NEW INTERSTELLAR MOLECULES DETECTED WITH THE NRAO 100-m GREEN BANK TELESCOPE

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Over the last several years, the NRAO 100-m Green Bank Telescope (GBT) has been the primary instrument in the search for many new, large interstellar molecular species. Included in the list of new molecules detected with the GBT are propenal (CH_2CHCHO) and propanal (CH_3CH_2CHO) toward SgrB2N[a] and methylcyanodiacetylene (CH_3C_5N) toward TMC-1[b]. This year, we report the detection of three new interstellar molecules: cyclopropenone (c-H_2C_3O) toward SgrB2N, and cyanoallene (CH_2CCHCN)[c] and methyltriacetylene (CH_3C_6H) toward TMC-1. Furthermore, we present possible pathways for the formation of each molecule relevant to the astronomical environment where each species was detected.

[a] Hollis, J. M., Jewell, P. R., Lovas, F. J., Remijan, A., & Møllendal, H., 2004, ApJ, 610, L21

[b] Snyder, L. E., Hollis, J. M., Lovas, F. J., Jewell, P. R., & Remijan, Anthony J. 2006, ApJ, in press

[c] Lovas, F. J., Remijan, Anthony J., Hollis, J. M., Jewell, P. R., & Snyder, L. E., 2006, ApJ, 637, L37