

Astronomer

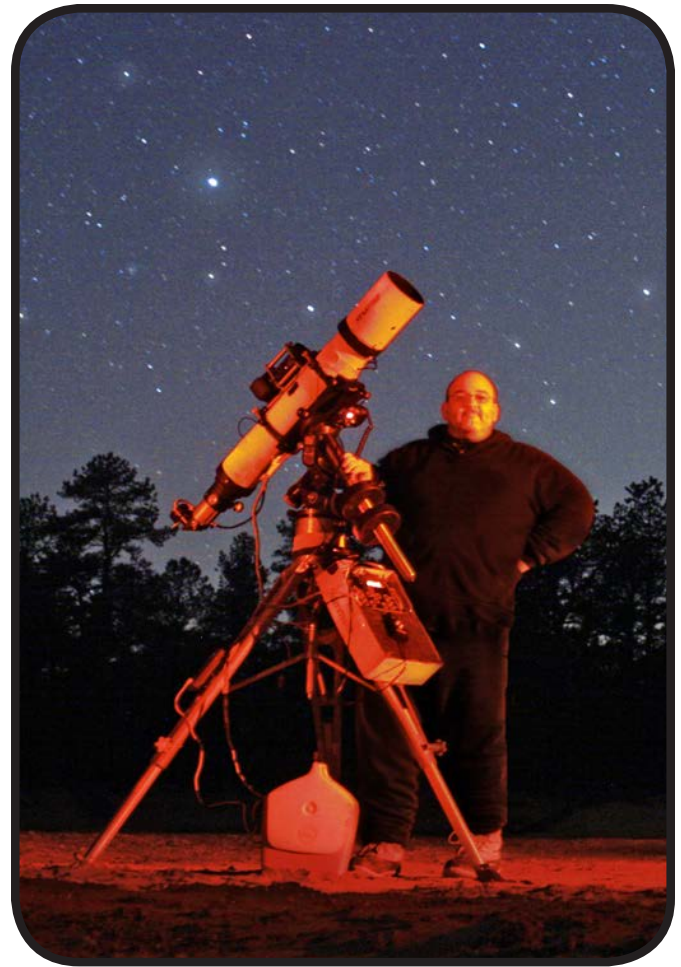
Career Files teach about important jobs in science and how science is used in other jobs. Careers with the STEM symbol focus on Science, Technology, Engineering, or Math.



Astronomers have stars in their eyes. They have planets, comets, and black holes in their eyes, too.

An astronomer's job is to apply mathematics and the laws of physics to learn about our solar system and beyond. Anything that happens outside of Earth's atmosphere is the domain of the astronomer.

Astronomers often help design and operate satellites and telescopes, hoping to catch a glimpse of something that no one has seen before. They also build and use special instruments to collect information about the universe. Some of those instruments are installed on spacecraft. Using this equipment, astronomers can study stars, comets, planets, nebulas, black holes, and distant galaxies.



Astronomers sometimes work in the field using portable telescopes.



An astronomer operating a telescope in an observatory

Many astronomers work in colleges and universities. Some teach, while others conduct experiments and research. Astronomers also work in observatories, planetariums, and museums. NASA, the space agency of the United States, employs many astronomers.

Astronomers must continue their education even after they graduate from college. Some become experts in one subject area, such as the Sun or exoplanets that revolve around other stars.

Astrophysicist

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The universe is *huge*. In fact, no one knows where the universe ends—if it ends at all—or what the whole thing looks like.

Understanding something so vast and mysterious is difficult. But each day, astrophysicists try to figure out how the universe works. In ancient Greek, *astro* means “star,” and *physics* means “nature.”

Astrophysicists are a special type of astronomer. They try to come up with theories, or educated guesses, about how the universe works. Their new theories are often mathematical equations based on data recorded by telescopes and satellites. Astrophysicists also use complex mathematical equations to calculate distances, positions, and relationships between celestial bodies.

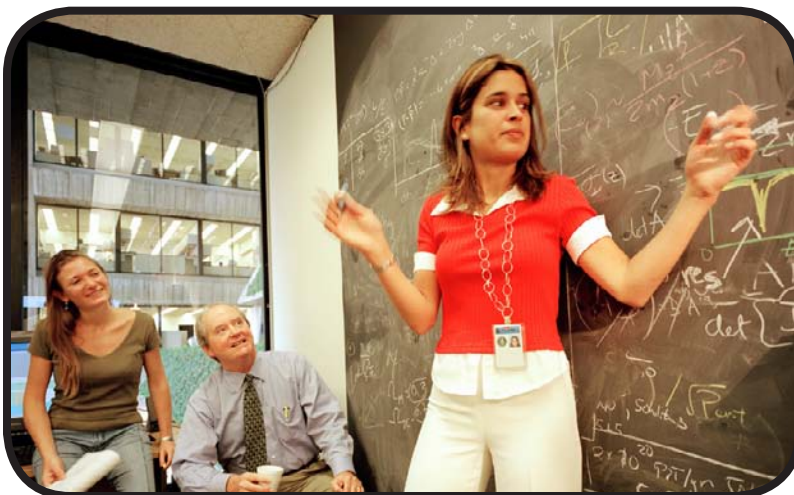


Astrophysicist Neil deGrasse Tyson discussing the features of a new telescope

A good astrophysicist has an imaginative and creative mind that he or she uses to come up with new concepts and theories about the nature of the universe.

To become an astrophysicist, a person needs to study astronomy, physics, and math for many years. He or she also has to understand and operate high-tech computers and other equipment.

Like an astronomer, an astrophysicist may work for the government or at a university or college.



An astrophysicist explaining a model of outer space

Planetarium Curator

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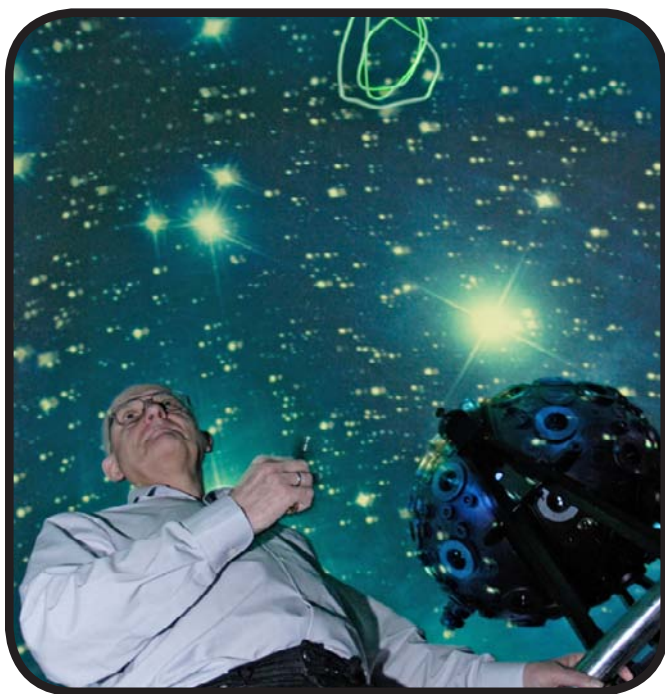
How do you learn about the universe? You could read a book, go to the library, or search the Internet. Or you might

want to visit a planetarium.

A planetarium is a special type of movie theater where educational films about space are projected onto a dome-shaped screen. The shape of the screen is similar to the shape of the sky, allowing stars and planets to be displayed in a realistic way. Planetariums often have hands-on displays to help visitors learn about astronomy and the universe.



Planetariums display realistic images of outer space.



A planetary curator operating a projector during a presentation

Planetarium curators interpret displays and answer questions. They also design and set up exhibits. They often prepare and give lectures about space for students and the general public.

In addition to being educators, curators also repair and maintain telescopes, projectors, and computers. They may also be responsible for preparing budgets, hiring workers, and training employees.

Some curators have college degrees in astronomy or physics. Planetarium curators study and understand a wide range of topics, including math, physics, Earth science, education, and astronomy.