Multi planetary beings

Question
How would life be on Mars (or on other planets)?

Introduction

A multi planetary being is man, in the future, being able to colonize other planets. Scientists say that we are still many years away from this possibility. If this day ever comes, how will life be? Landing is one thing. Thriving is another. A day on Mars is roughly 40 minutes longer than a day is here on Earth, so we'll have extra time to do whatever we want to. But why are we obsessed with Mars? Well, 60 years ago, people already believed that life would be possible, one day, on Mars. Before NASA went on its first trip to Mars, they thought there was water and life, like on Earth. In 2015 Elon Musk (the founder, CEO, and lead designer of SpaceX; co-founder, CEO, and product architect of Tesla) came up with the idea of warming up Mars with a thermonuclear weapon so humans can live on it, but scientist don't really agree with him.

Reflection

Many scientists believe that in the near future, humans may be able to leave Earth to live on Mars. For life on any planet to be able to exist, we need water, carbon dioxide and hydrogen. So life on Mars would be possible if man could solve the problem of the atmosphere. Mars can only be modified to become more similar to Earth by building one or more gigantic domes inside which atmosphere and the temperature are like our own. The average temperature on Mars, on average is −55 °C and surface temperatures may reach a high of about 20°C at noon, at the equator, and a low of about −153°C.

It is colder on Mars than on Earth. The fact that the Sun is aging may affect the possibility of life on Mars. Chris McKay, a NASA scientist, claims that this process that may put an end to life on Earth may lead to a rebirth on Mars. This process only happens because the Sun burns the hydrogen in its nucleus for about 4.5 billion years and when it burns out, in 1.5 billion years, the nucleus will collapse, increasing its temperature and expanding the outer layers about one hundred times. Eventually, the Sun may melt the ice on Mars and turn it back into water. This ice may form oceans. This would greatly improve chances of survival. We would have a water rich environment which would, in turn, lead to more carbon dioxide. All of this would only happen if the Sun burnt twice or three times more intensely than it does today.

The most dangerous aspect of travelling to Mars is space radiation. The radiation on Mars can increase our lifetime risk of cancer. The radiation on Mars is ten times bigger than on Earth. Our planet Earth, has a magnetic field and atmosphere that protect us from harsh cosmic radiation. Without it, we were going to be more exposed to the treacherous radiation, and that would be a very big problem for us.

But what's really the problem of the radiation? How can this stop us from living on Mars? We have to do a lot of exercise and eat properly, so that we don't lose muscle strength, endurance, and experience cardiovascular deconditioning since it does not take effort to float through space.

A diet high in freeze-dried food, required daily exercise to keep your muscles and bones from deteriorating, a carefully scripted high-tempo work schedule, and confinement with three co-workers picked to travel with you by your boss may cause other health problems, either physical or psychological.

And what about the gravity? Well, there are three gravity fields that we should experience on a Mars mission. Changing from one gravity to another affects our spatial orientation, head-eye and hand-eye coordination, balance and locomotion. Probably, if we had to land a spacecraft on Mars, it would be a very dangerous situation. NASA has already discovered that without gravity working on our body, your bones lose minerals, with density dropping at over 1% per month.

But what are the two biggest problems we have to solve before living on Mars? Well, Mars isn't just a red planet, it's a dead one. Bill Nye (an American science communicator, television presenter and mechanical engineer) says that terraforming (Earth shaping) Mars, or colonizing it all, would be practically impossible.

Solutions

For our survival on Mars we would need lots of gases especially oxygen, and to create that oxygen we would need to find a way to grow plants on the ground. We would have to create greenhouses for their protection and survival. Researchers have already managed to plant tomatoes, peas and radishes on soil collected from Mars. Since 2014, scientists from Wageningen University in Holland, led by the ecologist Wieger Wamelink, have tried to grow vegetables in a simulated environment like Mars or the Moon. Tomatoes, peas, rye, rocket, radish and watercress all germinated and grew to the same size as on Earth.

Because it's very cold on Mars, we will need warm clothes, which can't be the ones that we usually wear. NASA has already released details of the new and more flexible apparel that was designed for long-distance travelers. Maybe we will have to wear it on Mars. This is an excellent suit that allows us to walk, climb and crouch. The Z-2 suit is the latest prototype developed by NASA for planetary spacewalks.

NASA is developing and operating a new generation of space vehicles to open space to everyone. It is an easier and more comfortable way of travelling around the planet. It is called Space Exploration Vehicle (SEV) with twelve wheels wich rotate 360 degrees and can go at speeds of ten km per hour.

Space agencies are actively working to deal with space radiation. An Israeli company is developing a body vest designed to more fully absorb radiation. This sleek vest might protect NASA astronauts from deadly radiation on a deep-space mission. A NASA scientist has already had the idea of deploying a satellite that would serve as an artificial magnetic shield to divert harmful radiation around Mars.

NASA is already considering what kind of housing we will need to survive on the surface of Mars. In 2016, NASA selected six U.S. companies to help advance the journey to Mars by developing ground prototypes and concepts for deep space habitats. What are these habitats going to have in common with ours from now? Well, they will have to be self sustaining, sealed against the this atmosphere and capable of supporting life for extended periods without support from Earth.

Daily routines include food preparations from non-perishable ingredients, exercise, scientific research, equipment testing and tracking resource utilization such as food, power and water. By the 19th September 2017, scientists had already completed eight month isolation experiment to simulate life on Mars. They did this in a dome in Hawaii.

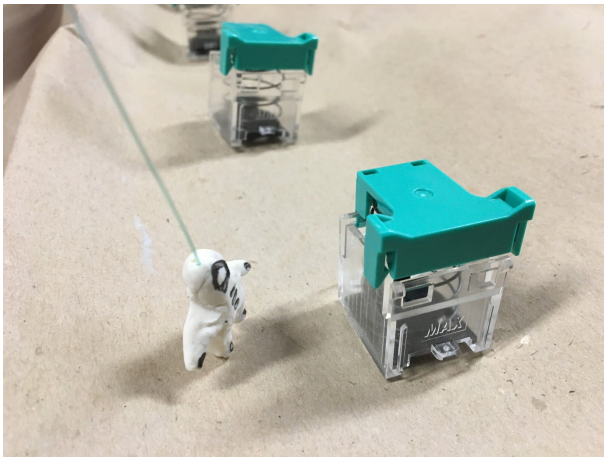
Conclusions

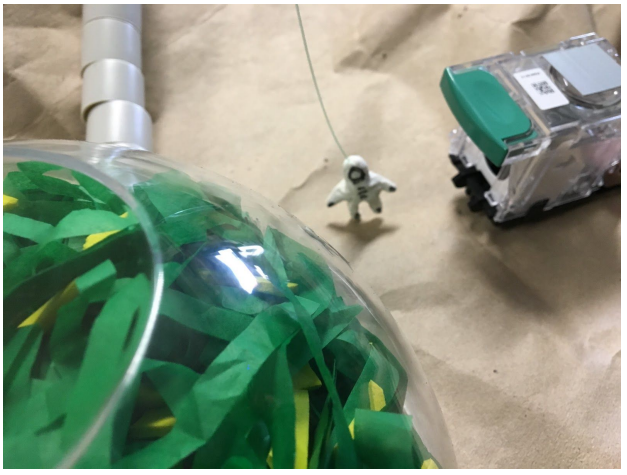
We created a model that shows the story of an astronaut who went to live on Mars with his team and started building there. The astronaut built a greenhouse and a place to stay. When he returned to Earth, a team of Virgin Galactic sent a team to Mars to continue the work done by the astronaut.
This is a day in our colony:
https://drive.google.com/file/d/1j0QX7hAXEm7J3wtbx2TJ5tdxk_uxLi2l/view?usp=sharing

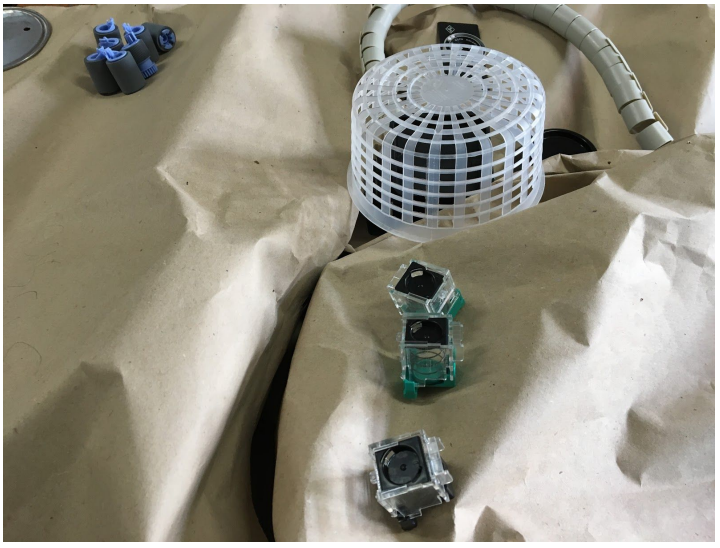
NASA wants to send humans to Mars (the red planet) by 2030 and SpaceX wants to get there even sooner, with plans to have people there by 2024. Sixty-five years ago, exploring Mars was not something anyone could do. There weren't even any images of Mars. Mars has some resources that we can take advantage of now. Possibly life will be possible if we manage to solve all or most of the problems that we have now (atmosphere, weather, water, radiation and gravity).

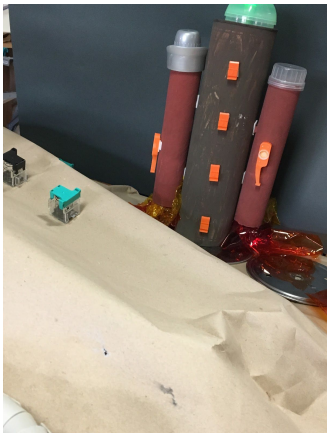
Attachment 1
Our model of Mars colony

Attachment 2
Details of our colony









Attachment 3
Life at our colony
https://drive.google.com/file/d/1j0QX7hAXEm7J3wtbx2TJ5tdxk_uxLi2l/view?usp=sharing

Bibliography

https://www.fatosdesconhecidos.com.br/como-seriam-os-seres-humanos-se-eles-nascessem-em-marte/
http://www.astronomy.com/news/2017/05/could-we-live-on-mars

https://science.nasa.gov/solar-system/programs/mars-exploration

https://www.windows2universe.org/kids_space/lifeonmars.html

https://www.sciencenewsforstudents.org/article/what-wear-mars

https://www.nasa.gov/hrp/bodyinspace

http://marsforthemany.com/project/living-on-mars/getting-around-on-mars/

https://www.nasa.gov/feature/the-next-generation-of-suit-technologies

https://www.universetoday.com/14859/gravity-on-mars/

https://futurism.com/us-government-issues-nasa-demand-get-humans-to-mars-by-2033/

https://www.smithsonianmag.com/science-nature/radiation-remains-problem-any-mission-mars-180959092/

http://www.businessinsider.com/martian-radiation-levels-crewed-mission-2017-7
http://www.businessinsider.com/r-mars-astronaut-radiation-shield-set-for-moon-mission-trial-developer-2017-3

https://www.nasa.gov/hrp/images
https://www.nasa.gov/press-release/nasa-selects-six-companies-to-develop-prototypes-concepts-for-deep-space-habitats
https://healthyplanetpro.wordpress.com/conclusion/
http://bigthink.com/laurie-vazquez/the-2-biggest-challenges-humans-need-to-solve-before-living-on-mars
https://mars.nasa.gov/allaboutmars/mystique/dailylife/
http://ops-alaska.com/time/gangale_other/IntroToMartianTime.htm
https://www.space.com/16924-mars-cultural-fascination.html

http://www.latimes.com/business/la-fi-elon-musk-mars-20150910-htmlstory.html