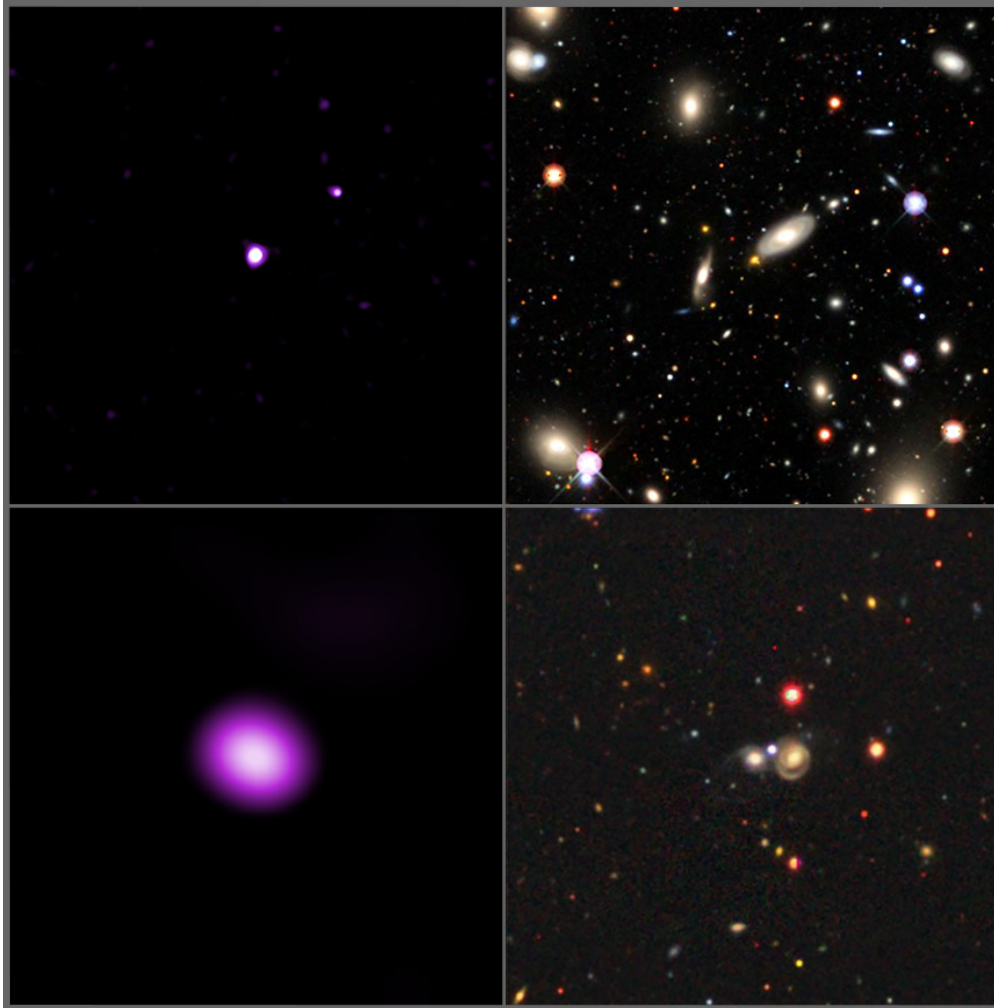




Chandra Science Highlight

Astronomers Dig Out Buried Black Holes with NASA's Chandra



- Hundreds of supermassive black holes have been identified in a new survey using NASA's Chandra X-ray Observatory.
- The key to this finding was comparing objects in the Chandra Source Catalog to data from Sloan Digitized Sky Survey.
- Researchers discovered 817 candidate "XBONGs" (X-ray bright, optically normal galaxies). About half of them are buried under dust and gas, preventing optical light but not X-rays from escaping the galaxies.
- They concluded about half the XBONGs are buried supermassive black holes. These results provide a more accurate census of supermassive black holes found in the centers of most large galaxies.

Distance estimate: 4.2 billion and 1.5 billion light-years

Credits : X-ray: NASA/CXC/SAO/D. Kim et al.; Optical/IR: Legacy Surveys/D. Lang (Perimeter Institute)

Instrument: ACIS

Reference: Kim, D. et al., AAS Meeting #241, 2023, id, 408.03.

Caption: A survey has revealed hundreds of previously unidentified black holes using data from the Chandra Source Catalog and the Sloan Digitized Sky Survey (SDSS). Researchers compared the X-ray and optical data for a class of objects known as "XBONGs" to reveal about 400 supermassive black holes. This four-panel graphic shows two of these XBONGs in X-rays from Chandra (left) and optical light from SDSS (right). The XBONGs are the X-ray sources in the middle of the Chandra images, and they are circled in the SDSS images.

<https://chandra.harvard.edu/photo/2023/xbongs/>

The CXC is operated for NASA by the Smithsonian
Astrophysical Observatory



January 2023