

# Solvay Colloquium



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## **Black Holes in the Era of Gravitational Wave Astronomy**

Black holes are one of the more astonishing predictions of the theory of General Relativity. The Schwarzschild black hole solution was discovered within months of Einstein publishing the field equations of general relativity, though for decades after was regarded more as a mathematical curiosity than a plausible description of any real object in the universe. This began to change in the 1960s, both through theoretical and observational discoveries, and finally in 2015 the LIGO gravitational wave detectors found the first direct evidence for the existence of black holes, having measured a signal consistent with the inspiral and merger of two black holes. In this talk I will give an overview of black holes in general relativity, the LIGO observations, and what we can hope to learn about black holes in the coming decade as a plethora of new data is gathered from ground based gravitational wave detectors, the Event Horizon Telescope, and pulsar timing arrays.

**Tuesday 6 June 2017 at 4.00 P.M.**

**COFFEE AND TEA WILL BE SERVED AT 3.45 P.M. IN FRONT OF THE SOLVAY ROOM**

### **SOLVAY ROOM**

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