Physics 304
Observational Astronomy
Lafayette College
Fall 2019

Instructor

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Course Website

We will use moodle.

Course Locations and Times

Class: Hugel 017, Tuesday & Thursday, 2:45-4:00.

We will have a few out-of-class activities for observations, and you will need to do some things on your own time. Details will be announced. We will find a way to accommodate everyone's schedules.

Office hours

I will have weekly office hours. The times will be set at the start of the semester, at which time they will be posted on moodle and announced in class and via E-mail.

Text

We will use *To Measure the Sky,* second edition, by Frederick Chromey, Cambridge Univ. Press, 2016, ISBN 978-1-107-57256-0.

The class text and the several references are on reserve at Skillman:

- *Observational Astronomy*, second edition, by D. Scott Birney, Guillermo Gonzalez, and David Oesper, 2006.
- *Astronomy Methods* by Hale Brandt, 2004.
- *Explanatory supplement to the Astronomical Almanac*, third edition, edited by Sean Urban and Kenneth Seidelmann, 2013.
- *Astronomical Almanac 2019* by U. S. Naval Observatory and Her Majesty's Nautical Almanac Office.

This course is a work in progress

Your humble instructor is excited to be teaching this course! However, he has not taught it before, and he was not expecting to be the instructor until late in the summer. For this reason, the course structure, logistics, equipment, and syllabus are less developed than they normally would be at the start of the semester.

I will make expectations and timelines for assignments, projects, presentations, etc., known to you in a clear and timely manner.

I am knocking the rust off of some of the observing equipment in this department. I expect us to make optical and radio observations using small telescopes on or near campus, as well as undertaking remote observations with the Arecibo Observatory.

I can promise that this course will be sometimes fun, sometimes challenging, sometimes satisfying, and sometimes frustrating. I can also promise that you will learn a lot.

Homework

Homework will be broadly defined in this class. We will start out with weekly homework assignments due in class on Thursdays (starting the second Thursday) but we may flex on this arrangement as the semester moves on and we have more observation-oriented and project-oriented assignments.

Late assignments will be accepted for half credit up to four days late. Extensions for full credit will be given at the discretion of the instructor.

If you cannot complete a homework due to illness, family emergency, religious observation, or similarly compelling reason, please contact me. (Also see the section on "Dean's excuse policy" in the Student Handbook.)

I encourage you to work together in this course. However, anything you turn in should be your own work.

Exams

There will be no exams in this course.

Astronomy-Picture-of-the-Day presentations

You will do three presentations based on images from the *Astronomy Picture of the Day* website, `http://apod.nasa.gov`.

Colloquia

You will be given extra credit for Physics colloquium attendance. Details will be announced in advance of the first colloquium.

Grading

There must be grades. Your grade will be based on:

Homework (broadly defined)	90%
APOD presentations	10%

Course Topics

This is a *very rough estimate* of how our time will be spent on lecture-type material. The topics won't necessarily be covered in this order, and other activities will be interspersed with traditional class structures.

Topic	Text chapters	Number of weeks
Time & Positions	3	2
Maps, catalogs, etc.	4	1
Light, magnitudes, spectra	1	2
Optics	5	1
Telescopes	6	2
Data collection and reduction	various	3
Pulsar observing		2

Outcomes

After completing this course, among other things, you will be able to....

- Use optical telescopes.
- Reduce astronomical data.
- Use astronomical coordinate systems and time scales.
- Use modern tools for astronomical calculations.
- Understand a range of astrophysical phenomena.

Whom we root for (besides Lafayette, of course)

We root for the Philadelphia Eagles. In emergency situations, when the Philadelphia Eagles are not available to be rooted for, we root for the Green Bay Packers.

Intellectual honesty

You are expected to abide by the principles of intellectual honesty outlined in the Lafayette College Student Handbook (available from http://conduct.lafayette.edu).

Learning is a collaborative process. Discussion and collaboration on homework in this course is very strongly encouraged. "Collaboration" does not mean "copying." You must understand and individually write out your answer to each problem.

For some projects, you may be asked to collect data and submit reports with other students. For you may be asked to work on your own. Details will be announced with each project.

Accommodation

My policy. It is important to me that you do well in this class. If you have any disabilities which you feel may interfere with your ability to succeed and prosper in this class, please contact me to discuss ways of accommodating them.

Mandatory statement for any Lafayette course with a disability policy. In compliance with Lafayette College policy and equal access laws, I am available to discuss appropriate academic accommodations that you may require as a student with a disability. Requests for academic accommodations need to be made during the first two weeks of the semester, except for unusual circumstances, so arrangements can be made. Students must register with the Office of the Dean of the College for disability verification and for determination of reasonable academic accommodations.

Mandatory Moodle privacy statement

Moodle contains student information that is protected by the Family Educational Right to Privacy Act (FERPA). Disclosure to unauthorized parties violates federal privacy laws. Courses using Moodle will make student information visible to other students in this class. Please remember that this information is protected by these federal privacy laws and must not be shared with anyone outside the class. Questions can be referred to the Registrar's Office.

Mandatory credit hour statement

The student work in this course is in full compliance with the federal definition of a four credit hour course.