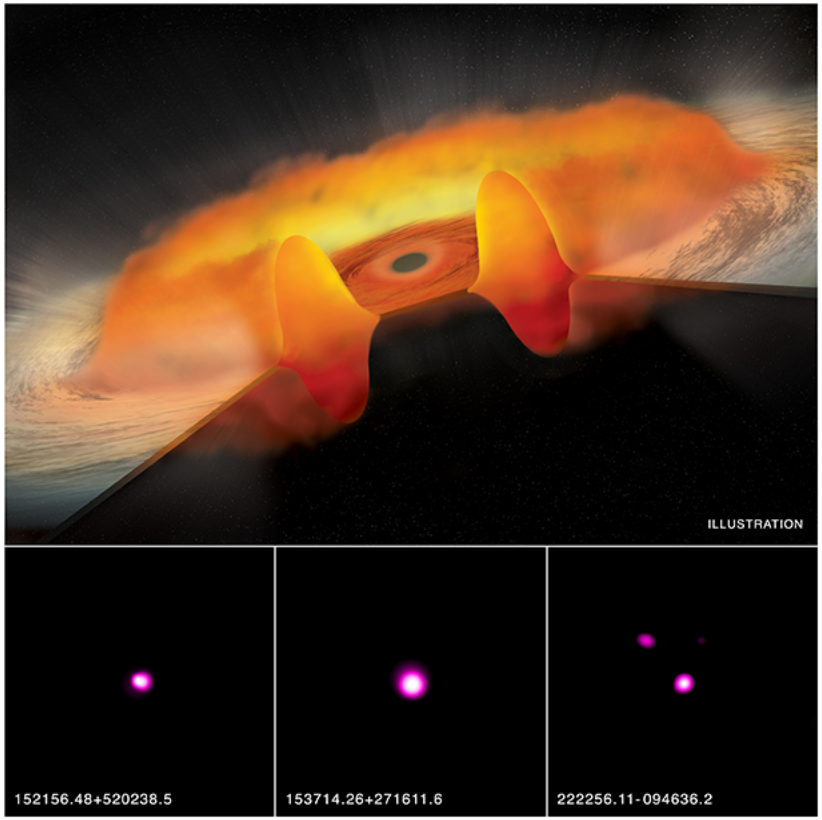
Chandra Science Highlight

Supermassive Black Holes with Thick Accretion Disks



Distance estimates: Left to right, quasars at distances of 10.75 billion light years (lys), 11.03 billion lys, and 11.48 billion lys, respectively.

A Chandra study of 51 quasars–extremely luminous sources powered by gas falling into supermassive black holes—indicates that these black holes are shielded by a thick disk of gas.

- ❑ The disk is likely puffed up because gas is falling into the black hole at an unusually high rate
- ❑ Black holes with high accretion rates might have been more common in the early universe about a billion years after the Big Bang, explaining the existence of huge black holes at early times.

Credit: X-ray: NASA/CXC/Penn State/B.Luo et al.; Illustration: NASA/CXC/M.Weiss

Reference: Luo, B. et al, 2015, ApJ (in press); arXiv:1503.02085

Instrument: Chandra ACIS Observation

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