

Abstract Submitted
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Excitation Probabilities and Pathways in e-N₂O Collisions

J. WILLIAM MCCONKEY, Department of Physics, University of Windsor, CHARLES P. MALONE, PAUL V. JOHNSON, JOSEPH M. AJELLO, ISIK KANIK, Jet Propulsion Laboratory — Vacuum ultraviolet emissions following electron impact dissociative excitation of N₂O have been studied over the wavelength range 80–180 nm and for electron energies from threshold up to 300 eV. Calibrated spectral data are presented at 100 eV incident energy. The dominant N I ($2p^3\ ^4S^{\circ} - 3s^4P$) multiplet at 120.0 nm has a measured maximum cross section of $(2.2 \pm 0.3) \times 10^{-18}$ cm² at 100 eV, which in turn was used to normalize 100 eV cross sections for all observed spectral features. In addition, excitation functions corresponding to the dominant emission features have been analyzed in detail with particular emphasis on the near-threshold region. Possible dissociation channels are discussed. Acknowledgement: This work was carried out at JPL, Caltech, under contracts with NASA. This research was performed while CPM and JWMcC held NASA Fellowships at JPL.

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