

APR18-2018-000733

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

Uncovering the Formation of Compact Objects Through Gravitational Wave Observations

WILL FARR, Univ of Birmingham

The gravitational waves emitted by coalescing compact-object binaries carry information about the formation and evolution of the binary. With the recent explosion of binary black hole gravitational wave detections, we have tantalising hints that either (a) nearly all the angular momentum in the stellar cores that will become the black holes is removed during the lifetime of the star or (b) we are seeing a population of binaries that is dynamically formed *after* the constituent stars collapse to black holes. I will describe the measurements that lead us to this conclusion, speculate about the future of such measurements, and highlight other ways we might try to discover the formation processes underlying the observed population of merging binary black holes.