

## **Astronomy 680: *Astronomical Techniques***

**Lecture:** Tu, Th 14:00-15:15, PA 256

**Office Hours:** Tu, Th 10:00-11:00, PA 212

**Text:** *Observational Astronomy*, 2nd Ed., Birney (Cambridge Univ. Press)

### **Lead Instructor:**

- Dr. Allen Shafter, PA 212, x46170

### **Guest Instructors (tentative):**

- Dr. Paul Etzel, P 237, x46169
- Dr. Douglas Leonard, P 238, x42215

### **Furlough Impact:**

The California state budget cuts prohibit faculty and staff at SDSU from working on two days per month during the 2009/10 academic year.

The faculty furlough prohibits faculty members from teaching, being on campus, doing research, and consulting with students on two days per month. Faculty furlough days vary from faculty to faculty. My furlough days are the following: Sep 4, **29**; Oct **1**, 16; Nov 13, **24**; Dec 4, 21. On the dates indicated in **boldface**, the A680 class and office hours are canceled (you will have homework to keep you busy).

The staff furlough causes most University, College, and Department Offices to close on the following days: Sept 11, 18; Oct 2, 16; Nov 13, 25; Dec 21, 22, 23, 24.

### **Course Description:**

The purpose of this course is to provide students with a brief introduction to astronomical techniques. We will begin with a cursory discussion of the basic mathematical, physical, and astronomical tools required to conduct astronomical research. The course will then expand to cover basic principles of astronomical photometry, spectroscopy, and direct imaging. In particular, a discussion of the acquisition and reduction of astronomical data will be emphasized.

There will be a lecture as well as a laboratory component to the course. The laboratory component will include data reduction using *IRAF*, and various photometry reduction packages available in the department. In addition, one or more trips to the Mount Laguna Observatory to participate data acquisition will be undertaken. Our goal is to do research on a cataclysmic variable star this Fall, and publish a paper!

Astronomy 680 is a required core course for entering graduate students. This year the course will be team-taught. Prof. Shafter will organize the class and present the introductory and background material, and will present the discussion on direct imaging. Profs Etzel and Leonard will cover astronomical spectroscopy and IDL programming, respectively.

It is our intention that this course provide the minimal experience and background necessary to enable students to successfully complete the graduate core curriculum and to initiate their own research programs.

Grading will be based primarily on a midterm (25%), and a comprehensive final exam (40%). The remaining 35% of your grade will be based on class assignments that are to be decided by the various instructors.

**Emergency Preparedness:**

<http://bfa.sdsu.edu/emergency/>