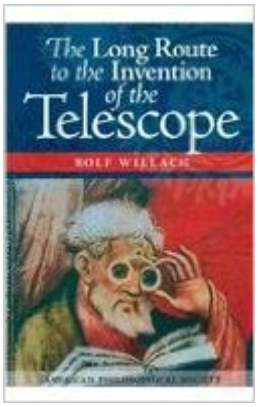
The Long Route To The Invention Of The Telescope (Transactions Of The American Philosophical Society)



Synopsis

After the telescope became known in 1608-1609, a number of people in widely separate locations claimed that they had such a device long before the announcement came from The Hague; in the summer of 1608, no one had a telescope, in the summer of 1609, everyone had one. For a number of years author Rolf Willach has quietly tested early spectacle lenses in museums and private collections, and now he reports on this study, which gives an entirely new explanation of the invention of the telescope and solves the conundrum mentioned above. Illustrations.

Book Information

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Customer Reviews

A fair number of people know that in the early seventeenth century Galileo used the newly-invented telescope to revolutionize understanding of the "heavens". Fewer people know that the invention of the telescope is attributed to Johannes (also referred to in other sources as Johann or Hans) Lipperhey (Lippershey in some sources) in 1608. (He was a German by birth, living in the Netherlands by that time.) Fewer yet know that there were other claimants from the same time. As Albert van Helden writes in the introduction, "in the summer of 1608 no one had a telescope, in the summer of 1609, everyone had one". This monograph aims to sort the matter out.The general idea that two lenses could be used to magnify a distant image appears to have been known long before any usable telescope was built. The problem was that the quality of lenses available couldn’t produce a usable image. (A larger, but hopelessly distorted, image wasn’t of much interest to anyone.) Willach starts by walking through the development of lenses, from crude "magnifying

stones", to magnifying lenses that could be set on text to make it appear larger, to crude spectacle lenses, to spectacle lenses that could be ground to approximately a user's needs.Willach, an optical engineer, actually tested the optical quality of many spectacle lenses that have survived in good enough condition to test. If you are not sufficiently into optics to enjoy reviewing pages of Ronchi tests on lenses, this may not be the book for you. But the bottom line is that spectacle lenses of the time often had good optical quality near their center, but were much degraded near the edges. As such they were fine for spectacles, as people using them would look through the center of the lens when trying read or examine small features. But as telescope objective lenses they would be terrible.It turns out that the great invention of Lipperhey (or Lippershey) was to place a mask over the objective lens so that only the central, "good", part of the lens was used. Doing so resulted in a usable telescope. But it was also an invention that would be obvious to anyone examining the telescope, so others quickly claimed to have done it first. There is, however, no convincing evidence to deny Lipperhey precedence.The eventual solution, of course, came in learning to grind lenses that are of good optical quality to their edges. But it was Lipperhey who made telescopes real, and set off a chain of improvements.The only reservation I have in recommending this book is that it is written at a level that assumes an understanding of optics theory. Someone very interested in the invention of the telescope but without an optics background might enjoy this monograph even if they have to skip over parts of it.

Willach seeks to answer a question - why did it take from about 1185 when spectacles first appeared until 1608 or thereabouts for the first telescopes to be made? The answer takes us on an interesting tour of reliquary artwork, glass making, and lens grinding. Spectacle lenses, it turns out, generally are not suitable as telescope objectives. Willach tested the ones he was able to find (and which hadn't devitrified owing to poor glass composition), and bolstered this conclusion. How, then, would one hope to make a telescope from them? The answer might surprise you.

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