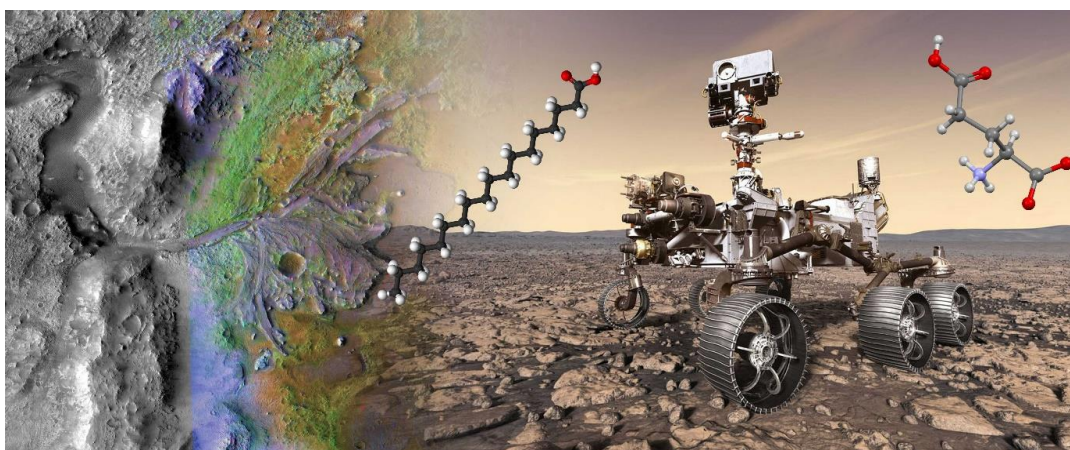




## Organic preservation in Jezero Crater – site of the Mars 2020 Perseverance rover

*Professor Mark A. Sephton & Dr Jonathan Watson*

*Earth Science & Engineering, South Kensington Campus, Imperial College, SW7 2AZ*



Habitable conditions are required for life to exist on other planets. The presence of standing bodies of water offers the possibility of life. Over 3.5 billion years ago, when life on Earth may have already established, a meteorite impact generated the 45 km wide Jezero Crater which was then filled with water to create a lake. It is possible that the Jezero lake contained microbial life and its remains may be buried as organic matter in the underlying or surrounding rocks.

The [Mars 2020 Perseverance Rover](#) is currently active in Jezero crater and is collecting samples for return to Earth. The geological diversity and great age of Jezero provide a number of sampling opportunities. The ability of the Jezero rocks to trap organic matter is unknown and studying representative rock types in Earth laboratories can help to understand how organic records of life may have been captured and preserved. Data from the study will help to inform current and future life detection missions including Mars Sample Return which will deliver samples of Mars to Earth laboratories in the early 2030s.

The research will use equipment in the Imperial College Organic Geochemistry Laboratories. Full training will be provided. The project would suit a candidate with a background in Earth Science, Chemistry or a subject that develops similar skills.

- For more information contact: [Professor Mark Sephton \(m.a.sephton@imperial.ac.uk\)](mailto:m.a.sephton@imperial.ac.uk).
- Details of how to apply are at: <https://www.imperial.ac.uk/study/pg/apply/how-to-apply/>.
- Funding details can be found at: <https://www.imperial.ac.uk/study/pg/fees-and-funding/scholarships/>.