

Colonizing Mars The Human Mission To The Red Planet

Colonization of Mars

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The colonization of Mars is the proposed process of establishing permanent human settlements on the planet Mars. Most colonization concepts focus on settling, but colonization is a broader ethical concept, which international space law has limited, and national space programs have avoided, instead focusing on human mission to Mars for exploring the planet. The settlement of Mars would require the migration of humans to the planet, the establishment of a permanent human presence, and the exploitation of local resources.

No crewed missions to Mars have occurred, although there have been successful robotic missions to the planet. Public space agencies (including NASA, ESA, Roscosmos, ISRO, the CNSA, among others) have explored colonization concepts, but have primarily focused on further robotic...

Human mission to Mars

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The idea of sending humans to Mars has been the subject of aerospace engineering and scientific studies since the late 1940s as part of the broader exploration of Mars. Long-term proposals have included sending settlers and terraforming the planet. Currently, only robotic landers, rovers and a helicopter have been on Mars. The farthest humans have been beyond Earth is the Moon, under the U.S. National Aeronautics and Space Administration (NASA) Apollo program which ended in 1972.

Conceptual proposals for missions that would involve human explorers started in the early 1950s, with planned missions typically being stated as taking place between 10 and 30 years from the time they are drafted. The list of crewed Mars mission plans shows the various mission proposals that have been put forth by...

SpaceX Mars colonization program

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SpaceX Mars colonization program (also referred to as Occupy Mars) is the planned objective of the company SpaceX, and particularly of its founder Elon Musk, to send humans to live on Mars. The plan is to establish a self-sustaining, large scale settlement and directly democratic, self-governing colony. The motivation behind this is the belief that colonizing Mars will allow humanity to become multiplanetary, thereby ensuring the long-term survival of the human race if it becomes extinct on Earth. Colonization is to be achieved with reusable and mass-produced, super heavy-lift launch vehicles called Starship. They have been referred to as the "holy grail of rocketry" for extraplanetary colonization.

These plans for colonizing Mars have received both praise and criticism. They are supported...

The Case for Mars

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The Case for Mars: The Plan to Settle the Red Planet and Why We Must is a nonfiction science book by Robert Zubrin, first published in 1996, and revised and updated in 2011.

The book details Zubrin's Mars Direct plan to make the first human landing on Mars. The plan focuses on keeping costs down by making use of automated systems and available materials on Mars to manufacture the return journey's fuel in situ. The book also reveals possible Mars colony designs and weighs the prospects for a colony's material self-sufficiency and for the terraforming of Mars.

Mars to Stay

from the book The Human Mission to Mars: Colonizing the Red Planet highlights their mission plans as: No base on the Moon is needed. Given the broad

Mars to Stay missions propose that astronauts sent to Mars for the first time should intend to remain there. Unused emergency return vehicles would be recycled into settlement construction as soon as the habitability of Mars becomes evident to the initial pioneers. Mars to Stay missions are advocated both to reduce cost and to ensure permanent settlement of Mars. Among many notable Mars to Stay advocates, former Apollo astronaut Buzz Aldrin has been particularly outspoken, suggesting in numerous forums "Forget the Moon, Let's Head to Mars!" and, in June 2013, Aldrin promoted a crewed mission "to homestead Mars and become a two-planet species". In August 2015, Aldrin, in association with the Florida Institute of Technology, presented a "master plan", for NASA consideration, for astronauts, with...

List of crewed Mars mission plans

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This list of crewed Mars mission plans is a listing of concept studies for a crewed mission to Mars during the 20th and 21st centuries. It is limited to studies done with engineering and scientific knowledge about the capabilities of then current technology, typically for high-budget space agencies like NASA. Mission profiles include crewed flybys, crewed landers, or other types of Mars system encounter strategies.

Flag of Mars

A flag of Mars is a concept of a possible flag design, meant to symbolize the planet Mars or to represent a fictional Martian government, in works of

A flag of Mars is a concept of a possible flag design, meant to symbolize the planet Mars or to represent a fictional Martian government, in works of fiction.

Exploration of Mars

Mars Colonization of Mars Human mission to Mars Life on Mars List of artificial objects on Mars List of missions to Mars Mars landing Mars race Mars rover

The planet Mars has been explored remotely by spacecraft. Probes sent from Earth, beginning in the late 20th century, have yielded a large increase in knowledge about the Martian system, focused primarily on understanding its geology and habitability potential. Engineering interplanetary journeys is complicated and the exploration of Mars has experienced a high failure rate, especially the early attempts. Roughly sixty percent of all spacecraft destined for Mars failed before completing their missions, with some failing before their observations could begin. Some missions have been met with unexpected success, such as the twin Mars Exploration Rovers, Spirit and Opportunity, which operated for years beyond their specification.

Outline of Mars

The following outline is provided as an overview of and topical guide to Mars: Mars – fourth planet from the Sun and the second-smallest planet in the

The following outline is provided as an overview of and topical guide to Mars:

Mars – fourth planet from the Sun and the second-smallest planet in the Solar System, after Mercury. Named after the Roman god of war, it is often referred to as the "Red Planet" because the iron oxide prevalent on its surface gives it a reddish appearance. Mars is a terrestrial planet with a thin atmosphere, having surface features reminiscent both of the impact craters of the Moon and the valleys, deserts, and polar ice caps of Earth.

Mars in fiction

with the early efforts of establishing a permanent human presence on the red planet. The members of the third human mission to Mars are forced to trek

Mars, the fourth planet from the Sun, has appeared as a setting in works of fiction since at least the mid-1600s. Trends in the planet's portrayal have largely been influenced by advances in planetary science. It became the most popular celestial object in fiction in the late 1800s, when it became clear that there was no life on the Moon. The predominant genre depicting Mars at the time was utopian fiction. Around the same time, the mistaken belief that there are canals on Mars emerged and made its way into fiction, popularized by Percival Lowell's speculations of an ancient civilization having constructed them. The War of the Worlds, H. G. Wells's novel about an alien invasion of Earth by sinister Martians, was published in 1897 and went on to have a major influence on the science fiction...

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