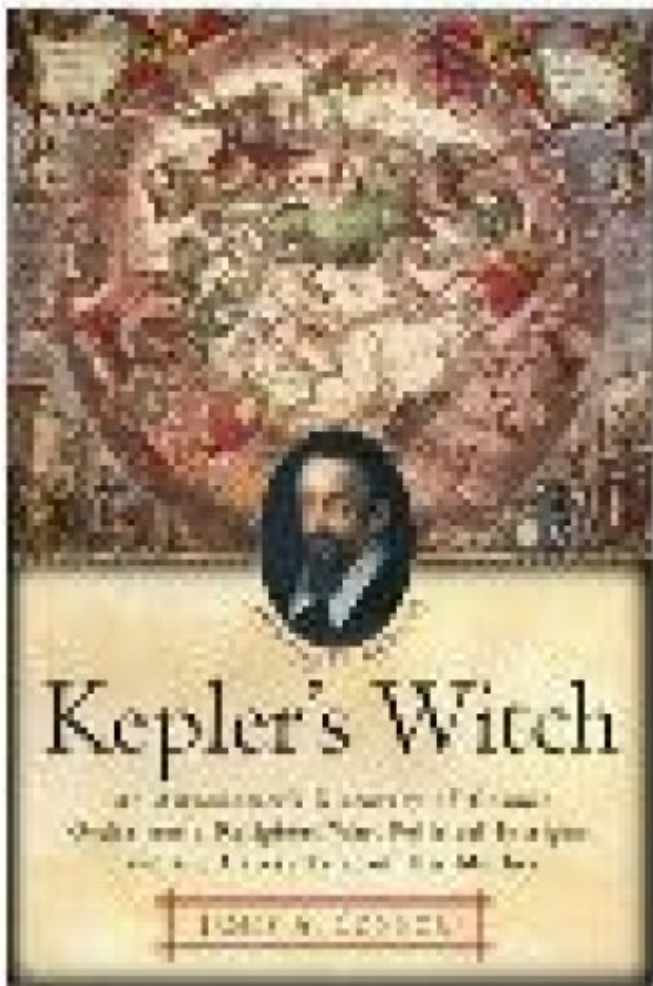


Kepler's Witch/Galileo in Rome

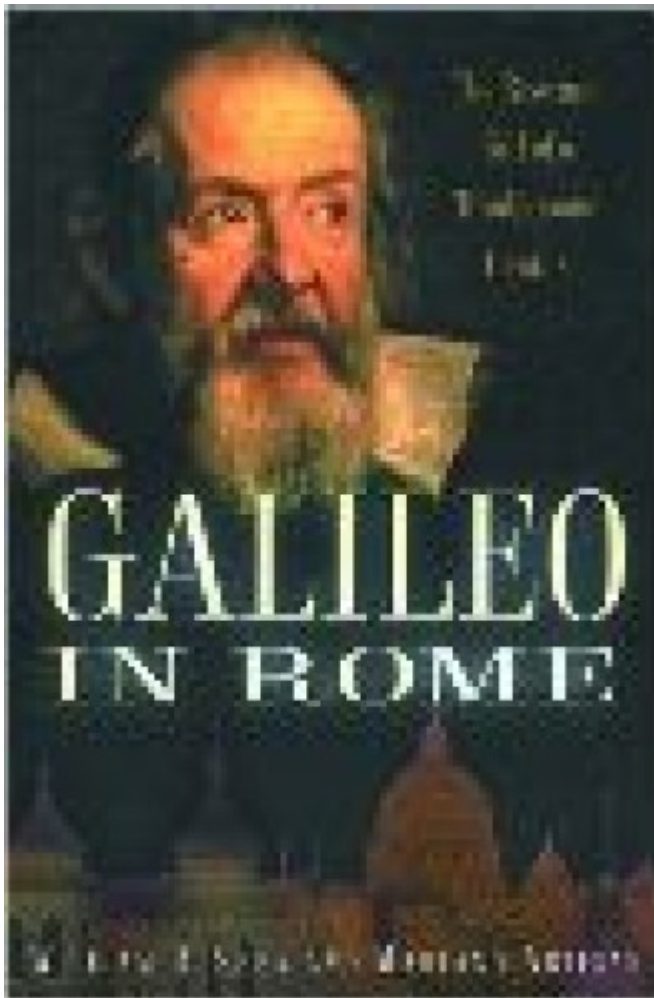
reviewed by [Owen Gingerich](#) in the [June 29, 2004](#) issue

In Review



Kepler's Witch: An Astronomer's Discovery of Cosmic Order Amid Religious War, Political Intrigue, and the Heresy Trial of His Mother

James A. Connor
HarperSanFrancisco



Galileo in Rome: The Rise and Fall of a Troublesome Genius

William R. Shea and Mariano Artigas
Oxford University Press

Johannes Kepler and Galileo Galilei were contemporaries, standing midway in time between Copernicus and Isaac Newton. They were the primary figures who made the radical sun-centered cosmology intellectually respectable as a true physical description of the cosmos. Both lived at a time of deep religious turmoil and sectarian strife, and both suffered at the hands of their respective churches.

Kepler, a staunch Lutheran, was excommunicated in part because he believed that Calvinists should be treated as Christian brothers. Galileo, who made a pilgrimage to a Catholic shrine in Loreto after he fell ill in 1618, was tried before the Inquisition on “a vehement suspicion of heresy” because of his defense of the Copernican heliocentric cosmology.

The religious scene takes stage center in both *Kepler's Witch* and *Galileo in Rome*. Both are deliberately selective in their biographical treatments, skipping over much of the scientific accomplishments of their protagonists. But there the similarity between them ends.

James Connor focuses on the arresting but bizarre tale of Kepler's mother's witchcraft trial, which played out over the years 1616-20. Connor graphically recreates the rural mind-set and hysteria of the early 17th century, and he recounts in vivid detail the politics and gore of the Thirty Years' War. No other Keplerian biography fleshes out so fully the background against which the astronomer reworked the rough Copernican blueprint into what we today think of as the Copernican system.

Connor's book is in some ways more like a well-researched historical novel than a scholarly work of nonfiction. He never hesitates to describe the inner feelings of his cast of characters, and he extrapolates freely. For example, he presents Kepler's teacher, Michael Maestlin, as lending his young student his copy of Copernicus's book and telling him that Copernicus had prefaced it with the statement that his ideas were merely a useful means for calculating celestial events. But Maestlin's copy of Copernicus's book survives. In it he has explicitly noted that someone else wrote that prefatory statement and that it disagrees with Copernicus's own opinion. Furthermore, Kepler had his own copy of the book, in which the name of the author of that anonymous introduction had been inscribed by a previous owner. When Kepler showed it to Maestlin, this confirmed Maestlin's insight that the introduction was not written by Copernicus.

Thus Connor's book rests uneasily in the gray area between scholarly biography and historical fiction. Nevertheless, Connor's description of Kepler's problems with the Lutheran establishment is excellent. He makes clear what the now-obsolete doctrine of ubiquity was all about. The Lutheran response to the Catholic notion of transubstantiation in the Eucharist was that since Christ was omnipresent in creation, no eucharistic transformation was necessary to enable communicants to receive Christ's flesh and blood. This understanding was part of the Formula of Concord, which hardened Lutheran doctrine as the Reformation matured and sectarian boundaries became ever more rigid.

Because Kepler had doubts about the doctrine of ubiquity, he could not subscribe unreservedly to the Formula of Concord. Hence he was refused communion by his

local pastor, who had consulted with the Tübingen theological faculty (where Kepler had studied with the intention of becoming a Lutheran clergyman). While Connor's insightful depiction of Kepler's cultural background is well worth reading, his book needs to be supplemented by Kitty Ferguson's *Tycho and Kepler* or James Voelkel's *Johannes Kepler and the New Astronomy* for a balanced view of the architect of the modern Copernican system.

Galileo in Rome is a book of a far different sort, especially in its meticulous use of a gamut of sources. Selective in their focus, William Shea and Mariano Artigas concentrate on Galileo's six visits to Rome to tell the story of the Tuscan philosopher's growing entanglement with the Roman church. The Catholic establishment was trying to maintain a united front against the Protestants and resisted the idea of having an amateur theologian instruct it in how to interpret the Bible (for example, that the Bible "tells how to go to heaven, not how the heavens go").

Galileo first visited Rome in 1587 as a 23-year-old searching for employment. He returned triumphantly in 1611, spyglass in hand, and had it christened "telescope" at a banquet in his honor. He came back for six months at the end of 1615, this time to lobby the hierarchy not to make the geocentric cosmology an official church position.

Worried churchmen saw to it that Copernicus's *De revolutionibus* was placed on the Index of Prohibited Books until additional words could be inserted into the text to reinforce the notion that the sun-centered arrangement was merely a mathematical hypothesis, "not necessarily true nor even probable," as the anonymous introduction to Copernicus's book had expressed it. And Galileo was warned not to hold or teach the Copernican doctrine.

When a new and liberal pope, a friend and fellow Florentine, was inaugurated in 1621, Galileo came to Rome again in the hopes of getting a green light to write about the cosmological options. Shea and Artigas point out that it is not clear that Galileo received any formal agreement from Pope Urban VIII, but he did come away from a series of audiences under the impression that there was no longer an obstacle to his writing about heliocentrism. On a fifth visit to Rome in 1630, Galileo sought a license for his *Dialogo*, the book that was to land him in deep trouble with the Inquisition. Unfortunately, Galileo returned to Florence empty-handed, and the favorable licenser died before permission was granted. Eventually a Florentine

official granted the license—something the Roman inquisitors were later to view with considerable suspicion.

Galileo's sixth and most fraught visit occurred after the publication of his *Dialogue on the Two Chief World Systems*, when he was ordered to Rome by a riled-up pope who felt he had been blindsided by Galileo's thinly veiled popular defense of Copernicus's ideas. Contrary to the common view, Shea and Artigas convincingly argue that Galileo was handled with kid gloves by the Vatican, though he felt outraged and betrayed, interrogated "to the level of torture" and forced to read a humiliating confession. This excellent book can be recommended without reservation.