



## Chasing the Moon

How America Beat Russia in the Space Race

By: Robert Stone, Alan Andres (As told to)

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*„If you think you know all that is important about the Apollo moon landings, you would be wrong”*

*(Roger D. Launius, former chief historian of NASA)*

"Chasing the Moon" by Robert Stone and Alan Andres is a riveting and historical non-fiction book that recounts the events leading up to the Apollo 11 mission to land a man on the moon. The book takes the reader on a journey from the rocket pioneers Arthur C. Clarke, Tsiolkovsky, Goddard, Oberth, and finally to Wernher von Braun through the Cold War era, when the United States and the Soviet Union were in a race to become the dominant superpower in the world. The moon landing would be seen as the political and technical superiority of the nation that would be the first to accomplish the first “manned“-moon landing.



*W. von Braun (2<sup>nd</sup> from right) H. Oberth (4<sup>th</sup> from right) 1930 at the Raketengußplatz Berlin Reinickendorf, Flugplatz Tegel*



*Wernher von Braun with five F-1 engines of Saturn V rocket*

Robert Stone recounts the history and the dramatic events leading up to the successful Apollo 11 mission to land a man on the moon – which is also inseparably tied to the career of Wernher von Braun..

The depth of research that Stone has done is impressive, he has clearly poured over countless primary sources, including interviews with key figures and previously classified documents, to provide an accurate and well-rounded picture of the events that took place. His writing is clear, concise, and engaging, making the book an easy and enjoyable read. With the vintage, original iconic pictures illustrating the book it is also a reference compendium and seamless account of technical facts and political decisions.

As Robert Stone observes, innumerable books have been written about the heroes of the Apollo program, but in his book to the 50<sup>th</sup> anniversary of the moon landing also less famous persons are honoured.

For the purpose of this review and to pay tribute to them I selected Ed Dwight and “Poppy” Northcutt to illustrate how their significance is presented in the anniversary book.

**D**uring the mid-1961 Edward R. Murrow, chief of the United States Information Agency (USIA) wondered if negative stories of radical prejudice might be countered by a more inspiring space-related story that would also appeal to foreign readers. Murrow typed out a quick memo to his fellow Carolinian NASA director James Webb which asked: “Why don’t we put the first non-white man in space?”

After Kennedy’s speech at the Rice University on September 12<sup>th</sup>, 1962 and the selection of astronaut group two, the “new nine” on September 17<sup>th</sup>, Murrow, not having received a response to his earlier memo decided to revive his suggestion that NASA integrate the astronaut corps. He also wrote to President Kennedy a memo asking whether the United States shouldn’t begin training black test pilots now, because that was a precondition for becoming an astronaut candidate. At the same time an military equal opportunity advisory committee asked the nations most celebrated pilot training school at Edwards Air Force Base, the Air Force’s Aerospace Research Pilot School (ARPS) – than under leadership of Chuck Yeager, whether there was any African American pilots enrolled in the ARPS, the answer was a strict “no”.

At the request of the White House the Pentagon began a search to find a qualified minority candidate, ideally a black Air Force pilot with extensive flight experience and a technical degree. They settled on twenty-eight-year-old Air Force captain Edward Dwight.

Dwight was proposed to enroll in the test pilots school at Edwards, where he was accepted by the other pilots but was also viewed with suspicion among the highly competitive fellow classmates. But the notoriously suborn Chuck Yeager did nothing to make Dwight’s situation easier. Dwight was told by a confidant that Yeager had assembled his entire staff of instructors to inform them that the White House had forced him to enroll Ed Dwight in an attempt to promote racial equality. Dwight was also told Yeager then suggested that if they all failed to speak, drink, or fraternize with him, Dwight would be gone in six months.

Despite the adversarial situation at Edwards, Dwight’s hard work and determination to preserve paid off, and he graduated sixteenth in his class, but Yeager would only advance his top ten students to the ARPS postgraduate school for astronaut training. General LeMay interceded at the behest of the White House and made a deal with Yeager by expanding the number of students from ten to sixteen.

In early August 1963, while the selection process was under way, “Deke” Slayton received a phone call from Robert Kennedy who had requested that NASA accept Ed Dwight as part of the third group of astronauts. Slayton told his second astronaut group guys:” If he [Ed Dwight] wouldn’t be qualified, then they’d have to find sixteen other people, because all of us would leave”.

During the press conference on October 18<sup>th</sup> 1963, NASA introduced its third group of astronauts, and the press saw fourteen white male faces, many of the group became famous like Buzz Aldrin, Alan Bean, Eugene Cernan, Michael Collins, and Dick Gordon.

As the press conference was winding down, a journalist directed a question to Slayton about the selection process: “Was there a Negro boy in the last thirty or so that you brought here for consideration?” Slayton “No, there was not.” And with that the press conference ended. From Dwight’s class only two were selected: Ted Freeman and Davit Scott. Freeman died in a T-38 crash and Scott walked on the Moon.

Two years later in 1965 – civil rights movement still ongoing, *Ebony* magazine published an article about Ed Dwight’s experience at Edwards, and the press was asking when America might recruit the first black astronaut. At a press conference held at an Air Force airstrip in California, Dwight was asked whether he might still be selected as an astronaut. He could only reply “I have no idea”, and from NASA officials Dwight heard no more.

Frances “Poppy” Northcutt the first woman in Christopher Kraft’s Mission Control team at Houston was one of the stars of the return-to-Earth team. A twenty-four-year-old mathematician who routinely put seventy hours a week in writing and refining the complex computer programs. She was an employee of TRW contracted by NASA to handle the lunar calculations and, recognizing her talent, she was promoted to the Apollo lunar-to-Earth operations.

The Apollo 8 engine at the rear of the service module was scheduled to be fired after disappearance behind the Moon. Poppy Northcutt was on hand to analyze the lunar orbital data as soon as the spacecraft’s signal was reacquired. But at the moment Apollo 8’s signal was due, nothing was heard – had the engine failed to fire? In the Houston control room the anxiety was unbearable. Northcutt noticed that no one was breathing as the very long seconds ticked away. The Capcom repeatedly called “Apollo 8, Houston over” – but only radio static in return.

Finally the suspense was broken by Lovell’s voice “Okay, here we go ... burn complete. Our orbit is 169 by 60.5”, and a cheer was heard in the Mission control room. An almost perfect lunar orbit insertion had occurred as Poppy was happy to confirm. The voice signal acquisition delay was due to the fact that the spacecraft was affected by “mascons”, strange irregular concentrations of mass beneath the Moon’s surface.

The success of Apollo 8 only heightened Northcutt’s media attention to her role in the mission and she started to receive fan mail. One was addressed (and delivered) to “Poppy, Space Program, U.S.A.” Since she came to work on the space Program, Northcutt had been irritated by a clause in the Texas labor law. Despite performing the same work as her male colleagues and working the same extended hours, she was paid 23 percent less. She found the inequality of compensation frustrating – and supported the National Organization for Women. *Life* magazine took notice as well and featured her in a cover story on an emerging phenomenon the magazine referred to as “Women’s Lib”.

Poppy Northcutt, who served on Mission control’s third shift during Apollo 11 – Glyn Lunney’s “Black” team – had been elated as she watched the moonwalk on television. She and more than four hundred thousand other American’s whose work had led directly to that moment, knew their efforts had made a lasting mark on the history of the human race.

Overall, "Chasing the Moon" is not necessarily a must-read, however it is a complete reference book in text and images supported by extensive “Notes-” and “Index” registers for how American astronauts achieved to set foot on the Moon the first time.

Of course it is a must-read for anyone interested in the history of the space race and the Apollo 11 mission. It provides a unique and insightful look at one of the most pivotal moments in human history, and it does so in a way that is both engaging and informative with a lot of yet unpublished back-ground information.

Whether you are a fan of space exploration, a student of history, or simply looking for refreshing your memory as aerospace engineer, "Chasing the Moon" is a book that deserves a very prominent “space” position on your bookshelf



## *Editors Addendum*

I used chatGPT to compose the following biographies for Ed Dwight and Frances “Poppy” Northcutt.



**E**d Dwight is a renowned American astronaut and aerospace engineer who rose to fame in the 1960s as one of the first African American astronaut candidates. Born on November 27, 1933, in Denver, Colorado, Ed grew up in a family of aviators and engineers, and always had a fascination for flying.

As a child, Ed was exposed to the aviation industry through his father, who was a World War II veteran and a licensed pilot. This sparked his interest in the field, and he went on to study aeronautical engineering at the University of Colorado. After graduation, he was accepted into the United States Air Force, where he served as a test pilot and later as an experimental flight test engineer.

In 1962, Ed was selected as one of the first African American astronaut candidates by NASA's Project Apollo. He underwent extensive training, including simulations and physical and psychological exams, and was poised to become one of the first black astronauts in space. However, he was eventually not selected to fly a mission due to conflicts of political pressure and racial constraints.

Despite this setback, Ed continued to work in the aerospace industry and made a significant impact in the field. He worked as an aerospace engineer, designing and developing aircraft and missiles for various aerospace companies, including the Lockheed Corporation. He also served as a consultant for NASA and the United States military, providing expert guidance on aeronautical and space issues.

Throughout his career, Ed was a dedicated advocate for diversity in the aerospace industry and inspired countless young people to pursue careers in science and engineering. He has received numerous awards and honors for his contributions to the field, including the International Space Hall of Fame, the International Aerospace Walk of Fame, and the NASA Space Flight Awareness Honoree.

[1]

After resigning from the Air Force, Dwight worked as an engineer, in real estate, and for IBM. He opened a barbecue restaurant in Denver. Dwight was also a successful construction entrepreneur and occasionally "built things with scrap metal". Dwight's artistic interest in sculpting and interest in learning about black historical icons grew after Colorado's first black lieutenant governor, George L. Brown, commissioned him to create a statue for the state capitol building in 1974. Upon completion, Dwight moved to Denver and earned an M.F.A. in sculpture from the University of Denver in 1977.

[2]



**F**rances “Poppy” Northcutt is a former mathematician and computer programmer who became widely known as one of the first female engineers at NASA during the Apollo moon landing missions. Born on December 2nd, 1943 in Texas, she grew up in a family that encouraged her interest in science and mathematics.

After graduating with a degree in mathematics from the University of Texas at Austin in 1965, Northcutt joined NASA's Lunar and Planetary Mission Analysis Branch, where she worked as a computer programmer and analyst. She was part of the team responsible for calculating the trajectories and orbits of the Apollo missions to the moon, and she was one of the few women working in the field at the time.

Northcutt's work at NASA was instrumental in ensuring the success of the Apollo missions. She was the only woman on duty in the control room during the historic Apollo 11 mission, and she was responsible for ensuring that the spacecraft's computer systems were working properly. She also served as a spokesperson for NASA during the mission, answering questions from the media about the technical aspects of the mission.

After the Apollo missions, Northcutt continued to work at NASA for several years, before leaving to pursue other opportunities in the private sector. She went on to work for a number of companies in the computer and technology industries, where she continued to use her expertise in mathematics and programming to develop innovative solutions to complex problems.

Despite her significant contributions to the field of space exploration, Northcutt is often not well-known or recognized for her work. However, her impact on the Apollo program and her trailblazing role as one of the first female engineers at NASA continue to inspire future generations of women in science and technology.

Throughout her career, Northcutt has been a dedicated advocate for the advancement of women in STEM fields, and she continues to be an inspiration to women and girls who are pursuing careers in these areas today. [3]

References:

[1] chatGPT Text input “Biography Ed Dwight astronaut candidate”  
[https://www.youtube.com/results?search\\_query=die+eroberung+des+mondes+2v3+arte](https://www.youtube.com/results?search_query=die+eroberung+des+mondes+2v3+arte)

[2] Ed Dwight Wikipedia [https://en.wikipedia.org/wiki/Ed\\_Dwight](https://en.wikipedia.org/wiki/Ed_Dwight)

[3] chatGPT Text input “Biography Poppy Northcutt Apollo”

[X] For German Readers, see also: ARTE TV: Die Eroberung des Mondes (3 Parts)  
<https://www.youtube.com/watch?v=2iEm5nCDivg>