

BOOK REVIEWS/КНИЖНЫЕ РЕЦЕНЗИИ

Asif A. Siddiqi. *The Red Rockets' Glare: Spaceflight and the Soviet Imagination, 1857-1957*. Cambridge: Cambridge University Press, 2010. 204 pp. \$85 cloth. ISBN 978-0-521-89760-0.

In *The Red Rockets' Glare*, Asif Siddiqi combines a richly detailed narrative of the development of Russian and Soviet space technology with a ground-breaking reframing of the relationship among those involved in its development. Siddiqi challenges the perception of the paramount role of the Soviet state in developing space science through bringing to light the contributions of science popularizers, voluntary societies, and others, as well as the role of foreign technology and expertise after World War II. His insights illuminate the workings of space science in the Soviet Union and bring new understandings of the Soviet experience in the interplay of society, technology, and politics.

Siddiqi builds here on his previous work on the space race (most notably in *Challenge to Apollo: The Soviet Union and the Space Race, 1945-1974* [Washington, DC: National Aeronautics and Space Administration, 2000]). In *The Red Rockets' Glare*, Siddiqi begins his narrative with Konstantin Tsiolkovskii in the nineteenth century and continues through the development and launching of Sputnik in 1957. Siddiqi is intimately familiar with a huge range of sources on this topic and deploys his knowledge expertly. He bases his work on extensive use of archival sources, including documents from the Archive of the Russian Academy of Sciences, the Russian State Military Archive, and the Russian State Archive of the Economy. He also employs evidence from published collections of primary sources, newspaper and journal articles, and published memoirs.

An overriding theme of Siddiqi's work is a challenge to the view that the Soviet state held sway unilaterally over scientific developments and policies. Beginning with Tsiolkovskii, Siddiqi demonstrates that informal or alternative scientific networks developed and operated outside of and along with state-sponsored networks. In the early Soviet years, these alternative networks included "voluntary scientific societies, laypersons with little or no qualifications, international correspondents (primarily in Germany), and influential popular science writers." (p. 56) These alternative networks were sometimes self-taught or anti-elitist, such as the *kosmopolity*. Through examining the influence of alternative networks on policy and scientific culture, such as the development of the space fad in the 1920s, and framing the discussion in terms of a symbiotic relationship between amateur work and the state, Siddiqi demonstrates that agency existed in the populace as well as with the state.

In his analysis of the intersection of science, society, and politics, Siddiqi's work is comparable in approach to Kendall Bailes' classic monograph *Technology and Society under Lenin and Stalin: Origins of the Technical Intelligentsia, 1917-1941* (Princeton, NJ: Princeton University Press, 1978). For example, in his discussion of the Society for the Study of Interplanetary Communications (OIMS), an organization of students, scientific workers, and others interested in spaceflight, Siddiqi brings together Tsiolkovskii's influence in his later years, publications by Russian and foreign science fiction writers, the Military-Scientific Society of the Zhukovskii Military Air Engineering Academy, a public lecture about spaceflight in 1924 by Mikhail Lapirov-Skoblo (a politically well-connected scientist who was the head of *Pravda's* department of science and technology), and response to OIMS from the Moscow city government. As he addresses such complex topics as the question of the effects of the purges on space science, Siddiqi traces the connections between politics and science, concluding that the "nebulous demarcations between technology and politics blurred as engineers took on the language of the state and vice versa." (p. 157)

Siddiqi excels at bringing into focus these blurred demarcations among formal and informal networks and the intersection of technology, politics, and society. In this framework, "In effect, science and technology became a new cosmology in the Marxist-Bol'shevik-Leninist context of the interwar years; they were both alternatives to religion and religions themselves. Spaceflight was one vibrant example of this conflation." (p. 113)

As he turns to the effects of World War II and the role of German equipment and scientists in Soviet space science, Siddiqi explains how German technology and expertise blended with indigenous technology and expertise. He thoroughly explores the role of foreign technology and expertise and discusses the roles of continuity, contingency, and agency in post-war space science. Siddiqi concludes that the success of informal networks that were established by representatives of the Soviet military and industry who were present in Germany "strikingly illustrated the possibility of local, flexible, and dynamic management in the immediate postwar period." (p. 198) The combination of these informal military and industrial networks, German technology and expertise, and the work of key individuals such as Lev Gaidukov led to state interest and commitment, forming the foundation of the space program.

After a final chapter about the launching of Sputnik in 1957, Siddiqi begins his conclusion by saying, "Sputnik was not a triumph of Soviet science." (p. 363) The emphasis here is on who was responsible for the success of Sputnik – and as Siddiqi explains, success should not be attributed solely to "Soviet science," which itself is a term that obscures more than it reveals. The final chapter recounts how those involved in Sputnik's development viewed it as "just another launch," not expecting "anything more than moderate publicity." (p. 359) Instead, the global response riveted attention on the launch of the first satellite as a symbol of Soviet power during the Cold War,

as it has come to symbolize, perhaps inaccurately, the potential of Stalinist or Soviet science ever since.

Siddiqi's work is, of course, essential reading for those interested in Soviet science or the history of science or space science. Yet it is bound to draw a far wider audience based on Siddiqi's remarkable ability to bring together and bring to life broad themes, social groups, and individual actors. Like Kendall Bailes' work, *The Red Rockets' Glare* is also a key text for anyone interested in twentieth-century Soviet history, culture, and politics. Some sections may be challenging for those who do not have a scientific background (such as those that include detailed discussions about specific rocket technologies), but Siddiqi's approach is in general highly accessible. Siddiqi clearly views his work within the context of current historiography about the public and the private, the state and society, the social construction of technology, and technological utopianism. He places his conclusions within this context both intellectually and explicitly within his work.

The Red Rockets' Glare could easily be considered the definitive text about the development of the Soviet space program. It is also without a doubt destined to become a classic text for those who study Soviet history.

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