A SEARCH FOR INTERSTELLAR UREA WITH CARMA

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Urea, a molecule discovered in human urine by H. M Rouelle in 1773, also plays a significant role in prebiotic chemistry. Previous BIMA observations have suggested that interstellar urea [$(NH_2)_2CO$] is a compact hot core molecule such as the other large molecules methyl 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 favorable coupling of source size and synthesized beam size, which was found to be essential for flux measurements and detection limits of weak signals. The $2.5'' \times 2''$ synthesized beam of CARMA significantly resolves out the extended emission and reveals the weak lines that were previously blended with nearby transitions. Our analysis indicates that these lines are likely to be urea since they are now less contaminated, the resulting observed line frequencies are coincident with a set of overlapping connecting urea lines, and the observed line intensities are consistent with expected line strengths of urea.