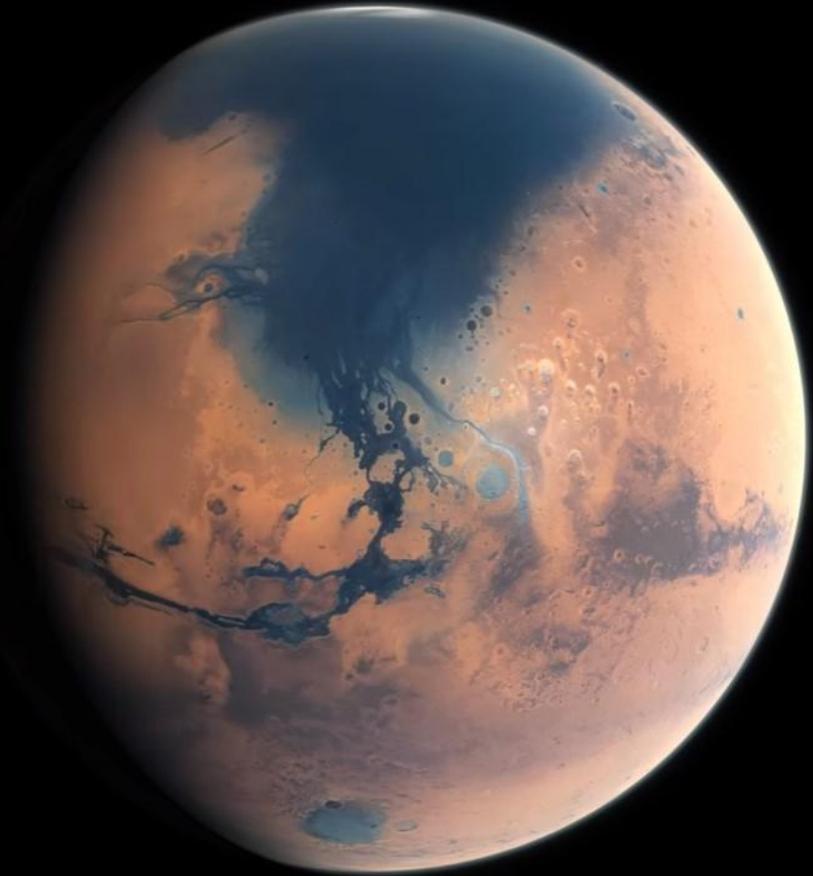


***Remote Sensing
the Red Planet:
Geology and
Astrobiology
of Mars***

**UCLA
Sci|Art Lab + Studio
2020**



Artists conception of ancient Mars



Modern river delta on Earth (left) and Martian paleo-delta in Jezero Crater (right).

WORKSHOP OVERVIEW

This workshop is designed to introduce students to fundamental concepts in geology and planetary science. By examining geologic processes and the morphologic features they produce here on Earth, we can learn to recognize similar features on other planetary bodies to gain insight to the active processes occurring there. On Mars for example, active sand dunes show us that our nearest neighbor is presently a wind dominated planet, while dry river deltas indicate that water flowed across its surface in the past. Using GoogleEarth, JMars, and other remote sensing software, students will use the concepts introduced in the workshop to identify a potential landing site for a future robotic mission to Mars and will be asked to justify their choice of landing site and specify the type of instruments they think should be included on the rover (camera, mass spectrometer, XRF and XRD instruments, wind gauges, etc.).



WORKSHOP LEADER

Shane Houchin is an Earth-scientist, artist, and musician. He has recently graduated from the UCLA EPSS department with a B.S. in Geology and is preparing to start a PhD at Caltech in Fall 2020. His scientific focus is in Earth's deep past - such as when, why, and how plate tectonics initiated. His current research involves analyzing lunar samples using scanning electron microscopy (SEM) and energy-dispersive spectrography (EDS), the project aims to identify micron-scale mineral grains of zircon and apatite for radiometric dating in order to better understand the impact history and planetary conditions of the Earth-Moon system during the first billion years of their existence. As a musician, Shane has recently released an album of original music covering such topics as particle-wave duality, black holes, finding a cool rock, and the banality of immortality. Bringing together his background in the arts with his geologic training, Shane seeks to communicate science in aesthetic and engaging ways that inspire interest in the natural world.