



## CHANDRA SCIENCE HIGHLIGHT: April 2026

### NASA Connects Little Red Dots With Chandra, Webb

- NASA's Chandra X-ray Observatory has found a "little red dot" (LRD) — a class of small, red, distant objects — that is giving off bright X-rays, unlike others observed so far.
- This suggests that this so-called X-ray dot represents a previously unseen phase of supermassive black holes in the early Universe.
- In the proposed scenario, gas surrounding the growing black hole becomes patchy as the black hole consumes it.
- Over time X-rays from material falling onto the black hole are then able to pass through, which Chandra can detect.

**Distance estimate:** 11.8 billion light-years from Earth

**Credit:** X-ray: NASA/CXC/Max Plank Inst./R. Hviding et al.;

Optical/IR; NASA/ESA/STScI/HST; Image Processing:

NASA/CXC/SAO/N. Wolk

**Instrument:** ACIS

**Reference:** Hviding, R.E., et al., 2026, ApJL, 1000, L18

**More information:** The detailed caption and other material are here: <https://chandra.si.edu/photo/2026/xraydot/>



➤ The large image is an optical and infrared composite image centered on the position of the X-ray dot and shows two of its key features as an LRD – small and red. Optical light from NASA's Hubble Space Telescope is colored blue and green and infrared light from Hubble is colored orange and red. The Chandra X-ray image of the X-ray dot (purple) is in the inset, showing the source is bright in X-rays.

➤ An artist's impression of the X-ray dot shows the research team's understanding of this newly-discovered object: a growing supermassive black hole at the center of a large sphere of gas. As the black hole in the little red dot has consumed gas surrounding it, patchy holes in the clouds of gas have appeared. This allows X-rays from material falling onto the black hole to pass through, which are observed by Chandra.

