

Biogeosciences Discuss., referee comment RC1
<https://doi.org/10.5194/bg-2021-135-RC1>, 2021
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Comment on bg-2021-135

William Martin (Referee)

Referee comment on "Comment on K. Michaelian and A. Simeonov (2015) "Fundamental molecules of life are pigments which arose and co-evolved as a response to the thermodynamic imperative of dissipating the prevailing solar spectrum"" by Lars Olof Björn, Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-135-RC1>, 2021

The critique is good and should be published. K. Michaelian and A. Simeonov (2015) call everything that absorbs photons a pigment, which is incorrect, as Björn points out. The worst flaw in the K. Michaelian and A. Simeonov (2015) paper is however, that if life arose at submarine hydrothermal vents, as some have been saying for 30 years and as some evidence suggests (Weiss et al. Nature Microbiol 2016; Preiner et al. Nature Ecol Evol 2020), then no light at all was required at life's origin, it was just chemical energy. But even if light was required, the reasoning in K. Michaelian and A. Simeonov (2015) is flawed and, worse, teleological to the extreme (life arose to serve a purpose).