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Call for Participation in IODP Exp 348:
NanTroSEIZE Plate Boundary Deep Riser - 3

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CDEX currently plans to implement IODP Expedition 348: NanTroSEIZE Plate Boundary Drilling – 3, beginning around 15 August 2013. The main expedition goal is to deepen IODP Riser Hole C0002F to at least ~3600 meters below the sea floor (mbsf). An additional objective is to install a long-term monitoring package (similar to a CORK observatory) in non-riser Hole C0010A. This is phase 1 of a two-phase Expedition plan to extend riser Hole C0002F to ~5200 meters below the sea floor (mbsf). The objective of this two-phase plan is to drill across the prominent reflection interpreted as the key plate boundary fault known as the megasplay to collect cores, logging data and install casing. Hole C0002F has already been drilled to 2005.5 mbsf (and cased to 856 mbsf) on Expeditions 326 and 338. Phase 2, extending the hole from the planned Expedition 348 3600 mbsf casing shoe to 5200 mbsf across the mega-splay reflection for cores and logs, is anticipated to be carried out in early 2015. This Call for Participants solicits a pool of scientists to potentially staff both Phase 1 and Phase 2 (Expedition 348 and the follow-on expedition).

IODP NanTroSEIZE Complex Drilling Project

The IODP Complex Drilling Project (CDP) known as the Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) Project comprises multiple expeditions over a several-year period aimed at sampling and instrumenting the up-dip transition into the subduction seismogenic zone. Hole C0002F is the centerpiece deep riser hole for this project. Expedition 348 will follow normal IODP rules for designation of co-chief scientists, scientific staffing, and follow the IODP Sample, Data and Obligations Policy, which defines data moratorium, data access and publication responsibilities.

Scientific Objectives of the expedition

The Expedition 348 goal is to deepen Hole C0002F to sample the deep interior of the accretionary complex in the midslope region beneath the Kumano forearc basin with both cores and drill cuttings. Please read the Expedition 348 Fact Sheet

(http://www.iodp.org/expeditions/) for further details. Expedition 348 is expected to reach a depth of 3600, possibly to 4400 mbsf, where the hole will be cased and left ready for deepening in Phase 2.

The main objective of Phase 2 is to log and sample the hanging wall, the presumed fault zone, and ~200 meters of the footwall of this structure, which is believed to be the main active detachment zone of the plate boundary within the accretionary prism. Additional key objectives include conducting a 3D two-ship Vertical Seismic Profile (3D-VSP) at the 3600 mbsf level before advancing deeper, to image the mega-splay in unprecedented detail; and also drilling through the lower accretionary prism interval with LWD and cuttings analysis. Finally, the hole is to be cased and suspended in a condition that will permit future return for further operations.

Operation Plan

Operations planned for Expedition 348 include:

- Re-opening the hole as suspended after Expedition 338, which entails reaming from 856 - 2007.5 mbsf by riser drilling, and installing 13 3/8-inch casing at 2300 mbsf.
- Riser drilling, with continuous LWD & real-time MWD logging, and cuttings and mud gas analysis, to a depth of 3600 (or 4400) mbsf, depending on drilling conditions, and installing 11 ¾-inch (and 9 5/8-inch casing if 4400 m TD reached) casing.
- Coring of ~100 meters of the inner accretionary prism.
- Installation of the LTBMS (CORK) system at nearby Site C0010.

Operations for the follow-on Phase 2 expedition tentatively include:

- Riser drilling, with continuous cuttings and mud gas analysis, beginning from the Expedition 348 casing point to reach the planned ~5200 mbsf Total Depth (TD).
- LWD and wireline logging accompanied by downhole stress, pore pressure and permeability tests.
- A two-ship 3D vertical seismic profile (3D-VSP).
- Coring of several hundred meters above, within, and below the plate boundary megasplay fault reflector.

Expedition Schedule

Current plans have Expedition 348 beginning on or near 15 August 2013, and finishing on 20 January 2014. This would allow approximately 159 days of offshore operations. If LTBMS/CORK installation track goes ahead, a 'rump' science presence will be aboard for the operations to install the C0010 LTBMS/CORK. After this is complete, the initial Science Party group (see "Science Party" below) will board D/V *Chikyu* by helicopter after initial riser operations complete reaming and casing to 2005 OR 2300 mbsf. During this initial effort, only a minimal science party will be on board. The science party will stay on board during the main new hole drilling, logging, and coring, and then depart when operations shift to riser recovery. During the Phase 2 expedition, the science party will remain on board during all times where scientific samples or data are actively being collected. This schedule is under development and subject to change. Updates and the latest information can be found on the CDEX website: (http://www.jamstec.go.jp/Chikyu/eng/).

Science Party

Because of the long duration of these expeditions, the full Science Party will comprise several teams organized to participate for up to ~8 weeks each in a staggered schedule in both 2013 and 2014. Scientific specialties that will likely be required for the shipboard science party include sedimentology, structural geology, organic and inorganic geochemistry (including mud gas monitoring), microbiology, physical properties, micropaleontology, paleomagnetism, well logging analysis, and core-log-seismic integration specialists.

Data Sharing

These expeditions (Exp. 348 & Phase 2) will share data and samples between the different phases, as part of one "greater science party". They will also have access to data and cuttings samples from IODP Expedition 338 Hole C0002F.

Nobu Eguchi
CDEX Expedition Manager

Table 1. D/V Chikyu Schedule for FY13/14

Exp.#	Expedition Name	Schedule	Duration	Co-chief Scientists	EPM
348	NanTroSEIZE Plate Boundary Deep Riser - 3	15 August 2013 – 20 January 2014	159 days	TBA	TBA

Remarks:

(1) All expedition schedules are subject to change based on FY budgetary situation, engineering considerations, and site conditions.