Equation of state of lunar glass and numerical modeling of LCROSS (Lunar Crater Observation and Sensing Satellite) experiment

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An analysis of high-pressure thermodynamic properties for basic oxides forming minerals of Solar system is done. Multi-phase equation of state for lunar glass is constructed on the base of available experimental data and general peculiarities. 3D numerical modeling corresponding setup of 2008-year LCROSS experiment is done. Conclusions are made for size, shape of crater and amount of ejected during impact lunar material.