
Astronomy

In the College of Sciences

OFFICE: Physics / Astronomy 210
TELEPHONE: 619-594-6182 / FAX: 619-594-1413
E-MAIL: astro@sciences.sdsu.edu
<http://mintaka.sdsu.edu>

Faculty

Allen W. Shafter, Ph.D., Professor of Astronomy, Chair of Department
Paul B. Etzel, Ph.D., Professor of Astronomy, Director of
Mount Laguna Observatory
Eric L. Sandquist, Ph.D., Associate Professor of Astronomy
William F. Welsh, Ph.D., Associate Professor of Astronomy
(Graduate Adviser)
Douglas C. Leonard, Ph.D., Assistant Professor of Astronomy
Jerome A. Orosz, Ph.D., Assistant Professor of Astronomy
Robert W. Leach, Ph.D., Resident Astronomer

Associateships

Graduate teaching associateships in astronomy are available to a few qualified students. A limited number of graduate research assistantships are also available from the department or through faculty with funded research projects. Application for teaching associate or graduate research positions is done as part of the student's application for Admission to Graduate Study.

General Information

The Department of Astronomy offers graduate study leading to the Master of Science degree in astronomy. The degree is designed to prepare students either for further graduate work leading to the doctorate, or for a professional career in teaching or in industry.

San Diego State University operates the Mount Laguna Observatory, which is located 45 road miles east of the campus at an elevation of 6100 feet. The research telescopes at the observatory include three reflectors with apertures of 40 (two) and 24 inches. One 40-inch telescope is operated jointly with the University of Illinois and the other with the University of Kansas. Equipment for the telescopes includes CCD and Near-IR cameras for direct imaging, CCD spectrographs, and photoelectric photometers. A dormitory for observers and a shop-laboratory building complete the main research facilities at the observatory. Additionally, each dome has dedicated PCs and/or UNIX workstations for telescope control, data collection, and on-line data reduction. All buildings at the observatory are connected to a fiber-optics, local area network, which in turn is connected to a high speed (45 Mbps) wireless Internet service. Associated with the observatory is the Awona Harrington Visitor Center, which provides facilities for educational programs and for visiting astronomers. The 21-inch Buller reflecting telescope is employed exclusively for education and public outreach programs.

The Department of Astronomy operates its own computer facilities for image processing of astronomical data. Departmental PCs and several UNIX workstations with various storage units and laser printers are connected to the Internet. The department has access to more extensive campus computing facilities and to the San Diego Supercomputer Center.

Campus facilities include a Clark 12-inch refractor, two permanently fixed 12-inch reflecting telescopes, ten portable 8-inch Meade LX200 reflectors, and 20 smaller assorted portable reflecting telescopes. Two CCD cameras, a CCD-equipped spectrograph, and photometer are also available. A Spitz AP3 planetarium is used for both student instruction and public outreach programs. The central campus library has a very extensive collection of astronomical texts

and journals. In addition, the Special Collections section contains the world-renowned Zinner Collection of rare and historically important astronomical texts. The department also maintains a resource room of astronomical catalogs, charts, and selected reference texts.

A main research interest in the department is the study of the structure and evolution of stars derived from the investigation of eclipsing and interacting binary stars. These studies make use of both photometry and spectroscopy at the observatory. Stellar evolution is further studied with photometry of star clusters. The stellar content of nearby galaxies is probed through observations of novae and low-mass x-ray binaries contained within these systems. Galaxies are investigated through surface photometry using direct imaging. The department also has a strong CCD instrumentation program. Graduate students are extensively involved in many of these research programs. Students make use of observatory facilities in support of their thesis research.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the university with classified graduate standing, as described in Part Two of this bulletin. In addition, students must have an overall grade point average of at least 2.85 in the last 60 units of their undergraduate work and must have preparation in astronomy and/or related sciences substantially equivalent to that required for the bachelor's degree in astronomy at San Diego State University.

Students applying for admission should electronically submit the university application available at <http://www.csumentor.edu> along with the \$55 application fee.

All applicants must submit admissions materials separately to SDSU Graduate Admissions and to the Department of Astronomy.

Graduate Admissions

The following materials should be submitted as a complete package directly to:

Graduate Admissions
Enrollment Services
San Diego State University
San Diego, CA 92182-7416

- (1) Official transcripts (in sealed envelopes) from all postsecondary institutions attended;

Note:

- Students who attended SDSU need only submit transcripts for work completed since last attendance.
- Students with international coursework must submit both the official transcript and proof of degree. If documents are in a language other than English, they must be accompanied by a certified English translation.

- (2) GRE scores (<http://www.ets.org>, SDSU institution code 4682);
- (3) TOEFL score, if medium of instruction was in a language other than English (<http://www.ets.org>, SDSU institution code 4682).

Department of Astronomy

The following materials should be mailed or delivered to:

Department of Astronomy
(Attention: Graduate Adviser)
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-1221

- (1) Letters of reference (two or three);
- (2) Personal statement;
- (3) Application for teaching associate position or graduate assistantship (if desired).

Astronomy

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as specified in Part Two of this bulletin. If the student's undergraduate preparation is deficient, he/she will be required to take courses for the removal of the deficiency. These courses are in addition to the minimum of 30 units for the master's degree.

Specific Requirements for the Master of Science Degree

(Major Code: 19111)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must also meet the following departmental requirements in a 30-unit program:

1. Complete the 15-unit core course curriculum (Astronomy 620, 630, 640, 660, and 680).
2. Complete at least 12 additional units of graduate level or approved 500 level courses in astronomy or related fields as approved by departmental graduate adviser.
3. Complete Astronomy 799A (Thesis, 3 units) and pass a final oral examination on the thesis.
4. Facility with a scientific computing language is required.

