

ASTROGEOLOGY AND PLANETARY SCIENCES SESSION

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Astrogeology and planetary sciences constitute an interdisciplinary field investigating the geological evolution, mineralogical and geochemical characteristics, and physical and chemical processes of Solar System planets and other celestial bodies. Recent advances in planetary exploration missions, remote sensing techniques, laboratory investigations, and terrestrial analogue studies have significantly improved our understanding of planetary geology, surface processes, mineral formation and alteration, and the environmental conditions that may have supported life in the past.

This session aims to bring together researchers from geology, geochemistry, mineralogy, petrology, sedimentology, geomicrobiology, and planetary sciences to explore the geological characteristics and evolution of planets and other celestial bodies, particularly Mars, the Moon, icy satellites, and asteroids. Contributions addressing magmatism, volcanism, tectonics, impact structures, sedimentation, weathering and alteration processes, water–rock interactions, hydrothermal systems, mineral formation, and geochemical evolution are particularly encouraged. The session also welcomes studies of terrestrial planetary analogues, including alkaline and saline lakes, evaporitic environments, volcanic and hydrothermal systems, and extreme environments, as well as investigations into past and present habitability and the formation and preservation of potential biosignatures.

By integrating data from planetary exploration missions with terrestrial observations, laboratory experiments, and geochemical modelling, this session seeks to provide an interdisciplinary platform for advancing our understanding of extra-terrestrial geological processes and the geological evolution of planetary bodies.