

**Astronomy 1075**  
**Astronomy Laboratory II - Planets**  
**Summer 2010**

Instructor: Larry DeWarf  
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463 Mendel Hall  
610-519-4824

Office Hours: 2:00 - 3:00pm (Tuesday, Friday); or by appointment

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Co-Requisites: Ast1074, Ast2121, or through special dispensation

**Purpose:**

As a continuation of *Astronomy Laboratory I - Stellar Lab*, the purpose of this part of the lab is essentially unchanged. That being to provide the student with an understanding of some of the basic laws of nature as revealed by the motion of celestial objects, thereby to show in general how the scientific method can be used to learn about the Universe. Although ancient civilizations required many centuries to interpret these motions correctly (primarily due to insufficient sampling), we may now replicate these motions on a computer and understand their nature in a semester or two. This is accomplished by using computer software that can take us back in time, to any place on Earth, and show us the sky as it was. We may also speed up this clockwork so that many years may pass in each minute of real time, thus revealing important laws of nature usually hidden in the normally subtle and imperceptible real motions of celestial objects.

We will concentrate on the properties of the Planets and the Solar System in this section.

**Lab Materials:**

Lab books **must** be purchased from your instructor (\$5.00). If your lab book is forgotten or lost, the current weeks' lab can be purchased in class for \$1.00. In addition, you **must** bring a pencil (with eraser) to class. All labs will be completed in pencil.

**Schedule:**

- A) Measurement and Experimental Uncertainty
- B) Effects of Atmosphere on Astronomical Observations
- C) Properties of Angles
- D) The Total Eclipse of the Moon - February 21, 2008 - and the Saros
- E) Planetary Motion
- F) Synodic & Sidereal Periods of the Moon and Planets
- G) Kepler's Determination of the Distance to Mars
- H) Verification of Kepler's Laws
- I) Moons of Jupiter
- J) Rømer's Determination of the Speed of Light
- K) Rotation Period of Mercury
- L) Comets
- M) Astrometry of Asteroids

To successfully complete the course, you will complete all thirteen (13) of the above lab experiments. Should it become necessary to miss a lab, you must notify your instructor as soon as possible (preferably before the absence) so that arrangements can be made to complete the missed assignment.

Grading:

Each lab will be graded individually on a numerical basis according to the following scale:

A	93 +
A-	90 - 92.99
B+	87 - 89.99
B	83 - 86.99
B-	80 - 82.99
C+	77 - 79.99
C	73 - 76.99
C-	70 - 72.99
D+	67 - 69.99
D	63 - 66.99
D-	60 - 62.99
F	00 - 59.99

The final *Astronomy Laboratory II* grade will be based on the average of these labs as well as lab performance. If there is a problem with the course, a grade, or with the computers, please see one of your instructors to discuss the problem **immediately!**

### **A Word on Academic Integrity**

As a community committed to the Augustinian ideals of truth, unity, and love, Villanova University prides itself on maintaining the highest standards of academic integrity and does not tolerate any form of academic dishonesty or misconduct. As is true with all work done at Villanova (or anywhere else for that matter), there is a well-defined policy that applies to Academic Integrity. This policy can be found in its entirety in your Echiridion (see *Policy on Academic Integrity* and the Appendix I). You should read and understand this policy. To paraphrase, there are seven specific sections addressed by this policy: Cheating, Fabrication, Assisting in or Contributing to Academic Dishonesty, Plagiarism, Multiple Submission of Work, Unsanctioned Collaboration, and Other Forms of Dishonesty. To paraphrase the position of this course on these issues: There will be **NO** Cheating, Fabrication, Assisting in or Contributing to Academic Dishonesty, Plagiarism, Multiple Submission of Work, Unsanctioned Collaboration, **OR** Other Forms of Dishonesty tolerated in this class!

If it comes to pass that an Academic Integrity infraction occurs, the Instructor may (but is not limited to) reduce the score on the offending assignment, reduce the course grade, and/or refer the individual to the Board of Academic Integrity.

### **Disability Policy**

It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability please contact me after class or during office hours and make arrangements to register with the Learning Support Office by contacting 610-519-5636 or at [Nancy.Mott@Villanova.edu](mailto:Nancy.Mott@Villanova.edu) as soon as possible. Registration is needed in order to receive accommodations.