

# New Scientist

WEEKLY February 11-17, 2023

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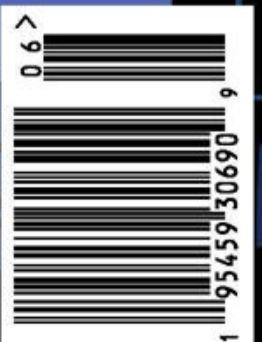
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# Real life on Mars

Living on Mars will take enormous work, but an urban planner is already on the case, discovers **Chris Stokel-Walker**



**Book**  
**The First City on Mars**  
Justin Hollander  
Springer

SPACE travel holds a mystique for humanity that few other areas of exploration do, and, beyond the moon, Mars is seen as the next step.

The Red Planet has come to signify opportunity in our era of polycrises. In fact, Mars has become a fixation for many, including space entrepreneur and Twitter owner Elon Musk. His vision of the future includes sending SpaceX rockets full of colonisers to Mars by 2050.

But can we really set up a new civilisation on a distant planet? Just how difficult this will be is made all too clear in a new book by Justin Hollander, an urban planner at Tufts University in Massachusetts.

*The First City on Mars: An urban planner's guide to settling the Red Planet* is a bit of an odd proposition: at first it seems like an academic book, but it is very readable and has a cover that looks like it belongs on

Despite the huge challenges, Earth's richer countries are making real plans to colonise Mars

a 1960s science-fiction novella.

Hollander is a serious planner, however, and over 12 chapters and scores of subsections he sets out what we are up against if we want to live on Mars.

Luckily, aliens aren't on his list.

Hollander outlines how, in the 1960s, the Mariner 4 mission to Mars sent back 21 images of the planet's surface. Unlike sci-fi of the time, which imagined a planet with civilisations and networks of canals, the barren landscapes it showed revealed challenges of an entirely different nature. Now, the James Webb Space Telescope is giving us even more detail.

So, arriving on Mars, there will be lots of work to get done. Hollander's planned conurbation, which he calls Aleph (the first letter of the Hebrew alphabet and the early letter from which the Greeks derived their "alpha"), is sited at Utopia Planitia. This is a large plain within Utopia, thought to be the largest impact basin on Mars and the site from which the Viking 2 lander began its exploration of the Red Planet in 1976. It can't be a coincidence that the flagship craft of several *Star Trek* series were constructed in shipyards orbiting this location.

Of course, the story will be

brutally different for the colonisers. "The first city on Mars will be largely underground," writes Hollander, facing up to the reality of harmful radiation at the planet's surface.

Hollander envisions Aleph as having three sunken structures for living and working, each roughly 100 metres across and covered by a dome. This cluster would form a triangle around a communications and life-support hub.

To the north, there would be a dozen more golf ball-like domes to shield vehicle storage, greenhouses, mining hubs and more from the radiation. Aleph's citizens could shuttle around the city using rover paths on the surface, though traffic is presumably expected to be light.

Planning pragmatism and scepticism may explain why Hollander keeps highlighting the enormous challenges involved in getting to and then safely inhabiting the Red Planet. He stresses how much the idea remains a dream by comparing it with the effort required to support life on the International Space Station, which orbits 400 kilometres above Earth's surface. Around 2500 square metres of solar panels pointed directly at the sun are needed to power the station, on which up to 13 people can live in a space the size of a UK football field.

Compared with the ISS, the idea of inhabiting Mars any time soon seems rather far-fetched. Hollander admits that "the first streets may be decades from being laid out", but this hasn't stopped several governments in richer countries from "preparing for a real, long-term human presence on Mars".

Such a move would be a giant leap for humankind – still, in writing this book, Hollander is banking on us having heard that once before. ■

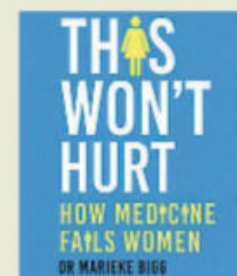
Chris Stokel-Walker is a technology writer based in Newcastle, UK

## Don't miss



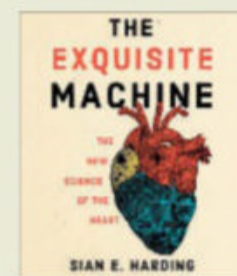
### Watch

**Ant-Man and the Wasp: Quantumania** stars Paul Rudd (above) as petty thief-turned-Avenger Scott Lang in a new Marvel movie. Set in the Quantum Realm, Lang faces Kang the Conqueror. On general release 17 February.



### Read

**This Won't Hurt** says Marieke Bigg, tongue firmly in cheek, as she explains how medicine fails women, from research to diagnosis and treatment. Today's landscape, she argues, was designed for men. On sale from 16 February.



### Visit

**Unlocking the mysteries of the heart** is a talk by Sian Harding based on her book *The Exquisite Machine*. It explores new cardiac research (see comment, page 25). At the Royal Institution, London, on 13 February, 7pm GMT.

