



Little Door to the Twelfth of December

Greetings, fellow **Eukaryotes**. As you may be aware, our planet is 4.6 billion years old. Meaning geologists work on immensely long time scales. So, here's a quick summary provided by [Georgia Tech Biological Sciences](#) (BYA = billion years ago | MYA = million y. a.)

- **Hadean (4.6-4.0 BYA)**: occurred before life arose (or at least, before there is compelling evidence of life)
- **Archaean (4.0-2.5 BYA)**: featured the evolution of early life, including bacteria, archaea, and the first cyanobacteria capable of oxygenic photosynthesis
- **Proterozoic (2.5 BYA-542 MYA)**: featured oxygen accumulation (the Oxygen Revolution), and the first single-celled and multicellular eukaryotes, and the flourishing of early microbial and multicellular life
- **Phanerozoic (542 MYA to present)**: beginning with the Cambrian explosion, features the proliferation of animal and plant life

We currently live in the Phanerozoic eon, included in this eon are the following periods:

Cambrian (542 MYA), Ordovician (488 MYA), Silurian (434 MYA), Devonian (416 MYA), Carboniferous (359 MYA), Permian (299 MYA) which in turn are part of the **Paleozoic era** (= Paleozoic translates to "old life"); the Triassic (251 MYA), Jurassic (200 MYA) and the Cretaceous (145.5 MYA) may be more familiar to you as the dinosaurs dominated during the last two periods – all three of them are part of the **Mesozoic era**; lastly, the Tertiary (65.5 MYA) and the Quaternary (2.6 MYA) are part of the **Cenozoic era** – the era we live in.

So, how's this relevant to my introduction as my fellow Eukaryotes?

Well, not really relevant but I thought it would be cool to show you the geological time scale.

Bacteria and Archaea belong to the **Prokaryotes**, single-celled microorganisms with no nuclei; to the **Eukaryotes** belong we humans and all other animals, plants, fungi, and single-celled protists, our cells have nuclei to enclose DNA from the rest of the cell.

And yes, these are the three domains of life on Earth: Bacteria, Archaea and Eukarya. We do share a single common ancestor, but the first living organisms to appear on our surface were Prokaryotes, one billion years later it was eukaryotes finally appeared.