

DarkNESS: probing dark matter from Low Earth Orbit with skipper-CCDs

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The DarkNESS (Dark Matter Nano-satellite Equipped with Skipper Sensors) mission will deploy a skipper-CCD CubeSat Observatory to search for dark matter (DM) from Low Earth Orbit. During its time in orbit, DarkNESS will observe the Galactic Center to probe O(keV) X-rays from decaying DM models, as well as perform a direct search for electron recoils from strongly-interacting sub-GeV DM. The DarkNESS mission will be the first space deployment of skipper-CCDs, with a launch opportunity anticipated in late 2025. In this contribution, we describe the DarkNESS mission, focusing on its scientific objectives and recent programmatic milestones.

Authors: ETZION, Erez (Tel Aviv University (IL)); ESTRADA, Juan; Dr SAFFOLD, Nathan (Fermilab)

Presenter: Dr SAFFOLD, Nathan (Fermilab)

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