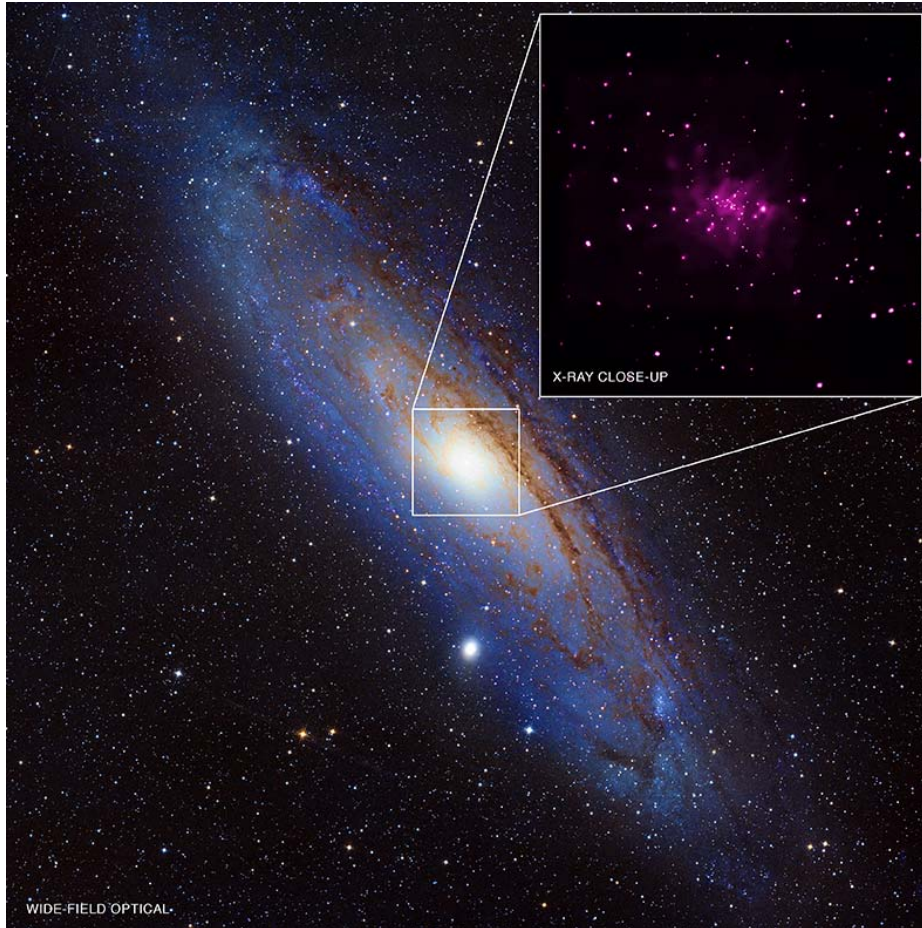




Chandra Science Highlight

M31: Black Hole Bonanza Turns up in Galaxy Next Door



The wide-field optical view of M31, shown in red, green and blue, contains optical data from the Burrell Schmidt telescope of the Warner and Swansey Observatory on Kitt Peak in Arizona, combined with data taken by astrophotographer Vicent Peris using two of his personal telescopes. The inset shows Chandra data from the central region of M31.

- Twenty-six black hole candidates have been identified in M31, aka Andromeda, adding to nine previously found by the same team. The authors used over 150 separate Chandra observations spread over 13 years to obtain these results.
- These are stellar-mass black hole candidates, which are formed by the collapse of a massive star and typically have masses between five and 10 times that of the Sun.
- New techniques were adopted to distinguish black hole candidates from systems likely to contain neutron stars and to eliminate active galactic nuclei in background galaxies.
- This new work confirms predictions made earlier in the Chandra mission about the properties of X-ray sources near the center of M31.

Scale: Image is 2 degrees across (about 100,000 light years); inset image is 14 arcmin across (about 12,000 light years).
Distance Estimate: 2.5 million light years

Instruments: ACIS

Credit: X-ray (NASA/CXC/SAO/R.Barnard, Z.Lee et al.), Optical (NOAO/AURA/NSF/REU Prog./B.Schoening, V.Harvey; Descubre Fndn./CAHA/OAUV/DSA/V.Peris)