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**Modeling motion of a small black hole through a star or a planet**

VICTORIA TUROVA, ALEXANDER PANIN, Utah Valley University — In some scenarios of Big Bang the fluctuations of density in early universe result in the formation of various sized primordial black holes. The black holes of mass range  $10^{10}$  -  $10^{22}$  kg are suitable candidates for a dark matter (or at least for a part of it). Such black holes could from time to time pass via Solar system or Sun or even Earth. What would a trajectory of a small black hole passing through Sun or through Earth look like? Would a black hole slow down and stuck consuming matter and causing cataclysmic collapse of Earth or Sun, or would it just pass? What other effects would take place? We model computationally a motion of a small black hole moving with various initial velocities (10- 1000 km/sec) through a planet-like and a star-like body of various density distributions. The results of this modeling are presented.

Alexander Panin  
Utah Valley University

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