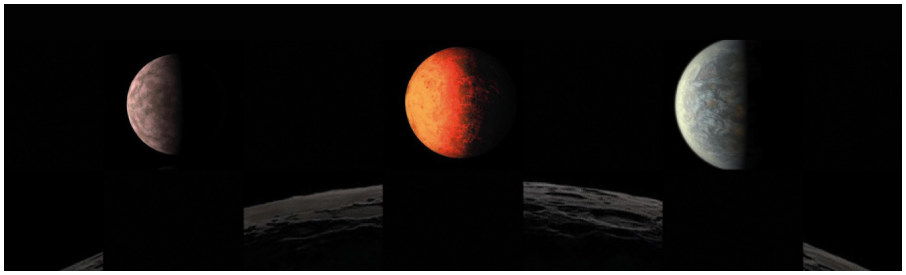

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Vapour pressure equilibrium over sublimating ice scarps on Mars

Friday 24 October 2025 15:40 (15 minutes)

About one-third of the Martian surface contains water ice within the shallow ground. Many researchers see the thermodynamics of that ice as crucial for Martian climate history research and as possible source of water during future missions.
Shallow ice affects geomorphology as the ground cemented by the ice in pores turns into a solid rock. In some places exposed scarps show uncovered ice layers, mixed with dust to some extent. Such places are visible from the orbit and yield detailed investigation.
To better understand processes in the surface of those scarps, a detailed numerical model was created to simulate environmental effects, taking into account thermodynamics of heat within the ice and air above.
Presented are results of calculating recession rate of the surface and comparison of the theoretical results to the satellite observations.

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