

Molecular dynamic simulation of explosive origin of planets satellites

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The explosion in the planets interior and throw out part of its outer layers onto orbit with the satellite formation helps to explain features of the elemental and isotopic composition of the Moon. Computer simulation of the satellite origin was solved in a 2D setting method of molecular dynamics with the number of particles up to some hundred thousand.

The role of particles played bodies by asteroid size of order 100 km, interacting by the Newton low. Substance properties in condensed state adopted as short distance potential. Some calculations with a variation of initial conditions allowed confirming explosive scenario of the Moon origin and showing its advantages over other hypotheses.