

# IODP Science Advisory Structure Executive Committee

## 2<sup>nd</sup> Meeting, 1-2 November 2006

### Hilton Odawara Resort and Spa

### Odawara, Japan

#### Science Advisory Structure Executive Committee - SASEC

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Keir Becker	RSMAS, University of Miami, USA
Michael Bickle	Department of Earth Sciences, University of Cambridge, United Kingdom
John Hayes	Woods Hole Oceanographic Institution, USA
Susan Humphris (chair)	Woods Hole Oceanographic Institution, USA
Gaku Kimura	Department of Earth and Planetary Sciences, University of Tokyo, Japan
Masaru Kono	Okayama University, Japan
Young-Joo Lee (observer)*	Korea Institute of Geoscience and Mineral Resources, Korea
Kenneth Miller	Department of Geological Sciences, Rutgers University, USA
Toshiyasu Nagao	Earthquake Prediction Research Center, Tokai University, Japan
Eli Silver	Earth Sciences Department, University of California, Santa Cruz, USA
Jianshong Shen (observer)*	Ministry of Science and Technology, China
Manik Talwani	IODP Management International, Inc.
Yoshiyuki Tatsumi (vice-chair)	Institute for Research on Earth Evolution, JAMSTEC, Japan
Gerald Wefer	Center for Marine Environmental Studies, University of Bremen, Germany

\* Unable to attend.

#### Liaisons, observers, and guests

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Jamie Allan	National Science Foundation, USA
Rodey Batiza	National Science Foundation, USA
Millard Coffin	Ocean Research Institute, University of Tokyo, Japan
David Divins	JOI Alliance, Joint Oceanographic Institutions, Inc., USA
Dan Evans	ECORD Science Operator, British Geological Survey, United Kingdom
Issa Kagaya	Advanced Earth Science and Technology Organization, Japan
Yoshihisa Kawamura	Center for Deep Earth Exploration, JAMSTEC, Japan
Kelly Kryc	IODP Management International, Inc.
Hans Christian Larsen	IODP Management International, Inc.
Catherine Mevel	ECORD Managing Agency, Institut de Physique du Globe de Paris, France
Takao Miyazaki	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Julie Morris	National Science Foundation, USA
Toshi Oshima	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Yoichiro Otsuka	IODP Management International, Inc.
Kazuya Shukuri	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Masato Sugiyama	Ministry of Education, Culture, Sports, Science, and Technology, Japan
Kiyoshi Suyehiro	Japan Marine Science and Technology Center, Japan

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2<sup>nd</sup> Meeting, 1-2 November 2006  
Odawara, Japan

## EXECUTIVE SUMMARY (v2.0)

### 2. Approval of the Minutes from the July 2006 SASEC Meeting

**SASEC Motion 0611-01:** SASEC approves the revised minutes of its first meeting on 11-12 July 2006 in Washington, D.C., USA.

*Miller moved. Kono seconded. 10 in favor, 0 abstained, 0 against.*

### 3. Approval of the Agenda

**SASEC Motion 0611-02:** SASEC approves the revised agenda for its second meeting on 1-2 November 2006 in Odawara, Japan.

*Silver moved. Tatsumi seconded. 10 in favor, 0 abstained, 0 against.*

### 8. Update on Long-Term Evaluation Plans for IODP Science

**SASEC Consensus 0611-03:** SASEC endorses the approach to long-term evaluation of IODP science suggested by Hans-Christian Larsen. Specifically, one panel will be convened each year, reviewing in turn each of three thematic areas. To begin, the theme of climate variability will be reviewed in late 2007. The themes dealing with the structure of the ocean crust and with fluid flow and sub-seafloor life will follow in 2008 and 2009.

The panels will be chaired by the IODP-MI Vice President for Science Planning. As outlined in SASEC Consensus 0607-06, each review committee will include two to four experts external to IODP, one member each from SASEC and SPC one representative from IODP-MI, and one former member of SAS who was involved in the nurturing of the expeditions under review.

For the review of the climate variability theme in 2007, SASEC proposes that K. Miller should be its representative, that R. Nomura (or, as an alternate, G. Filippelli) should be the representative from SPC, and that J. Thurow (or, as an alternate, R. Tada) would be an excellent representative of SAS. Two to four individuals from the group comprised of R. Toggweiler, W. Curry, G. Haug, B. Zolitschka, E. Tajika, and M. Sarnthein would provide the required external experts.

### 9. Review of the Science Advisory Structure

**SASEC Consensus 0611-04:** As part of its activities to review and recommend any changes to the Science Advisory Structure to ensure it is optimally configured as IODP enters Phase II and as Missions are introduced, SASEC recommends that the sub-committee created at its last meeting solicit input from the broader IODP community on the effectiveness of SAS and ideas for structural modifications and/or simplifications. This may best be accomplished through the development of a short questionnaire.

## 10. Mission Implementation

**SASEC Motion 0611-05:** SASEC approves the IODP Mission Designation and Implementation Plan as developed by the Mission Implementation group (SASEC Action Item 0706-08) and as revised at this meeting.

*Silver moved. Nagao seconded. 10 in favor, 0 abstained, 0 against.*

**SASEC Action Item 0611-06:** SASEC requests that IODP-MI integrate a Call for Mission proposals into its next annual Call for Drilling Proposals, ensuring that expectations regarding available resources and the number of proposals likely to be designated as Missions are contained.

SASEC notes that the lead agencies need to review the IODP Mission Designation and Implementation Plan prior to its official release, and requests this be done as soon as possible.

## 12. Planning for Future Workshops

**SASEC Consensus 0611-07:** SASEC recommends that IODP-MI fund the revised proposal for an IODP Workshop entitled ‘Large Igneous Provinces’ in 2007. SASEC believes that the Workshop proponents have adequately addressed the issues discussed and summarized in SASEC Consensus 0607-09.

### **Charge to the Steering Committee for the Large Igneous Provinces Workshop from the IODP Science Advisory Structure Executive Committee (SASEC)**

The IODP Initial Science Plan (ISP) identifies Large Igneous Provinces (LIPs) as one of its important initiatives, and highlights their importance for understanding mantle processes, melt formation and movement, as well as for their potential environmental impacts. The committee recognizes the value of a workshop aimed at planning global and long-term drilling strategies to address the problem of LIP formation.

SASEC charges the workshop participants with (i) defining the key scientific objectives that can be achieved by drilling into LIPs, (ii) identifying a global, long-term strategy (including scientific, technical, engineering and operational components) to address those objectives, and (iii) providing a conceptual framework for potentially considering LIP drilling as a Mission within the IODP.

IODP-MI will provide logistical support for the workshop.

**Steering Committee:** SASEC recommends creating a steering committee of 5-7 individuals to organize and run the meeting, headed by 1-2 conveners. The steering committee must decide how best to structure the workshop and accomplish those goals within the available budget.

**Expected deliverables:** As an outcome of the workshop, the steering committee must deliver at least two publishable documents – an *EOS* meeting summary report, and a longer, comprehensive workshop report that describes the scientific objectives, presents a drilling strategy for addressing those objectives, and identifies the technological and engineering requirements. A primary goal is to provide information to update the ISP.

**SASEC Consensus 0611-08:** SASEC thanks the SSEP and the SPC for sending forward two workshop proposals:

(i) Extreme Climates and Abrupt Climate Change During the Cretaceous and Paleogene  
(ii) IODP-ICDP Workshop on High to Ultra-High Resolution Sedimentary Records,  
and applauds the SSEP's efforts to be proactive in bringing important topics to the attention of SASEC.

Both topics are regarded as highly relevant to the objectives of IODP, and SASEC looks forward to receiving more complete proposals at the next workshop proposal deadline (1 February 2007).

In preparing such proposals, SASEC encourages the proponents to ensure they address the following issues:

- overall scientific or technical objectives, and their relevance to the ISP
- rationale for drilling as a means of addressing scientific questions
- scope of topics to be covered by the workshop and potential for interactions with other international science programs
- target audience/workshop participants (individuals or research groups)
- proposed conveners and Steering Committee members
- suggested timing and location of workshop
- a preliminary budget (including potential for funding from other organizations – highly desirable).

**SASEC Consensus 0611-09:** SASEC approves the following call for workshop proposals and requests IODP-MI to advertise this opportunity in a timely manner for a 1 February 2007 deadline.

## **Integrated Ocean Drilling Program**

### ***Call for Workshop Proposals***

**Deadline: 1 February 2007**

The Integrated Ocean Drilling Program (IODP) is the premier international research program conducting scientific investigations of the Earth through ocean drilling.

IODP invites short proposals for workshops to be held (tentatively) in 2008 and 2009 on topics either derivative of the IODP Initial Science Plan (ISP – download at

[www.iodp.org/isp](http://www.iodp.org/isp)) or on other globally important problems that can be addressed through ocean drilling during the next phase of IODP.

Proposals (not to exceed four pages of text) must include:

- overall scientific or technical objectives, and their relevance to the ISP
- rationale for drilling as a means of addressing scientific questions
- scope of topics to be covered by the workshop and potential for interactions with other international science programs
- target audience/workshop participants (individuals or research groups)
- proposed conveners and Steering Committee members
- suggested timing and location of workshop
- a preliminary budget (including potential for funding from other organizations – highly desirable).

Expected deliverables will likely include an EOS meeting report, a detailed workshop report, and an article for Scientific Drilling.

Please include a 1-2 page curriculum vita for each workshop convener (up to a maximum of 5). Submit proposals in .pdf format by 1 February 2007 to Kelly Kryc (kkryc@iodp.org).

### 13. IODP DRILLS Program

**SASEC Consensus 0611-10:** SASEC nominates Bo Barker Jørgensen (USA tour), Ted Moore (Japan tour) and Yoshiyuki Tatsumi (European tour) as the inaugural speakers for the IODP DRILLS program starting in 2007.

### 14. IODP Topical Symposia

**SASEC Consensus 0611-11:** SASEC thanks Gerold Wefer for agreeing to host the first IODP Topical Symposium on “North Atlantic and Arctic Climate Variability” to be convened in Bremen, Germany in August 2007. SASEC further nominates G. Wefer, J. Backman, R. Stein, J. Channell, K. Takahashi, D. Kroon, M. Raymo, and E. Janssen as potential Steering Committee members.

**SASEC Consensus 0611-12:** SASEC recommends that the subject of the 2008 Topical Symposium be Ocean Crust Formation and Evolution.

**SASEC Action Item 0611-13:** SASEC members are requested to identify potential additional funding sources, location, and conveners for the 2008 IODP Topical Symposium, including investigating the possibility of convening a dedicated Gordon Conference, for further discussion at the its spring 2007 meeting.

## 16. Interactions with Industry

**SASEC Consensus 0611-14:** SASEC endorses IODP-MI pursuing partnerships with industry for drilling targets of mutual interest, particularly in light of the realities of future funding for IODP. Such partnerships will need to be set up so that the scientific integrity of the Program is maintained.

**SASEC Consensus 0611-15:** SASEC encourages the IIS-PPG to foster the development of industry-related drilling proposals. However, SASEC does not endorse the establishment of “proposal working groups” as a formal part of the IIS-PPG and the SAS. Furthermore, IODP cannot provide travel support for proposal working groups to meet to write proposals.

## 17. Update of the IODP Initial Science Plan

**SASEC Action Item 0611-16:** SASEC members are requested to identify potential editorial board members for the preparation of an updated ISP to be published by December 2008. The editorial board will be constituted at the Spring 2007 SASEC meeting.

**SASEC Action Item 0611-17:** SASEC members are requested to re-read the IODP ISP and identify areas that need to be updated or added in the updated ISP to be published by December 2008. The Table of Contents of the updated IODP ISP will be discussed at the Spring 2007 SASEC meeting.

## 19. Future meetings

**SASEC Consensus 0611-18:** SASEC agrees to hold its next meeting 22-23 March 2007 (Eastern Standard Time mornings only) via videoconference in locations to be determined.

## 20. Closing remarks

**SASEC Consensus 0611-19:** SASEC thanks Yoshi Tatsumi and Issa Kagaya for hosting their second meeting. The location was wonderful, the views spectacular, and the onsen much appreciated by all.

# IODP Science Advisory Structure Executive Committee

**2<sup>nd</sup> Meeting, 1-2 November 2006**  
**Odawara, Japan**

## **Minutes (v3.0)**

<b>Wednesday</b>	<b>1 November</b>	<b>0900-1700</b>
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### **1. Opening Remarks**

Susan Humphris opened the meeting at 0900. The committee members and other meeting participants introduced themselves. Yoshi Tatsumi, the host, welcomed everybody and explained the onsite logistics. Humphris took a moment to outline the SASEC Rules of Engagement, which encourage discussion, request that speakers raise their hands, limit the use of acronyms, limit the number of observers to equal that of the committee members, specify that members speak slowly, and restrict the use of the internet during session. In addition, Humphris clarified that SASEC will work by consensus unless a vote is called for and that the committee can go into executive session if it chooses to do so.

### **2. Approval of the Minutes from the July SASEC Meeting**

Humphris asked the committee members if they had any comments, additions, or changes to the minutes from the July 2006 SASEC meeting. Talwani noted that in Appendix C (SASEC Terms of Reference), both he and Becker had been omitted as members of the committee. Humphris agreed that there was an error in the TOR, which were forwarded by the IODP-MI Board of Governors, and that the error should be corrected. Kono indicated that he thought that there was an oversight on Page 19 with individual speakers not being properly recognized. There was a brief discussion about the merits of keeping verbatim minutes and it was generally agreed that it was not required. Becker requested the following change be made on Page 8: In appropriate circumstances SASEC WILL ADHERE TO...as opposed to they MIGHT CHOOSE to. The revised July 2006 meeting minutes were approved by consensus. Kryc will make the noted changes and post the approved minutes on the IODP website as soon as possible.

<b>SASEC Motion 0611-01:</b> SASEC approves the revised minutes of its first meeting on 11-12 July 2006 in Washington, D.C., USA.
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*Miller moved. Kono seconded. 10 in favor, 0 abstained, 0 against.*

### **3. Approval of the Agenda**

Humphris asked the committee members if any additions or changes were required to the agenda. Humphris made two additions:

Agenda Item 12 - Planning for Future Workshops: Two workshop proposals were submitted to SASEC by SSEP and should be discussed.

Agenda Item 16 – Interactions with Industry: A memo from Ralph Stephen, Chair of the Industry-IODP Science Program Planning Group (IIS PPG) was forwarded to SASEC for consideration.

Nagao stated that Talwani had provided him with a list of IODP acronyms and was willing to distribute it if anyone required one. No other changes to the agenda were made and the agenda was approved by consensus.

**SASEC Motion 0611-02:** SASEC approves the revised agenda for its second meeting on 1-2 November 2006 in Odawara, Japan.

*Silver moved. Tatsumi seconded. 10 in favor, 0 abstained, 0 against.*

#### **4. Update on Action Items from the July 2006 meeting**

Humphris summarized the action taken on the following SASEC motions:

1. SASEC Motion 0607-03: IODP-MI BoG approved requested changes to the Terms of Reference in August 2007.
2. Meeting Schedule: The IODP-MI BoG approved SASEC's request to conduct three meetings per year, which would not include a joint meeting with SPC in August 2007.

#### **5. Agency, IODP-MI & Implementing Organization (IO) Reports**

The Lead Agencies, IOs and IODP-MI provided reports that the committee members were asked to read prior to the meeting. Forty-five minutes were provided to allow the committee members to ask questions of the representatives attending the meeting.

SASEC received an update from Morris on behalf of NSF regarding the status of the SODV.

Humphris asked if the Environmental Impact Statement (EIS) is still on schedule and Morris replied that it is about one month behind schedule. Divins added that it likely would be complete in early 2007. Allan stated that NSF and NOAA would review it in November and that it is on schedule. Humphris asked if the EIS covers all of the ship operations and Allan confirmed.

MEXT reported that the Chikyu shakedown test was successful and that it is currently in route to Kenya. Kawamura stated that Phase 2 of the shakedown was terminated on October 26 and that 80% of the testing was successfully completed. They were unable to test the coring with drilling mud scenario. Chikyu will be in Singapore on November 16 before departing for Kenya for 1-2 months and then will move to Australia. CDEX anticipates that the ship will return to Japan next summer. Silver asked about the recent problem with the blow-out-preventer. Kawamura replied that there was severe weather during the riser drilling test and that they were forced to do an emergency disconnect leaving the lower part of the BOP. One of the hydraulic control lines was damaged, but there are two so, while it can still operate, it is a safety issue. The test was abandoned and repairs are being conducted on board during the transit to Kenya. Morris stated that she recently visited Chikyu and that the ship is a fantastic contribution to the program.



Shukuri added that the 2007 budget is currently being requested and the Japanese fiscal year begins in April. Ideally, MEXT would like enough of a budget to commence Nankai drilling in Autumn 2007. Negotiations with the Minister are ongoing and MEXT will have more to report on the subject in January.

On behalf of EMA, Mevel reported that the ECORD council meets at the end of November, at which time more will be known. Humphris asked about the recent European submarine slides workshop in Barcelona. Evans replied that it was quite successful. The workshop participants had some concerns about the dates of the 2007 IODP Geohazards Workshop as there is a conflict in early October. Silver clarified that the Steering Committee is looking at a late August date and that Julia Morgan had asked Angelo Camerlenghi to serve on the Steering Committee. Larsen asked Mevel about the timeline of the ECORD review. Mevel answered that there was a meeting in September and that a report will be available in November for review and finalized by the end of the year. It will go to each country and will be discussed at the upcoming ECORD Council meeting. The situation will be clearer by Spring 2007. It is not a question of renewal, but a question of the increase in contributions.

Talwani, on behalf of IODP-MI, didn't have anything to add to the written report in SASEC agenda book. Kono asked about the status of the core transfers. Talwani replied that if the Kochi core repository is ready by May 2007, the cores will be shipped. The transfer has been approved and TAMU is in the process of preparing and moving the cores. Kono asked for clarification that the transfer will happen. Kawamura confirmed that Kochi is ongoing. Racks are being made and the repository will be ready in April 2007. TAMU will start shipping in April and the first cores will be received in May.

The USIO had nothing to add to their report and no questions were asked. Kawamura, on behalf of CDEX, stated that he had already spoken during the MEXT report and had nothing further to add. No questions were asked. Evans reported that ESO held a pre-cruise meeting and that they are following up on the issues discussed at that meeting. No questions were asked.

## **6. Update on the Revised FY2007 Program Plan**

Talwani reminded SASEC that they had already approved the FY2007 Annual Program Plan. He reported that there were two significant changes. The date of the SODV delivery was moved to November and therefore into FY2008. In addition, funds have been released to initiate the core transfers. Talwani expressed his gratitude to Divins for amicably reducing the budget as requested. Otsuka made a brief presentation outlining all of the changes to the FY2007 APP since SASEC had approved it in July. Changes included the following: No SODV operations in FY2007; DSDP/ODP core redistributions; IODP-MI review; Korean participation in IODP; and SASEC updates including workshops. Otsuka reported that the FY2007 SOC total is \$26.8M and that the APP was approved by the Lead Agencies on September 22, 2006. Humphris asked if there were additional questions about the FY2007 APP. There were none.

## **7. Items from the August SPC meeting**

Becker presented a short review of the important items and consensus statements from the August SPC meeting and highlighted some issues requiring SASEC attention. During their meeting, SPC approved the FY2008 ship operations schedule. Specifically, they approved the Chikyu science and operation plan for NanTroSEIZE non-riser and riser drilling. SPC also conditionally approved Mission Specific Platform operations for Great Barrier Reef drilling. Regarding SODV ship operations, SPC approved the FY2008 science and operation plan recommended by the Operations Task Force, which includes caveats for a slight delay in ship delivery. Becker updated SASEC on the status of proposals being considered for FY09-10 drilling and described the projected SODV, Chikyu, and MSP operations. Regarding specific SSEP requests, Becker reported that Bob Duncan had been approved as the chair of the Hotspot Geodynamics Detailed Planning Group and that their first meeting is planned for January 2007. In addition, SPC approved SSEP's redefinition of the 5-star grouping system for forwarded proposals. With respect to Site Surveys and Missions, SPC put forth that the IODP agencies need to continue developing fiscal mechanisms to enhance the support of acquiring site-survey data essential to the integrated structure of mission planning. SPC reviewed the draft mission implementation plan and made several comments that were incorporated into the draft that SASEC will consider at this meeting.

Becker then updated SASEC on the SPC Expedition Science Assessments that were conducted in August. Expeditions 302, 308, 309, 311 and 312 were reviewed. The timing of the reviews ranged from 9 months post-expedition to nearly 2 years. SPC agreed that the description and assessment of the science results from Exp. 302 were much more complete than the others and thought that it would be more satisfactory to wait for ~2 years post-expedition to conduct the review. Unless SASEC objects, SPC intends to follow that model in the future. SPC will review Exp. 310 in August 2007 and Phase 2 assessments will begin in ~2009 with a review of the New Jersey Sea Level Expedition.

Finally, SPC requested clarifications from SASEC on the Conflict of Interest policy that prohibits IODP contractors and sub-contractors from serving on SAS panels. The IOs are considered separate entities within larger research organizations, such that scientists from those larger organizations can serve on panels. For example: CDEX within JAMSTEC, USIO within TAMU, and ESO within BGS. Non-IO scientists from JAMSTEC, TAMU, and BGS can serve on SAS panels. SPC would like to know if the same applies to industry scientists from separate companies or divisions within larger international corporations. For example, can scientists from Schlumberger research labs not directly connected to IODP wireline logging service providers serve on SAS panels?

After Becker's presentation, Humphris opened the floor for questions. Humphris started by asking if an Environmental Impact Statement was required for Great Barrier Reef drilling. Evans replied that they have made contact with the park officials and are hoping for a meeting early next year at which time guidance is expected. Silver asked about the status of the GBR site surveys. Evans replied that half of the work is complete and that the other half has been funded. Talwani enquired whether or not the sites have been decided and if the site survey was primarily side-scan sonar. Becker responded that the

primary sites have been identified and that they will be fine-tuned by additional site-surveys. Evans added that the sites have been changed from the original proposal and that 6 sites have been identified based on the completed site survey work. Allan asked if the target date of FY09 is still appropriate and if there was some amount of money allocated in FY08. Evans stated that, yes, the target date is still appropriate and that some money might be needed in FY08 due to the September/November weather window.

Hayes thought that the overall operations timeline appears very uncertain and wondered if the two NanTroSEIZE operations would have to be compressed. Becker agreed that the timelines remain uncertain and stated that SPC will revisit the schedule and adjust it if required. He emphasized that the SPC/OTC interaction is working well with respect to scheduling.

Humphris asked if there had been any progress on the EIS for Monterey. Allan responded that it hadn't changed and that any progress needs to be initiated by the proponents.

Tatsumi asked if the Indus Fan proposal had both a riser and non-riser component. Becker replied yes. He further emphasized that there are several more proposals that have been forwarded to OTF and are available for developing schedules beyond FY08. However, some of the proposals have site survey issues and are in limbo between SPC and OTF. Coffin asked if the site survey for the Indus and Murray fan was complete. Becker replied that an industry 3-D dataset had been made available and already has been previewed at EPSP. SPC requested further scoping although a formal scoping group has not been established (Kawamura confirmed).

Humphris suggested that SASEC should be aware of the proposals in the system and should look long range at the overall portfolio of activities and how it compares to the ISP in preparation for renewal in 2013. Miller asked if drilling thus far was covering the ISP and if SPC considers this when ranking proposals. Becker replied that SPC does not formally map proposals still at the SSEP level against the ISP and that when operations are scheduled into the future there are operational trade-offs involved. For example, OTF presented several ship-tracks for FY09-10, but there was only one that was really feasible in terms of maximizing science, minimizing transit, and operating within an optimal weather window. The pool of proposals available for scheduling in the next three years of drilling will see decent coverage of paleoceanography, seismogenic zone, crustal drilling, gas hydrates. The ISP initiative for continental rifting and sedimentary basin formation is currently not well represented. Hayes pointed out that microbiology was missing and Becker replied that nearly all of the expeditions have a microbiology component. Humphris identified LIPs as another underrepresented drilling objective.

Tatsumi asked how long a proposal may be maintained in the system. Becker replied that they can stay in SPC indefinitely and that no mechanism exists to terminate a proposal at the SPC level. Larsen added that if a proposal has not been updated in 3 years, it may die in the system. Becker stated that there are currently 3-4 proposals that have been at the SPC level for quite some time. Coffin agreed and added that any kind of update, including a letter or email, will keep them updated.

Becker clarified that, based on the Canterbury basin gas hazard analysis, OTF may require a special meeting to reschedule the SODV. If Canterbury can't be drilled, then SPC agreed that Wilkes will be postponed as well. Final decisions will be made at the March SPC meeting.

Discussion moved onto items related to the hotspot geodynamics DPG, the SSEP 5-star grouping system, and the Mission Implementation Plan. Becker emphasized that, with respect to the mission plan, SPC had concerns about site survey issues, but that he wasn't sure that site survey issues will ever be considered by SASEC. This topic will be revisited at the March SPC meeting. Talwani thought that SASEC should offer an opinion on the subject and Silver agreed that SASEC should move beyond issuing a motherhood statement.

Becker then described the SPC Expedition Science Assessments of 302, 308, 309/312, and 311 (see above for details in Becker's presentation). The full assessments will be available in the SPC minutes, which aren't yet available. Humphris asked if there were any issues that arose during the assessment that SASEC needs to be aware of. Becker replied that there weren't any except for the issue of holding the assessments 18-24 months post expedition rather than 9 months. Humphris concurred with holding the assessments later. Miller requested clarification on the assessment process. Becker explained that an assessment team of 3 SPC members is assigned to each expedition, and they lead a thorough SPC discussion after a detailed presentation by the expedition co-chief scientists. The co-chief scientists and the assessment team are asked to map the scientific results against the original expedition objective as defined in the ranked proposal and prospectus. The assessment team produces a short (3-page) report for the SPC minutes and IODP legacy. Humphris reminded SASEC that the SPC assessment is a short-term one and that SASEC will address the issue of long-term assessments later in the meeting. Becker emphasized that waiting two years led to a more useful SPC assessment. Talwani asked if outside reviewers should be brought in. Becker replied that the long-term SASEC reviews should engage outside reviewers rather than the short-term SPC review.

Becker then asked SASEC to consider clarifying the COI policy with respect to representatives on the SAS panels (see above for details in Becker's presentation). Allan clarified that the USIO contract is with TAMRF not with TAMU and so there are no actual financial ties with the university, which is an important clarification. Humphris asked about other services like core repositories and the databanks – in those cases, the contract is with the university and yet we have independent scientists from those institutions who can serve on panels. The question is whether the same should apply to scientists from industry. Hayes stated that there is an obvious difference in that one is for-profit and the others aren't. Humphris clarified that if we exclude people from industry, then the SAS panels will not benefit from their considerable experience – especially when we are trying to encourage interactions between IODP and industry. Talwani added that we can be more liberal with taskforces than with SAS and that it is expected that people will declare their conflicts of interest ahead of time. If this is the case, then we

should be able to use the services of these individuals. Larsen was concerned that if we are too flexible we might encounter legal issues. Bickle replied that everything will grind to a halt if we eliminate too many people from the pool, but wasn't sure how we can protect ourselves. Miller added that EPSP and EDP don't contribute to proposal ranking and that conflicts might not be a concern for those panels. However, he was uncomfortable with an industry representative serving on SPC and suggested that they serve as non-voting members. Humphris thought that that would weaken their interest in serving. She also added that EDP and EPSP are much more advisory and that they are not officially involved in designating the science that goes forward. In this case, we should be more open and encourage involving industry in IODP. Hayes thought that engineering vs. science expertise was a key point and asked if SASEC could use that distinction to resolve the issue. Kono stated that for science issues, there is no need to ask advice from industry. He added that we should be able to ask industry for advice for engineering issues, but that he didn't see a clear way forward to obtain industry advice within the plans and emphasized that SASEC should be very clear about these issues. Becker replied that he would like to apply the same standard as the academic standard. Humphris summarized that it appeared that SASEC doesn't want to exclude the engineers and should apply the same COI policy. In the case of Schlumberger, if the lab/scientist/engineer is not directly providing us a service and if all conflicts are declared at the beginning of the meeting that we should be able to engage these individuals in the SAS. Silver concurred and added that the same individuals shouldn't be excluded from voting unless there is a conflict. SASEC generally concurred with Humphris' summary and agreed that there was no need for a consensus statement. Humphris asked if there were any additional comments. There were none.

## **8. Update on Long-Term Evaluation Plans for IODP Science**

Larsen presented SASEC with a proposal for conducting long-term evaluations of IODP science as a follow-up on SASEC Consensus 0607-06. Larsen postulated that short-to-medium term (2-24 months post-expedition) evaluations should be expedition/project specific and should address the issues of the nature and amount of material recovered and any potential impacts of the science. Long-term evaluations (36-48 months post-expedition) should be thematic and include multiple expeditions. There should be one review per year and the review committee should include 2-4 external members. He asked SASEC to consider whether or not the review should include publication metrics. Kono asked what publication metrics are and Larsen responded that they are data on the publication record. They are useful in determining the effectiveness of a program.

Larsen continued by describing the expedition specific science assessments. At the end of any given expedition, a self-assessment is conducted, which is included as a special section in the preliminary report and is reviewed by IODP-MI. Approximately 20 months post-expedition there is a post-expedition meeting, the co-chiefs reports to both SPC and IODP-MI and SPC posts their assessment on the IODP webpage. To date, SPC has reviewed expeditions 301, 302, 304/305, 303/306, 307, 308, 309/312 and 311. 310 will be reviewed by SPC in March 2007. At this time, the completed reviews are posted as appendices in the SPC minutes; however, IODP-MI proposes to create a new webpage for posting all assessments with links from specific expedition pages.

Larsen identified climate variability, ocean crust structure, and fluid-flow and subseafloor life as the obvious thematic groups for Phase 1 drilling. Climate variability (302, 303, 306, and 310) should occur first in 2007 followed by ocean crust structure (304, 305, 309, and 312) in 2008 and fluid flow and subseafloor life (301, 307, 308, and 311) in 2009. Action items for SASEC to consider for the 2007 climate variability review include: identifying the SASEC, SPC, and SAS members on the review committee, nominating external reviewers, inviting the reviewers, selecting a chair, and organizing the associated topical symposia.

After Larsen's presentation, Humphris opened discussion by commenting that this is Larsen's proposal for the long-term assessment of IODP and asking if SASEC was comfortable with the three themes identified by Larsen. There were no objections. She continued by stating that she agreed that climate should be first since we already have a topical symposia, but that the others don't necessarily have to be associated with topical symposia, especially as there have just been workshops dedicated to these topics. She asked for comments from SASEC, none were offered.

Humphris next addressed the action items identified by Larsen by first asking what is SASEC's feeling about the chair of the assessment committee. Should this individual be internal or external to IODP? Wefer argued that the chair should be internal for the sake of consistency. Hayes commented that there should be one internal chair to work on all the assessments. Wefer agreed that the person should be familiar with the system. Talwani offered that it might be useful for Hans Christian to chair all of the sessions for continuity. Miller concurred and offered that it is useful to have corporate memory and that the VP of Science Planning at IODP-MI should chair. Nagao and Humphris both agreed and Hans Christian was asked if he would be willing to do this. Hans Christian agreed to the task and offered the assistance of the science coordinators.

Humphris commented that topical symposia will be discussed on Thursday and that Wefer will provide an update. She endorsed the idea of having the first thematic assessment with that topical symposium and then moved on to identifying the SASEC, SPC, and SAS members to serve on the assessment committee.

Ken Miller was nominated as the SASEC representative despite the fact he is rotating off. Talwani recommended extending Miller's term. Wefer was also nominated, but deferred to Miller. From SPC, Filippelli, D'Hondt and Camoin were nominated. Humphris asked for Japanese names, but didn't receive any at that time. She also thought that D'Hondt would be more appropriate for the fluid flow and subseafloor life review. SASEC generally concurred that Camoin would be conflicted and therefore the best choice was Filippelli, if no one else was available. Hayes commented that Filippelli was not the ideal choice as a geochemist, but Becker disagreed and said that Filippelli has been very eloquent on behalf of the paleoceanographic community. Miller added that Filippelli has corporate memory. Tada (SSEP co-chair) was recommended as the general SAS member. Humphris suggested leaving the SPC slot open, but then Coffin offered Nomura and Thurow as potential members. Humphris commented that they now had too many people and suggested that the SAS representative be Thurow or Tada and that the SPC

representative be Nomura or Filippelli. Silver liked the idea of having 1 American, 1 Japanese, and 1 European. SASEC agreed that the ideal composition for the committee would comprise Miller, Thurow, and Nomura and that if any of those three can't serve, then Filippelli and Tada should be alternates.

The external composition was discussed and it was generally agreed that everyone in this community is associated with IODP. Miller suggested Bill Curry at WHOI. Kimura nominated Tajika at the University of Tokyo. Larsen suggested reaching out to the modeling and ice core community and Mevel suggested including ECORD and ICDP. Wefer recommended Zolitschka at University of Bremen and Sarnthein at Kiel. Miller added Gerald Haug in Potsdam and Hayes suggested Togweiler. Talwani and Humphris discussed the fiscal ramifications of having a committee meet in FY2007, which isn't in the APP. They agreed to discuss this further offline. Hayes and Nagao were appointed by Humphris to write a consensus statement.

**SASEC Consensus 0611-03:** SASEC endorses the approach to long-term evaluation of IODP science suggested by Hans-Christian Larsen. Specifically, one panel will be convened each year, reviewing in turn each of three thematic areas. To begin, the theme of climate variability will be reviewed in late 2007. The themes dealing with the structure of the ocean crust and with fluid flow and sub-seafloor life will follow in 2008 and 2009.

The panels will be chaired by the IODP-MI Vice President for Science Planning. As outlined in SASEC Consensus 0607-06, each review committee will include two to four experts external to IODP, one member each from SASEC and SPC one representative from IODP-MI, and one former member of SAS who was involved in the nurturing of the expeditions under review.

For the review of the climate variability theme in 2007, SASEC proposes that K. Miller should be its representative, that R. Nomura (or, as an alternate, G. Filippelli) should be the representative from SPC, and that J. Thurow (or, as an alternate, R. Tada) would be an excellent representative of SAS. Two to four individuals from the group comprised of R. Togweiler, W. Curry, G. Haug, B. Zolitschka, E. Tajika, and M. Sarnthein would provide the required external experts.

## **9. Review of the Science Advisory Structure**

This is an update of an action item from the July meeting. The subcommittee, comprising Yoshi Kawamura, Mike Bickle, Keir Becker, David Divins, and Hans Christian Larsen, met October 31, 2006. Coffin also attended the meeting as the current chair of the IODP-MI review committee. Keir Becker was elected chair of the SASEC working group on SAS. Becker updated SASEC.

Becker emphasized that this is an interim report on the first meeting and is meant to summarize the overall approach taken by the working group and that they intend to provide its final recommendations to SASEC at the March 2007 meeting. The working group is also waiting for the final mission implementation plan. Becker's presentation highlighted the context for the working group including the history of the SAS structure

though ODP and the adjustments made to it for IODP. The mission implementation plan does not recommend any significant changes to SAS for implementing missions, but added tasks to existing panels and committees.

Becker outlined the discussion items at the initial meeting that included:

- Does IODP-MI desire new kinds of advice or new approaches from SAS?
- What kind of community input should the WG seek?
- Are changes in SAS needed to incorporate mission planning?
- Core science planning elements – SSEP and SPC
- Is platform specific proposal evaluation needed to plan 3-platform operations?
- Integration of survey evaluation for science and operational planning (SSP and EPSP)
- Technical advice panels – STP and EDP
- Industry-IODP Science PPG
- Relationship of SAS panels to IODP-MI taskforces
- When are DPGs and PPGs appropriate?
- SAS panel membership – quotas and terms

Becker noted that, at its first meeting, the WG took its mandate to define an “internal” review of SAS with an overall objective to refine SAS structure and procedures. The WG thought that this approach would be satisfactory as opposed to introducing major changes to the SAS at this time. The WG plans to consult with current and immediate past panel chairs, but as of its initial meeting, was not planning to repeat the 2005 effort to solicit extensive community input although they might consider soliciting some opinions from select individuals, it is probably premature for a major external review of SAS. Becker will draft a document based on the first meeting to circulate to the WG, whose next meeting will be at the March SPC meeting. Becker outlined the preliminary findings of the WG. The WG felt that the well-defined roles of SSEP and SPC would allow for flexibility in mission planning. They also agreed that a global evaluation is all that is required to plan multi-platform operations. The WG agreed that EPSP should preview the proposals earlier to highlight any issues prior to scheduling. It was agreed that EDP works well, but that STP needs a more focused mandate. At this time, it is premature to change the IIS-PPG as it has just had its first meeting. The relationship of the SAS panels to the IODP-MI taskforces is good, but it should be better explained to the community. Finally, the WG thought that SAS panel membership should have more flexible terms and smaller service panels.

After the presentation, Humphris asked if there were any comments. Talwani stated that he has a fundamental difference with the SAS WG approach to this issue and that an outside review would be far more useful than an internal review that tinkers around the edges. He used the IODP-MI review as an example entailing an outside committee review, a self-evaluation, and community input. He feels that the three-tiered approach is extremely useful, helpful, and meaningful. He added that we should look at this topic from another angle and that if we started over from the beginning, what would we do differently? Talwani also disagrees with respect to missions, which will require different



kinds of advice from SAS. As we enter Phase 2 and multi-platform drilling operations, we will require a high-functioning SAS and, even though most people agree that it is working well, we shouldn't be complacent. Mevel agreed with Talwani and thought that the SAS WG is asking the program to evaluate itself, which won't be critical enough. Silver added that getting outside input could be useful and that as a member of the IODP-MI review committee he was impressed by how rapidly outside input was solicited and thought the SAS WG could also get opinions in short order. Allan added that, because the program is so complex, it is critical that an IODP primer be created as a simple guide for people to bring them up to speed on how things work. Talwani was delighted that Allan mentioned the IODP primer. Mevel questioned whether or not the program needed to be so complex. Miller pointed out that he recently attended the IODP-ICDP Chixulub workshop and was unable to successfully explain IODP infrastructure. Miller added that in some cases ephemeral panels might be more effective than standing panels and that taking a corporate approach might be better. Hayes pointed out that every time something is restarted, elements are lost and that we should respect the value of evolution. The solution might be to look at the system that has evolved and identify areas that can be simplified. Silver thought that the committee is quite capable of sifting through all of the advice, even if some of it is stray. It may turn out that significant change is required as was the case with SPPOC. Larsen commented that he thought that the system had been simplified over the past decade. Talwani clarified that he did not think that we should start over but that we should have an external group evaluate the present structure. Morris asked Coffin to clarify what constituted the outside group for the IODP-MI review committee. Coffin said that the external group actually had a number of people with drilling experience. Kimura concurred with the general discussion that the first impression of IODP is quite complicated. Outsiders want to understand a more simplified system and he agreed with Talwani that there should be an outside evaluation. Humphris summarized that there might be some advantage for having an external viewpoint and asked SASEC what the potential impact of a major change to SAS might be as we move into a 3-platform program. She also asked what would be the extent of doing an external review of SAS. Wefer commented that it is not about who does it, but what the objective is. He agrees that the system is complicated and thinks that having less panels and committees might simplify the system. He added that ICDP, while not exactly comparable, has fewer committees to determine where sites are drilled. Kono thought that Susan summarized the problem well. He added that we are not prepared for drastic changes that might change the structure of IODP as a whole before we have tested it within the constraints of multi-platform program. He pointed out that the legacy programs carried out very good science in the past and that IODP should strive to do the same. Now is not the time for a fundamental restructuring of the SAS. He thought that SASEC should follow the model set forth by the SAS WG. Becker added that the SAS WG did think that an external review would be appropriate after a couple of years of multi-platform operations. Humphris agreed that we need a couple of years of experience. Miller concurred with the earlier discussion about SASEC vs. SPPOC and asked if the structure could be simplified without overhauling it. Humphris asked if an external review was required to do that. Kimura agreed with Miller and added that it might be hard to find external people who have a great enough understanding of the system. Wefer suggested someone from industry or ICDP who also make decisions about where to drill

to obtain ideas about how they organize their decision-making process. Mevel said that it was vital for the program to attract new people and that we don't project a very good public image with such a complicated system. Silver thought that asking a broad array of users how the system can be improved was still worthwhile. Bickle reminded SASEC that this was just done in 2005, and that we should consider whether or not we should ask the community for further input. He added that the SAS WG was set up as an internal committee and that if they set up a larger, external review it will take several years to implement. He suggested that this kind of review might be better timed with the renewal in 2013. Hayes believes that Mevel's motivation to bring in new people is good and that the recent subseafloor workshop was incredibly successful doing just that. The workshop participants were both impressed and depressed by the complexity of the program, but understood that it was necessary. As they became aware of the scientific potential of the program, they focused on the scientific challenges ahead rather than the complexity of the system. We should nurture these people.

Humphris hears that the committee wants some level of external input and argued that SASEC needs to specifically define what level of input is required. Talwani thought the IODP-MI review should be used as a model. Humphris asked if the current composition of the SAS WG needed to be changed. Silver suggested that the committee should stay the same, but that they should go to the community with a questionnaire. Hayes argued that Talwani's approach would be appropriate in three years, but not now. He agreed with Silver's suggestion. Miller suggested merging SSEP meetings with SSP or at least hold them concurrently to improve the efficiency of the system. Bickle argued that SASEC shouldn't be discussing how to improve SAS, but how the SAS WG should work. Humphris agreed that SASEC shouldn't debate specific issues and that SASEC needed to provide the SAS WG with advice on how to move forward. She asked if anyone on the committee had a problem with the model put forward by Kono to move forward with the current SAS WG, do a small survey of the community, collect their input and incorporate it in the immediate future with the caveat that a larger review will occur in several years. The next step for the SAS WG is to create a short questionnaire and distribute it through the website. Kono argued that it isn't appropriate for SASEC to tell the SAS WG how to operate and that SASEC should simply advise the WG to get outside opinions and they can figure out how to implement the plan. Bickle asked what resources were available to help the WG send out a questionnaire. Humphris asked if Kryc was available to help with this and Kryc agreed. Tatsumi suggested that it might be more effective to engage the national offices in the effort. Humphris agreed and thought that the working group should identify 3-5 questions. Talwani argued that there should only be one website used and that it should be IODP-MI's. Hayes reminded Talwani that the Japanese response might be better if they had a Japanese website to go to. Talwani thought it would be simpler with just one. Tatsumi worried about the response from the Japanese community and volunteered to lead the effort in Japan. Becker requested clarification regarding the external community or the IODP community. Mevel offered that if it is a questionnaire it must go to the IODP community. Humphris added that an appropriate question might be, "what is the experience of the people who have used the system and do they have suggestions for how the system might be improved." She thought that it should go to the IODP community, which would include people who have recently submitted proposals.

Coffin offered a technical suggestions that the questionnaire should use an online submission process. Humphris agreed and thought that this could still be accomplished by the March deadline. Larsen asked who would define the questions. Humphris replied that Kono suggested that the SAS WG do it and added that it could be done over email. Humphris asked SASEC if there were any further comments on this topic. There were none.

**SASEC Consensus 0611-04:** As part of its activities to review and recommend any changes to the Science Advisory Structure to ensure it is optimally configured as IODP enters Phase II and as Missions are introduced, SASEC recommends that the sub-committee created at its last meeting solicit input from the broader IODP community on the effectiveness of SAS and ideas for structural modifications and/or simplifications. This may best be accomplished through the development of a short questionnaire.

## **10. Mission Implementation**

Humphris thanked Hayes for taking on the task of making the Mission Implementation Plan (MIP) more readable (See Appendix 1). The first call for mission proposals is April 1, 2007. Hayes clarified that he revised the document only for the sake of clarity and that he was not trying to make any corrections to it. The most substantial change he made was to rename Stage 3. Humphris thought that his changes improved the document substantially. Humphris explained that the mission working group tried to define a complete implementation plan from conception to implementation and that there is an added step for an external committee to review the Mission proposals at the same time as SSEP. Stage 1 is to create a mission team, which includes the proponents and additional scientists. Stage 2 is detailed planning and execution. Stage 3 is synthesis. Humphris announced that the goal for SASEC is to vote to approve this plan as a new process for IODP. Kono suggested some changes that were incorporated into the attached plan. Batiza asked whether the external review would be for individual mission proposals or for the group. Humphris said that it was collective. Batiza suggested clarifying the wording. Larsen stated that the review would be for all mission proposals submitted at the same deadline.

Becker requested that a factual error be corrected to reflect that ACEX started as an ODP proposal not an IODP proposal. Bickle stated that the SAS WG had considered how missions should be reviewed and that they thought it was important the mission review process should be specified in the Mission Implementation Plan. Becker added that the mission proponents should be required to identify milestones of mission progress for review. Humphris designated Becker and Bickle to write a statement about mission reviews to include in the mission implementation plan.

Humphris asked if there was further discussion on this agenda item. Morris asked if there was a sense of what the community response might be to the call for mission proposals. Furthermore, if the response is large, how will it be managed? The number of missions is limited fiscally. How will expectations be managed if the program can't deliver the funds? Humphris replied that, in the call for mission proposals, they anticipate an annual

call, which leaves the door open in case there isn't a call. Additionally, the mission implementation plan declares that there will only be 1-2 ongoing missions at a time. Morris remarked that we want to help scientists take a long-term view. She anticipates people wanting to be part of a mission to help navigate their proposals through the system, and that we must help people understand that the mission planning process will help with the 2013 renewal. Hayes asked if expeditions under the mission umbrella will necessarily be more expensive than other expeditions. Morris replied not necessarily, and that it will be mission dependent. Humphris added that there likely will be missions with expensive expeditions and cheaper expeditions. Talwani commented that, in general, they could be more expensive because there is the added cost of maintaining the mission teams. Batiza commented that proponents should communicate with the funding agencies to identify additional sources of funds to support non-program costs like site surveys. This will be important for managing expectations as the limiting factor may be these non-program related costs. Humphris asked if Batiza was suggesting that missions might not be completed due to lack of site-surveys and Batiza answered, yes. He also added that, given the budget projections for the next couple of years, it is likely that we can't do everything we hope to and that the community needs to be aware of the limitations. Talwani added that Batiza raised an important issue and that the site surveys need to be a part of missions, not done separately. Humphris clarified that we need to make it clear in the mission implementation plan that resources might not be available to complete missions. She then asked if this is any different for other IODP proposals. Batiza answered that this is the case for all IODP proposals. Becker asked whether the warning would be more appropriate in the call for mission proposals rather than in the mission implementation plan. Humphris agreed that this would solve of problem of delineating between mission proposals and regular IODP proposals. Allan requested that the Lead Agencies see the mission implementation plan before it goes public and suggested that if SAS were simplified, perhaps there would be enough extra revenue to support missions. Talwani argued that simplifying SAS wouldn't create nearly enough extra funding.

Hayes suggested that one principle of mission designation could be added that stipulates missions should be proposed only where there is a very clear advantage in terms of intellectual unity.

Talwani reintroduced the topic of additional costs and thought that if we don't have missions, we would have complex drilling projects. Kono added that the program should strive to keep complexity at a minimum and that if we have missions, CDPs should be eliminated. Humphris concurred with Kono and added that not all multi-expedition projects are CDPs citing Cascadia as an example.

Larsen asked what would happen to highly ranked mission proposals that don't get scheduled. Will they stay in the system and then be reconsidered in the same fashion as other drilling proposals? Humphris commented that the mission group didn't consider that and then suggested that mission proposals be resubmitted on an annual basis to prevent proposals from accumulating.

Humphris then clarified with Allan that the lead agencies should look at the mission implementation plan before it is officially released. Allan said that NSF/MEXT could review it at their meeting the next day, which would allow plenty of time for the call for proposals to be released by the Sapporo office.

Humphris asked SASEC if they wanted to vote on the document or wait until they had read the final document, which reflects the changes made during this discussion. SASEC decided to wait until the next day to vote on the final document.

Humphris added that SASEC must also draft a Call for Mission Proposals referencing the mission implementation plan, which should be available on a website supporting the call for proposals. It should also reflect the recent discussions regarding limited number of missions and fiscal constraints. Becker asked if the Mission Call for Proposals would be integrated with the regular proposal submission and Larsen responded that it should be.

Hayes then pointed out that the single leg expedition, despite its global significance, should not be designated a mission. SASEC should offer clear guidance to make proponents understand that mission designation is practically required to achieve the scientific objectives, otherwise they should submit a conventional proposal. Talwani said that it was envisaged that there could be single-leg missions however, it now seems that we have moved away from that. Bickle and Wefer added that, in the case of ACEX, complex planning and high risk were involved. Becker clarified that citing ACEX was not meant to identify it as an actual mission examples, but rather to demonstrate the importance of applying resources early on in the planning process. Talwani thought that citing ACEX might be confusing to readers of the document. Bickle disagreed and thought that examples of complex drilling provides context for why we require missions. Miller argued that it was time to stop discussing the nuances and recommended moving ahead. He provided draft text of the Call for Mission Proposals to Larsen.

SASEC then discussed the merits of maintaining the term “complex drilling project.” Larsen requested some clarification from SASEC maintaining that it was confusing for the community. Humphris asked if the community was even aware of the term. Larsen said generally no, but that they had received a proposal for a CDP. Becker added that SPC had discussed abandoning the term, but decided that there may be cases where missions encompass several CDPs. Mevel asked if it was possible to submit CDP proposals and Humphris replied no. However, Larsen and Coffin both argued that it has been done anyway. Humphris provided historical context by stating that originally, CDPs were to be designated by the SAS. She also thought that there would be an issue with CDPs, but she didn’t have a solution. She thought that if they proceed with a call for proposal for both missions and conventional proposals, they might be able to circumvent the CDP issue entirely until it dies.

Humphris closed the discussion by summarizing she would make the changes to the mission implementation plan that were discussed by SASEC and they would vote tomorrow. She also asked that the IODP-MI Sapporo office draft a version of the Call for

Mission Proposals and send it to SASEC for approval. SASEC will also await guidance from the lead agencies regarding any other revisions to the mission implementation plan.

SASEC revisited this topic on Thursday and discussed the merits of the proposed revisions. It was decided to remove the ACEX reference and to avoid the discussion of single-expedition mission until warranted. Kono argued in favor of keeping the system as simple as possible at this time and to revisit at a later time if required. Humphris recommended that SASEC follow Kono's suggestion and asked SASEC to vote to accept the revised mission implementation plan.

**SASEC Motion 0611-05:** SASEC approves the IODP Mission Designation and Implementation Plan as developed by the Mission Implementation group (SASEC Action Item 0706-08) and as revised at this meeting.

*Silver moved. Nagao seconded. 10 in favor, 0 abstained, 0 against.*

**SASEC Action Item 0611-06:** SASEC requests that IODP-MI integrate a Call for Mission proposals into its next annual Call for Drilling Proposals, ensuring that expectations regarding available resources and the number of proposals likely to be designated as Missions are contained.

SASEC notes that the lead agencies need to review the IODP Mission Designation and Implementation Plan prior to its official release, and requests this be done as soon as possible.

## **11. IODP Workshop Reports**

### *Mission Moho*

Humphris summarized the proceedings of the IODP Mission Moho Workshop convened September 7-9, 2006 in Portland, Oregon, USA (See Appendix 2). After the presentation, SASEC was asked if there were any questions. Silver commented that the ocean crust evolution topic sounds very exciting and asked if there are any groups working to put that together outside of the Mission Moho purview. Humphris responded that the old ODP Purdy proposal had been discussed and that the workshop participants also discussed how to deal with this topic as an independent effort. Allan mentioned that he attended the workshop and was confused afterwards about the term Moho. Talwani clarified that for seismologists, it is an image, but that for petrologists it is not a simple question. Humphris recommended that any site should be drilled off-axis to reconcile the seismogenic image with the petrographic evidence. Tatsumi summarized that the workshop did not successfully come to consensus about the site for the hole. Humphris added that they did agree to deepen 1256D in the meantime. Larsen concluded by stating that the white paper component of the workshop will be published in Scientific Drilling in Spring 2007.

### *Continental Breakup*

Talwani complimented Coffin and Sawyer for an excellently run workshop and announced that a mission proposal would certainly be submitted. Talwani then distributed a document of the lessons-learned he solicited from the workshop co-chairs. The major notes were that we need to make a conscientious effort to engage the younger generation, that the objectives of the workshop need to be more clearly stated up front, and that 7-8 months is too little time to execute the workshops.

Coffin was invited to present the outcomes of the IODP Continental Breakup workshop (See Appendix 3).

Tatsumi asked if there was any discussion about back-arc basin formation. Coffin responded that yes, there were 3 Japanese scientists (Coffin, Kasahara, and Shinjo) and a Korean in attendance but the topic just didn't make into the Mission.

### *Subseafloor Life*

Hayes summarized the proceedings of the IODP Subseafloor Life Workshop convened October 3-5, 2006 in Vancouver, British Columbia, Canada. The great majority of participants had no prior drilling experience although most of them had experience with NASA's astrobiology program, which provides a nice counterpart to an equally complex program. Workshop participants sensed the potential of ocean drilling and were excited. While there was nothing done at the workshop to designate mission teams, there certainly will be significant proposal pressure from the participants in the future. The number of techniques to analyze microbiology is expanding at such a rate that the potential is limitless. The workshop was organized in a standard fashion with keynotes in the morning and breakouts for the rest of the day. The four breakout groups focused on Genes and Cells, Habitability, Biogeography, and Technology. The organizers stayed for an additional day to compile the workshop report. Hayes concluded by stating that the workshop was very successful.

Talwani added that it was a fascinating workshop and that microbiologists are in the infancy of discovering things and that they wanted to drill multiple sites to compare microbiology and geochemistry and then revisit the sites to see if anything was reproduceable over time or space. He was perplexed by how microbiology could fit into the mission concept and suggested that microbiologists be given the latitude define their mission and that the mission could then be tailored to meet their needs. He concluded by stating that the program should remain flexible in dealing with microbiologists and missions.

### *IODP-ICDP Joint Drilling of the Chicxulub Impact*

Miller presented a summary of the workshop convened September 11-12, 2006 in Potsdam, Germany (See Appendix 4). He concluded that the biggest obstacles for the project are the Mexican government granting drilling permits and also core archival. Previous cores are housed in Mexican facilities and are very difficult to access. Allan asked about the cost differential between drilling 2 km and 3 km. Miller replied that the

size of the rig and derrick need to be much larger to drill to 3 km. The cost could be reduced dramatically by using an artificial island.

Humphris concluded this agenda item by stating that the 2006 workshops were collectively successfully and added that the workshop reports should provide insight that will help update the ISP. She asked if anyone had questions. There were none.

## **12. Planning for Future Workshops**

### *Status of Ocean Geologic Hazards Workshop Planning*

Silver updated SASEC on the progress of planning for the Geologic Hazards Workshop. The Steering Committee currently comprises Julia Morgan (chair), Rice University; Eli Silver, UCSC; Craig Shipp, Shell Geohazards Research Group; Kiyoshi Suyehiro, JAMSTEC; and Steve Kirby, USGS. Angelo Camerlenghi, University of Barcelona, has also been invited to join the steering committee. A long list of Japanese scientists were contacted with very little success. Suyehiro is working to find another Japanese member. A workshop proposal has been submitted to JOI/USSSP to increase the workshop funding. The steering committee is hoping to obtain additional support from Europe and Japan as well. Workshop timing and venue are still being considered, but it will likely be held between late July and early September in Hawaii, Japan, or the Pacific Northwest.

### *Large Igneous Provinces proposal*

Humphris reminded SASEC that they had requested the LIPs workshop proponents to revise the proposal, which was resubmitted and included in the agenda book. The associated cover letter addressed most of SASEC's original concerns. Humphris then asked SASEC if they felt that the proposal should be funded as a 2007 IODP workshop. Bickle offered that it meets the requirements that were requested. Kono asked if anyone on the list of suggested steering committee members had been contacted before hand. Humphris clarified that the proposal proponents listed people but probably didn't notify them because they didn't actually have any workshop funding. Mevel asked about the 7:7:3:1 ratio and Humphris requested that they discuss that topic in a different venue. Talwani asked if there was any other entity that might want to sponsor this workshop. Humphris didn't think there was another candidate community. Talwani argued that they should make a push for additional sponsors. Humphris asked for further comments and SASEC approved the LIPs workshop proposal by consensus.

**SASEC Consensus 0611-07:** SASEC recommends that IODP-MI fund the revised proposal for an IODP Workshop entitled 'Large Igneous Provinces' in 2007. SASEC believes that the Workshop proponents have adequately addressed the issues discussed and summarized in SASEC Consensus 0607-09.

### **Charge to the Steering Committee for the Large Igneous Provinces Workshop from the IODP Science Advisory Structure Executive Committee (SASEC)**

The IODP Initial Science Plan (ISP) identifies Large Igneous Provinces (LIPs) as one of its important initiatives, and highlights their importance for understanding mantle



processes, melt formation and movement, as well as for their potential environmental impacts. The committee recognizes the value of a workshop aimed at planning global and long-term drilling strategies to address the problem of LIP formation.

SASEC charges the workshop participants with (i) defining the key scientific objectives that can be achieved by drilling into LIPs, (ii) identifying a global, long-term strategy (including scientific, technical, engineering and operational components) to address those objectives, and (iii) providing a conceptual framework for potentially considering LIP drilling as a Mission within the IODP.

IODP-MI will provide logistical support for the workshop.

**Steering Committee:** SASEC recommends creating a steering committee of 5-7 individuals to organize and run the meeting, headed by 1-2 conveners. The steering committee must decide how best to structure the workshop and accomplish those goals within the available budget.

SASEC then focused on 2 unsolicited proposals forwarded by SSEP through SPC. Becker clarified that, in the SPC Executive Summary, there is a consensus statement endorsing the workshops. They were late because SSEP met in May after the workshop proposal deadline. Workshop proponents are seeking additional funding.

#### *Extreme climates and abrupt climate change during the Cretaceous and Paleogene*

Humphris asked SASEC for comments. Talwani suggested that since the proposals were submitted late they should be postponed until FY08. Humphris agreed and recommended that the call for workshop proposals be earlier to integrate potential workshops into the program plan. Miller added that he would like to see a workshop proposal that included scientific objectives, background, and potential participants. He argued that, at this time, the proposal was not competitive. He seconded the consensus of SPC that this is an important topic and this it should be resubmitted with guidance from SASEC. Humphris concurred and suggested that they contact the proponents and inform them that SASEC likes the idea and look forward to seeing a proposal based on guidance provided in the call for workshop proposals.

#### *High-to ultra-high resolution sedimentary records*

Wefer commented that this is a very important topic, but thought that strategy was missing from the proposal. Kono concurred that this is an important topic, but that it requires more preparation to be a proper workshop proposal. He added that this is a good opportunity for IODP to highlight what drilling technology can bring to the science. Miller didn't know who the lead-PI is and wondered what the scientific objectives are. He also thought that there might be some linkage between ICDP and IODP. Humphris asked Becker where the idea for this workshop originated. Becker wasn't sure, but thought that maybe Pisias had suggested it while SPPOC still existed. Humphris summarized that the proposal is an interesting topic and that it should be resubmitted as a proper proposal for FY2008. Talwani commented that this is an excellent example of the SAS panels being proactive. Becker requested that SASEC guidance be provided to SSEP in time for their meeting in 2 weeks.

**SASEC Consensus 0611-08:** SASEC thanks the SSEP and the SPC for sending forward two workshop proposals:

- (i) Extreme Climates and Abrupt Climate Change During the Cretaceous and Paleogene
  - (ii) IODP-ICDP Workshop on High to Ultra-High Resolution Sedimentary Records,
- and applauds the SSEP's efforts to be proactive in bringing important topics to the attention of SASEC.

Both topics are regarded as highly relevant to the objectives of IODP, and SASEC looks forward to receiving more complete proposals at the next workshop proposal deadline (1 February 2007).

In preparing such proposals, SASEC encourages the proponents to ensure they address the following issues:

- overall scientific or technical objectives, and their relevance to the ISP
- rationale for drilling as a means of addressing scientific questions
- scope of topics to be covered by the workshop and potential for interactions with other international science programs
- target audience/workshop participants (individuals or research groups)
- proposed conveners and Steering Committee members
- suggested timing and location of workshop
- a preliminary budget (including potential for funding from other organizations – highly desirable).

#### *Call for Future Workshops*

Humphris opened the topic by suggesting that SASEC update the call for workshop proposals from last year to provide more guidance on the criteria. She also stated that SASEC needed to set a deadline for submitting workshop proposals and suggested February 1, 2007. This deadline will allow SASEC to provide guidance for the FY2008 APP. Becker added that this deadline meets with the scheduled March SASEC meeting. On the topic of revising the text, Hayes suggested adding something about the significance of the objectives. Miller added relevance to the ISP and identifying a time and place. Becker contributed potential for co-sponsors. Humphris thought that the number of CVs should be kept to a maximum of 5 people and that the CVs should be 1-2 pages. Silver asked about deliverables and Humphris answered that SASEC should specify the deliverables and keep that as our prerogative. Tatsumi concurred with Miller about adding something of relevance to the ISP. Evans suggested that SASEC provide some guidance about the expected deliverables. Humphris agreed and mentioned an EOS article, workshop reports, etc. Miller suggested that co-sponsorship need not be fiscal but could also allow liaising and interacting with other organizations. Talwani reminded SASEC that co-sponsorship allows us to include participants from other countries. Humphris decided that SASEC is not responsible for the 7:7:3:1 issue and that would have to be addressed with the Lead Agencies. A call for workshop proposals was drafted and approved by consensus the following day.

**SASEC Consensus 0611-09:** SASEC approves the following call for workshop proposals and requests IODP-MI to advertise this opportunity in a timely manner for a 1 February 2007 deadline.

## **Integrated Ocean Drilling Program**

### ***Call for Workshop Proposals***

**Deadline: 1 February 2007**

The Integrated Ocean Drilling Program (IODP) is the premier international research program conducting scientific investigations of the Earth through ocean drilling.

IODP invites short proposals for workshops to be held (tentatively) in 2008 and 2009 on topics either derivative of the IODP Initial Science Plan (ISP – download at [www.iodp.org/isp](http://www.iodp.org/isp)) or on other globally important problems that can be addressed through ocean drilling during the next phase of IODP.

Proposals (not to exceed four pages of text) must include:

- overall scientific or technical objectives, and their relevance to the ISP
- rationale for drilling as a means of addressing scientific questions
- scope of topics to be covered by the workshop and potential for interactions with other international science programs
- target audience/workshop participants (individuals or research groups)
- proposed conveners and Steering Committee members
- suggested timing and location of workshop
- a preliminary budget (including potential for funding from other organizations – highly desirable).

Expected deliverables will likely include an EOS meeting report, a detailed workshop report, and an article for Scientific Drilling.

Please include a 1-2 page curriculum vita for each workshop convener (up to a maximum of 5). Submit proposals in .pdf format by 1 February 2007 to Kelly Kryw (kkryw@iodp.org).

SASEC adjourned the meeting at 5:00.

SASEC convened at 0900, reviewed action items and worked to revise and approve relevant consensus statement wording from the previous day. SASEC then proceeded with their first agenda topic.

### **13. IODP DRILLS Program (Distinguished Researchers and International Leadership Lecture Series)**

Miller reiterated that SASEC had already approved the IODP DRILLS program via email. Miller, Kimura, and Kryc developed the program based on an outline originally conceptualized at IODP-MI by Kelly Kryc and Nancy Light. The program loosely follows the JOI DLS program. Humphris reminded SASEC that they need to nominate three scientists for the ISP themes at this meeting. She thought that since this is the inaugural event we should try to think of key international leaders and should aim to have one speaker from Europe, Japan, and the US. SASEC suggested the following names:

Judith Mackenzie, Andreas Teske, Steve D'Hondt, Peggy Delaney, Yoshiyuki Tatsumi, Gerald Haug, Gilbert Camoin, Gerry Dickens, Ted Moore, Irhyu, Kinoshita, Harold Tobin, Kate Moran, Jan Bachman, Damon Teagle, Donna Blackman, and Benoit Ildefonse.

SASEC agreed to let Miller, Kimura, and Kryc narrow the list down. They selected Tatsumi for the European tour, Ted Moore for the Japan tour, and Judith MacKenzie for the American tour. Hayes asked about MacKenzie and subsequently, Wefer nominated Bo Barker Jørgensen as an alternate. Miller agreed to substitute Jørgensen for MacKenzie and SASEC approved the nominations by consensus.

**SASEC Consensus 0611-10:** SASEC nominates Bo Barker Jørgensen (USA tour), Ted Moore (Japan tour) and Yoshiyuki Tatsumi (European tour) as the inaugural speakers for the IODP DRILLS program starting in 2007.

### **14. IODP Topical Symposia**

Humphris opened discussion by reminding SASEC that, during the July meeting, North Atlantic climate variability was suggested as the topic for the first topical symposium and that Wefer had been asked to follow-up on this item. Wefer presented a proposal for the symposium (Appendix 5) that included the objectives, a list of potential steering committee members, potential dates and venue, draft schedule of events, and a budget.

Talwani asked if there might be additional funding sources for this event. Humphris offered ICDP or IMAGES as suggestions. Wefer promised to investigate. Talwani asked how much was allocated for the IODP DRILLS program in the FY2007 APP. Kryc answered ~50K, which leaves ~25K for the topical symposium. Talwani replied that ~\$25K needed to come from elsewhere. Bickle thought that the organizers could offer half support. Wefer clarified that travel support would only be available for invited participants and that he expected 150-200 people to attend. Talwani concurred with

Bickle's suggestion. Humphris thought that SASEC should clarify the difference between the topical symposium and the review committee. It is not the intent for the co-chairs of the symposia to be the co-chiefs of the IODP expeditions, but that the steering committee should comprise the best North Atlantic climate scientists. She asked if people agreed. Bickle agreed and added that he didn't think that the invited presenters should be presenting for a review. Miller contributed that the review committee should attend the symposium, which would offer a cost-sharing benefit. Humphris asked Wefer to reevaluate the proposed steering committee to which he replied, Bachman, Stein, Raymo, Kroon, Curry, and Keigwin. Miller asked about national balance and Kimura nominated Kozo Takahashi. Miller added Wefer and Jim Wright. Humphris suggested that Wefer host the symposium, identify a date and invite the steering committee. She asked IODP-MI to specify the budget for the symposium and suggested that the steering committee convene a meeting at AGU in December. Wefer agreed.

SASEC continued discussing the merits of Wefer's proposal. Humphris thought the number of presenters seemed high and suggested having a smaller number of thematic talks. Miller suggested Denver after GSA as a potential venue and date. Humphris asked about a host and Miller then amended his suggestion to Bremen in August. Kryn'c reminded SASEC that the International Conference on Paleoceanography was scheduled in early September 2007 and Wefer thought that wouldn't pose a conflict. Humphris confirmed that SASEC approved the proposed Steering Committee and recommended that the symposium be held in Bremen in August. Otsuka offered that it would be beneficial to convene the symposium under the auspices of the International Year of Planet Earth, but Wefer disagreed. Talwani offered that it would be more important to be involved with International Polar Year and Humphris agreed that the symposium should be linked to IPY. Batiza informed SASEC that through NSF both the Bering Sea and Wilkes Land expeditions are registered with IPY.

**SASEC Consensus 0611-11:** SASEC thanks Gerold Wefer for agreeing to host the first IODP Topical Symposium on "North Atlantic and Arctic Climate Variability" to be convened in Bremen, Germany in August 2007. SASEC further nominates G. Wefer, J. Backman, R. Stein, J. Channell, K. Takahashi, D. Kroon, M. Raymo, and E. Janssen as potential Steering Committee members.

Humphris asked SASEC to recommend topics for a 2008 Topical Symposium and Bickle suggested Ocean Crust. Becker said that the topic also corresponds with the review scheduled in 2008. Hayes strongly supported the idea, as did SASEC at large.

**SASEC Consensus 0611-12:** SASEC recommends that the subject of the 2008 Topical Symposium be Ocean Crust Formation and Evolution.

Humphris asked SASEC to take action on the identifying a potential host and conveners and additional funding sources before the March SASEC meeting. Larsen suggested having a special AGU session, but Humphris thought that the session wouldn't be long enough nor would it receive as much publicity. Hayes recommended looking into having

a Gordon Conference, but there was concern from Humphris that the IODP identity might be lost under the Gordon umbrella. Bickle and Hayes both argued that the topic was strong enough to maintain identity and that the cost benefit would be worth investigating. Humphris volunteered to research the options with Gordon. Talwani reminded SASEC that the Lunar and Planetary Institute Symposium could also be used as model.

**SASEC Action Item 0611-13:** SASEC members are requested to identify potential additional funding sources, location, and conveners for the 2008 IODP Topical Symposium, including investigating the possibility of convening a dedicated Gordon Conference, for further discussion at the its spring 2007 meeting.

## **15. Communication/Outreach to Other Geoscience Initiatives**

### *ICDP*

Miller presented a short overview of the structure of ICDP, mapping it as best as possible to IODP's organizational structure. He concluded that a procedure must be established to coordinate proposals that are potentially joint between ICDP and IODP. ICDP's deadline for proposals is 15 January and proposals are evaluated in March. Proposals identified as joint projects should be evaluated by ICDP's SAG and IODP's SSEP. Simultaneously, these proposals should be identified to the SPC chair for long-term monitoring. At this time, ICDP lacks resources to liaise at both the SSEP and SPC level. Miller recommended that ICDP should be represented at the SPC level. He also recommended that proposal evaluations and responses be coordinated between the two organizations to avoid confusing the proponents. He recommended that the SPC Chair be charged with developing procedures for joint proposal evaluation.

Humphris opened the floor for discussion. Larsen asked how many proposals ICDP typically receives. Miller answered approximately 15 of which 4-6 are workshop proposals. Becker said that ICDP has asked for SPC liaisons at their meetings, and that there is a lunch planned for December 14 at AGU with IODP, ICDP, and DOSECC. Talwani nominated Miller, Humphris, Becker, and himself to attend the lunch. Allan recommended that someone from the funding agencies also attend. Mevel informed SASEC that ECORD organizes an ICDP town hall meeting every year and that there might be an additional opportunity to collaborate. Humphris recommended that the next step is to try and coordinate the science planning meetings so that they don't overlap, which would allow panel members to effectively liaise. Becker asked if there were clear ground rules in place to define which program (ICDP or IODP) can support which projects. Allan mentioned Iceland and said that there wasn't much understanding at the time about how to submit an IODP drilling proposal. Batiza added that the two programs fall into two different divisions at NSF, to which Talwani responded that shouldn't be a problem. Mevel contributed that ICDP has agreed to contribute to the New Jersey Shelf Expedition and that IODP should be more flexible. Miller thought that ICDP would probably contribute to the offshore drilling component of Chixculub. Batiza reminded SASEC that the offshore survey effort was funded by OCE. Miller added that for the workshop, ICDP was the primary supporter and IODP fell in behind as a latecomer. Allan reminded everyone again of the limited amount of funding for drilling. Talwani

responded by stating that it is the job of the scientific community to pressure the funding agencies. Larsen redirected the conversation by clarifying that, at this time, IODP can only accept drilling proposals that address underwater targets and that IODP might need to be more flexible in the future. Mevel and Humphris agreed. Miller added that there are many topics that can only be addressed fully by drilling a transect across the shoreline. Evans reminded the group that there is a Campri-Flegrei transect workshop coming up in Naples. Talwani asked what happened to that workshop proposal and Kryc reminded SASEC that they rejected it in July.

#### *ORION, ESONet, and DONET*

Nagao presented an overview of the DONET system (Appendix 6). Humphris opened the floor for discussion. Batiza asked how the system is protected from fishing and Nagao answered that the cable is buried in trenches where possible. Shukuri added that there is mutual communication among the relevant agencies to fund this initiative.

Humphris described her interactions with the ORION initiative, which has three components: Coastal, Regional, and Global. The two of interest to IODP are the regional (cable and instrument the Juan de Fuca plate) and the global (seafloor sites first at EPR and perhaps, in the long term, at MAR near Lucky Strike) components. The high cost of the program has set in and now the committees are working to de-scope the activities of the ORION program so, there isn't much to report on the final designs. Wefer asked if there were still plans to lay a cable from Lucky Strike to the Azores. Humphris answered that hopes are for ESONet and ORION to work together to cable one area. Mevel said that hadn't been abandoned yet and sites are yet to be prioritized. Wefer added that there wasn't enough money available to buy a cable and volunteered to present information about ESONet at the March meeting.

Humphris asked if there were any other comments on other geoscience programs. Talwani volunteered that Janecek and Myers are organizing an IODP Observatory Taskforce and that they should be in contact with these other programs. Humphris mentioned that she and Kimura are the SASEC liaisons to that taskforce and that they would help Janecek identify the potential connections. Talwani said that Janecek would contact Humphris and Kimura.

#### **16. Interactions with Industry**

Humphris referred to the supporting material provided in the agenda book and asked Talwani if he was seeking specific advice from SASEC. Talwani replied that the final paragraph of his letter has specific implications and that IODP has something to gain from encouraging interactions with industry. He thought that we should all be prepared for reduced funding in the future and that we have to figure out how to increase the size of the pie. Two sources include new members and industry. New members will only contribute a few million dollars, which may or may not solve the problem. The ships can also be leased to industry for some period of time. Or we can partner with industry in some way that is outside of the way we currently conduct business. Realistically, we will not be able to proceed in the way we have in the past. Morris added that ocean sciences funding at NSF is precarious. Unexpectedly, 3 MREFC projects were funded

simultaneously rather than sequentially, which means that the operations costs will hit NSF simultaneously. NASA and NOAA are no longer funding research at the same level. NSF has agreed to look at its portfolio of activities and put everything on the table. IODP should be looking at other sources of funding to increase its share of the pie. There are ways to lease the ship back to industry. There may be other options that are within the ground rules of NSF. It is important to note that, as before, any data acquired with NSF/MEXT funds will continue to be available to the community. Allan added that there may be some caveats regarding equipment on the ship that is owned by NSF including the drillstring. Shukuri thought that the framework of IODP might be changed as relationships with industry are pursued. Partnering with industry might restrict where we drill under restrictions imposed by Law of the Sea. In the case of Chikyu, the ship is owned by JAMSTEC so, its first priority is science, but because national taxes paid for it, it must be justified to the Japanese community. There is an added problem that if the Minister of Science believes that the program is being augmented by industry, the science budget could be decreased. Mevel added that the ECORD Council is keen on developing ties with industry and that the issues that exist with NSF and MEXT do not exist in Europe.

Kimura stated that the first priority of Chikyu operations should be riser drilling. Using Chikyu for non-riser drilling is very expensive. If IODP partners with industry, the results of all drilling must remain open to the science community. If we can keep this principle as a priority, then partnering with industry is a very good idea. Kawamura added that if we pursue a relationship with industry, industry-driven proposals must not be prioritized over conventional proposals. Humphris agreed that we must protect the scientific integrity of the program, but argued that there are some examples of highly ranked proposals that might be enhanced by industry participation.

Humphris asked Talwani what SASEC action was required. Talwani asked SASEC to go on record indicating which kind of partnerships are acceptable and then asked if it was better for the ship to be totally lost to the program for several months of the year. Humphris responded that she didn't see a problem with going on the record that SASEC endorses pursuing these options while maintaining the scientific objectives of the program. Becker asked if "scientific integrity of the program" would include a scientific review of the drilling in the proposals. Humphris thought that we might have to change what we consider highest ranked science rather than keeping the ship idle. Bickle agreed. Mevel also agreed and said that is what is done in France to fund their research ship. Morris concluded that the last paragraph in Talwani's statement is a good one. IODP's review process is too long to satisfy industry needs so there would need to be a fast track for industry proposals that maintains the scientific integrity that Becker pointed out. Humphris pointed out that this could be explored.

<p><b>SASEC Consensus 0611-14:</b> SASEC endorses IODP-MI pursuing partnerships with industry for drilling targets of mutual interest, particularly in light of the realities of future funding for IODP. Such partnerships will need to be set up so that the scientific integrity of the Program is maintained.</p>
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The second topic in this agenda item is to draft a response to Ralph Stephen's memo asking that the IIS-PPG be allowed to set up proposal working groups to involve industry in writing proposals for IODP. Becker stated that there is an issue to consider. It is consistent with their mandates that PPGs encourage proposal-writing groups; however, such proposal-writing groups have not previously been formally named as SAS bodies so it would be a new precedent for it to be done as a SAS activity. Humphris added that Stephen also requested travel support, but that IODP does not provide travel support for proposal writing activities. Humphris argued in favor of endorsing the proposal writing groups, but that the groups remain outside the SAS structure and that no travel support will be provided. Evans encouraged Stephen to interact with the UKILP, which had a successful meeting in June. Talwani confirmed that Stephen is in contact with their chair, Richard Davies. Humphris asked if there were any further comments. There were none.

**SASEC Consensus 0611-15:** SASEC encourages the IIS-PPG to foster the development of industry-related drilling proposals. However, SASEC does not endorse the establishment of "proposal working groups" as a formal part of the IIS-PPG and the SAS. Furthermore, IODP cannot provide travel support for proposal working groups to meet to write proposals.

### **17. Update of the IODP Initial Science Plan**

Humphris presented a potential timeline for this activity and asked SASEC to identify appropriate editorial board members by the March meeting.

#### **Timeline for update to Initial Science Plan**

December 2006	Plans for ISP update announced at AGU Town Meeting
Spring 2007	Article in Scientific Drilling to solicit community input
March 2007	Editorial board nominated by SASEC
March 2008	Manuscript submitted to SASEC for internal and external review
June 2008	Manuscript revised based on reviews
July-August 2008	SASEC approves final version
September 2008	Final version submitted to IODP for publication
December 2008	ISP: An Update published

She reviewed some of the changes identified at the previous meeting and asked SASEC to reread the ISP for the March SASEC meeting and think about what topics need to be updated and which ones are missing. Wefer thought that the environmental section could be more readable and Miller agreed. Humphris concluded that this is an important activity for SASEC to undertake and she would like to be able to announce at AGU that the ISP will be updated. Everyone agreed. She asked if anyone else had comments. Larsen asked if SASEC will seek input from SPC and SAS. Humphris replied absolutely and that the SAS panels should be asked to start thinking about the issues. There were no other comments.

**SASEC Action Item 0611-16:** SASEC members are requested to identify potential editorial board members for the preparation of an updated ISP to be published by December 2008. The editorial board will be constituted at the Spring 2007 SASEC meeting.

**SASEC Action Item 0611-17:** SASEC members are requested to re-read the IODP ISP and identify areas that need to be updated or added in the updated ISP to be published by December 2008. The Table of Contents of the updated IODP ISP will be discussed at the Spring 2007 SASEC meeting.

### **18. Member Schedule of SASEC**

Humphris asked Becker what was the status of the USAC nomination of a US SASEC co-chair after Humphris steps down in June. Becker replied that USAC was not prepared to name someone a year in advance. Humphris thought that there should be some overlap between the two individuals, but Becker assured her that it is the same for all the panels.

Regarding SASEC alternates, Tatsumi identified Tokuyama (physical sedimentologist) and Kawahata (paleoceanographer), both from ORI, as the Japanese alternates. Humphris identified Bob Duncan (petrologist) and Terry Quinn (sedimentologist) as the US alternates. Talwani asked if there was some way to get all of the groups rotating on the same schedule. SASEC agreed that it was best that they are not all coordinated so that a mass migration of committee members and loss of corporate memory is avoided.

### **19. Review of Action Items/Motions from the Meeting**

The results of this discussion are summarized in the SASEC Meeting Executive Summary. Any action taken by SASEC has been inserted under the appropriate topic in the minutes.

### **20. Future Meetings**

Humphris reviewed the decision from the July meeting to hold the March 2007 meeting as a videoconference during two morning (EST) sessions 22-23 March. The US members would meet in Washington, the Japanese at JAMSTEC, and the Europeans have yet to identify a location. SASEC agreed to work out the logistics later.

Humphris also stated that the June meeting would be held in Bremerhaven in conjunction with the IODP-MI BoG and Council meetings. Beyond June, it was decided that the next meeting be held in Santa Cruz in early 2008. Talwani requested that host institution assume some financial responsibility for the meeting, but Humphris didn't think that was very likely.

**SASEC Consensus 0611-18:** SASEC agrees to hold its next meeting 22-23 March 2007 (Eastern Standard Time mornings only) via videoconference in locations to be determined.

## **21. Closing remarks**

Humphris thanked everyone for attending and the meeting was adjourned at 1230.

<p><b>SASEC Consensus 0611-19:</b> SASEC thanks Yoshi Tatsumi and Issa Kagaya for hosting their second meeting. The location was wonderful, the views spectacular, and the onsen much appreciated by all.</p>
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**APPENDIX 1:**  
**Mission Implementation Plan**

## **IODP Missions: Designation and Implementation**

(K. Becker, S. Humphris, M. Talwani, Y. Tatsumi, M. Underwood)

This document outlines a plan for the designation and implementation of IODP Missions – a new mode of IODP planning intended to complement existing procedures.

The Mission concept builds on recent experience in planning the “NanTroSEIZE” program that will be a prime focus of IODP operations starting in 2007. It will involve years of riser and riserless drilling to core, log, and instrument the seismogenic plate-boundary fault in the Nankai Trough offshore SW Japan. This program began as a highly rated proposal, and was recognized as having unusual scope, challenges, and scientific importance. It became remarkable for the level of resources devoted by program management to early planning stages. It demonstrated the need for a mechanism within IODP to facilitate development of such programs.

### **Goals of Missions**

IODP proposal processes should foster the imaginative conception and testing of bold scientific ideas that advance the scientific goals of the Initial Science Plan. The addition of Missions is expected to allow IODP to (a) address its scientific goals and initiatives effectively, efficiently, and within budgetary constraints, and (b) engage a broader array of scientific stakeholders in Missions, including a new generation of ocean drilling scientists and scientists from other communities.

### **What is a Mission?**

A **Mission** is an intellectually integrated and coordinated drilling strategy originating from the scientific community that addresses a significant aspect of an IODP Science Plan theme over an extended period and which merits urgent promotion in order to achieve overall IODP program goals.

### **Overarching Principles of Mission Designation**

- Missions must address scientific themes of global significance and must originate from, and must be strongly supported by, the international scientific community.
- Mission proposals do *not* replace proposals for specific expeditions but, rather, augment them. As always, IODP will remain responsive to individual, unsolicited proposals for single or multi-expedition projects.
- Definition and planning of missions should integrate scientific strategies, technological approaches, and management and educational/outreach plans.
- Because resources are limited, Missions should be proposed only when requirements for development of complex strategies, or integration of multiple expeditions, are compelling.

## **Call for Mission Proposals**

It is anticipated that there will be annual calls for Mission proposals. The first will have a deadline of 1 April 2007.

- Proposals should follow the guidelines below and should be specifically designated as “Mission Proposals.”
- Ideally, Mission proposals will originate from the international scientific community through planning activities such as workshops.
- Proponents can develop entirely new proposals or can bundle existing proposals, adding new components if necessary, to form a Mission proposal.
- As with conventional drilling proposals, no IODP-MI financial assistance will be available for preparation of Mission proposals.

## **Content and Structure of Mission Proposals**

A Mission proposal outlines and explains the scientific factors that unite the individual projects to address an important global scientific theme. It provides an overall identity for the expedition or expeditions that fall within its scope. Although more detailed, full proposals will be required for each component of the Mission, those proposals will be reviewed in terms of their contributions to the overall Mission.

A Mission proposal (no more than 25 pages, including text, figures and tables, excluding references) should:

- state the theme and scientific objectives and explain how they address a significant aspect of the ISP or emerging new IODP science;
- identify the process by which broad, international input has been sought and incorporated and outline evidence for acceptance of the plan by the community;
- describe the overall drilling strategy and its components, showing how the proposed multiple drilling and logging sites/expeditions will address the scientific objectives;
- describe each component in sufficient detail to enable evaluation of its importance to the overall drilling strategy;
- prioritize the components and propose a timeline for completion of the Mission;
- identify critical milestones and suggest an appropriate process for assessment of progress throughout the lifetime of the Mission;
- describe the status of site surveys, especially what additional information is needed and how it could be obtained;
- identify technical needs for tools, observatories, etc. – are they already available or will funding be needed from the program or third parties for their development?
- identify what resources, fields of expertise, and personnel will be needed for the Stage 1 core Mission Team (see below);
- specify co-leaders and proponent members (4-6) based on expertise needs for the Stage-1 core Mission Team.

Since there will be separate proposals for each Mission component, only Site Summary Form 1 is required for each site for a Mission proposal.

## **Review of Mission Proposals and Mission Designation**

- Mission proposals will be reviewed both within SAS and by an external review panel.
- The major criteria in considering Mission designation will include:
  - (i) the plan should lead to considerable scientific success and is or should be a high priority for IODP.
  - (ii) accomplishment of the science goals will require a considerable technological effort and/or complex, multiple drilling strategies, hence requiring planning on a longer term than is typical of drilling expeditions.
- SSEP will review Mission proposals and will forward its evaluations to SPC. SSEP will also provide comments on the compositions of the proposed Stage-1 core Mission Teams.
- In parallel with the SSEP review, an external review panel appointed by SASEC will conduct an independent review of the Mission proposals as a group, and will forward its evaluations to SPC.
- SPC will consider the recommendations and the proposals, possibly selecting one or more to be designated as Missions. For those selected, SPC will also provide a recommendation on the composition of the Stage-1 core Mission Team. Other possible outcomes are
  - (i) outright rejection;
  - (ii) recommendation for revision and/or resubmission;
  - (iii) recommendation that a proposed mission be “unbundled,” with some components being submitted as regular drilling proposals.

They will also provide comment on the needed expertise for the Stage-1 core Mission Team.

## **Implementation**

After initial designation, Missions will progress through three stages of implementation. IODP-MI will be responsible for managing these stages.

### **Stage 1. Definition of Scope**

After SPC designates a Mission, a Mission Team is created. The Mission Team includes all proponents (and others) involved in any component of the Mission, including young scientists. Since this may be a large number, IODP-MI will form a Stage-1 core Mission Team. The charge to the core Mission Team is to (i) ensure that full proposals for each component of the Mission are developed by proponent groups and submitted to the SAS, (ii) with technical advice from the IOs and IODP-MI, begin refining the scope of the Mission by determining first-order operational needs and budgets, engineering development needs, etc. and (iii) develop a conceptual plan for Mission management.

Deliverables from Stage 1:

- (1) Full proposal(s) for the initial component of the mission submitted to SAS

(2) a conceptual Mission management plan.

The Stage-1 core Mission Team will consist of the following members:

- 2-3 co-leaders (proponents) – a stipend/honorarium will be provided depending on workload
- 4-6 proponent members based on expertise
- an IODP-MI representative
- IO representative(s) as appropriate to the Mission
- Education and Outreach representative(s) as needed, and as appropriate to the Mission.
- Outside consultants invited as required.

Liaisons will include representatives from:

- SAS (especially SSEP) as needed
- Appropriate earth and biological science initiatives.

The normal lifetime of a Stage-1 core Mission Team will be 1-2 years, with a review of progress by the SSEP and SPC at the end of Year 1 (see below).

## **Stage 2. Detailed Planning and Execution**

A Mission advances to Stage 2 after one or more of the component proposals has been through the SAS review process (see below) and has been forwarded to the Operations Taskforce for scheduling and execution. The charge to the Stage-2 core Mission Team is (i) to develop and coordinate the detailed staging and operational plans for the Mission expeditions, (ii) to ensure that full proposals for the remaining components of the Mission are being submitted to the SAS, and (iii) to continue site-by-site scoping for components still within the SAS.

Deliverables from Stage 2: Proposals for all expeditions within the mission.

The original, Stage-1 core Mission Team evolves into the Stage-2 core Mission Team. Co-chief scientists of each expedition will be added (if not already members), and Specialty Coordinators may be appointed as necessary. Technical advice from the IOs will continue, and outside technical consultants will be added as required to provide external advice on aspects of the detailed planning. Liaisons from the SAS will no longer be required.

The normal lifetime of the Stage-2 core Mission Team will be 2 years.

## **Stage 3. Synthesis and Completion**

Stage 3 begins when all Mission expeditions have completed Stage-2 planning. The charge to the core Stage-3 Mission Team will be to (i) downsize the core Mission Team and available resources, (ii) oversee the synthesis and coordination of science results, and (iii) define needed follow-up expeditions, observatory data acquisition needs, etc.

## **Mission Evaluation Process within SAS**

### **1. Evaluation of Mission component full proposals**

Full proposals for Mission components will be submitted to the SAS. The review process will duplicate that used for proposals that are not part of any mission. Passage



through this process should, however, be more efficient because of the early nurturing by SSEP liaisons to the Stage 1 core Mission Team.

The SSEP will forward mature component proposals to SPC, which will include them in its overall ranking of all proposals forwarded by the SSEP. As with any proposal, Mission-component proposals will need to rank high enough to fall in the group to be sent forward to the Operations Taskforce for scheduling.

## **2. Review of Mission progress**

The progress of the core mission team will be reviewed annually by SSEP and SPC as long as Mission-component proposals remain within SAS. During stages 2 and 3, progress will be assessed by OTF and SPC at regular intervals consistent with critical milestones identified in Mission planning. If there is insufficient progress or serious logistical issues arise, SPC can recommend changes in the Mission and its scope or, in an extreme situation, that the Mission be halted.

## **Needed Program Support**

- Support (stipend/honorarium, travel, etc.) of the core Mission Team co-leaders is essential to the success of Missions. Resources will come from IODP-MI. Program Member Offices (PMO) or other sources may also contribute to the support.
- The IOs will require the resources to support the participation of staff scientists and engineers in Mission scoping and implementation. These will come from commingled SOC funds.

## **Needs Critical to Successful Implementation of IODP Missions**

- Coordinated national funding is absolutely required for site surveys and related research that is essential for Missions, as for all drilling expeditions.
- Observatories are likely to be an essential component of some Missions. Coordinated national funding for instrumentation, installation and maintenance of observatory facilities will be required. This will include support for major infrastructure development.

**APPENDIX 2:**  
**Mission Moho Workshop Report**

# **Mission Moho Workshop**

## **7-9 September 2006**

### **Portland, OR**

#### **Objectives**

- To provide guidance on the scientific and operational framework of a “Mission Moho” for IODP.
- To redefine scientific objectives and propose elements of a global strategy to understand processes that drive the formation and evolution of the oceanic lithosphere.
- To identify and encourage the technical development that will ultimately allow drilling to and through the Moho.

#### **Participants**

- 98 participants
- US, UK, Canada, China, France, Germany, Iceland, Italy, Japan, Norway, Russia, Switzerland

#### **Recommendations**

- Drilling a deep, full crustal penetration hole through the Moho and into the uppermost mantle at a single site is the highest priority (but long-term as needs a >3 km riser). Mission Moho planning should focus on achieving this goal as soon as feasible.
  - First site should be in fast-spreading crust (>50% of present ocean crust was created at fast-spreading ridges – even higher proportion of subducted crust over past 200 Myr). Most likely candidate – Hole 1256D, but others need to be evaluated.
- Until a full penetration is technically feasible, deepen Hole 1256D as far as possible with riserless drilling
- Complementary studies of slow-spread lithosphere will be essential to fully understand the architecture of the ocean crust. No consensus was reached on either the priorities or the scope of drilling. The extent to which existing or planned drilling projects in slow-spread crust should be included in a Mission Moho was not resolved at the workshop.
- Although evolution of the ocean crust (thermal, alteration, etc.) is important, it is not an essential element of Mission Moho.

**APPENDIX 3:**  
**Mission Breakup Workshop Report**

# Investigating Continental Breakup and Sedimentary Basin Formation

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An IODP-MI - InterMARGINS Workshop  
16-19 September 2006  
Pontresina, Switzerland

# Steering Committee

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- ❑ Mike Coffin (co-chair), University of Tokyo, mcoffin@ori.u-tokyo.ac.jp
- ❑ Dale Sawyer (co-chair), Rice University, dale@rice.edu
- ❑ Tim Reston, University of Birmingham, t.j.reston@bham.ac.uk
- ❑ Joann Stock, California Institute of Technology, jstock@gps.caltech.edu



51 participants from 6 continents  
InterMARGINS:  
Australia, Brazil, Ethiopia, Luxembourg, New Zealand





# Venue

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Pontresina  
(1777-1860 m)



Rondo Convention  
Center



Swiss Alps



# Workshop Description

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- ❑ The IODP Initial Science Plan highlights continental breakup and sedimentary basin formation as one of eight high-priority initiatives.
- ❑ This workshop addressed rifting and breakup processes in a global context, and considered drilling strategies using the full range of IODP drilling, logging, and borehole monitoring capabilities.

# Workshop Outline

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## □ Keynotes

- Sverre Planke: volcanic margins
- Tim Reston: hyperextended margins
- Tony Watts: key scientific themes
- Greg Myers: IODP capabilities

## □ Other Presentations

- Mike Coffin: IODP proposal process
- Dale Sawyer: IODP site characterization

# Field Trip

## High-strain basin (a rift basin soled by a detachment fault) The Tasna OCT

*"a preserved Ocean-Continent Transition"*

### Tasna OCT

Mot da Ri



Foliated serpentinites (LTD)

Piz Clünas



Post-rift sediments sealing UTD

Piz Oscar



Sediments over exhumed mantle

Piz Marsch



Sediments over exhumed mantle

"Florineth" outcrop



Sediments over exhumed mantle

Thin section ("Florineth" outcrop)



Basement-sediment contact (UTD)

NE of Piz Oscar



Serpentine gouge

Champatsch



Basalt overlying sedimentary breccia

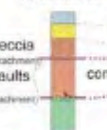
Champatsch



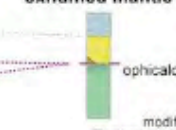
Sediments over exhumed mantle



continent



exhumed mantle



modified after  
Florineth and Fritzsche 1994





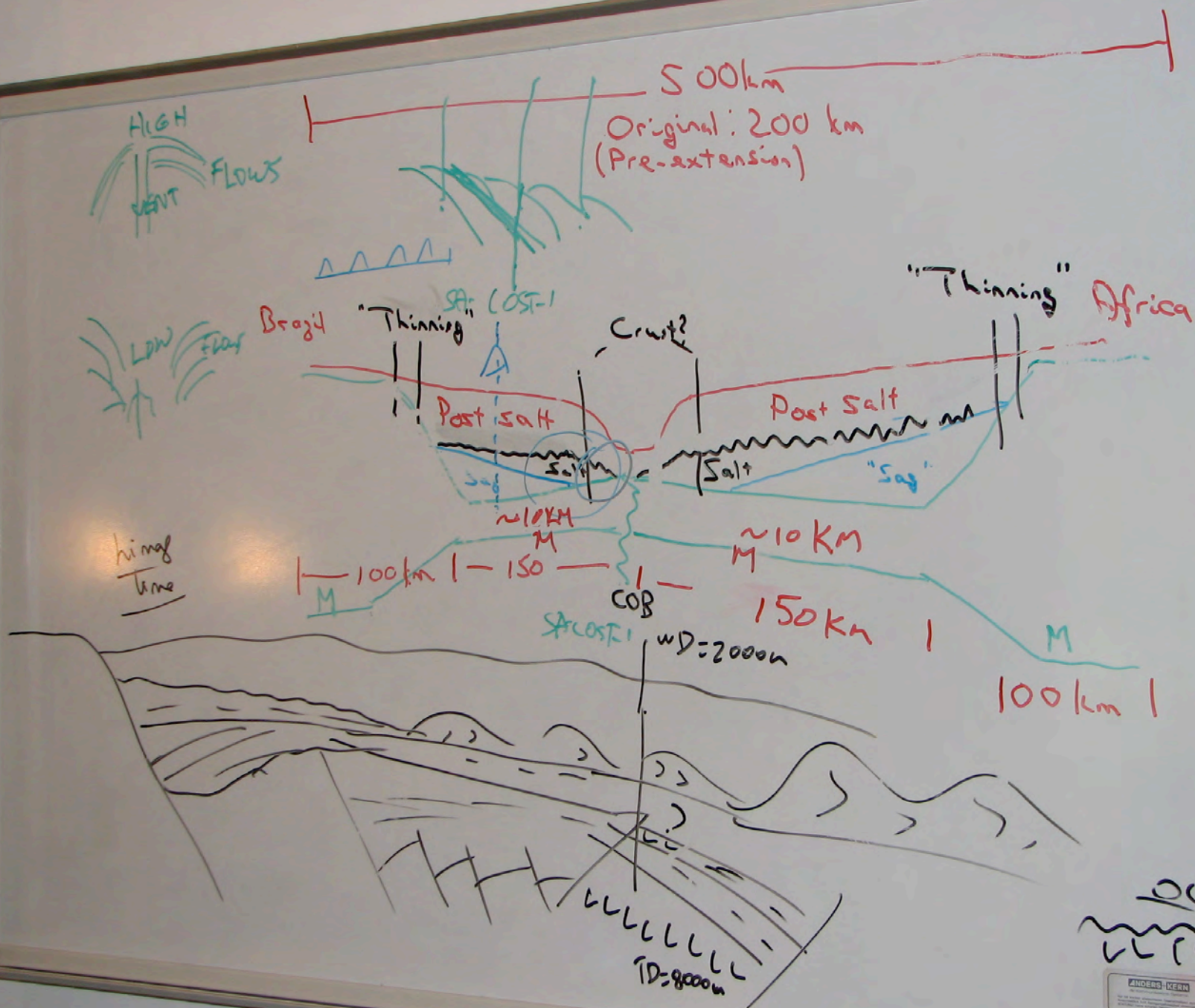
# Workshop Outline

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- ❑ 5-minute presentations invited from all workshop participants
- ❑ Regional breakout groups
- ❑ Key scientific themes
  - Rift initiation
  - Tectonic and dynamic aspects of rift evolution
  - Magmatic aspects of rift evolution
  - Sedimentary, paleoenvironmental, and oceanographic aspects of rift evolution
  - Initiation of seafloor spreading
  - Consequences and impact







# Mission Breakup

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## □ Mission Proposal Foci

- Active rifting: Gulf of California and Woodlark Basin
- Highly magmatic: conjugate North Atlantic and conjugate-less Western Australia
- Hyperextended: Iberia-Newfoundland and South Atlantic

## □ Mission Hero: John Hopper (Texas A&M University)

# Mission Core Proposals (team)

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- ☐ Gulf of California (Stock, Martin, Umhoefer)
- ☐ Woodlark (Goodliffe, Baldwin?)
- ☐ Volcanic (Planke, Müller, Huismans)
- ☐ North Atlantic hyperextended (Manatschal, Reston, Tüchler)
- ☐ South Atlantic (Unterwiesing, Mohriak, Norton)
- ☐ Disciplinary Balance (Muntener?, Snow)



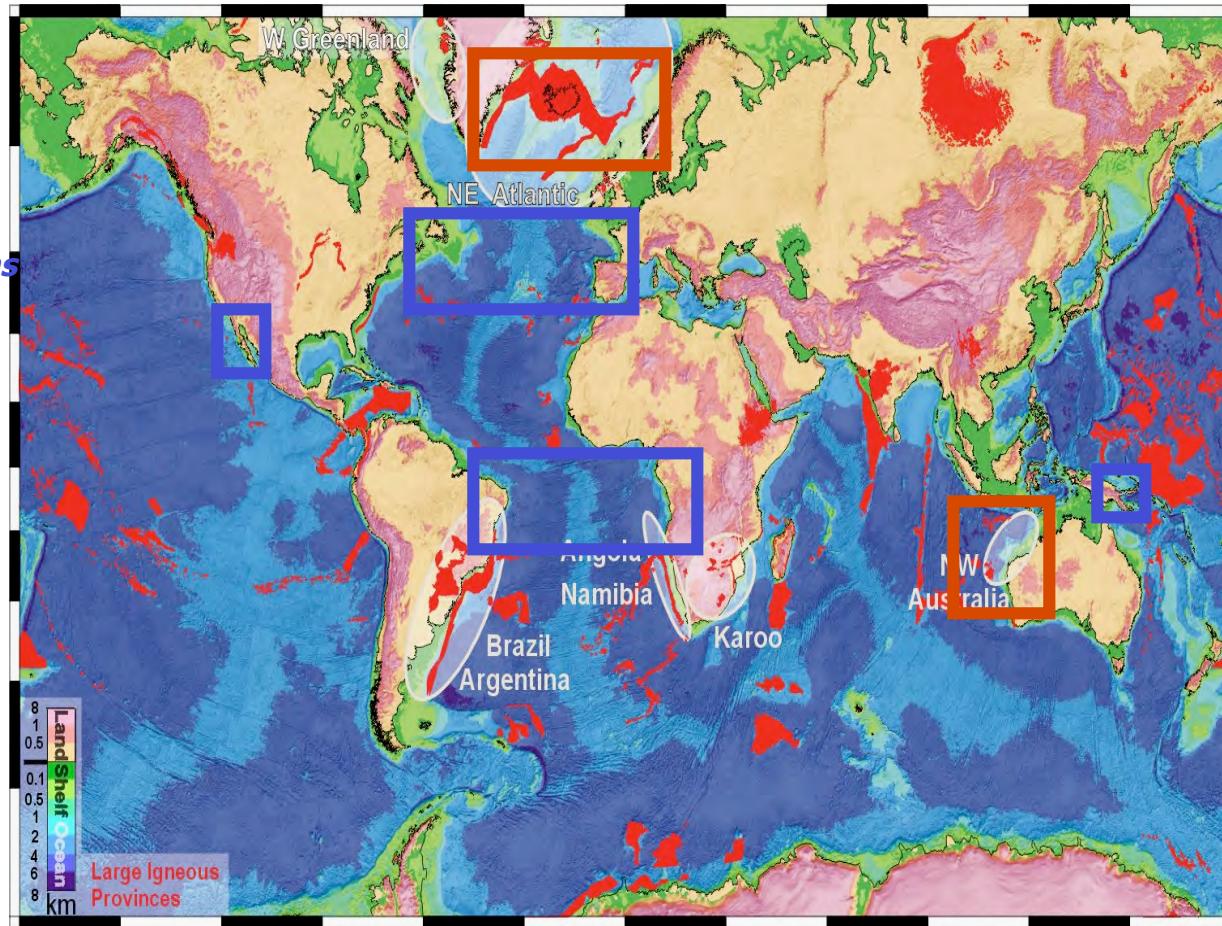
# Mission Breakup

*Conjugate North Atlantic  
Volcanic Margins*

*Conjugate Iberia-  
Newfoundland Margins*

*Actively Extending  
Gulf of California*

*Conjugate South  
Atlantic Margins*



*Actively Extending  
Woodlark Basin*

*Conjugate-less  
Western Australian  
Volcanic Margins*

# Site Characterization and Drilling

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- The IODP-InterMARGINS Workshop ‘Investigating Continental Breakup and Sedimentary Basin Formation’ endorses the principle of integrated site characterization and drilling within the IODP, and unanimously recommends that the IODP provide financial support for both site characterization and drilling in addressing high-priority scientific themes and initiatives of the IODP.

# Status of Deliverables

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- ❑ *Eos* Meeting Report: submitted on 12 October; accepted on 31 October, *in press*
- ❑ *Scientific Drilling* White Paper: anticipated delivery of first draft to IODP-MI on 20 November
- ❑ Full Workshop Report: expanded White Paper

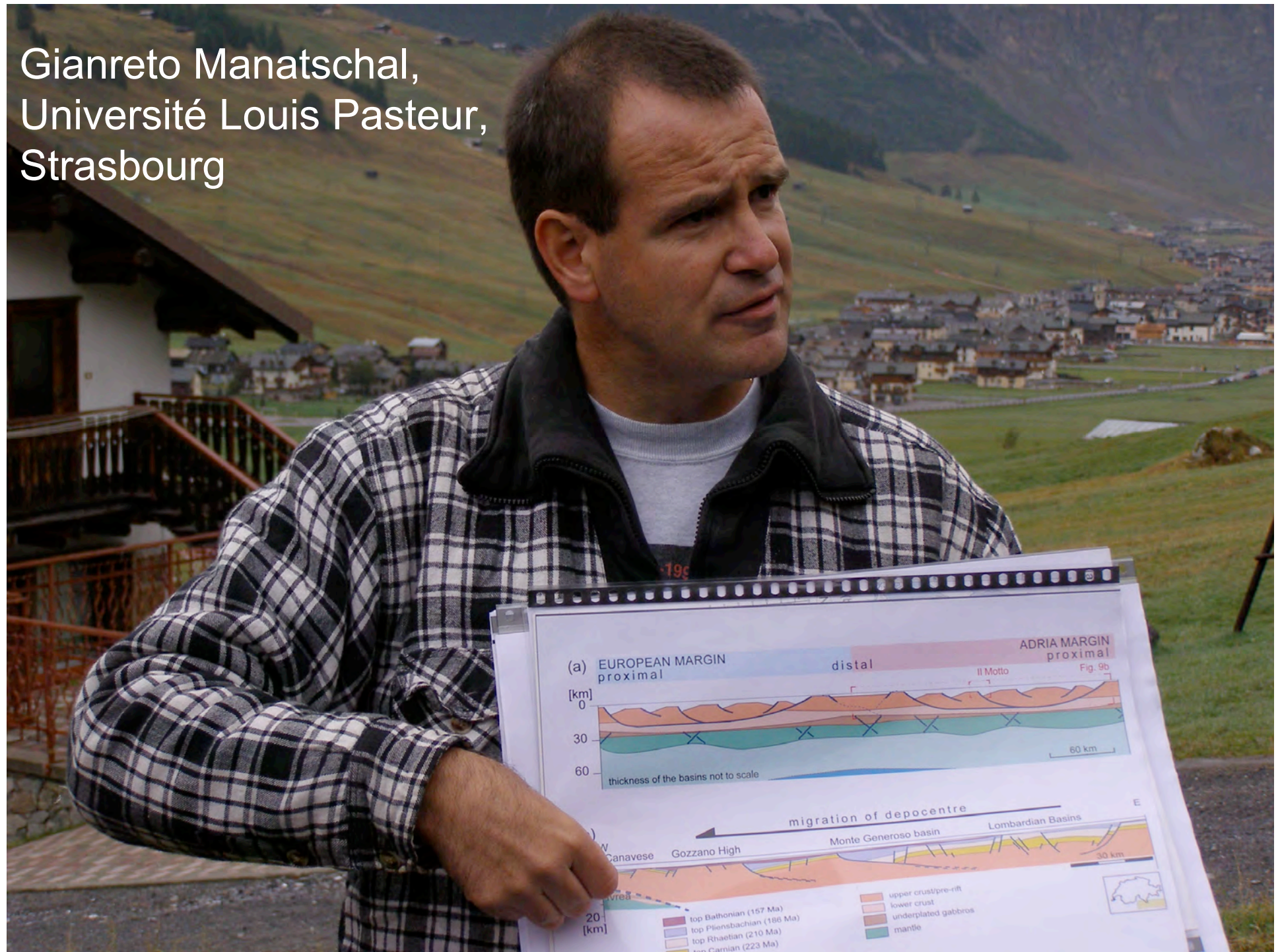
# Lessons Learned & Recommendations

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- ☐ Non-IODP member participant support
- ☐ More lead time for workshop planning (12-18 vs. 7.5 months)
  - superior planning
  - fuller community participation
  - more opportunities for co- or supplemental funding
- ☐ Steering committee meeting post-workshop
- ☐ Longer timelines for deliverables (four weeks for *Eos* meeting report, two months for *Scientific Drilling* white paper and workshop report)
- ☐ Honoraria for workshop co-chairs



Gianreto Manatschal,  
Université Louis Pasteur,  
Strasbourg





Kelly Kryc, IODP-MI



**APPENDIX 4:**  
**ICDP-IODP Chixculub Workshop Report**



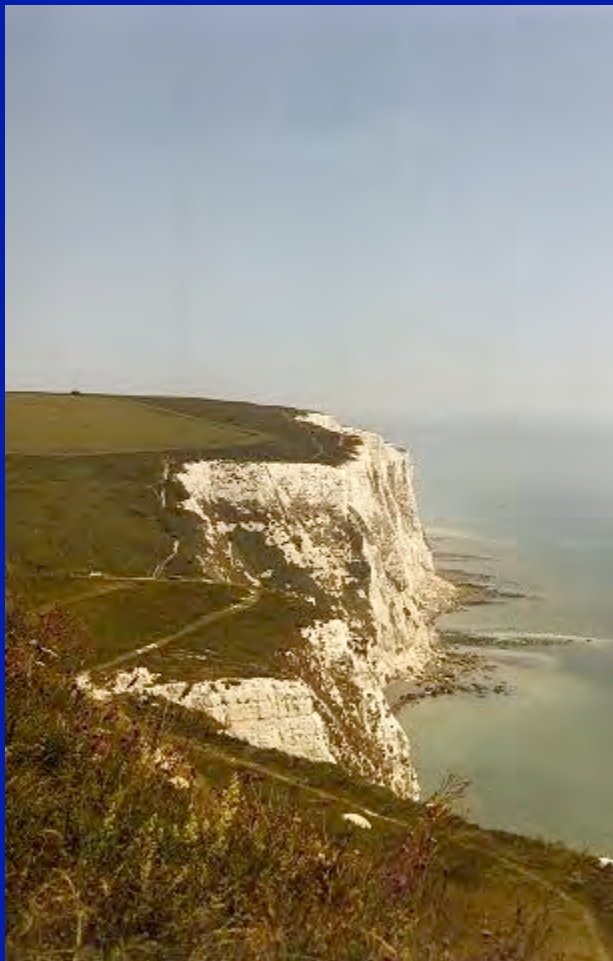
# Funding Precipice at the Shoreline

Miller to Bruce Malfait (NSF/OCE) 1991:

My main concern with the proposed onshore drilling is that it might fall through "programmatic cracks". Because the boreholes will be drilled above the high tide line, this may not seem to be an obvious OCE/ODP program; however, the integration of the onshore and offshore components directly address OCE/ODP programs and objectives.



Earth Sciences  
(EAR)



Ocean Sciences  
(OCE)





## Chicxulub Workshop

Sept. 11, 12, 2006 GFZ Potsdam (ICDP HQ)

Proposal 548 Morgan, Gulick

Three communities: impact, onshore drilling, IODP  
IODP goals: foster extant drilling proposal & ties to IODP

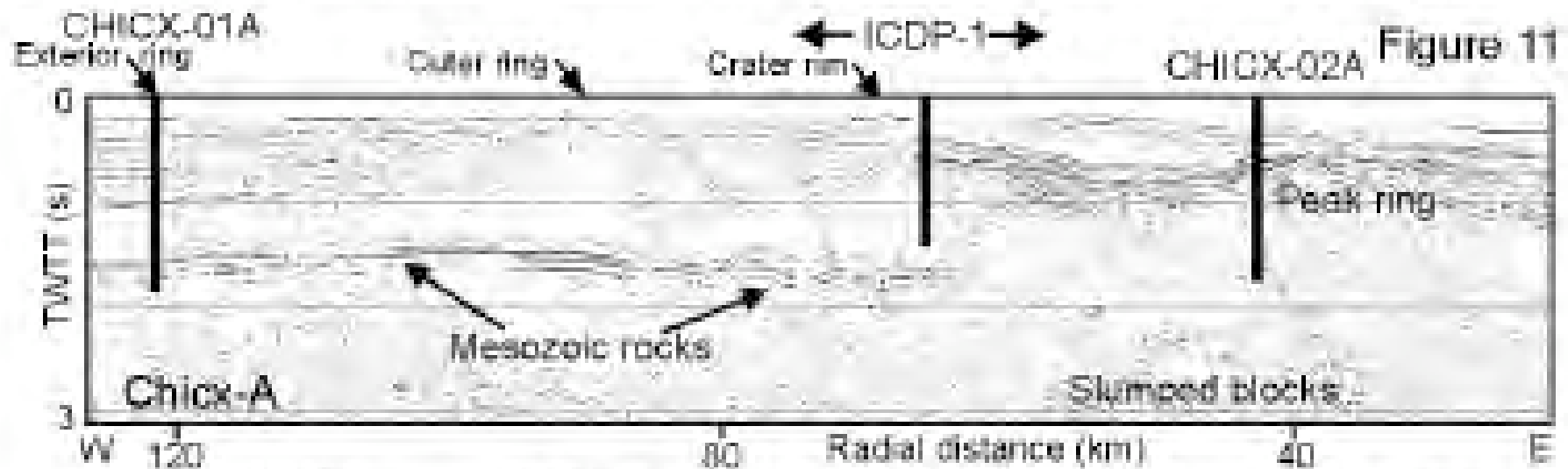
Miller: Drilling onshore and offshore: the programmatic  
challenge

What is IODP? Thanks to Peggy Delaney

The IODP proposal process: Thanks to H.-C. Larsen

Drilling onshore and offshore: Successes and  
Frustrations, NJ Sea-level Transect

Chicxulub Workshop like NJ, is caught in the development phase of our nascent efforts to coordinate IODP and ICDP. NJ is receiving \$500,000 toward the MSP from ICDP (please note my conflict on this as CoPI of NJ). Chicxulub is the next likely target of collaboration in drilling. The workshop resulted in identification of two primary targets, the aforeproposed and highly ranked Chicx 02 offshore site and an onshore site. The proponents will be preparing an addendum to proposal 548 that provides the rationale for moving forward with Chicx 02 and adding the onshore component.



Location of ODP holes ICDP is the projected location of the onshore hole onto Chicx-A

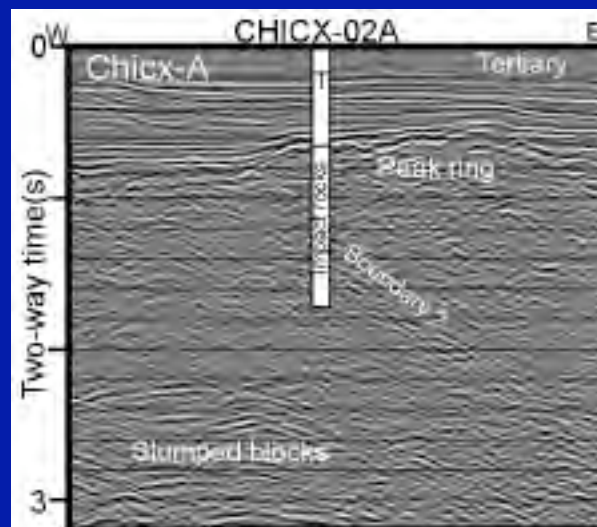


Figure 13 Proposed location of Chicx-02A

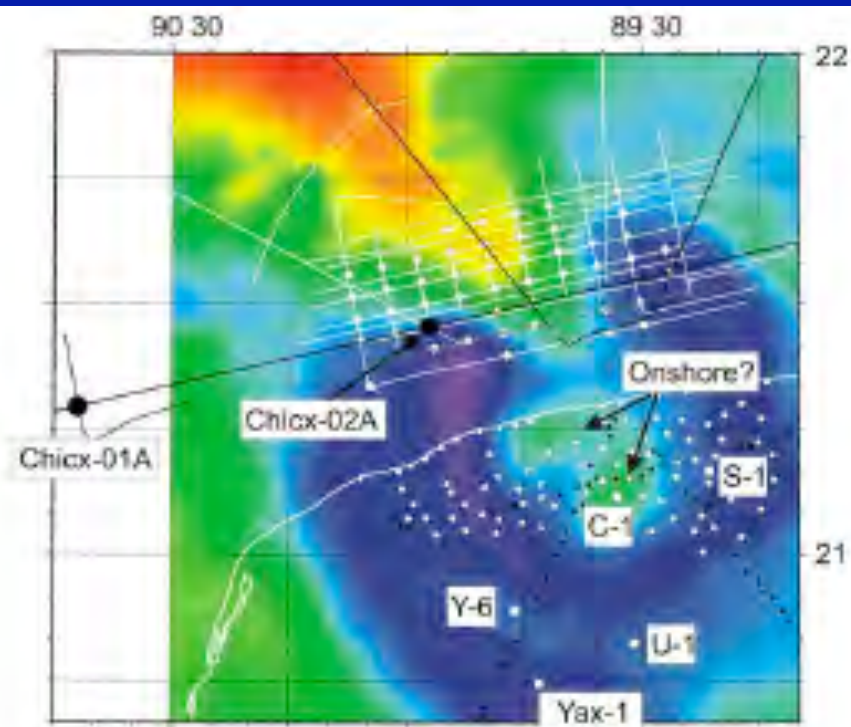


Figure 1

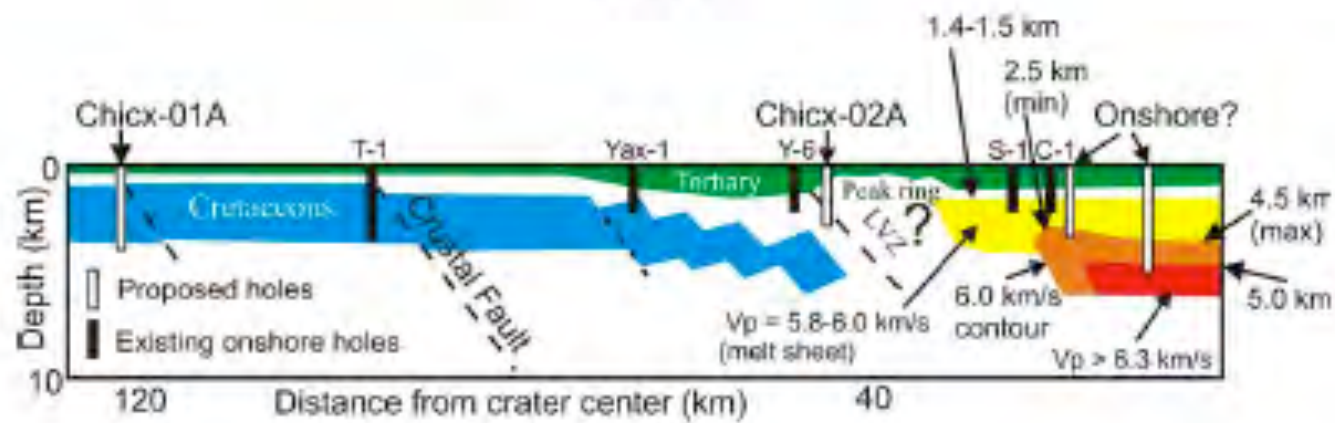
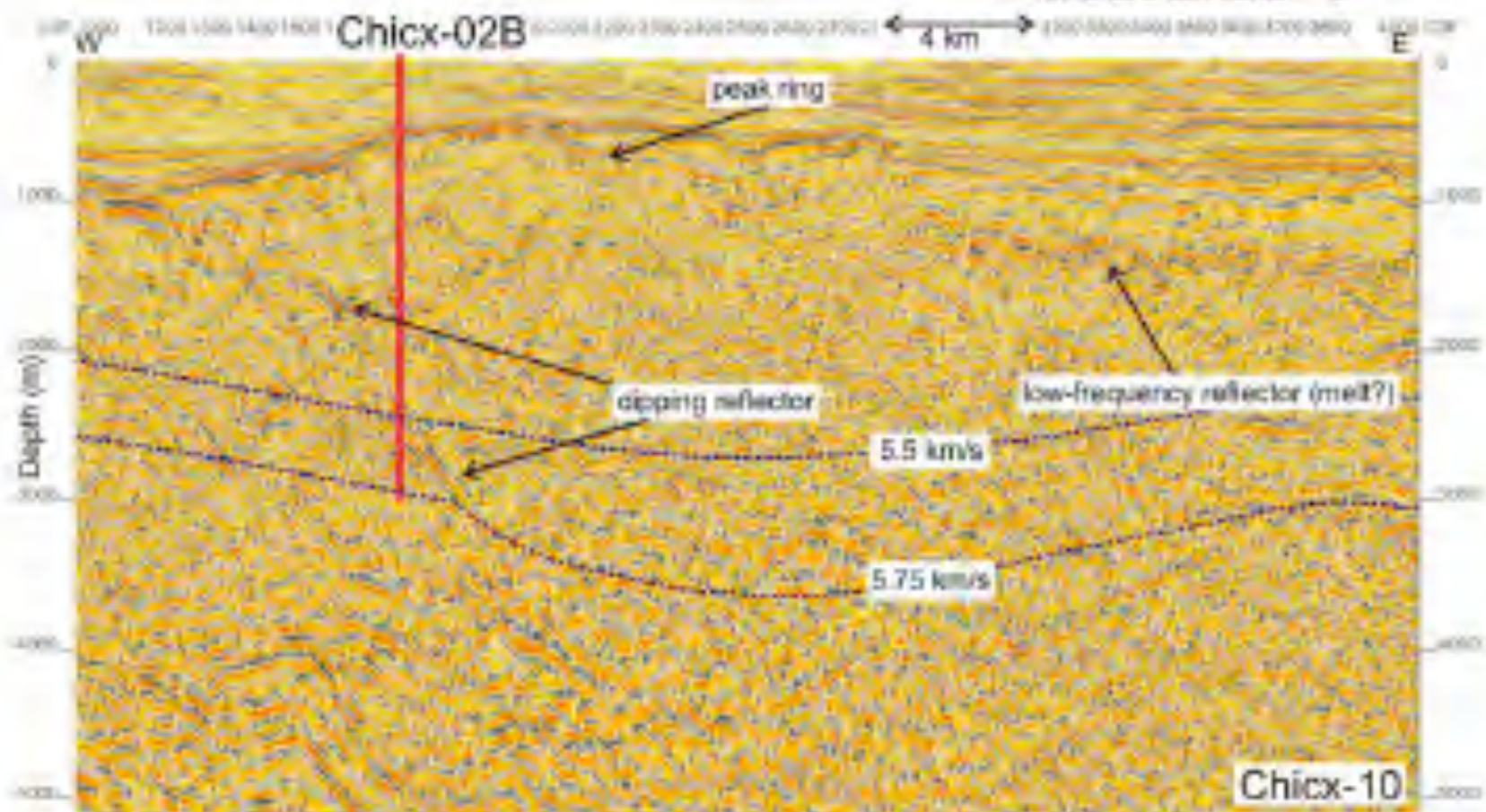


Figure 2





CHICX-02A is a 3-km-deep hole that penetrates the peak ring within the impact basin. The

primary objectives of this hole are to:

- 1) determine the lithological and structural character of the peak ring to test competing models of peak-ring formation,
- 2) constrain the mechanics of transient-cavity collapse and improve estimates of crater size, and
- 3) characterize the impactites in order to identify the composition of the target rocks and meteoritic component, and investigate clast-and melt-mixing relationships.

.

Planning an ICDP proposal Jan 15, the logical expectation after a funded ICDP workshop. Considerable budgetary discussion took place. The two sites have proposed target depths of 3 km. To do this might entail budgets as high as 50-100 m\$ for the offshore (using a large jack-up) to 10\$m for the onshore. The workshop realizes that these figures are non starters. We discussed options of drilling to 2 km onshore and offshore, which are remarkably cheaper (3 m\$ onshore, 9 m\$ offshore). We also discussed a very exciting option of "sinking" a barge in 17 m of water at site Chicx 02 to form an artificial island with a cost for 3 km on the order of 10 m\$. We obtained a very informal estimate from DOSECC of 5-6 m\$ for a 3 km hole onshore using their topdrive system. The PIs are providing both 2 and 3 km targets for both Chicx 02 and the onshore site.

**APPENDIX 5:**  
**2007 Topical Symposium Proposal**



# IODP Topical Symposium on North Atlantic and Arctic climate variability

## Aim:

To present our knowledge on North Atlantic and Arctic climate variability regarding:

- Northern hemisphere glaciation and role of Panama Isthmus closure
- North Atlantic deep water formation and meridional overturning circulation
- Changes in the oceanic nutrient distribution and their effect on productivity
- Influence of Atlantic Ocean thermohaline circulation on tropical sea surface temperatures and North African climate
- Temperature and ice cover history of Arctic ocean

During the Late Quaternary, Pliocene/Pleistocene, in the course of the Neogene climate cooling and during the Paleogene warm period.

## Steering committee:

- J. Backman (302)
- K. Moran (302)
- J. Channell (303)
- T. Sato (303)
- T. Kanamatsu (306)
- R. Stein (306)
- E. Janssen
- M. Raymo
- G. Camoin (310)
- Y. Iryu (310)

Alternates: B. Curry, L. Keigwin, D. Kroon, R. Zahn

**Location:** MARUM, Bremen University

**Date:** first two weeks in November 2007

## Schedule:

09.00 - 11.00 4 presentations  
11.00 - 11.30 Coffees  
11.30 - 13.00 3 presentations  
13.00 - 15.00 Lunch and poster session  
15.00 - 17.00 4 presentations  
17.00 - 17.30 Coffees  
17.30 - 19.00 3 presentations

Second day:

09.00 - 10.30 3 presentations  
10.30 - 11.00 Coffees  
11.00 - 12.30 3 presentations  
12.30 - 14.00 lunch and poster session  
14.00 - 16.00 workshops  
16.00 - 17.00 presentation of workshop results

## Costs:

20 persons air fares	20,000.- Euro
20 persons accommodations (3 nights)	6,000.- Euro
20 persons daily allowances (4 days)	4,000.- Euro
Catering (meals, coffees) for 100 persons	8,000.- Euro
Student helpers	2,000.- Euro
Other expenses (report printing, telephone, etc.)	1,000.- Euro
	-----
	41,000.- Euro, ca. 50,000.- USD
For 30 persons ca. 60,000.- Euro	

**APPENDIX 6:**  
**DONET presentation to SASEC**



# Dense Oceanfloor Network System for Earthquakes and Tsunamis

FY2006-2009 (April 2006 to March 2010)

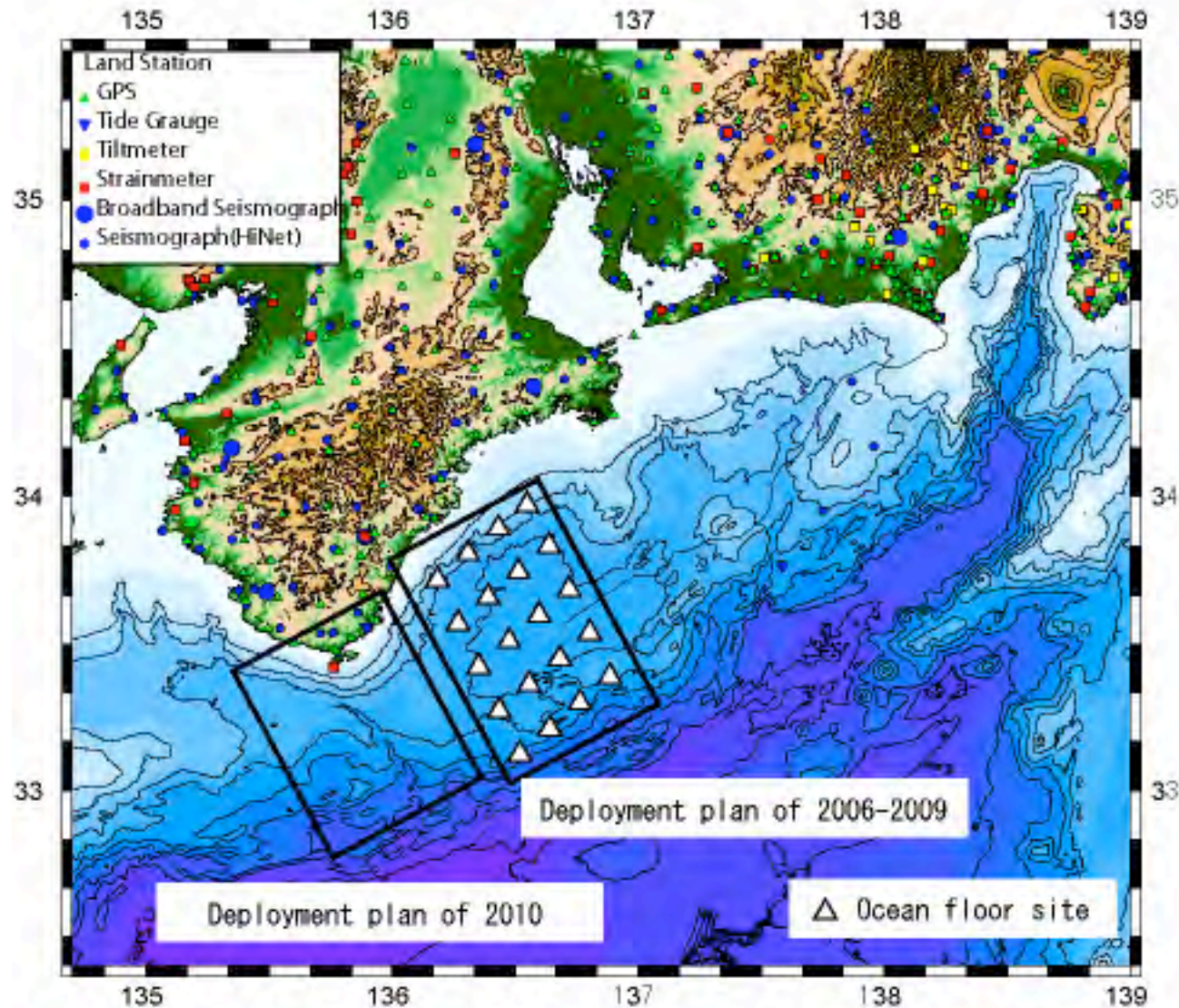
FY2006 :system design and explore the cable route.

FY2007 and 2008 :system developments and manufacturing,  
explore the cable route.

FY2009 :deployment of the cable system,  
sensor connection etc.

FY2010 : system in operation

# Outline of the Ocean Floor Network System



# Three Major Targets of the ocean Floor Network System

## Ocean Floor Network System



```
graph TD; A([Ocean Floor Network System]) --- B[Contribution of Disaster Reduction and Mitigation]; A --- C[Advancement of Earthquakes Simulation Models]; A --- D[Development of Most Advanced and Leading Technologies]
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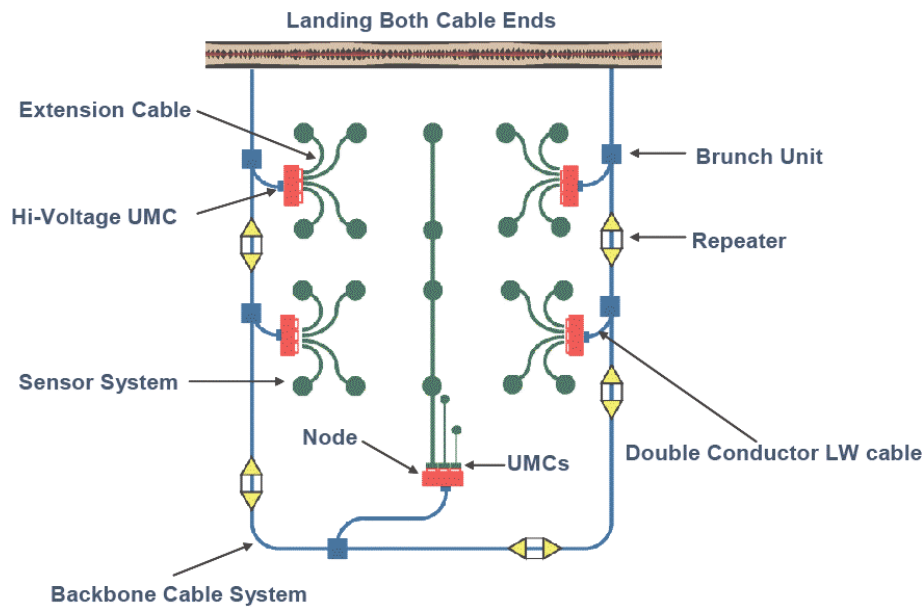
Contribution of Disaster Reduction and Mitigation

Advancement of Earthquakes Simulation Models

Development of Most Advanced and Leading Technologies



# System Concepts



## • High Reliability Backbone Cable System

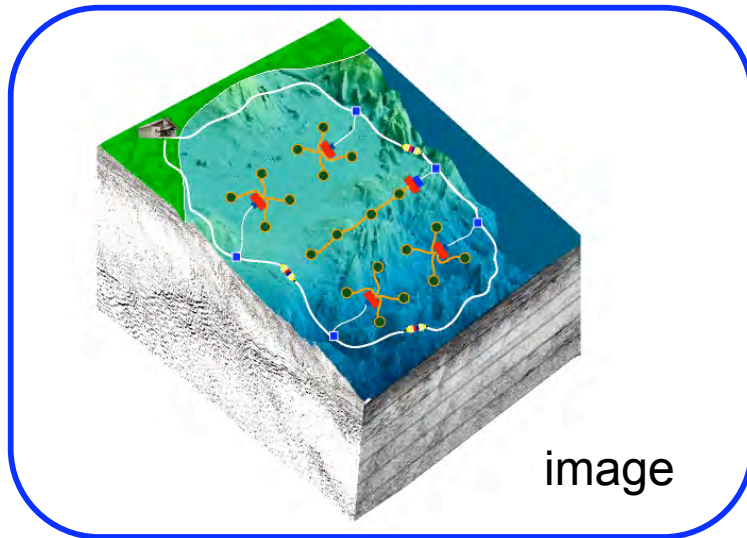
Observation network backbone cable system will be used existing commercial telecommunication submarine cable technology as much as possible to secure the system reliability. Several functions for power branching and data transmission will be newly developed for this network. Double landing topology will help for the redundant configuration of the system.

## • Replaceable Observatory Node

Each observatory node will directly connect to the land system using exclusive optical fiber lines (pier to pier connection) to have up to 10Gbps data transmission. The node has the function to manage 200-300W power for extendable sensors.

## • Extendable Advanced Sensor System

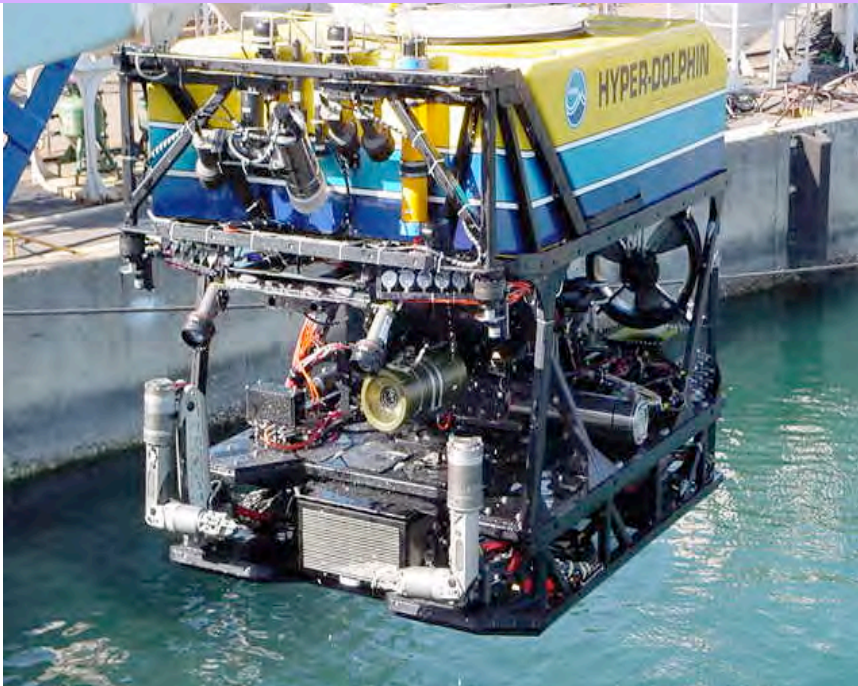
The data output from the sensor makes the node a hub and is transmitted to land. Up to 10km of cable extension can be used to connect the node and sensors.



image

# ROV/AUV

3000m class ROV「HYPER-DOLPHINE」



7000m class ROV「KAIKO 7000 II」

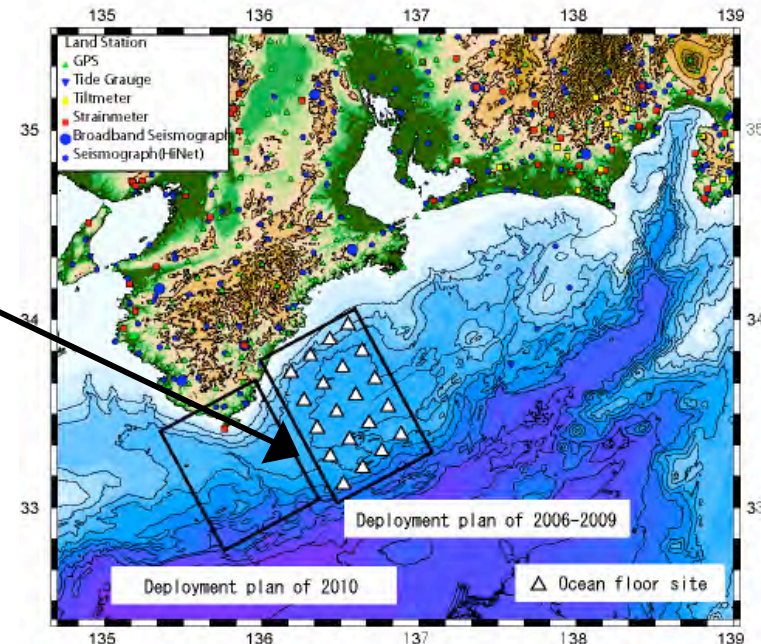
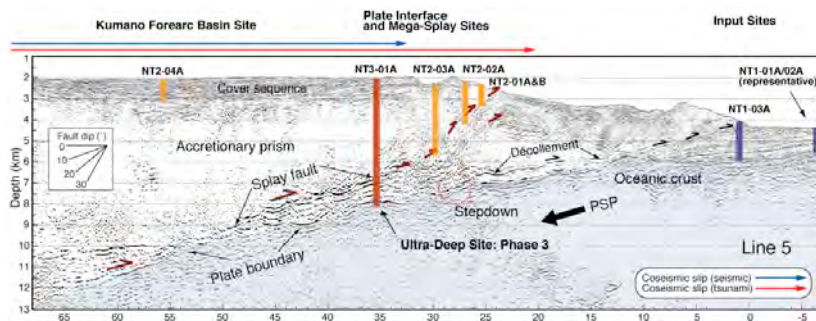


Deep Sea Cruising AUV「URASHIMA」





# Future Plane



Furthermore, Science Drilling under Integrated Ocean Drilling Program (IODP) will be done off Kii Peninsula by Drilling Vessel “Chikyu”, therefore, valuable information about fault mechanisms and pre /co seismic crustal activities will be provided by drilling results and borehole observatories.