



GWL Cluster Meeting Thursday 16th June 2016, 18:00 for 18:30 “Escaping Snowball Earth”

This presentation will take place in the Royal Cambrian Academy headquarters in Crown Lane, Conwy at 18:30, with refreshments available from 18:00.

Speaker: Ian Fairchild (University of Birmingham):

Ian has worked at several Midlands Universities in his career, during which his profile has expanded to include interests in contemporary environments and environmental change, especially from study of cave deposits, to complement the geological research that is the subject of tonight's lecture. He has published over 150 scientific papers, supervised 35 graduate researchers and chaired research committees in the UK and overseas. He has served as a departmental head at Birmingham and at Keele, where he was also Dean of Natural Sciences. Ian has ploughed back his research to illustrate a wide range of teaching in geology, geography and environmental science.

Abstract:

Did the Earth really suffer the encapsulating climatic catastrophe of a Snowball Earth as some claim? The BBC website shows such a planet as an essentially white ball, but could the earth ever escape from such a highly reflective state? And how strong is the geological evidence that a shift to a completely different climate regime actually occurred outside the realm of computer models?

This lecture focuses on the second of two globally distributed ice ages (panglaciations) in the Neoproterozoic Era. It sets up some critical tests of Snowball Earth theory and shows how they are met by the succession exposed in Svalbard: the ice age started with a long hiatus, carbon dioxide rose to high levels during glaciation, and the glacial deposits themselves, which arguably show precession forcing, were deposited near the end of the glaciation. The sedimentology and geochemistry of the deposits clearly shows cold, hyperarid climatic conditions, close to modern Antarctica, and that much of the Snowball continents was bare ground – conclusions backed by new models. Today we have an anti-Snowball as ice melts in the Arctic, but a recurrence could be expected following a nuclear war.