

BOLD THEY RISE

The Space Shuttle Early Years, 1972–1986

David Hitt and Heather R. Smith

FOREWORD BY BOB CRIPPEN



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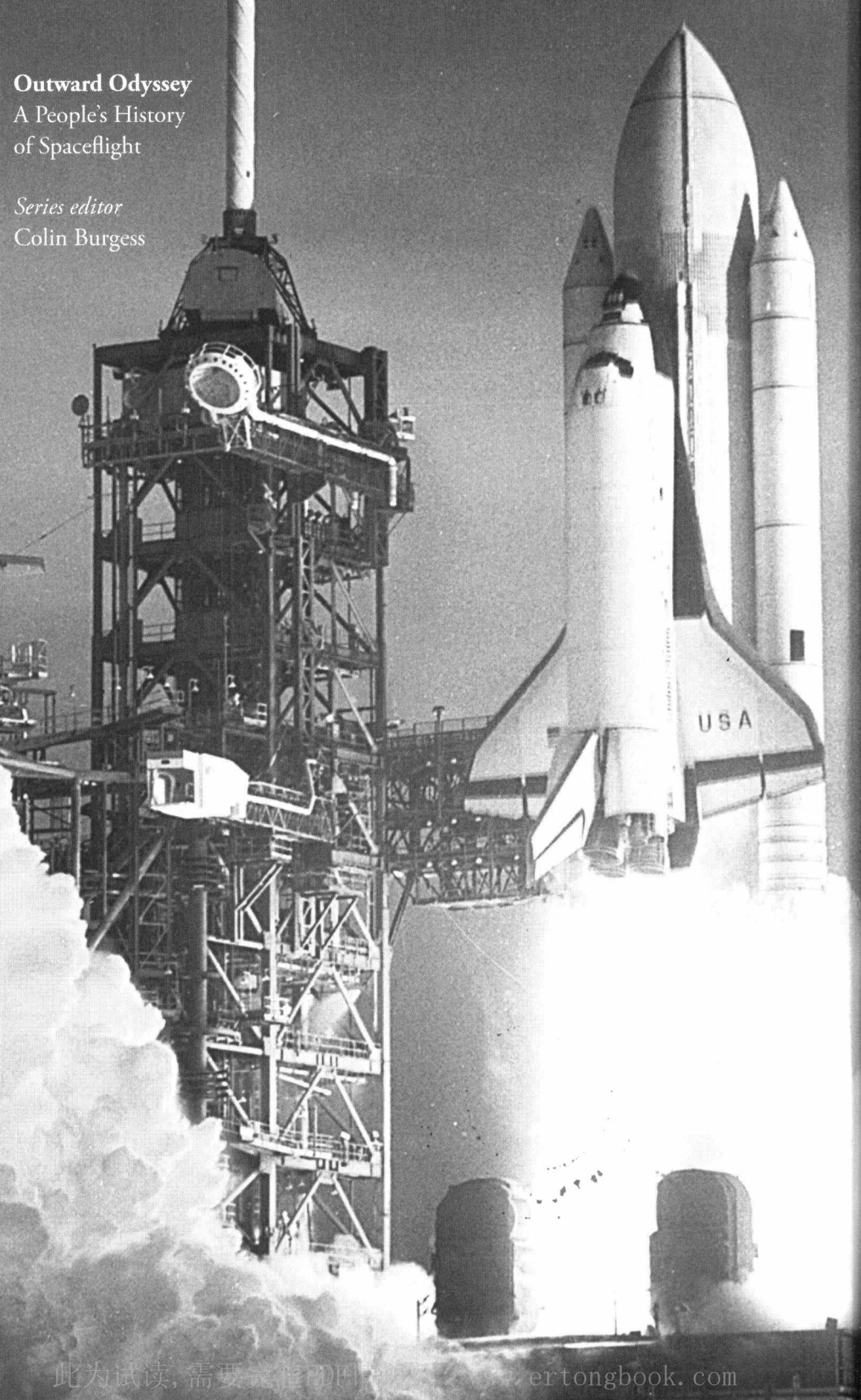
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Bold They Rise

Outward Odyssey
A People's History
of Spaceflight

Series editor
Colin Burgess



To Finn, Cadēn, Bethany, Nathan, Lillian, Lila Grace, Will,
Baxter, Amelia, Andrew, Peyton, Sabrina, Kean, Elliott,
Rhys, Daniel, Lainey, and millions of other children who
will be the ones to carry on the exploration of tomorrow.

They venture forth, into the spangled night
Lured inexorably by dreams;
With vision
And resolve
To go beyond the quest of yesterday

Bold they rise, these winged emissaries
To wonders transcendent;
With audacity
And faith
In the divine promise of tomorrow.

Colin Burgess, "Bold They Rise"

Foreword

After John Young and I made the first flight of the Space Shuttle aboard *Columbia* all those years ago, people would sometimes ask me what the best part of the flight was. I would always use John's classic answer: "The part between takeoff and landing."

Now that it's all said and done, I think that describes what the best part of the Space Shuttle program was: the part between our first launch in April 1981 and the last landing in July 2011.

There were some low points in between, particularly the loss of both of the orbiters I had the privilege to fly and their crews, but as a whole I think the shuttle has been one of the most marvelous vehicles that has ever gone into space—a fantastic vehicle unlike anything that's ever been built.

The Space Shuttle has carried hundreds of people into space and delivered hundreds of tons of payloads into space. The shuttle gave us the *Galileo* and *Magellan* probes, which opened our eyes to new worlds, and it let us not only launch the Hubble Space Telescope but also repair and upgrade it time and time again, and Hubble has revolutionized our understanding of not only our solar system but the entire universe. The shuttle carried a lot of classified military payloads early on that probably helped the United States win the Cold War.

The Space Shuttle let us build the International Space Station. The Space Station is an incredible accomplishment, a marvelous complex, but it was the Space Shuttle that taught us that we could build a complicated space vehicle and make it work very well. The Space Station would not have been possible without the Space Shuttle.

But in those early days, I think the shuttle did something else, a little less concrete but just as important. The late '70s and early '80s weren't really a great time for the United States. We'd basically lost the Vietnam War. We'd been through economic hard times, through the hostage crisis in Iran.

President Reagan was shot just before our flight on STS-1. And morale for a lot of people in the country was really low. People were feeling like things just weren't going right for us.

And that first flight, it was obvious that it was a big deal. It was a big thing for NASA, but it was a big thing for the country. It wasn't just our accomplishment at NASA; it was an American accomplishment. It was a morale booster for the United States. It was a rallying point for the American people. And the awareness may not be as high now as it was then, but I think that's still true today. I think you saw that when the shuttle made its last flight; the pride people had in what it had accomplished and the fact that a million people watched it. When I talk to people, they think space exploration is something we need to be doing, for the future of the United States and humankind.

The retirement of the shuttle was kind of bittersweet for me. I'm proud of all it's accomplished, and I'm sorry to see it end. But I believe in moving on. I'd like to see us get out of Earth orbit and go back to the moon, and to other destinations, and eventually to Mars.

John and I got to see a lot of the development of the Space Shuttle firsthand. As astronauts, we were involved from an operations standpoint, and as the first crew, John and I visited the sites where they were working on the shuttle, getting it ready to fly. We had an outstanding, dedicated team, people who really believed they were doing something important for the nation. When we finally got into the shuttle for that first flight, meeting those thousands of people gave me a lot of confidence that we had a good vehicle to fly on.

I never expected to be selected for that first flight. I thought they would pick someone more experienced to fly with John. I was excited that they picked me, and I was honored to be a part of that flight. All told, that flight was the beginning of something truly amazing, and I'm honored to be one of the thousands of people who made it happen.

Bob Crippen

Preface

When I (David) first became involved in the Outward Odyssey series, working on the Skylab volume, my coauthors and I were shown a list of proposed titles for the first eight books in the series. As authors working on our first book, coming up with a title seemed like one of the more exciting parts of the job. We were thus somewhat pleased to be disappointed with the working title the publisher had provided: “Exemplary Outpost.” It was an accurate title, but it lacked the poetry of the other titles on the list—titles like *Into That Silent Sea* and *In the Shadow of the Moon*. I’m not sure that we quite lived up to that standard with *Homesteading Space*, but we made our best effort.

Even though it meant giving up the privilege of titling this volume, Heather and I were quite happy to go along with the name the publisher had suggested for this book: *Bold They Rise*. It was, quite literally, poetic, taken from the poem by series editor Colin Burgess that appears as the epigraph.

When we first read the poem, very early on in the process of writing this volume, we pictured the title as being about the Space Shuttles themselves, reflecting the poem’s reference to “winged emissaries.” As the book took shape, however, we realized that was no longer true; the title had taken on a new meaning for us. Rather than being about the hardware, it was about the men and women who risked their lives to expand humankind’s frontiers.

And in that vein, this book owes an incredible debt of gratitude to the NASA Johnson Space Center (JSC) Oral History Project, without which it quite literally would not exist.

With *Homesteading Space*, it was relatively easy to create a book that filled a unique niche—with a few notable exceptions, such as a handful of official NASA publications and David Shayler’s *Skylab*, very little had been written about America’s first space station. Breaking new ground was not a particular challenge.

With this book, the challenge was a little greater. There are more books about the Space Shuttle program, so it was somewhat harder to create something unique. Most of the previous works, however, fall into one of three categories—technical volumes, which span the entire program but include none of the human experience; astronaut memoirs, which relate the human experience, but only from one person's perspective; or specific histories, which are more exhaustive but focus on only a limited slice of the program.

Based on the overall goal of the Outward Odyssey series, a new niche we could address became clear—a book relating the human experience of the Space Shuttle program, not limited to one person's story but including a variety of viewpoints and spanning the early years of the program. Originally the goal was to create a “*Homesteading Space* of the shuttle program,” but it quickly became apparent that was a misdirected goal. *Homesteading* had only three manned missions to cover, and thus we could delve much deeper and more broadly in covering them. To attempt to write about the subject of this book in that manner would be to do either the subject or the reader a grave disservice; we needed to narrow our approach to create something that was both relevant and readable.

When we began reading from the JSC oral history interviews early in our research, the ideal approach for the book became apparent. Here was a wealth of first-person experience, describing in detail what it was like to be there—what it was like to be involved in the design of a new spacecraft, what it was like to risk one's life testing that vehicle, what it was like to do things that no one had done before in space, what it was like to float freely in the vacuum of space as a one-man satellite, what it was like to hold thousands of pounds of hardware in one's hands, what it was like to watch friends die.

This book almost exclusively offers the astronauts' perspective on the early years of the Space Shuttle program, and, while research for the volume drew on several resources, the extensive quoted material draws heavily from the JSC Oral History Project. It's the astronauts' story, told in their own words, about their own experiences.

Bold They Rise is not a technical volume. We would love for this volume to inspire you seek out another book that delves more deeply into the technical aspects of the shuttle. There are parts of the story that we had to deal with in what seemed like a relatively superficial manner; even dedicating an entire chapter to the *Challenger* accident and the effects it had seems woeful-

ly insufficient. Entire books could, and have, been written about the *Challenger* accident. If this book leaves you wanting to know more about that incident or other aspects of the shuttle's history, we encourage you to seek out those volumes. And of course, individual astronauts have told their stories in memoirs with more personality than we were able to capture here. The subject of this book is such that it can't be covered by any one volume exhaustively, but hopefully we have provided a unique, informative, and engaging overview here.

The chronological scope of the book was also set by the publisher to fit within the Outward Odyssey series. (Another volume, written by Rick Houston, picks up the Space Shuttle story where this one leaves off.) Initially, the ending point of the book was a bit discomfiting; the *Challenger* accident seemed a rather low note on which to end a book. There were any number of successes both before and after *Challenger*. Why would one pick the lowest point of the early years as a place to end the story? But, in a very real way, it was the best possible way to turn this history into a story arc.

As astronaut Mike Mullane wrote in his memoir *Riding Rockets*,

The NASA team responsible for the design of the Space Shuttle was the same team that had put twelve Americans on the Moon and returned them safely to Earth across a quarter million miles of space. The Apollo program represented the greatest engineering achievement in the history of humanity. Nothing else, from the Pyramids to the Manhattan Project, comes remotely close. The men and women who were responsible for the glory of Apollo had to have been affected by their success. While no member of the Shuttle design team would have ever made the blasphemous claim, "We're gods. We can do anything," the reality was this: The Space Shuttle itself was such a statement. Mere mortals might not be able to design and safely operate a reusable spacecraft boosted by the world's largest, segmented, uncontrollable solid-fueled rockets, but gods certainly could.

That, then, is the story of this book—a Greek tragedy about hubris and its price. It's a story of the confidence that bred some of the most amazing achievements in human history but also led to overconfidence.

But make no mistake, this book is also a love letter. Both authors of this volume were born after the end of the last Saturn-Apollo flight; the Space Shuttle is "our" spacecraft. The *Challenger* accident occurred when we were still children; it was our "where were you" equivalent of the Kennedy assas-

sination. In our “day jobs” as NASA education writers, we wrote extensively about the shuttle, its crews, its missions, its accomplishment and ultimately its retirement. We write this with a fondness for the shuttle, even when that means telling the story with warts-and-all honesty.

It’s been an honor and a pleasure to tell this story. We hope you enjoy reading it.

David Hitt

Heather R. Smith

Acknowledgments

As mentioned in the preface but bears repeating, this volume owes a great deal of gratitude to the Johnson Space Center Oral History Project, without which it would not exist.

In addition, we are grateful to the University of Nebraska Press, and in particular to senior editor Rob Taylor, for their dedication to chronicling the history of space exploration through their publication of the Outward Odyssey series and specifically through their help and support with this volume. In addition, the authors wish to express their substantial thanks to Outward Odyssey series editor Colin Burgess, who has been a loyal shepherd, a wise counsel, and a good friend during the process.

It was an incredible honor to have astronaut Bob Crippen agree to write the foreword for this volume. For David, the journey to writing this book begins in a very real way in front of a television set in 1981 watching Bob Crippen and John Young make history, and to conclude that journey with Crippen being a part of this project is a surreal bookend to the experience.

Astronaut (and *Homesteading Space* coauthor) Owen Garriott provided much assistance early in the project, making contacts and helping to get things moving, and that assistance is much appreciated. In addition, astronaut Bo Bobko was also involved in the early stages of the book and provided insight into its direction and helped open some doors. Astronauts Hank Hartsfield and Joe Kerwin and NASA legends Chris Kraft and George Mueller also provided us with material for the book.

Phillip Fox, Jon Meek, Jordan Walker, Rebecca Freeman, Lauren McPherson, and Suzanne Haggerty read early portions of this book in progress and provided feedback.

On a personal note, the authors wish to acknowledge Finn and Caden Smith, ages seven and five at the time the original manuscript was finished, for their sacrifices during deadline work on this book.

In addition, David would like to thank the following:

Heather, who for years has made my writing better and without whom I could not have written this book.

As per last time, my father, Bill Hitt, for engendering my interest in spaceflight that set me on the path to, among other things, writing this book. Jim Abbott, for giving me my first break and being a brilliant editor and a wonderful mentor and for shaping the man I am today. Holly Snow, for opening the door for my new involvement with NASA.

Owen Garriott and Joe Kerwin, for sponsoring me through Olympus and for sharing their stories, their insight, their knowledge, their expertise, and their friendship.

All of those who traveled with me on multiple road trips to Kennedy Space Center, which occasionally involved successfully watching shuttle launches.

Heather would like also to thank the following:

David, for offering me the opportunity to coauthor a book and for shepherding me through the process.

Mrs. Hughes, for seeing potential in the writing skills of a young, tenth-grade Heather and inviting her to write for the school yearbook staff, sparking an interest in writing and communication that led me down this career path. Mr. Sandy Barnard, for believing that I could write and write well whatever I put my pen to.

The *Times-Mail* in Lawrence County, Indiana, the proud home to three astronauts, including Charlie Walker, who is quoted extensively in this book, for giving me my first professional writing job and an occasional space-related assignment that made a big difference in me ending up writing at NASA and thus ending up writing this book. I was blessed to work in a community that adores its hometown astronauts and that still gets excited about spaceflight.

Starbucks locations in Huntsville, Alabama, and Nashville, Tennessee, and the Flint River Coffee Company in Huntsville, Alabama, for hospitality and tasty coffee. Portions of this book were written and edited there.

And most important, God my Father. Any writing talent that I possess is a gift from You, and You have shepherded my life and career. May You get any and all glory for this volume.

Bold They Rise

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