

Abstract Submitted  
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**Detection of precise quantum defects of the  $6snd$ ,  $6sng$  and  $6sni$  Rydberg states of Ytterbium.** FATHIMA NIYAZ, Univ of Virginia, JIRAKAN NUNKAEW, Chiang Mai University, THOMAS GALLAGHER, Univ of Virginia — We use a selective field ionization technique to observe the microwave transitions of Ytterbium Rydberg states, from the  $6s(n+3)d$  states to the  $6sng$  and  $6sni$  states for  $27 \leq n \leq 33$ . We also observe the microwave transitions from  $6snd$  to  $6s(n+1)d$  for states  $33 \leq n \leq 38$ . Our measurements and previous  $6snd$  to  $6s(n+1)d$  measurements give precise values for the  $6snd$  quantum defects which indicate the presence of a previously undetected perturbation in the series. This work has been supported by the U. S. Department of Energy, Office of Basic Energy Sciences.

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