

GW Astronomy with TianQin

Saturday, 7 November 2026 14:00 (30)

The millihertz gravitational-wave band offers a new view of compact objects and black holes across cosmic history. TianQin, a planned space-based observatory, will explore this band through long-duration observations. In this talk, I will discuss its astrophysical prospects, from Galactic double white dwarfs and stellar-mass black hole binaries to massive black hole mergers and extreme-mass-ratio inspirals. These sources address questions at different scales: how compact binaries form and evolve, how massive black holes grow through mergers, and how stellar remnants move within galactic nuclei. I will also consider how joint observations with other gravitational-wave detectors and electromagnetic telescopes could improve source characterization and enable multi-messenger studies. I will conclude by introducing the proposed TianQin Mock Data Challenge (MDC), currently in preparation, and its potential role in developing and testing the data-analysis methods needed to realize these science goals.

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