

Reading Guide to "The Transition from Geochemistry to Biogeochemistry"¹

Most important: What questions do you have that we have not covered here? Write them down and bring them to class.

Bring your copy of the paper with your notes to class!

1. Some terminology to define:
 - (a) Ga
 - (b) LUCA
 - (c) Hadean
 - (d) Plate tectonics
 - (e) Endogenous, exogenous
 - (f) Homochiral
 - (g) Ribozymes
2. According to this article, what are the fundamental features of life?
3. What is the "chicken-and-egg" problem? How can we get around it?
4. According to this article, what are the scientific challenges in figuring out how life arose? Note there are several challenges described in different places in the article.
5. What are the two major theories about the origin of life?
6. Besides separating/defining the space we might call a cell or protocell, what other key role will membranes play?
7. Other than (potentially deep) curiosity about the origins of life, what is another reason for studying this topic?

¹Sahai *et. al.* *Elements* vol. 12, pgs 389-394 (2016)