AST 2134: **OBSERVATIONAL LABORATORY 2** **Spring 2017 Syllabus**
catch it every Wednesday, 1:30-4:20pm, in the front lab

Instructor: Dr. Andrej Prša, assoc. prof.
Dept. of Astrophysics and Planetary Sciences
Mendel 458c (4th floor)
aprsa@villanova.edu
(610) 519-4822 – work
(484) 868-0813 – cell

| **OFFICE HOURS** |
| Tue 10am – noon |
| Wed 10am – noon |
| Thr 10am – noon |
| other times by appointment |

Course homepage:

http://aprsa.villanova.edu/?q=oblab2

Course prerequisites:

Dr. Engle taught you how to deal with telescopes and acquire your own data. You have done baby steps with Image Reduction and Analysis Facility (IRAF) as well, so I will assume you have a basic understanding of linux, know how to login to clusty, how to run iraf (or, better yet, pyraf), and how to do the basic reduction tasks. If any of this is not the case, please come see me and I'll do my best to get you where you need to be. In ObLab 2 we will be reducing and analyzing the data you acquired, or with the data that are publicly available – such as Kepler, Hubble Space Telescope, Kitt Peak, etc. – and making them ready for publication quality research. We will first review the basics of photometry and spectroscopy from the theoretical perspective, making sure that we all understand why we do all the steps in the reduction process in a certain way. Then we will get back to IRAF and spend the rest of the semester learning the techniques of image and spectrum analysis. In particular, we will do astrometry (celestial positions), photometry (flux measurements) and spectroscopy (wavelength-dispersed flux measurements). That will be a steep learning curve but it will be highly rewarding once we emerge on the other side! You will be able to both acquire and reduce data for publication quality!

Course material:

- IRAF manuals, freely available from http://iraf.noao.edu/docs/docmain.html

Course work and grading:

Your final grade will reflect your effort, homeworks, test and the data assignments. For the course you are required to do the following:

- get all your assignments from Dr. Engle's part of the course completed and submitted;
- provide Dr. Engle *and* myself with the data you acquired on a flash drive so that we can verify their correctness, completeness and integrrity;
- complete six assignments: two theoretical worksheets, one astrometry assignment, two photometry assignments, and one spectroscopy assignment. You will use either the data you have acquired in ObLab I, or data that you acquire in the course of this semester, or publicly available data from other sources.

Every assignment carries 250 points, and 50 points of extra credit. Dr. Engle will grade the observational part and I will scrutinize your reduction/analysis part. The grading will be done according to the following grade breakdown:

0-56%	F	68-72%	C-	84-88%	B
56-60%	D-	72-76%	C	88-92%	B+
60-64%	D	76-80%	C+	92-96%	A-
64-68%	D+	80-84%	B-	96-100%	A

Yes, looks scary. But remember: work hard, work constantly, and seize all the extra credit opportunities, and there should be no reason for alarm. Ultimately, the grade you earn is yours alone, I am just a scribe.

Attendance:

Regular attendance is essential for uninterrupted understanding of course material. Since this course covers a significant amount of content in a not-so-significant amount of time, each missed class will hurt. Really hurt. The topics are not trivial and continuous work is required to remain on top of things.

Please do not miss the deadline for turning in assignments. If you <u>must</u> miss the deadline, you <u>must</u> inform me of that in advance, and you <u>must</u> have a written notice excusing your absence. Provided that you follow these rules, I will not penalize you for a late submission. Verbal excuses and call-the-health-center-and-you'll-see-I-was-sick-on-the-day-the-assignment-was-due are <u>not</u> admissible. There will be no exceptions. If you do not turn in your assignment on time, you can still turn it in within 1 week, but the penalty for late submission will be a 30% grade deduction. If you turn it later than 1 week after the deadline, you will earn no credit. In other words: don't miss homeworks. Do them, they really help.

The etiquette for using laptops and cell phones in class:

You are expected to use your computers in the second part of the lab – either to use the software installed on your laptops or as a ssh terminal to clusty. That said, you will be publicly flogged with a wet noodle if caught using cell phones in class for texting, facebooking or web surfing.

How to reach me:

I am available for your questions and comments whenever you get a hold of me. The best time to catch me is every day between 9:30am and 5pm except around noon when I'm off to lunch. I am also known to answer e-mails on a regular basis. Or just grab me when I'm making coffee in this room. Or, if you want to be super-formal, follow the office hours on the front of the syllabus. But you knew all of this already, didn't you?

Fineprint:

Students with disabilities who require reasonable academic accommodations should schedule an appointment to discuss specifics with me. It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. You must present verification and register with the Learning Support Office by contacting 610-519-5176 or at learning.support.services@villanova.edu or for physical access or temporary disabling conditions, please contact the Office of Disability Services at 610-519-4095 or email Stephen.mcwilliams@villanova.edu Registration is needed in order to receive accommodations.

All students are expected to uphold Villanova's Academic Integrity Policy and Code. Any incident of academic dishonesty will be reported to the Dean of the College of Liberal Arts and Sciences for disciplinary action. For the College's statement on Academic Integrity, you should consult the Enchiridion . You may view the university's Academic Integrity Policy and Code, as well as other useful information related to writing papers, at the Academic Integrity Gateway web site: http://library.villanova.edu/Help/AcademicIntegrity

Over and out! Let the fun begin!!