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国台学术报告 NAOC COLLOQUIUM

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Time: Wednesday 2:30PM, Feb. 04 Location: A601 NAOC

Discovering an Ultra-luminous Quasar with Most Massive Black Hole in the Distant Universe

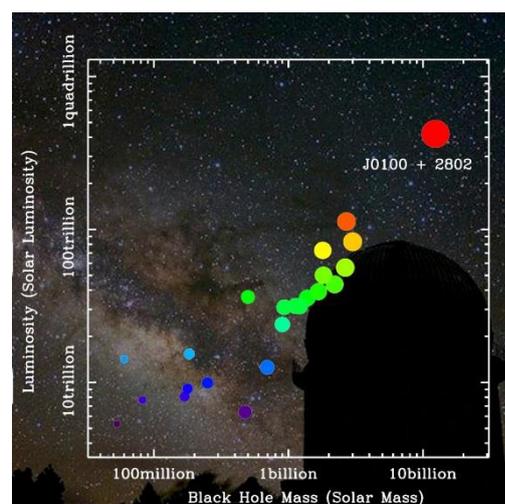
Prof. Xuebing Wu (KIAA/PKU)



Xue-Bing Wu is a professor at Department of Astronomy, Peking University and the associate director of Kavli Institute for Astronomy and Astrophysics. He got the PhD from Beijing Astronomical Observatory (NAOC now) of Chinese Academy of Sciences in 1996. Then he worked as a postdoc and visiting scholar at Institute of Theoretical Physics of CAS, University of Alabama in Huntsville, Max-Planck Institute for Astrophysics before joining PKU in 2000. He was the deputy chair in 2003-2011 and chair in 2011-2014 of Department of Astronomy at PKU. His main research interests include quasars and active galaxies, black hole accretion, high-energy astrophysics, and observational cosmology.

Abstract

To date about 40 quasars with redshifts $z > 6$ have been discovered. They harbor black holes with masses of several billion solar masses. The existence of billion solar mass black holes when the universe was less than one billion years after the Big Bang presents significant challenges to the theory of the formation and growth of black holes and the black hole/galaxy coevolution. I will report a recent discovery of an ultra-luminous quasar at redshift $z = 6.30$, which has an observed optical and near-infrared luminosity a few times greater than those of previously known $z > 6$ quasars. With near-infrared spectroscopy, we obtain a black hole mass of about 12 billion solar masses, which is well consistent with the mass derived by assuming an Eddington-limited accretion rate. This ultra-luminous quasar with a 10 billion solar mass black hole at $z > 6$ provides a unique laboratory to the study of the mass assembly and galaxy formation around the most massive black holes in the early Universe.



All are welcome! Tea, coffee, biscuits will be served at 2:15 P.M.