

Abstract Submitted  
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**A Thermal Graviton Background from Extra Dimensions** ETHAN SIEGEL, JAMES FRY, University of Florida — Inflationary cosmology predicts a low-amplitude graviton background across a wide range of frequencies. We demonstrate that the presence of extra spatial dimensions will modify the primordial graviton spectrum. If the fundamental scale of these extra dimensions is below the reheat temperature, the high-frequency modes of the graviton background may have a thermal spectrum instead. The energy density in this background is significant enough that nucleosynthesis may be affected in a substantial way. Examining the 21-cm hydrogen line may allow for direct detection of a thermal graviton background.

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