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# How youngsters can reach for the stars with a career in astronomy

Human beings have always been fascinated by stars, the moon and the ever-changing sky. The fascination endures till date, even when modern science has taken away much of the mystery. Driven by this fascination, many may have wanted to take up astronomy, the study of heavenly bodies, not simply as a hobby but as a career.

But how does one go about becoming an astronomer?

“Curiosity is the key. You should be somebody who has lots of questions about the sunrise, sunset, stars, colours in the sky, etc,” says Amanjot Singh, a 24-year-old amateur astronomer. Back in 2010, while still in school, Singh and his friend Sahil Wadhwa had ‘found’ an asteroid — the first Indian students to do so — when they had taken part in the All India Asteroid Search Campaign conducted by SPACE, an NGO that works to popularise astronomy. The asteroid they discovered is named 2010 PO24.

One can start by reading books on the subject and joining an astronomy club in school, recommends Singh. Students in schools where there are no astronomy clubs can form their own or join clubs run by science NGOs like SPACE. Besides, there are web portals like Zooniverse and phone apps that provide a fun way to learn about astronomy. One could also buy a telescope or take up photography, Singh advises. “A 76-mm telescope costs around Rs 10,000. Or they can start astro-photography with a DSLR camera or by attaching a mobile device to a telescope.”

Busting a myth, Singh, who has studied aerospace engineering, says, “It is not necessary to excel in maths and science to become an astronomer. One just needs to have an inclination for the subjects and lots of patience.” In school, Singh also worked as a volunteer with space research organisations; they would send him data in the form of pictures or graphs from observatories and he had to process the data and send it back within 24 hours.

Those who want to take up astronomy as a profession need to get a Bachelors’ degree in physics or mathematics and follow it up with a Masters’ degree in astrophysics or astronomy, offered in India by the Indian Institute of Astrophysics, Indian Institute of Science and Homi Bhabha National Institute among others. Those seeking to study further and get a PhD need to appear for the Joint Entrance Screening Test, which is conducted annually in February. As for jobs, there are opportunities to work as a research scientist with organisations like the Indian Space Research Organisation and NASA (National Aeronautics and Space Authority). They can also teach — astronomy and astrophysics are specialisations offered in the physics course in several universities — or they can become educators with NGOs like SPACE.

Astronomy requires specialised products — whether it is instruments or computer programming — and developing these is another way to get into the profession. Engineers with a specialisation in electronics, computer science, mechanical, aerospace or mechatronics fit the job. “With growing popularity and a trend to innovate, a number of start-ups are coming up in the field of space education and technology. They provide career opportunities, but one has to be aware of the upcoming discoveries and technologies,” says Shreya Santra, who works as a research assistant at the Skolkovo Institute of Science and Technology in Russia.

Apart from these, there is also the option of an optician course, where one can study about lenses to pursue a career in astronomy.

To earn a good living in India, one needs to hold a PhD degree or has to be a senior scientist, says Santra, and adds that students with a PhD or Masters’ degree earn enough to support themselves.

“Private companies and government agencies like Team Indus, ISRO, HAL, PRL, etc. have a good pay bracket if one performs well,” she adds.