

Comet 67P/Churyumov-Gerasimenko and the connection from the ISM to the terrestrial planets

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Abstract

The relative abundances of the volatile molecules in comet 67P/Churyumov-Gerasimenko (67P/C-G) exhibit similarities to the interstellar medium (ISM), which indicates an origin in the ISM for at least parts of the material in 67P/C-G. On the other hand, impacting comets on Earth may have been a major supplier of molecules of prebiotic relevance and an important source of volatiles in the terrestrial atmosphere, whereas the contribution of water to the Earth's oceans was quite limited.

Based on the relative abundances of the volatile material derived in comet 67P/C-G and some basic assumptions we trace the volatile material from the ISM all the way to the inner planets and discuss the implications.