

## **IODP Expedition 340T: Atlantis Massif Oceanic Core Complex APL**

### **Site U1392 Summary**

A seafloor feature located 3 m south and 2 m east of the reentry cone for Hole U1309D caught our interest during Expedition 340T. It was first seen shortly after the seafloor came into view on the VIT camera, as the positioning for reentry was starting, and was surveyed again following the logging operations at Hole U1309D. The motivation for sampling was to test the inference the feature included (or was solely) geothermal deposits, whose composition might provide insight into any fluids responsible for the growth or, perhaps, simply lithification of pre-existing or concurrently deposited sediments. Opportunistic sampling at this location, now designated Site U1392 (30° 10.1179' N, 042° 07.1118' W), recovered fragments of possible cap rock that may provide information on processes within the exposed detachment.

The circular shape of the feature and distinct coloring relative to surrounding seafloor gave the impression that it was the (still distant) reentry cone. Additional characteristics became evident with closer view: a distinct rim separates the center of the feature from surrounding material, possible concentric or stacked intervals are distinguishable from the observed shadow pattern. This feature was named Decoy Mound due to our initial misinterpretation that it was the reentry cone for Hole U1309D with sediment encrusted on/around/below it.

To collect a sample from Site U1392, a modified APC bit was lowered in the pipe to 1500 mbrf and held there while the ship was positioned over Decoy Mound. The drill string was pushed into contact with the impenetrable surface below the rim and held there. The cable tension was freed, allowing the barrel to obtain a gravity core, with intent that the flapper valve could retain material penetrated. Cable was reeled in to position the barrel again near 1500 mbrf and then tension released for a repeat sampling attempt. The core barrel was recovered after this second drop. The core catcher contained a small amount of material that was catalogued as Core 340T-U1392A-1M, the 'M' indicating miscellaneous sample type. The sample contained mixed rock fragments and some microfossils.