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Hot News from NuSTAR about black hole ${\rm spin}^1$ DOMINIC WALTON, Caltech

Measurement of black hole spin has the potential to enhance our understanding in a wide variety of key astrophysical topics, including galaxy formation and the growth of supermassive black holes, supernova/GRB explosions, and relativistic jets. The best methods for measuring black hole spin currently available are anchored in X-ray spectroscopy, and ultimately rely on constraining the radius of the innermost stable circular orbit (ISCO), which relates directly to spin. Although such measurements are in their relative infancy, substantial progress has been made over the last few years. NuSTAR has undertaken a major program, coordinated with XMM, Swift and Suzaku, to obtain the highest-quality broad band X-ray spectra from AGN and BH binaries to date, with the aim of obtaining spin constraints. The quality of the data not only allows us to make robust constraints, but also challenge the physical assumptions inherent in the relativistic reflection models primarily utilized for these measurements. We review the current status of this program, highlighting in particular some of the early observational results obtained.

¹On behalf of the NuSTAR team