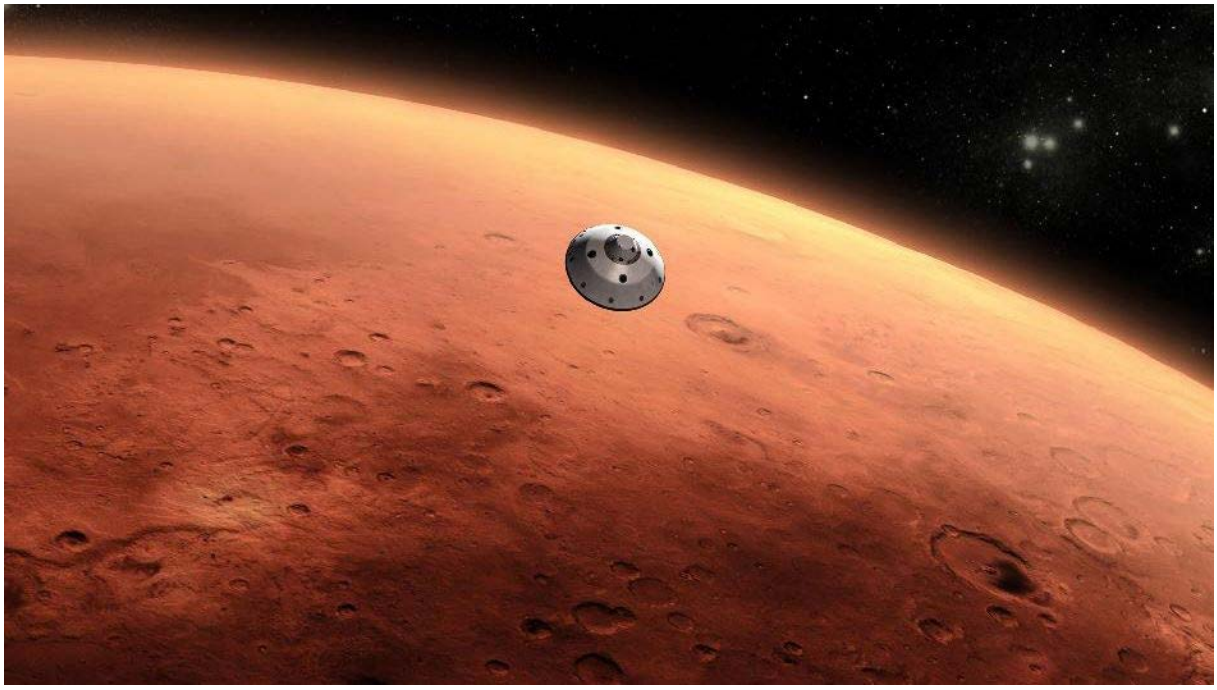
Perseverance



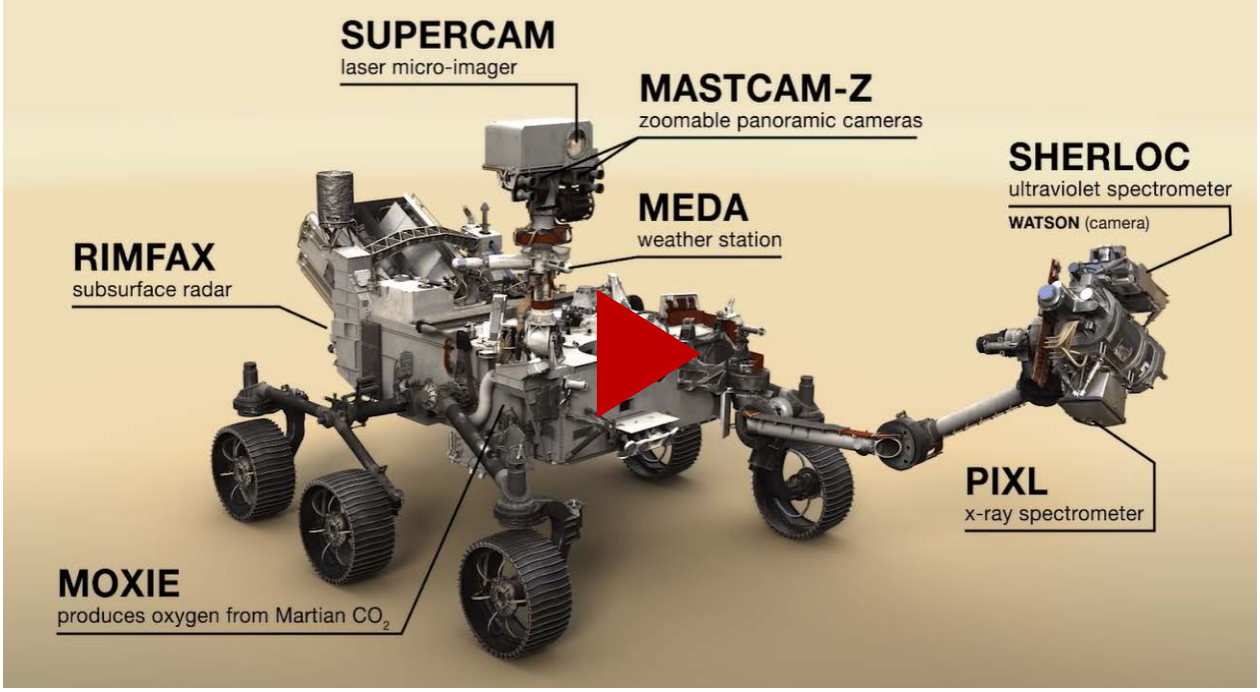
©NASA/Space.com

A word that we have heard very often lately is perseverance. It is something that we have been encouraged to tap into to get through this crisis period. And we have managed quite well. But this article is not about that explicitly. But it is about perseverance of dreams as we take a closer look at NASA's ongoing Mission Overview and the Mars rover named, you guessed it, Perseverance. So if your Curiosity is piqued, read on….😊

Perseverance (Percy, for close friends) is a car-sized Mars rover designed to explore the Jezero crater as part of NASA's mission and on 30 July , 2020 at 7:50 am ET, Percy blasted off from the Kennedy Space Center in Cape Canaveral, Florida. With its newest, U$2.4-billion robot *en route* to Mars, NASA is setting out to answer a question that has nagged humanity for as long as astronomers have pointed telescopes at the reddish world: Is there—or was there once—life on our neighbouring planet?

'Our strategy is to look very deep in time, back to this time when we believe Mars and Earth were much more similar,' says deputy project scientist Ken Williford of NASA's Jet Propulsion Laboratory (JPL). 'Studying Mars and its ancient environments—what can we learn about our place in the universe? Are we alone? Have we always been alone?'

But exploring Jezero won't be easy. The first test for Perseverance will be a perilous seven-minute plunge through the thin Martian atmosphere, scheduled for this upcoming 18 February. Surviving that risky descent means relying on a heat shield, a parachute, a new navigation system, and a hovering sky crane that will lower the rover to Jezero's soil—all without any input from mission controllers on Earth. Once on the surface, Perseverance will deploy a small, featherweight helicopter named Ingenuity and over the mission's first few weeks on Mars, the little chopper will find out whether powered flight in Mars's thin air is within human capability.



Mission Overview: NASA's Perseverance Mars Rover [Video 2:58min]

Perseverance is based on the design of the highly successful Mars Science Laboratory rover, Curiosity, which landed almost two years ago, and is currently operating on the planet. The new rover will carry more sophisticated, upgraded hardware and new instruments to conduct geological assessments of the rover's landing site, determine the potential habitability of the environment, and directly search for signs of ancient Martian life. It is another important step on our journey to Mars.

The new rover also will help advance our knowledge of how future human explorers could use natural resources available on the surface of the Red Planet. An ability to live off the Martian land would transform future exploration of the planet. Designers of future human expeditions can use this mission to understand the hazards posed by Martian dust and demonstrate technology to process carbon dioxide from the atmosphere to produce oxygen. These experiments will help engineers learn how to use Martian resources to produce oxygen for human respiration and potentially as an oxidiser for rocket fuel.

NASA selected the name Perseverance proposed by Alexander Mather, a seventh-grade student from Virginia, following a nationwide 'Name the rover' contest that attracted more than 28,000 entries. I will conclude with an extract from Alex's winning essay:

'Curiosity. Insight. Spirit. Opportunity. If you think about it, all these names of past Mars rovers are qualities we possess as humans. We are always curious, and seek opportunity. We have the spirit and insight to explore the Moon, Mars, and beyond. But, if rovers are to be the qualities of us as a race, we missed the most important thing. Perseverance. We as humans evolved as creatures who could learn to adapt to any situation, no matter how harsh. We are a species of explorers, and we will meet many setbacks on the way to Mars. However, we can persevere. We, not as a nation but as humans, will not give up. The human race will always persevere into the future.'

We wish to thank our colleague Zoltán Szabó for writing this article for the OIE In-house Times.