



# X-RAY ASTRONOMY 2019

*Current Challenges and New Frontiers in the Next Decade*

8-13 September 2019  
CNR/INAF Research Area, Bologna, Italy

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## Size of the ISCO and hot corona from gravitational lensing

*Wednesday, 11 September 2019 14:30 (15 minutes)*

We present current X-ray observations and simulations showing how gravitational lensing is used to infer the structure near the event horizons of black holes, constrain the spin of the supermassive black hole and its evolution over cosmic time and test general relativity in the strong-gravity regime.

We also show how these observations can be expanded to a statistically large sample of  $z = 0.5-5$  lensed quasars with the predicted discovery by LSST of  $> 4,000$  additional gravitationally lensed systems and with a next generation X-ray telescope having a spatial resolution of  $< 0.5$  arcsec to resolve the lensed images and a collecting area of  $> 0.5 \text{ m}^2$  at 1 keV.

### Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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**Session Classification:** ACTIVE GALACTIC NUCLEI