

Dark-Sector Photo-Magnetic Coupling Studies

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We report the results of studies showing that temperature dependent photo-luminescence is the likely source of unexpected large background rates in afterglow searches for dark sector phenomena. Using this information, we examine the possibility of a room temperature afterglow search that automatically eliminates this background. Finally, without this background, we discuss a modest search effort that would explore the chameleon afterglow half-life range: $0.1 \leq T_{1/2} \leq 200$ second, corresponding to the photon coupling constant range: $\sim 3 \times 10^{13} \leq \beta\gamma \leq \sim 3 \times 10^{14}$.

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