

Phenomenology 2021 Symposium



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Stellar Shocks From Dark Asteroids

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Dark matter could take the form of macroscopic objects, scattering on baryonic matter with geometric cross section. There is a wide “asteroid” mass range over which such objects are almost unconstrained. We show that when a dark asteroid travels through a star, it produces shock waves which reach the stellar surface, leading to a distinctive transient UV emission. In a dense globular cluster, such transients occur far more often than flare backgrounds, and an existing UV telescope could probe five orders of magnitude in dark matter mass in one day of observation.

Summary

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