Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Observation of the 'missing' polar OCS dimer.[1] MAHIN AFSHARI, MEHDI DEHGHANI, ZIAD ABUSARA, NASSER MOAZZEN-AHMADI, Department of Physics and Astronomy, University of Calgary, ROBERT MCKELLAR, Steacie Institute for Molecular Sciences, National Council of Canada, LASER SPECTROSCOPY TEAM — The lowest energy, non-polar isomer of $(OCS)_2$ has long been known from infrared spectroscopy, while the polar form has only been deduced from qualitative beam "refocusing" experiment. We have observed a new infrared band at 2069.3 cm^{-1} and assigned to the long-anticipated polar isomer of OCS dimer, helping to explain apparent discrepancies among earlier studies. Reported data which have been confirmed by direct observation of the rotational spectrum of polar OCS dimer, should motivate new theoretical work on the energies of OCS dimer isomers and interconversion energy barriers. OCS dimer is now one of the rare weakly bound clusters to have more than one isomer observed in high resolution spectroscopy.

[1]National Science and Engineering Research Council of Canada

Mahin Afshari
Department of Physics and Astronomy, University of Calgary

Date submitted: 02 Feb 2007 Electronic form version 1.4