

ASTR 372/472: Exoplanets

Fall 2018

Instructor: Professor Joshua Pepper

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Texts: *How Do You Find an Exoplanet*, by John Johnson, Princeton University Press, 2016

Transiting Exoplanets, by Carole A. Haswell, Cambridge University Press, 2010

You must have hard copies of both textbooks for the course. You are responsible for verifying that if you are renting or borrowing the texts, that you will have them through the final exam.

Class Times: Tuesdays and Thursdays, 10:45am – 12:00pm

Office Hours: By appointment

Course Requirements: General requirements include:

- (i) Read assigned materials prior to class
- (ii) Attend all classes
- (iii) Complete all assignments on time
- (iv) See the instructor if you are having trouble.

Grading: Your numerical grade will be determined *approximately* as follows:

Homework Problems	30%	
Final Exam	30%	
Class Project(s)	20%	(possible 300 vs 400-Level distinction)
Attendance/Quizzes	20%	

Coursework Policies

You may work with other students in the class on homework. However, you must submit your own version of the homework. Other policies regarding homework are posted on the Course Site.

Primary Topics:

- Basics of planets, the solar system, and star and planet formation
- The history of exoplanet discovery
- Methods for detecting exoplanets
- Properties of known exoplanets
- Conditions for habitability

Upon starting the class, I expect that everyone has mastered the following skills:

Initial Competencies:

- Algebra, trigonometry, calculus
- Introductory physics, including mechanics and electromagnetism, and basic principles of blackbody radiation and spectroscopy
- General understanding of the physical properties of stars and the process of stellar evolution

My goal is that at the end of the class, among other objectives, you will have also mastered the following skills:

Final Competencies:

- ✓ Describe how exoplanets are detected
- ✓ Explain what observational biases exist for different exoplanet detection methods
- ✓ Calculate the properties of a planetary system from observational data
- ✓ Describe what kinds of planets have been discovered
- ✓ Explain the connection between planet formation and current planet distributions and frequencies

Accommodations for Students with Disabilities:

If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:

Lehigh University endorses The Principles of Our Equitable Community (<http://www4.lehigh.edu/diversity/principles>). We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.