

Abstract Submitted
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A Critical Look at the 3.5 keV Line TESLA JELTEMA, STEFANO PROFUMO, ERIC CARLSON, University of California, Santa Cruz — We take a critical look at the possible origins of the 3.5 keV line using both spectroscopic analysis of the Galactic Center and M31 and a morphological analysis of the Galactic Center on the Perseus Cluster. In particular, we find that the spatial distribution of 3.5 keV emission in the Galactic Center is incompatible with a dark matter origin, and this allows us to place stringent limits on dark matter decay lines near 3.5 keV in tension with a dark matter explanation of the line seen in clusters and other systems. We do not detect a significant 3.5 keV line in M31. We do detect a line near 3.5 keV in the Galactic Center, but find that its flux could be compatible with astrophysical plasma emission from e.g. K XVIII within the systematic uncertainties.

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