



Mars Micro-Satellite for Terahertz Remote Sensing

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We present an idea for an instrument aimed to measure Martian oxygen isotopologue ratios in several species (including O₂, CO, H₂O, and others) by flying a terahertz sensor to Mars on a micro-satellite mission that will orbit the planet for a short while before landing the instrument on the surface. The presentation will discuss the scientific targets, the instrumental details, and the expected outcome of the measurements.

As is generally known, Martian atmospheric chemistry is governed by the photolytic destruction of carbon dioxide, forming free oxygen and carbon monoxide. A complicated chemical chain then resupply the atmosphere with carbon dioxide and leaves behind a mixture of some of the trace gases involved in the chain. Our interest here is that the oxygen isotopologue ratios, in its various forms, is a result of the entire resupply chain.

We are presently (January and onward) performing tests of the design of the instrument, so more details will be available in time for the presentation.