Measurement of Charge Exchange and X-Ray Emission Cross Sections for Solar Wind – Comet Interactions. A. CHUTJIAN, J. B. GREENWOOD, I. D. WILLIAMS, and S. J. SMITH, JPL/Caltech, Pasadena, CA; Queen's University, Belfast, UK, GA. Surprising X-ray emission from a comet as it approached the Sun was first observed by Lisse *et al.* in 1996 [1]. One of the mechanisms believed to be contributing to this emission is the interaction of highly-charged solar-wind ions with the cometary gases. Reported here will be absolute charge-exchange (*ce*) normalized X-ray cross sections for collisions of high charge-state (+3 to +10) C, N, O, and Ne ions with the cometary species H_2O and CO_2 [2]. It is found that in several cases the double *ce* cross section can be large, and in the case of C3+ they re equal to those for single *ce*. Present results are compared with values used in recent comet models.

This work was carried out at JPL, and supported through agreement with NASA.

[1] C. M. Lisse *et al.,* Science **274**, 205 (1996).

[2] J. B. Greenwood, S. J. Smith, and A. Chutjian, Ap. J. (2000) (in press).