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O₂

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A Novel Proposal

by

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and

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Introduction

- Working Title: *O₂*
- Target Readers: Young to middle-aged career women and men
- Genre: Near-future science fiction thriller
- Length: About 100,000 words
- Completion Time: We can deliver a final polished manuscript within six months of signing a contract.
- Summary: Valkerie Jansen is a Christian microbial ecologist, one of four crew members on the first manned mission to Mars. She finds herself in conflict with the rest of the crew, especially Bob Kaganovski, a physicist with a very different worldview. When the ship loses most of its oxygen, she and the other crew members struggle to survive. But who will live and who will die, when the remaining oxygen can support only one of the four on the long journey to Mars?
- Spiritual Payload: “Trust in the Lord with all your heart and lean not on your own understanding; in all your ways acknowledge him, and he will make your paths straight.” (Proverbs 3:5,6, NIV)
- Even astronauts get the blues. When you’re a hundred million miles from home, staring death in the tonsils, certain questions come shivering into focus. Who’s flying this universe, anyway? If God cares so much about you, why doesn’t He send an email? When all the chips are on the table, and the Reaper’s dealing the final hand, should you bet on God—or on good engineering?
- We invite our readers to share a journey with us through an emotional and intellectual landscape that few take the time to explore. We don’t pretend to have all the answers. We’re not even sure we understand all the questions. But we’re eager to give them voice—hoping that our readers will finish the book feeling like they’ve had a lively discussion of some weighty issues with two trusted friends.

Audience: Valkerie Jansen, our focal character, is struggling to be a woman of God in an increasingly demanding workplace. When her success propels her into a high-profile, high-commitment position, she finds herself filled with doubt and regret. Has she given up her chance at having a family? What does she really want to accomplish with her life? How does she integrate her faith with her career?

O₂ aims straight for the heart of women. Yes, we'll be careful to get the technical details right, but we're much more concerned with the web of relationships that surrounds our realistic heroine than we are with the technical backdrop. *O₂* focuses on relationships, yet it is still a fast-paced thriller with enough action and suspense to make its male readers work up a good sweat. It's strong enough for a man, but made for a woman.

Market Analysis: The spring of 2001 should see the United States abuzz with talk of a manned mission to Mars. While trying to convince the newly elected President to sign off on the program, NASA and other organizations will be taking the case for Mars straight to the American people. Many see a manned Mars mission as NASA's last chance for survival after decades of budget cuts and less than stellar performance. NASA is a master of PR. It won't go down without a fight. If the new President espouses the same vision that JFK did 40 years ago, then the buzz will last throughout the decade, culminating in a manned mission in 2014.

We aren't the only writers who've seen this opportunity.

James Cameron will release his first novel, a fact-based mission to Mars, in the spring of 2001. He will co-author it with Bob Zubrin, president of the Mars Society and creator of the first practical mission design for a manned flight to Mars—the Mars Direct Plan. Cameron will also release a five day, highly-publicised TV miniseries and an IMAX film.

Brian De Palma is directing a movie, *Mission to Mars*, with Gary Sinise, which will debut in March, 2000.

Mark Canton is producing a movie, *Red Planet*, starring Val Kilmer, which will release in the summer of 2000.

In the next section, we discuss a number of books similar in spirit or in subject matter to our book.

Similar Books:

Apollo 13, (1994, Simon and Schuster) by astronaut Jim Lovell, with Jeffrey Kluger. This best-selling book about the Apollo 13 disaster, (originally titled *Lost Moon*), formed the basis for the hit movie. Like our book, *Apollo 13* deals with a disaster in space. Unlike our book, this one is ancient history and is targeted to the secular reader. Ours looks to the future and targets Christians.

Mars, (1992, Bantam Books) by Ben Bova. A well-researched novel by a bestselling science fiction writer. The plot is a bit thin and the characters are mostly two-dimensional, but Bova's research carries this book. The story begins when the crew reaches Mars. Bova's tale is laced with sexual content that will discomfit many Christian readers. His mission architecture is well out of date.

Red Mars, (1993, Bantam Books) by Kim Stanley Robinson. Winner of the 1993 Nebula Award, *Red Mars* paints a dark, feverish picture of the future colonization of Mars by the first hundred colonists, an ambitious, promiscuous, near-psychotic band of frontiersmen (and women). Robinson's staged debates between Christians and atheists will likely offend many Christians. This bleak but highly literary book leaves the reader depressed and exhausted.

Mars Underground, (1997, Tor) by William K. Hartmann. Dr. Hartmann has participated in a number of Mars missions sponsored by NASA and the Russian Space Agency. This novel tells the story of the future discovery of an underground artifact hidden on Mars by some ancient alien species. Hartmann is a better scientist than novelist, and his scenes of casual sex seem designed to compensate for a lack of emotional intensity.

Back to the Moon, (1999, Delacorte Press) by Homer H. Hickam, Jr. Author of the memoir *October Sky*, Hickam switches to fiction in this uneven technothriller. His expertise as a former NASA engineer is apparent on every page. Unfortunately, his skill in writing his boyhood memoir has not translated into craft in writing fiction. The plot is never quite believable; the characters are just a bit overblown.

Firebird, (1999, Bethany House) by Kathy Tyers. *Firebird* is the most recent science fiction title to come out in the CBA, and its sequel, *Fusion Fire*, is scheduled for release in January 2000. Unlike our book, the setting for Kathy's books is "fantastic" and the technology is "futuristic." Like our novel, *Firebird's* protagonist is a strong female on a spiritual journey.

Additional Research: Of course, we've studied the standard books on the history of space flight, giving special attention to the disasters of Apollo 1, Apollo 13, Challenger, and the Mir Space Station. We've pored over Robert Zubrin's book, *The Case for Mars*, the first workable mission architecture. We've based our novel's mission on The Mars Reference Mission document from NASA's web site. And we attended the Second International Convention of the Mars Society, in Boulder, Colorado, last August.

Critically important to our thinking has been Bryan Burrough's 1998 tome, *Dragonfly: NASA and the Crisis Aboard Mir*. This well-written nonfiction book explains how and why the American missions failed so badly on the Mir Space Station. Burrough has written a must-read book on the inner workings of NASA and the Russian Space Agency. While the primary culprit was poor engineering of Mir and slipshod ground support by the Russians, NASA must also take plenty of blame. NASA failed to psychologically evaluate its astronauts. The result was that most of the American astronauts wasted their time (and hundreds of millions of dollars) aboard Mir. We believe that future mission planners will study *Dragonfly* carefully, and will take to heart the lessons so painfully learned. Therefore, psychological factors play a key role in our book.

Endorsements: The following people have agreed to review our book for potential endorsement:

Robert Zubrin: President of the Mars Society, author of *The Case for Mars*.

Sally Silverstone: Director of Agriculture Systems, Biosphere II Project.

Kathy Tyers: Christian science fiction writer, author of *Firebird*, *Fusion Fire*, and two Star Wars novels.

Imre Friedman: NASA advisor and bio-probe designer. Director of the Polar Desert Research Center. Lawton Distinguished Professor, Florida State University.

Mike Carroll: Christian space artist. Founding member of the International Association for the Astronomical Arts and author of six science books for children. Member of the NASA Arts Program.

About the Authors

Randall Ingermanson earned a Ph.D. in theoretical physics from the University of California at Berkeley in 1986. He spent two years doing postdoctoral research in superstring theory at The Ohio State University and has worked for the past eleven years as a computational physicist in private industry. He has written a number of scientific articles and reports in quantum field theory, superstring theory, and plasma physics, and is a member of the Mars Society. He is the author of *Transgression*, a time-travel novel, and *Who Wrote the Bible Code?*, a controversial book debunking the Bible code. He maintains an extensive web site promoting his books at www.rsingermanson.com. Dr. Ingermanson lives with his wife and three children in San Diego.

John Olson received a Ph.D. in biochemistry from the University of Wisconsin at Madison in 1995. He did two years of postdoctoral work at the University of California at San Francisco and now works for a computational biochemistry company in the San Francisco Bay Area. John is a member of the Mars Society and is thrilled to return to Mars after so many years away. He spent a large part of his childhood there—flying with the Swifts, fencing with the Barsoomians, and fishing with the Hrassa. Now, when he's not goofing off with his wife and two children, he's creating wild adventure parties or working to establish a postmodern ministry in Dublin, California.

Synopsis

The year is 2014. Valkerie Jansen, a young Christian microbial ecologist, is presented with an amazing opportunity—to continue her research as a well-paid member of the NASA corps of astronauts. Broke, and burdened with enormous medical school loans, she accepts a position on the backup astronaut crew for Ares 10, the first manned mission to Mars.

Valkerie discovers, beneath NASA's cool and competent exterior, the paranoia and political infighting of a bureaucratic giant fighting for survival. Steven Perez, the new NASA Administrator, seems more concerned with PR than engineering. Nate Harrington, the flight director, is preoccupied with a security investigation. Bob Kaganovski, first engineer of the Ares 10 crew, is paranoid that he'll be replaced.

Bob asks Valkerie out to dinner, then realizes that she might be his replacement. At dinner, he tries to be polite, but when he learns that she's a Christian, his patience wears thin, and he starts an argument, hoping he'll never see her again. Then Tom Rogers, mission commander of the Ares 10, resigns. Kennedy Hampton, the second in command, will lead the team in his stead. Valkerie is promoted to the Ares 10 prime crew.

Bob is openly hostile toward Valkerie during her training. It's clear that Tom was forced to step down from the team, and Bob blames her. When security is mysteriously tightened yet again, Bob investigates. He learns that explosives have been stolen from a NASA supply room. Nevertheless, the launch goes ahead as scheduled.

After a flawless lift-off, the four astronauts settle into a routine for their six-month voyage, but tension runs high. Kennedy and Alexis start spending more and more time together. Valkerie is left to work with Bob, but she can't seem to get past his hostility. Bob feels a growing attraction for Valkerie, but has a problem with her 24/7 faith.

Then disaster strikes. A low-probability micrometeorite hits the ship, piercing the outer hull. When Bob tries to repair the breach, he discovers a cable that isn't supposed to be there. He tests the cable with an ohmmeter and triggers an explosion.

The crew struggles to repair the damage, but they have lost vital supplies. They lack enough oxygen to make it to Mars, and they have no fuel to return to Earth. Worse, they conclude that the ship was sabotaged. Only six people could have done it—the four crew members or their two commanders back on earth.

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Character Sketches

Valkerie Jansen

Valkerie is a 32-year-old Christian with an M.D. and a Ph.D. in microbial ecology. Her career seems like one unbroken string of short-term research appointments, sterile apartments, and temporary relationships. With her mother recently deceased and her father increasingly remote, Valkerie feels alone and empty. What's wrong with her life?

When she accepts an offer to join the Ares 10 crew, she desperately wants to fit in. On paper, her scientific training and medical skills make her a huge asset to the four-person crew. But her teammates see her as an interloper, a late addition, someone who bumped the popular crew commander, Tom Rogers. Valkerie's immediate problem is to weld herself into the team before they take off on a three-year mission to Mars. But the crew doesn't make it easy. Bob Kaganovski, the flight engineer, is particularly hostile—especially when he finds out that she's a Christian. Bob seems like such a nice guy around everyone else. Why is it that he can't talk to her for thirty seconds without starting an argument? Valkerie hates the fact that her religion is so alienating and begins asking herself some serious questions about her faith.

Halfway to Mars, disaster strikes—the ship is hit by an ultra high-speed micrometeorite. During repairs, Bob finds a mysterious wire, one not appearing on any diagram. Testing it, he accidentally triggers an explosion that releases most of the ship's oxygen supply.

Convinced that one of them must be a suicidal saboteur, the four crew members find themselves entangled in a web of mutual suspicion. A terrible dilemma confronts them. They can't turn back to earth. Yet their oxygen supply is not quite enough for even *one* person to survive the remaining months of the voyage.

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Bob Kaganovski

Bob is a 34-year-old engineering physicist, a self-denigrating team player who considers himself a lucky slob just to be on the crew. His low-key attitude masks deep feelings of insecurity and self-doubt. His nit-picky attention to detail, which earned him a spot on the team, arises from his unwillingness to trust others. He has so far succeeded in hiding his fears from the ever-present psychologists infesting NASA. But how long can he stay ahead of the shrinks?

Six months before liftoff, the psychologists strike—in an unexpected direction. They bump the mission leader, Tom Rogers, from the team to make room for Valkerie. Tom has been Bob's best friend and mentor. This plays against all of Bob's insecurities. He resents Valkerie for bumping the man he had trusted most; he feels guilty because he thinks himself less deserving than Tom; and he fears another last-minute change will knock him off the team too.

After a hellish final few months of training, liftoff comes as a huge relief. No matter what happens now, they can't bump anyone off the team! With that fear suddenly gone, Bob wakes up to the fact that Valkerie is quite an attractive woman. There has to be a reason why NASA has put two men and two women together in such close quarters. Does management implicitly expect some hanky-panky? Bob wouldn't mind that at all. Unfortunately, Valkerie seems to be a prude. Frustrated, Bob treats her with increasing hostility. It doesn't help that the other two crew members are spending some suspiciously private time together.

After accidentally triggering the explosion that depletes the ship's oxygen supply, Bob is badly shaken. He's convinced that the device must have been deliberate sabotage. Because of the high security before launch, he concludes that the saboteur is either one of the four crew members on board or one of two key personnel on the ground. And who is the most likely candidate? Obviously Valkerie. As a Christian, she clearly wants to prevent the mission from discovering life on Mars.

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Alexis Ohta

Alexis is a 34-year-old half-Japanese, half-Caucasian geochemist who desperately wants the first man on Mars to be a woman—herself. Tall, slim, athletic, and sexy, she's got several boyfriends, none of whom knows that she's married.

Alexis has dreamed of going to Mars for more than half her life, and she's chosen every step in her career so as to get there—first. With the disaster on board Ares 10, she has a hard time facing the fact that she may not get there at all. For the first time in her life, she has to deal with her own mortality, and it both frightens and angers her. She suspects the two men on board of trying to sabotage her chances. This is especially traumatic, because she's been sleeping with the commander, Kennedy . . .

Kennedy Hampton

Kennedy is the 36-year-old commander and pilot of the Ares 10. Born to “good family” in Virginia, Kennedy is a hot-dog naval pilot who has flown a number of Space Shuttle missions and is a good mechanic, though nowhere near as skilled as Bob. But he’s a natural leader and adept at psychological manipulation. He hopes to go into politics after the mission, and unlike John Glenn, he doesn’t intend to stop at the senatorial level.

After the accident, Kennedy is the first to crack under the enormous stress. Sudden death, he could face, but slow asphyxiation? As the crew’s situation becomes increasingly desperate, he grows more and more paranoid. It isn’t his fault! Why should he get the blame? Kennedy doesn’t trust Bob, who has been unreasonably hostile on this mission and now seems to be completely unbalanced. Nor does he trust Alexis. What if her Mars Society ideology is all a front? Kennedy feels better about Valkerie than he does about the others, but the only person he *really* trusts is Tom Rogers, the man back on the ground working around the clock to save the mission . . .

Tom Rogers

Tom, 38 years old, was the original hands-down choice to lead the mission. He’s a great pilot, an experienced astronaut, and an excellent leader, adept at inspiring people to obey him. Unfortunately, the NASA psychologists see him as an overpowering presence, someone the others won’t question. That’s unhealthy. Recalling the unbalanced group dynamics aboard the Mir Space Station in 1997, the psychologists lobby against Tom. Six months before the mission, they replace him with Valkerie Jansen.

Disappointed, Tom vows to prove them wrong. He *is* a team player, and he’ll prove it by graciously accepting his demotion. He asks to serve as “Capcom” during the mission, a role traditionally filled by an astronaut like himself.

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Nate Harrington

Nate is the 55-year-old flight director for Ares 10. More than anything, he wants to return NASA to the glory days of the Apollo program, to lead one great mission and then retire to Colorado and design ultralights. This mission must succeed!

And yet it seems cursed from the start, thanks to the bumbling new NASA Administrator, Steven Perez. Half a year before liftoff, Perez is bringing in way too many shrinks and PR flacks. Worse, he's mucking around with the crew, using his goofball teamwork metrics to argue for replacing the team leader, Tom Rogers. Nate fights Perez tusk and claw—and fails. He's forced to replace Rogers with Valkerie Jansen, a decent kid, but not Nate's idea of an astronaut. However, having lost the fight, Nate works doggedly to get the crew ready for launch. Good engineering, he believes, not PR mumbo-jumbo, will land his crew safely on Mars.

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Steven Perez

A newcomer to NASA, 45-year-old Steven Perez's experience centers on "human factors," a branch of cognitive science. Perez has spent his whole previous career as a civilian improving military operations. A year before launch, he is appointed Administrator of NASA to fix the troubled agency. His first step is to study the psychological forces within the Ares 10 prime team. He makes the difficult decision to replace Tom Rogers before the mission begins.

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