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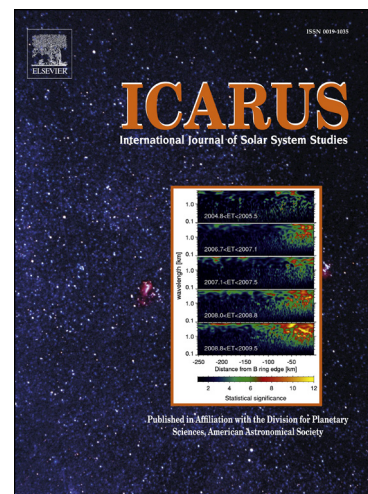
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## Laboratory insights into the chemical and kinetic evolution of several organic molecules under simulated Mars surface UV radiation conditions

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### Abstract:

The search for organic carbon at the surface of Mars, as clues of past habitability or remnants of life, is a major science goal of Mars' exploration. Understanding the chemical evolution of organic molecules under current Martian environmental conditions is essential to support the analyses performed *in situ*. What molecule can be preserved? What is the timescale of organic evolution at the surface? This paper presents the results of laboratory investigations dedicated to monitor the evolution of organic molecules when submitted to simulated Mars surface ultraviolet radiation (190-400 nm), mean temperature ( $218 \pm 2$  K) and pressure ( $6 \pm 1$  mbar) conditions. Experiments are done with the MOMIE simulation setup (for Mars Organic Molecules Irradiation and Evolution) allowing both a qualitative and quantitative characterization of the evolution the tested molecules undergo (Poch *et al.*, 2013). The

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