Astronomer or Astrophysicist

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.

The Work

You could be:

- 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.

Pay

The figures below are only a guide. Actual pay rates may vary, depending on:

- where you work
- the size of the company or organisation you work for
- the demand for the job.

The starting salaries for astronomers or astrophysicists in postdoctoral research posts are normally in the range of £25,000 to £39,000 a year. Senior (or advanced) researchers, university lecturers and professors can earn up to £70,000 a year.

Conditions

- You would work in a laboratory or office, using a computer and remote controlled telescopes to observe the skies.
- You might sometimes work in observatories, often based in other countries, as part of a team with astronomers from other countries.
- You might work in a museum or planetarium open to the public.
- You might work in a university, with teaching a main part of your duties.

- Hours will sometimes include evenings, nights, and possibly weekends, depending on astronomical events and weather conditions.
- Much of your working time will involve long, constant, patient observation to try to discern small differences in detail.

Getting In

- There are very few vacancies for professional astronomers or astrophysicists.
- You would need a degree (SCQF Level 10) in astronomy or astrophysics. For entry, you generally need 4-5 Highers including Maths, Physics and usually another science subject.
- You then need to do specialist postgraduate study, usually a PhD (SCQF Level 12), to get a post as a professional research astronomer.
- After completing your PhD you will normally have to work for several periods of 2-3 years each as a postdoctoral research assistant before you get a permanent post.
- You must be willing to move around for jobs.

Most jobs are attached to universities. Because competition for astronomy jobs is fierce, many astronomy graduates work in related areas such as systems analysis, software development, aerospace or satellite research and development.

Students with PhDs in astrophysics or astronomy are very employable because of their skills in mathematical modelling and data handling. These skills are relevant to banking, finance, education, the scientific civil service and in managing science.

What Does It Take

You must be:

- able to come up with new ideas about complex situations
- logical and methodical
- able to handle abstract ideas and complex information
- able to solve problems and carry out complicated calculations
- accurate and precise
- patient and able to concentrate for long periods
- committed and determined.

You should have:

- strong computing skills
- an aptitude for maths and physics
- an enquiring mind
- an exceptionally high level of enthusiasm for astronomy
- good communication skills, to put across complex ideas in simple terms
- an eye for detail.

Training

- Specialist training is normally on the job.
- For some work, you may have to do further postgraduate study and gain professional qualifications.
- You need to keep up to date with developments in your specialist area. You would do this by research and going to conferences and presenting your findings.

Getting On

- You usually work in a university or research institution.
- With experience and ability, you may get a permanent post, then a senior post in a university, research institution or observatory.
- You should become a member of the Royal Astronomical Society (RAS) – membership is open to anyone with acceptable qualifications or a serious interest in astronomy or geophysics. Most members are research, professional or retired scientists but some are amateur scientists.
- You could also work in teaching or journalism.
- You may have the opportunity to work abroad.

More Information

The website spacecareers.uk has lots of information on careers on the space sector, including interviews with professionals so that you can read about what it's really like to work in space related jobs.

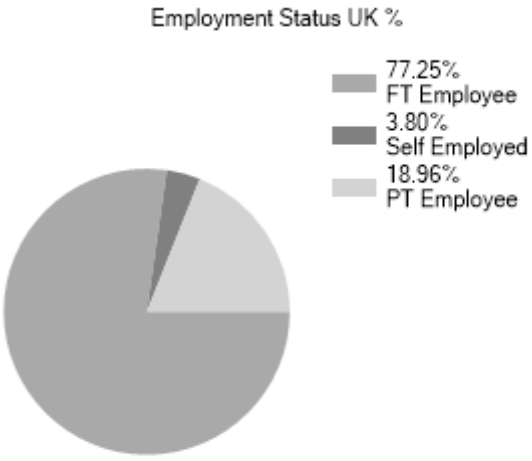
Contacts

British Astronomical Association
Tel: 020 7734 4145
Website: www.britastro.org
Facebook: www.facebook.com/BritAstro

Royal Astronomical Society (RAS)
Tel: 020 7734 4582/3307
Website: ras.ac.uk
Facebook: www.facebook.com/RoyalAstroSoc

Society for Popular Astronomy
Website: www.popastro.com
X: @popastro

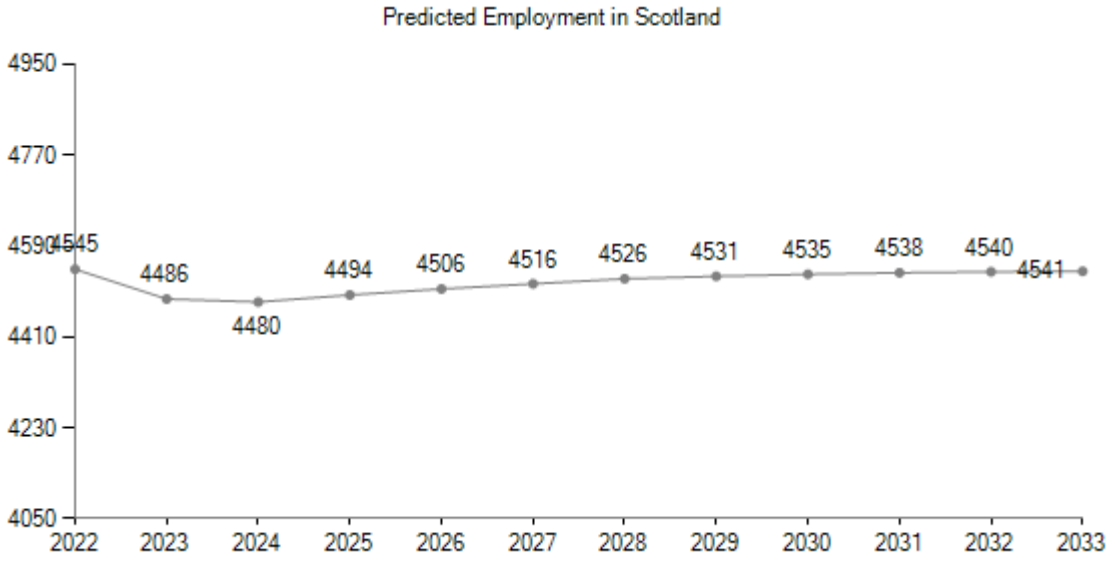
Statistics



Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All



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