

Abstract Submitted  
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**Mass difference of  $^{115}\text{In}$  and  $^{115}\text{Sn}$** <sup>1</sup> S. CALDWELL, University of Chicago, Argonne National Lab, G. SAVARD, J. CLARK, Argonne National Lab, J. FALLIS, University of Manitoba, D. LASCAR, Northwestern University, Argonne National Lab, G. LI, McGill University, Argonne National Lab, K. SHARMA, University of Manitoba, M. STERNBERG, J. VAN SCHELT, University of Chicago, Argonne National Lab — At the Canadian Penning Trap mass spectrometer we have measured the atomic mass difference  $\Delta M$  between the ground states of  $^{115}\text{In}$  and  $^{115}\text{Sn}$  with uncertainty below 0.5 keV. Our measurement was occasioned by a reported observation of a  $\beta^-$  decay from the ground state of  $^{115}\text{In}$  ( $9/2^+$ ) to the first excited state of  $^{115}\text{Sn}$  ( $3/2^+$ ). Based on the known value of  $\Delta M$ , this hypothetical decay was known to have a “ $Q$  value” of  $2\pm 4$  keV. If positive, this value would be among the smallest for any known  $\beta$  decay and could have implications for direct neutrino mass measurements that rely on high-resolution mapping of a  $\beta$  spectrum near its endpoint. Our measurement is a test of whether this decay is physically possible, and if so, provides its  $Q$  value.

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