CONFUSION-LIMITED SURVEY OF SGRB2N AT 1, 2, AND 3 MM: NEW INSIGHT INTO INTERSTELLAR ORGANIC CHEMISTRY

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The rich mm-wave spectrum of Sgr B2(N) showcases complex organic chemistry in the ISM by exhibiting the spectra of many unique compounds, which are important for studying the gas-grain interface and prebiotic chemistry. However, owing to its large number of abundant polar molecules, it also possesses the most complex mm-wave spectrum. Many of the details of the chemistry of this region lie in weak features, where their accurate assignment is hampered by confusion from overlapping transitions of multiple carriers. Therefore, assignment of new species requires extensive searches over dozens of transitions to seek out ”clean” spectral features among the forest of lines. Spectral surveys offer the best solution to this problem, but those presently found in the literature are at about half the required sensitivity to locate new molecules (or recently discovered ones at lower frequencies). A confusion-limited spectral line survey of the Galactic center region, Sgr B2(N), has been assembled over the past several years in searches for complex organic species. At present, approximately 70% of the 2 and 3 mm region has been covered using the Arizona Radio Observatory (ARO) 12 meter telescope and about 10% of the 1 mm region has been covered using the ARO 10 meter antenna. We have developed a stochastic chemical scheme that attempts to link the purely gas phase constituents of the interstellar medium to those of purely condensed phase species such as those found on meteorites. The scheme currently consists of 80 organic species. It starts with the molecules CO and HCN and leads to complex organic species such as hydroxy acids, amino acids and sugars. We have already searched for a number of these compounds towards Sgr B2(N). Current results will be presented.