

Abstract Submitted  
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**Positron Interactions with Rare Gas Atoms**<sup>1</sup> A. JONES, P. CARADONNA, C. MAKOCHEKANWA, J. SULLIVAN, D. SLAUGHTER, S. BUCKMAN, CAMS, Australian National University, Canberra, D. MUELLER, University of North Texas, Denton, S. BELLM, B. LOHMANN, CAMS, University of Adelaide, South Australia — We present results for low energy positron scattering from the rare gas atoms He, Ne and Ar. A high resolution, trap-based positron beam has been used for these measurements which encompass absolute cross sections for total scattering, positronium formation, electronic excitation and total ionization at energies between 0.5 and 60 eV. Where possible we make comparison with previous experiments and with contemporary scattering theory for the total scattering and positronium formation cross sections. The excitation measurements have focused on the  $2^1S,P$  states of helium at energies between threshold and 40 eV, and they represent the first state selective measurements of these two excited states. A key motivation of the ionization measurements is to study the near-threshold ‘Wannier’ regime, and we will present measurements that map the energy dependence of the ionization cross section within 2 eV of threshold.

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Stephen Buckman  
Australian National University

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