

B B C *WHEN TO SEE MARCH'S SOLAR & LUNAR ECLIPSES*

#238 MARCH 2025

Sky at Night

THE UK'S BEST-SELLING ASTRONOMY MAGAZINE

MARS A NEW ERA

As NASA's rover enters unexplored territory, the story so far...

*WHY WE NEED TO CHANGE
OUR ADDICTION TO LIGHT*

*60 YEARS OF
SPACEWALKS*



PLUS
How to watch
and image the
ISS passing
overhead

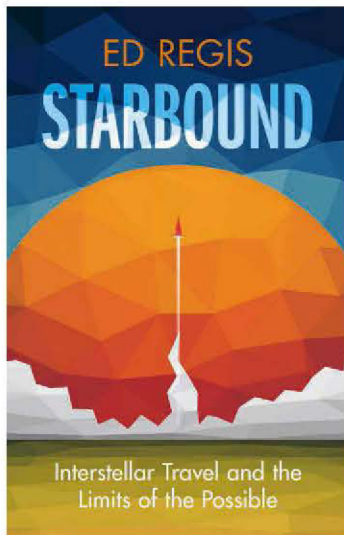


*STAR TEST: CANON'S R8
MIRRORLESS CAMERA*

*WHY SATURN'S RINGS WILL
DISAPPEAR THIS MONTH*

*THE NEW THEORY THAT COULD
OVERTHROW DARK ENERGY*

BOOKS



Starbound

Ed Regis
Cambridge University Press
£25 • HB

Whenever the subject of interstellar travel is discussed, Arthur C Clarke's first law – stating that when a distinguished scientist claims something is 'impossible', they will very likely be proved wrong – will rarely be far from the conversation.

The dream of journeying to the stars has been with us for centuries and is such a staple of popular imagination that we can all too readily assume it represents an inevitable future.

In *Starbound*, Ed Regis provides an enlightening corrective to the assumption that reaching the stars is merely a matter of time, effort and inexorable technological progress. Throughout its information-packed, engagingly written pages, he applies a rigorous eye to both the broad-brush concepts of human interstellar travel and

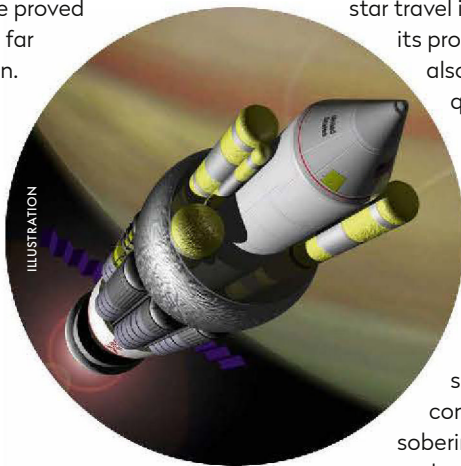
the fine detail of countless specific proposals. Warp drives, nuclear power, antimatter and other speculative forms of propulsion are all shown to founder on closer examination. Multi-generational 'world-ships' (and that sci-fi favourite, suspended animation), meanwhile, raise a host of questions about practicality, human biology and behaviour, and even morality. It's Regis's engagement with potential failures that really brings the point home, however. When the tiniest technical problem could doom an interstellar mission, who would sanely commit the vast resources required with such a minuscule chance of success?

Although the analysis is serious, the tone is lightened with anecdotes and occasional incredulity at some proposed schemes. Project Orion, for example, a 1950s proposal for a spacecraft propelled by the ejection and detonation of countless small nuclear bombs, sounds like one of Wile E Coyote's more foolhardy inventions, yet it was funded and developed for almost a decade.

If his overwhelming message is that star travel is a lot harder than its proponents argue, Regis also raises important questions about why we should even attempt it. His penultimate chapter reviews all the common arguments for voyaging to other stars and finds them sorely wanting. His conclusions may be sobering for interstellar dreamers, but this revelatory book carries lessons about our broader susceptibility to scientific and technological boosterism that we might all do well to digest.

★★★★★

Giles Sparrow is a science author, editor and consultant



Mission impossible: bomb-driven Project Orion, one of several doomed star-voyager schemes

Interview with the author

Ed Regis



Is interstellar travel possible?

As a theoretical possibility? Yes. As a workable technology that's within our reach, within our current engineering capability and our willingness to finance such a gigantic, complex and technically challenging project? No. Even the nearest stars are incredibly far away. And the only propulsion systems currently available are chemical systems, which are not nearly powerful enough to propel us across such vast distances.

If humanity could leave today, where should we go?

A 'mirror Earth'. It must be a rocky planet with liquid water, a breathable atmosphere, gravity that's neither too strong nor too weak, orbiting a star bright enough to permit human vision. The Habitable Worlds Catalog lists 70 potentially habitable worlds ranked on an 'Earth Similarity Index'. All top 10 candidates orbit red dwarf stars which emit mostly in the infrared, not visible light – meaning that currently we have nowhere to go.

Is interstellar travel a necessity for our species?

Certainly not. We already have the whole Solar System available for colonisation – planets and satellites, plus locations in free space for O'Neill-type space colonies. Getting a founding human population to any of those would be a wildly expensive and technically challenging undertaking. The difficulties only multiply exponentially when the destination is another Solar System lightyears away. Interstellar travel is therefore unnecessary and, given its risks and costs, not worth it.

Ed Regis is a philosopher, educator and science author