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ACTIVITIES (D5)

Prediction, Testing, Measurement and Effects of space environment on space missions (3)

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## VIBRATION TESTING OF THERMAL CAMERA FOR UAE LUNAR ROVER

**Abstract**

The United Arab Emirates (UAE) will be sending a compact rover to the Moon in 2024. Among many other devices, the rover will be equipped with a thermal camera. In this work we use a modal shaking machine (“the shaker”) to simulate the conditions that the camera must survive during rocket launch.

The shaker is programmed to generate sinusoidal accelerations at specified frequencies that mirror those exhibited during rocket launch. To assess for any damage to the camera components, we inspect the camera before and after the test using four different tests, including microscope imaging and 3D CT scan. In my talk I will describe the findings of such tests and show how the Phytex-VM051 Thermal Camera is capable of withstanding the accelerations necessary for space flight without detectable structural damage and while maintaining its ability to reliably image temperatures. Finally, I will also outline the future prospects for this work such as additional acoustic testing, and applications to other components or missions.