

REVIEW OF *A CITY ON MARS*

This was pretty entertaining, as I'd expect from these authors. It's got lots of fun and/or horrifying facts, and covers more than just the science/engineering topics you might expect—for example, there are discussions of how precedents for Antarctica and the deep sea might relate to exploitation of resources in space; of what historical nation-formation on Earth suggests about the prospects for space colonies achieving independence; and of what we can predict about privately-owned space settlements based on what company towns have been like.

1. Conflict?

As a friend [noted in his review](#), the book claims two things which seem odd in combination:

1. that there aren't really any valuable resources to be extracted from space,
2. *and* that there's a high risk of war over scarce space resources.

There's no direct contradiction here; if influential people *believe* space has a lot to offer us, we could end up fighting over it even if that belief is false. The authors seem to think such a false belief is already pretty common (hence the need for this book to argue against it). Also, a race to (further) militarize space could be driven by fear that such militarization would alter the balance of power among nations, even if the validity of that fear is uncertain (see p. 366-367).

The authors point out that there is a very limited amount of prime real estate in space—places that are notably less terrible (though still terrible) for settlement than everywhere else. For example, “the Craters of Eternal Darkness”—where you'd go to get water on the moon—“only make up 0.1 percent of the lunar surface”¹ and the total amount of water across all of them is only comparable to a modest-sized lake. If countries do come to believe (correctly or not) that establishing settlements in space is worthwhile, they're going to want to claim these regions, whose scarcity could cause conflict.

2. Ecology

One of the ways the book tries to throw cold water on any dreams of near-term space settlements is by arguing that we're *way behind* on doing a lot of important research about whether, and how, humans can be kept alive and healthy in space indefinitely. That includes research on making more-or-less-self-sustaining ecosystems. We haven't accomplished that in experimental environments on Earth yet, let alone in space. The authors praise [Biosphere 2](#) (in a section subtitled “Contrary to Legend, Not an Unmitigated Calamity”²) for providing “a sort of tantalizing proof of concept”³, and mention a few “other, smaller-scale experiments since”⁴, but suggest we need way more investment in such experiments:

For the same cost as the ISS, five hundred biospheres could've been built. Better yet, a decades-long sequence of experiments could've been run in order to create what we really need—an extremely detailed computer model for how to design sealed worlds. ...

A major reason governments pay to stick tiny habitats full of humans in orbit is national prestige—looking smart and strong in front of the world community. Blasting humans in a rocket to the Moon is substantially more impressive than creating detailed reports about how to turn poop and food scraps into wheat. But if the goal of space agencies is eventual space settlement, this sort of thing should get a lot more funding...⁵

3. Tampons

As an aside, the book does a little myth-busting regarding the somewhat famous “story about women astronauts of the 1978 NASA class being given an absurd amount of tampons by clueless techs.”⁶ It sounds like this particular decision was not an oblivious consequence of ignorance about women, but rather a considered response to ignorance about the effects of being in space.

Here’s the thing: Dr. Rhea Seddon, the only combination medical doctor, astronaut, and period-haver in the class of ’78, helped make the decision about how many tampons to include. According to a 2010 interview, the large number of tampons was a safety consideration. As she said, “There was concern about it. It was one of those unknowns. A lot of people predicted retrograde flow of menstrual blood, and it would get out in your abdomen, get peritonitis, and horrible things would happen.”⁷

1. Kelly Weinersmith and Zach Weinersmith, *A city on Mars: can we settle space, should we settle space, and have we really thought this through?* (New York: Penguin Press, 2023), 133.
2. *Ibid.*, 184.
3. *Ibid.*, 188.
4. *Ibid.*
5. *Ibid.*, 189.
6. *Ibid.*, 213.
7. *Ibid.*

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