ASTRONOMY 153 – Moons and Planets - Brief Syllabus

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Office hours: 1 hour before and after each class
Keep checking UVM Blackboard for course updates

Purpose: A wealth of observational data in the last 30 years has revolutionized solar system astronomy, as well as our knowledge of exoplanet systems. We first review the parameters of the Drake equation as a review of pertinent 005 topics. It predicts the number of life forms in our galaxy. Current topics research concerning the planets and moons in our system are then discussed, with emphasis on the underlying observations and logic. Exoplanet systems are also addressed in detail. The chances of discovering life are emphasized throughout.

Prerequisite: Astronomy 005, Math 10 or permission

Possible Topics List: (not in order)
Course intro and the definition of "Planet"
Astr 005 review: deriving terms of the Drake equation
Origin of the solar system
Necessary environments for life and habitable zones
Sun's angular momentum problem, and possible solutions
Earth's Lagrange points
Origin of Earth's water
Our lopsided moon and the lunar Maria
Formation of moons
Details of the radar measurements of Venus' rotation
What started the runaway greenhouse effect on Venus?
Could life exist in the atmosphere if Venus?
Terraforming Venus and Mars
How did Mars lose most of its atmosphere?
Liquid water on Mars
Liquids on Europa, Enceladus and Titan
Pluto history and New Horizons
The search for Earthlike exoplanets Detecting exomoons
Asteroid detection, diversion and mining
The SETI program
Tabby's star
Evidence for and against Planet X

Recommended Text: Websites

Grade Structure:
- 8 assignments worth 6% each. Each will consist of 23 multiple choice questions drawn from the current 3 classes, plus 2 drawn from the current Astronomy Picture of the Day website (APOD). Each will be posted on a Friday morning, due at 5pm on the Monday 10 days later. Many answers will have to be worked out, while others are explicit in the lectures.
- 3 exams worth 15% each, format TBD.
- Class participation worth 7%