THE INTERSTELLAR DETECTION OF HSCN IN Sgr B2(N)

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HSCN (thiocyanic acid), an energetic isomer of the well-known species HNCS, has been detected toward Sgr B2(N) with the Arizona Radio Observatory 12m telescope. Eight rotational transitions in the K_a = 0 ladder were observed in the 2mm and 3mm bands. Five consecutive transitions in the 3 mm band are unblended, but three in the 2 mm band are partially masked by lines of other molecules. The line width and radial velocity of HSCN match closely with those of the ground state isomer HNCS, HNCO, and HOCN. Although HSCN is calculated to lie over 3000 K higher in energy than HNCS, its column density of $1.3\text{x}10^{13}$ cm^{-2} in Sgr B2(N) is only three times lower than that of HNCS. By analogy with the isomeric pair HCN and HNC, these two sulfur-bearing isomers are plausibly formed from a common cation precursor.