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Imaging Black Holes

AVERY BRODERICK, Department of Physics & Astronomy, University of Waterloo; Perimeter Institute for Theoretical Physics

Black holes are simultaneously powerful astrophysical engines and an exotic prediction of general relativity. As a consequence, understanding both the phenomenology of the interactions between astronomical black holes and their environments as well as the peculiar properties of strong gravity and its implications for physics beyond Einstein, is of great interest. Both of these, however, require probing black holes on scales comparable to their event horizon. With the advent of millimeter-wave Very Long Baseline Interferometry, it has now become possible to image a handful of black holes on sub-horizon scales. I will discuss some of the implications that existing observations have already had upon our understanding of accretion, jet formation, and strong field gravity, and how constraints upon these will dramatically improve in the coming years.