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**On the contribution of multiple-electron capture to cometary x-ray emission in solar wind-comet interactions<sup>1</sup>** P.A. NEILL, R. ALI, C.L. HARRIS, University of Nevada, Reno, P. BEIERS-DORFER, Lawrence Livermore National Laboratory, D.R. SCHULTZ, M.J. RAKOVIĆ, Oak Ridge National Laboratory, J.G. WANG, P.C. STANCIL, University of Georgia — To shed light on the contribution of multiple-electron capture (MEC) processes to the cometary X-ray emission, we have carried out laboratory investigations of such processes. The experiments involved the triple-coincidence detection of X-rays, scattered projectile, and recoil ions in 100-keV Ne<sup>10+</sup> on He, Ne, and Ar collisions. In addition to the X-ray energy and the final projectile and recoil ions' charge states, the measurements provide the collision  $Q$ -value through the COLTRIMS technique. The measurements enable the separation of single-electron capture and MEC collisions, and provide X-ray spectra specific to the number of captured electrons. The measurements provide unequivocal evidence for the important role played by MEC processes. The experimental results for double-electron capture will be compared with theoretical predictions.

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