



Astronomy is by far the oldest of the sciences. Ancient people without even a written language made a careful study of the motions of the Sun and Moon, in Africa and elsewhere, building stone temples and monuments tied to astronomical ideas. Babylonian and Greek astronomers were writing detailed mathematical descriptions of celestial motions more than 2000 years ago. Today's astronomers explore the nature of celestial objects ranging from planets and stars (including our own sun) to galaxies containing perhaps a thousand billion stars, clusters and much larger structures of galaxies, and the universe itself and its formation ten to twenty thousand million years ago.

WHAT IS AN ASTRONOMER?

Astronomers are scientists who study the origins, evolution, physical and chemical properties of objects that can be observed in the sky, which are outside the Earth, as well as the processes involving them.

WHAT ASTRONOMERS DO?

Astronomers work to increase our understanding of how the Universe began, how it has evolved and will evolve. They study how interstellar dust, gas clouds, planets, stars, galaxies and clusters of galaxies came to exist and how they work.



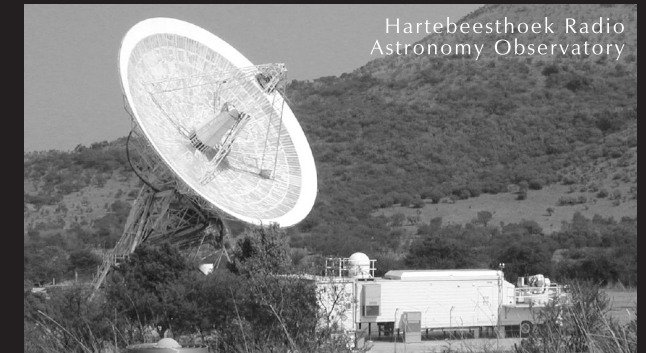
Southern African
Large Telescope

CHARACTERISTICS OF AN ASTRONOMER

1. A serious interest and above-average aptitude for physics and mathematics.
2. Ability to work alone and in a team.
3. Good computer skills.
4. Perseverance, individual initiative and patience.
5. Good communication skills.

UNDERGRADUATE STUDY

- **Minimum entry requirement at university:** Matric exemption with physical science and mathematics on the higher grade. Computer science and additional mathematics recommended.
- **Typical undergraduate degree:** Bachelor of Science (B.Sc.) degree in physics, mathematics or engineering.
- **Other recommended subjects at university:** Astronomy, astrophysics, pure and applied mathematics, computer science, statistics and electronics.
- **Universities offering undergraduate astronomy courses:** University of Cape Town (UCT) and University of South Africa (UNISA).



Hartebeesthoek Radio
Astronomy Observatory





POSTGRADUATE STUDY

The National Astrophysics & Space Science Programme (NASSP) is a cooperative, combined graduate programme launched by the South African astronomical community and is hosted by the University of Cape Town (UCT). It currently offers Honours and Masters programmes in astronomy/astrophysics and space science. The Honours programme lasts one year and the Masters programme lasts up to two years. Students are supervised by scientists from the universities and the specialist research organisations doing work in astronomy such as the South African Astronomical Observatory (SAAO) and the Hartebeesthoek Radio Astronomy Observatory (HartRAO). Refer to the NASSP website for more information, www.star.ac.za. However, a fundamental prerequisite for all professional positions in astronomy is a doctoral degree (Ph.D.) that consists of an original research thesis.

BURSARIES

Both undergraduate (B.Sc.) and postgraduate (Honours, M.Sc. and Ph.D.) bursaries are available for studying astronomy. Refer to the websites of the National Research Foundation, www.nrf.ac.za, the South African Astronomical Observatory, www.saa.ac.za and Square Kilometre Array, www.ska.ac.za.

CAREER OPPORTUNITIES

Graduates in astronomy are equipped to conduct research at the cutting edge of astrophysics and space science and have the broad science skills needed in any modern technological society. They would normally find employment at astronomical research facilities (Observatories), university departments and are also highly valued in fields as diverse as aerospace, financial services and telecommunications. Particularly appreciated are the astronomers' abilities in understanding basic scientific issues and in conceptualizing and evaluating systems-level solutions.

Southern African Large Telescope (SALT)

www.salt.ac.za

Hartebeeshoek Radio Observatory (HartRAO)

www.hartao.ac.za

Square Kilometre Array (SKA) & Karoo Array Telescope (meerKAT)

www.ska.ac.za

High Energy Stereoscopic System (HESS)

www.mpi-hd-mpg.de/hfm/HESS/HESS.html

CONTACT DETAILS SAAO

Attention: Sivuyile Manxoyi

P. O. Box 9, Observatory, 7935, SOUTH AFRICA
Tel: +27 (0)21 460-9315 • Fax: +27 (0)21 447-3639
Email: sivuyile@saa.ac.za • Website: www.saa.ac.za



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A CAREER AMONG THE STARS

