastasopoulou, K. et al. 2016 MNRAS 460, 370

CXC Operated for NASA by the Smithsonian Astrophysical Observatory

June 2017