

Abstract Submitted  
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**Towards a narrow-line MOT of YO**<sup>1</sup> YEWEI WU, SHIQIAN DING, IAN FINNERAN, ALEJANDRA COLLOPY<sup>2</sup>, JUN YE, University of Colorado, Boulder — We report a magneto-optical trap (MOT) of Yttrium monoxide (YO) molecules and our recent progress towards a second-stage narrow-line MOT. YO molecules are produced from a cryogenic buffer gas cell, slowed by a counter-propagating laser beam and then loaded into the RF MOT. Currently, the MOT holds  $\sim 1.5 \times 10^4$  molecules at a temperature of 4.1(5) mK. Recently we performed high resolution spectroscopy for the narrow transition ( $\sim 6$  kHz) in YO suitable for further cooling to the microkelvin regime. At these temperatures, molecules will be ready to be loaded into magnetic or optical dipole traps for studies of ultracold chemistry and quantum many-body physics.

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