

Abstract Submitted
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A Persistent Disk Wind in GRS 1915+105 with NICER JOEY NEILSEN, Villanova University — As a result of their small sizes and deep gravitational potentials, accreting stellar mass black holes can vary on timescales as short as milliseconds, even as they launch relativistic jets and ionized winds, outshine stars by orders of magnitude, and provide testbeds for General Relativity. As such, they are excellent targets for NICER’s sensitive X-ray capabilities. One such source, the bright, erratic black hole GRS 1915+105, has long been a target for studies of these accretion/ejection processes. In this talk, I will present our analysis of 39 NICER observations of GRS 1915+105 over five months, focusing on Fe XXVI Lyman alpha absorption lines present in the vast majority of our spectra. I will discuss how these signatures of a well-known ionized wind depend on the broad properties of the X-ray lightcurve: intensity, spectral shape, and variability. Our results are consistent with an average wind column density that is fairly steady over weeks or months but may vary rapidly with the source on timescales of seconds. The dependence of the wind absorption on spectral shape echoes known behavior of disk winds in outbursts of Galactic black holes; these results clearly indicate that NICER will be a powerful tool for studying black hole winds in the future.

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