Science News & Journal Club Public Talk

时　间：2018年11月09日 12:15 – 1:45pm

地　点：紫台仙林园区3号楼302室

Science News:

报 告 人：**吴 琪**

Journal Club Public Talk:

报 告 人：**刘 伟**

报告题目：**Two ULXs with jets——M81 ULS-1 & Swift J0243.6+6124**

摘要：①Relativistic jets are not expected to be produced by sources with soft or supersoft X-ray spectra . Here we report the optical spectra of an ultraluminous supersoft X-ray source (ULS) in the nearby galaxy M81 (M81 ULS-1). Unexpectedly, the spectra show blueshifted, broad H α emission lines, characteristic of baryonic jets with relativistic speeds. These time-variable emission lines have projected velocities of about 17 per cent of the speed of light .The unexpected presence of relativistic jets in a ULS challenges canonical theories of jet formation , but might be explained by a long-speculated, supercritically accreting black hole with optically thick outflows.

②We report observations of an evolving jet launched by a strongly magnetized neutron star accreting above the theoretical maximum rate given by the Eddington limit. The radio luminosity of the jet is two orders of magnitude fainter than those seen in other neutron stars with similar X-ray luminosities , implying an important role for the properties of the neutron star in regulating jet power. Our result also shows that the strong magnetic fields of ultra-luminous X-ray pulsars do not prevent such sources from launching jets.

参考文献：①J. van den eijnden et al. An evolving jet from a strongly magnetized accreting X-ray pulsar. Nature 562, 233-235 (2018).

②Ji-Feng Liu et al. Relativistic baryonic jets from an ultraluminous supersoft X-ray source. Nature 528, 108-109(2015).

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