BOOKS

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Research scientists are often remiss in the matter of informing the general public of the results of their researches in a manner which the layman can appreciate and understand. The result is that many of the popularizers of science are not scientists by training and consequently do not have the appreciation and insight necessary to give a truly scientific perspective of their subject. Public awareness therefore of the role of science in our technological society is only of the most superficial nature.

Such a situation has arisen because in discussing their science through the public media scientists themselves frequently present their results with the caution and self-criticism which is inherent in good scientific debate. This approach is in sharp contrast to the certainty with which the many ‘experts’ of modern-day mass communication will treat almost any subject, an approach which the public have come to accept and even to demand. The scientist is therefore faced with the problem of to what extent he must be ‘unscientific’ in order to capture the attention of his audience.

Professor Asimov has faced this problem on many occasions in his science writings and overcome it admirably. “Eyes on the Universe” is no exception. Superficially the book is presented as a history of the telescope (and indeed is so subtitled) but it would be more aptly described as a history of the development of the modern science of astronomy as determined by instrumental innovation. It is a book which gives a real insight into the way in which astronomical discoveries have been made and yet it is written in a clear and easily understood manner.
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After a brief chapter summarizing the achievements of early visual astronomy the author describes the invention of the telescope and its dramatic effect in reinforcing the Sun-centred picture of the Solar System. The invention of the chronometer and micrometer is then described, resulting in the discovery of motions among the ‘fixed’ stars, thereby shattering the concept of an outer ‘starry sphere’ which still existed a century and a half after the death of Copernicus. Herschel’s discovery of binary stars demonstrated that Newton’s Law of Gravity was indeed Universal and his star counts over the sky quantified for the first time the concept of a stellar entity of much greater dimension than the planetary system and which we now know as the Galaxy. So we are led through the application of spectroscopy to the study of stellar spectra (made more powerful when combined with the photographic process) and thence to the development of modern astrophysics. The final chapters are devoted to a review of the most recent developments up to proposals for a Large Space Telescope and its possible effects on current work.

There are some errors in the text. One that comes to mind is the statement that the Cassegrain arrangement of reflector optics lowers the magnification of a telescope. Diagrams are sadly lacking and in many places even a simple line drawing would have helped considerably. The absence of diagrams and the collection of all illustrations at the centre of the book undoubtedly lowered production costs but it also diminished the ease with which one could read the text. A tendency was noted towards the end of the book to make reference to the nationality of every person mentioned in the text. Apart from its tedium this is to be regretted since science, and astronomy in particular, strives to be international.

Nevertheless after reading this book I was left with a sense of breathlessness at the pace of the text and a sense of admiration for the way in which the author although himself not an astronomer managed to capture the spirit of astronomical endeavour. It is reasonably priced which puts it within the reach of the intended audience, the ‘intelligent layman’ and amateur astronomer. I would not hesitate to recommend it as a valuable addition to any scientific library professional or amateur.

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