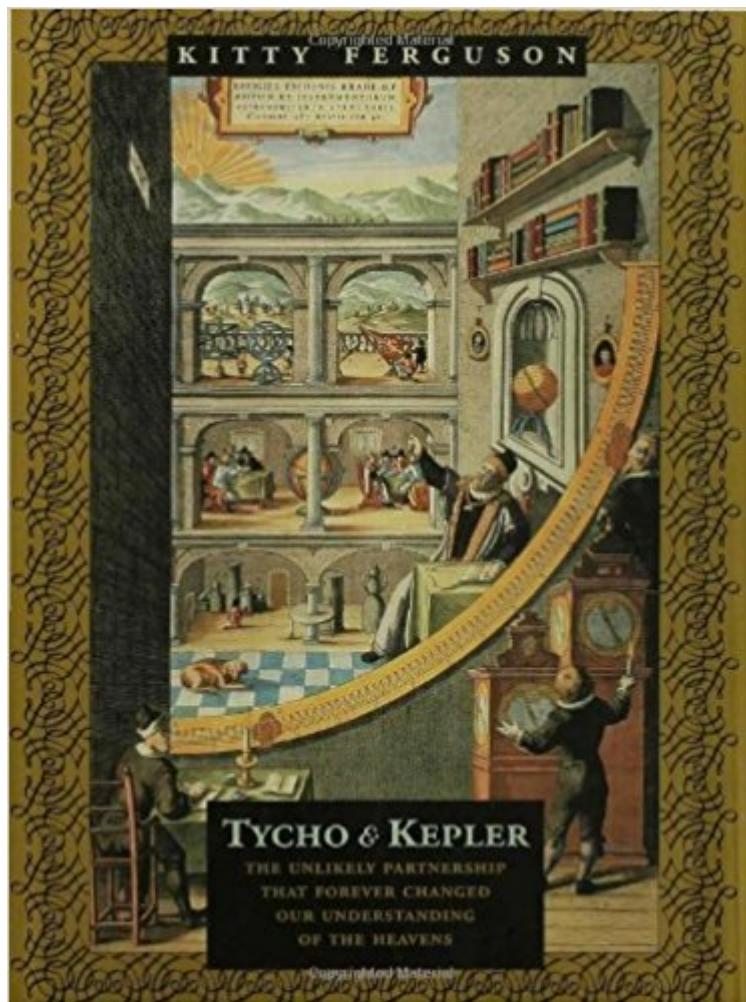


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# Tycho & Kepler



## Synopsis

On his deathbed in 1601, the Danish nobleman and greatest naked-eye astronomer, Tycho Brahe, begged his young colleague, Johannes Kepler, "Let me not seem to have lived in vain." For more than thirty years-- mostly in his native Denmark and then in Prague under the patronage of the Holy Roman Emperor, Rudolph II-- Tycho had meticulously observed the movements of the planets and the positions of the stars. From these observations he developed his Tychonic system of the universe-- a highly original, if incorrect, scheme that attempted to reconcile the ancient belief that the Earth stood still with Nicolaus Copernicus's revolutionary rearrangement of the solar system some fifty years earlier. Tycho knew that Kepler, the brilliant young mathematician he had engaged to interpret his findings, believed in Copernicus's arrangement, in which all the planets circled the Sun; and he was afraid his system-- the product of a lifetime of effort to explain how the universe worked-- would be abandoned. In point of fact, it was. From his study of Tycho's observations came Kepler's stunning three Laws of Planetary Motion-- ever since the cornerstone of cosmology and our understanding of the heavens. Yet, as Kitty Ferguson reveals, neither of these giant figures would have his reputation today without the other. The story of how their lives and talents were fatefully intertwined is one of the more memorable sagas in the long history of science. Set in a singularly turbulent and colorful era in European history, at the turning point when medieval gave way to modern, *Tycho & Kepler* is both a highly original dual biography and a masterful recreation of how science advances. From Tycho's fabulous Uraniborg Observatory on an island off the Danish coast to the court of the Holy Roman Emperor, Rudolph II; from the religious conflict of the Thirty Years' War that rocked all of Europe to Kepler's extraordinary leaps of understanding, Ferguson recounts a fascinating interplay of science and religion, politics and personality. Her insights recolor the established characters of Tycho and Kepler, and her book opens a rich window onto our place in the universe.

## Book Information

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## Customer Reviews

The story of how Copernicus replaced the prevailing geocentric view of the universe with his heliocentric model is a familiar one. Less familiar are Tycho Brahe's contributions to astronomy and his influence on Johannes Kepler, who revolutionized 17th-century thinking about planetary movements. Science writer Ferguson's intellectual and cultural biography of these two seminal scientists provides a delightful, detailed look into the ways that each man developed his ideas about the universe. Brahe, a Danish nobleman, developed a variety of instruments for observing the heavens. In his observatory off the coast of Denmark, he built a magnificent armillary—an instrument that allowed him to construct his theory that Venus and Mercury orbit the Sun while the Sun and the outer planets orbit the unmoving Earth. In 1600, Brahe took on a brilliant young student named Kepler, whom Brahe asked to carry on his own work after his death. Though indebted to Brahe for his instruments and his detailed charts of the stars, ultimately Kepler departed from Brahe's views, confirming instead Copernicus's theory that all the planets orbit the Sun. More famously, he discovered that the planets had elliptical rather than circular orbit. Ferguson (Measuring the Universe) paints her picture of Brahe and Kepler in broad strokes, placing them among the political intrigues of their times and the conflict between religion and science. Her biography offers glimpses of two men completely enamored of the beauty of the stars and planets and their attempts to describe the world through the eyes of this great love. 16 color and 30 b&w illus., 2 maps. Library of Science Book Club alternate selection. Copyright 2002 Reed Business Information, Inc.

Ferguson (Measuring the Universe) continues to wield her gift as a popular science writer in this double biography of Renaissance astronomers Tycho Brahe and Johannes Kepler. This watershed relationship in the history of science is fascinating for several reasons. Ferguson's subjects lived and worked during a turbulent time when medieval thought was starting to give way to modern concepts and a scientific explanation of the world. In his own way, each epitomized the new scientific method of careful observation of the facts (Tycho) and their interpretation or explanation based on rational, rather than religious, thought (Kepler). In addition, Tycho's and Kepler's lives are

interesting in their own right. As with her earlier books, Ferguson has a wonderful ability not only to explain her topic and its significance but also to render the historical background in such a way that the participants do not seem to be either incredibly farsighted prophets or quaint characters fumbling for explanations. Highly recommended for academic and public libraries. James Olson, Northeastern Illinois Univ. Lib., Chicago Copyright 2002 Reed Business Information, Inc.

I had known about Tycho and Kepler being the first to prove that the Greek view of astronomy was outright wrong. I had not known of the details of their lives and the interplay between them. The author gives great descriptions of Tycho's instruments. On a tablet or PC the illustrations helped understand how the parts worked together. On my Paperwhite too many of the illustrations were tiny and refused to enlarge. I was disappointed in needing to go to another device to see them. I tried to follow Kepler's calculations as closely as I was able to follow Tycho's observations, but was disappointed that the author did not discuss their nature at all. (She mentioned the years that they took, the fact that each observation was analyzed iteratively, and the breakthrough when he finally tried to fit the data to ellipses instead for circles. But she was silent (and likely ignorant) of just what those calculations were. The idea behind the calculations was that triangles are congruent if they share two angles and a side. I could convince myself that indeed he could calculate the angles Sun, Earth, Mars and Mars, Sun, Earth, although it would have been tedious. I was stymied with how he calculated one of the lengths until it dawned on me that he used Astronomical Units, the distance from the Sun to the Earth, without converting them to miles. An engaging read. Gave me lots to think about in the relations between the two men and the others around them. Missed the mark in explaining Kepler's calculation.

As a biography of Tycho Brahe and Johannes Kepler, the author does an excellent job of portraying the protagonists, the difficulties and intrigues of their time, and the significance of their scientific contributions. The book is successful of many fronts. It is an interesting read that should entertain a broad audience. It gives a carefully detailed, but not laborious, depiction of the theoretical challenges Brahe and Kepler struggled with, painted against a backdrop of established doctrines and religious preconceptions. The highlight is perhaps the measured way in which Ferguson reveals how Kepler's own fundamental misconceptions played a key role in leading him to his great discoveries. Ultimately the book gives a sympathetic account of both Brahe and Kepler, and should serve to motivate the reader to further study both history and astronomy.

This book is a real time-machine travelling the reader in a journey through time, thought, people and nations. Starting with the birth of Tycho Brahe and ending with the death of Johannes Kepler. In between a lot of stories about their lives, families, studies, countries,..and most importantly when their lives overlapped to produce one of the most important scientific cooperation that changed forever our accepting and understanding of the universe. It is interesting, exciting, enjoyable, and easy-to-read book which is recommended for all readers who are interested in the history of science and especially the history of astronomy.

Engrossing read, especially as we were visiting Prague and Regensburg, and I wanted to put the rumors that Kepler had somehow poisoned Brahe

Read this book. I enjoy reading science history because it gives a certain depth, a vibrancy, to my understanding of science. Kitty Ferguson is an amazingly clear and precise writer who understands the science and the humanity of her subjects. This is the fourth book I've read of hers and recommend anything she writes...

This story is great for encouraging serious interest in science, also sharing a dream/goal/work for life, with another type lesson. With the ever presence of chance in discovery, working with research! It is addictive education, if it is introduced with the wonders up front, like a magician's tricks!

A dual biography of Tycho Brahe and Kepler. Wonderful intellectual history. Even has some more advanced math in the appendices for those who are more ambitious. Very well explained. Great diagrams.

Good info

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