

EART 290Q – PHYSICS OF PLANET FORMATION

Winter 2011 Class Notes

Email Prof. Nimmo (fnimmo@es.ucsc.edu) if you have problems accessing the files below

Timing/Location: Tu/Thurs from 10:00 to 11:45 in E&MS D236

Course Goals: To provide a quantitative, graduate-level investigation of the physical processes controlling the formation of planets and satellites in this (and other) solar systems.

Texts: Most of the course will consist of close reading of journal articles, but Lissauer and DePater *Planetary Sciences* (2nd ed.) will be used heavily, and some use may be made of Murray and Dermott *Solar System Dynamics*.

(Approximate) Course Outline

Week 1 (4 Jan): Overview, gravity & orbits. Notes.

Excerpts from L&DP, Chapter 2

A good overview, J.E. Chambers, Planet Formation, *Treatise Geochem.* Vol. 1, pp.461-475, 2005.

Week 2 (11 Jan): Disks and migration

F away Tues

Week 3 (18 Jan): Condensation and chemistry

F away Tues

Week 4 (25 Jan): **Solid body accretion**

Week 5 (1 Feb): **Effects of impacts**

F away Tues

Week 6 (8 Feb): **Clocks**

Week 7 (15 Feb): **Gas giant accretion**

Week 8 (22 Feb): **Satellite accretion**

Week 9 (1 Mar): **Obliquity and precession**

Week 10 (8 Mar): No lectures - LPSC