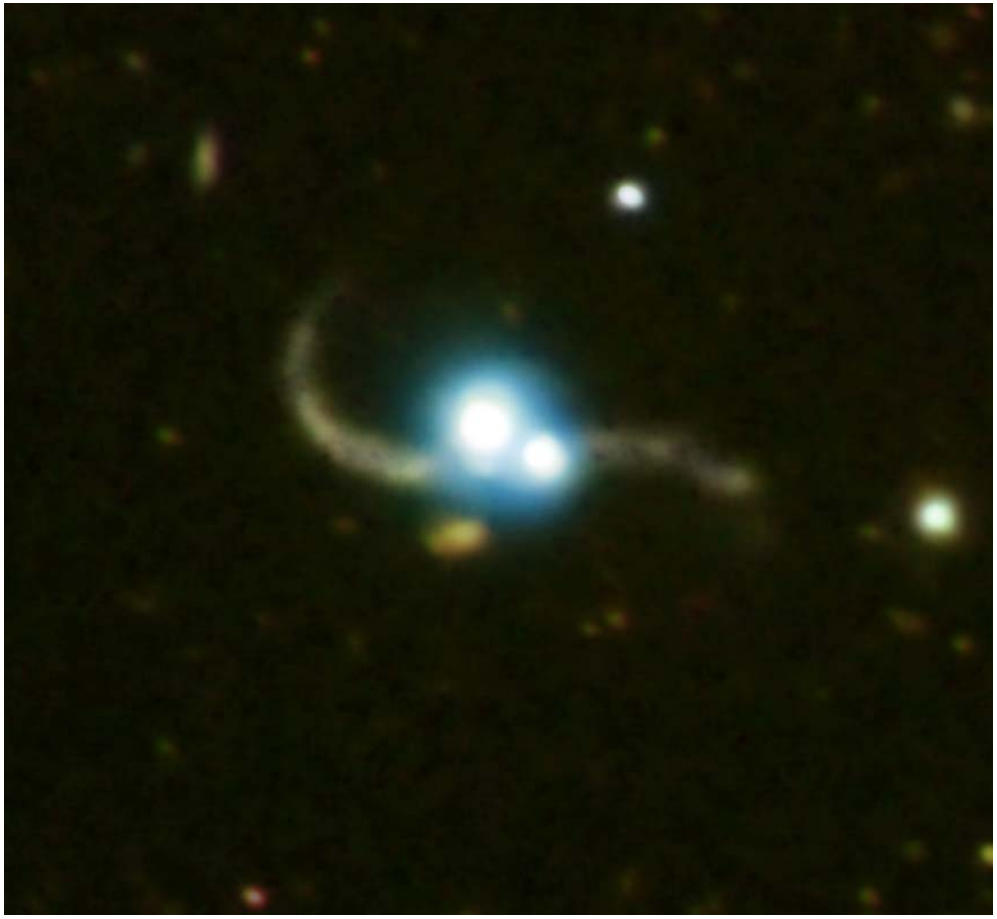
Chandra Science Highlight

SDSS J1254+0846: A Quasar Pair Caught in the Act of Merging



Scale: Image is 1 arc min across Chandra X-ray Observatory ACIS

Distance Estimate: About 4.6 billion light years (redshift = 0.44)

This composite image shows a pair of luminous quasars (blue) embedded in two large merging galaxies. The optical image (yellow) shows extensive tidal tails – gravitationally-stripped streamers of stars and gas produced by the merger – fanning out from the galaxies.

- Quasars, among the most luminous objects in the universe, are powered by the accretion of gas onto supermassive black holes in the centers of galaxies.
- This represents the first time a luminous pair of quasars has been clearly seen in an ongoing galaxy merger.
- This result represents strong evidence for the prediction that a pair of quasars can be triggered by a significant increase of accretion onto supermassive black holes during a merger.

Reference: P. Green et al, 2010, Astrophys.J. 710, 1578

Credits: X-ray: (NASA/CXC/SAO/P. Green et al.),
Optical: (Carnegie Obs./Magellan/W. Baade Telescope/ J.S.Mulchaey et al.)