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BACK TO

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THE MOON

A NOVEL

BACK to the MOON

A NOVEL

Homer H. Hickam, Jr.

ISLAND BOOKS

Published by
Dell Publishing
a division of
Random House, Inc.
1540 Broadway
New York, New York 10036

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ISBN: 0-440-23538-3

Reprinted by arrangement with Delacorte Press

Printed in the United States of America

Published simultaneously in Canada

April 2000

10 9 8 7 6 5 4 3 2 1

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PRAISE FOR BACK TO THE MOON

"[Hickam's] boyish, eager idealism is showing again in his first try at fiction, and it's charmingly contagious. . . . One of the strengths of this readable, diverting novel is that the reader isn't absolutely sure who's good and who's bad until very near the end. Hickam is also adept at false scares . . . and nifty plot twists."

—*The New York Times Book Review*

"A FASCINATING PLOT . . . A FUN, INTERESTING PAGE-TURNER."

—*SpaceViews News*

"Hickam proves that the meteoric success of his last book, 'Rocket Boys,' was no fluke. The sights and sounds of the coalfields are gone in Hickam's latest entry, but there is a compelling pathos in 'Moon' similar to the boot-strap determination of 'Rocket Boys.' Hickam spins a darn good yarn. . . . *Back to the Moon* has a wealth of history, lore, legacy and hope for the future that could only be written by a space agency insider . . . a classy tale of adventure and pathos."

—*Bluefield Daily Telegraph* (W. Va.)

"A COSMIC ROMP . . . AS HICKAM'S TALE HEATS UP, THE ROCKET RIDE ACHIEVES HIGH VELOCITY."

—*Publishers Weekly*

"[Hickam's] vast knowledge of the politics and hardware of spacefaring shines through, filling the reader with hope that marvelous things still await us."

—*Kirkus Reviews*

"A CLIFFHANGING YARN."

—*Booklist*

"[A] novel of high-spirited adventure—of guys and gals in space—with a decidedly upbeat message. 'This rocket flies on dreams,' says the hero. You better believe it!"

—*Library Journal*

Also by Homer H. Hickam, Jr.

TORPEDO JUNCTION
ROCKET BOYS

To Linda
and
the women and men of NASA

ACKNOWLEDGMENTS

Unlike astronauts and cosmonauts, no author ever works in a vacuum. A support team is required, albeit ad hoc, to complete any manuscript, especially one that attempts to recreate a reality that never existed. This is especially true of a writer devising a tale of space that occurs in the near future. The space business today is hideously complex. In a way, it inhabits a separate world, complete with its own unique laws, personalities, technologies, bureaucracies, and language. An outsider entering this world quickly becomes lost in the myriad unwritten rules of those who work the space trade, confused by the jargon, bewildered by temporary organizations within organizations that rapidly coalesce then just as quickly fall apart, bemused by managers both cautious and audacious nearly at the same moment, disgusted by the often enormous waste of talent and money and time just to stroke a particular ego, baffled by decisions never decided but realized anyway, and mentally pulverized by a technology nearly impossible to understand because no one has ever written it down in a way that's understandable. Even though I've been a space business insider for three decades, I have had to rely on the assistance of others who work space to make my manuscript as accurate as possible. To them (and you know who you are) I give my heartfelt gratitude, especially Jim Baker, an engineer of great vision and special talent. Clay Terry was also especially helpful in transferring vitally important documents written on one

viii Acknowledgments

computer platform to another so as to allow me access to them.

Special thanks are also due to Linda Terry Hickam, my first editor, Tom Spain of Delacorte, my final editor, Frank Weimann, my literary agent, and Mickey Freiberg, my Hollywood agent. Finally, for the inspiration they have always given me, I doff my spacesuit helmet to NASA agency and contractor grunts everywhere. God bless them. They toil endlessly for me and you along the pathways to space.

AUTHOR'S NOTE

Coalwood, West Virginia, my hometown, was not a place where children often looked at the stars. The narrow swath of sky between our mountains only allowed us a peek at the heavens, and even that was often blotted out by the dust and smoke coming from the coal mine tipples. The people of Coalwood, dedicated to the industry of coal mining, tended to look down, not up. That all changed for me when I was in the fourth grade. After reading everything on the grade school bookshelves, I started going upstairs to the junior high library and there I discovered the wonderful novels of Jules Verne. I was astonished by his tales, filled not only with great adventures but with scientists and engineers who considered the acquisition of knowledge to be the greatest pursuit of mankind. When I finished everything by Verne in the library, I started to read the modern science fiction writers who had followed in his footsteps: Heinlein, Asimov, van Vogt, Clarke, and Bradbury. These writers challenged me to look up at the sky, and to imagine myself crossing the boundless frontier of the universe. The junior high librarian knew to call me any time a new science fiction book arrived and I would almost break my neck running up the steps to get at it. This distressed my grade school teachers, who preferred that I have a more eclectic library record. To counteract my fixation they prescribed appropriate doses of Twain, Steinbeck, and other writers. I was happy to oblige them because I loved those writers too. But

I was always happy to get back to my literary adventures in science and space.

In the fall of 1957, when I was in the tenth grade, *Sputnik* was launched and a great space race began between the United States and Russia. Because of the science fiction I'd read, I thought I already knew something of spaceflight and began to build and launch my own rockets, much to the consternation of the good citizens of Coalwood. I wrote about what happened in the three years that followed *Sputnik* in the book *Rocket Boys, A Memoir* but the story didn't end there. I eventually fulfilled my boyhood dreams and secured a position as an engineer with the National Aeronautics and Space Administration. I had become, I thought, a man like Verne's men, an engineer dedicated to the pursuit of science and exploration.

The space shuttle era was just beginning when I started at NASA. It was an exciting time for engineers, scientists, and astronauts in the space agency as we learned how to fly and operate a manned heavy-lift spacecraft with wings. The space shuttle proved to be a magnificent machine, capable of accomplishing a wide variety of tasks in space. But as the years passed, I began to notice an increasing frustration among my fellow NASA engineers. The fact was most of us had signed on to explore space, to go to the moon, to the planets and beyond. The space shuttle was designed for the routine task of people and cargo hauling into low earth orbit. It was almost as if after the *Apollo* flights there had been a directive from on high: the moon and the planets were off-limits to astronauts. All they were allowed to do was carve endless loops around the earth in the space shuttle and maybe, someday, aboard an International Space Station. This caused much frustration within the agency. Many of us especially thought we should build on *Apollo*, and go back to the moon.

I began to get together with a few of my NASA colleagues who thought as I did and we worked on ways to get

out of low earth orbit, usually in a variety of new spacecraft. One day a paper written by Jim Baker, a Rockwell engineer, fell into my hands. In it was a proposal for modifying an existing space shuttle to fly to the moon, orbit around it, and return to earth. I called Jim and we discussed his idea at length. Yes, he said, it could be done. All that it required was the will to go and do it. Many years passed but Baker's idea stuck with me. I often found myself lurking in the techno-thriller or science fiction area of bookstores looking unsuccessfully for a novel about a realistic spacecraft, maybe even the shuttle, going back to the moon. I never found it. One day it occurred to me that if I wanted to read such a book, I would have to write it myself. About the same time I began to hear about a very special isotope called helium-3. Helium-3, a source of almost limitless energy, is rare on earth but abundant on the moon. I found it both ironic and hopeful that mankind's survival on our relatively lush planet may very well depend on our airless, desolate moon.

And so it was I set myself to the task of writing the book I wanted to read, remembering not only Jim Baker's designs, and the promise of helium-3, but also the strong-willed, inventive men and women who peopled the science and space adventures I read as a boy. It is said that heroes are made by the challenges they confront, by the risks they take, and by the pain they endure. Challenges, risks, and pain are all necessary for the fictional characters of *Back to the Moon* to live up to the book's title. This reflects reality. The *Apollo* missions pushed the edge of the technological envelope and to go back to the moon today would still be difficult and risky. Nevertheless, many of my colleagues at NASA share my belief that we need to go now, without delay. The moon is laden with a vast storehouse of treasure that this country, and the world, will need in the very near future. If we aren't willing to take on the challenge of securing it, we will perhaps doom our planet to a limited and painful future that

won't allow spaceflight at all. Then it will be too late. Let's not risk it. We need to go back to the moon. All that is required is the will, and the courage, to do it.

Homer H. Hickam, Jr.
Huntsville, Alabama

BACK

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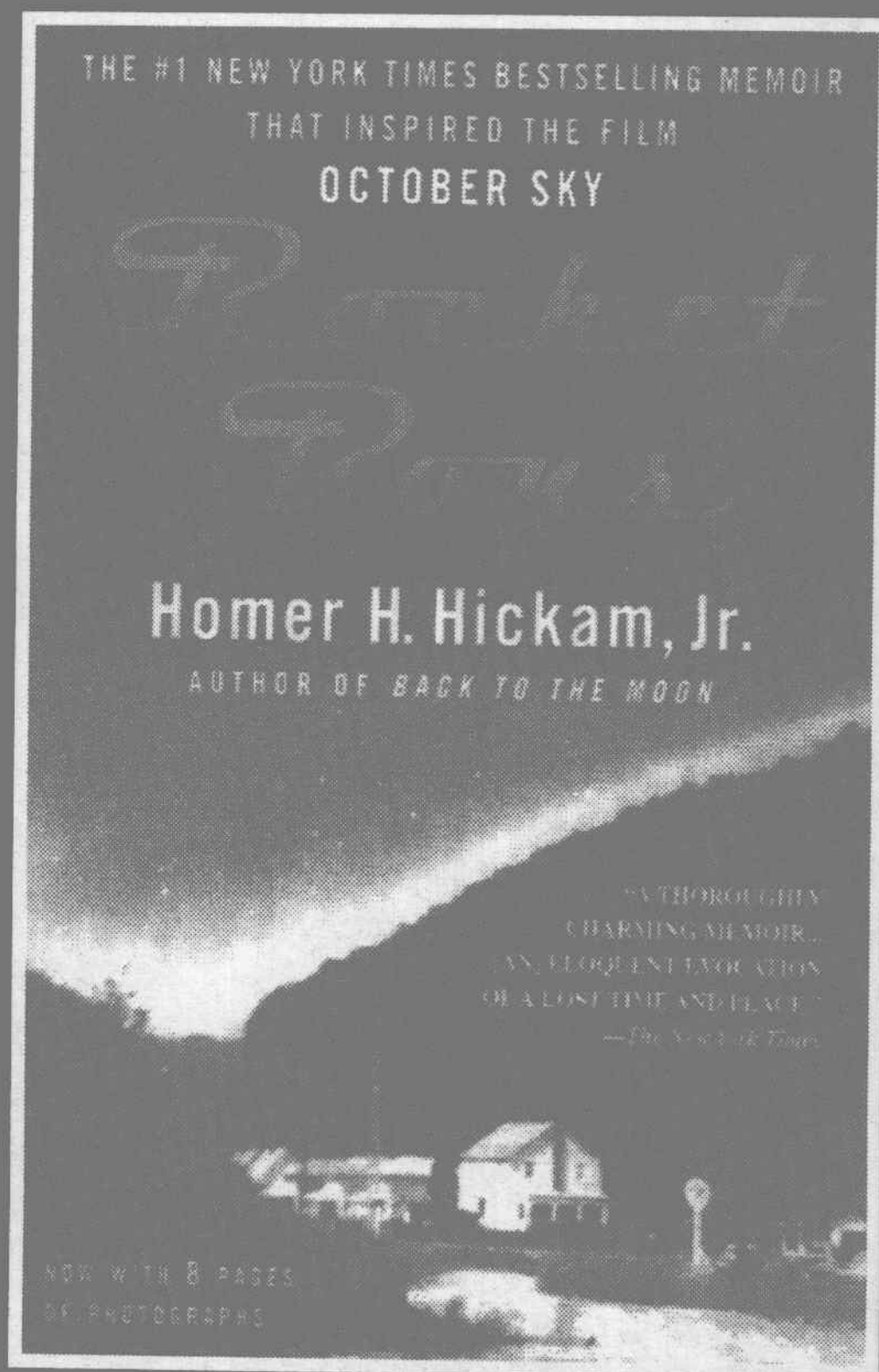
MOON

*O fortune like the Moon
you ever want
but to regain
your former circumstance.*

*Life's equally fain
to decimate
as reinstate
the mind with games of chance
prosperity
and penury
reversing with a glance.*

*—Carmine Burana,
"Fortune, Empress of the World"*

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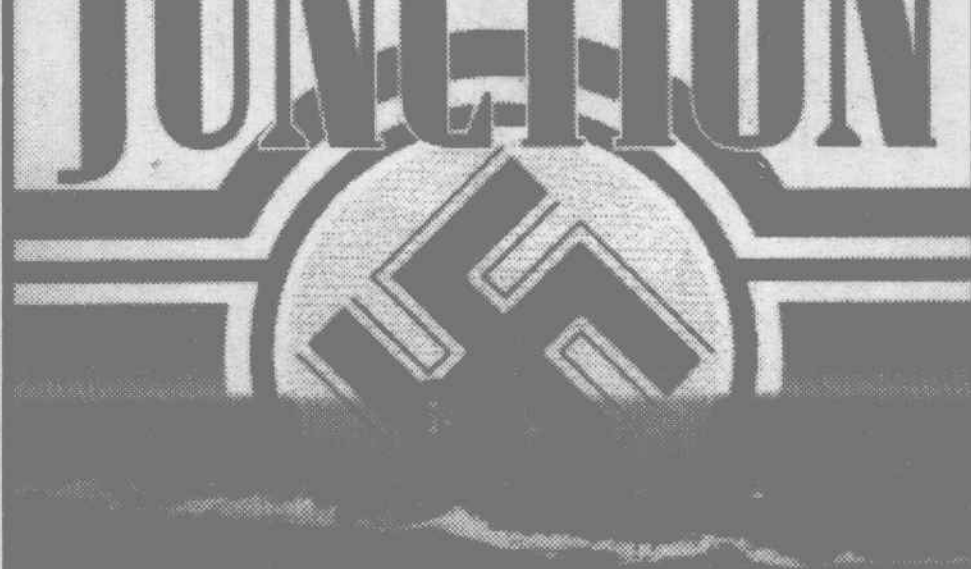
A rousing non-fiction saga of courage, ingenuity
and triumph in the early years of World War II

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New York Times bestselling author of *Rocket Boys*,
the memoir that inspired the film *October Sky*

**U-BOAT WAR OFF
AMERICA'S EAST COAST, 1942**

TORPEDO JUNCTION



"THE BEST ACCOUNT TO DATE OF
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PROLOGUE:

The End of the Beginning

*Oh, it's home again, and home again, America for me!
I want a ship that's westward bound to plough the rolling sea,
To the blessed Land of Room Enough beyond the ocean bars,
Where the air is full of sunlight and the flag is full of stars.*

—Henry Van Dyke, “America for Me”