

Telescopes in India. Mohan Sundara Rajan. National Book Trust, India, Nehru Bhawan, 5 Industrial Area, Phase III, Vasant Kunj, New Delhi 110 070. 2009. xviii + 329 pp. Price: Rs 130.

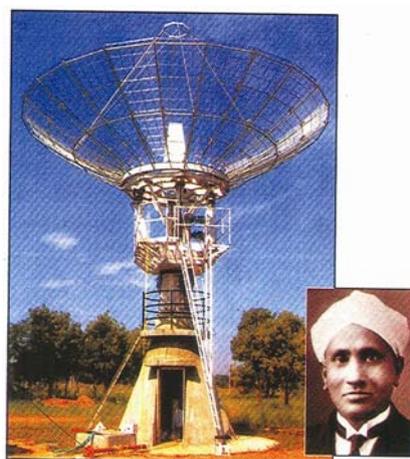
Telescopes play a very important role in unravelling the structures and origin of cosmos. All the necessary information about our cosmos is carried in the form of electromagnetic radiation from the external objects. Our ability to uncover the cosmos depends on how well we can collect photos from the distant sources in the sky and manipulate them through optical instruments. Therefore telescopes operating at different wavelengths and associated instruments play a vital role.

Starting from small hand held telescopes now optical astronomers have moved to 8 m class telescopes (with a single mirror having a diameter of 8 m or several segments of mirror producing an equivalent mirror of 10 m diameter). Such telescopes allow us to directly see objects that are billions of light years away from us. We have a very good tradition of observational astronomy with three 2 m class optical telescopes operating in India. At present there is a strong urge among the optical astronomy community to participate in the next generation 30 m class optical telescopes. Similarly, Indian contribution to radio astronomy is well known. The largest radio telescope in the world operating in the metre wave bands (Gaint Metrewave Radio Telescope (GMRT) near Pune) is

in the country. In the coming decade, radio astronomy community is planning to build a very large radio telescope named 'Square Kilometre Array'. Indian radio astronomers will be contributing to this international effort. It is also an exciting time for multiwavelength astronomy in the country as we are getting ready for the launch of 'Astrosat', a space telescope that will operate from ultra violet to hard X-ray range simultaneously. Thus, we are entering a decade where we will have access to several new high technology telescopes that will allow us to probe the cosmos in much greater details.

At this juncture it is important to convey these excitements to the general public through simple non-technical presentations. In this context, the book under review provides a first step in the right direction. This book provides details of various astronomical telescopes in India. The first part presents the basic introduction to optical telescopes. In the second part various telescopes available in India are listed with some details of what kind of science is done using them.

In the first part, basic ideas of light and optical telescopes, and their classifications are introduced. Starting from sim-



A 12-m parabolic dish at Gauribidanur, built by Raman Research Institute, Bangalore, for detection of low frequency waves from outer space. The umbrella-like structure, with steel tubes from a central hub, is the first of its kind used for radio astronomy (Courtesy: RRI). (Inset) C. V. Raman.

ple introduction to the telescope this part covers up to new concepts like active and adaptive optics. The illustrative examples in this section are good and for a non-expert this part of the book gives a simple and easy introduction to optical telescopes. To my mind this is the best part of this book.

Part II of the book gives a review of optical telescopes in India. It starts with historic overview and gives brief introduction to various telescopes in the country, and gives overview of science done with those telescopes. Parts III and IV cover radio and infrared (IR) telescopes in the country. The author tries to cover various scientific activities carried out with different telescopes. Although this part is very informative, I feel that the discussions on the science done with each observatory are not well developed. For example, I would have liked some information on major discoveries highlighted for each telescope. I am also a bit surprised by the omission of Inter-University Centre for Astronomy and Astrophysics (IUCAA), Girawali 2 m telescope run by IUCAA near Pune. Also there is no mention about the 3.4 m telescope that is being built by ARIES in Devastal.

In short, this book is an interesting attempt to introduce the concept of telescopes and summarizes various telescopes in the country and the science being done with them. This is done in a language that can be easily followed by general reader. I particularly find the illustrations in the first part of the book very interesting. I would have liked the summary of various telescopes to be sharp (avoid listing all the activities without giving any priority) with a list of major discoveries being highlighted. Overall, the book is useful for general public to have a first-hand introduction to various astronomical telescopes in the country.

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