

AS6005 – Advanced Astronomical Observations / 高等天文觀測

SPRING 2017

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Time and Location: Tuesday 13:00-14:50 and Wednesday 17:00-17:50, Science Building 4, Room 914

Office Hours: Monday 14:00-16:00 and Thursday 14:00-16:00, Science Building 4, Room 908

Course Objective

To learn about data reduction and analysis in optical astronomy.

Course Description

Astronomy is an observational science. This course is a continuation of “Observational Astronomy” taught in Fall Semester. In this course, we will learn about basic skills needed for optical astronomy, including data reduction and analysis, and others. This course includes classroom lectures, hands-on experience, and field trips to Science Building I Observatory and Lulin Observatory. Laptop is required in this course.

This course will be divided into two parts (not in order):

- A** To learn about telescope operations and basic observations, followed by image reduction and photometry with IRAF using the data taken from Lulin Observatory.
- B** To learn about time series analysis using archival data taken from the PTF/iPTF Project, as well as other interactive activities (e.g., remote observing, guest lecturing, join lectures/projects with international institutions, and etc).

Each parts the students are required to write a series of Reports – further details will be given in class.

Tuesday Class

Tuesday 2-hours class will be mixed of lectures and hands-on experience for data reduction. Students are required to bring laptop to the class.

Wednesday Class

Depends on the weather, the Wednesday 1-hour (or more) class will be either one of the following:

1. If the weather is bad → we will have in-class lectures or hands-on experience, just like the Tuesday class.
2. If the weather is good → we will start the class late (TBD, depends on the sunset) and have class at the Science Building I Observatory (科一館天文台) to learn about telescope operations and simple observations.

Please do show up in class at 17:00 regardless of the weather.

Textbook/References

There is no textbook in this course. However, there are a number of reference that can be found in internet. For example, documents regarding IRAF can be found in <http://iraf.net/irafdocs/>.

Grading

- Written reports: 100%

Reports

There are multiple reports to be submitted in this class. Details of the reports and due dates will be given in class later. Students are free to use Chinese or English in writing their reports. Late reports will **not** be accepted, please submit them on time.

All reports are encouraged to be written in L^AT_EX, but not required.

Important Dates

- February 14: First day of class
- February 21: Guest lecturer – Dr. Quan-Zi Ye
- **February 28 – Public holiday, no class**
- *March 03-05: Lulin Observatory trip*
- **March 14-15: Instructor away; no class**
- **April 04: Pubic holiday; no class**
- **April 11-12: Mid-term exam week; no class**
- **April 25-26: Instructor away; no class**
- **May 02-03: Instructor away; no class**
- **May 30: Pubic holiday; no class**
- June 07: Last day of class
- **June 13-14: Final-exam week; no class**

Trip(s) to Lulin Observatory

A trip to Lulin Observatory is scheduled on **March 03-05** (depart on Mar 03 and return on Mar 05), we will observe open clusters and standard stars on Mar 03 and 04 using LOT. Depends on the weather, a second trip might be arraged in later time. Details of the trip, such as arrangement of transportation etc, will be discussed in-class.

Replacement Class

The trip to Lulin Observatory is good enough to serve as replacement class. In case there is a need of additional replacement class, it will be on Friday from 13:00 to 13:50.

Laptop

I assume all student will have a personal laptop (if not please come to see me). We will setup an account on the server for each students, so the students can login to the server via his/her laptop. The IRAF will be pre-installed on the server and the image reduction can be run there. However, wireless connection may be an issue if too many login, so it is encouraged to install the IRAF on your own laptop under the Linux distribution.

SmartStart Questionnaire

Toward the end of Semester, you probably will be contacted by SmartStart via email for filling out a questionnaire (in English). Please do so and let me know if you have any questions.

Policy on Plagiarism and Cheating

Plagiarism and cheating is a serious offend to ethical behaviour, and will not be permitted in the class. Students who being caught for plagiarism and/or cheating will be reported to University, and will not pass the course. For more information, see <http://sex.ncu.edu.tw/papers/3-1.php>