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Primordial black holes: Searching in lots of places

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Although black holes can be the remnants of dead stars, it is also possible that some predate stars. Such primordial black holes (PBHs) are a special (non-particle) dark matter candidate, and they could also explain some of the unexpected properties of the black hole mergers that LIGO-Virgo-KAGRA have detected. I will summarise the evidence and challenges behind this claim, linking PBH formation to inflation. There is an interesting coincidence of scales between the black hole merger events, the Chandrasekhar limit, the horizon mass during the QCD transition in the early universe, and the wavelength of gravitational waves on which NANOGrav may (potentially) have detected a stochastic gravitational wave background.

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