

:: Accelerating Neoproterozoic Research through Scientific Drilling MagellanPlus Workshop - 17-19 March 2014, Nottingham (UK)

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An ICDP and ECORD sponsored Workshop, in March 2014, was held with 49 participants from 14 countries, to consider the utility of scientific drilling to accelerate research of the Neoproterozoic (1.00 to 0.54 Ga) to earliest Cambrian (541 to ~520 Ma) rock record. The Neoproterozoic time slab challenges us with a hierarchy of questions, from the broadly profound, such as 'why did complex, macroscopic life evolve on this planet some 600 million years ago?' (*right*), and 'how likely is it that other Earth-like planets may have experienced the same?', to the more detailed, such as 'how do different but broadly coeval stratigraphic sections that contain distinctly different proxy records really relate to one another?'.

Unlike most other MagellanPlus workshop topics, this one was not centred on a single site or collection of sites in one area. The need for global coverage is that the questions being asked are ultimately about global Earth system change and addressing such questions requires the integration of numerous local/regional datasets in order to advance understanding of global-scale Earth system change. When and where applied, scientific

drilling for Neoproterozoic research has been instrumental in providing access to rock sections that do not outcrop (*e.g.*, South Oman Salt basin) and in obtaining material that is not contaminated through surface processes (*e.g.* weathering) such that primary proxy record (isotopes, biomarkers, magnetic) can be reliably extracted and studied. The aim is to greatly increase the number of such records, therefore a number of high priority sites were identified and discussions were held regarding establishing operating and management mechanisms for undertaking an integrated global drilling programme, constructing open-access data and sample archiving, and coordinating approaches to multi-national funding. In addition to the specific drilling projects, issues relating to developing and sustaining an overarching initiative were also discussed.

The workshop was a success insofar that it initiated discussion and progress towards the development of a scientific drilling research initiative charged with accelerating Neoproterozoic research and identified key locations to focus on for initial drilling efforts. It was agreed that a programme of scientific continental



Ediacaran fossils dated at ~565 Ma, some of the oldest macroscopic fossils known and which pre-date the Cambrian explosion by some 35 million years.

drilling for the Neoproterozoic must match in spirit and scope that of the IODP and its key role in advancing understanding of the co-evolution of Cenozoic climate and life. Such a programme will involve multiple drilling projects funded by different sources (*e.g.* ICDP plus industry, NASA, national research foundations) and engage with as wide a spectrum of the Earth science community as possible. Such an undertaking will engage the Earth science community for decades.

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<http://www.ecord.org/magellanplus.html>



ICDP Training Course Drilling into Active Fault Zones

The annual ICDP Training Course took place from 6 to 10 October 2014 at the Franz Josef Glacier (New Zealand) close to the parallel-running ICDP Deep Fault Drilling Project (DFDP) that started drilling on 29 August to sample and monitor the Alpine Fault at depth.

33 graduate students, Ph.D. students, early-career scientists and senior scientists involved in current or upcoming scientific drilling projects attended the training course. The lecturers touched upon relevant aspects of scientific drilling in active fault zones, including drilling engineering, rock and fluid samples and sampling strategies, pre-site studies,



(photo courtesy ICDP)

downhole logging, permanent downhole monitoring, and data management. Practical exercises and a one-day visit to the DFDP drill site helped deepen the acquired expertise (*above*).

The training course was very well received by the participants from New Zealand, USA, UK, Canada, Finland, India, China, Italy, South Korea, the Netherlands, Switzerland, Spain and Germany, including a representative from ESO. More information on the training course and other ICDP training activities can be found on the ICDP website at <http://www.icdp-online.org/support/training/annual-training-course>

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