

# Book Review

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## ***The Birth of NASA—The Diary of T. Keith Glennan***

Edited by J. D. Hunley, with an Introduction by Roger D. Launius, The NASA History Series, NASA SP-4105, 1993, 389 pp., \$24.00

## ***Powering Apollo—James E. Webb of NASA***

W. Henry Lambright, The Johns Hopkins University Press, Baltimore, MD, 1995, 271 pp., \$35.95

On Oct. 4, 1957, the United States was greeted by newspaper headlines that announced the Soviet Union's successful launch of Sputnik I. The nation was shocked and angry that a communist nation could demonstrate such technical superiority. That single event changed the aerospace community forever and altered the careers of thousands of engineers and scientists. For within the next year, President Eisenhower sent Congress a bill to create NASA to establish and manage a national space program. The bill was passed and signed into law by the President on July 29, 1958. NASA was created using the National Advisory Committee for Aeronautics (NACA) as its foundation. NACA, which had been established in 1915, had grown to become a highly respected federal agency with 8000 employees and major centers in Hampton, Virginia; Cleveland, Ohio; and Moffett Field, California. NACA had been relatively free from political influence, but NASA was established as an executive agency run by an Administrator responsible to the President.

*The Birth of NASA—The Diary of T. Keith Glennan* tells the story of the critical formative months of the new agency. The Introduction describes the background of T. Keith Glennan, the first NASA Administrator. He graduated from Yale University with an electrical engineering degree in 1927. At the time of his appointment to NASA he was the president of the Case Institute of Technology in Cleveland. He was appointed by President Eisenhower and became NASA Administrator on Sept. 9, 1958, and served for 28 months until Jan. 20, 1961, when the Democratic administration of President Kennedy took office.

After the Introduction, the book continues with Glennan's recollections of NASA from his appointment until the end of 1959. The 13 chapters are written in a diary format covering month-by-month his activities until he left the position in 1961. A Postscript, written in 1963, gives his views on the space program after he left office. A Biographical Appendix gives short sketches of about 400 individuals active in the space program during this period. Throughout the diary numerous explanatory footnotes by the editor clarify events and provide references for further details. Although Glennan's stay at NASA was short, his contributions are most significant, as he built the organization that would send men to the moon and serve the nation to the present time.

The Introduction, footnotes, and biographical sketches give a scholarly tone to the book. But the diary entries develop the human aspects of the story. From his comment that a certain protective Army administrator "...was one of the most stupid people that I have ever met. But he fought for his people and they believed in him" to his descriptions of co-workers such as Hugh Dryden and Wernher von Braun and his relations with the politicians on Capitol Hill and the press, the diary is never dull. The description of his arduous schedule of seven-day workweeks and everyday details such as what President Eisenhower ate at a White House breakfast provide a human touch. At the same time he tells, in real time, how some of NASA's most significant decisions evolved.

T. Keith Glennan's successor as the NASA Administrator was James E. Webb. The contrast between the two men's backgrounds is most striking. *Powering Apollo—James E. Webb of NASA* is a biography emphasizing Webb's years at NASA during the Apollo program. Webb was a North Carolina native who graduated from the University of North Carolina with an education degree in 1928. He was appointed NASA Administrator by President Kennedy in Jan. 1961, and he served until Oct. 7, 1968.

*Powering Apollo* describes his early years, including experience reading law, serving as a Marine Corps Reserve pilot, working as a congressional assistant in Washington, D.C., and serving as personnel director and assistant to the president of Sperry Gyroscope Company. Later he returned to Washington, where he was director of the Bureau of Budget under President Truman. From there he was Undersecretary of State during Truman's second term. After leaving the State Department he returned to private industry as an executive with Republic Supply Company, part of Kerr-McGee Industries. He received this job through the powerful Senator Robert S. Kerr of Oklahoma, who was president of Kerr-McGee. Webb returned to Washington in 1958. His years in national government service made him a Washington insider, and he was close friends with many powerful Democratic political leaders, including Vice President Lyndon Johnson.

The most fascinating chapters of the book deal with the Apollo program. The events leading to the Apollo decision to go to the moon are described, and then the

expansion of NASA to support the mission is depicted. The strong political leadership of Webb and the excitement of these times are captured very well. The most gripping part of the book recalls the events following the Apollo fire of Jan. 27, 1967, that killed astronauts Grissom, White, and Chaffee. After that, the NASA honeymoon was over, and Webb was under considerable pressure from critics in Congress and the press who raised questions about NASA mismanagement and poor contractor performance. How Webb survived this period and kept the Apollo program on schedule is a fascinating story. (A quite different view of the Apollo fire and subsequent events from the contractor perspective is given in the 1992 book *Angle of Attack—Harrison Storms and*

*the Race to the Moon* by Mike Gray.) Also interesting is Lambricht's description of the price that NASA paid in subsequent years, including reduced budgets and diminution of the post-Apollo program. Jim Webb saw, as a private citizen, the successful moon landing in July 1969.

Taken together, *The Birth of NASA—The Diary of T. Keith Glennan* and *Powering Apollo—James E. Webb of NASA* cover NASA's first 10 exciting years. The books provide excellent accounts of NASA's first two Administrators and their important roles in initiating the space program and going to the moon.

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## Errata

### Radiation-Induced Anomalies in Satellites

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**B**ECAUSE of an editing error, an acronym was misdefined in the first paragraph of page 879. The paragraph should read as follows:

#### C. CRUX on APEX

The Cosmic Ray Upset Experiment (CRUX)<sup>14</sup> on the U.S. Air Force APEX satellite was specifically designed to validate the models that predict upset rates. To do so, it used specific part types that are popular with NASA designers as test parts. The experiment contained 125 static RAM (SRAM) of six different types with 256-kbit and 1-Mbit capacity with an approximate total memory of 70-Mbit. APEX was launched on Aug. 3, 1994, and data from CRUX

have been processed and analyzed through April 1995. The recorded number of upsets for this period was enormous (>250,000) with the overwhelming majority attributed to trapped energetic protons. Several important findings from CRUX were reported at recent international conferences and are being published in the open literature.<sup>14,15</sup> CRUX was still operational in early 1996, and more data currently are being analyzed. Because of the orbit parameters (71 deg, 352 × 2544 km) and orbit precession, it is expected that CRUX will provide detailed mapping of the proton and heavy-ion environment in terms of SEUs for most low-Earth-orbit (LEO) applications.

AIAA regrets the error.