

The role of migration and planet-planet scattering in shaping planetary systems

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Abstract

Planets are thought to form from a circumstellar disk surrounding a star in its initial stages of evolution. The disk not only supplies the rough material for the accretion of solid bodies and their atmospheres but it also tidally interact with the growing planets moving them away from their initial location. Different types of planetary migration may explain the large number of 'hot Jupiters' observed among the known extrasolar planets. I will discuss how migration depends on the planet mass and how it may have also affected and shaped our solar system. Additional dynamical mechanisms are invoked to explain the large values of eccentricity and inclination observed in many extrasolar systems. Planet-planet scattering is possibly the most relevant causing both a significant inward migration of planets and exciting their eccentricity and inclination.