HARROW & HILLINGDON GEOLOGICAL SOCIETY

A Local Group of the Geologists' Association *Founded 1973*

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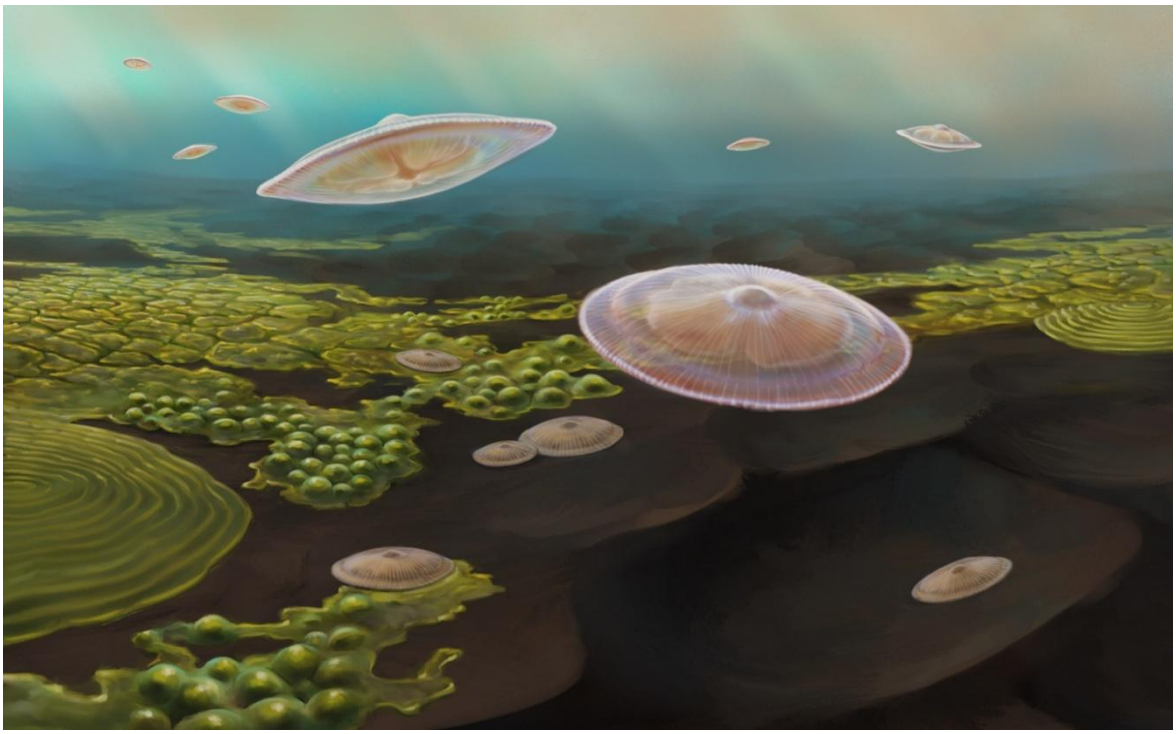
Wednesday 10th June 2026 at 8pm on Zoom

"Life and Rocks: A Deep-Time Story of Earth's Transformation"

By Associate Professor Ernest Chi Fru (Cardiff University)



An artist's impression of Earth's oldest complex marine ecosystem, 2.1 billion years ago, in an inland sea in Gabon, Africa.

Since eternity, humanity has wrestled with one of its oldest questions—where did we come from? Creationists found comfort in the idea of divine design until Charles Darwin arrived with his deeply unsettling proposal that life evolved through natural selection over immense spans of geological time. Since then, debates between believers and evolutionary biologists have rarely ended with smiles, handshakes or anyone changing their mind. One side appeals to faith, the other to evidence etched into the rocks beneath our feet.

Yet perhaps the divide is not always as absolute as it seems. After all, both perspectives begin with the same mystery—how does something arise from nothing? Whether one invokes God or the Big Bang Theory, both ultimately confront the profound question of origins and the source of creation itself. What is beyond dispute, however, is that Earth's geological record preserves a remarkable history of transformation. The rocks tell a story of worlds long vanished and life forms unlike anything alive today.

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From microscopic fossil microbes entombed in ancient sediments to the mineralised bones of giant creatures, the geological archive reveals that life on Earth has changed dramatically through time. Species have appeared, flourished and disappeared, while the planet itself has been repeatedly reshaped by volcanic fire, shifting oceans and a rise of oxygen from vanishing levels in the atmosphere.

This lecture takes us on a journey through deep time, from the early Earth over 4 billion years ago to the emergence of the first primitive complex organisms after the great Snowball Earth glaciations around 635 million years ago. Along the way, we will explore how rocks became the memory of the planet, how microbes transformed the atmosphere and how life and Earth co-evolved to produce the living world we know today. Because if rocks could speak, they would tell us that Earth has never stood still. And neither has life.

Dr Ernest Chi Fru

Professor (Associate) Ernest Chi Fru is a geobiologist who studies the interactions between life, elements, minerals, and geochemical processes in Earth's history. Passionate about the holistic understanding of how life and the Earth system co-evolve, he uses interdisciplinary tools that combine molecular geomicrobiology, biogeochemistry, isotope geochemistry, trace element geochemistry, sedimentology, geology and palaeontology.

His work focuses on how life (particularly microbial) influences the cycling of elements like iron, sulfur, arsenic, phosphorus, copper, zinc and carbon through the geobiosphere, and how these processes have shaped Earth's atmosphere and environment over geological time.