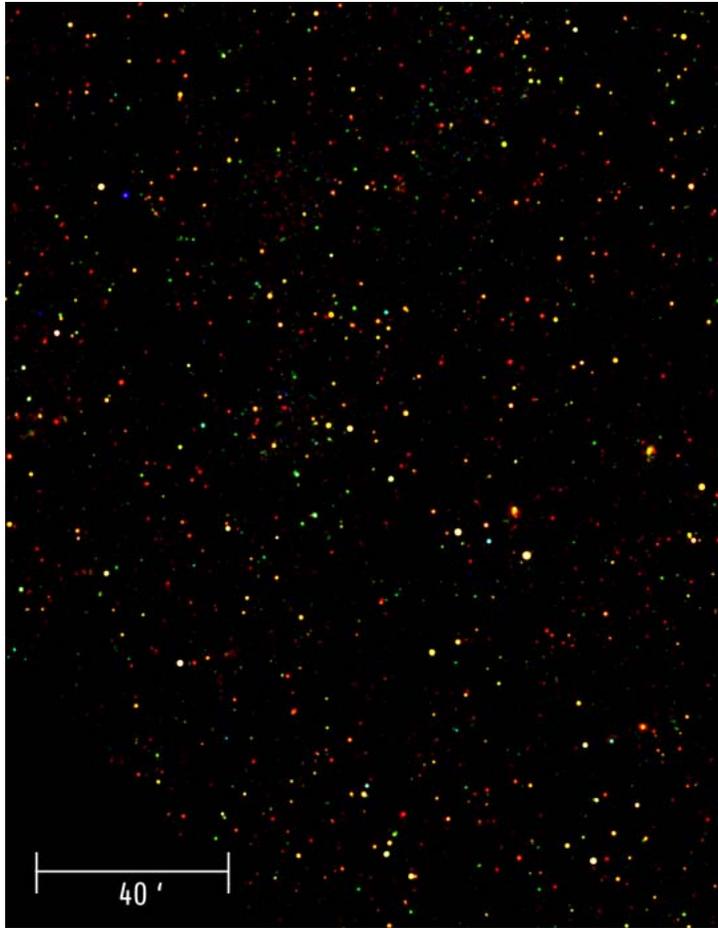




# Chandra Science Highlight

## Bootes Field: New Panorama Reveals More Than a Thousand Black Holes

Chandra X-ray Observatory ACIS image.



This image of a 9.3 square-degree field in a region of the Bootes constellation shows active galactic nuclei (AGN) powered by gas falling toward supermassive black holes. In the image, red represents low-energy X-rays, green shows the medium range, and blue the higher energy X-rays.

- The Bootes survey involved 126 separate Chandra exposures of 5,000-seconds each, making it the largest contiguous field ever obtained by the observatory.
- Data from NASA's Chandra X-ray Observatory, the Spitzer Space Telescope and ground-based optical telescopes were used to select the active galactic nuclei in the field.
- The supermassive black holes in the image are hundreds of millions to several billion times more massive than the sun and are located between about 6 and 11 billion light years from Earth.
- The red sources are mostly those in which the obscuration of X-rays from the AGN is small, whereas the green and blue sources are dominated by obscured AGN.

Reference: R. Hickox et al. (2007), *Astrophys. J.* (submitted)

Credit: X-ray: NASA/CXC/CfA/R.Hickox et al.

CXC operated for NASA by the Smithsonian Astrophysical Observatory

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