

Review Sheet for Lecture #03: Precambrian Atmosphere

Terms and Definitions: lithification, pyrite, fool's gold, pyrite cement, pyrite conglomerates, anoxic, oxygenated, banded iron formations (BIFs), red beds, cyanobacteria, stromatolites

Persons: none

Dates:

The occurrence of the Great Oxygenation Event: 2.5-2.3 Billion years ago

Places:

Shark Bay, Hamlin Pool, Australia (place of living cyanobacteria building stromatolites)

Review Questions:

How do we know what kinds of gases were present in the early atmosphere?

Why is the most abundant sediment and clasts inside rivers made only of quartz?

What are the six, most-common rock forming minerals?

How are pyrite cements and pyrite conglomerates evidence that the early atmosphere was anoxic?

What are the three most common cements found in sedimentary rocks today?

What are the three major mineral constituents of an average banded iron formation?

Explain how both pyrite cements/conglomerates AND banded iron formations could form at the same time, even though the former requires anoxic conditions, whereas the latter required the presence of oxygen to form.

What significant event do the oldest red beds record in our planet's history?

How is it possible that banded iron formation continued to form in the ocean for nearly 400 million years longer than pyrite cements/conglomerates in fluvial environments?

How do stromatolites form? Why are they found only in restricted environments today?