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MoonLITE

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Abstract

Please MoonLITE is a proposed, 4 penetrator Lunar Mission that would create a network of scientific instruments around the Moon and include in-situ study of permanently shaded craters. Following endorsement and support from both a NASA-BNSC working group on Lunar Exploration, an International Peer Review, and the first successful trials of critical payload technologies in a series of full-scale Penetrator impact trials at Pendine in South Wales, the MoonLITE mission stands ready to embark on an industrial phase A study. The poster brings together the current status of the project, key technological issues and a progress report on the study.

In fact the study is comprised of four interdependent elements, a) a Mission-level study that explores launcher options, spacecraft configurations and operations, b) a study of the Earth-Orbiter communications technologies, c) a study of the descent modules which are required to de-orbit the penetrators and deliver them to predefined locations on the surface within a narrow range of velocity and attitude constraints, and d) a study of the penetrators themselves, their payload subsystems and the science experiments. The interdependencies require that the studies are carefully coordinated and that trade-offs between solution options can be conducted as a collaborative endeavour.

The poster will also discuss the relevance of the MoonLITE mission to the planned International Lunar Network showing that the MoonLITE penetrators could provide and important vanguard for such a programme and also that the MoonLITE orbiter could go on to be an important communications relay node for future ILN assets.