



Tips and Tools for Teaching Planetary Science

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Abstract

Planetary Science has changed dramatically from the time when instructors could do little more than teach a factual "march of the planets". The field has matured into a conceptually rich discipline, where much of the origin and evolution of planets can be explained through straightforward cause-and-effect relationships. One tenet of this approach is "comparative planetology", in which the rules governing the behavior of planets are revealed by studying groups of planets. For example, the vast differences in the surfaces and atmospheres of the rocky, Earth-like worlds can largely be attributed to differences between their sizes, distances from the Sun, and rotation rates. Teaching introductory astronomy students about these concepts can be challenging, however, since it takes them out of their comfort zone of factual memorization. But the rewards for both students and instructors are substantial: the latest discoveries of extrasolar planets can confirm or challenge our understanding of planetary behaviors. The poster will describe hands-on exercises with demonstrations, clicker questions and discussion to demonstrate how to help students understand planets on a deeper conceptual level. We'll also discuss ways to take the latest discoveries beyond "wow" and turn them into teachable moments. The goal is to give modern strategies for teaching planetary science, emphasizing physical concepts and comparative principles. All will be given digital copies of video clips, demonstration descriptions, clicker questions, web links and powerpoint slidesets on recent planetary science discoveries.