

# Tourists'

# Guide to Mars

*A Scientific Perspective in a Nutshell*

Currently the “Journey to Mars” bubble is all over the media and in particular it is visible at NASA. What to expect from the next US president and how can we make it? Realistically?

Discussed is the physics of space travel starting at the launch, followed by a hopefully smooth cruise, to the soft landing and, of course, growing potatoes (in-situ resource utilization).

Rendezvous maneuvers, transfer orbits, new low energy trajectories based on chaos theory, zero-g physics, artificial gravity, free return trajectories, etc. are explained in plain English. The author is a physicist and college professor in the US.

What are the strategies to set up such a trip? What are NASA's, ESA's, Russia's, plans as well as what is the private sector up to?

All the nitty gritty details are included, too. How to make O<sub>2</sub> and fuel on Mars? Life-support systems, communication, and navigation—how does that work? Why should we go there in the first place, and who will likely be first? Buckle up and join the ride.

**The physics and chemistry of a trip to Mars are outlined in this comprehensive guide.**

The author is a physical chemist, a surface chemist, and since 2003 a faculty member at a US college. Born in West-Berlin, he got most of his education in Physics in Germany. After many years of postdoc positions (Italy, USA, Italy, Germany) and a habilitation in Germany (German tenure), he found a faculty position in the US where he obtained tenure in 2009. Although this book project has nothing to do with the university he is employed, more one could find here [www.uweburghaus.us](http://www.uweburghaus.us) He has written several books, (most of these about practical engineering topics), and sells most of those books in the meanwhile by myself, i.e., he owns a part time small business. Details are here: [www.LatheCity.com](http://www.LatheCity.com). LatheCity is actually specialized in manufacturing tools for benchtop metal work systems.

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# Tourists' Guide to Mars



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**Did you ever consider a trip to Mars? It does become cheaper year after year, though. If you do, we recommend this brief guide that covers everything from the launch, over a smooth cruise, to the soft landing and, of course, growing potatoes (“in-situ resource utilization”) in just ~150 pages. All that you need to know for your trip—all inclusive. This is the real deal, however, a serious guide: the physics of interplanetary travel, rendezvous maneuvers, transfer orbits, and why astronauts float are explained by a college professor, in plain English. All the nitty gritty details are included, too. How to make O<sub>2</sub> and fuel on Mars? Life-support systems, communication, and navigation—how does that work? Why should we go there in the first place, and who will likely be first? Buckle up and join the ride.**

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