

A SEARCH FOR INTERSTELLAR UREA WITH CARMA

H.-L. KUO, L. E. SNYDER, 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*.

Previous BIMA observations have suggested that interstellar urea $[(\text{NH}_2)_2\text{CO}]$ is a compact hot core molecule such as other large molecules methyle formate and acetic acid (2008, 63rd OSU Symposium On Molecular Spectroscopy, RF11). We have conducted an extensive search for urea toward the high mass hot molecular core Sgr B2(N-LMH) using the CARMA array. The resolution at 1 mm enables the coupling of source size and synthesized beam size, which has found to be essential for flux measurements and detection limits of weak signals. Compared to the $8.1'' \times 2.8''$ synthesized beam of BIMA, the $1.6'' \times 1''$ beam of CARMA significantly resolves out the extended emission and revealed the urea lines that were previously blended with nearby transitions. Based on our fit to the spectra, these lines are consistent with a rotational temperature of $T_{rot} \sim 80\text{K}$ and a linewidth of $\Delta v \sim 2.05 \text{ km s}^{-1}$. The calculated beam averaged total column density is $N_{tot} = 9.75 \times 10^{14} \text{ cm}^{-2}$.