

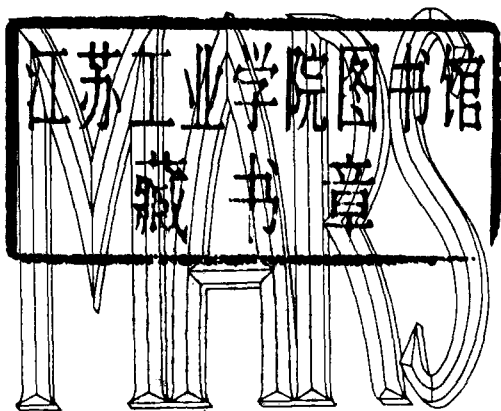
Ben Bova

MARS

A splendid book . . . of his many books,
MARS must be the most important

ARTHUR C. CLARKE

Ben Boyd



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Critical acclaim for MARS

'Gripping, realistic – don't miss it'
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LOCUS MAGAZINE

'[Bova] has produced an intelligent, entertaining story that may also serve as a rallying cry, spurring us all to pool our resources and get back into space. "Mars waits for us," says Bova. Let's go.'
OMNI

About the author

Ben Bova holds degrees from the State University of New York and Temple University, Philadelphia. He has taught science fiction at Harvard University and at the Hayden Planetarium in New York, and lectures regularly on topics dealing with the space program.

An award-winning editor and president of the Science Fiction Writers of America, Ben Bova is also the author of 75 futuristic novels and non-fiction books. He and his wife live in Connecticut and Florida.

To Florence and Jerry Nelson

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They have helped to make this novel as accurate a depiction as possible of the planet Mars, of the hardware that the first explorers of Mars will use, and of the mythology of the Navaho people. I have taken poetic liberties with the basic facts, here and there, as every author must. The authenticity of this novel is thanks to them; any inaccuracies are entirely my own doing.

Finally, my heartfelt thanks also to Edgar Rice Burroughs, Stanley G. Weinbaum, and most especially Ray Bradbury. The different versions of Mars that they wrote about exist only in the imagination – but that is more than enough.

BEN BOVA
*West Hartford
and Marco Island*

MARS

THE RED WORLD AND THE BLUE

Listen to the wisdom of the Old Ones:

The red world and the blue are brothers. They were born together in the seething maelstrom of dust and gas spinning out from the heart of the vast cloud that was to become Father Sun.

For uncountable time each world was engulfed in endless violence. Monsters roared down out of the sky, pounding the worlds mercilessly in a holocaust of terrible explosions. Under such awesome bombardment there could be no solid ground; the rocks themselves were liquid bubbling magma as the fiery rain from the sky went on and on, blotting out the radiance of the newly bright Father Sun with steaming clouds that covered each world from pole to pole.

Slowly, with the godlike patience of the stars themselves, slowly their surfaces cooled. Solid land took form, bare rock, hard and harsh and lifeless. Worse than the desert where The People live; much worse. There was no tree, no blade of grass, not even a drop of water.

Deep below their crusts both worlds were still liquid-hot with the energy of their violent creation. Water trapped beneath the ground boiled up, sweated from the depths like droplets beading a gourd in the heat of summer. The water evaporated into the thin film of atmosphere swaddling each newborn world. Cooling rain began to spatter onto the naked rocks, running into rivulets, streams, raging torrents that gouged the rocks out of their paths and tore huge gashes in the land.

On the bigger of the two worlds mighty oceans grew, filling deep rocky basins with water. The smaller world formed broad shallow lakes, but gradually they faded away into the

thin, cold atmosphere or sank out of sight below the surface of the land.

Because of its glistening wide oceans the larger of the two worlds took on a deep blue tint. The smaller world slowly turned into a dusty, windblown desert as its waters sank into its ground. It turned rust-red.

Life arose on the blue world, first in the seas and later on dry land. Gigantic beasts roamed forests and marshes, only to disappear forever. At last The People came to the blue world – First Man and First Woman emerged, standing tall and proud in the bright sunlight. Their children multiplied. Some of them wondered about the world in which they lived and about the stars that dotted the night.

They turned their intelligent eyes to the red gleam in the sky that marked their brother world and wondered what it was. They watched it carefully, and the other stars too, and tried to understand the workings of the heavens.

To The People, the stars spoke of the endless cycles of the seasons, the time to plant, the time of the rains. The red world held no special fascination for them. They called it merely “Big Star.”

But to the Anglos, steeped in conquest and killing, whenever their pale eyes turned to the red gleam in the sky that marked their brother world they trembled with thoughts of blood and death. They named the red world after their god of war.

Mars.

SOL 1: MORNING

“Touchdown.”

It was said in Russian first and then immediately repeated in English.

Jamie Waterman never felt the actual moment when they touched the surface of Mars. The descent vehicle was lowering so gently that when it finally set down on the ground Jamie and the others realized it only because the vibration of the rocket thrusters ceased. Beyond everything else, Vosnesensky was a superb pilot.

All sense of motion stopped. There was no sound. Through the thick insulation of his pressure suit helmet Jamie could hear nothing except his own excited breathing.

Then Joanna Brumado's voice came through his earphones, hushed, awed: “We're here.”

Eleven months ago they had been on Earth. Half an hour ago they had been in orbit around the planet Mars. Then came the terrifying ride down, shaking and bumping and burning their way through the thin atmosphere, an artificial meteor blazing across the empty Martian sky. A journey of more than a hundred million kilometers, a quest that had already taken four years of their lives, had at last reached its destination.

Now they sat in numb silence on the surface of a new world, four scientists encased in bulky, brightly colored pressure suits that made them look as if they had been swallowed alive by oversized robots.

Abruptly, without a word of command from the cockpit above them, the four scientists began to unstrap their safety harnesses and get up stiffly, awkwardly from their chairs. Jamie slid his helmet visor up as he squeezed between Ilona Malater and Tony Reed to get to the small round

observation port, the only window in their cramped compartment.

He reached the window and looked out. The other three pressed around him, their hard-shell pressure suits butting and sliding against one another like a quartet of awkward tortoises trying to dip their beaks into the same tiny life-giving puddle.

A red dusty desert stretched out as far as the eye could see, rust-colored boulders scattered across the barren gently rolling land like toys left behind by a careless child. The uneven horizon seemed closer than it should be. The sky was a delicate salmon pink. Small wind-shaped dunes heaped in precise rows, and the reddish sand piled against some of the bigger rocks.

Jamie catalogued the scene professionally: ejecta from impacts, maybe volcanic eruptions but more likely meteor hits. No bedrock visible. The dunes look stable, probably been there since the last dust storm, maybe longer.

"Mars," breathed Joanna Brumado, her helmet practically touching his as they peered through the window.

"Mars," Jamie agreed.

"It looks so desolate," said Ilona Malater, sounding disappointed, as if she had expected a welcoming committee or at least a blade of grass.

"Exactly like the photos," said Antony Reed.

To Jamie, the red desert world beyond the window looked just as he had expected it to look. Like home.

The first member of the team to leave the landing ship was the sturdy construction robot. Crowding against the small observation window with the three other scientists, Jamie Waterman watched the bulbous, blue-gray metal vehicle roll across the rusty red sand on its six springy wheels, stopping abruptly about fifty meters from where their lander stood.

Watching the square-sided machine with the bulky liquefied air tanks atop it, Jamie thought to himself, Russian design, Japanese electronics, and American software. Just like everything else on this expedition.

A pair of gleaming metal arms unfolded from the truck's front like a giraffe climbing to its feet and began to pull a shapeless heap of plastic from the big storage bin on its side.

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The robot spread the plastic out on the sand as precisely as a grandmother spreading a picnic tablecloth. Then it seemed to stop, as if to inspect the shiny, rubbery-looking material. Slowly, the lifeless plastic began to stir, filling with air from the big tanks on the robot's top. The plastic heap grew and took form: a bubble, a balloon, finally a rigid hemispherical dome that completely hid the robot from view.

Ilona Malater, pressing close, murmured, "Our home on Mars."

Tony Reed replied, "If it doesn't leak."

For more than an hour they watched the industrious little robot building their inflated dome, fixing its rim firmly to the dusty Martian soil, trundling back and forth through a man-tall flap to get reinforcing metal ribs and a complete airlock assembly from the landing vehicle's cargo bay and then weld them into place.

They were all anxious to go outside and plant their booted feet on the rust-red soil of Mars, but Vosnesensky insisted that they follow the mission plan to the letter. "The braking structure must cool," he called down to them from the cockpit, by way of legitimizing his decision. "The dome structure must be finished and fully pressurized."

Vosnesensky, of course, was too busy to stand by the observation port and watch with the rest of them. As commander of the ground team he was up in the cockpit, checking out all the lander's systems while he reported to the mission leader in the spacecraft orbiting overhead and, through him, to the mission controllers back on Earth, more than a hundred million kilometers away.

Pete Connors, the American astronaut who copiloted the lander, sat at Vosnesensky's side and monitored the construction robot and the sensors that were sampling the thin air outside. Only the four scientists were free to watch the machine erect the first human habitation on the surface of Mars.

"We should be getting into our backpacks," said Joanna Brumado.

"Plenty of time for that," Tony Reed said.

Ilona Malater gave a wicked little laugh. "You wouldn't

want him to become angry with us, would you, Tony?" She pointed upward, toward the cockpit level.

Reed cocked an eyebrow and smiled back at her. "I don't suppose it would do to upset him on the very first day, would it?"

Jamie took his eyes from the hard-working robot, now fitting a second heavy metal airlock into the dome's curving structure. Without a word he squeezed past the three others and reached for the backpack to his pressure suit, hanging on its rack against the far bulkhead. Like their suits, the backpacks were color coded: Jamie's was sky-blue. He backed against it and felt the latches click into place against the back of his hard suit. The suit itself still felt stiff, like a new pair of Levis, only worse. It took real effort to move its shoulder joints.

In the jargon of the Mars Project their vehicle was called an L/AV: landing/ascent vehicle. It had been designed for efficiency, not comfort. It was large, but most of its space was given to capacious cargo bays housing equipment and supplies for the six explorers. Atop the cargo bays, on the airlock level, the hard suits and backpacks for outside work were stored. There were four fold-down seats in the airlock level, but the compartment felt terribly crowded to Jamie when he and the three other scientists were jammed into it, especially when they were bundled inside their cumbersome hard-shell suits. Above the airlock level sat the cockpit with the cosmonaut commander and astronaut second-in-command.

If they had to, the six men and women could live for days inside this landing vehicle. The mission plan called for them to set up their base in the inflated dome that the robot was building. But they could survive in the lander, if it came to that.

Maybe. Jamie thought that if they had to spend just a few more hours cooped up in this cramped claustrophobic compartment, somebody would commit murder. It had been bad enough during the nine-month flight from Earth in the much roomier modules of the parent spacecraft. This little descent vehicle would quickly turn into a lunatic asylum if they had to live in it for days on end.

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They donned the backpacks using the buddy system, as they had been trained to do, one scientist helping the other to check out all the connections to the suit batteries, heater, and air regenerator. Then check it all again. The backpacks were designed to connect automatically to ports in the pressure suit, but one tiny misalignment could kill you out on the surface of Mars.

Then they began to check the suits themselves, from the heavy boots to the marvelously thin and flexible gloves. What passed for air outside was rarer than the highest stratosphere of Earth, an unbreathable mix of mainly carbon dioxide. An unprotected human would die in an explosive agony of ruptured lungs and blood that would literally boil at such low pressure.

“What! Not ready yet!”

Vosnesensky’s deep voice grated. The Russian tried to make it sound mildly humorous, but it was clear that he had no patience with his scientific underlings. He was fully encased in his blazing red suit, backpack riding like a hump behind his shoulders, ready to go, as he clumped down the ladder from the cockpit. Connors, right behind him, was also in his clean white hard suit and backpack. Jamie wondered which genius among the administrators and psychologists back home had assigned the black astronaut to a gleaming white suit.

Jamie had helped Tony Reed and now the Englishman turned away from him to face their flight commander.

“We’ll be ready in a few moments, Mikhail Andreivitch. Please be patient with us. We’re all a bit nervous, you know.”

It was not until that exact moment that the enormity of it hit Jamie. They were about to step outside this metal canister and plant their booted feet on the red soil of Mars. They were about to fulfill a dream that had haunted humankind for all the ages of existence.

And I’m a part of it, Jamie said to himself. Maybe by accident, but still I’m here. On Mars!

“You want my honest opinion? It’s crazy.”

Jamie and his grandfather Al were hiking along the crest

of the wooded ridge that overlooked the freshly whitewashed mission church and the clustered adobe houses of the pueblo. The first snow had dusted the mountains and the Anglo tourists would soon be arriving for the ski season. Al wore his bulky old sheepskin coat and droop-brimmed hat with the silver coin band. Jamie felt so warm in the morning sun that he had already unzipped his dark-blue NASA-issue windbreaker.

Al Waterman looked like an ancient totem pole, tall and bone-lean, his craggy face the faded tan color of weathered wood. Jamie was shorter, more solidly built, his face broader, his skin tanned an almost coppery brown. The two men shared only one feature in common: eyes as black and deep as liquid jet.

“Why is it crazy?” Jamie asked.

Al puffed out a breath of steam and turned to squint at his grandson, standing with his back to the sun.

“The Russians are runnin’ the show, right?”

“It’s an international mission, Al. The U.S., the Russians, Japanese, lots of other countries.”

“Yeah, but the Russians are callin’ most of the shots. They been shootin’ at Mars for twenty years now. More.”

“But they need our help.”

“And the Japs.”

Jamie nodded. “But I don’t see what that’s got to do with it.”

“Well, it’s like this, son. Here in the good old U.S. of A. you can get on the first team because you’re an Indian – now don’t get mad at me, sonny. I know you’re a smart geologist and all that. But being a red man hasn’t hurt you with NASA and those other government whites, has it? Equal opportunity and all that.”

Jamie found himself grinning at his grandfather. Al ran a trinket shop on the plaza in Santa Fe and milked the tourists shamelessly. He harbored no ill will for the Anglos, no hostility or even bitterness. He simply used his wits and his charm to get along in the world, the same as any Yankee trader or Florida real estate agent.

“Okay,” Jamie admitted, “being a Native American hasn’t hurt. But I *am* the best damned geologist they’ve got.” That

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wasn't entirely true, he knew. But close enough. Especially for family.

"Sure you are," his grandfather agreed, straight-faced. "But those Russians aren't going to take you all the way to Mars on their ship just because you're a red man. They'll pick one of their own people and you'll have spent two-three years training for nothing."

Jamie unconsciously rubbed at his nose. "Well, maybe. That's a possibility. There are plenty of good geologists from other countries applying for the mission."

"So why break your heart? Why give them years of your life when the chances are a hundred to one against you?"

Jamie looked out past the darkly green ponderosa pines toward the rugged, weather-seamed cliffs where his ancestors had built their dwellings a thousand years ago. Turning back to his grandfather he realized that Al's face was weathered and lined just as those cliffs were. His skin was almost the same bleached tan color.

"Because it draws me," he said. His voice was low but as firm as the mountains themselves. "Mars is drawing me to it."

Al gave him a puzzled, almost troubled look.

"I mean," Jamie tried to explain, "who am I, Al? What am I? A scientist, a white man, a Navaho - I don't really know who I am yet. I'm nearly thirty years old and I'm a nobody. Just another assistant professor digging up rocks. There's a million guys just like me."

"Helluva long way to go, all the way to Mars."

Jamie nodded. "I have to go there, though. I have to find out if I can make something of my life. Something real. Something important."

A slow smile crept across his grandfather's leathery face, a smile that wrinkled the corners of his eyes and creased his cheeks.

"Well, every man's got to find his own path in life. You've got to live in balance with the world around you. Maybe your path goes all the way out to Mars."

"I think it does, Grandfather."

Al clasped his grandson's shoulder. "Then go in beauty, son."