



Laboratory Studies Relevant to Uptake of Ammonia in Jupiter's Clouds

K. S. Kalogerakis and J. Marschall

Molecular Physics Laboratory, SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025 USA (ksk@sri.com)

The Jovian vertical ammonia profile is poorly understood. Currently, no clear explanation is available on how the global ammonia abundance decreases from supersolar at pressure levels above approximately 2 bar to subsolar below 2 bar. A hypothesis has been proposed that suggests uptake of ammonia by the water / ammonium hydrosulfide clouds may be a solution to this problem. However, no relevant laboratory experimental results are currently available to test this hypothesis. We have initiated a laboratory research program addressing this important gap in understanding Jupiter's atmosphere and its vertical ammonia profile. We present a progress report on our ammonia uptake laboratory experiments using a Knudsen cell apparatus.