

Using Microwaves for Extracting Water from the Moon

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ABSTRACT

A scientific hypothesis states that cryogenic trapped water is just under the surface of lunar soil at the poles in permanently shadowed craters. Microwave energy can be used to efficiently extract this water from permafrost. COMSOL permits calculation of the heating of simulated lunar soil using measured temperature dependent dielectric properties. Calculations at different microwave frequencies will allow the evaluation of the type of hardware that would be needed to most efficiently extract the water and other volatiles.