

Complex Organic Molecules in Protostars with ALMA Spectral Surveys (**COMPASS**)

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Complex organic molecules (COMs) easily form in star-forming regions. Those present in the inner regions of solar-type protostars could be incorporated into comets and asteroids before being delivered into planets through impacts. They could then potentially play a role in the emergence of life if the conditions on the planets are suitable.

Large unbiased spectral surveys are ideal to characterize the molecular content of star-forming regions. An ALMA large spectral survey (PILS[1]) was carried out a few years ago towards the solar-type protostar IRAS 16293-2422, which allowed us to determine the chemical composition of this source. To determine if IRAS 16293-2422 is typical of all low-mass protostars, the chemistry of more sources needs to be investigated and compared. The ALMA large program COMPASS has for aim to answer this question through large spectral surveys of 11 additional solar-type protostars at different evolutionary stages and from various environments. So far half of the data have been obtained. Here, I will present the first results of this ALMA large program. It will include the isotopic fractionation of CH₃OH and CH₃CN in the protostar BHR71-IRS1 as well as preliminary comparisons of abundances of COMs in the different sources of the program.

References

[1] J.K. Jørgensen et al. 2016, A&A 595, A117