

# ASTRONOMY

## College of Computer, Mathematical & Natural Sciences

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<http://astro.umd.edu>

The Department of Astronomy aims to achieve excellence in research, education, and outreach in the areas of astronomy and astrophysics. We maintain internationally recognized research programs that address fundamental questions on all scales from our solar system to the entire universe. Our observations cover the entire electromagnetic spectrum from radio waves to gamma rays, and we make use of telescopes all over the world as well as space telescopes and space missions. Our theoretical work makes use of state-of-the-art computational resources. Both our graduate and undergraduate curricula are continuously revised and updated, and we receive high student evaluations in our introductory courses and courses for majors.

## PROGRAMS

### Major

- Astronomy Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/astronomy/astronomy-major/>)

### Minors

- Astronomy Minor (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/astronomy/astronomy-minor/>)
- Planetary Sciences Minor (ASTR) (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/astronomy/planetary-sciences-minor/>)

## ADVISING

The Astronomy undergraduate program has mandatory advising each semester before an undergraduate in the program may register for courses for the following semester. Information regarding undergraduate advising pre-registration appointments is sent out each semester to the department's undergraduate email list. If you are unsure if you should be receiving advising, please contact the Undergraduate Advisors at [astro-ug@umd.edu](mailto:astro-ug@umd.edu). When students enter the major, they are assigned to one of the Undergraduate Advisors.

Students who have been away more than two years may find that due to curriculum changes the courses they have taken may no longer be adequate preparation for the courses required to complete the major. Students in this situation must contact [astro-ug@umd.edu](mailto:astro-ug@umd.edu) to meet with an Undergraduate Advisor to make appropriate plans.

If you are considering changing to or adding on the Astronomy major, please contact the Undergraduate Advisors at [astro-ug@umd.edu](mailto:astro-ug@umd.edu) with questions or to make an appointment.

For the Astronomy minor and Planetary Science minor, there is regular undergraduate advising is not mandatory. Students interested in the Astronomy minor should contact [astro-ug@umd.edu](mailto:astro-ug@umd.edu). Students interested

in the Planetary Sciences minor should contact Dr. Melissa Hayes-Gehrke ([mhayesge@umd.edu](mailto:mhayesge@umd.edu)) or Dr. John Merck ([jmerck@umd.edu](mailto:jmerck@umd.edu)).

## OPPORTUNITIES

### Undergraduate Research Experiences

Undergraduates have many research opportunities both on and off campus. More information is available on the department website under Undergraduate Research (<http://astro.umd.edu/undergrad/ugresearch/>).

### Internships

Many undergraduate students do astronomy research internships at the NASA/Goddard Space Flight Center. See the department website under Undergraduate Research (<http://astro.umd.edu/undergrad/ugresearch/>).

### Honors Program

The Honors Program offers students of exceptional ability and interest in Astronomy opportunities for research participation. Honors students work with a faculty advisor on a research project for which academic credit is earned. Certain graduate courses are open for credit toward the bachelor's degree. Students are accepted into the Honors Program by the Department's Honors Committee on the basis of grade point average or recommendation of faculty. Honors candidates enroll in ASTR399, complete a research project, write a thesis and do an oral presentation before a committee. Satisfactory grades lead to graduation With Honors (or High Honors) in Astronomy. Further information about the Honors Program can be obtained by calling the Department of Astronomy office at 301-405-3001.

## Student Societies and Professional Organizations

### AstroTerps

AstroTerps is a student club open to all undergraduates with an interest in astronomy. The club invites guest speakers and coordinates many outreach activities, field trips, and special events.

### ACE

ACE (Astronomy Community Engagement) is a student-led group within the University of Maryland Department of Astronomy. The group aims to facilitate community and access among intersecting groups in undergraduate and graduate students studying astronomy. Alongside broader community events, the group hosts spaces for these discussions where students do not need to be concerned about their well-being and where diverse challenges that scientists in the field face can be discussed. See the ACE webpage (<http://ace.astro.umd.edu/>) for details.

## Scholarships and Financial Assistance

The Office of Student Financial Aid (OSFA) administers all types of federal, state and institutional financial assistance programs and, in cooperation with other university offices, participates in the awarding of scholarships to deserving students. For information, visit: <http://financialaid.umd.edu>.

## Awards and Recognition

For information about external and university awards which our undergraduate students have won, see the department's

Fellowships and Prizes webpage (<http://astro.umd.edu/undergrad/fellowships.html#PreviousWinners>).

## Academic Programs and Departmental Facilities

The Department of Astronomy is a full partner in the 4.3m Lowell Discovery Telescope (LDT) (<https://lowell.edu/research/telescopes-and-facilities/ldt/>), one of the largest and most technologically advanced telescopes in the continental U.S. We have joined Caltech and other partners in the Zwicky Transient Facility (<http://ptf.caltech.edu/ztf/>), a time-domain survey for studying rare and exotic transient phenomena with first light at Palomar Observatory in 2017. The department has been involved with major space missions, such as NASA's Deep Impact, EPOXI, and Rosetta missions which have explored comets as well as the JAXA/NASA Hitomi mission. We are now involved in the JAXA/NASA XRISM mission and the NICER experiments on the International Space Station. Department members are frequent users of the Hubble Space Telescope, the Chandra X-Ray Telescope, the SOFIA airborne observatory, ALMA (large radio array in Chile), and many other facilities. Additionally, the department operates a small observatory (<http://astro.umd.edu/openhouse/>) on campus which has four fixed telescopes ranging in aperture from 20" to 7" and six portable 8" telescopes. This facility is used for undergraduate majors' classes and for small-scale research projects, as well as for an Open House Program for the public. The department operates a modern computer cluster (<http://astro.umd.edu/rareas/ctc/#ctcfacilities>) for computation-intensive science projects, and a visualization laboratory with a hyper-wall for state-of-the-art simulations and displays of large datasets. Opportunities are available for undergraduates to become involved in research with all of these facilities. Many of our students also conduct research and instrumentation projects with distinguished scientists at the nearby NASA Goddard Space Flight Center and other sites.