

Physikalisches Kolloquium

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**»Rosetta at comet 67P:
deciphering the origin of the solar system, the Earth and life«**

Einführung: M. Mühlleitner

Although the Rosetta stone, found by the troops of Napoleon in Egypt near the city of Rosetta (Rashid) contains only a small amount of text in three languages it was key in deciphering Hieroglyphs. The Rosetta mission tried to achieve something similar: by looking at a tiny body its goal was to decipher the origin of the solar system, planets including Earth and life. After more than 12 years the Rosetta spacecraft softly crash-landed on comet Churyumov-Gerasimenko on September 30, 2016. It has traveled billions of kilometers, just to study a small (4 km diameter), black boulder named 67P/Churyumov-Gerasimenko. The results of this mission now seem to fully justify the time and money spent in the last decades on this endeavor.

High resolution mass spectrometry in the near vicinity of the comet for more than two years revealed a huge amount of organics up to amino acids. The ROSINA (Rosetta Orbiter Sensor for Ion and Neutral Analysis) was able to identify many molecules and isotopologues, which let us reconstruct where these molecules must have formed and under which conditions. Almost three years after end of mission we now have a good overview on the chemical composition of the nucleus, although data analysis is still ongoing and will need several more years to be completed.

In this talk I will show how our perception changed on how the solar system formed thanks to Rosetta and especially ROSINA measurements.

Freitag, 28.06.2019, 15:45 Uhr,

**KIT, Campus Süd,
Otto-Lehmann-Hörsaal, Physik-Flachbau (Geb. 30.22).
Anschließend Nachsitzung.**