
Practical Astronomy. *W. Schroeder.* Philosophical Library, New York, 1957. xi+206 pp. \$6.00.

Mr. Schroeder, a member of the British Astronomical Association, has written a very interesting and useful book in conformance with the high standards of his organization. We shall not quarrel about the title: this book is not what is usually meant by "practical astronomy" that is, the mathematical treatment of the problems of determination of latitude, longitude, azimuth, etc.

The subtitle to Schroeder's book reads "A New Approach to the Old Science" and he has no hesitation of putting in excellent maps and descriptions of constellations (ch. 3 and 16), discussion of a small telescope and what can be seen with it (ch. 15), problems of navigation, (ch. 10), discussion of ancient and medieval astrolabes (ch. 9), sun-dials (ch. 8), etc.

The most unusual, and welcome, feature is the approximate calculation of the apparent position of the sun, moon and planets (ch. 11 and 12). The stumbling block here is the extreme complexity of equations properly treated in the texts on celestial mechanics. To calculate the precise longitude of the moon, for instance, it is necessary to handle 1,500 terms. Students even with good mathematical background often fail to see the wood for the trees. Students (and teachers also) seldom realize that cutting down the expression for the longitude of the moon to six terms, it is possible to calculate the moon's position with a precision of 10 minutes of arc, which is all that is necessary for the naked eye observations. This is the precision actually achieved by Kepler at the beginning of the 17th century.

Mr. Schroeder does exactly that. Instead of analytical expressions for lunar inequalities, he gives graphs from which various corrections to the mean position of the moon can be read off. The same procedure is employed for the planets. The principle of the determination of exact positions of the moon and planets becomes quite clear.

The book is written for an "intelligent layman" who wants to understand the principle of astronomy, with a bit of astrophysics thrown in. It is also an excellent collateral reading for college students who are taking elementary courses in astronomy without much mathematical background. It is also a good reference book for a teacher in astronomy, showing as it does how many complicated things in astronomy can be made simple and understandable without sacrificing too much of precision.

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