



Chandra Science Highlight

Black Holes Raze Thousands of Stars to Fuel Growth



- Astronomers have found evidence for the destruction of thousands of stars in multiple galaxies, using NASA's Chandra X-ray Observatory.
- Growing black holes within dense stellar clusters are thought to be responsible for this large-scale devastation.
- This process could create "intermediate mass black holes" through the runaway growth of stellar-mass black holes.
- Intermediate mass black holes are a class that are bigger than the stellar-mass variety but smaller than supermassive black holes.
- The new study involved the observations of over a hundred galaxies with Chandra.

Distance estimate: In light-years: 43 million (NGC 1385); 32 million (NGC 1566); 62 million (NGC 3344); 18 million (NGC 6503)

Credits: X-ray: NASA/CXC/Washington State Univ./V. Baldassare et al.; Optical: NASA/ESA/STScI.

Instrument: ACIS

Reference: Baldassare, V., et al., 2022, ApJ, 929, 84; [arXiv:2203.02517](https://arxiv.org/abs/2203.02517).

Caption: *These four galaxies are part of a large survey of more than 100 galaxies conducted by Chandra that looked for evidence of growing black holes. A new study uncovered evidence that stellar-mass black holes in these dense environments are ripping apart multiple stars, and then using their debris to fuel their growth, forming much larger black holes. In each of these images, Chandra data have been combined with optical images from the Hubble Space Telescope. Chandra data is blue in the upper left galaxy and purple in the others. The boxes on each of the images show the locations of the growing black holes.*

The CXC is Operated for NASA by the Smithsonian
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