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## COVER

In Shen JX and Lin W et al. (doi: [10.26464/epp2022042](https://doi.org/10.26464/epp2022042)), Mars analogs on Earth are classified into four groups in accordance with the evolutionary history of surface environments on Mars. Mars has undergone a series of events that dramatically change the planetary habitability. More comprehensive investigations of scientific instruments capable of detecting biosignatures and their applications in different groups of Mars analogs facilitate formulating the strategy of in situ Mars exploration and sample-return missions. See pages 431–450.