

# ASTRONOMY–PHYSICS, B.A.

## ASTRONOMY

Astronomy, the oldest of the sciences, originated in the human urge to understand the mysterious lights we see in the sky above us—the Sun, the Moon, the planets and the stars. Over the centuries, new tools have become available to study these cosmic icons—telescopes that allow us to see further and fainter, detectors that are sensitive to electromagnetic signals at non-visible wavelengths, and satellites that can observe from outside the confines of the Earth’s atmosphere. These tools have answered many questions, but raised even more. How did the Universe begin, and how did the stars and galaxies within it form? How will it end? Are there habitable planets around other stars—and has life emerged on these planets?

## WHY STUDY ASTRONOMY?

- Because it’s fascinating: Astronomy speaks directly to our natural urge to better understand our place in the cosmos.
- Because it’s challenging: Astronomy studies objects that are distant beyond simple conception.
- Because it’s adaptable: Astronomy utilizes a broad set of transferable skills, from a foundation in logical and quantitative reasoning through to data analysis, programming, and visualization.

The UW–Madison Astronomy–Physics program builds on a foundation of classical and modern physics, to embark on a comprehensive study of the observable Universe at scales extending from planets and stars, through to galaxies and the cosmic web.

## A BACHELORS DEGREE FROM THIS STEM PROGRAM CAN:

- Prepare you for graduate studies for master’s or doctoral degrees in experimental or theoretical Astronomy, Astrophysics or Physics.
- Prepare you for employment in industrial or governmental laboratories.
- Provide a broad background for further work in other sciences, such as materials sciences, aerospace, computer science, geophysics, meteorology, radiology, medicine, biophysics, engineering, and environmental studies.
- Provide a science-oriented liberal education. This training can be useful in some areas of business administration, public policy, law, or other fields where a basic knowledge of science is useful.
- Provide part of the preparation you need to teach Astronomy and Physics. To teach these subjects in high school, you will also take education courses to become certified. You will need a doctoral degree to become a college or university professor.

Students who intend to continue astronomy in a graduate program are strongly encouraged to get involved in research early. To learn about research opportunities in the department, please meet with faculty advisors. In addition, leading or co-authoring a professional journal publication, or doing a Senior Thesis ASTRON 691/ASTRON 692 or Senior Honors Thesis ASTRON 681/ASTRON 682, is highly encouraged. The experience of actual research and of writing a major paper develop both technical and writing skills.