

Geomicrobiological and Geochemical Colloquium

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Searching for the roots of our earliest animal ancestors

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Abstract

Establishing when animals emerged and when they first gained ecological importance remains one of the great challenges in geobiology. Equally challenging is the question of what factors drove early animal evolution. The origins of animals are studied using paleontology, molecular clocks, and biomarkers (molecular fossils preserved in sedimentary rocks). However, to date, these three approaches have yielded conflicting results. In this discussion, we will explore recent advances in all three disciplines that may finally allow us to reconcile these results. Furthermore, new methods at the forefront of paleontology, biomarkers, and stable carbon isotopes enable us to gain fundamentally new insights into the evolution of primary producers and the carbon cycle, and to assess their potential impacts on early animal evolution.

