

New dynamical probes of primordial black holes

Compact objects as dark matter have historically been constrained by their dynamical effects. Since these objects can participate in hard few-body scattering processes, they can readily transfer energy to visible objects, with effects such as the disruption of wide binaries. However, binary disruption is not the only possible outcome of such few-body encounters. I will discuss recent work on dynamical capture, exchange, and perturbations to precision observables that open new avenues for compact object phenomenology across a wide range of masses. In particular, I will show how precision Solar System data offers the opportunity to detect primordial black holes in the asteroid-mass range, where compact objects can constitute all of the dark matter.

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