



Astronomer

Astronomers or astrophysicists study the universe to help us understand the physical matter and processes in our own solar system and other galaxies. It involves studying large objects, such as planets, as well as tiny particles. They may specialise in a particular area, for example tracking the position and movement of space objects or how galaxies are formed.

What does the job involve?

- collecting, analysing and interpreting information on features in the universe, by using computers, optical and radio telescopes, spectroscopes, satellites, spacecraft and space probes
- setting up instruments to observe and measure features in space
- charting the appearance, position and movement of the sun, stars, planets and galaxies, and their possible structures
- measuring radiation coming from stars, planets, quasars and other matter in space
- developing models and using computer programs to interpret your findings and to describe and explain the results
- making predictions and testing them, perhaps developing new instruments or software to do this
- keeping detailed logs and records, and writing reports
- teaching in a university
- managing research teams and working with other scientists, sometimes from different disciplines such as geoscience
- You could work in an observatory, in a laboratory, at a university or visit sites.

Routes and choices while at school:

You will need to try to get at least five GCSEs at grades 4 or C or better, or equivalent qualifications. These should include English, maths and science. Other relevant subjects include physics, algebra and calculus.



Skills You'll need:

- maths knowledge
- knowledge of physics
- analytical thinking skills
- science skills
- excellent verbal communication skills
- the ability to use your initiative
- the ability to think clearly using logic and reasoning
- concentration skills
- to have a thorough understanding of computer systems and applications



Astronomer

How to get into this role:

You can get into this job through:

- a university course

University

You'll need a degree and postgraduate qualification to work as an astronomer. You'll usually need to have achieved a first or a 2:1 in your degree.

Relevant subjects include:

- maths
- physics
- astrophysics
- geophysics
- astronomy
- space science

You can also do an extended 4-year degree to get a postgraduate qualification like a master of physics. These courses include more independent research and can lead directly onto a PhD.

Entry requirements

- 5 GCSEs at grades 9 to 4 (A* to C), or equivalent, including English, maths and science
- 2 or 3 A levels, or equivalent, including maths and physics
- a degree in a relevant subject for postgraduate study

Further information

Career tips

Join an amateur astronomy group to share your interest, develop connections and get observation experience.

Look out for summer schools like [Space School UK](#).



Career path and progression

You'll usually start as a post-doctoral researcher before moving on to permanent posts that can lead to becoming a professor.

You can transfer your science skills across lots of careers and sectors, for example:

- aerospace research and development
- satellite research and development
- systems analysis
- software engineering
- teaching and lecturing
- science communication
- finance

Rates of Pay

The starting salaries for astronomers or astrophysicists in postdoctoral research posts are normally in the range of £26,000 to £39,000 a year. Senior (or advanced) researchers and university lecturers earn up to £60,000 a year.