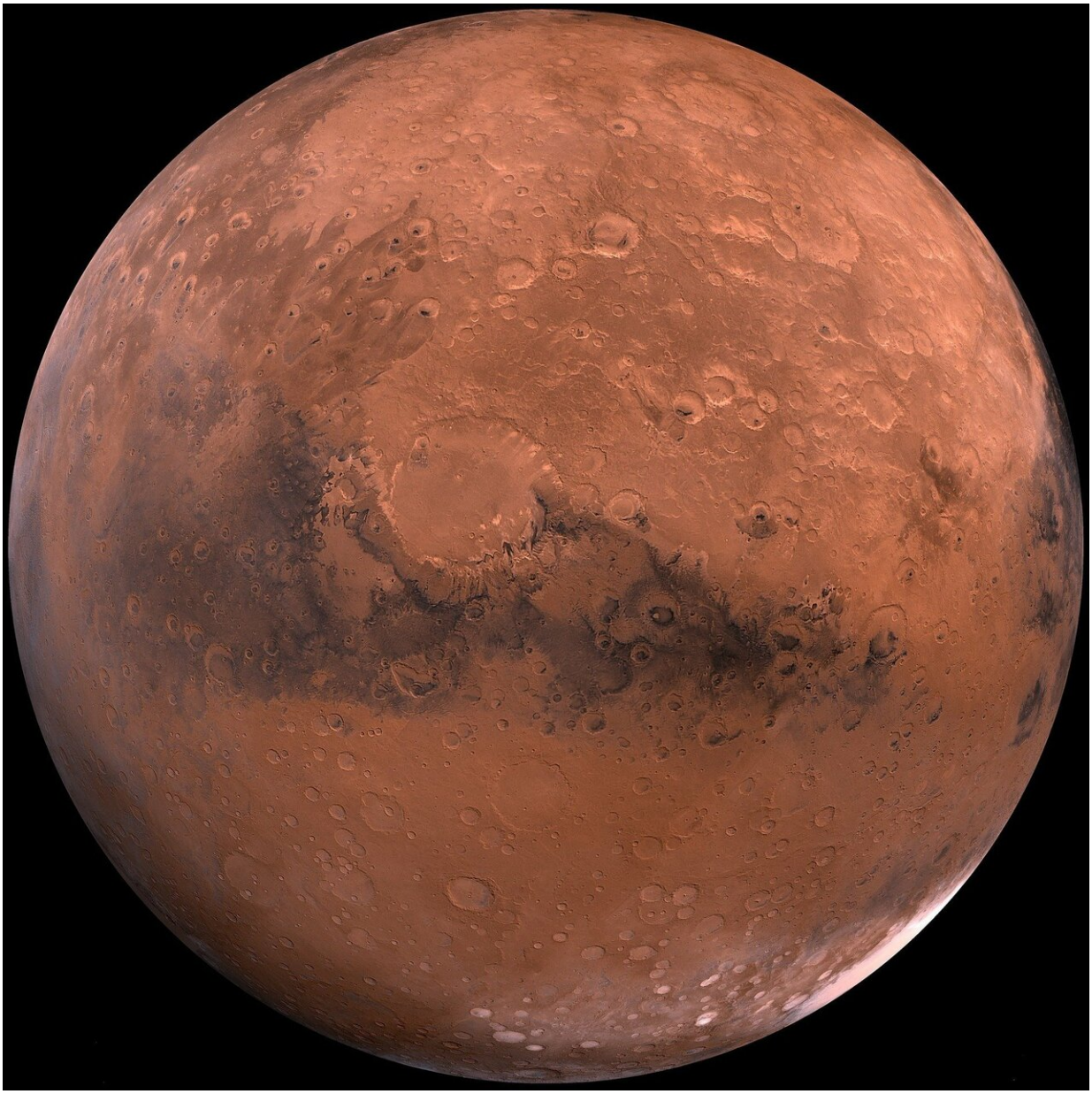
Video: Flight over the Mars 2020 Perseverance rover landing site

July 31 2020



This video shows Jezero crater, the landing site of the NASA Mars 2020 Perseverance rover on the Red Planet, based on images from ESA's Mars Express mission. The planned landing area is marked with an orange ellipse.

Scheduled for launch from Cape Canaveral, Florida on 30 July 2020 on board an Atlas V rocket, the Perseverance rover will land on 18 February 2021 in Jezero crater.

An impact crater with a diameter of about 45 km, Jezero is located at the rim of the giant Isidis impact basin. Morphological evidence suggests that the crater once hosted a lake, some 3.5 billion years ago.

Jezero possesses an inlet and an outlet channel. The inlet channel discharges into a fan-delta deposit, containing water-rich minerals such as smectite clays. Scientists believe that the lake was relatively long lived because the delta may have required one to 10 million years to reach its thickness and size. Other studies conclude that the lake did not experience periods of important water-level fluctuations and that it was formed by a continuous surface runoff. This makes Jezero crater to a prime target for the search for potential signs of microbial life, because organic molecules are very well preserved in river deltas and lake sediments.

A recent study of the ancient lakeshores, diverse minerals and violent volcanism of Jezero crater based on data from ESA's Mars Express mission is available here: Mars Express helps uncover the secrets of Perseverance landing site

The animation was created using an image mosaic made from four single orbit observations obtained by the High Resolution Stereo Camera (HRSC) on Mars Express between 2004 and 2008. The mosaic combines data from the HRSC nadir and color channels; the nadir channel is aligned perpendicular to the surface of Mars, as if looking straight down at the surface. The mosaic image was then combined with topography information from the stereo channels of HRSC to generate a three-dimensional landscape, which was then recorded from different perspectives, as with a movie camera, to render the flight shown in the video.

Provided by European Space Agency

Citation: Video: Flight over the Mars 2020 Perseverance rover landing site (2020, July 31) retrieved 16 May 2024 from https://phys.org/news/2020-07-video-flight-mars-perseverance-rover.html