

## ON THE LEGITIMIZATION, IMPORTANCE AND DUTY OF COLONIZING MARS

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Fact is: We cannot simply fly to Mars or even colonize it just out of a mood to do so. There does not exist an inherent purpose in doing so that is immediately apparent to everybody. There have to be strong reasons to justify the immense efforts and expenses.

Good afternoon Ladies and Gentlemen, and welcome to this speech at the Mars Society Founding Convention here at Boulder, Colorado.

The question I will address today is the question that should be answered before any technical problems are tackled and before any plans are made, it is the question of the correctness, it is the question of the legitimization of colonizing the Red Planet. – And the answering of that question will make clear why I today consider it so important and maybe even our duty to colonize Mars. Although I am focusing in this speech on the “why”, it will also become necessary to briefly address the “how”.

When, as an open-minded member of the space-community, one encounters for the first time the idea of sending men to Mars and colonizing the Red Planet, one is instantly absorbed by it.: This bold undertaking, this challenge, this impossibility of establishing a continued and, given a little time, largely independent presence of human beings on another celestial body. Personally, I can hardly imagine anything else being more fascinating and exhilarating. The thought of leaving Earth behind and found a new home for mankind among the stars, an outpost of life, was, and is enough to render me addicted. The whole undertaking of colonizing Mars, all the efforts and expenses, seem to completely justify themselves beyond the shadow of a doubt.

So, what is it what we really want? At this point, we have to be careful: Frankly spoken, sometimes I get the feeling that some people would be perfectly satisfied with a Flags & Footprint mission. To cut a long story short, I mean by this to start some sort of gut-action space euphoria that then, after a short period of admittedly probably marvelous successes, leads into nothingness. We would be successful in convincing a decision-maker or two, we will get one or two manned missions to Mars, but then, sooner or later, funds will be cut and that's it.

But on the other hand, we have this dream of a long-term program of manned missions, ultimately leading to a colonization of the Red Planet. A program with broad public support, a program where all mankind would participate. And then, through all those joined activities, we finally develop into one space-faring civilization, with a healthy population on Mars and

already planning the next steps towards the stars. As all mankind is finally united in common goals, wars become fewer and fewer, and it is finally learned how to solve conflicts in a way worthy of human beings. Or as Archibald MacLeish put it: "To see Earth as it really is, small and blue and beautiful, is to see ourselves as riders on the earth together."

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In plain text: We do not want a Flags & Footprint mission, we want a long-term program!

So far so good, a long-term project then. But why actually? And why should the public pay? Taking a look at the reasons which support these goals, we will see that it is not only a possibility, but also a necessity and duty to conduct the colonization of Mars, as we will see with all mankind in mind, that Mars offers a seldomly encountered chance that must be used!

So let us take a look at what a colonization of Mars has to offer: Fact is: The resources required for the conduct of the research and engineering efforts necessary to establish and continually operate a colony on Mars will be considerable. It could very well turn out that they are, as the subject itself, on a new order of magnitude. Fact is that money and manpower and whatever other resource utilized for this purpose cannot be used to improve the situation of the socially disadvantaged, cannot be used to support kindergartens or schools and cannot be used to save the poorest of the poor on our planet from starving. This shall suffice as a brief glimpse of some of the arguments that have to be won and some of the responsibilities a supporter of the movement to colonize Mars carries. By the way, it should be clear that the problem itself is not solved by discussing some new fancy ways of working with the industry. Without being able to give a legitimization the public can understand, I ask you, what is the point in colonizing Mars after all?

Mankind has in the past years, reached a stage of its development where our technical abilities allow us to eradicate all higher forms of life on our home planet within half an hour. But satellite communication, supersonic passenger airplanes and innumerable other inventions would also allow us to start with a planet-wide cooperation, if we would only choose to do so. The possibilities we have at hand not only make this possible, but they oblige us to use our powers for peaceful purposes, simply because anything else could be fatal.

Never before in the entire history of mankind had we the chance to do anything remotely like crossing the vastness of space to colonize another planet. Never before did we have the chance to unite all people, and I am not only talking of those living in the United States of America, but of the people living in all different countries around the globe, to unite them under one common, peaceful goal. Never before did we have the chance to act as one "civilization", not on a timely strictly limited basis, but to build our Gate to the Stars. With the settlement of Mars we have, for the first time, the unique chance to engage in a worldwide, cooperative challenge. It not only requires a planet-wide coordination, it requires the acceptance of the fact that all men are equal, regardless of the circumstance of birth or upbringing. This is the main point, because I firmly believe that this promotion of peace, freedom and security forms the core of the legitimization, it is this what justifies. Furthermore, it could very well be that the sheer

dimension of the effort to support an outpost or a colony on Mars leaves no choice but to be a true international undertaking. Should that, what at first seems to pose the greatest threat, the scale, legitimize the project in the long run?

In addition to this, there are all the other benefits of going into space, “for free” if you like to say so: In the first place, there are the technical spin-offs: The function of space-programs as turbo-pumps in the stream of technical innovation is widely known. Just to name a few: There are the classic examples of the solar cell, the PC or simply the Teflon-coated pan. More recent examples include a LED, which, originally designed to grow crops in spaceships, allows new forms of cancer-treatment. Or geoponic soil, which can help save fertilizer. Or a new medical device which supports the function of the heart, but does not require surgery on the heart itself. Expected leaps in the technical development for us here on Earth through the development of Martian technology can include, for example, new and more efficient machinery which produce less pollutants, or maybe even none at all in the case of purely electric systems, to protect our fragile environment back here on Earth. Or more efficient agricultural techniques which will require a minimum use of artificial substances, because they will probably be quite expensive on Mars. Or new or more advanced materials than we have today.

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Other, long-term, justifications include Krafft-Ehrlicke’s Extraterrestrial Imperative. Due to the exhaustion of resources, we simply will have to leave Earth sometime. Maybe we can delay this, but sooner or later our home planet will simply be unable to support any more, or even none at all, of us. At the latest, we can be ready to leave Earth then, or take the alternative and pray that everybody prefers strict birth-control to fighting for food, water and air.

Now I will become almost unbearably subjective and perhaps reach the point where some non-engineers may be of a totally different opinion: In my opinion, there are very, very few other fields of human endeavor where, as is done within astronautics, there is so obviously and consciously defined what is possible or not, where there is in such impressive magnitude created reality. (So much for the engineer’s self-esteem!).

In addition to all this, Mars is still something that presents a great challenge to mankind. Without those challenges, we would enter into a slow, but steady decline. At this point, I would like to remind you that Apollo did also pose a great challenge, did also inspire the youth and did also foster technical progress, but went down the drain after a few years, along with almost all connected hopes. Now is a good time to take a closer look at the Apollo Program, the only program that seems comparable, and see what we can learn:

Back in the 1960s, during the R&D phase, during the first launches and of course during the first walks on the Moon, the whole program was popular with the politicians and the public alike, and almost unlimited funds were secure. But after the initial space-euphoria began to cool down, after the primary goal of the people involved had been achieved, namely to demonstrate to the former Soviet Union who is boss in space and who is not, the interest in the program as a whole began to fade away, along with the public and financial support. What remained were separate groups of scientists, engineers, idealists, politicians and, of course, the military. But

robbed of a common denominator, which the race with the Soviet Union had so splendidly provided, soon everybody started to pull in a different direction: The scientist, for example, wanted data (fast rockets), the politician wanted prestige (big rockets), the engineer wanted self-esteem (sophisticated rockets) and the public wanted more money to be spend elsewhere (no rockets). Detailed information on the different groups within the space-community can be found in the Parkinson-Classification, which has recently been published in the July Edition of the *Journal of the British Interplanetary Society*. So the Moon-Base quickly and silently died, along with the space-station, along with the trip to Mars. And last but not least, Apollo 18's Saturn-V today makes a marvelous sight at the Lyndon B. Johnson Space Center in Houston.

So we see that it is important for a large-scale program to function to have a common aim, a goal which is supported by all people involved. But today, we are still stuck in the middle of this 'separation'. We can learn that much from Apollo: If a common denominator for all people involved is missing, this will securely put an end to any large-scale program. We need a firm foundation on which to build, a foundation that will, unfortunately in contrast to Apollo, last long enough to support a large-scale and truly long-term program. I do believe that the legitimization given above, the promotion of peace, freedom and security through international cooperation, provides us, in addition to its primary purpose, with such a foundation. Only this kind of common aim makes it possible in the first place to start an undertaking as colonizing Mars. We have to assure that the importance of this common denominator does not get lost in all the benefits this global approach has.

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So, what did we get so far? (1) What we want is a large-scale long-term Mars program. (2) This is only *legitimate* as a process that is build around the active attempt to include all mankind. (3) This is only *possible* as an international effort, because this forms an essential part of the foundation on which it is build. (4) A colonization of Mars includes all the "classic" benefits encountered in space-programs.

If we take all this into account, there is only one possible conclusion on how the long-term manned mission to Mars is possible: It prerequisites that the whole undertaking of colonizing Mars is done as a multinational effort, with the honest attempt to conduct it as a mission for all mankind.

We must foster true and long-term international cooperation. We must create a basis for mankind to grow together over time. We must actively support the participation of as many nations as possible. We must create, or better engage in, a challenge that is open for all mankind, in order to promote peace, freedom and security for us and the generations to come.

This way, it not only becomes possible to colonize the Red Planet, but those are the factors that justify all expenses, those are the factors which lift a colonization of Mars from a severe problem to a noble duty.

We must take this unique chance and opportunity Mars offers.

What could this concretely mean for the colonization of Mars? This could, for example, mean that for the colonization of Mars one planet-wide agency is created, which deals with all our Martian affairs. This agency will allow mankind to grow together over time, united by common goals and the effort of bringing and sustaining life among the stars, including our home here on Earth. As more and more people realize that it is better for them to place their attention on the destiny of all mankind, the positive impact in all fields, including the before mentioned kindergartens and schools, and including the before mentioned help for the poorest of the poor, even the impact in these fields will be immense.

Peace and freedom and security through the colonization of Mars, these are the main reasons why it is important. Let us make sure that Mars is not the end of a costly story, but that Mars marks the beginning of a new era for mankind.

For all mankind with all mankind, this is what is important, this is what legitimizes, this is the duty we carry.