

artificiality of its customs, and by careful observation he interpreted the whole society as an "Empire of Signs."

Barthes was a master reader. But the object of his reading was not only to understand signs but to demystify them. By exposing the codes and languages that determine meaning, he makes us conscious of the arbitrary schemes and orthodoxies that govern our lives. If we did not choose to wear this year's fashions or think this year's thoughts, Barthes suggests, we might find something better. The proof is Barthes's own writing—sometimes perverse but always brilliant and fresh. Like a new pair of glasses, he makes the world look sharp and strange again.

The two books here are wonderful for browsing. *The Grain* provides a sample of the critic's thought in action: reviewing his career, arguing with the interviewers, trying out ideas, changing his mind. *The Responsibility* collects a variety of late essays, at their best when they catch Barthes's enthusiasm for art that has taught him new ways to respond: Sergey Eisenstein's films, the theater of Berthold Brecht, drawings by Erté or Cy Twombly, the piano music of Robert Schumann. These are not books to read through at a sitting, nor do they present the essential Barthes, if there is such a thing. (The best one-volume introduction remains *A Barthes Reader*, published in 1982, with a good preface by Susan Sontag.) But they crackle with a unique play of mind—that of a critic who really does create his own world.

—Lawrence Lipking '85

**THE HEAVENS AND
THE EARTH:
A Political History of
the Space Age**
by Walter A. McDougall
Basic, 1985
555 pp. \$25.95

Now that the space age is nearly two generations old, scholars are beginning to chronicle its development. In his superbly written history, Walter McDougall, a historian at the University of California, Berkeley, considers both the foreign and domestic politics of space exploration and research in the United States and the Soviet Union. In the process, McDougall also delves into the moral dimensions of space technology.

Fundamental to the author's approach is his view of Soviet and American attitudes toward "technocracy"—a social-political order shaped, if not directly governed, by scientists and technicians. In the Soviet Union, state-controlled technological change has been viewed as "a partner of ideology in the building of socialism." Americans, by contrast, long deemed government patronage in science and technology to be incompatible with the nation's ideals. Both judgments require qualification: State-sponsored science existed in Russia long before the revolutionary movement arose. And the U.S. Department of Agriculture and other federal agencies provided important stimuli to American science long before

anyone had heard of the term technocracy. Nonetheless, the generalization is useful because it explains the eagerness with which Soviet authorities supported their scientists' pioneering research in rocketry, a story that McDougall recounts. It also explains why the United States lagged so far behind until the 1950s.

During the 1950s, the tables turned. In fact, as McDougall reminds us, the Soviets' undeniable advantage in the theory of rocketry had dwindled even before the launching of Sputnik in 1957. Realizing this, Nikita Khrushchev gave priority to a series of space "spectaculars" that were intended to divert attention from the limitations—especially military—of the famed *Semyorka* rocket, backbone of the Soviet effort. This "missile bluff" failed. President Dwight D. Eisenhower and then NASA head James Webb called for an increased American investment in space, and Sputnik proved, in the end, to be what John Foster Dulles called "Mr. Khrushchev's boomerang."

The politics behind this dramatic flip-flop are the subject of McDougall's fascinating book. There are heroes aplenty, notably Eisenhower and the durable aviation engineer Sergei Korolev, a leader of Soviet rocketry from the 1930s until his death in 1966. Ike stands out because of his measured but effective advocacy; Korolev because of his ability to endure some 35 years of harassment (including a stint in the gulag) by the very Soviet officials whose space program he so brilliantly masterminded.

McDougall's engrossing narrative is enriched by his sensitivity to the moral dimension of his subject. Technocracy, he argues, has spawned pride in man's *works*, but at the price of contempt for mankind itself. The wise person, McDougall suggests, realizes that while science and technology are feeble at controlling nature, they can at least reveal the limits of human knowledge. On this basis, the arrogance that characterizes the age of technocracy can lead eventually to a new modesty about mankind's achievements. And, at the same time, it may foster a deeper regard for the Promethean aspirations that caused human beings to reach beyond their globe in the first place.

—S. Frederick Starr
Former Secretary, Kennan Institute
