Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Absolute Charge Exchange Cross Sections for O^{5+}, O^{6+}, and O^{7+}Collisions with CO and CO_2 RICHARD MAWHORTER, Pomona College & JPL/Caltech, NADA DJURIC, JPL/Caltech, JOHN MACASKILL, JPL/Caltech, STEVEN J. SMITH, JPL/Caltech, ARA CHUTJIAN, JPL/Caltech, IAN D. WILLIAMS, Queens' University Belfast — Motivated by ongoing EUV and X-ray studies of comets, we have continued our experimental investigations of absolute charge exchange cross sections for highly-charged ions present in the solar wind incident on cometary gases. These are the first measurements on the JPL charge exchange beam-line using a new LabView data acquisition system combined with a larger gas cell exit aperture. Data for O^{5+} & O^{7+}on CO_2 agree with earlier measurements [1], and are included in these new results for O^{5+}, O^{6+}, and O^{7+}on CO and CO_2. The ion beam accelerating potential was 7 kV, which yields ion velocities consistent with the fast component of the solar wind. Agreement with earlier, smaller exit aperture measurements is also significant in demonstrating an independence from angular collection issues for these fast, heavy ions and targets. This was verified by studying collection angle-cross section effects for slow $^3He^{2+}$ ions on He and H_2. This work was carried out at JPL/Caltech, and was supported through contract with NASA. N.Djuric also acknowledges support through the NASA-NRC program. [1] J.B. Greenwood, et al., Phys. Rev A **63**, 062707 (2001).

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Date submitted: 11 Mar 2005 Electronic form version 1.4