



The Great Telescope of the Lick Observatory. Aperture, 36 inches; Length, 57 feet.

LESSONS IN ASTRONOMY

INCLUDING URANOGRAPHY

A BRIEF INTRODUCTORY COURSE

WITHOUT MATHEMATICS

FOR USE IN SCHOOLS AND SEMINARIES

BY

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BOSTON, U.S.A., AND LONDON
GINN AND COMPANY, PUBLISHERS

1891

ENTERED AT STATIONERS' HALL.

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PREFACE.



THIS volume has been prepared to meet the want of certain classes of schools which find the author's "Elements of Astronomy" rather too extended and mathematical to suit their course and pupils. It is based upon the Elements, but with many condensations, simplifications, and changes of arrangement: everything has been carefully worked over and rewritten, in order to adapt it to those whose mathematical attainments are not sufficient to enable them to use the larger work to advantage.

Of course, such pupils cannot gain the same insight into the mechanism of the heavens as those who take up the subject at a more advanced stage in their education. They must often be contented with the bare statement of a fact without any explanation of the manner in which its truth is established, and thus will necessarily miss much that is most valuable in the discipline to be derived from the study of Astronomy.

But enough remains—surely there is no other science which, apart from all questions of How or Why, supplies so much to widen the student's range of thought, and to make him comprehend his place in the infinite universe.

The most important change in the arrangement of the book has been in bringing the Uranography or "constellation-tracing," into the body of the text, and placing it near the beginning; a change in harmony with the accepted principle that those whose minds are not mature succeed best in the study of a new subject by beginning with what is concrete, and appeals to the senses, rather than with the abstract principles.

It has been thought well also to add brief notes on the legendary mythology of the constellations for the benefit of such pupils as are not likely to become familiar with it in the study of classical literature.

In the preparation of the book great pains have been taken not to sacrifice accuracy and truth to compactness; and no less to bring everything thoroughly down to date. The student will find in their proper places the new results obtained by Schiaparelli with respect to the rotation of Mercury and Venus; the identification of Brooks's comet with the long-lost comet of Lexell, and the latest spectroscopic discoveries of Pickering and Vogel.

The Appendix contains in its first chapter descriptions of the most used astronomical instruments, and where time permits, might profitably be brought into the course. The second chapter of the Appendix is designed only for the use of teachers and the more advanced pupils. Arts. 431-434, however, explaining how the sun's distance may be found in the simplest way, might well be read by all.

My warmest thanks are due to my friend and assistant, Mr. Taylor Reed, who has gone over all the proofs of the book, and has given me many valuable suggestions.

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