

Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Soft X-ray Line Emission Spectra from Highly-Charged Solar Wind Ions on Cometary Gases: $N^{5,6+}$ on CO ¹ WINTHROP SMITH, KENNETH MILLER, Univ. of Connecticut, CHRISTOPHER VERZANI, Univ. Wisconsin - Stephens Pt., WESLEY GOHN, QUENTIN KESSEL, Univ. of Connecticut, STEVEN J. SMITH, ARA CHUTJIAN, NASA Jet Propulsion Lab/Caltech — Laboratory measurements to benchmark space observations of x rays from comets approaching the sun were made using the highly- charged ion-beam facility at JPL and the UConn 1 m grazing- incidence CCD spectrometer. Beam-gas spectra are obtained from ions found in the solar wind on CO and other cometary gases. We compare our latest measurements of line emission in the range 2- 70 nm (17-600 eV) for $N^{5,6+}$, near the fast solar wind velocity (700 km/s), with previous measurements involving the isoelectronic ions $O^{6,7+}$. The highest n states excited on the projectiles by single electron charge transfer agree approximately with the Coulomb over-the-barrier model (e.g. for N^{6+} on CO , primary excitation is mainly to n=4 and some to n=5 levels). The final l-dependences are also under study.

¹Work at JPL was supported by NASA through agreement with JPL/Caltech, and at UConn through NASA EPSCOR Grant NCC5-601

Winthrop Smith
Univ. of Connecticut

Date submitted: 02 Feb 2007

Electronic form version 1.4