

The 'mad' Egyptian scholar who proved Aristotle wrong

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Ibn al-Haytham's 11th-century Book of Optics, which was published exactly 1000 years ago, is often cited alongside Newton's Principia as one of the most influential books in physics. Yet very little is known about the writer, considered by many to be the father of modern optics.

January's [Physics World](#) features a fanciful re-imagining of the 10-year period in the life of the medieval Muslim polymath, written by Los Angeles-based science writer Jennifer Ouellette.

The feature covers the time when al-Haytham -- banished from society and deprived of books -- came up with his revolutionary theories about the form and passage of light.

Ouellette brings detail to the skeletal plot of al-Haytham's life, from the awe and intimidation felt when he was summoned by the Caliph to use his engineering prowess to overcome the annual flooding of the Nile, to his fear of punishment when he realised he had failed in his task.

Al-Haytham was only able to escape a death sentence from the notoriously brutal Caliph by pretending he had gone mad. The Caliph instead incarcerated Al-Haytham, imprisoning him under house arrest to a cell. Confined and alone, it was here that Al-Haytham carried out the work that was to make him famous.

In 11th-century Egypt, Aristotle's ancient thought that visible objects and our own eyes emit rays of light to enable our vision still held.

Ouellette imagines al-Haytham lying alone in his darkened room questioning why the objects in the room are not emitting light and asking 'Is it possible that the ancients were mistaken?'

The question providing the crux, al-Haytham was spurred into experimental action with the candles and copper in his bare room to conclude that there is no mysterious "form" that all objects emit; rather there are sources of primary light that are reflected by other objects.

As Ouellette writes, "This is a work of fiction – a fanciful re-imagining of a 10-year period in the life of Ibn al-Haytham, considered by many historians to be the father of modern optics. Living at the height of the golden age of Arabic science, al-Haytham developed an early version of the scientific method 200 years before scholars in Western Europe."

Released from prison after the Caliph's death, Al-Haytham (AD 965-1040) went on to make contributions to astronomy, mathematics, engineering and medicine, as well as physics. But it his seven-volume Book of Optics, which he wrote while imprisoned, that remain his most famous contributions to science, covering visual perception, psychology and physical optics.

Provided by Institute of Physics

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