

AN ALMA SEARCH FOR CHIRAL MOLECULES TOWARD SGRB2(N)

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We have recently reported the first detection of a chiral molecule in the interstellar medium, toward Sgr B2(N) (McGuire & Carroll et al. 2016). Chiral molecules represent a critical class of organic species that drive biology. The cosmic origin of these species is proposed to have its origins in cometary and asteroidal material. The initial detection of propylene oxide was in the cold outer envelope of Sgr B2, however it is not clear how representative this population is of the more evolved hot core chemistry, which seeds planetesimal inventories, and the detection lacks any information on spatial distribution. Thus, propylene oxide, as well as several isotopically chiral species such as CH_3CHDCN and CH_3CHDOH , may persist through the hot core phase of star formation.

In order to determine under what conditions chiral species might be incorporated into icy material in pre-solar environments, it is necessary to map the distribution of these species. To this end, we have conducted ALMA Band 7 observations of Sgr B2(N). We will present results of our observations, and discuss the abundance and excitation conditions of propylene oxide and other isotopically chiral species.