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Absolute Photoionization of Br^+ and Rb^{3+} Ions for the Determination of Elemental Abundances in Astrophysical Nebulae DAVID MACALUSO, ALLISON MUELLER, University of Montana, AUSTIN KERLIN, University of West Georgia, DYLAN GROSS, University of Montana, MANUEL BAUTISTA, Western Michigan University, NICHOLAS STERLING, University of West Georgia, RENE BILODEAU, Western Michigan University and Advanced Light Source, Lawrence Berkeley National Laboratory, NICHOLAS STERLING COLLABORATION — Recent observations have identified several trans-iron elements in astrophysical nebulae. The determination of elemental abundances in these nebulae provides insight into the processes of stellar nucleosynthesis which in turn contributes to our understanding of the chemical evolution of the Universe. However, determinations of these abundances are highly dependent on the availability of accurate atomic data. For many of the observed species, these data are either not well known or have never been measured. This lack of information motivated the present systematic program to study several of the observed species of trans-iron elements. In the present work, absolute single photoionization cross sections for Br^+ and Rb^{3+} have been measured at the Advanced Light Source at Lawrence Berkeley National Laboratory using the merged-beams technique. Both ions were measured from the metastable region to at least 10 eV above the direct ionization threshold. Rydberg resonance series are identified for each ion where possible.

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