PHYSICS 370L: Astronomy Laboratory 1

This lab provides students with extensive experience using the campus observatory to do astronomical observations. Completion of this course will require a significant number of nights of observing. These observations should be doable in evening hours (i.e. before midnight) but there may be occasions when later work is required. These observations will be only possible during clear weather which is not common at this time of year. This implies that every clear night (e.g. on any day of the week from Monday to Friday, and possibly weekends) will be used for night-time observations. It is also important to note that, as with any research astronomical work, significantly more time will be spent in data analysis after the data has been obtained.

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Office Hours: anytime door is open (or e-mail to book an appointment)  
Teaching Assistant: Chengyu Xi  email: cxi@uwaterloo.ca  
Textbook: none. Materials will be posted on course webpage on UW Learn (signing up for news and content notifications is highly recommended)  
There is no midterm exam in this course.

Grading:  
Experiment grades = 80%, Final Exam = 20%  
OR: Experiment grades = 60%, Final Exam = 40%  
(whichever gives the better grade)

This course requires each student to complete three experiments from the list provided. There are three sets of experiments: A, B, and C. **At least one experiment from each of set A and B must be selected.** Set C experiments are more challenging! **Due dates are February 1, March 7, and April 4.**

Experiments

Set A:  
Experiment A1. Measure the proper motion of an object in the Solar System (e.g. planet, comet, asteroid).  
Experiment A2. Measure the light curve of an eclipsing binary star.

Set B:  
Experiment B2. Ionization structure of an HII Region  
Experiment B3. Line emission from a collisionally ionized nebula (e.g. a planetary nebula or a supernova remnant)

Set C:  
Experiment C1. Surface brightness and colour gradient in a globular cluster.  
Experiment C2. Find the faintest stars that can be detected from the UofW observatory!

Revised: 4 January, 2016
**Academic Integrity**: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

**Grievance**: Students, who believe that a decision affecting some aspect of their university life has been unfair or unreasonable, may have grounds for initiating a grievance. Students should read **Policy #70**, Student Petitions and Grievances, Section 4. When in doubt, students must contact the department/school’s administrative assistant who will provide further assistance.

**Discipline**: Students are expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about ‘rules’ for group work/collaboration should seek guidance from the course instructor, academic advisor, or the Associate Dean of Science for Undergraduate Studies. For information on categories of offenses and types of penalties, students should refer to **Policy #71**, Student Discipline. For information on typical penalties, students should check **Guidelines for the Assessment of Penalties**.

**Appeals**: A decision or penalty imposed under Policy 33 (Ethical Behavior), Policy #70 (Student Petitions and Grievances) or Policy #71 (Student Discipline) may be appealed, if there is a ground. Students, who believe they have a ground for an appeal, should refer to **Policy #72** (Student Appeals).