

Black Hole Mergers

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According to hierarchical galaxy merger models, binary black holes should form frequently, and should be common in the cores of galaxies. The presence of massive black hole binaries has been invoked to explain a number of class properties of different types of galaxies, and in triggering various forms of activity. Coalescing massive black hole binaries are powerful emitters of gravitational waves (GW). The search for such binary black holes (BBH) is therefore of great interest in order to test cosmological models, make predictions of GW event rates, and explore their role in triggering various forms of activity in galaxies. X-rays are the most powerful probe of obscured BBH activity, and the first few examples of spatially resolved BBHs have appeared in the last few years based on X-ray observations. High spatial resolution in X-rays is essential to detect the close pairs. We present a review of recent observations of supermassive BH mergers and stress the need for future high-resolution X-ray observations to find more of these systems.