Geophysical Research Abstracts
Vol. 20, EGU2018-17792-2, 2018
EGU General Assembly 2018

New constraints on the age and depositional history of the Cretaceous-Paleogene flysch of the western Indo-Burman Range

Tin Tin Naing (1), Stuart Robinson (1), Mike Searle (1), Gideon Henderson (1), Paul Bown (2), and Ian Millar (3)

(1) University of Oxford, Earth Sciences , United Kingdom (tin.naing@exeter.ox.ac.uk), (2) University College London, (3) NERC Isotope Geosciences Laboratory, British Geological Survey

Project title: New constraints on the age and depositional history of the Cretaceous-Paleogene flysch of the western Indo-Burman Range
Authors: Tin Tin Naing1, Stuart Robinson1, Mike Searle1, Gideon Henderson1, Paul Bown2, Ian Millar3
Affiliation: 1University of Oxford, 2University College London, 3NERC Isotope Geosciences Laboratory, British Geological Survey
Abstract
The geology of western Myanmar is the consequence of a complex oblique collision between the Indian and Asian plates during the Cenozoic closure of the Neotethys. The Indo-Burman Ranges (IBR) occupy the western part of Myanmar. The IBR represents the folded and thrust margin of the Indian plate interpreted as the southward extension of the Himalaya, rotated clockwise as a result of the northward indentation of the Indian plate and shortened by transpression during the Neogene. To the south of the region, the IBR passes into the Sumatra – Andaman Trench, indicating more orthogonal plate motions to the south. The tectonic complexity of the region makes it an important area for understanding the history of the Indian-Asian collision, the genesis of extensive mineral deposits and the existence and style of on and offshore petroleum systems. Within the IBR a wide variety of lithologies are present including schists, pillow lavas, ultramafic rocks and Triassic to Eocene sedimentary rocks. The stratigraphy and tectonic evolution of the region is poorly constrained. Here we present new biostratigraphic and radiometric dates to better constain the stratigraphic ages of Cretaceous – Cenozoic deep-water sediments. These deep-water sediments (mainly fine-grained sandstones and shales) yield very few microfossils and nannofossils. Poorly preserved planktic foraminifera include Hedbergella planispira (Aptian – Turonian) and Heterohelix globulosa (Campanian – Maastrichtian). The nannofossils, include Prediscosphaera columnata, suggesting an Albian – Turonian age, and Watznaueria sp. U-Pb detrital zircon age data from the same sample set contain a significant Cretaceous-age population and a maximum depositional age of Middle Eocene. We also present petrographic, biostratigraphic and stable-isotopic data from exotic pelagic and shallow-water limestone blocks. Our results suggest that biostratigraphic ages from the deep-water siliciclastics maybe biased by reworking of older Cretaceous-age sediments. The occurrence of many limestone olistoliths of Cretaceous age within the Cenozoic flysch provides clues as to the provenance of these sediments and palaeogeographic setting.