

Laboratory work on cometary organic matter in support of space missions

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To date, about twenty molecules have been detected in the gaseous phase of comets. But so far, we do not have any direct measurement of the nucleus composition.

Since more than twenty years, many laboratory experiments are devoted to the study of the chemistry of cometary and interstellar ices. All of them tend to indicate that compounds more complex than those already detected are also very likely to be present: high molecular weight molecules, polymers, amino acids precursors, or even amino acids themselves.

The aim of this presentation is to present a study of the laboratory experiments implemented so far and to build an inventory of organic molecules detected. Doing so, it is interesting to address the following questions:

- 1) Will those molecules be detected during Rosetta mission? With special emphasis on the COSIMA and the COSAC instruments.
- 2) Can we already infer the presence of those complex organics through the observation of extended sources such as H₂CO, CN et CO ?