

Abstract Submitted
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High Resolution X-ray Spectroscopy of Charge Exchange Collisions of Astrophysical Interest¹ I.N. DRAGANIC, C.C. HAVENER, C.R. VANE, Physics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA, X. DEFAY, K. MORGAN, D. MCCAMMON, Department of Physics, University of Wisconsin, Madison, WI 53706, USA, M. FOGLE, Department of Physics, Auburn University, Auburn, AL 36849, USA — Soft X-ray emission following charge exchange (CX) by fully stripped and hydrogen-like ions of carbon, nitrogen, and oxygen on H, H₂ and He were measured in a collision energy range of 0.5 keV/u – 30.0 keV/u. CX experiments were performed using the ORNL Multicharged Ion Research Facility ion-atom merged-beams apparatus with a high resolution X-ray quantum calorimeter (XQC) from the University of Wisconsin. First recorded X-ray spectra were made with He and H₂ gases introduced into the beam line and with ion beams decelerated from a high voltage platform to simulate a range of solar wind ion velocities. Current results are compared with the previous experimental and theoretical studies, and presented along with the status of CX measurements with atomic hydrogen using a merged-beams technique.

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