

# Unveiling the Cosmic Dance of Repeated Tidal Disruption Event ASASSN-14ko: Insights from Multiwavelength Observations

*Tuesday, 15 October 2024 14:50 (15 minutes)*

ASASSN-14ko is a nuclear transient resulting from the repeated partial tidal disruption event (rpTDE). We conducted high-cadence, multiwavelength observations of this source, revealing several recurrent early bumps and rebrightenings in its UV/optical light curves. The energy released during these bumps and rebrightenings shows a decreasing trend in recent UV/optical outbursts and we monitored the whole process through multiwavelength observations. This unique structure may be attributed to the interaction between stream debris and the expanded disk in the rpTDE. The X-ray light curve exhibits an evolution opposite to that of the UV/optical bands, with periodicities of approximately 54 days and 105 days, respectively. Furthermore, our high-cadence, multiwavelength observations demonstrate that the UV/optical luminosity in each outburst increases with the blackbody temperature and radius, and such evolution resembles that observed in quasi-periodic eruptions, distinguishing it from typical TDEs.

**Primary author:** 黄, 石锋 (中国科学技术大学)

**Presenter:** 黄, 石锋 (中国科学技术大学)

**Session Classification:** Session