

**CATECHISM OF ASTRONOMY, AND THE  
USE OF THE GLOBES, CONTAINING ON  
THE TERRESTRIAL AND CELESTIAL  
GLOBES, WITH NUMEROUS PROBLEMS  
FOR SOLUTION BY PUPILS**

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Catechism of Astronomy, and the Use of the Globes, Containing on the Terrestrial and Celestial Globes, with Numerous Problems for Solution by Pupils by William Hardcastle

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**WILLIAM HARDCASTLE**

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# CATECHISM OF ASTRONOMY,

AND

## The Use of the Globes,

CONTAINING

648 QUESTIONS ON THE TERRESTRIAL AND CELESTIAL  
GLOBES,

WITH NUMEROUS PROBLEMS FOR SOLUTION  
BY PUPILS.

BY

WILLIAM HARDCASTLE,

TEACHER OF MATHEMATICS.

LONDON:

RELFE & FLETCHER, CLOAK LANE,

NEAR THE MANSION HOUSE.

1845.

TO THOSE OF HIS PUPILS  
WHO HAVE DISTINGUISHED THEMSELVES  
BY THEIR LOVE OF KNOWLEDGE, AND THEIR PERSEVERANCE  
IN ACQUIRING IT,  
AND ESPECIALLY, ON THAT ACCOUNT,  
TO FRANCES MATILDA BRASHER,

AND

GEORGE VERNON MARSH,

**This little Book.**

WRITTEN FOR THEIR INSTRUCTION,  
IS, WITH A SINCERE WISH FOR THEIR GROWTH IN  
KNOWLEDGE, VIRTUE, AND PIETY,  
AFFECTIONATELY DEDICATED  
BY THEIR TEACHER AND FRIEND,

THE AUTHOR.

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## P R E F A C E.

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MANY teachers may perhaps have found that the elementary books on the "Use of the Globes," at present in use, are not sufficiently explanatory. Such has been the Author's experience; it has always appeared to him that they presuppose, on the part of the pupil, a fund of knowledge seldom possessed. Thus, he has frequently met with young persons who could solve, by the globe, numerous problems, but who had no knowledge whatever of the *causes* of those phenomena which the problems were intended to illustrate. These considerations induced him to compose, for the use of his own pupils, a Catechism on Astronomy and the Use of the Globes, of which the first two parts are now submitted to teachers, and two other parts will be published as soon as

the Author's leisure will permit him to make some alteration in the arrangement of the questions. His object has been to combine with every problem sufficient scientific information to make the subject clear; but not so much as to perplex the non-mathematical student. It will be perceived that many problems usually solved by the terrestrial globe are, according to his system of instruction, solved by the celestial: he has made this change because the latter appears to him to be the clearer mode of illustration. In the First Part, some few problems are given, of which the explanations are not subjoined. These problems are repeated in the Second Part, with explanations which would not have been understood by the pupil at an earlier stage of his progress.