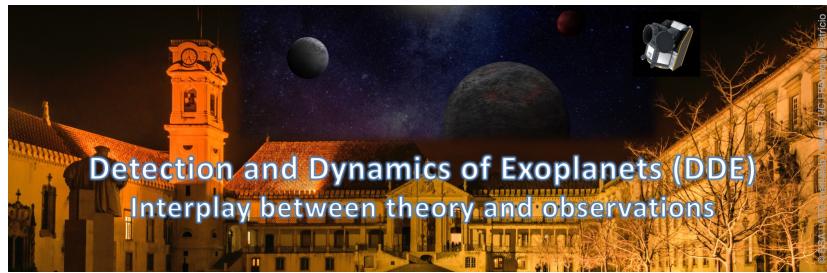


Detection and Dynamics of Exoplanets (DDE): Interplay between theory and observations



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Formation of Hot Jupiters in Systems with Too-Distant Binary Companions

Monday, July 7, 2025 6:00 PM (15 minutes)

The formation of hot Jupiters remains an open question, with many proposed mechanisms well-suited to explain subsets of the observed population. Notably, the traditional high-eccentricity migration mechanism driven by a distant stellar companion is one of the oldest hot Jupiter formation channels, and it is often cited as the formation mechanism for hot Jupiters on high-obliquity orbits. However, many hot Jupiter systems lack suitably-close binary companions for high-eccentricity migration. I will discuss a new mechanism for driving hot Jupiter formation in systems with wide binary companions involving an intermediate body and discuss a tentative detection of such a system where this mechanism may operate.

Presenter: SU, Yubo (Princeton University)

Session Classification: Formation and evolution of planetary systems