

Abstract Submitted  
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**X-ray emission measurements following charge exchange between  $\text{Ne}^{8+}$  and He.**<sup>1</sup> C. C. HAVENER, R. T. ZHANG, Physics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, D. G. SEELY, Dep. of Physics, Albion College, Albion, MI 49224, V. M. ANDRIANARIJAONA, Dep. of Physics, Pacific Union College, Angwin, CA 94508, D. WULF, F. JAECKEL, D. MCCAMMON, Dep. of Physics, University of Wisconsin, Madison, WI 53706 — With a high-resolution x-ray quantum micro-calorimeter detector, x-ray emissions following single charge exchange are measured for  $\text{Ne}^{8+} + \text{He}$  collisions at solar wind velocities (392 km/s to 876 km/s). To investigate the  $(n, l)$  distributions of the captured electron, Balmer series line ratios are compared to ratios constructed from Multichannel Landau-Zener (MCLZ) calculations by Lyons et al. (*Astrophys. J* 232, 27 (2017)). Such MCLZ calculations are used to produce atomic data needed to model x-ray emissions from a variety of astrophysical objects. It is found that the measured line ratios are in excellent agreement with the calculations for the  $4s \rightarrow 4p$  emission. However, compared to the MCLZ theory, the measured line ratios indicate an increasing state-selectivity for the  $4d$  and  $4f$  states. Currently the apparatus is being modified to perform x-ray emission measurements for highly charged ions colliding with atomic H using the merged-beam technique.

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