



A  
P  
O  
L  
L  
O  
8

The Thrilling Story of the First Mission to the Moon


**J E F F R E Y   K L U G E R**

BESTSELLING AUTHOR (WITH JIM LOVELL) OF *APOLLO 13*



Henry Holt and Company

Publishers since 1866  
175 Fifth Avenue  
New York, New York 10010  
[www.henryholt.com](http://www.henryholt.com)

Henry Holt® and ® are registered trademarks of  
Macmillan Publishing Group, LLC.

Copyright © 2017 by Jeffrey Kluger  
All rights reserved.

Distributed in Canada by Raincoast Book Distribution Limited

Library of Congress Cataloging-in-Publication Data

Names: Kluger, Jeffrey, author.

Title: *Apollo 8 : the thrilling story of the first mission to the Moon* / Jeffrey Kluger.

Description: New York : Henry Holt and Co., 2017. | Includes bibliographical  
references and index.

Identifiers: LCCN 2016046157 | ISBN 9781627798327 (hardback) | ISBN  
9781627798310 (electronic book)

Subjects: LCSH: Project Apollo (U.S.) | Space flight to the moon. | BISAC:  
HISTORY / Expeditions & Discoveries. | HISTORY / United States / 20th  
Century. | TECHNOLOGY & ENGINEERING / Aeronautics & Astronautics.

Classification: LCC TL789.8.U6 A54325 2017 | DDC 629.45/4—dc23

LC record available at <https://lcn.loc.gov/2016046157>

*Our books may be purchased in bulk for promotional, educational, or business  
use. Please contact your local bookseller or the Macmillan Corporate and  
Premium Sales Department at (800) 221-7945, extension 5442, or by e-mail at  
[MacmillanSpecialMarkets@macmillan.com](mailto:MacmillanSpecialMarkets@macmillan.com).*

First Edition 2017

Endpaper illustrations by Lisa Marie Brennan, [lisa@saber.net](mailto:lisa@saber.net)

Designed by Meryl Sussman Levavi

Printed in the United States of America

1 3 5 7 9 10 8 6 4 2

## PROLOGUE

*August 1968*

**T**HE LAST THING FRANK BORMAN NEEDED WAS A PHONE CALL WHEN he was trying to fly his spacecraft. No astronaut ever wanted to hear a ringing phone when he was in the middle of a flight, but when the spacecraft was an Apollo, any interruption was pretty much unforgivable. The Apollo was a beautiful machine—so much bigger, so much sleeker than the corrugated Mercury and Gemini pods that all of the other Americans who had ever been in space had flown. But the Mercurys and the Geminis had a perfect record: sixteen launches, sixteen splash-downs, and not a crewman lost. The Apollo, on the other hand, was already a killer: only eighteen months ago, three very good men had died in the first ship, before it even got off the launchpad.

So when Borman was trying to fly the cursed machine, he needed to pay complete attention. And now, at precisely the wrong moment, there was a call for him.

In fairness, Borman was not actually in midflight when the phone rang. No one had yet taken an Apollo into space; that would be folly until the ship was proven fit to fly, which it most assuredly had not been. For now, he was merely on the factory floor at the North American Aviation

plant in Downey, California, where all of the new Apollos were being built. But Borman *was* sitting in the cockpit of an actual Apollo ship, one that was currently known as “Spacecraft 104,” though it would soon enough be called Apollo 9. And it *was* his ship, the one he would command if it ever got off the ground. If it did fly, Borman’s place would be in the left-hand seat—the ranking seat—and that suited him just fine. His crewmates, Jim Lovell and Bill Anders—exceptional men, both—would be in the center and right seats. Lovell and Anders were with him today, in fact, and the work they were doing was every bit as difficult as his own.

Apollo 9 was scheduled to launch in approximately nine months, which put Borman and his crew in the stretch run of their training. That schedule, however, depended on Apollos 7 and 8, the first two manned flights of the Apollo series; both had to get off the ground and bring their crews home whole and well. All three of the flights would be limited to Earth orbit, and to Borman’s way of thinking, that was a shame. It was the boiling summer of 1968, and the world had spent much of the year bleeding from countless wounds: multiple wars, serial assassinations, riots and unrest from Washington to Prague to Paris to Southeast Asia. The Soviets and the Americans, again and always, were staring each other down in hot spots around the globe, while American boys died in Vietnam at a rate of more than a thousand each month.

A flight to the moon—which President Kennedy had once promised would happen by 1970—would have been a fine and bracing achievement right about now. But Kennedy was five years dead and three Apollo astronauts were eighteen months dead and the entire lunar project was flailing at best, failing at worst. Most people believed that if American astronauts reached the moon at all, they wouldn’t get there for years.

Still, Borman had his mission, and he and his crew had their ship. And today they were inside it, running their flight drills and doing their best to get the feel of the machine. All of the Apollos looked the same and were laid out the same way, but spacecraft were like aircraft. Pilots could feel their differences—in the give of a seat or the grind of a dial or the stickiness of a switch that had a bit more resistance than it should. Each spacecraft was as particular to each astronaut who flew it as a favor-

ite mitt is to a catcher, and you had best know your ship well before you took it into space.

Now, as Borman, Lovell, and Anders lay in their assigned seats in their small cockpit, working to achieve that flier's familiarity, a technician popped his head through the hatch.

"Colonel, there's a phone call for you," he said to Borman.

"Can you take a message?" Borman asked, annoyed at the interruption.

"No, sir. It's Mr. Slayton. He says he has to talk to you."

Borman groaned. Slayton was Deke Slayton, the head of the astronaut office and the man who made the crew selections and assigned all of the men to their flights. That power came with the understanding that he could always *un*-assign you to a flight if he chose. When Slayton rang, you took the call.

Borman crawled out of the spacecraft and trotted to the phone. "What is it, Deke?" he asked.

"I've got something important I need to talk to you about, Frank."

"So talk. I'm really busy here."

"Not on the phone. I want you back in Houston now."

"Deke," Borman protested, "I'm right in the middle of—"

"I don't care what you're in the middle of. Be in Houston. Today."

Borman hung up, hurried back to the spacecraft, and told Lovell and Anders about the call, offering only a "who knows" shrug when they asked him what it meant. Then he hopped into his T-38 jet and flew alone back to Texas as ordered.

Just a few hours after he was roused from his spacecraft, Borman was sitting in Slayton's office. Chris Kraft, Borman noticed with interest, was there as well. Kraft was NASA's director of flight operations; as such, he was Slayton's boss and Borman's boss and almost everyone else's boss, save the top administrators themselves. But today he remained silent and let the chief astronaut talk.

"Frank, we want to change your flight," Slayton said simply.

"All right, Deke . . ." Borman answered.

Before Borman could say anything else, Slayton held up his hand. "There's more," he said. "We want to bump you and your crew from

Apollo 9 up to Apollo 8. You'll take that spacecraft since it's further along—and you'll fly it to the moon.”

Then, as if to make clear that the astounding statement Borman had just heard was really what Slayton meant to say, he put it another way: “We are changing your flight from an Earth orbital mission to a lunar orbital.” He added, “The best launch window is December twenty-first. That gives you about sixteen weeks to get ready. Do you want the flight?”

Borman said nothing at first, taking in the sheer brass of what Slayton was proposing.

Before Borman could fully gather his thoughts, Kraft spoke up: “It's your call, Frank.”

That, all three men knew, was entirely true—and entirely untrue, too. Borman was a soldier, a West Point graduate and an Air Force fighter pilot. He had never had an opportunity to fight in a hot war, but the space program was a race with the Soviet Union and a critical part of the Cold War. A battlefield assignment—no matter what kind of battlefield—was not something he could possibly turn down.

The way Borman saw it, circumstances might warrant your saying no to a dangerous assignment, and your commanding officer might forgive you for saying no, but if you hadn't signed up to fight, then why did you become a soldier in the first place? And if you hadn't joined the space program to fly to the moon when your boss and your nation and—somewhere in that long chain of command—your president were asking you to, well, maybe you should have chosen a different line of work. The Apollo spacecraft might not be up to the job, the flight planners who had the same sixteen weeks to get ready for a mission to the moon might not know exactly what they were doing, and in the end three more Apollo astronauts might wind up dead. But death was always a part of the piloting calculus, and this time would be no different.

“Yes, Deke,” Borman said. “I'll take the flight.”

“And Lovell and Anders?” Slayton asked.

“They'll take it, too,” Borman responded briskly.

“You're sure about them?”

“I'm sure,” Borman answered. Then he smiled inwardly. He could only imagine the look on Lovell's and Anders's faces if he had flown back

to Downey and told them that they had all been offered the chance to go to the moon before Christmastime and he had answered, *No thanks*.

☆ ☆ ☆

There was no established way for a man to tell his wife he was going to the moon. A man could tell his wife he was going to sea or going to war; men had been doing that for millennia. But the moon? It was a whole new conversation.

Reporters loved stories about astronauts coming home with the exciting news that they had been assigned to a mission. They especially loved it when the astronauts would let them photograph the family—the brave man posing with a world atlas in his lap, tracing the path his spacecraft would make around the Earth, the children sitting on either side of him, the wife standing over his shoulder beaming down at the entire tableau. Surely a map of the moon would make an even grander picture.

There would be no moon maps in Frank Borman's house, however. When the commander got word that his assignment had been changed from an Apollo 9 Earth orbit to an Apollo 8 lunar orbit, he came home and told his wife, Susan, the news; she looked at him and said, "Okay." He then told his boys, who were seventeen and fifteen; they looked at him and said, "Okay," too. That was the way it had gone the first time Borman had flown into space, three years earlier, and that was the way it had always gone when Borman was given a dangerous assignment. With or without the pretty pictures of the families with their atlases, it had gone that way in all of the other Houston households, too, when, sixteen times before, American astronauts had prepared for a flight into space.

But this time was different, because none of those other astronauts had flown to the moon, and a moon mission was exactly what Susan's husband had just accepted. Still, she and Frank would find a way to manage this challenge, just as they had managed every difficult challenge they'd faced in eighteen years of marriage. They even had a shorthand for their preferred approach, and it went like this: "The custard is in the oven at 350 degrees."

Frank would mention the custard when he was requesting combat

duty or trying out a dangerous new plane; Susan would mention the custard when they were looking at a new house or sending the boys to a new school. They both took comfort in the little incantation. What the custard meant—with its sense of domestic coziness—was that Susan would tend to the home and Frank would tend to the flying. And if they both did that, while taking care not to overstep to the other person's patch, the custard would come out just fine.

But this new challenge, Susan realized, might require something more than the custard. She had been an astronaut's wife for a long time, and she realized at a primal level that something about this mission was particularly troubling, something that went beyond the obvious risks most people were considering. Frank wouldn't be landing on the moon; in fact, the spidery lunar module that would be needed for that final step in the lunar project hadn't even been fully built yet. But an orbital mission posed its own dark peril.

The most important piece of hardware on an Apollo spacecraft was its engine—the big, roaring blunderbuss at the rear of the ship, the machine that some of the more superstitious people in NASA referred to merely as The Engine, the same way they would say The Queen or The President or The Moon itself, with the “The” conferring an almost supernatural specialness. Borman, Lovell, and Anders referred to the engine by its brisk, clinical initials: to them it was the SPS, short for “Service Propulsion System.” The label nicely expressed its job, which was to propel and to serve.

A machine that played so central a role in a lunar mission could not possibly fail. But what if it did? That was the worry. Once the rocket that gets you off the ground and hurls you toward the moon is done with its job and falls away, the main means of propulsion you have left is the SPS. If you were planning to orbit the moon, you would need it to fire at least twice: the first time to slow you down, so you'd surrender to the moon's gravity and become a lunar satellite, and the second time at the end of your visit, so you'd speed back up and peel off for Earth. If the engine failed the first time, the mission would be wrecked but the crew might survive, whipping around the moon and coming home. If it failed the second time, the crew would be trapped in lunar orbit. They would circle the moon as it circled the Earth, on and on, forever and



ever. Sealed inside a metal sarcophagus, the astronauts would never come home, but they'd never descend for a conclusive crash into the lunar surface, either. That engine failure would effectively ruin the moon: no one would ever be able to look up at it again and not be aware of the three dead men.

So Susan decided to talk to NASA's director of flight operations. Apart from her husband, Chris Kraft was perhaps the only person in the space program with whom she could be herself. He had a sandpaper temperament and a pitiless honesty that Susan found refreshing. And since the NASA families living in the communities around the space center in Houston were a sociable bunch, she figured she'd have a chance to talk with him before long. Sure enough, shortly after Borman got his lunar assignment, Kraft dropped by their house one evening, and Susan seized a private moment.

"Chris, I'd really appreciate it if you'd level with me," she said. "I really want to know what you think their chances are of coming home." It was a straight-up question and she held his eyes, insisting that he give her an equally straight-up answer.

Kraft studied her face. "You really mean that, don't you?" he asked. "Yes," Susan said, "and you know I do."

Kraft did know. "Okay," he said directly. "How's fifty-fifty?"

Susan nodded. She had suspected as much.

### Buy the Book:

