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GROUND ICE RESOURCES OF THE PROTONILUS MENSÆ

**Abstract**

The Mid-Latitude Protonilus Mensæ region on Mars is host to a number of distinctive landforms that can be interpreted as evidence of the presence of water ice buried and preserved under the regolith. If existing at depths accessible by excavation equipment, these deposits may represent a significant water resource for future human missions to the red planet. In this work we discuss the geomorphological properties of these features and interpret them in the context of their formation, preservation, and age. We also discuss technological approaches for the potential utilisation of these deposits as a resource to support human operations, and present a review of the environmental and terrain conditions in which mining and exploration activities may likely be conducted.