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Dimming Starlight with Dark Compact Objects

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Dark compact objects can arise naturally in a variety of dark sectors. Clouds of dark matter between a source star and an observer could effectively act as a "lampshade" and dim starlight if the dark sector couples to the Standard Model photon. These dimming effects can be searched for in microlensing surveys, which measure the brightness of stars as a function of time. By considering the EROS-2 and OGLE surveys, we demonstrate how dimming effect searches could be complementary probes for extended structures of dark matter, and can be used to place constraints on dark sectors.

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