



Methane released by serpentinization of the early Martian crust

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The early atmosphere of Mars was probably thicker than the current one. Large amount of CO₂ and CH₄ may have induced a considerable greenhouse effect during Noachian. Here we show that, assuming the presence of crustal fluids enriched in CO₂, serpentinization processes may have been very efficient to enrich the early Martian atmosphere in CH₄. Its possible storage in the crust (via clathrates) and its photodissociation once it is released have been investigated and the results will be presented. Strengthen the greenhouse effect may have led to stable liquid water and possible organic molecules at the Mars' surface during Noachian.