PHYSICS AND ASTRONOMY

COLLOQUIUM

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"Imaging Supermassive Black Holes on Horizon Scales"

Abstract

Supermassive black holes, the million to billion solar mass cousins of the more commonly described remnants of massive stars, are now believed to exist at the centers of nearly all galaxies, and power some of the most energetic phenomena in the universe, with cosmological implications. Nevertheless, due to their compact nature, it remains unclear how supermassive black holes grow, how they launch the ultra-relativistic outflows observed, if gravity in the vicinity of their horizons is well described by general relativity, and even if event horizons exist. However, the Event Horizon Telescope, a developing Earth-sized millimeter-wave interferometer, has now probed two supermassive black holes on spatial scales smaller than their respective event horizons. I will describe how these observations are being performed, and how existing (and forthcoming) data from the Event Horizon Telescope is already providing novel insights into both their enigmatic behaviors and fundamental natures

Wednesday, October 17, 2012
3:30 p.m.
Bob Wright Centre
Room A104