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国台学术报告 NAOC COLLOQUIUM

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Time: Wednesday 2:30 PM, Jan.17th **Location: A601, NAOC**

New insights on the X-ray Source Populations in Globular Clusters, Galactic Center and Galaxy Clusters

Prof. Zhiyuan Li (Nanjing University)



Zhiyuan Li is currently a Professor of Astronomy at Nanjing University. He obtained his Bachelor and Master degrees in Astronomy at NJU, his PhD degree in Astrophysics at the University of Massachusetts. He was then a postdoc at the Smithsonian Astrophysical Observatory and an assistant researcher at UCLA, before joining the faculty of NJU in 2013. His research focuses on high-energy astrophysics in the context of galaxy evolution, using a multi-wavelength approach.

Abstract

X-ray-emitting, close binary systems involving a black hole (BH), a neutron star (NS) or a white dwarf (WD), are among the first objects discovered in the X-ray sky and now understood to be ubiquitous in the Universe. As such, X-ray binaries can serve as an important tool to study the evolution of their parent populations on scales from star clusters to galaxies clusters. In this talk, I will present our recent work on the X-ray sources in globular clusters, the Galactic center, and nearby galaxy clusters, based on Chandra observations. In globular clusters, we find that the specific number of CVs (i.e. accreting WDs) is on average lower than that in the field, which can be understood as an efficient disruption of primordial binaries due to binary-single encounters. In the Galactic center, however, we find no clear sign of dynamical effects on the specific number and spatial distribution of CVs, despite the high stellar density and the presence of a massive black hole. On the other hand, we are able to place interesting constraints on the number of NS- and BH-binaries in the Galactic center. Lastly, we report the discovery of intra-cluster X-ray sources in the two nearest galaxy clusters, Virgo and Fornax, which probably have a mixed origin, including the long-sought gravitationally recoiled massive black holes.



All are welcome / Tea, coffee, biscuits will be served at 2:15 PM.