



Highly Commended

Science Writing

Year 5 - 6

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A Day on Mars in 2090

How space science is helping humans live beyond Earth

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Figure 1. Harmonia City, a future human settlement on Mars powered by solar energy. This imagined city shows how humans may one day live beyond Earth using science and technology.

Source: Andrey Maximov, via HumanMars.net

The Red Morning

The morning lights flickered on at exactly 6:30am.

I sat up inside my sleeping pod and looked through the glass dome of Harmonia City. Outside, the red dust of Mars stretched across giant craters and rocky cliffs. Rows of solar panels glowed in the weak sunlight, collecting energy for our city.

It was the year 2090.

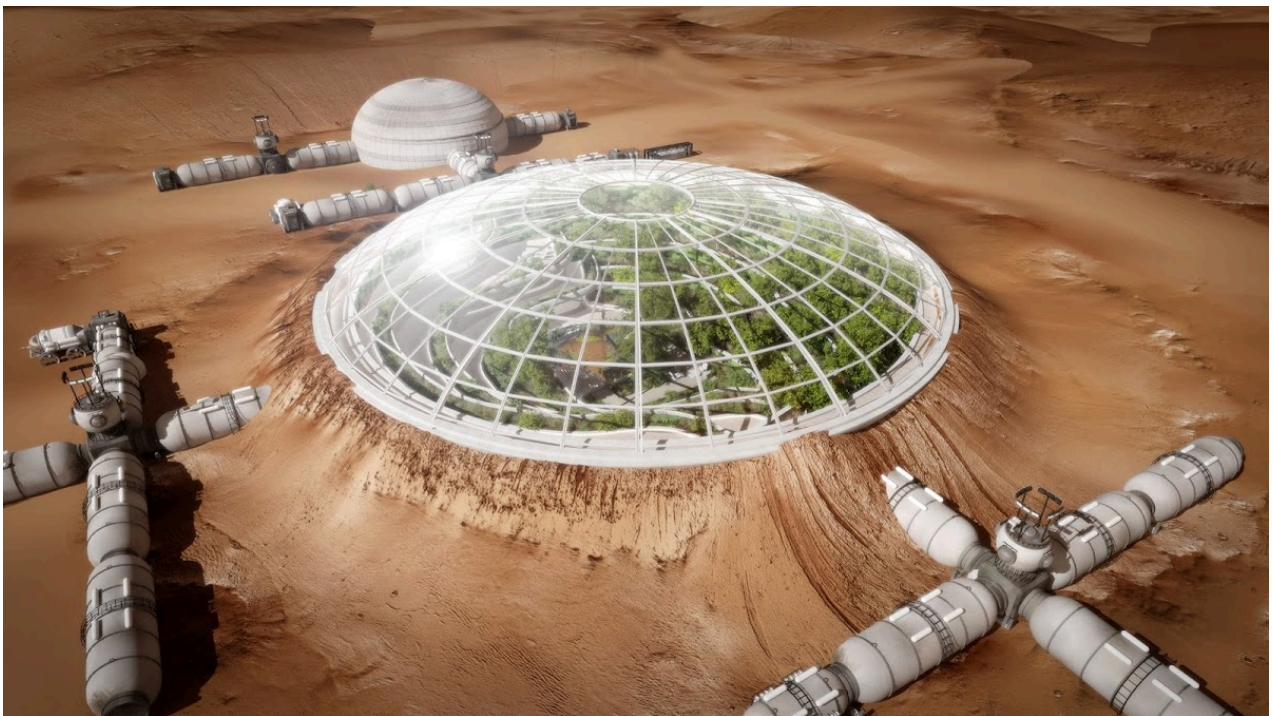
Mars was no longer just a planet.

It was home.

As I walked into the greenhouse for breakfast, I picked fresh lettuce and tomatoes growing under bright artificial lights. Every plant here mattered. Through photosynthesis, the plants absorbed carbon dioxide and released oxygen, helping us breathe inside the dome. They also gave us fresh food, making life on Mars possible.

But as I looked across the giant glass dome, I wondered: *How did humans ever get here?*

The answer began over 120 years ago.



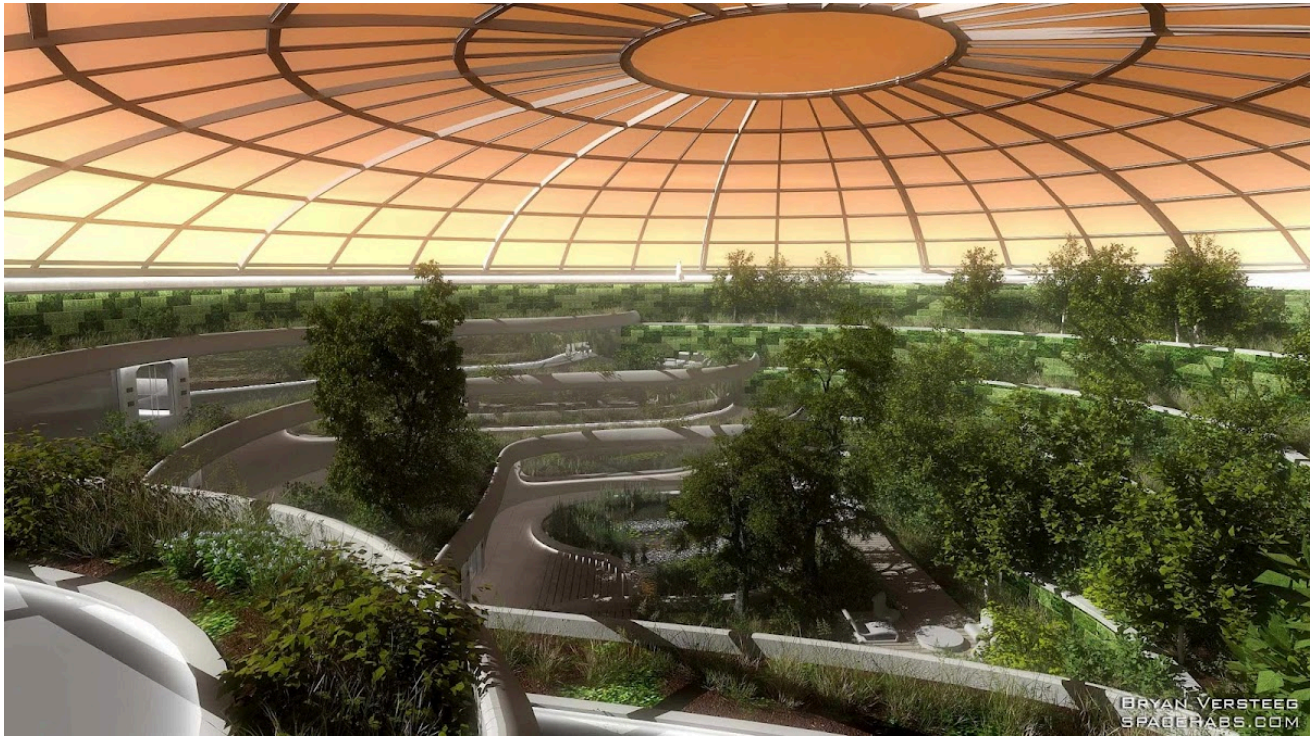


Figure 2. A greenhouse garden inside a transparent dome on Mars, designed by Bryan Versteeg.

Source: Bryan Versteeg via HumanMars.net

The First Footprints Beyond Earth

In 1969, NASA made one of the biggest discoveries in human history. Apollo 11 became the first mission to land humans on the Moon.

Neil Armstrong stepped onto the lunar surface and showed the world that humans could survive on another world. Scientists learned how spacecraft could orbit, land, and return safely.

Moon rocks also helped scientists study how planets are formed.

This mission was important because it proved that space travel was possible. Without Apollo 11, future missions to Mars may never have happened.

It was humanity's first giant leap.

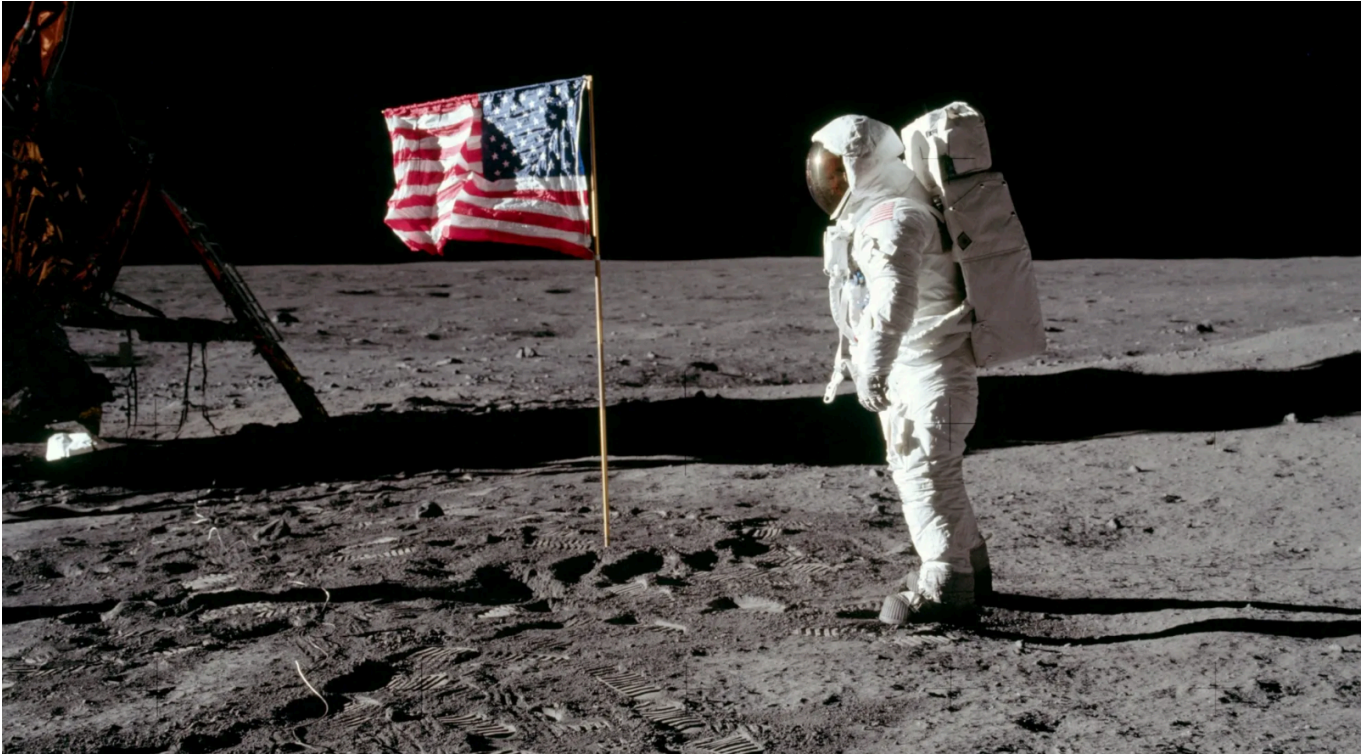


Figure 3. Astronaut Buzz Aldrin standing on the Moon beside the United States flag during NASA's Apollo 11 mission in July 1969.

Source: NASA Apollo 11 Archive via <https://www.nasa.gov/mission/apollo-11/>

Learning to Live Among the Stars

After the Moon, NASA built the International Space Station (ISS), a laboratory orbiting Earth at 28,000 kilometres per hour.

Astronauts lived there for months in microgravity. Scientists discovered that without gravity, muscles shrink and bones become weaker.

This was a major problem for future Mars missions.

The ISS also taught scientists how to recycle water, create oxygen, and grow plants in space. These systems became the foundation of life on Mars.

Today in Harmonia City, we use those same systems every day.

Every drop of water is cleaned and reused.

The ISS taught humans how to survive in space before we came here.



Figure 4: The International Space Station

Source: <https://www.nasa.gov/international-space-station/space-station-facts-and-figures/>

The Robots That Went First

Long before humans landed on Mars, robots explored it first.

NASA's rovers Curiosity and Perseverance studied the geology of Mars, searching for signs of ancient water and life.

They found dry riverbeds, minerals and rocks shaped by flowing water. This showed scientists that Mars once had rivers and lakes billions of years ago.

That meant Mars may have once been habitable.

Perseverance also carried a machine called MOXIE.

MOXIE changed everything.

It turned carbon dioxide from the Martian atmosphere into oxygen.

This was one of the most important scientific breakthroughs because oxygen is needed for breathing and rocket fuel.

Without MOXIE, Harmonia City could not exist.

The robots proved Mars could support life.

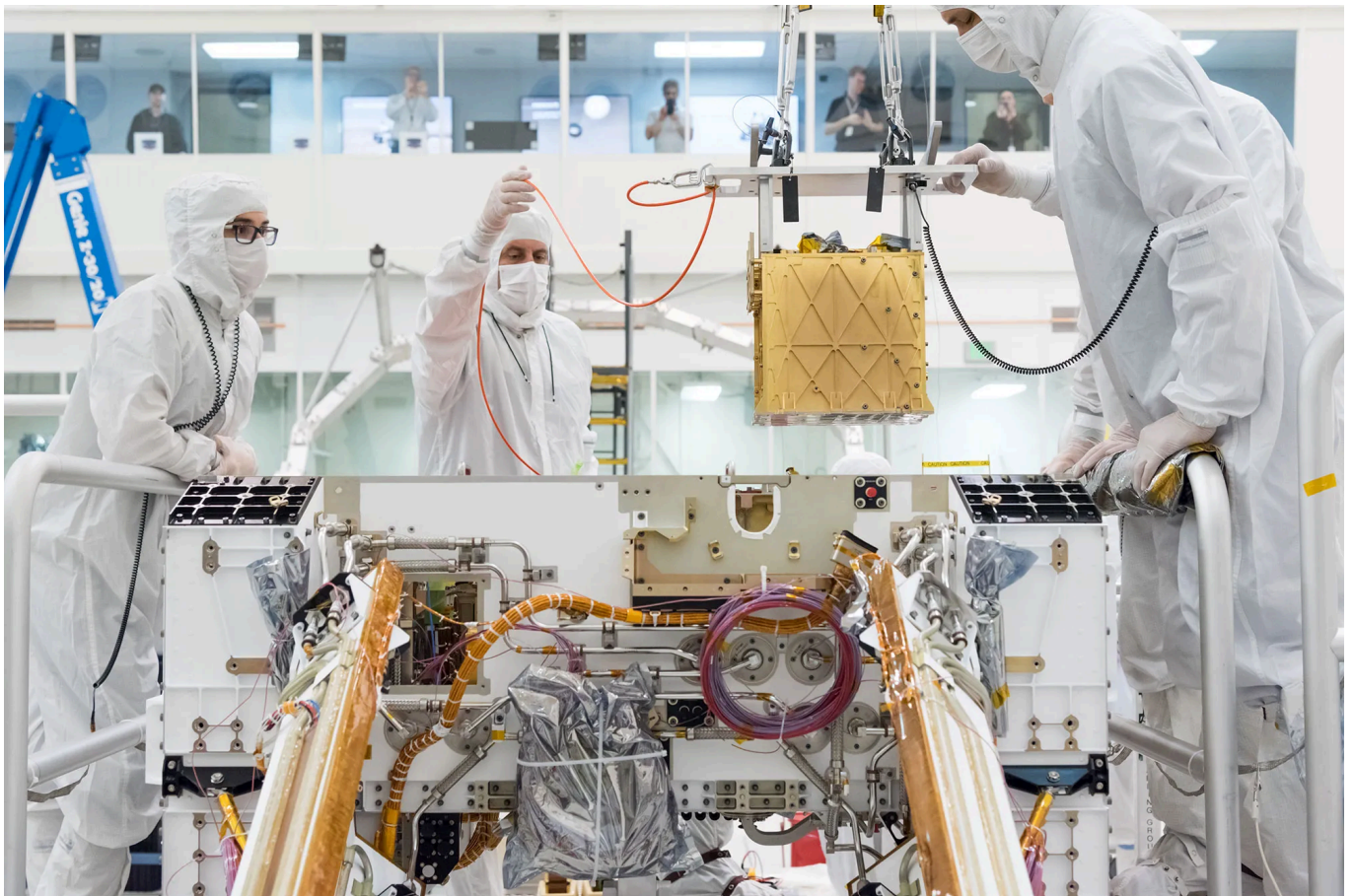


Figure 5: MOXIE (Mars Oxygen In-situ Resource Utilization Experiment)

Source: [MOXIE](#)

Building Harmonia City

NASA's Artemis missions helped humans return to the Moon and test new spacecraft before travelling to Mars.

By 2078, the first humans landed here.

At first, life was difficult.

Mars has freezing temperatures, dangerous radiation and huge dust storms. Unlike Earth, Mars does not have a strong magnetic field to protect people.

That is why Harmonia City was built underground using Martian soil.

The thick walls protect us from radiation.

Solar farms power the city. Ice buried beneath the Martian surface is melted and purified for drinking water.

Greenhouses grow crops.

Special machines recycle air and remove carbon dioxide.

Every system here was built using knowledge from NASA's past missions.

Each giant leap led to this moment.

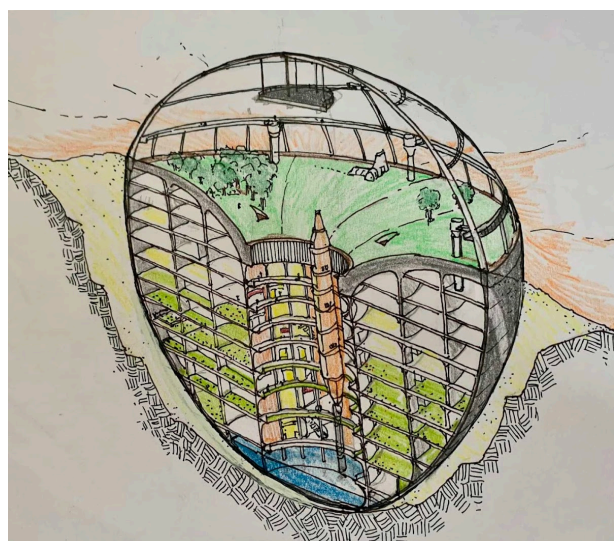
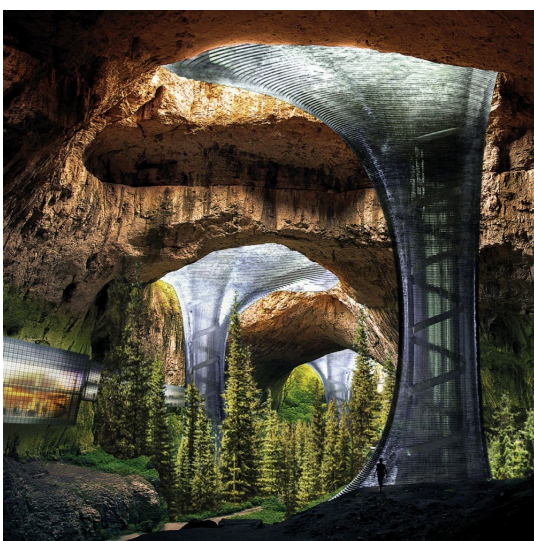


Figure 6: "Below Freezing," a concept design for a human habitat inside a Martian lava tube, using underground space for radiation protection.

Source: Shane Powers & Linjie Wang, Marstopia Design Contest

The Next Giant Leap

As I looked out across the red planet, I thought about the future.

Maybe one day humans will build forests under giant glass domes.

Maybe cities will spread across Mars.

Maybe children born here will never visit Earth.

Space science has already changed life on Earth too. Satellites help with GPS, weather forecasts and communication. Space technology has improved medicine, robotics and engineering.

NASA's giant leaps taught humans to land, survive and explore.

But maybe the biggest lesson of all is this:

What began with one small step on the Moon has become humanity's greatest journey - to turn the stars from distant dreams into places we can call home.



Figure 7: "Join Us on Mars," a poster by Canadian illustrator Jode Thompson imagining Mars as a future home for humans and encouraging settlement on the red planet.

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Acknowledgement

I would like to thank my mum for helping me with the formatting of this report and teaching me how to reference my sources correctly.