



Potential Biospheres of the icy world in our solar systems

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The challenge in astrobiology and planetary research in the near future is to realize space missions to study the habitability of Mars and the icy moons of the Jovian and Saturnian systems. Mars is an interesting object to search for habitable environments and for fossilized (and potentially present) life because of its past water driven wet history. On the other hand the Jovian moon Europa and the Saturnian moon Enceladus are promising candidates, where liquid water oceans beneath the surface are expected. These oceans can be habitable environments and the next challenge is to search there for present life. Some examples on potential biospheres and their biosignatures in Mars-like environments and in environmental conditions with reference to the icy moons will be given, which might exist in such kind of icy environments.