

## A Spatial Perspective of Mars Colonization

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### Abstract

Mars is the most Earth-like planet and indorses the potential of becoming a new home to humans. All the resources necessary to sustain life are readily available on Mars surface. We humans need to conduct basic science research to gain new knowledge about the solar system's origin and history and applied research on how to use Martian resources to augment life-sustaining systems. Mars has a radius of 3397 km with 687 days a year and thus 24 hrs and 40 min length of the day and night cycle. Mars has a very unsubstantiated atmosphere with the atmospheric pressure about 100 times lower than that of Earth. On average, Mars is 214.44 million km away from sun, which makes it a much colder place. Without a thick atmosphere to insulate the surface the temperature variation is much larger. Mars is smaller and has a lower overall density than the Earth, resulting in a surface gravity that has only 38% the Earth's strength. Space colonization development and assisted atmospheric conditions have necessitated active research efforts to fundamentally understand the varying operating conditions and the key controlling parameters involved. The subject involves atmospheric conditions, sustainable structures and designs. Selected issue of concern for effective futuristic martian colonization is the radiation owing to weak magnetic field, the need of development of early warning systems and the extreme conditions that can force the main structural challenge to hold down the interior pressure of all habitats. The major structural problem on Mars is holding the buildings down and not holding them up against gravity like on Earth.



### Biography:

Gautam Vishwanathan are presently pursuing undergraduate studies in Department of Aerospace Engineering and Mechatronics Engineering in SRMIST respectively. There research interests include Space Explorations, Rocket propellants, Nuclear Energy sources, Embedded systems and various others.

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