

Thematic Session 04

Clay minerals throughout the solar system

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The nature of clay minerals on celestial bodies beyond the Earth is an emerging area of interest. Extraterrestrial clay minerals have been identified by sample-based studies in meteorites, by remote sensing of the surface of Mars and asteroid Ceres, by direct X-ray diffraction observations by MSL Curiosity rover, and through terrestrial analog studies on Earth. Identification and characterization of clay minerals hold valuable clues into the evolution of celestial bodies such as aqueous alteration and processes that may allow life to develop. Clay minerals can serve as geochemical indicators of potential habitable environments and paleoclimate markers. We welcome mission observations, laboratory-based, field-analogue and theoretical studies aimed to understand clay minerals in meteorites and on Solar System bodies. The intent of this session is to promote discussion and broaden perspectives on origin, genesis, and distribution of clay minerals and their role in biosignature preservations.

Keywords: Clay minerals, Solar system, Meteorites, Mars, Alteration, Habitability, Biomarkers.

Potential Journals: Journal of Geophysical Research: Planets, Clays and Clay Minerals.

