

P24a **Deuterated Molecules in the Low-Mass Star Forming Region, L1527**

坂井南美 (東京大学)、酒井剛 (東京大学)、廣田朋也 (国立天文台)、山本智 (東京大学)

We have conducted millimeter-wave observations of deuterated species of various carbon-chain molecules toward a low-mass star-forming region, L1527, by using IRAM 30 m telescope and Green Bank telescope. L1527 shows extraordinary richness of carbon-chain molecules in a vicinity of the protostar (Warm Carbon Chain Chemistry). Toward this source, we have detected the spectral lines of $l\text{-C}_3\text{D}$, C_4D , C_4HD , DC_3N , DC_5N , and $c\text{-C}_3\text{HD}$, where $l\text{-C}_3\text{D}$ and C_4HD are detected for the first time in space. The deuterium fractionation ratios are found to be moderate (2 % to 7 %), although they tend to be higher than those in the starless core, TMC-1. The upper limit to the $[\text{CH}_2\text{DOH}]/[\text{CH}_3\text{OH}]$ ratio is also as low as 3 %. Therefore, very high deuterium fractionation ratios reported for hot corino sources, like IRAS16293-2422, are not seen in L1527. The observed ratios means that the depletion of CO onto dust grains had not proceeded well in L1527, compared with the hot corino cases. This would be consistent with a short time scale of the starless core phase suggested for the possible origin of Warm Carbon Chain Chemistry.