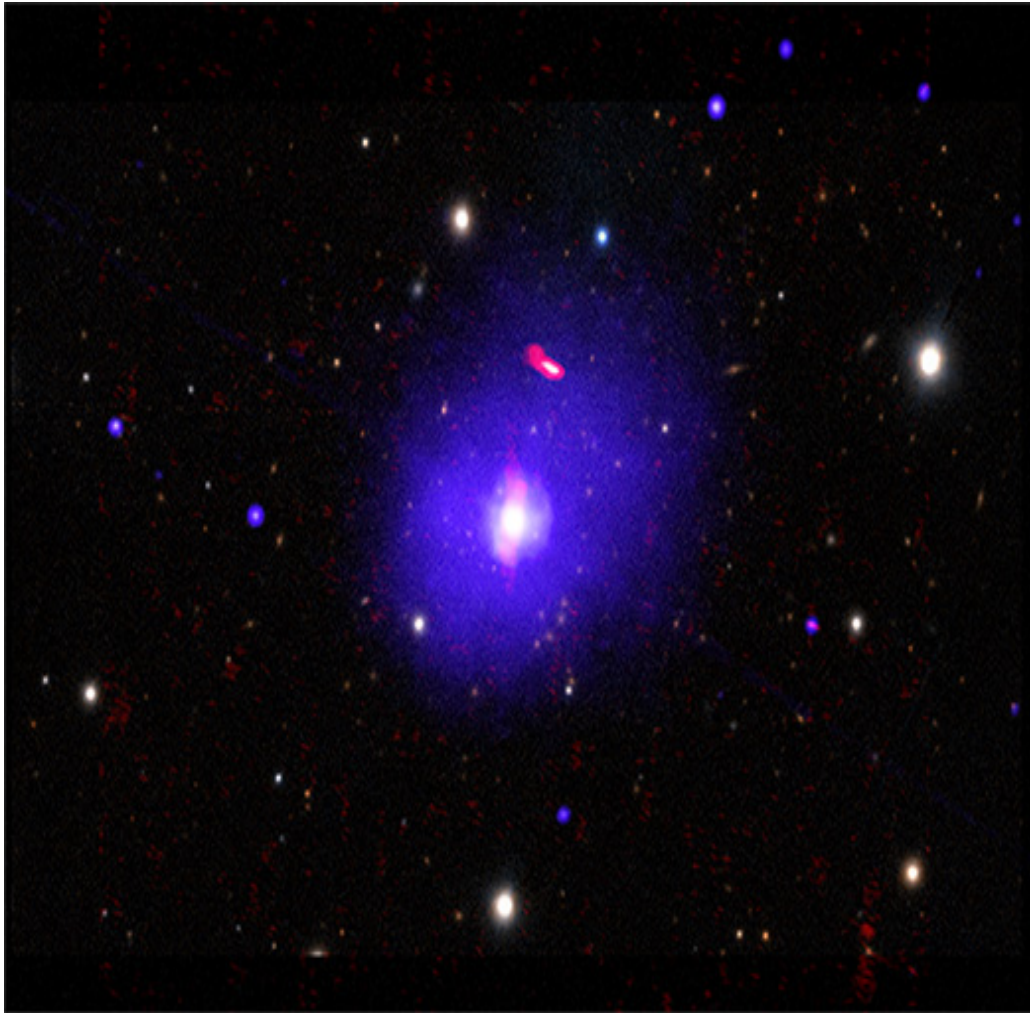




# Chandra Science Highlight

## Chandra Shows Giant Black Hole Spins Slower Than Its Peers



- Astronomers have gauged how fast a supermassive black hole is spinning in a quasar 3.4 billion light years away.
- Using Chandra data, they found the rotation speed near the event horizon is about half the speed of light.
- This remarkable speed is still slower than many less massive black holes, providing clues to how this black hole grew.
- Scientists think that nearly every large galaxy, including the Milky Way, has a giant black hole at its center.

**Distance estimate:** About 3.4 billion light-years

**Credits:** X-ray: NASA/CXC/Univ. of Cambridge/J. Sisk-Reynés et al.;  
Radio: NSF/NRAO/VLA; Optical: PanSTARRS

**Instrument:** ACIS

**Reference:** Sisk-Reynés, J. et al., 2022, MNRAS, 514, 2568;  
[arXiv:2205.12974](https://arxiv.org/abs/2205.12974)

***Caption:** Astronomers have used Chandra to determine the spin of the supermassive black hole in the quasar H1821+643. This composite image of H1821+643 contains X-rays from Chandra (blue) along with radio data from NSF's Karl G. Jansky Very Large Array (red) and an optical image from the PanSTARRS telescope on Hawaii (white and yellow). The supermassive black hole is located in the bright dot in the center of the radio and X-ray emission. It is spinning about only half as fast as those with a lower mass, giving clues to how it and others like it may have grown and evolved. <https://chandra.harvard.edu/photo/2022/h1821/>*

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