USING A SEARCH FOR INTERSTELLAR UREA TO TEST THE ABILITY OF CARMA TO DETECT NEW MOLECULES

L. E. SNYDER, H.-L. KUO, D. N. FRIEDEL, L. W. LOONEY, *Department of Astronomy, University of Illinois at Urbana-Champaign*; B. J. McCALL, *Departments of Chemistry and Astronomy, University of Illinois at Urbana-Champaign, Urbana IL 61801*; A. J. REMIJAN, *NRAO, Charlottesville VA 22903*; F.J. LOVAS, *Optical Technology Division, NIST, Gaithersburg MD 20899-8441*; J. M. HOLLIS, *NASA/GSFC, Code 606, Greenbelt MD 20771*.

The CARMA interferometer is a new telescope which operates at millimeter wavelengths. We have been checking its ability to detect new interstellar molecules by using urea [$(NH_2)_2CO$] as a test molecule. We chose urea because its chemical composition makes it a likely interstellar candidate and its microwave frequencies have been well established by Lovas and Ilyushin (private communication). We have experimented with calibrator fluxes, baseline subtraction, and self calibration techniques in order to compare the urea search data from CARMA with data from the BIMA Array, the NRAO 12m, and the Swedish-ESO Submillimetre Telescope. Our initial efforts have been concentrated on Sgr B2 (N-LMH), the best source of large molecules in the galaxy. We have found that coupling of source size to synthesized beam size is essential for understanding flux measurements and detection limits.
We acknowledge support from the Laboratory for Astronomical Imaging and from the Critical Research Initiative program at the University of Illinois, and from NSF grant AST-0540459.