

Astronomy Talk 15th September 2018

Rodinia and the Boring Billion

This talk was given by the Chairman, James Fradgley, and had the basic theme of looking at Earth's history to try and get an idea of what we should look for if we want to look for life on exo-planets.

We looked at the history of Earth's Supercontinents: Vaalbara, Ur, Kenorland, Columbia/Rodinia, Pannotia, and Gondwana/Pangaea.

The break-up of Kenorland and Rodinia had a radical effect on the oceans, life and the atmosphere, including snowball Earths, and we looked at the reasons for this. In particular we looked at Rodinia and the fact that there was geological and biological stability for 1 billion years from 1,800 to 800 million years ago: "The Boring Billion".

We then looked at the history of Earth's atmosphere's oxygen levels, including "The great oxygenation event", reversion to anoxia and the rise to modern levels.

Biological Effects and the development of complex life were looked at, up to the Cambrian explosion.

Exo-planets come in all sorts of types and sizes, and we considered what sort of requirements there might be for life to develop.

The conclusion was that oxygen isn't what it's all about and that the search for life should look at imbalances in the atmosphere and the planet's spectral appearance.