

Review

Chaokang Tai, Bart van der Steen, and
Jeroen van Dongen (eds):

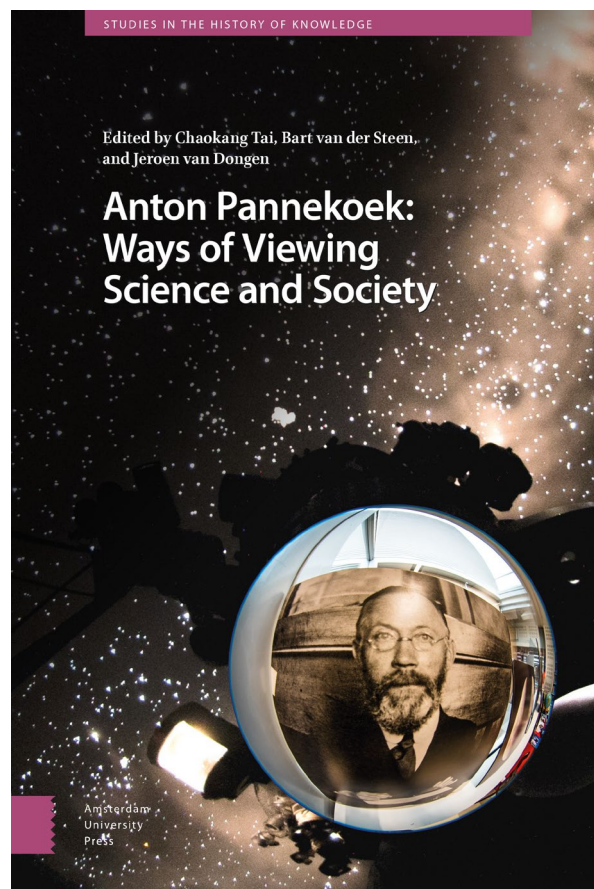
Anton Pannekoek: Ways of viewing science and society

Amsterdam: Amsterdam University Press, 2019. 322 p.

ISBN 9789462984349 /

Open Access e-book <https://www.jstor.org/stable/j.ctvp7d57c>

Reviewed by Margaret E. Schotte



The Dutch astronomer Anton Pannekoek (1873-1960) is remembered for two seemingly disparate accomplishments: he was an influential socialist and he was also the founder of the field of astrophysics in the Netherlands. During Pannekoek's lifetime, his political activities had a negative effect on his astronomical career – in 1919 the Dutch government blocked him from taking up a professorship at the University of Leiden due to his reputation as a socialist. As a result, in later years Pannekoek kept these spheres distinct, going so far as to write two separate autobiographies. In this collected volume, however, editors Chaokang Tai, Bart van der Steen, and Jeroen van Dongen present a convincing case for considering both pillars of Pannekoek's life together.

Anton Pannekoek: Ways of viewing science and society begins with a concise biography of Pannekoek written by Edward P. J. van den Heuvel, himself a leading astrophysicist and former director of the Anton Pannekoek Institute for Astronomy at the University of Amsterdam. As a young man, Pannekoek became involved with the German Social Democratic Party, teaching at party schools in Berlin and Bremen, but he returned to the Netherlands at the outbreak of the First World War. He taught secondary school physics until he was invited to lecture on astronomy at Leiden University, his alma mater. After the prime minister derailed his promotion there, Pannekoek was hired by the University of Amsterdam, an institution without a telescope. Due to these material constraints, in his late forties Pannekoek turned from observational to theoretical astronomy, becoming the first Dutch astronomer to work in the field of astrophysics.

Various chapters in this volume illuminate Pannekoek's collaboration with astronomers around the world. Once at his post in Amsterdam, he relied on the theoretical work of Indian astrophysicist Meghnad Saha. He travelled extensively – to Canada, Finland, Java, the United States – to make first-person observations using borrowed telescopes, and later, to accept an honorary degree from Harvard. At a time when American observational astronomy was rising to pre-eminence, Pannekoek made considerable effort to translate Dutch research into English.

The *Ways of viewing* editorial team includes two historians of science, Van Dongen and Tai, as well as a labour historian, Van der Steen. Certain chapters provide straightforward political or scientific background: Gerrit Voerman traces Pannekoek's radical strand of socialism in the broader Dutch and Russian contexts. David Baneke discusses the state of astronomy in the first half of the 20th century in the Netherlands, while Robert W. Smith surveys the wider field. However, in light of the volume's project to unite the two halves of Pannekoek's career, most chapters interrogate the relationship between socialism and science. Using this approach Klaas van Berkel assesses the astronomer's utopianism, while Bart van der Steen and Annemarie Rullens each examine his conception of scientific socialism.

Pannekoek wrote extensively about the nature of science, social sciences, and history in his political treatises, enabling us to see the consilience between his areas of speciality. Marx, in Pannekoek's view, had turned both socialism and the social sciences into natural sciences. The nature of history – “certain rules from the past” – thus enabled Pannekoek to “say something about future developments” (142). He also viewed scientific progress as an integral part of the socialist project of human liberation (150).

Historians of science will appreciate how the authors connect Pannekoek's oeuvre to major themes in that field, including histories of observation and objectivity (see Daston and Galison, *Objectivity*, 2007), as well as Darwinism. Bart Karstens explores Pannekoek's connections to the sociology of knowledge (SSK). The shadow that socialism cast over Pannekoek's scientific prospects brings to mind the abortive career of Austrian historian Edgar Zilsel, but the Dutch astronomer was not subject to the same lasting censure. Jennifer Tucker presents Pannekoek as a popularizer of science, striving to educate the masses. Indeed, his general interest *History of astronomy* (1951, English translation 1961) and a number of his political pamphlets remain in print.

A particularly rich pair of chapters offer contrasting interpretations of Pannekoek's pioneering depictions of the Milky Way. Chaokang Tai, who is working on a larger study of Pannekoek, argues that the astronomer took inspiration for his method of “visual photometry” from socialism. Tai finds answers in Pannekoek's Marxist writings about the philosophy of the human mind, where he asserted that “humans have an innate ability to analyse and synthesize sense perceptions” and that they were influenced by prior experience (221). In the early years of the 20th century, photography was not immediately trusted or accepted by astronomers. Pannekoek did use cameras but attempted to eliminate individual subjectivity by combining multiple observations into a single composite image (228). He then supplemented these isophotic diagrams (composed of lines of equal brightness) with verbal descriptions as well as naturalistic drawings. For Pannekoek, his images of the Milky Way, like all scientific laws, were human constructs.

In the following chapter, Omar W. Nasim also analyzes the multifaceted Milky Way images. Instead of turning to Pannekoek's Marxism to understand the hybrid drawings, Nasim focuses on their manual component. He claims that “handwork” can not only overcome ideology and metaphysics, but also serves as a bridge between “Pannekoek-the-socialist and Pannekoek-the-astronomer” (251). For Nasim, the Milky Way drawings were used not just for presentation but as tools for observing, and as such “the acts of seeing, knowing, and drawing” all effectively became “a form of scientific labour” (270).

The final two chapters move in a different direction, to artistic interpretations of the Milky Way drawings. In the 1920s they were incorporated into the projections of Zeiss planetariums. A century later, they served as inspiration for German artist Jeronimo Voss, here in conversation with professor of political aesthetics Johan Hartle. Voss's 2016 installation, "Inverted Night Sky," brought together the same three concerns that animated Pannekoek's life: art, astronomy, and radical politics. Art and media historian Alena Williams offers a concluding analysis of Voss's astronomical oeuvre.

The chapters by Tai, Nasim, and Voss are enhanced by numerous illustrations. An index of selected names makes it possible to trace topics through the volume although a full index is lacking. *Anton Pannekoek: Ways of viewing science and society*, produced as an open-access publication, succeeds in alerting a wider audience to this fascinating thinker. It also provides a valuable model for how to recover the interconnections between an actor's political convictions, philosophical and historical theories, and his or her scientific practices.

About the reviewer

Margaret E. Schotte is associate professor of history at York University in Toronto, Ontario (Canada). She earned her Ph.D. in the history of science and technology at Princeton University (Princeton, New Jersey, U.S.) in 2014. She is the author of the prize-winning monograph *Sailing school: Navigating science and skill, 1550-1800* (Johns Hopkins University Press, 2019). Her research brings together book history, maritime history, and the history of early modern science and technology.