

P116b **Unbiased Chemical Survey of Protostellar Sources in Perseus II**

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It is well known that low-mass protostellar cores show significant chemical diversity. One distinct case is hot corino chemistry characterized by rich saturated complex organic molecules, while the other case is warm carbon chain chemistry (WCCC) characterized by rich carbon-chain molecules. However, the number of sources definitively classified into each category is limited, and the statistics has been apparently poor. We recently conducted an unbiased survey of chemical composition toward 34 Class 0 and Class I protostars in the Perseus molecular cloud complex by using IRAM 30 m telescope (1.2 mm band) and NRO 45 m telescope (3mm band).

We detected multi-transition lines of CCH, *c*-C₃H₂ and CH₃OH toward most of the sources. According to the line intensity, the result shows chemical diversity, where many intermediate sources are found between the two distinct cases (see P124a; 2015 ASJ meeting). In the present study, we calculated the column density and temperature of CCH, *c*-C₃H₂ and CH₃OH, by using multi-transition lines. As a result, we confirmed that the range of chemical diversity ($[CH_3OH/CCH]$) is higher than the previous report. The relative occurrence of each category as well as preferential association of the sources in each category with a specific part of the cloud complex will give us an important clue to understanding the origin of the chemical diversity in terms of evolutionary and/or environmental effects.