Getting there: Why We Should, Shouldn’t, Can And Can’t

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ABSTRACT

This report examines the feasibility of going to the planet Mars for indefinite amounts of time

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1. Why Mars?

1.1. Profile of Mars

Mars is a desolate island in the same degree of cold as loneliness. It gets its frigid temperature from being 50% further away from the Sun than Earth (www.nasa.org).

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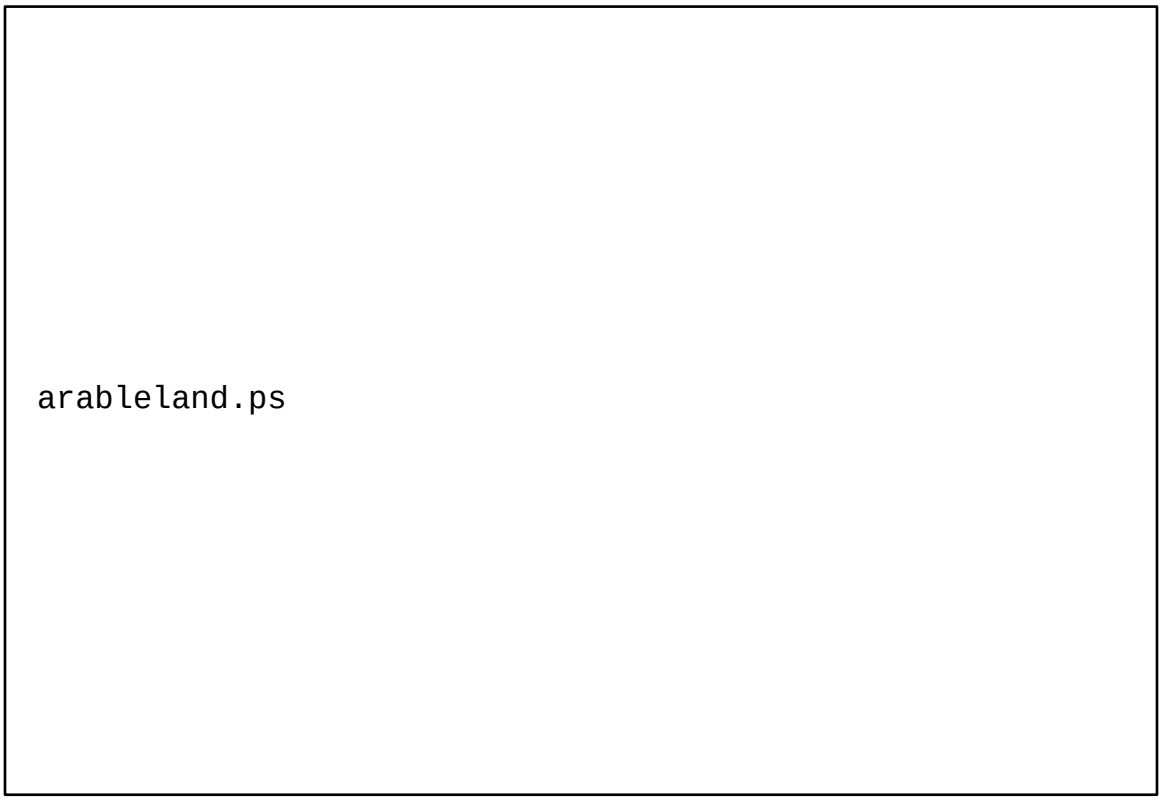
marscape.ps

Credits: https://www.cgtrader.com/3d-models/space/planet/Mars-landscape (PUT CREDITS ON IMAGE) At a frigid minus 80 degrees Fahrenheit (Sharp), the red planet, which has a mass of 6.42*10ˆ23 (Space.com) is rendered uninhabitable to anyone not wearing a protective suit. Despite this cold temperature, it is still believed that there is running water on the surface of the planet (David,30); this is unlike any other planet except Earth, the travelers now can have water for drinking and irrigating Another similarity Mars has with Earth is its clock cycle. Mars is only 39 minutes off of Earths 24-hour clock(Mars-One). Alongside this is the fact that Mars has an atmosphere composed of mostly Co2, argon, nitrogen, oxygen, and water vapor(Nasa) that can block solar radiation (Mars-One). This is true even though Mars' atmosphere is 100 times less dense than Earth's

(Sharp). Mars was not always this way though, 3.5 billion years ago it used to be much denser. What makes Mars so attractive to live on, even to figures like Elon Musk, is that it has carbon,nitrogen,hydrogen and oxygen with an added bonus that it is easily accessible (Zubrin)

1.2. Financial incentives

As it is shown here:



Dictonary.com defines arable land as "land that can be or is cultivated". The amount of arable land in the united

states has fallen significantly. If we had another planet to farm on, it would be beneficial to society, and could be potentially profitable with government subsidy. "By far the greatest impact on the American landscape comes not from urbanization but rather from agriculture. According to the U.S department of Agriculture, farming and ranching are responsible for 68% of all species endangerment in the United States" (westerwatersheds,FIX SOURCE). Alongside this is the idea that this might be necessary for the survival of our species "As just about everyone already knows, this planet is currently experiencing some pretty unprecedented challenges. So much so that Stephen Hawking claimed this week that we only have 100 years to get humans set up elsewhere in the galaxy or our entire species will face extinction. His statement is rather dubious, but it’s true that our future looks pretty bleak." (Popsci, FIX SOURCE)

1.2.1. Land

Another source of revenue could be real-estate. "Under conditions of such large scale immigration, sale of real-estate will add a significant source of income to the planet’s economy" (Zubrin). Just how valuable is this? Mars soil, when sold at 10 dollars per acre, could be a 358 BILLION dollar industry, and if Mars was terraformed, it could be worth up to 36 trillion as land prices would increase by

a hundred fold (Zubrin). If you do not believe that Mars real estate could be valuable, "Enormous tracts of land were bought and sold in Kentucky for very large sums of money a hundred years before settlers arrived" (Zubrin). This shows that even if Mars' land isn't accessible, it could still be valuable. There could potentially be a huge market for martian real-estate as people bet on the idea that their real-estate would be worth more in the future when travel to and from Mars becomes more convenient.

1.2.2. Mining

1.3. Combat pollution on Earth

As we heard from the quote in the section on Financial Incentives, agriculture has a big effect on the well-being of the country. One of the ways agriculture hurts the land is through pesticides, "Pesticides often don't just kill the target pest. Beneficial insects in and around the fields can be poisoned or killed, as can other animals eating poisoned insects. Pesticides can also kill soil microorganisms" (wwf.panda.org, FIX SOURCE). Paradoxically, another harm could be fertilizer "When the excess nutrients from all the

fertilizer we use runs off into our waterways, they cause algae blooms sometimes big enough to make waterways impassable. When the algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic species canât survive in these so-called âdead zonesâ and so they die or move on to greener underwater pastures. A related issue is the poisoning of aquatic life. According to the U.S. Centers for Disease Control (CDC), Americans alone churn through 75 million pounds of pesticides each year to keep the bugs off their peapods and petunias. When those chemicals get into waterways, fish ingest them and become diseased. Humans who eat diseased fish can themselves become ill, completing the circle wrought by pollution." (Scientific American, FIX SOURCE)

1.4. Plan B for the Human Race