

SUPPORTING INFORMATION FOR: Persistence of Dual Free Internal Rotation in the $\text{NH}_4^+(\text{H}_2\text{O})\cdot\text{He}_{n=0-3}$ Ion-Molecule Complexes: Expanding the Case for Quantum Delocalization in He Tagging

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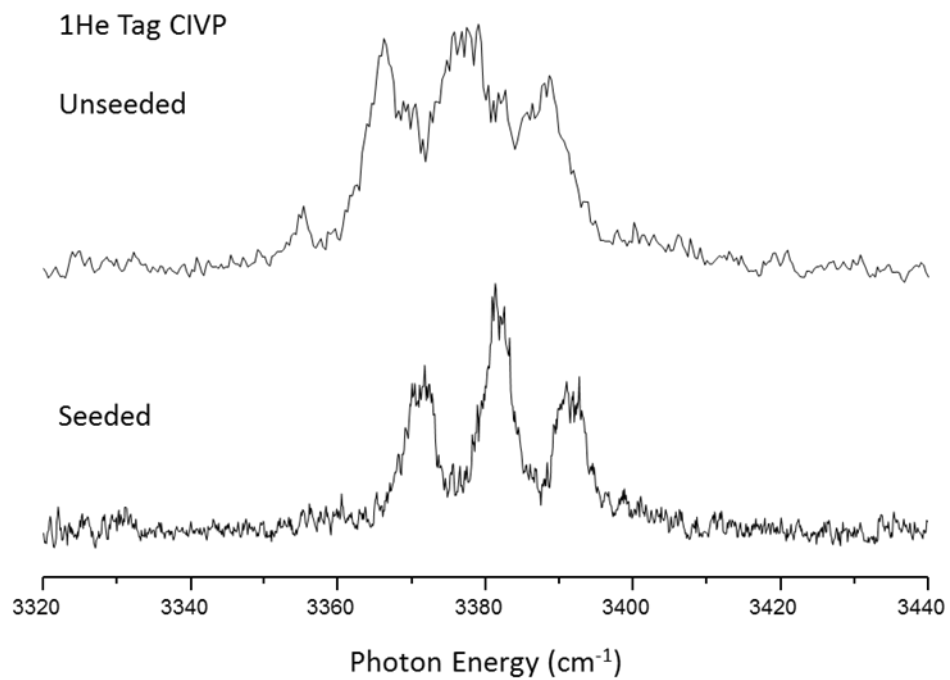


Figure S1. Comparison of CIVP spectra of $\text{NH}_4^+(\text{H}_2\text{O})\cdot\text{He}$ obtained using a seeded and unseeded Nd:YAG laser.

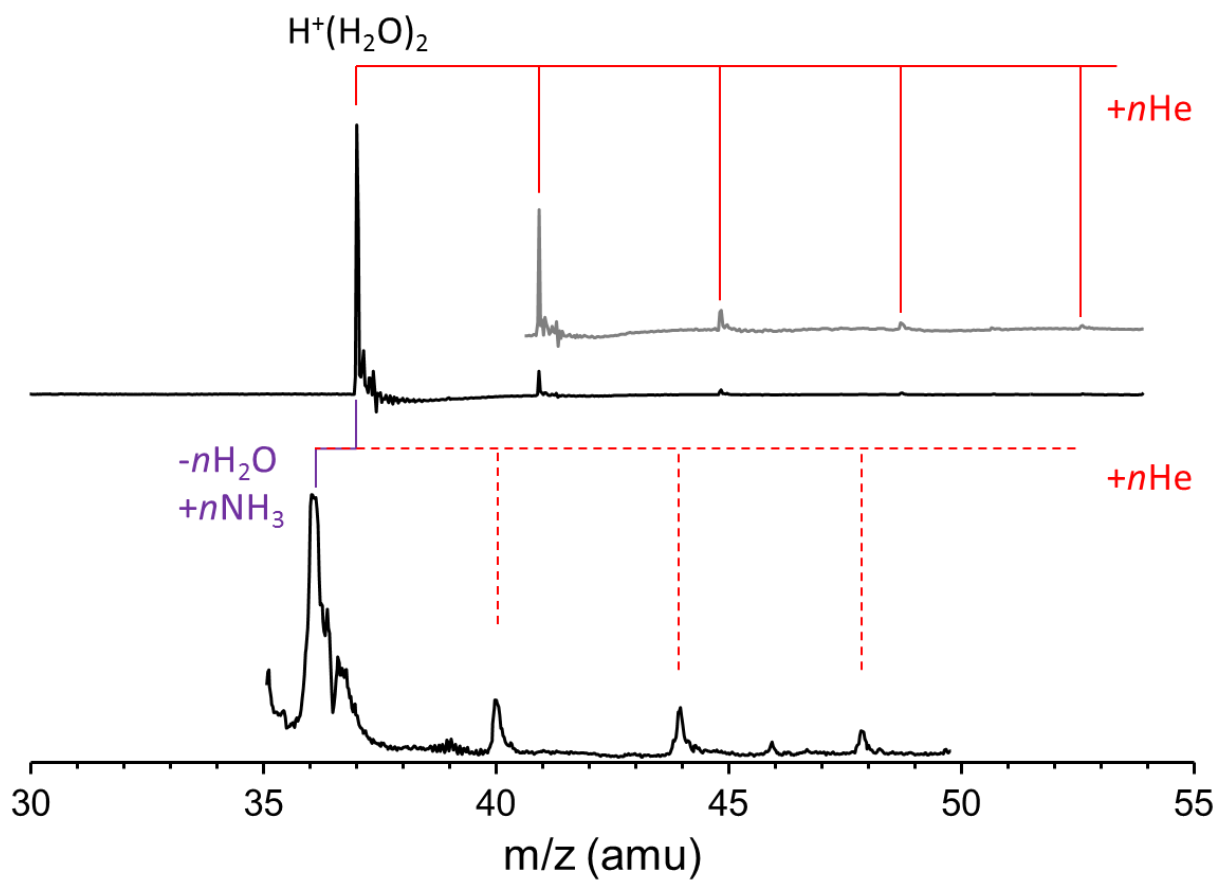


Figure S2. Mass spectra showing He uptake and exchange of NH_3 for H_2O .

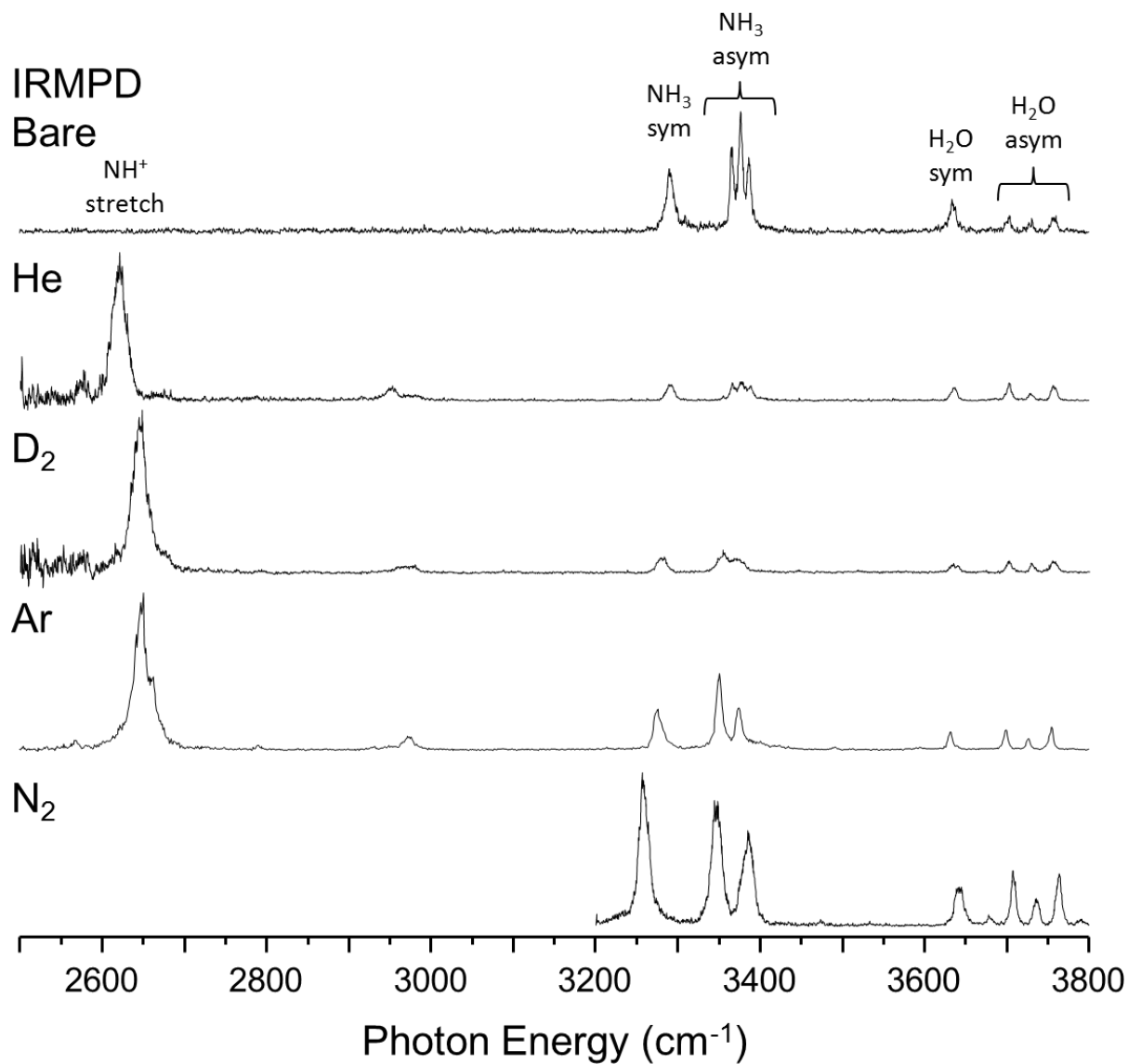


Figure S3. $\text{NH}_4^+(\text{H}_2\text{O})\cdot\text{He}$ IRMPD spectrum and CIVP spectra obtained using He, D_2 , Ar, and N_2 messenger tags.

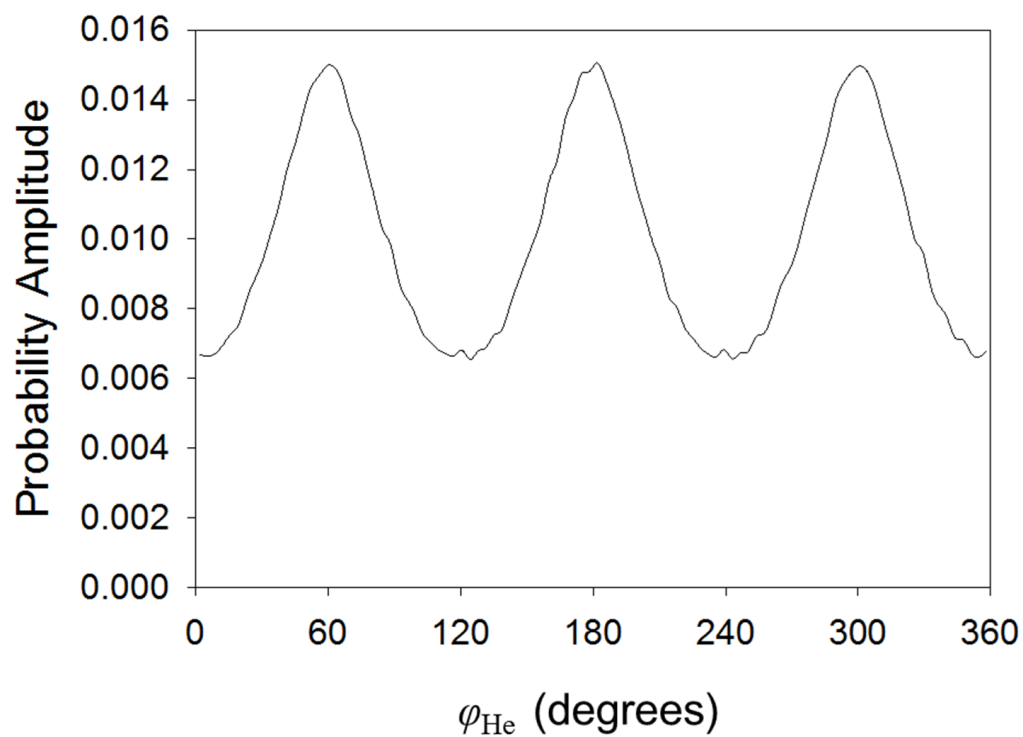


Figure S4. Projection of the probability amplitude for $\text{NH}_4^+(\text{H}_2\text{O})\cdot\text{He}$ onto ϕ_{He} , when the NH_3 rotor is locked in its equilibrium position.