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Can Mars support human life? NASA project aims to colonise the red planet by 2030s

NASA's bold plan to colonise the red planet is being bolstered by scientific effort from across the globe. But could Mars support human life one day?

By [SEBASTIAN KETTLEY](#)

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The [American space agency's boffins are dead set on sending humans into Mars' orbit by the early 2030s.](#)

NASA believes that mars is a “tangible” and “achievable frontier” for humanity’s space colonisation efforts.

It said: “We are well on our way to getting there, landing there, and living there.”

But NASA are not the only agency with its focus set on Mars. Australia has been invited to build a city on the rocky planet together with the United Arab Emirates' Space Agency.

The two countries will partake in a grand initiative to build a 170,000 square metre, £130million (\$175million) habitable zone in the heart of the arid Dubai desert to simulate conditions on Mars.

Salem Humaid al Marri, of the Mohammed bin Rashid Space Centre, told Sky News Australia that the project is an extended olive branch to the scientific communities of the world.

He said: "This will be the largest initiative of its kind in the world, and it will bring all researchers and scientists together.

Agency director Dr Mohammed Nasser Al Ahbabi added: "This type of project will push you to the limit."

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Meanwhile a team of researchers at Illinois-based Bradley University are using 3D printing tech to develop modular habitats ahead of NASA's manned mission.

The "3D Printed Habitat Challenge" aims to figure out ways in which materials such as red regolith, which is abundant on Mars, can be used to support life.

The third phase of the challenge offers a hefty sum of £1.4 (\$2million) to whoever comes up with a solution to the dilemma.

Monsi Roman, program manager of [NASA's](#) Centennial Challenges, said: "The ideas and technologies this competition has already produced are encouraging, and we are excited to see what this next phase will bring.



NASA aims to send humans on into Mars' orbit as early as the 2030s

"The solutions we seek from our competitions are revolutionary, which by nature makes them extremely difficult. But this only fuels our teams to work harder to innovate and solve."

One of the biggest obstacles faced by potential settlers is the lack of breathable oxygen, but the NASA Innovative Advanced Concepts Program thinks the answer could lie in isolated bio-dome environments.

We are well on our way to getting there, landing there, and living there

NASA

By introducing eco-system building microbes, the tiny little organisms could be used to remove nitrogen from soil and churn out oxygen.

The team's chief scientist, Eugene Boland, said: "This is a possible way to support a human mission to Mars, producing oxygen without having to send heavy gas canisters.

"Let's send microbes and let them do the heavy-lifting for us."

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Mars: The first step to colonising the planet is sending robots to study it

Travelling to Mars also begs the question of whether or not the parched planet could sustain plant life for human settlers to thrive.

The hit 2015 sci-fi epic, *The Martian*, starred Matt Damon as a stranded astronaut who figured out how to grow potato crops on the red planet and new breakthrough research has found that fiction might be a lot closer to reality than expected.

The NASA-backed Potatoes on Mars Project showed promising results when potato plants were introduced to Mars-like conditions.

Researcher Julio Valdivia-Silva, who has worked at NASA's Ames Research Center, said: "If the crops can tolerate the extreme conditions that we are exposing them to in our CubeSat, they have a good chance to grow on Mars.

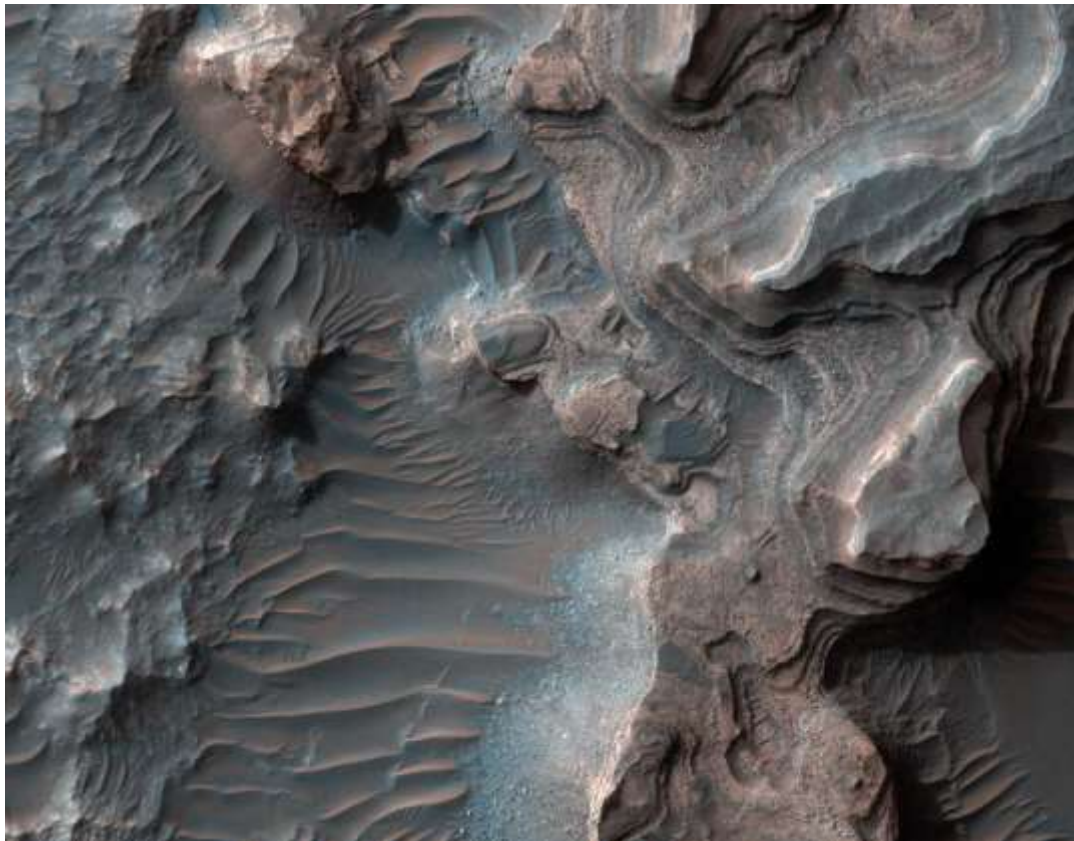
"We will do several rounds of experiments to find out which potato varieties do best.

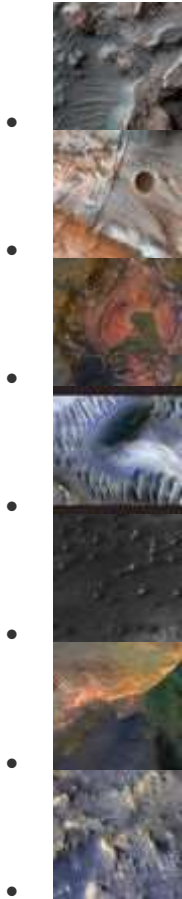
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“We want to know what the minimum conditions are that a potato needs to survive.”

Similarly Scientists at the the Wageningen University & Research Centre found that [earth worms introduced to Martian soil were able to thrive](#) and even reproduce.

Dr Wieger Wamelink who led the exciting study, said in a statement: “Clearly the manure stimulated growth, especially in the Mars soil simulant, and we saw that the worms were active.

“However, the best surprise came at the end of the experiment when we found two young worms in the Mars soil simulant.”