MICROWAVE OBSERVATION OF THE 'RECENTLY FOUND' POLAR OCS DIMER

ANDREA J. MINEI, and STEWART E. NOVICK, *Department of Chemistry, Wesleyan University, Middletown, CT 06459*.

Recently Afshari and coworkers[a] reported on the detection of a new infrared band which was assigned to the "long-anticipated polar isomer of the OCS dimer". We report here the microwave confirmation of their results. The lowest energy, non-polar isomer of $(OCS)_2$ has long been known from IR spectroscopy, while the polar form has only been deduced from qualitative beam "refocussing" experiments. The higher energy, polar isomer of $(OCS)_2$ has been produced by high pressure expansion of dilute OCS in helium. A surprisingly strong microwave spectrum of C_s $(OCS)_2$ has been observed and assigned. The structure of the dimer has been determined.

[a] M. Afshari, M. Dehghani, Z. Abusara, N. Moazzen-Ahmadi, and A. R. W. McKellar, *J. Chem. Phys.* **XXX**, XXXX (2007); and A. R. W. McKellar, private communication.