

Gas Hydrate Instability in the Southeastern Bering Sea
Contract No. DE-FC26-05NT42665

Quarterly Progress Report

Date: 6 December 2006
Period: July to September 2006
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Progress

Task # 3.0
Task **Paleomagnetic Analysis**

Steve Lund is currently analyzing the U-channel samples he collected in June from 57JPC and 55JPC in order to test the reproducibility of his data from the type section, 51JPC.

Task # 4.0
Task **Core Sampling**

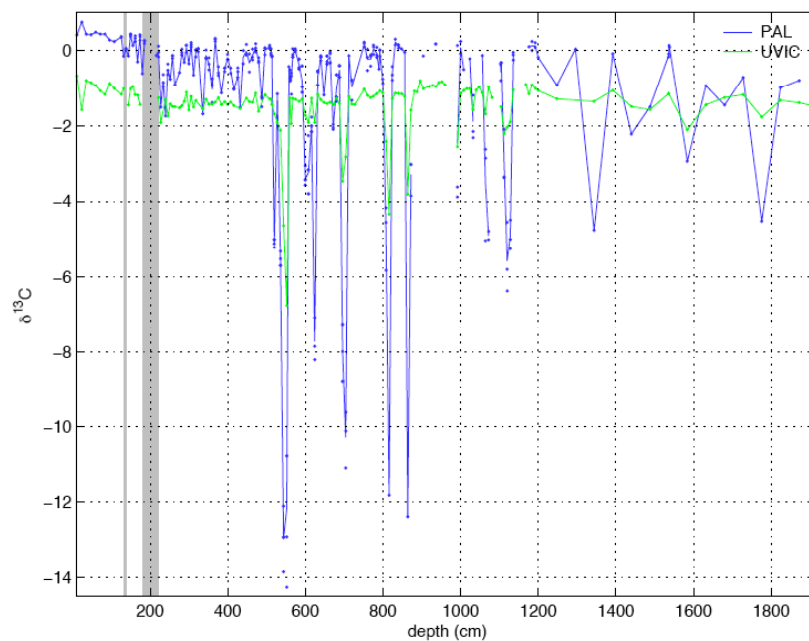
Core 57JPC was sampled at high resolution for the time period that we think coincides with the high-resolution record we developed for 51JPC. We based this on comparison of the 51JPC and 57JPC magnetic susceptibility data and the 57JPC coarse resolution isotope data. This task is now completed.

Task # 5.0
Task **Sample Preparation**

Mea Cook completed preparation of the coarse-resolution samples from 57JPC. She has begun preparing the high-resolution samples from this core.

Task # **6.0**
Task **Mass Spectrometer Work**

The high-resolution samples from 51JPC were analyzed for their oxygen and carbon stable isotope composition. We are excited to report that we found 6 additional $\delta^{13}\text{C}$ minima (6.5 to 12m). These events occur deeper in the core than the 3 events we identified in the preliminary data for this study (5 to 6.5m). This is consistent with our hypothesis that these events may coincide with Dansgaard-Oeschger events, which are pervasive in this part of the last glacial period. In addition, we found that there are no isotopic events during the Last Glacial Maximum (3 to 5m). This is also consistent with our hypothesis because there were no Dansgaard-Oeschger event at this time.



The coarse resolution samples from 57 JPC were analyzed as well and used to guide the high-resolution sampling of this core (Task 4.0).

Schedule

The mass spectrometer has been running well. We are on schedule to complete the high-resolution isotope analysis of 57JPC during the next quarter. This will complete Tasks 5.0 and 6.0.

At this point, when the isotopic analyses are complete, we will be in a position to carefully identify depth horizons in which to take samples for radiocarbon dating (Task 7.0).

In addition, we will be able to identify intervals in each core to analyze for the lipid biomarkers of methanotrophs (Task 8.0).

Other Activities

On September 5th, 2006, Mea Cook gave an invited seminar at the Monterey Bay Aquarium Research Institute. This seminar included all of the data collected on this project to date. Dr. Cook also met with several investigators at MBARI who study modern methane seeps, the biology of the chemosynthetic communities at the seeps, and the porewater chemistry.