

# The New Century

## *Twinkle Twinkle Little Star*

by Anil Shrivastava 'Musafir'



I wish to see humans land on Mars in my lifetime. Of all the adventures and thrills that I've witnessed, space exploration is the dearest to my heart. It all started on October 4, 1957, when I saw the first sputnik crossing over my village in the sky. It looked like a little star that moved in its orbit at a speed of 7,000 mph. That was soon followed by manned space flights, orbit around the moon and then Neil Armstrong and Edwin "Buzz" Aldrin walking on the surface of the moon on July 21,

1969. We also landed on a comet and asteroids and purposely crashed on one of those in an attempt to change its course to avoid any future collision with the earth by a wandering heavenly body.

In 2012 Voyager 1 left the solar system for the first time and is traveling into deep space (interstellar) after exploring Jupiter and Saturn. Voyager 2 is also in interstellar space after traveling for 45 years and 5 months as of January 20, 2023, reaching a distance of 12.275 billion miles from Earth.

In its course, it flew by Uranus and Neptune.

It has been a spectacular journey starting with a Redstone Rocket that took the first American into space on May 5, 1961. That was followed by Project Mercury, the Gemini Program, the Apollo program, the Space Shuttle to the current launch of Artemis 1 on November 16, 2022, which orbited the moon and returned to earth as planned. Artemis 2 is on track to launch with a crew to orbit the moon by the end of 2024. Humans will return to the moon by 2025. The moon will be the launching pad for going further to Mars by 2040 or sooner.

This is not only for thrills. Space exploration has led to the development of various technologies that feed back into the economy and improve our lives on Earth. Without space programs, we wouldn't have GPS, accurate weather prediction, solar cells, or ultraviolet filters in sunglasses and cameras. There's also medical research happening in space right now that could cure diseases and prolong human lives, and these experiments can't be done on Earth. Space exploration could save our life.

Many objects around the solar system are made of similar minerals and chemical compounds that exist on Earth. That means that some asteroids, moons, and planets could be rich in minerals and rare elements. Figuring out how to harvest those materials in a safe and responsible manner and bring them back to Earth represents a possible

benefit of space exploration. Elements that are rare on Earth may exist elsewhere, and that could open new avenues for manufacturing, product design, and resource distribution.

We know that Mars is enveloped by carbon dioxide. But there is a plan to convert Martian carbon dioxide into oxygen called MOXIE. This can help make the Red Planet habitable for humans.

For me, the romance of space will never be over. As a boy in India, I spent summers stargazing in my village on the Indo-Nepal border. Now, I am looking forward to man landing on Mars all within a span of 80 years (1960 AD-2040 AD). It has been a privilege to live in such an exciting time.