

## SCIENCE FICTION

# Crusoe on Mars

Elizabeth Gibney relishes Ridley Scott's disco-laced chronicle of survival on the Red Planet.

relied on considering multiple hypotheses. The vehemence of the debate hints, too, that their rejection was more of Old World hierarchies than of Wegener's theory.

Indeed, the barriers were largely sociological, as Greene shows. Wegener was born at the wrong time. The First World War interrupted his career, and began the long isolation of German scientists just when his great idea most needed discussion. He also fell between disciplinary stools. He published important contributions on astronomy, meteoritics, atmospheric science, climatology, palaeoclimatology, geology, geophysics, geodesy and glaciology. When he died aged just 50 in 1930, from a heart attack on the Greenland ice sheet, he left no disciples. 'Cosmic physics' broke up like a supercontinent.

As a result, Wegener makes a challenging subject, which Greene tackles through extensive archival research, travel and circumstantial evidence. Wegener left no extensive notebooks; much of his unpublished writing was destroyed by war or neglect, and he was not given to personal revelation. Like many polar explorers, he was wrapped up in his work. It seems amazing that Wegener married, until we realize that his wife, Else, was the daughter of his collaborator, émigré Russian climatologist Vladimir Köppen.

Others have covered aspects of the enigmatic geoscientist's legacy. Henry Frankel published the comprehensive four-volume *The Continental Drift Controversy* in 2012 (Cambridge Univ. Press); Naomi Oreskes expertly explored US opposition to the theory in *The Rejection of Continental Drift* (Oxford Univ. Press, 1999). Greene's full picture of the man is set masterfully within the wider development of the subjects on which he exerted influence (or failed to). If this wonderful book has a weakness, it is a dearth of illustrations; but those on show include many previously unpublished expedition pictures.

Following the advice of Michael Faraday's biographer L. Pearce Williams, Greene has "read everything his subject wrote, everything he read, and as much as possible of what the people he read, read". He has also travelled everywhere Wegener went, including Greenland. The labour has taken more than 20 years. The result is a magnificent, definitive and indefatigable tribute to an indefatigable man. ■

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Watching *The Martian* might disturb your dreams, but it will not give you nightmares. Veteran director Ridley Scott's Mars is dirty, rugged and perilous, yet the lingering impression is of a planet more rose-tinted than red.

*The Martian* tells the story of NASA astronaut and botanist Mark Watney (Matt Damon), stranded alone on Mars after his crew is forced into an emergency evacuation. Believing him dead, the team heads back to Earth, leaving Watney to work out how to survive until NASA can launch a rescue mission. Despite being faced with unimaginable loneliness, and probable death, Damon's Watney seems bizarrely chipper. This danger-riddled film is almost absurdly fun.

Cheeriness in the face of peril is a new turn for Scott. Bar his much-derided *A Good Year* (2006), the director of *Gladiator* (2000) and *Alien* (1979) does not really do comedy. *The Martian* inherits much of its wit from the source novel, originally self-published by writer Andy Weir in 2011. Its irreverence also owes much to scriptwriter Drew Goddard, whose work includes television's *Buffy The Vampire Slayer*. Thanks in large part to Damon's likeably wry portrayal of Watney, the tone works. You are happy to share his company for the duration, particularly given the joyful, mostly disco soundtrack.

In his crew's habitat, or 'Hab', Watney has an array of solar panels and apparently unending rolls of duct tape. But food is limited, and to grow his own he must source water (he manages by burning hydrazine from rocket fuel). After last year's Christopher Nolan blockbuster *Interstellar*

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2014), Damon might seem to be repeating the role of abandoned astronaut, but there are few parallels. *The Martian* is strong on the workings of science — logic, problem-solving and perseverance — in contrast to Nolan's rather pompous affair. Ridley gives us failures as well as the triumphs — and

includes geeky shout-outs to the second law of thermodynamics, the hexadecimal

system and radioisotope thermoelectric generators. There is also Watney's heavily trailed quote that the only way to survive is to "science the shit out of this".

Some press reports have focused on Weir and Scott's efforts to get the science right. And it is true that if humans were to go to Mars — a NASA goal for the 2030s — the set-up would probably resemble that in the film. Missions are run in stages, with equipment sent ahead. The crew dawdles on space trips many months long, and once on Mars, scrabbles to collect the perfect soil sample. Yet the science is hardly faultless. Mars's low gravity would be more visible in the astronauts' gait. The thin atmosphere would make radiation one of Watney's main concerns. But when human spirit and ingenuity are the heart of the film, dwelling on these elements seems unfair.

Given *The Martian's* fantastic cast, it is a shame that only Damon is allowed to shine. Kristen Wiig, as NASA's director of media relations, too often stands wide-eyed in the background when the public-relations roller coaster of the plot should have brought her character to life. Jeff Daniels as the NASA administrator could have been a cynical counterbalance to the pure-as-snow researchers, but he, too, is one of the good guys.

The film has been praised for its diversity, and there appear to be more women and ethnic-minority staff at *The Martian's* fictional NASA than in the real agency. Chiwetel Ejiofor enjoys himself playing Vincent Kapoor, head of Mars missions. Jessica Chastain is perfect as serious but warm-hearted mission-commander Melissa Lewis. There are two female crew members, both worthy role models; but whereas several of the male astronauts have children, neither of the women does — perhaps a disappointing hint that space and motherhood do not go together.

*The Martian* is more feel-good than 2013's *Gravity*, and lighter than *Interstellar*. Watney's psyche is left largely unexplored. Where the other two blockbusters invite the audience to stand in awe of nature as a mighty beast, *The Martian* asks you to saddle it. Enjoy the ride. ■

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Matt Damon in *The Martian*.

