

## **Blue Oceans in Outer Space**

by Curt Nickisch

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Ariel Davis

**Summary.** The void beyond Earth has become an exciting frontier for entrepreneurial ventures. SpaceX, Blue Origin, and scads of other companies are pursuing commercial activities in outer space—launching rockets to send tourists to new heights, deploying satellites to collect... [more](#)

Twenty years ago, as a young reporter, I trekked out to the Badlands Observatory in South Dakota. Ron Dyvig, an amateur astronomer, had built the facility to help NASA spot and track killer asteroids like the one that blotted out the dinosaurs. Dyvig welcomed me into the building and then cranked its dome open

to the cold night sky to chill his telescope. Warm equipment, he explained, leads to blurry views by creating a thermal disturbance in the air. “That’s what causes the stars to twinkle at night,” he told me. “It’s great for romance, but it’s not very good for astronomy.”



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Turning that crank helped Dyvig make clear-eyed observations about the sky. But as new books show, expunging starry-eyed romanticism isn’t always easy for those captivated by space exploration and the economy being built around it.

In *When the Heavens Went on Sale: The Misfits and Geniuses Racing to Put Space Within Reach*, journalist and Elon Musk biographer Ashlee Vance describes parts of the burgeoning space industry as a “shared hallucination.” Among those entranced are the billionaires who fear a new extinction event on Earth—another asteroid, nuclear war, maybe a health or environmental catastrophe. They dream of populating other planets but are starting with space tourism. Jeff Bezos’s company Blue Origin rockets customers 100 kilometers high. Musk’s SpaceX is marketing boomerang trips around the moon. These commercial adventures have been made possible by a veritable revolution in space launch that has slashed the cost of escaping Earth’s gravity. And that’s where Vance focuses his story: on the venture-funded start-ups building the satellite-slinging rockets that are propelling the commercial space rush.

The book chronicles an enthralling Wild West of ego, idealism, and regulation-skirting greed, where soaring dreams are weighed down by economics and physics. CEOs, investors, engineers, and welders alike are smitten, but their efforts yield mostly pedestrian

tools that track cargo ships, measure crop growth, or make phone calls. Still, the projects keep multiplying. “Something about space,” Vance writes, “allows humans to perceive themselves as being part of a timeless story and casting their lot in with the infinite.”

In *The Space Economy: Capitalize on the Greatest Business Opportunity of Our Lifetime*, venture capitalist Chad Anderson serves up a practical guide for investors, entrepreneurs, and other professionals fantasizing about making a dent in the universe. “Look up” to find your career, he urges, citing 30,000 job openings across 700 companies. “The Space Economy is here.”

Having spent more than a decade funding space start-ups, Anderson has lived through the revolution in commercial launch services and seen the emergence of disposable satellites that can be as big as a refrigerator or as small as a pack of cards. He argues that the resulting constellations of low-Earth-orbit satellites (what Vance calls a “computing shell around the planet”) have created a nascent market poised for unlimited growth. In chapters with titles such as “Chief Orbital Officer,” Anderson maps the ecosystem and recommends paths for professionals craving fortune, impact, or fame. Sometimes his advice is down-to-earth: “Forget the idea of mission control rooms with giant screens and rows of flashing buttons. Most of the real work of the Space Economy takes place at a laptop or around a conference table.” At other times Anderson launches into inspiring rhapsody: He describes the industry as one “from which anyone can achieve extraordinary things for all of humanity.” And he challenges founders: “Why risk entrepreneurship if you’re not going to shoot, literally, for the Moon? Or, at least, in that general direction?”

Curious professionals eager to explore how their careers and fortunes might take off in the space industry can look to digital resources too. Newsletters and blogs such as Payload and Case Closed take stock of commerce in the space “space,” while the podcast *TerraWatch Space* covers the business of Earth

observation with episodes on remote sensing, commercial satellite software, and geospatial tech stacks. These offerings will be illuminating for any student of innovation in a fast-growing technology market where unit economics are nosediving.

Meanwhile, the availability of better, faster, cheaper rockets is stoking dreams of future space settlements. Elon Musk, for example, believes that with about one million volunteers, humans could create a self-sustaining civilization on Mars within 30 years of landing there. The wife-and-husband team of Kelly and Zach Weinersmith, a biologist and a cartoonist, respectively, scrutinize the idea of a “planet B” in *A City on Mars: Can We Settle Space, Should We Settle Space, and Have We Really Thought This Through?* The well-researched, plainspoken, and delightfully illustrated book wades through the thorny biological, economic, governmental, regulatory, and technical issues and urges that the mission be scrubbed for now.

“An Earth with climate change and nuclear war and, like, zombies and werewolves, is still a way better place than Mars,” the Weinersmiths write. They systematically run through the challenges to space colonization (along with the leading ideas for solving them). For instance, there’s reproduction: “Moms on Earth worry about things like eating sushi or having a beer. Try 1% bone loss per month while doing several hours of resistance training every day in a high radiation, high carbon dioxide atmosphere.” And employment: The Weinersmiths envision dismal labor mobility and terrible bargaining leverage for workers under the thumbs of corporate overlords in a company town on Mars. Ultimately, the duo warns that premature colonization could endanger our own planet—think of rival nuclear powers battling over prime Martian real estate, or renegade villains hurtling large objects back down to Earth. It’s enough to sober up a space romantic.

What these celestially focused books and other media highlight is that space plays a much bigger role in global commerce than many people might realize: It's a \$424 billion market and growing. We regularly interact with satellites without knowing it—perhaps as often as 300 times a day, according to one industry source. Still, will we be mining asteroids for precious metals or headquartering corporations on Mars anytime soon? Given today's technology and economic realities, that future still feels light-years away.

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