

Why Colonize Mars?

My grades aren't too bad in history, and I could bore you with a story about 16th century Europeans and dreams of leaving their crowded, disease-infested cities and moving to the New World. I could ramble on about how the expansion to this continent brought about progresses in exploration and cartography that would fuel the scientific revolution of a new age. And I could explain how the country that came out of it advanced the world perhaps centuries beyond its time in scientific, economic, diplomatic, and religious progress. But that's not why you're here.

Here are seven reasons why we should colonize Mars:



1. Its Similarity to Earth

Mars has water, frozen underground and at the polar caps. There is evidence that this water has, in the past and present, flooded the surface in liquid form. Signs of erosion can be found on the slopes of craters and volcanoes. Geological features resembling those on Earth suggest that Mars was once a wet and hospitable planet.

A day on Mars is 24.5 hours long. Mars is a third the size of Earth, but it has as much land area as the seven continents combined. Its gravity is 2.7 times less than that of Earth: enough to remain flat-footed on the surface, but a low enough escape velocity to make launching from Mars relatively simple. Remember, it was much easier for Apollo to lift off from the moon than it was to leave Earth. Construction materials would be lighter as well, facilitating labor in the early colony. The health benefits of such an environment are unknown, but it is theorized that Mars might prevent and relieve forms of arthritis and back pain. Also, Martian-born children might be taller than their Terran cousins.

Both planets have seasons and similar rotational patterns. Mars is roughly in the same heat-range as Earth, being next-door in the solar system, and if it had a thicker atmosphere it is likely the two planets would share the same climate. Today, Mars's temperature varies from +1°F to -178°F, with an average global temperature of -85°F. That's cold, but still the solar system's most hospitable for humans.

2. Its Scientific Secrets

With its similarity to Earth, there is a strong possibility that bacterial life (or something more?) exists on the planet. Some people believe that Viking detected it way back in 1976. Others believe that we found it in a Martian meteorite. Rovers are on their way to Mars to settle the debate, but we may only be sure if humans look for themselves. As any engineer will tell you, the ease with which a human being can cover a stretch of ground and examine specimens along the way, gathering and processing data, cannot be emulated with a machine. If we ever find life, we can begin to answer some of the biggest questions we've ever asked: "Are we alone in the universe? What else is out there? What is the basic unit of life? What does life need to survive?"

From a geological standpoint alone, Mars is exciting because it offers scientists a view of how planets develop. Mars is billions of years older than the Earth, and its features are much more exaggerated. The largest canyons, volcanoes, and craters in the solar system are available for our study.

3. Its Diplomatic Potential

It is obvious that the world isn't perfect, but we've been trying for the entirety of our civilized existence. We've reached a point now where the majority of the world's superpowers are on good enough terms to begin an international joint-project to colonize Mars. This was much the theory with the International Space Station, but dirty politics proved how immature the world's superpowers are. Ending the quarrelling and going to space might sound like ignorant idealism, but imagine the diplomatic potential. When we become united in a goal, not just as Americans or as Russians but as mankind, all of humanity puts aside its differences.

Even if the initial trip to Mars is sponsored by one nation or one space agency, in the end Mars will be for everyone. The Old World's boundaries will not be able to restrain the emigration. Who knows, the concept of countries might remain a thing of the Earth, an archaic reminder of castles and kings and the battle for power. Mars could be the beginning of a new era in human diplomacy.

4. Its Economic Value



Mars is worth a lot of money. There are 144 trillion square meters of surface area, roughly the land area of the Earth, available for development. I'm not going to tell you how great all that land is for residential, commercial, and industrial use... go play Sim City.

An important part of the fusion reaction process is deuterium, a stable isotope of hydrogen. Once we can contain a fusion reaction, the deuterium-tritium reaction has a high yield of energy for the small amount of fuel put in. Deuterium, or heavy hydrogen, is hard to obtain on Earth, but on Mars it is five times more abundant in the form of Hydrogen-Deuterium-Oxygen (See Also: Compositions). A milliliter of liquid heavy-hydrogen fuel would produce as much energy as 20 tons of coal. Deuterium is also important in chemistry because it reacts the same way as hydrogen, but can be distinguished from hydrogen by its mass. These reactions occur slower than normal hydrogen reactions.

There is an abundance of rare metals on Mars such as platinum, gold, silver, and others. Shipping from Mars to Earth, as mentioned above, is much easier than the other way around. Even more promising is the proximity of the asteroid belt to Mars. Dactyl, the moon orbiting the asteroid Ida shown in this picture, is 1.4 kilometers in diameter, yet it contains more iron than the human race has used in its entire existence. These asteroids could be mined near Mars and shipped from the planet for little cost. What we could see develop is a triangle trade route, much like the one in the 18th century between Britain, the West Indies, and America. The economic potential is colossal.

5. Its Location

That brings us to our next point: location. Mars is relatively close to the Earth. Mars sits between the asteroid belt and us, acting as a kind of stepping stone to what lies beyond. It remains close enough to the sun to benefit from its heat (and light) but remains far enough away to be protected from any significant change in the sun's heat output. (We still know little about the sun's long-term heat cycles.)

6. Its Home for Mankind

My personal favorite reason for colonizing Mars is that it offers a backup plan for humanity. Every few million years, the Earth tends to be wiped clear of almost all life in a globally catastrophic event (read: asteroid collision). An asteroid the size of Dactyl could wipe us off the face of the Earth. Who knows how close we've already come to blowing ourselves to smithereens.

A colony on Mars is not far off, but the question remains: could that colony be self-sufficient? The time will come when Mars will not need Earth to sustain it, much like the United States found itself long before the Revolutionary War. Does that mean life will be self-sufficient? No. We may be able to grow our own food on the planet in greenhouses, but what about wild animals, and birds, and fish, and rivers, and oceans? Terraforming, then, becomes a necessity in more than one way. Terraforming is the process of creating another Earth, and you can find out more about it by reading the various terraforming articles on this site. The general consensus is terraforming is necessary for global colonization and global colonization is necessary for terraforming. The two go hand-in-hand.



7. Its Challenge for Mankind

Colonizing Mars will no doubt be the most difficult thing that humanity has ever pursued. Like building a bridge or a skyscraper, it will represent the pinnacle of human achievement up to that time. We can begin colonization now with technology that exists now; this is not

science fiction anymore.

Before he began his fateful expedition to Mount Everest, George Mallory was asked why man kept trying to reach the summit of that mountain. "Because it is there," he said.

In the words of the great science fiction author Kim Stanley Robinson, "We are the consciousness of the universe, and our job is to spread that around, to go look at things, to live everywhere we can. It's too dangerous to keep the consciousness of the universe on one planet; it could be wiped out. Mars will always remain Mars, different from Earth, colder and wilder. But it can be Mars and ours at the same time. And it will be. There is this about the human mind: if it can be done, it will be done. We can do it, so we will do it. So we might as well start."