

SPECTROSCOPY OF THE $A - X$ TRANSITIONS OF NH-He AND OH-He

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The NH-He van der Waals complex was characterized via laser excitation of bands associated with the NH $A^3\Pi - X^3\Sigma^-$ transition. It was demonstrated that the ground state supports a bound level with a rotational constant of $B'' = 0.334(2) \text{ cm}^{-1}$. These results are in agreement with the predictions of recent high-level theoretical calculations. Spin-orbit predissociation of the excited complex was observed, and the spectra yield insights regarding the NH(A)+He potential energy surfaces.

Features of the OH-He complex have been observed in conjunction with the $A^2\Sigma^+ - X^2\Pi$ 0 - 0 transition. The partially resolved bands have been interpreted using the theoretical results of Lee, McCoy, Toczyłowski and Cybulski (JCP, 113, 5736, (2000)).