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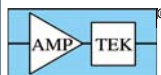
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anyone has in his book is being human.

As with all ambitious works of history, and especially technical history, there are some minor errors dispersed throughout the text. I noticed a few outright mistakes in the section on the Manhattan Project, and there were a few interpretations I considered dubious. But none of the errors I noticed significantly altered the narrative or Schlosser's key findings. He did his homework. Furthermore, he includes more than 120 pages of discursive end notes, an essay on sources, and an ordered bibliography—a remarkable inclusion for a book aimed at a popular audience. For an expert, or even just a curious reader, that material will help cement the status of this eminently readable book as an important and reliable resource for the future and as an important historical contribution.

Alex Wellerstein

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Asian Space Race Rhetoric or Reality?

Ajey Lele

Springer, 2013. \$179.00 (279 pp.).
ISBN 978-81-322-0732-0

Once the domain of the two Cold War superpowers, space activities now have associations that go beyond the US and Russia. Occupying a growing place in the public imagination is China, which has a modest orbiting space facility that its astronauts regularly visit and that recently sent a sophisticated robotic rover to the surface of the Moon, a feat that displays a mastery of cutting-edge technologies. Meanwhile, an Indian probe on its way to Mars is drawing attention to an impressive array of satellites, launch vehicles, and ground infrastructure that the Indian Space Research Organisation operates. And Japan has one of the largest modules attached to the International Space Station, where Japanese astronauts regularly spend time.

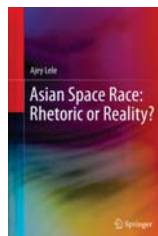
In *Asian Space Race: Rhetoric or Reality?*, Ajey Lele seeks to untangle the complicated moves of those maturing space powers and other smaller ones, including Israel, Pakistan, and the two Koreas, and to “explore the character . . . of the investments made by various Asian states in the space arena.” The fundamental question for Lele, a re-

search fellow at the Institute for Defence Studies and Analyses in New Delhi, is a simple one on the surface, although it masks a complicated set of factors at play: “Is the Asian space race for real or is it a subject more of an academic debate?” Other recent, similar books include James Clay Moltz’s *Asia’s Space Race: National Motivations, Regional Rivalries, and International Risks* (Columbia University Press, 2011) and Eric Seedhouse’s *The New Space Race: China vs. the United States* (Springer, 2010). But Lele’s is the first from the perspective of an Asian policy specialist.

The first half of the book is organized around the activities of the “big three” nations—China, India, and Japan. They are among the few that have the capacity to launch their own satellites into orbit. Such actions—and more modest activities such as using another nation’s remote-sensing data—indicate that a broad spectrum of national and corporate investments is being placed under the rubric of a space program. Lele summarizes many of those efforts using a vast amount of data culled from open sources, principally online.

We learn that China has a large and expanding space program, much of it serving both military and civilian users. In contrast, for many decades, India’s space program has been oriented toward domestic development—in the words of the late founding figure of the Indian space program, Vikram Sarabhai, “space for development.” Yet, having deployed an extensive array of advanced remote-sensing satellites to assess natural resources, the Indian Space Research Organisation has in recent years proposed and implemented projects that have no immediate developmental value.

Expensive missions to the Moon and Mars may have little obvious practical worth to the general population, but Lele believes that they should be understood as instruments of “soft power.” That’s especially the case for China, which has engaged in a wide-ranging program of space cooperation with many smaller nations in Asia and Africa. Lele argues that China’s cultivation of a “web of space help” generates goodwill and “garner[s] . . . economic, political, and strategic advantages.” But he also cautions that soft power only goes so far and that practical considerations—economic development, international cooperation, military applications, and scientific research—will remain important drivers of Asian space activities.



Asian Space Race is a useful (albeit very expensive) primer for those interested in an introduction to the panoply of actors in the Asian space programs. Its analysis of whether or not Asia is in the middle of a space race raises some interesting issues. For example, does the new competitive spirit between the big three Asian nations constitute an analog to the older Cold War space race? (In my view, the analogy only partially fits.)

Such questions are interesting, but the effectiveness of Lele's answers is compromised by the organization of the book, which often reads like a list of details in lieu of analysis, and by the lack of engagement with a deeper source base, such as interviews and archival documents. We also do not hear of any of the principal people behind these programs. Because few personalities are featured, Lele's conclusions about national imperatives suggest that all national programs are monolithic and devoid of internal discussion, debate, and dissent. Finally, a more rigorous copyeditor would have addressed the many typos and problems in syntax, which occasionally make for difficult reading. But those are relatively minor shortcomings in what is otherwise a

useful contribution to the growing literature on Asian space efforts.

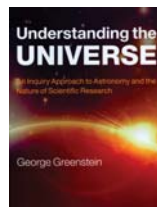
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Understanding the Universe

An Inquiry Approach to Astronomy and the Nature of Scientific Research

George Greenstein
Cambridge U. Press, 2013.
\$65.00 paper (650 pp.).
ISBN 978-0-521-14532-9

George Greenstein has been a professor of astronomy at Amherst College in Massachusetts for more than 40 years. For a good part of his career, he has advocated for an inquiry-based approach to the teaching of science. *Understanding the Universe: An Inquiry Approach to Astronomy and the Nature of Scientific Research* is the result of that long-time commitment.



Understanding the Universe is an introductory textbook to be used in an astronomy course for nonscience majors, and I would definitely recommend it for that purpose. Greenstein writes that his goal is to expose students to the "nuanced treatments of the process of science." He is not principally interested in having his students simply memorize facts; rather, he invites them to be part of the discovery process, argue hypotheses and theories, and explore implications. He includes numerous discussions about the nature of science that nicely complement his treatment of scientific theories.

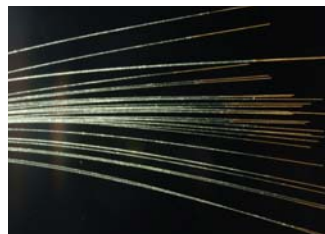
I was pleased to read in Greenstein's accompanying essay posted on the book's website (under the "Resources" tab at <http://www.cambridge.org/greenstein>) that instructors "cannot cover everything; if we spend a lot of time on one issue, many other issues will be left out." Most astronomy textbooks are plagued with an encyclopedic quest to cover the entire subject in a one- or two-semester course. Such an approach is doomed to failure. I agree with Greenstein that the main goal of introductory science courses is not merely to prepare scientists but also to open the minds of college students to the inquisitive and

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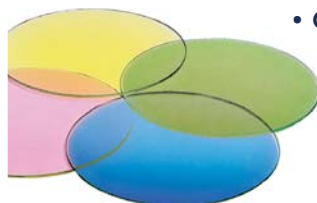
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