

Rise in Earth's Oxygen Timed to the Rise of Animals

An evolutionary burst 540 million years ago filled planet Earth with an astonishing diversity of animals, that some researchers believe was the result of a rise in atmospheric oxygen.

The chromium (Cr) isotope method provides a way to track atmospheric O₂ based on the assumption that marine sediments capture the signal of oxygen-dependent Cr cycling in ancient soils, and new data demonstrates that oxygen was low enough during the long period prior to this increase in animal diversity (the mid-Proterozoic) to have directly hindered the emergence of advanced animals until approximately 800 million years ago.

This now helps explain the mysterious, billion-year lag between the first appearance of eukaryotes (life consisting of cells with a distinct nucleus) and the emergence of complex animals on Earth.

