

**THE TELESCOPE (FROM
THE ENCYCLOPEADIA
BRITANNICA)**

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The Telescope (from the Encyclopaedia Britannica) by Sir John E. W. Herschel

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SIR JOHN E. W. HERSCHEL

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(FROM THE ENCYCLOPÆDIA BRITANNICA.)

BY

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1861.

185 . c . 12
~~180 . c . 46~~

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INTRODUCTORY NOTICE

THE little Volume here presented to the public is the reprint in a separate form of an article on the Telescope written for the Encyclopædia Britannica, under the express condition of extreme brevity. It would not have been difficult for the Author, had the pressure of other avocations allowed him, to have extended it into a more complete treatise— but this has not been the case, and the wishes of the Editors of this work being, that it should appear, as nearly as might be, simultaneously with two other articles from the same source, it is here given with but little additional matter, which is distinctly indicated by a different mode of designating the numerical citation of the sections in their order of occurrence.

Collingwood, *July 17, 1861.*

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ERRATUM.

In p. 88, line 3 from bottom—for M. Delarue read Mr. Delarue.

THE TELESCOPE.



(1.) THE TELESCOPE, as its name imports, is an instrument for rendering distant objects more clearly visible, which it does by enlarging their apparent angular dimensions, and by introducing into the eye a quantity of the light emanating from them, superior to that which it naturally receives from them.

(2.) The early history of this admirable invention is given in detail in the article on OPTICS, in another part of the work of which the present volume originally formed a part.* The limits there allowed us would not permit us to recapitulate it, and we have no comment to make

* Encyclopædia Britannica, eighth edition, volume xvi. The article alluded to is from the able pen of Sir David Brewster. The reference throughout is to the same article.

on its exactness. We shall only remark that it seems scarcely possible to read the passages in the works of Roger Bacon, Dee, and Thomas Digges, which bear upon this subject, without feeling satisfied that there must have existed some real, practical, experimental ground for their distinct and reiterated assertion of the increased visibility and magnified appearance of distant objects, produced by some combination, of whatever nature, of reflecting or refracting surfaces, prior to the not improbably alleged independent invention of the refracting telescope in Holland.

(3.) When a convex lens or concave mirror is placed before a luminous object (by which we understand any object, whether luminous *per se*, or illuminated by exterior light), a picture or image of it is formed at a certain distance behind or before the refracting or reflecting surface, determined by the distance of the object from it; whose magnitude is greater or less, according as it is formed farther from or nearer to the surface. This picture is distinct only at one particular distance from the surface, which is called *the focal distance*; and the