

Interactive comment on “Thermodynamic origin of life” by K. Michaelian

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Received and published: 14 May 2010

I thank the referee for their kind remarks. In the new version of the manuscript, I have made the arguments concerning the origin of life hypothesis based on UV light dissipation by RNA/DNA more quantitative. For example, in response to Referee 2, I have estimated the diurnal variation in temperature of the Archean sea surface skin layer due to UV and visible light absorption on organic material in this layer and argue that this temperature variation (and related diurnal chemical changes) are sufficient to promote denaturing and template assisted extension of either RNA or DNA through the postulated UVTAR mechanism. New experimental references have also been included which make the arguments, if not more quantitative, at least more plausible.

Interactive comment on Earth Syst. Dynam. Discuss., 1, 1, 2010.