

AMATEUR ASTRONOMY AND ASTRONOMY EDUCATION IN INDIA

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ABSTRACT

In India, astronomy has been studied from the beginning of civilization. The word amateur means involvement in work for pleasure rather than as a profession. So, amateur astronomers, in many places, prefer to be called non-professional astronomers. In India, the history of amateur astronomy is quite bright. From the Puranic age astronomy was studied for peoples' daily life. In Ramayana, Mahabharata, there is a lot of evidence of astronomical knowledge. Veda is the main source for studying the history of Indian astronomy. Today astronomy education, consciousness of astronomy education, sky observation, etc. are dependent on non-professional astronomers. Vigyan Prasar, an Indian Govt. organization, is trying to popularize astronomy throughout the country.

Key words: Amateur astronomy; Puranic; Veda

1. INTRODUCTION

The wonders of the sky attract the human mind to astronomy. The role of amateurs in the development of astronomical observations and acquisition of knowledge in the field occupied a significant position in western countries as well as in India and the eastern part of the world.

With the expansion of the Greek and the Roman empires, the culture and knowledge of astronomy were based on mathematics and accurate observation. This was the siddhantic period in Indian astronomy. Aryabhata was the key figure during this period. From Aryabhata to bhaskaracharya, a number of the astronomers who contributed to Indian astronomy were all amateurs. If the siddhantas are compared to text books, then karanas must be compared to the made easy books. The next significant contribution came during the Mughal era. Astronomers during this period prepared numerous Zijis (astronomical tables), and were also amateurs. In modern time, when observatories were being set up, a dedicated amateur astronomer, Radha Gobinda Chandra (1878-1975) was working on his own in Bangladesh. With a 3 inch refractor and 6 inch reflector, he reported a total 37215 observations up to 1954. From R G Chandra amateur astronomers became inspired for astronomy. Now almost 50 amateur astronomy organizations are working throughout India to enhance astronomy education.

2. THE PRESENT SCENARIO OF PROMINENT INDIAN AMATEUR ASTRONOMICAL ORGANIZATIONS

Prof. Meghnad Saha, discoverer of the Thermal Ionization Theory, laid the foundation of modern astrophysics, and initiated the formation of the Indian Astronomical Society in 1952 in Calcutta, which had a number of distinguished scientists as its members. From 1958 onwards a few individuals started popularizing the science of astronomy through audio-visual lectures in rural and urban areas of West Bengal before large organized gatherings. In 1959, Indian Interplanetary Society was formed in Calcutta with basic objective of popularizing astronomy through various mass media. In 1968, an Amateur Astronomers Association was initiated by a large number of students, teachers and sky lovers. In 1974, the Indian Astronomical Society founded by M N Saha started again under the efforts of A K Saha and N C Lahiri. From 1980, it started its publication, Akash. At present, amateur astronomers are working individually and collectively in different parts of the country.

These include Andhrapradesh (1), Goa (1), Gujrat (4), Karnataka (3), Maharastra (22), New Delhi (1), Orissa (2), Tamil Nadu (2), and West Bengal (10), for a total of 45. This is not complete, but collected from souvenirs of amateur astronomer meetings.

2.1. Confederation of Indian Amateur Astronomers (CIIAA)

Amateur astronomy activities in India picked up slowly in the early eighties. Attempts were made by groups of different states to form a national federation of amateurs. The Confederation of Indian Amateur As-

tronomers came into being on 22nd January, 1994 at Calcutta, West Bengal. The main aim of the national body is to coordinate all amateur astronomy activities and to disseminate astronomy among people. Groups include Amateur Astronomers Association (Bombay), Amateur Astronomers (Thane), Vyom Vihar, Amateur Astronomers Association, Andaman Prakriti Samsad, Akash Mitra, Vishwavedh, Akash Nirikshak Mandal, Astronomy Club, Jyotirvidya Parisannstha, Universe : Quest and Conquer, Amateur Astronomers Association of Rajkot, Khagol Mondal, Amateur Astronomers Association, Akash Vidnyan Mondal, Anusandhitsu, Ratnagari Khagol Mondal, Cosmic Academy, Sky Watchers Association, Manindra Narayan Astronomical Trust, and Kerla Sastra Sahitya Parishad.

2.2. *Amateur Astronomy, a way to enhance Scientific Temper*

Today, science has become an integral part of human life. It has pervaded into every sphere of human activity. It is now becoming clear that for a society that functions effectively, understanding of science and the scientific method is a basic requirement for all. Therefore it would be a grave error to not give due importance to general awareness of science, science education and above all the growth of scientific understanding. This can be done by creating curiosity about science. In Astronomy lies the greatest potential for arousing curiosity in people about science.

2.3. *How to Increase the Astronomical Content in School Level and Why?*

- **Suggestion**

- A separate curriculum can be implemented in school curricula.

- Within the existing content, astronomy can be inserted as a component

- **Why?**

- Astronomy opens a child's mind to the vastness of the world.

- Astronomy would help to search through lost history [example : the dating of Kurukhetra war]

- Astronomy study can start at home through a small telescope or the naked eye.

3. THE PRESENT THE PATTERN OF AMATEUR ASTRONOMERS

General observer: Sky watching activity, students motivation, recognizing the constellation stars and Messier objects in the sky.

Special Observer: Who notes down special parameters of astronomical events like the timing of solar eclipses, lunar eclipses, and occultation of asteroids, observes satellite occultation with the help of telescopes or binoculars.

Variable Star Observer: the brightness of particular stars is noted regularly.

Comet Hunters: Concentrated observer having knowledge to search for a new intruder.

Telescope Maker,

Astrophotographer,

Astro Artist,

Astro Writers

4. CONCLUSION

The Status of astronomy education in India :

School level: 3 percent of total curriculum

Higher level: Universities having astronomy and astronomy related subjects: 32

Observatories: 11

Telescope Manufacturers: 10 (approximately)

Planetariums: 33

Science is a way to look at the world. Amateur astronomy in West Bengal is flourishing rapidly and the members of these institutions are really dedicated to their jobs. Schools are allowing their premises to be used to organize popular lectures and sky watching camps. As a result, amateur astronomers as well as astronomy educators are now engaged in popularizing astronomy in India.

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