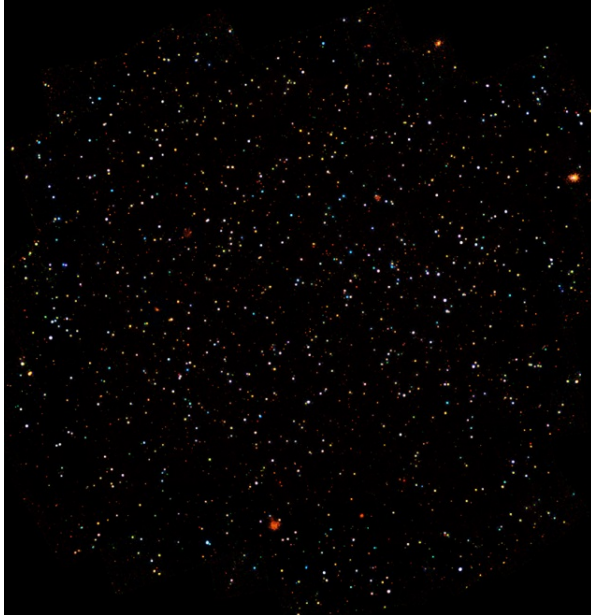




Chandra Science Highlight

Intermediate Mass Black Holes in the Nuclei of Dwarf Galaxies



This image contains Chandra data from the COSMOS-Legacy Survey, equivalent to about 4.6 million seconds of observing time. In this image red, green, and blue represent the 0.5 – 2.0 keV, 2.0- 4.5 keV, and 4.5 – 7.0 keV X-ray bands, respectively. Most of the colored dots in this image are black holes.

Distance estimates: Ranging from 410 million to 11.0 billion light years

- Two independent studies have found evidence for black holes in the nuclei of dwarf galaxies.
- The black holes detected in these studies have estimated masses ranging from 13,000 to 730,000 solar masses, and are located in galaxies having masses between 66 million and 3 billion solar masses.
- These black holes have masses intermediate between black holes with masses of a few to a few dozen solar masses, and supermassive black holes with masses as great as billions of Suns.
- The study of the numbers and masses of intermediate mass black holes should provide crucial insight into whether supermassive black holes are formed through direct collapse of a massive gas cloud, or the gradual buildup through the merger of many stellar mass black holes.

Credit: NASA/CXC/ICE/M.Mezcua et al.

Instrument: ACIS

References: Mezcua, M. et al., 2018, MNRAS, 478, 2576; [arXiv:1802.01567v2](https://arxiv.org/abs/1802.01567v2); Chilingarian, I. et al., 2018, ApJ, 873, 1; [arXiv:1805.01467](https://arxiv.org/abs/1805.01467)

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