

# Planetary Analogues for future robotic and manned exploration of Moon and Mars

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The growing interest in orbital, robotic and human exploration of the Moon and Mars requires research and analysis of terrains and materials on Earth that are considered analogous to planetary environments. It is therefore essential to identify and analyze terrestrial analogs and compare them with similar geological contexts on the surface of Mars and the Moon with particular attention to their resources and habitability potential. Among the most promising analogue sites are: lava tubes because of their sheltering effect towards cosmic and solar radiations and micrometeorite impacts and their mild inner temperature ranges, pyroclastic and phreatomagmatic deposits and their resources potential derived by volatile-magma interactions, semi-arid alluvial plains comparable to the sites focus of the upcoming martian sample return mission, anorthositic bodies and cumulitic veins similar to the lunar highlands of the southern pole objective of lunar manned exploration, hydrothermal dominated environment to assess rock-water interaction processes and microbial life potentially developed on martian environments. Hence proposals aiming at assessing the geological boundary conditions for future habitability of these or other analogue sites as well as their planetary counterparts are welcome. On the same sites mission methodologies and protocols including reduction/mitigation strategies for robotic and human operations and technology/instrumentation testing should be also foreseen.



The PhD student will carry out his work collaborating with team members involved in the DAEDALUS cam and SPACE IT up projects.

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