

On the Evolution of Short-Period Planets

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Abstract

The history of short-period extrasolar planets is strongly influenced by their close proximity to the host star. These planets likely formed at larger orbital distances, migrated inward, and experienced gross evolution of their physical and orbital properties by some combination of disk-planet interactions, planet scattering, giant impacts, tidal friction, photoevaporation and roche lobe overflow. They may be material witnesses to the dispersal of the protoplanetary disk and to early main sequence stellar evolution. Mutual gravitational interactions between planets couple the orbits of short-period planets to more distant members of a system. We are investigating the broader implications of this coupling. In this presentation we will review processes that drive the evolution of short-period planets and show how they may alter, and leave signatures in, the orbital architecture of exoplanetary systems.

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