

# AST112(Spring 2019)

Astronomy Undergraduate Lab (1 credit)

**Time:** Tuesday 7:00 - 10:00 PM

**Location:** Physics Bldg. Room A125

**Course Webpage:** <https://sites.google.com/view/ast112spring2019/>

**Instructor:** Changcheng Zhang

**Email:** [changcheng.zhang@stonybrook.edu](mailto:changcheng.zhang@stonybrook.edu)

**Office:** B130, Physics Building

**Office Hours:** TBD

**Faculty advisor:** Jin Koda

**Email:** jin.koda@stonybrook.edu

**Office:** Earth and Space Sciences Bldg. Room 455.

**Course Description:** In this course you will become acquainted with some of the techniques and equipment used to make astronomical observations. This course will include 9 in-lab experiments and 3 observing sessions. This means that the lab schedule must be flexible to accommodate for bad weather. The dates mentioned for the observing session are tentative and would be confirmed only a week before. You should be prepared for both the observing session and the next lab in case the schedule must be quickly adjusted.

**Suggested Text:** None required, material is based on Introductory Astronomy Lab Manual, 6th edition by Shipsey, Coy and MacCall.

**Materials:** You must have a notebook dedicated for this course. A regular notebook will do, and a special lab notebook is not required. You will need a calculator or computer with app that can compute trigonometric and logarithmic functions. For some of the labs, you may want to bring a ruler and protractor. Also, a computer with excel, Mathematica or a similar program will be helpful for data analysis, but not required. And always remember to check your email and Blackboard. You may need to download and preview the materials before lectures.

**Grading:** Your grade will be based on 12 labs (including observing sessions) and a semester-long project (the moon lab). Each lab will be worth 10 points while the Moon Lab counts for 30 points. All labs will count towards the final grade. You will be provided with a detailed set of instructions for completing lab reports, including an outline and grading rubric in the first lecture. You should follow these instructions when preparing your lab reports or you will needlessly lose points. The lab report always needs to be handed over the following week before the lab commences, i.e., by 7 p.m. on Tuesday. Late lab reports are penalized 2 points (out of 10) per day and will not be accepted after 2:00 p.m. Thursday, i.e., you shall receive a zero credit on that report. These penalties shall be enforced strictly, unless there is a good excuse and you have notified me sufficiently in advance of the deadline. (P.S. You will have a lab partner, or two, in this course. You will share the same data but each one of you must hand in your own individual, and original, lab report.)

**Attendance:** Please be on time for the lab. As this is a lab class you should not miss any sessions. If you absolutely must miss a lab you should email me as soon as possible. You will be allowed to

make up only one missed lab in event of a medical or similar emergency. This will count for the entire 10 points so you will not get punished for any unfortunate occurrences. However, you will not be allowed to make up for more than one missed lab. If you miss a second lab, you must take zero points for that lab. This is a fixed policy.

**Schedule:**

Date	Lab
Jan 29	No Class
Feb 5	Overview of the Lab and Math Review
Feb 12	The Cross Staff
Feb 19	Stars, Light, and Spectra
Feb 26	Parallax, Trigonometric Distances
Mar 5	Lenses and Telescopes
Mar 12	Observing Lab1: Setting up a Telescope
Mar 19	Spring Break (No Class)
Mar 26	Luminosity, Brightness, and Distances
Apr 2	Observing Lab2: Spring Constellations
Apr 9	Stellar Properties and the HR Diagram
Apr 16	Mass of Jupiter/Saturn
Apr 23	Observing Lab3: More Constellations and Ecliptic
Apr 30	Hubble's Law: Estimation of the Age of the Universe
May 7	Make-Up Labs Only

**Moon Lab:** In addition to your in-class work, you will also be doing some independent observations for the Moon Lab. You will receive instructions on how to do this lab, and you are expected to do a minimum of 5 observations outside of the class as well as the write-up.

## **Important University Policies:**

**Americans with Disabilities Act:** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

**Academic Integrity:** Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

**Critical Incident Management:** Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

### **SPECIAL NOTE REGARDING PLAGIARISM AND DISHONESTY:**

All instances of plagiarized work or academic dishonesty will be brought before the Academic Judiciary Committee. All parties involved (both the copier and the person who produced the original work) will be held accountable for any instance of plagiarism or dishonesty.