Cruise bursary Report

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The InterRidge cruise bursary is aimed at post graduate students seeking cruise experience. This provides a vital opportunity for training in data collection and experience of scientific principles in action. The bursary allowed me to join Dr. R. Hobbs' JC114 cruise to the Panama basin to study the Costa Rica and Ecuador ridges. Subsequently after the cruise I became involved in the OSCAR project, 'Oceanographic and Seismic Characterisation of heat dissipation and alteration by hydrothermal fluids at an Axial Ridge'. While on board Preliminary interpretation of the seafloor topography reveals some insight into tectonic and magmatic activity at these spreading ridges. Post cruise I became enrolled in the OSCAR project and the data were made available to use in my PhD research. Volcanic features such as off axis seamounts with collapsed calderas and proximal sheet flows as well as recent lobate flows erupting from lava domes. Fissure eruptions from axial dykes that penetrate the seafloor are spotted close to collapsed lava domes leaving 300m wide craters. Tectonic features include a transform zone west of the Ecuador ridge hosting a rotating micro plate creating a 1km high plateau. Separating the Ecuador and Costa Rica ridges is a wide transform boundary boasting three transform zones one of them leaky, as well as two extinct spreading centres. These data will be combined with others to be used in my PhD research with the aim of calculating fault heave at a variety of spreading centres. The aim is to compare the magmatic to tectonic spreading ratio at a variety of spreading ridges with varying spreading vectors, spreading rates and melt fluxes.