

Thaxted Astronomical Society

News

Features

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Astronauts Going To Mars
To Do The Right Thing

<https://www.dailymail.co.uk/sciencetech/article-8983473/Astronauts-going-Mars-need-right-stuff-need-conscientiousness.html>

Astronauts going to Mars will need more than 'the right stuff,' say experts who find they also need to have an eagerness to do the right thing

Daily Mail 24th Nov 2020 >

- **Astronauts on a mission to Mars will need to have conscientiousness**
- **The findings stem from a month long experiment that simulated Mars**
- **Five astronauts were asked to work together as if they were on the Red Planet**
- **After the experiment, they rated their team and themselves on personality traits**
- **The highest rated trait is possessing the eagerness for doing the right thing**
- **The 'non-negotiable' trait was social loafing or putting in less work**

The typical astronaut has a degree in science or math, spent countless hours working as a pilot and is in good health, but the right stuff will not matter for those looking to go to Mars – they will need 'conscientiousness.'

A study led by Western University found space faring heroes who wish to survive on the Red Planet will need to possess an eagerness for doing the right thing.

This personality trait was also found to outdistance others like 'honesty,' 'humility,' 'emotionality,' 'extraversion,' 'openness' and 'agreeableness.'

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Julia McMenamin, a Western psychology PhD candidate, said: 'Conscientiousness, an individual personality trait, can be thought of as a pooled team-resource.'

'The more conscientiousness a team is, the better they will likely be at accomplishing tasks.'

The findings stem from the four-week AMADEE-18 analog mission, which simulated a Mars environment featuring isolated and extreme conditions, along with exploring different personality traits to gather insight into how crews react to the isolation during real-world missions.

NASA is working tirelessly to send the first humans to Mars by 2030 and those chosen for the historic mission will spend time with a small group, in tight quarters and all must work together in order to survive in the Martian environment.

Because the team will feel isolated and overcrowded, experts warn that conflict is sure to arise, which has led Western University to investigate what attributes are needed to help stop wars from breaking out.

Following the four-week experiment, researchers had the five astronauts rated their team, and themselves, on several traits - humility and honesty, emotionality, agreeableness, extraversion, conscientiousness, and openness to experience.

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The surveys revealed traits like 'social loafing,' or the habit of a team member putting in less effort when they work individually, are at the bottom for a desirable trait.

These negative behaviors were found to cause trouble within the team and should be 'non-negotiable for long space missions, McMenamin explained.

'Anyone who has worked on a team knows conflict among team members can harm team performance and make for a negative experience,' she said.

'When people argue about how to get things done, or get into personal disagreements, there is less time and energy left for completing tasks.'

'What's interesting is that there are different types of conflict, and so long as interpersonal issues and arguments about how to go about accomplishing tasks are avoided, differences in views and opinions might actually improve team performance likely because this allows for the team to benefit from each member's knowledge and perspective.'

Beyond conflict, acute stress can also impact teams negatively on Earth and in space, said McMenamin.

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'Stress creates distractions, contributes to task overload, increases destructive emotions or feelings of anxiety and worry and makes things difficult for team members to coordinate their work,' she continued.

Given that this particular analog mission only lasted for about a month, the researchers are interested to know how things might play out over the course of a long-duration mission.

'Major issues caused by psychological distress and interpersonal problems don't tend to show up until months or even years spent in an isolated, confined, and extreme environment, which highlights the need for longer-duration simulations,' McMEnamin said.

NASA astronaut Victor Glover, who recently flew to the International Space Station, discussed the importance of teamwork when conducting long-term space missions.

'It is paramount,' Glover said speaking with National Air and Space Museum.

'It's probably the one thing that you will come back to more than any other specific science or technology or system that you'll have to work within the spacecraft or on the surface of another planet.'

'We spend a lot of time training to take care of each other and ourselves and our team in order to accomplish our mission.'

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NASA plans to send a manned mission to Mars in the 2030s after first landing on the Moon
Mars has become the next giant leap for mankind's exploration of space.

But before humans get to the red planet, astronauts will take a series of small steps by returning to the moon for a year-long mission.

Details of a the mission in lunar orbit have been unveiled as part of a timeline of events leading to missions to Mars in the 2030s.

In May 2017, Greg Williams, deputy associate administrator for policy and plans at Nasa, outlined the space agency's four stage plan that it hopes will one day allow humans to visit Mars, as well as its expected time-frame.

Phase one and two will involve multiple trips to lunar space, to allow for construction of a habitat which will provide a staging area for the journey.

The last piece of delivered hardware would be the actual Deep Space Transport vehicle that would later be used to carry a crew to Mars.

And a year-long simulation of life on Mars will be conducted in 2027.

Phase three and and four will begin after 2030 and will involve sustained crew expeditions to the Martian system and surface of Mars.

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Nasa has outlined its four stage plan (pictured) which it hopes will one day allow humans to visit Mars at the Humans to Mars Summit held in Washington DC yesterday. This will entail multiple missions to the moon over coming decades

