



## HISTORY OF SCIENCE

**FLAT EARTHS AND FAKE FOOTNOTES: The Strange Tale of How the Conflict of Science and Christianity Was Written into History** by Derrick Peterson. Eugene, OR: Cascade Books, 2021. xii + 359 pages, including bibliography. Paperback; \$44.00. ISBN: 978153265339.

My interest in Christianity and science first developed more than forty years ago, while I was teaching science and mathematics at a Christian secondary school. After the late Frank Roberts introduced me to the ASA, books by Bernard Ramm, Richard Bube, and others helped refine my thoughts and led me to pursue doctoral work in the history and philosophy of science at Indiana University. There I was mentored by two eminent scholars who shared and encouraged my interest, Richard S. Westfall and Edward Grant. Ironically, they were initially skeptical that a dissertation about the influence of theology on early modern natural philosophy even qualified as history of science—it would be more appropriate for a thesis in religion.

Both later came around to the idea, but their hesitation signaled the prevailing attitude among academics: religious beliefs often conflict with scientific facts, and for millennia religion has held back scientific progress. Although logical positivism was then waning, the philosophers in my department never got that memo. As for Grant and Westfall, like many other scholars of the postwar generation they mainly aligned with the classic view of the Scientific Revolution: modern science arose in the time of Copernicus, Galileo, and Newton, and then only when traditional Christian beliefs were set aside or entirely discarded, as enlightened reason triumphed over blind and obscurantist faith. Years later Grant changed his mind, writing major books and articles about the importance of medieval Christian natural philosophy for the rise of modern science—often cited in this book—but Westfall never budged from his position that science dethroned religion during the Scientific Revolution, and that Newton’s religious beliefs (which Westfall studied more intensely than almost anyone else) were irrelevant to his science.

If only a book like this had been available to me then. Of course, it couldn’t have been—it depends heavily on the best scholarship about the history of science and religion, so much of which was published after I finished graduate school. A freelance writer with graduate training in history, Derrick Peterson explains how history is done, and how historians

created the “conflict” view of religion and science that I encountered on all sides in graduate school, in an accessible manner that I would have found enormously helpful. At that time, only a few historians were taking that bull by the horns, and it had not yet been slain. Coming from a science background, I had not yet developed the ability to read historical literature with a critical eye. It took me several years to learn how historians think. History is not just a pile of facts: it is about how to assemble those facts into a coherent narrative that is faithful to the ideas, activities, and beliefs of the historical actors themselves, while taking care not to impose on them modern viewpoints and attitudes. As novelist L. P. Hartley famously wrote, “The past is a foreign country: they do things differently there.” Until I understood this, I could not begin to dismantle the conflict view and begin to delve more deeply into the real history of Christianity and science, which had long been obscured by false rumors of warfare.

Many ASA members today are probably where I was then. As Christians trained in science, not history, they recognize the cultural significance of the conflict view and instinctively reject it, but lack the historical tools to critique it effectively. *Flat Earths and Fake Footnotes* functions well as a primer for non-specialists on the ideological origins of the conflict view and how badly it misled scholars in earlier generations, leading them to write many things that would not pass muster today; the book explains how the conflict view was eventually deconstructed. That is its main value—despite the annoying absence of an index—but the book is much more than a primer. The latter half of the book examines numerous bogus stories of conflict that are still often repeated, starting with the notion (referenced in the title of the book) that most Christians before the rise of modern science believed on biblical grounds that the earth is flat. I found his debunking of the modern myth-makers Catherine Nixey and Stephen Greenblatt, authors of award-winning books advancing the conflict view, particularly on point. All lovers of truth should applaud this material. More importantly, Peterson has read widely in the history of ideas, enabling him to contextualize the history of science itself—which became an academic discipline in the twentieth century, substantially by embracing nineteenth-century versions of the conflict view. Nor are nonspecialists the only readers who will learn from this book. To cite just two (of many) examples, I did not realize the extent to which Leonardo da Vinci was wrongly presented as a secular saint by scholars opposed to traditional religion; nor did I know that John Tyndall was a pantheistic naturalist rather than a pure secularist.

Unfortunately, *Flat Earths and Fake Footnotes* contains at least a few fake footnotes of its own. Certain quotations are either misattributed, or wrongly cited. The most glaring instance involves a lengthy passage supposedly from Westfall, crucial to the argument at that point, which is not actually in the work identified in the footnote (pp. 52–53). Although it sounds authentic (and might be), I cannot identify the source. Some statements are also erroneous, such as the description of Goethe, Humboldt, and Haeckel as “contemporaries” (p. 262). All scholars make errors from time to time (myself included), but we should keep in mind that this is not an original work of scholarship; it is rather a popularization of conclusions reached by other scholars—and more reliable than many other popular-level works about the history of science, especially considering the complex historical ideas it relates. Readers who appreciate economy of expression may also be somewhat frustrated. Certainly, the author could have greatly reduced the number of quotations and cut some other information, without losing any real substance or nuance. A stern editorial hand would have helped. Partly for this reason, I rank this book lower than *Galileo Goes to Jail and Other Myths about Science and Religion* (2009), edited by Ronald L. Numbers, and *Unbelievable: 7 Myths about the History and Future of Science and Religion* (2019), by Michael Newton Keas. However, all three belong in the libraries of ASA members who want a better understanding of the conflict thesis and its fatal shortcomings.

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**COSMIC QUERIES: StarTalk’s Guide to Who We Are, How We Got Here, and Where We’re Going** by Neil deGrasse Tyson and James Trefil. Washington, DC: National Geographic Society, 2021. 309 pages. Hardcover; \$30.00. ISBN: 9781426221774.

Neil deGrasse Tyson is a well-known popularizer of science; the StarTalk podcast he hosted for years is both a fun and educational resource for countless science subjects. He has teamed up with James Trefil, a prolific science writer and popularizer in his own right, to produce a book trying to summarize a vast array of human discoveries about our place in the cosmos for a primarily nonscientific audience. The book attempts to mimic the style of StarTalk in using humor and even a bit of goofiness at times to keep it light.

Two observations are worth starting off with. First, the authors have attempted to summarize and

simplify a huge amount of science, and no reviewer could possibly do justice by attempting to summarize their summary. There is no central thesis or question which is under debate. An overview of topics and some high points discussed below will suffice.

But secondly, and more importantly, given the full title including the subtitle, these are questions which humans have wrestled with for millennia, and especially as they engage with personal considerations of meaning, purpose, and destiny. The ancient Greek philosophers asked similar questions, and surely humankind had pondered them for millennia before that. Yet the book settles for a response with a rather casual and unfortunate scientism. The science is wonderful, but apparently the publisher thought the book would sell better by choosing a philosophical title for a purely scientific discussion.

It may be a sign of the times that the 1982 cult movie *Blade Runner* engages more directly and significantly with those title questions than this 2021 book does. Recall the scene near the end of the movie in which Deckard asks, “All he’d wanted were the same answers the rest of us want. Where did I come from? Where am I going? How long have I got?” That is an extremely important tone and context in which those subtitle questions belong! But the essential philosophical side of those questions is utterly ignored in the book, except perhaps for a few times they poke fun at common straw man views of the church (they could at least acknowledge that the Christian worldview provided a foundation for the beginning of science as we know it). For example, the authors casually dismiss important questions when they say, “The emergence of galaxies, stars, and human intelligence all followed from this event” (p. 216). Excuse us? Human intelligence did what? Followed from galaxies and stars? Like water downhill? Is there no hard problem of human consciousness? Unfortunately, obvious categories of ideas are avoided as if they do not exist. This is clearly not accidental.

The chapter “Are We Alone in the Universe?” provides a great opportunity to characterize the book. Tyson and Trefil neatly and enjoyably summarize the history of the search for extraterrestrial intelligence starting with Lowell’s “canals” on Mars and proceeding through modern day SETI. The writing is light, fast-paced, and even includes a “Dad joke.” They present the Drake equation, of course, and even try their hand at a calculation of the odds, ending up as most do with a range of from one to possibly millions of intelligent races in the Milky Way. But then there is the meat—or lack thereof. They mention the Fermi Paradox that asks, “If aliens exist, where are they?” But the authors do not consider the question