INVESTIGATION OF THE USE OF HE – DIATOMIC VAN DER WAALS COMPLEXES AS A PROBE OF TIME-REVERSAL VIOLATION

JACOB STINNETT, ERIC ABRAHAM, NEIL SHAFER-RAY, *Homer L. Dodge Department of Physics, University of Oklahoma, 440 W.Brooks, NH 100, Norman, OK 73019*.

We examine the dipole-induced dipole interaction between NO and He in a molecular beam. We show that the effect of the He is to dramatically reduce the parity splitting of the NO rotational levels. We further show that the predicted Stark splitting of a model Hamiltonian computation agrees with a simple vector coupling model. This vector model is in turn in agreement with existing experimental data. This suppression of parity splitting should apply to many systems and could reduce the field required for a study of time reversal asymmetry from thousands of volts/cm to volts/cm. This research is supported by the NSF-REU program.