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The detection of a population of stellar mass primordial black holes

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After many years where the belief that dark matter is in the form of elementary particles has been the dominant paradigm, there is now growing support for the idea that at least in part dark matter is made up of primordial black holes. Although there have been a number of observational and theoretical pointers in this direction, there are two areas where a strong case has been made that primordial black holes have actually been detected. Recently, the detection of gravitational waves from black hole mergers has opened up the possibility that the merging objects are primordial black holes and not stellar remnants. The other area where claims for the detection of primordial black holes have been made is from the microlensing of compact bodies such as stars and quasars. This is the subject of my talk, where I shall present evidence that the population of compact bodies responsible for the observed microlensing is made up of stellar mass primordial black holes, and that these bodies must make up at least a substantial fraction of the dark matter.

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