



Exogeoconservation: Protecting Geological Heritage on Celestial Bodies

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Geoconservation is an increasingly widely adopted practical and theoretical approach to the protection of geological and geomorphological features of special scientific, functional, historic, cultural, aesthetic, or ecological value. Protected sites on Earth include natural rocky outcrops, shorelines, river banks, and landscapes, as well as human-made structures such as road cuts and quarries. However, geoconservation has rarely been discussed in the context of other celestial bodies, which present extraordinarily diverse, ancient, beautiful and scientifically invaluable geological phenomena. Here we propose to develop geoconservation strategies for protecting the geological heritage of rocky and icy planets, rings, moons, dwarf planets, asteroids, and comets, and introduce the term 'exogeoconservation' and other associated terms for this purpose. We discuss the necessity of geoconservation for the proper scientific exploration and description of celestial bodies, and suggest how this might be achieved and managed in terms of international protocols. With space exploration and exploitation likely to accelerate in coming decades, it is important that an internationally agreed, holistic framework for exogeoconservation be developed as soon as possible.