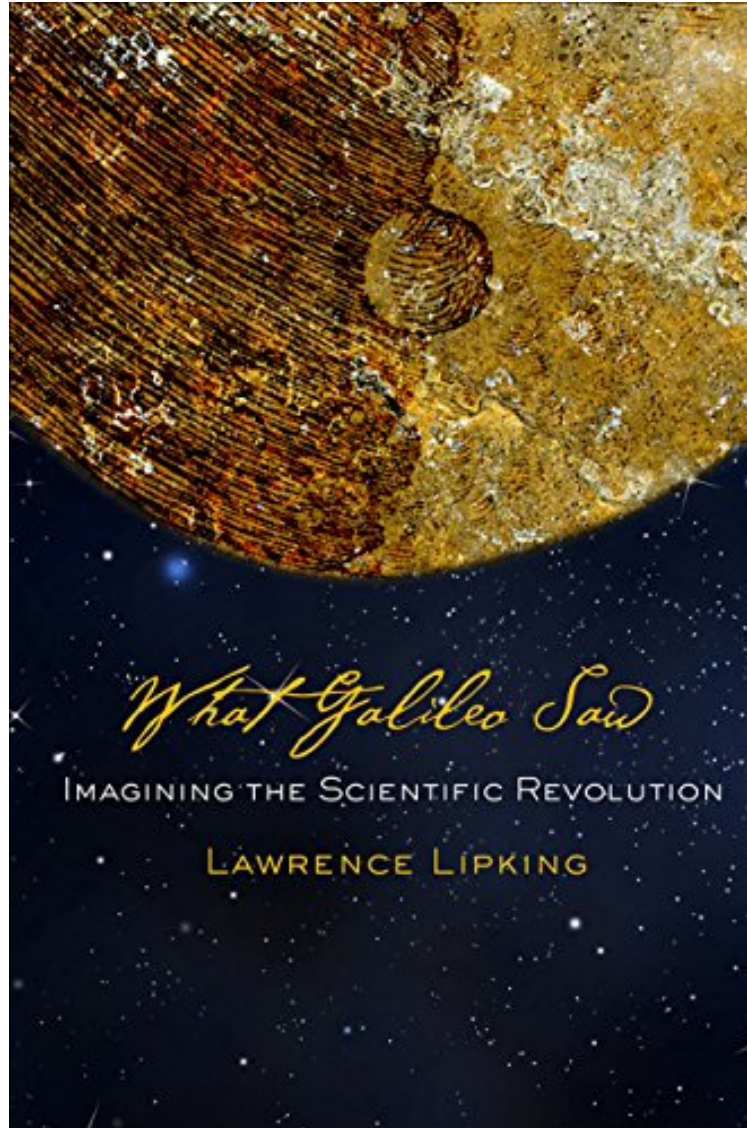


[Free pdf] What Galileo Saw: Imagining the Scientific Revolution

## What Galileo Saw: Imagining the Scientific Revolution

*Lawrence Lipking*

*ePub | \*DOC | audiobook | ebooks | Download PDF*



 Download

 Read Online

#1485094 in eBooks 2014-10-29 2014-10-29 File Name: B00P29CQOW | File size: 44.Mb

**Lawrence Lipking : What Galileo Saw: Imagining the Scientific Revolution** before purchasing it in order to gage whether or not it would be worth my time, and all praised What Galileo Saw: Imagining the Scientific Revolution:

0 of 0 people found the following review helpful. What You Bring To The Telescope Is As Important As What You See Through ItBy Doctor MossI was interested in this book because of the question the title itself suggests: what did Galileo see? Not literally what were the images he saw through his telescope mdash; we have his drawings as evidence of that mdash; but what did it mean to him, how did he interpret what he saw?The mythology that has come down to us is that what Galileo saw was the confirmation, if not the revelation, that the heavens were not populated by perfect, unblemished spheres of light. He saw the Moon like we see it mdash; spotted, rough, undeniably imperfect, maybe

beautiful in its own way but not the "heavenly object"; that the Church had prepared us to see. And what happened was the birth of modern science, a blow against superstition and a struggle that we still fight today. But Lipking wants us to think a little more closely, especially about Galileo's historical and intellectual context. The seventeenth century is often taken to be the century in which the scientific revolution bloomed, and it certainly was an amazing century — Galileo, Kepler, Newton, Boyle, Descartes, Bacon, . . . We might forget that this was also the century that began with Shakespeare, gave us Milton, Locke, Hobbes — poets, philosophers, . . . writers and thinkers of all sorts. Not everyone was a scientist. We've always had difficulty thinking of the seventeenth century as one thing — it seems like a collection of almost unconnected lanes — the lanes occupied by Shakespeare and the poets, political philosophers like Hobbes and Locke, early modern thinkers about the nature of knowledge and the methods of science like Bacon and Descartes, and scientists themselves like Galileo, Kepler, Boyle, and Newton. But Lipking's message is that those lanes don't really exist — all of these thinkers, writers, and researchers lived in a much more common intellectual world. He does not give us a tightly focused study of Galileo's observations. What he does instead is fill in the landscape of the seventeenth century mind, one that would no doubt see very different things through Galileo's telescope than we see in retrospect. That mind blended spaces of mathematics, physics, and astronomy with theology, astrology, alchemy, and poetry, all as ways to see the truth about our world and ourselves. For us now, the Moon that appears in poetry is quaint and metaphorical. For the mind of the seventeenth century, poetry was itself revelatory of meaning. Poetry gave us something different from theories and facts, something that rivaled science for truth. Lipking doesn't offer a simple answer to the question of what Galileo saw, and the book is not a discussion of that moment of looking through the telescope. Instead he paints the broader picture of the seventeenth century, to help us see that it wasn't as single-minded a march toward science against superstition as we are prone to see it today. And whether we call astrology and alchemy errors, the theology of the church superstition, or the poetic world of Milton a flight of fanciful imagination, those things, in the here and now of the seventeenth century, were real and valid and world-infusing. Lipking's book is not so much an explicit argument for one position or another as an exposition of the intellectual landscape in which Galileo, and others, lived. Galileo, from this perspective, is not an ahistorical genius — he is, like anyone, a person of his time. Understanding what he saw requires that we understand what a person of his time brought to his experience. To look through the telescope then and to look through it now are two very different experiences.

5 of 5 people found the following review helpful. Engaging, readable, insightful, fluid and wide-ranging,, highly recommended

By B. Capossere

What Galileo Saw: Imagining the Scientific Revolution is an insightful, intelligent look at the time period that saw so many advances in natural philosophy/science. In particular, Lawrence Lipking focuses on several familiar names, including Galileo, Kepler, Newton, Hook, Bacon, Descartes, and Boyle, though he often ranges further afield to place these actors in their proper context, adding smaller discussions of Tycho Brahe and Copernicus, for instance, among others. Lipking's explanations of the advancements in knowledge, as well as what those advancements were built upon, are clear and eminently readable. But what made this book stand out for me was not his survey of the various experiments/concepts/theories, excellent as those segments were. No, what made it stand out were three other aspects of the book. One was Lipking's refusal to focus too narrowly on the natural philosophers/scientists. These men did not work in a cultural vacuum; their ideas both were both inspired and also inspired the artists of their day. And so Lipking also delves quite formidably into Milton, Shakespeare (Lear especially), Donne, and others, highlighting the connective tissue of "imagination" that links these spirits together. And when I say, "delves," I mean just that. This is not some surface level discussion of Milton's poetry or Shakespeare's stage plays. Lipking dives in deep, boring into the language, the use of simile and metaphor, the imagery. I confess, his section on literary birds went a bit too far for me — both in length and in the points being made — but outside of those few pages, this English major loved the ease with which Lipking pivoted from the sciences to the humanities and the insights he brought to bear on the art and literature of the time. Secondly, he points out that as much as the story of the Scientific Revolution likes to hold these men up as paragons of rationality, of "science," they were, despite their visionary nature, products of their time, and too often the mythologizing glosses over or simply ignores their "less rational" beliefs, such as alchemy, sympathetic magic, and the like. If Newton's obsession with alchemy is by now well known, others' similar beliefs, while logically deducible based on their time period, are far less familiar both in the generalities and the specific details. Finally, I thoroughly enjoyed how Lipking constantly questions the "story" of the Scientific Revolution itself — how it first came about, how the story has been passed on, maintained, changed over time. He questions its starting points, its ending points, its objects of focus, its very existence as a meaningful term. No matter one's views on the matter, a healthy skepticism (skepticism being something else he discuss, particularly in the section on Descartes) almost always raises the level of discussion and thought, and it does so here as well. Engaging, readable, insightful, fluid and wide-ranging, this is an excellent examination of the time period — its natural philosophy, its science (once that word came about), its larger-than-life figures and those whose work preceded theirs, its writers and artists, and the general manner in which "imagination" became much the dominant mode of thought that drove all this. Highly recommended.

2 of 3 people found the following review helpful. Probably a 5-star

read for someone coming to it better informed...By FictionFan" What people saw then, what people see now, depends on the kind of story they might choose to tell." This quote, taken from the preface, is a good summary of Lipking's argument in this interesting and original look at the period known as the Scientific Revolution - running roughly between the publications of Copernicus' heliocentric theory (1543) and Newton's Principia (1687). He sets out to show that the discoveries that were made in this period were interpreted through the prism of the existing 'imagined world' while at the same time, and on into the future, contributing to its gradual change - a process he suggests is continuing to the present day. To make his case, he expands beyond science to look at literature and philosophy, showing the interconnection of all three in interpreting and re-interpreting the new discoveries. Some of this is fairly well covered ground, especially the beginnings of the religion v. science debate - the resistance of the Church to anything that impinged on existing doctrine, the attempts of many scientists to fit their discoveries into the contemporaneous religious view of creation, and the failure of some to do so, leading to accusations of heresy. But what is much less familiar, to me at least, is Lipking's argument that artistic creativity had as great an impact as rational thought in driving and making sense of the new revelations in all the major fields of science. To argue his case, Lipking spends as much time analysing the work of poets, writers and philosophers as he does looking at the achievements of the scientists. Starting with Milton, he shows how poetry and philosophy dealt with the passing of old myths in favour of the new science - sometimes with regret and nostalgia, but also helping to formulate a newly 'imagined world' to take account of the discoveries. He takes extracts from Shakespeare, Donne, and Wordsworth, amongst others, and convincingly shows how symbolism in poetry changed over time, as poets took account of the realism that science had introduced into views of the natural world. This is done in depth, usually using well-known passages, and I found it made me see them afresh with much more awareness of their historical context. And he also shows how philosophers such as Descartes and Bacon contributed to the creation and interpretation of the 'imagined world' in which both science and art operated. But Lipking also argues that art was essential to the progress of science, partly as I've already mentioned by imagining the world anew, but also because scientists themselves were obliged to be able to draw and write in order to disseminate their findings. He also highlights the distinction between the ability to see and the ability to perceive, suggesting that the latter was as important in science as in art. For example, he points out that some people couldn't see what Galileo saw when he looked into the sky, even using the same equipment, suggesting that part of the reason for this is that our perceptions are governed by our expectations. Galileo and the other scientists were open to the possibility that existing perceptions were wrong, so were able to 'see' past them. But he also shows that, having made their discovery and built a new 'imagined world' around them, many of the scientists then took just as entrenched defensive positions as the ones they had helped overturn. As a final strand, Lipking looks throughout at how the Scientific Revolution itself has been perceived over time, showing that its story has also been re-imagined by succeeding generations. He draws attention to the fact that many of the scientists who are today revered as the forerunners of rational thought held some views that would now seem to us to be superstition: for example, Newton's obsession with alchemy. And he also discusses some of the great discoveries of the period which have subsequently been disproven or, more often, proven to have been misinterpreted. Overall, the book gives a good reminder that the scientific certainties of each generation might only last until new information becomes available - or until a new world is imagined around them. The thrust is forward, but not always in a straight line. This is a complex book which I feel requires the reader to have at least a basic understanding of the major scientific advances of the period - that is, to understand them in general, rather than in scientific, terms - since Lipking seems to make the not unreasonable assumption that interested readers will have an existing level of familiarity with them. Some knowledge of the poetry, plays and philosophers of the period would be helpful too, though I felt Lipking explained and illustrated these aspects more fully as he went along. Personally, I found I was struggling from time to time through lack of background knowledge, especially on the questions of philosophy - hence the loss of 1 star for me, though I suspect it would be a five-star read for someone coming to it better informed. But for the most part I found the book both fascinating and thought-provoking, full of ideas that are still very relevant when looking at how scientific advances are treated today. NB This book was provided for review by the publisher, Cornell University Press.

The Scientific Revolution of the seventeenth century has often been called a decisive turning point in human history. It represents, for good or ill, the birth of modern science and modern ways of viewing the world. In *What Galileo Saw*, Lawrence Lipking offers a new perspective on how to understand what happened then, arguing that artistic imagination and creativity as much as rational thought played a critical role in creating new visions of science and in shaping stories about eye-opening discoveries in cosmology, natural history, engineering, and the life sciences. When Galileo saw the face of the Moon and the moons of Jupiter, Lipking writes, he had to picture a cosmos that could account for them. Kepler thought his geometry could open a window into the mind of God. Francis Bacon's natural history envisioned an order of things that would replace the illusions of language with solid evidence and transform notions of life and death. Descartes designed a hypothetical "Book of Nature" to explain how everything in the universe was constructed. Thomas Browne reconceived the boundaries of truth and error. Robert Hooke, like Leonardo, was both researcher and artist; his schemes illuminate the microscopic and the macrocosmic. And when

Isaac Newton imagined nature as a coherent and comprehensive mathematical system, he redefined the goals of science and the meaning of genius. *What Galileo Saw* bridges the divide between science and art; it brings together Galileo and Milton, Bacon and Shakespeare. Lipking enters the minds and the workshops where the Scientific Revolution was fashioned, drawing on art, literature, and the history of science to reimagine how perceptions about the world and human life could change so drastically, and change forever.

"While tensions between religion and science and arguments about the loss of meaning in the world were obvious as early as the 1600s and continue today (witness modern scientists such as Carl Sagan in *Pale Blue Dot* and Richard Dawkins in *Unweaving the Rainbow* attempting to dispel this perception), Lipking supports his thesis admirably by blending literary analysis of period texts with the philosophers' own writings. He demonstrates that there was no clean line of progress and that the world was never turned fully mechanistic by any of these great scientists. VERDICT Substantial and erudite, this title will appeal to scholarly readers studying the philosophy and history of science."?Evan M. Anderson, *Library Journal* (10/15/2014)Eighteenth-century literary studies have always been interdisciplinary: understanding Pope and Swift entails understanding garden history and developments in astronomy. Distinguished historian of literary and art theory and of the novel,Lipking (emer., Northwestern) has done enough homework to write a book about the scientific revolution that passes muster with such discerning of historians of science as Peter Dear. The book is not, as it first seems, a connected account of the role of visual imaging in science; rather, Lipking offers a series of meditations on individual figures from Galileo and Kepler to Hooke and Newton. ...Lipking's audience is not historians of science but students of literature and even, given his admirable clarity, general readers, for whom he has provided a thoroughly accessible intellectual feast.?D.L. Patey, *Choice* (March 2015)"The ten amusing and witty essays in *What Galileo Saw*, which are loosely connected and can be read independently, stem from the premise that if Christian time 'began with the Nativity of Christ, then another age, the dawn of modern times, began when Galileo looked through his spyglass'(p. 3). Lawrence Lipking deals with the cultural impact of the Scientific Revolution and does not claim to explain its genesisbeyond recognizing three basic versions of the story."?William R. Shea, *Isis* (March 2016) "*What Galileo Saw* is an exceptionally serious and intelligent discussion of issues that tend to transcend the disciplinary boundaries of the history of science. At the same time, Lawrence Lipking displays state-of-the-art command of the historical scholarship, especially striking in the cases of Galileo, Hooke, and Newton."?Peter Dear, Cornell University, author of *Revolutionizing the Sciences: European Knowledge and Its Ambitions, 1500ndash;1700* "*What Galileo Saw* is an astounding work, both brilliantly written and remarkably easy to read. What truly distinguishes Lipking's utterly fascinating book is the way he reveals how the so-called seventeenth-century Scientific Revolution actually occurred in a society that still believed in witchcraft and the presence of the devil. Each of Lipking's scientific geniuses?Galileo, Kepler, Descartes, Hooke, and all the others?were subject to these still medieval superstitions, which constantly deflected their thinking even as the results of their discoveries inadvertently proved the former wrong."?Samuel Y. Edgerton, Amos Lawrence Professor of Art History Emeritus, Williams College, author of *The Mirror, the Window, and the Telescope*About the Author Lawrence Lipking is Chester D. Tripp Professor of Humanities Emeritus at Northwestern University.