

Abstract Submitted
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Terrella for Advanced Undergraduate Physics Laboratory¹ JIM REARDON, DOUGLASS ENDRIZZI, CARY FOREST, STEVEN OLIVA, University of Wisconsin–Madison — A terrella has been in use in the Advanced Laboratory for undergraduates in the Physics Department at the University of Wisconsin–Madison since spring 2016. Our terrella is a permanent magnet on a pedestal which may be biased in various ways. In the vacuum region $B \leq 200$ gauss; for typical operation $p = 10^{-4}$ Torr. Plasma may be created by thermionic emission from a filament or by an S-band magnetron. Students are guided through diagnosis of the terrella plasma using spectroscopy and swept Langmuir probes. A suite of supporting experiments has been developed to introduce basic plasma phenomena, such as the Child-Langmuir law.

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