

CONTROL ID: 2255808

TITLE: Forming Terrestrial Planets and Delivering Their Water

ABSTRACT BODY:

Abstract Body: Building models capable of successfully matching the Terrestrial Planet's basic physical and orbital properties has proven difficult. Meanwhile, improved estimates of the nature of water-rich material accreted by the Earth, along with the timing of its delivery, have added even more constraints to match. While the outer Asteroid Belt seemingly provides a source for water-rich planetesimals, models that delivered enough of them to the still-forming Terrestrial Planets typically failed on other basic constraints - such as the mass of Mars.

Recent models of Terrestrial Planet Formation have explored how the gas-driven migration of the Giant Planets can solve long-standing issues with the Earth/Mars size ratio. This model is forced to reproduce the orbital and taxonomic distribution of bodies in the Asteroid Belt from a much wider range of semimajor axis than previously considered. In doing so, it also provides a mechanism to feed planetesimals from between and beyond the Giant Planet formation region to the still-forming Terrestrial Planets.

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PRESENTATION TYPE: Oral