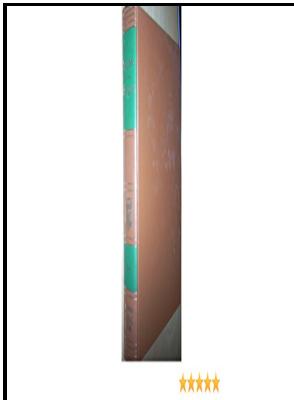


# Mathematical principles of natural philosophy - Optics

Encyclopædia Britannica - Isaac Newton

Description: -



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Civilization, Modern -- 20th century.  
Technology -- Moral and ethical aspects.  
Ontology.  
Slavery  
Refraction, Double.  
Light, Wave theory of.  
Optics -- Early works to 1800.  
Celestial mechanics.  
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Langues et civilisations  
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Notes: 1  
This edition was published in 1952



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## Newton's Philosophy (Stanford Encyclopedia of Philosophy)

The motion of the whole is the sum of the motions of all the parts; and therefore in a body double in quantity, with equal velocity, the motion is double; with twice the velocity, it is quadruple. Or so Leibniz seems to suggest. But if God stands in need of any organ to perceive things by, it will follow that they do not depend altogether on him, nor were produced by him.

## The Mathematical Principles of Natural Philosophy

Thus Newton repeats the view he mentions to Leibniz in 1693, viz. Evidently, the line of argument in the passage quoted above caught Hooke's eye. Indeed, the gravitational pull might originate with a mass that is millions of miles away.

## Isaac Newton

True motion is neither generated nor altered, but by some force impressed upon the body moved; but relative motion may be generated or altered without any force impressed upon the body.

## Newton, Isaac 1642

If the world consisted solely of a bunch of material objects, say rocks floating in interstellar space, then they would not experience any changes in their states of motion unless some external force acted upon them—if left to its own devices, matter is passive and does not move. Hence a body moving in a straight line will continue to do so until it experiences a gravitational pull, in which case it will deviate from a straight line motion, even if no body impacts upon it.

## Newton, Isaac 1642

In epilogue, excerpts from his abandoned grand scheme for revising the Principia in the early 1690s detail Newton's planned refinements to his printed exposition of central force, both simplifying and extending it, introducing therein a novel general fluxional measure of such force - but failing adequately to apply it to the primary case of conic motion. His book Philosophiae Naturalis Principia Mathematica Mathematical Principles of Natural Philosophy , first published in 1687, laid the foundations of classical mechanics.

**Mathematical Principles of Natural Philosophy; Optics; Treatise on Light: Sir Isaac Newton, Christiaan Huygens, The Franklin Library: tools.github.ffxiv.cn: Books**

The Principia is accompanied in your Franklin Library edition by another work of Newton's, the Optics, which propounds the corpuscular theory of light while at the same time establishes its spectral composition.

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