Astronomy 497: Astronomy of Extrasolar Planets, Spring '06

http://www.astro.psu.edu/users/alex/Teaching.html

Instructor:	Prof. Alex Wolszczan
Office:	501 Davey Lab, Dept. of Astronomy & Astrophysics
Phone:	863-1756
E--mail:	alex@astro.psu.edu
Office hours:	Wednesday 3:00-5:00 PM
Lectures:	541 Davey, TR 2:30P -3:45P
Textbook:	None. List of readings will become available later.

Description

This course is a 400-level review of the current state of planet searches and of our understanding of the physics of planetary systems. Although there are no prerequisites, a 200-level knowledge of physics and astronomy is recommended, to take a full advantage of the lectures. Technically, the course will consist of lectures and student presentations.

Exams

There will be no midterm exams and no final for this course. The final grades will be assigned based on the quality of presentations, and class activity and attendance.

Course layout

1. Introduction and brief history of planet searches
2. Search methods
   - 2.1 Doppler spectroscopy and classical astrometry
   - 2.2 Optical interferometry
   - 2.3 Transit photometry and coronography
   - 2.4 Gravitational lensing and direct detection
   - 2.5 Timing of pulsars and white dwarfs
3. Results, theories, and interpretation

3.1 Formation of the Solar System

3.2 Observations, theory and modeling of disks around stars

3.3 Discoveries of extrasolar planets and their interpretation

3.4 Future of astronomy of the extrasolar planets