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Interactive comment on "Fundamental molecules of life are pigments which arose and evolved to dissipate the solar spectrum" *by* K. Michaelian and A. Simeonov

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Manuscript "Fundamental molecules of life are pigments which arose and evolved to dissipate the solar spectrum" by Karo Michaelian and Aleksandar Simeonov, I found very interesting as its introduction contains informative and comprehensive survey concerning evolution of Earth atmosphere. Secondly, the main premise of the hypothesis presented in this paper, that the solar light has provided the free energy for a number of photochemical reactions leading from H2, N2, CO2, CH4, HCN, H2O and common polycyclic aromatic hydrocarbons to the earliest more complex organic molecules, pigments which absorb light in far ultra- violet spectra and are fundamental molecules

of life, is reasonable and well founded. RNA, DNA, the aromatic amino acids, and enzymatic cofactors absorb and dissipate strongly when dissolved in water. The arguments are clearly presented, mainly from the literature data. The formation of pigments is emphasized as a photochemical autocatalytic dissipative process driven by the entropy production. However, more definite discussion on the autocatalysis vs. template directed synthesis of RNA and DNA is lacking. In addition work is particularly valuable in highlighting the role of solar energy as an essential feature of life. Overall, article is well written in erudite manner. Therefore, I consider and recommend to the editor submitted manuscript as acceptable for publication.

There are also some additional minor comments: I've found difficult to found out the term G0-V and I am not familiar with the term primitive gases.

With kind regards,

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