

**JOIDES and Interim Science Steering and Evaluation Panels
for the
Dynamics of Earth's Environment (ESSEP) and Earth's Interior (ISSEP)**

14-17 November 2001
Japan Marine Science and Technology Center (JAMSTEC)
Yokosuka, Japan

Minutes

Wednesday, 14 November 2001, Joint Morning Session

1. Introductory Remarks

A. G. Camoin opened the first joint meeting of the JOIDES and interim Scientific Steering and Evaluation Panels. He thanked the iSAS Office and JAMSTEC for the excellent arrangements. After the panel members introduced themselves, the host of the meeting W. Soh gave an update on meeting logistics and social events.

B. MEXT greetings (Attachment 1)

Yoichiro Otsuka welcomed the participants to the first meeting of this kind which is symbolic for the transition period. Mr Otsuka, who had been involved in IODP since January 2001, stressed the significance of IODP for Japan both scientifically and politically. On the scientific level, the importance of the new program centers on the study of mechanisms of subduction zones around Japan – the more so since the Kobe earthquake – and also on the study of the subseafloor (?) microbiology.

After Mr Otsuka stated that the Japanese government remained fully supportive to providing the riser vessel, he gave an update on the vessel construction.

- The name “Chikyu” (Japanese for “earth-globe”) was chosen out of numerous suggestions submitted in a contest. One of the 2000 boys and girls who voted for this name will come to the launching ceremony on Jan. 18, 2002, in Okayama Prefecture.
- Mr Otsuka presented a series of photos documenting the progress of the construction in different stages.
- He reported the basic features of the drilling vessel as follows: 210 m long, 38 m wide, gross tonnage 57,000 tons, 150 crew, maximum operating water depth 2,500 m, drill string length 10,000 m, a 35,000 kWatt engine which is 2.1 bigger than the JOIDES Resolution.
- He presented a graph showing the parts that had been constructed already and concluded that the construction was going well.

For IODP as a science-driven project, the science advisory structure is of major importance. Mr Otsuka was therefore glad to welcome everybody to this meeting.

The question was raised when the ship would be operational. Mr Otsuka replied in 2004 / 05 with a subsequent shake down phase.

C. NSF greetings (Attachment 2)

Julie Morris highlighted recent NSF activities related to IODP:

- NSF requested the Program Plan for FY 2003 and also for phase out from 2004-2007 to be provided by the operators. The Program Plan will be presented next summer to the National Science Board for consideration. The transition phase 2004-2007 is of high priority with NSF, which plans to fund it without contribution from other member countries.
- Julie also reported on recent reorganization at NSF Ocean Sciences. NSF support of ODP science remains strong with \$5.5M for USSSP and \$10M for unsolicited proposals in FY2001. She presented a list of projects supported in 2001 and 2002.
- She explained that what would have to be presented to the National Science Board included US involvement in IODP. The proposal for the JR replacement would go out in winter 2002. These were the two hurdles to be taken. However, the NSF director had publicly stated the importance of IODP.

2. JOIDES Office Report / SCICOM Report (Attachment 3)

A. Keir Becker reported that the current JOIDES Office activities mainly focussed on the transition of the advisory structure:

- The interim advisory structure started phasing in. Staffing was still needed for the iTAP and the new industry liaison panel.
- In order to meet together as much as possible the membership on both the JOIDES and the interim panels has to be as common as possible.
- NSF gave its approval for iSAS to meet without JOIDES panels. During the transition phase through Sept 2003, JOIDES panels will meet only as needed and would need a strong reason to meet. The criteria for this have to be worked out yet.
- The JOIDES Office has started forwarding the proposals to the iSAS Office: proponents had been contacted and most proposals had been forwarded, except for the few for which the proponents have not responded yet. The iSAS office will handle all proposals, whereas the JOIDES Office only deals with archiving.

B. Scheduling Decision

Keir Becker gave a report on this year's scheduling decisions. The JOIDES Office sent forward to SCICOM 23 full proposals and 4 APLs. At its August meeting, SCICOM had to schedule 5 remaining legs. Keir Becker expressed his satisfaction with the way proposals had been reviewed and scheduled during this meeting.

- He explained that the arena for JR operations was to be the Atlantic Ocean. Among the proposals forwarded to SCICOM, two had other working areas than the Atlantic, while other proposals were mission-specific. SCICOM decided by consensus to rank all full proposals regardless of their location and mission in order to achieve a purely scientific ranking.
- Of the 10 top-ranked proposals, 4 were mission-specific and could not be scheduled so that SCICOM passed motions about their handling.
- All proposals below the 13th rank were cut off for forwarding to OPCOM. OPCOM tried to honor SCICOM's ranking as much as possible. For details of the discussions Keir Becker asked the attendees to refer to the SCICOM/OPCOM minutes posted on the web. From the ones forwarded, OPCOM chose 4 possible options to be presented to SCICOM, each

- containing the top 4 and one additional N Atlantic proposal.
- SCICOM discussed the 4 options thoroughly and subsequently conducted a straw vote to see if one option had a simple majority. Option #2 was voted for by clear consensus.
 - Becker showed the final schedule, which has to be finally approved by EXCOM. He expressed his satisfaction with the schedule, which represents different aims of the Long Range Plan and of various PPGs and DPGs.
 - One of the mission-specific proposals was the Arctic proposal. The final report of the Arctic DPG was presented to and accepted by SCICOM. There was also a consensus that the 4 highly ranked mission-specific proposals be forwarded to IODP as high-priority science.

Becker asked Gilbert Camoin for news about the European initiative. There were no news to report but the initiative had developed very rapidly lately, giving reason to believe that maybe this can happen before the riser operation and possibly in 2004.

Becker also reported on ODP funds for the initial phase of the Arctic Project Management Group. Even though the proposal could not be scheduled, SCICOM expressed its utmost endorsement.

Jimmy Kinoshita doubted that any ship would be able to go up to 86 degrees N without being damaged. Becker referred to the final report of the Arctic DPG, which outlined a plan to use an armada of ships. SCICOM believed it was possible. Larry Mayer explained that the DPG put together icebreaker captains of various nations who stated unanimously that this was feasible.

3. iSAS Office (Attachment 4)

A. Minoru Yamakawa introduced the iSAS Office staff and gave a short summary of its history from IWG approval to its co-location and opening at JAMSTEC on June 1, 2001. The opening had been widely announced to the drilling community and an iSAS Office website had been opened.

He explained the iSAS Office's main mandate as providing administrative support to iPC and the co-chairs, providing support for panel meetings as well as handling the proposals, in close cooperation with the JOIDES Office. He stressed that the iSAS Office was determined to ensure a smooth transition from ODP to IODP.

As part of their current activities Yamakawa reported that a call for proposals was sent out on July 1, 2001. The iSAS Office provided administrative support for the August iPC meeting held in Oregon and also for the present joint SSEPs meeting.

B. Jeff Schuffert reported on the handling of the scientific proposals.

Active proposals had been transferred from the JOIDES Office to the iSAS Office as of late September. So far, the number of proposals transferred amounted to 61. For the Oct 1 deadline, the iSAS Office received 11 revised proposals and addenda as well as 11 new proposals, which makes 72 active proposals.

He explained that a decision had been necessary on which proposals to be reviewed by the SSEPs. It had been decided that the 22 new or revised proposals of the Oct 1 deadline were to be reviewed. These proposals were all completely available in an electronic version.

With regard to electronic proposal submission, he reported that the iSAS Office had been planning a new web site to upload proposals over the web in order to avoid technical problems related to the submission of large files. The web site might be ready next week. After that, the

iSAS Office would start contacting the proponents to request missing parts from existing proposals.

Answering Wonn Soh's question about the number of proposals for which the proponents had not replied yet, Jeff Schuffert said that for 7 proposals they had not yet received the proponents' approval.

He further stated that the iSAS office had also been contacting proponents for approval to post the abstracts on the web.

The iSAS Office had drafted general requirements for proposal submission in order to ensure a fair process. The details were open to discussion and Jeff Schuffert asked the panel members to comment.

→ The question was raised whether the use of color figures should still be discouraged. Julie Morris asked if the external review would also be electronically submitted. If not, that would be one reason for the b/w figure requirement. Kathy Gillis requested support from the iSAS Office with regard to the handling of figures, which had created problems as she tried to print out the proposals. Schuffert replied that the iSAS Office had expected problems but saw them as surmountable. Many problems seemed to be related to proposals from Asian countries with different keyboards. Problems also occurred where different versions of Adobe software were used. He expressed the iSAS Office's wish to cooperate.

Jeff Schuffert outlined the specific requirements for the different stages of proposals and explained that they had been drafted on the basis of the existing JOIDES guidelines. The only new ones were introduced for addenda.

→ Julie Morris asked whether site forms were allowed for addenda. Jeff Schuffert replied that changing sites would imply a substantial change in the scientific objectives of the proposal. By definition, this was ruled out for addenda. In that case, the iSAS Office would request the proponents to submit a revised proposal.

→ The question was raised whether preliminary proposals were still seen as a necessary step. Schuffert replied a preliminary proposal was not required but recommended.

Further, he explained the procedures for external review and seismic data, again mirroring what happened to JOIDES proposals:

I. The data bank and site survey will maintain their function.

II. Questions for external reviewers had not been made up yet, but the current ones would probably be adopted with a few changes. Previous reviews had been transferred together with the proposals themselves.

III. Out of the 61 proposals transferred to the iSAS Office, about 33 had been externally reviewed and forwarded to SCICOM. The iSAS Office asked the panels to consider how extensively they want to re-review these proposals. Hans Brumsack inquired whether it was intended to keep all the proposals in the system or whether there should be an "age limit". Jeff Schuffert explained that in the current system a proposal without any activity in 3 years would be deactivated. He also quoted another provision in the JOIDES guidelines stating that the SSEPs could say if they do not want to consider a proposal any more.

Finally, he briefly reported on the discussions at the August iPC meeting on the categorization of proposals. There was no authority to rank for iPC right now. The issue will go back to IWG.

4. iPC Report (Attachment 5)

J. Kinoshita welcomed everybody and outlined the activities during the transition phase from ODP to IODP: IWG has met 8 or 9 (???) times. Its next meeting will be held near Kobe so that the participants will witness the launching ceremony of the riser ship. He mentioned the CONCORD, COMPLEX and APLACON conferences as important mechanisms to develop the new program. The most important activities of the recently disbanded IPSC had been to publish the Initial Science Plan, to phrase recommendations for iSAS groups and panels as well as on managerial principles.

The decision by IWG in favor of a right for the participating countries to send appoint panel members was important for filling panels like the SSEPs in the transition to IODP.

According to IODP membership principles, the members are entitled to participate in drilling campaigns and to submit proposals.

The main functions of iPC were to report to IWG, to develop guidelines for the evaluation of proposals and to continue scientific planning.

He reported on the recent iPC Meeting in Portland, hosted by Sherm Bloomer and quoted Motion 1-02 and Consensus 1-03 passed during this meeting.

5. ODP TAMU Report (Attachment 6)

A. Gary Acton summarized recent activities:

- Security measures had been heightened after Sept 11. They include a photo ID for staff and visitors as well as a security guard during port calls. There will be no more open tours for the general public.
- With regard to publications, he quoted the wording for a new acknowledgment statement and described new guidelines for the use of keywords.

B. Acton gave a report on the results of Leg 197 (see attachment 6 for details).

C. Carlota Escutia reported on Leg 198. A nearly complete section from present to the Jurassic/Cretaceous boundary had been recovered. The cores recovered show great potential for high-quality paleoceanographic records, biochronology and magnetostratigraphy.

During this leg, the digital imaging system had been run for the first time. It had carried out about 2483 images, each image 45 MB a section which was then compressed to 1 MB. Escutia showed a few examples for the Cretaceous/Tertiary boundary and reported on open issues, which needed to be worked out in greater detail like data storage or the use of images in publications.

Juergen Thurow expressed doubts whether the leg had met the scientific objectives as outlined in the proposal. He stated that the Neogene was missing and that the SSEPs had been rather concerned about this proposal from the very beginning.

D. Hitoshi Mikada reported on Leg 196.

Kenji Kato asked how to get radioisotope samples from the ship to different laboratories. He explained the difficulties experienced by Japanese scientists. Acton replied that such samples would not be shipped as radioactive material since they would not pose a health risk. They had

received guidelines on this from SciMP. If they were not posted on the web, he suggested asking Tom Davies. Wonn Soh added that this had been discussed in SciMP but without conclusions. Acton replied this was an issue to be discussed by SciMP and referred to their next SciMP Meeting.

6. Logging Report (Attachment 7)

A. Tim Brewer reported that during Leg 197 one hole was logged and revealed exceptional results. The quality of the images was well and they correlated with signatures from the German spectrometer. The images would allow scientists to reconstruct the volcanic stratigraphy. The German DMT scanner can be used to map horizons, measure different strikes and dip, He described the successful reorientation of core 176-735 imaged by FMS. Individual pieces could be accurately positioned and reoriented.

Kathy Gillis asked about the core scribe. Tim Brewer explained that, even though some people worried about the calibration, the magnetic data from FMS ran well 2 times, Acton added that this could not be done regularly on board the ship, the German device had to be shipped specifically.

It was stated that ODP should make it a standard technique.

Brewer replied that it would cost up to 65,000 / 70,000 USD to buy such a device. Asked about the core length, he explained it was still limited to one meter at the moment. This parameter could, however, be influenced by a specification for the core length when buying a DMT scanner.

7. Hydrogeology Report (Attachment 8)

Liz Sreaton explained the overall goal of the PPG as defining the main problems of fluid flow in a global perspective. She briefly summarized the mandates as e.g. identifying cost-effective field and modeling strategies as well as assessing the requirements for pre-cruise activities in terms of modeling fluid systems (for details see Attachment 8).

An adaption of land-based methods to seafloor environments was needed and the PPG had proved successful in including the continental hydrogeologic community. She expressed hopes that this may attract some students to ODP and help make the land community aware of ODP.

She reported that, after 3 PPG meetings, the PPG chair Shemin Ge had reported to SCICOM in March 2001 and was now working on the final report, which should be done in December 2001. She briefly outlined the Table of Contents of the Final Report and the type settings described.

Julie Morris asked about the best way to continue educating panels and the community to integrate hydrogeology. Sreaton answered that planning a workshop was a good way. Also, she hoped that the final report would be useful.

When asked whether further expertise on panels was needed, Sreaton highly recommended this but stressed it could be difficult to get enough hydrogeologists on every panel.

With regard to dedicated hydrogeological legs, Tomochika Tokunaga explained that this had been discussed during the PPG meetings. There was a consensus not to insist on the dedication. Instead, they would advise to include hydrogeology in related legs.

Larry Mayer asked how the continental hydrologists had perceived ODP. Liz Sreaton replied they had been interested, but did not seem to rush to marine research. Nonetheless, we benefitted from their advice.

Julie Morris inquired whether ODP would lack the technology for standard measurements. As Liz Sreaton stated, ODP had the ability but would need greater frequency.

Juergen Thurow raised the issue of revising the discussion in connection with mission-specific platforms.

Keir Becker expressed his confusion about the handling of final PPG reports. He asked whether some were still outstanding. Julie Morris explained a recent shift of duties for the SSEPs chairs. When it had turned out to be difficult to negotiate with PPG chairs, Neil Lundberg and she decided to finalize the reports themselves. She added that for one report it was difficult to see its value for broader community.

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8. ODP legacy (Attachment 9)

A. Julie Morris explained the need to document where the current program ended and how to continue. The SSEPs had to focus on how it wanted to work in the interim and the new program. She asked for everybody's input in order to draft and finalize an outline to be presented to iPC.

- Keir Becker described the history of the ODP legacy issue, referring to EXCOM Motion 00-2-5. There had been efforts by SCICOM – a volume with 4-page contributions to four major areas of marine research - and JOIDES/JOI – the preparation of a “Greatest Hits” Volume. Requested from the SSEPs was a thematic volume that would serve the scientific community in detail.
- An outline of the SSEPs role in the ODP legacy prepared by Julie Morris was presented to the panel. She requested input from the panel members and asked for volunteers to work out recommendations for the different items on the list. With regard to item #5 on the list, Jimmy Kinoshita added that iPC would welcome any recommendations from SSEPs. He suggested as another possible issue the question how to effectively liaise between academia and other communities like industry e.g.
- Following Elspeth Urquhart's outline on Greatest Hits Vol II activities, the panel had a broad discussion about the form of the volume. Even though the panel supported the idea of a less US-centered, multi-authored volume to be published on the web, the panel also stressed the need for a printed version of a subset of selected highlights. There was a consensus that the SSEPs would be willing to advise JOI on which of the contributions to select.

B. Julie Morris invited the panel members to suggest further initiatives for cooperation besides the existing ones with InterMargins, InterRidge and ICDP.

- Panel members named Earth Scope, Neptune, DEOS, IMAGES, MESH, CSEDI and ION.
- In order to make better connections it was recommended to send liaisons to other initiatives. Julie Morris agreed that this had proved useful for mission-specific and margins proposal. Accordingly, a strong ICDP component in a proposal would call for an ICDP liaison. Hans

Brumsack explained that in Germany strong ties with ICDP existed already. He suggested sending watchdogs to specific meetings or inviting ICDP representatives to ODP meetings. Larry Mayer suggested that, for specific proposals, the SSEPs send a message to iCP so that the iCP liaison with ICDP could mediate if need be.

C. The following suggestions for review articles or special volumes were made: extreme climate/organic rich sediment (J. Thurow), fluid in subduction zones (M. Mottl with M. Kastner). Julie Morris also asked for input on possible topics for synthesis workshops. Both issues were to be revisited on the last day of the meeting.

D. Panel Structure and Procedures

I. Julie Morris quoted from panel members' comments on the efficiency of the panel she had collected prior to the meeting. She offered these comments as a starting point for a panel discussion.

- In order to improve the review process panel members asked whether it was possible to shift the proposal deadline so that the panelists could prepare better for the meeting. Jeff Schuffert replied that the iSAS Office hoped to switch entirely to electronic submission for the next proposal deadline. This would give more lead time. Switching the deadline would be difficult because it would have an impact on the overall meeting schedule. Julie Morris suggested addressing this item in one of the working groups.
- Further, she suggested to discuss, first, how reviews could describe better where the proposal stands and, secondly, a better way to eliminate unwanted proposals. Since this was a blank slate, the panel should feel free to make recommendations for new policies.
- The group discussion briefly discussed whether the current two panels should be reorganized as one panel with different working group. The panel agreed upon revisiting this issue in the morning session.

II. Since the range of technology for the new program had become broader, Julie Morris raised the question whether the panels had sufficient expertise on technological and scientific measurement issues to give the proponents technical advice early enough to fix problems. A related issue was the communication with the technical and scientific measurement panels. It was added that without liaisons from the operators during the transition phase, it was even more important to have liaisons to iTAP and SciMP. Larry Mayer suggested at least once a year a briefing of iTAP through the iPC chair and, secondly, identifying a iTAP watchdog for proposals with possible technical problems.

III. Julie Morris explained the problems with inconsistent SSP liaisons that had occurred in the past. She underlined the importance of effective communication between the panels, but reported also that the SSP chair was concerned about an increase workload for SSP members. There was a general consensus among panel members that it was very important to have consistent SSP liaisons. Enachescu stated a decline in the quality of the site survey of submitted proposals. The SSP would be strict about this in the future. Proponents should therefore be encouraged to submit proper data.

IV. Julie Morris explained in general how PPGs had worked. She asked whether the panel would perceive them as useful or, else, where problems could be identified. Panel members pointed out examples for both successful as well as less successful PPGs. They highlighted a few of the problems as e.g. a lack of guidance and feedback between both groups. Julie Morris saw a need to discuss this for the new program because the procedures were not well

defined yet.

- V. Larry Mayer reported that iPC had just started a discussion on long-term, multi-stage projects. There should be a mechanism to handle such projects. Colin Devey added that single-target, multi-platform projects should be included in the discussion.

As a result of the group discussion, the panels identified 3 working groups to discuss in greater detail the issues of: 1) long-term projects (headed by Ildefonse); 2) PPGs (headed by Sreaton); and 3) routine practices (headed by Mikada). The working groups reported back to the SSEPs on Thursday morning and legacy issues were summarized on Saturday morning.

Meeting resumes at 18:00.

9. Lectures

- A. Kiyoshi Suyehiro on JAMSTEC and OD21
- B. Ikuo Kushiro on the Institute for Frontier Research on Earth Evolution (IFREE)

Thursday, 15 November 2001, Joint Morning Session

Cont . 6. Logging Report

- U. Ninnemann reported on logging accomplished during leg-198.

The joint session adjourned and the working group meetings started separately as scheduled in the previous day. Finally, a joint session resumed at 10:30 for reporting a summary report of the working groups (long-term projects, PPGs, routine practices).

Cont. 8. ODP Legacy – Working Group Reports

A. Long Term Project working group

Benoit Ildefonse summarized the suggestions made by the Long-Term Projects (LTP) working group. The group had identified two types of LTP: 1) theme-related long-term projects, 2) site-related long-term projects using multi-platforms. Ildefonse presented the mechanism the group had developed to handle such projects. There was some concern that such a routine would not simplify the overall process. It was felt, however, that it would work provided there was strong commitment from the proponents and clear requirements stipulated by the program. In the ensuing discussion the issue of site survey was raised again. The panel members expressed their concern about the funding of site survey for riser and MSP operations.

B. PPG working group

As Juergen Thurow reported, the PPG working group concluded that there was a need for PPGs. Judging from past experience they had addressed such topics as to how to effectively guide and educate PPGs. They recommended pushing to finalize outstanding reports and have the PPG chairs report to the SSEPs after the final PPG meeting. As to the conflict of interest issue, the working group did not perceive this as a big problem as long as the results were widely distributed. Therefore, the program should encourage outside publication in addition to the final

report. The working group recommended publishing an open call for possible PPGs and also suggested several new PPGs.

The panel then discussed how best to attract other earth science communities as well as industry. Julie Morris suggested phrasing a message that the SSEPs were considering a range of PPGs to propose to iPC, possibly including an Industry / IODP PPG as high priority. There was a general consensus that the community should be widened.

C. Hitoshi Mikada reported that the working group agreed on keeping the current panel structure, with working groups reviewing proposals in between the I and the E panels. They recommended 6 weeks for panel members to analyze proposals and suggested that at first abstracts be forwarded to the chairs. It was also recommended that proposals be sent to SSP watchdogs. For proposals that proved difficult to review the group proposed external reviews. They called for an evaluation process that was transparent and would encourage proposal submission. When evaluating a proposal, the panel members should review:

- background and objectives
- hypotheses and methods
- relationship with the Initial Science Plan
- drilling necessity (depth / # of holes)
- expertise of the proponents

Furthermore, the working group suggested that the ISSEPs chairs attend the iPC meeting in order to ensure a good information flow.

Thursday, 15 November 2001, Afternoon Session

10. iESSEP/ISSEP Mandates and Categorization, Proposal Reviews.

Gilbert Camoin opened the afternoon session and briefly reviewed panel members’ duties. Before the panels split, the panel discussed specific aspects of the evaluation process. The question was raised whether it was appropriate for the panel to request lacking site survey data or to give guidance on the platform to be used. Gilbert Camoin explained that, according to discussions during the last iPC meeting, it was not the iSSEPs’ responsibility to judge drilling requirements. The proposals should be evaluated purely by their science. Accordingly, it was a iSSP ‘s responsibility to request additional site survey information.

Following the discussions, a new proposal review form was developed by a working group and presented to the panels (**Attachment 10**). After its wording had been finalized, the reviewing process started. In addition, two separate working group meetings (“Deep Biosphere” and “Environmental change”) were scheduled for the evening.

During the review meetings (Nov.15-17) the panels considered the following proposals:

Proposal ID	Target Area	PI or contact
477-Add4	Okhotsk/Bering Seas	Takahashi
482-Full3	Wilkes Land	Escutia
505-Full4	Mariana Convergent Margin	Fryer
545-Add	Juan de Fuca Ridge	Fisher

549-Full3	Arabian Sea OMZ	von Rad
551-Full	Hess Deep	Gillis
552-Full3	Bengal Fan	France-Lanord
567-Full	S. Pacific Paleogene Transect	Rea
570-Add2	Fast-spreading Crust	Haymon
595-Full2	Indus Fan and Murray Ridge	Clift
596-Pre2	Rockall-Hatton Region	Morrissey
600-Pre	Canterbury Basin	Fulthorpe
601-Pre	Iheya Ridge	Takai
602-Pre	Tropical Epeiric Seas	Edgar
603-Pre	Nankai Trough	Kimura (Tobin)
604-Pre	Ulleung Basin	Han
605-Pre	Asian Monsoon	Tada
606-Pre	Mesozoic Greenhouse	Nishi
607-Pre	New Jersey Slope	Dugan
608-Pre	NW Pacific Cretaceous Greenhouse	Hasegawa
609-Pre	Himalaya-Bengal System	Spiess
610-Pre	W. Florida Margin	Mallinson

Saturday, 17 November 2001, Morning Session

Cont 10. Proposal Review - Joint Working Group Reviews

The following panel members provided a brief summary of the group's discussions and final recommendations regarding the proposals considered:

Prop 505-Full4 D. Vanko (J. Morris conflicted)
 Prop 535 D. Blackman (D. Vanko conflicted)
 Prop 601-Pre J. Hayes and H. Yamanoto
 607-Pre L. Screatton
 596-Pre2 J. Thurow (P. Clift conflicted)
 595-Full2 B. Ildefonse
 552-Full3 D. Vanko
 609-Pre C. Devey

The following proposals, which were considered to be of interest to both panels, were presented by the watchdogs of each panel:

- H. Brumsack/M. Kominz
 606 H. Weissert/M. Kominz
 604 C. Ravelo/B. Housen
 600 H. Matsuda/M. Yamano

After these discussions and reviews after the meeting, the iSSEP’s panel assignment, watchdogs, dispositions were summarized as follows:

Proposal	Panel(s)	Lead Watchdogs	iSSEPs disposition
477-Add4	E	Weissert	Forward to iPC
482-Full3	E	Eyles/Matsuda	Forward to iPC
505-Full4	I/E	Vanko (I) Yamamoto (E)	Submit a revised proposal
545-Add	I/E	Blackman (I) Sreaton (E)	Forward to iPC
549-Full3	E	Brumsack	Forward to iPC
551-Full	I	Blackman	Forward to iPC
552-Full3	E/I	Soh (E) Vanko (I)	Submit an addendum including site survey data when available
567-Full	E	Thurrow	Submit a revised proposal
570-Add2	I	Gillis	Submit a revised proposal
595-Full2	I/E	Ildfonse (I) Filippelli (E)	Submit a revised proposal
596-Pre2	I/E	Gillis (I) Fulthorpe/Brumsack (E)	Submit a new proposal
600-Pre	E/I	Matsuda (E) Yamano (I)	Develop to full proposal
601-Pre	E/I	Hayes (E) Devey (I)	Develop to full proposal
602-Pre	E/I	Brumsack (E) Kominz (I)	Submit a revised pre-proposal
603-Pre	I	Tokunaga (I)	Develop to full proposal
604-Pre	E/I	Ravelo (E) Teagle (I)	Submit a revised pre-proposal
605-Pre	E	Ravelo	Develop to full proposal
606-Pre	E/I	Weissert (E) Kominz (I)	Submit a revised pre-proposal with substantial inputs
607-Pre	E/I	Fulthorpe/Sreaton (E) Ashi (I)	Develop to full proposal
608-Pre	E	Thurrow	Develop to full proposal
609-Pre	E/I	Kodama (E) Devey (I)	Long Term Project - Organize a workshop & submit a full proposal
610-Full	E	Ravelo	Submit a revised proposal

Cont 8. ODP Legacy (Attachment 11)

Julie Morris summarized the results of the ODP Legacy discussion during the SSEPs/iSSEPs meeting as follows:

A. iSSEPs Structure and Procedures

- iSSEPs considered alternative panel structure, and endorse 2-panel structure (E- and I-iSSEPs) during interim and note the critical role of joint working groups to foster interdisciplinary proposals.
- They recommend that OD21 and JOIDES coordinate panel rotations to ensure necessary expertise. iSSEP chairs should be contacted about expertise needed on the panel.
- They recommend that the iSAS Office approve guest invitations to an iSSEP meeting, as deemed necessary by iSSEP chairs, to ensure necessary expertise.
- They will work with the iSAS Office to increase time between proposal deadlines and panel meetings to 6 weeks.
- iSSEPs have revised the proposal review form to allow clearer communication with proponents (see Attachment 10).

- They recognize the scientific focus of the iSSEPs but note the need for greater technical expertise at panels, as well as the need for logging, operations input during interim. Recommendations:
 1. iSSEP liaison attend the annual joint meeting of the Technical Advisory Panel and iSciMP
 2. Liaison from TAP/iSciMP attend iSSEPs meetings
- To improve coordination with other organizations, they recommend that iSAS add to the cover sheet: Companion proposal? Yes or No. If yes, which organization?
- If ICDP is companion proposal, iSSEP chairs can invite ICDP watchdog to panel meetings.
- They recommend that iSSP establish more consistent liaison with iSSEPs, ideally in form of permanent liaison with 2-3 year terms. iSSEP and iSSP chairs should exchange watchdog assignments and panel reviews at earliest opportunity.
- With more than 70 proposals in the system, iPC may wish to consider adding a criterion for considering proposals at scheduling meetings: iSSP readiness level.

B. SSEPs and PPGs

- They urgently request SSEP chairs and PPG chairs to finalize outstanding PPG reports and post them on the web site for use in interim and IODP proposal preparation.
- They endorse an important role for PPGs in the future program, and believe that now is the time to establish some.
- They believe that conflict between PPGs as proponent group and advisory group is manageable.
- They recommend that PPG minutes be posted on web site before iSAS office approves next meeting.
- They recommend that PPG chairs report to SSEPs after the final meeting.
- They recommend that PPG proposals may originate from scientific community as well as iSSEPs, SCICOM and iPC. PPG proposals should include brief description of need for, focus of, and expected product from PPG.
- They believe that SSEP involvement in staffing PPG must occur early in process.

C. SSEPs and Long-Term Projects

- iSSEPs have already received multi-leg and riser proposals. IODP guidelines must be established with all deliberate speed.
- They emphasize that any long-term riser programs require commitment to site surveys, technical developments, and science funding as well as drilling. A mechanism to ensure these essential activities in timely manner must be developed.
- They suggest that iSAS develop new format for proposals deemed to be long-term project by iSSEPs, with increased page limits. Based on pre- or full proposals, iSSEPs invite proponents to submit proposal for long-term projects.
- They recommend that iSAS annually forward proposals for long-term projects, for information purposes and discussion to iPC.
- They encourage workshops as part of proposal development process to ensure maximum expertise and input, community support, open process.

D. SSEPs and Legacy Activities (publications and outreach)

- They note that it is desirable to develop legacy activities that can also broaden IODP constituency and participation, necessary to staff program with MSP, riser and riser-less drilling.
- They recognize and appreciate the educational and outreach aspects of web-based “Greatest Hits”. They respectfully note that 100-200 contributions are unlikely to all be “Greatest”. They recommend professional preparation of selected contributions in hard copy for funding agencies.
- They note that “Achievements and Opportunities” volume, published in a place such as Scientific American, could be great outreach.
- They recommend that IODP build a library of high-quality downloadable figures for educators (from A and O, JOI distinguished lectures, Leg highlights...).
- They recommend that iSAS/JOIDES web sites include links to wide range of science programs and initiatives with ties to ocean drilling. SSEPs list attached.
- They recommend that iSAS/JOIDES websites establish Legacy section that briefly describes, and where possible provides links to, legacy documents, workshops, publications...

SSEPs members propose to undertake, as individuals, a range of legacy activities intended to maximize impact of ODP on our scientific communities:

Review articles

Chemistry of fluids in subduction zone, M. Mottl

Synthesis of decollement structure and hydrology in accretionary prisms, H. Tobin

Thematic volumes

Asian monsoons on Milankovitch and sub-milankovitch time scales, S. Clemens, ed., Marine Geology

Geomagnetism and Ocean drilling, B. Housen (under discussion)

Synthesis workshops and publications

Organic-rich sediments as paleoclimate indicator, J. Thurow, Geol. Soc. London

Continent Ocean Interactions within E. Asian Marginal Seas, P. Clift, Chapman Conference & AGU monograph

12. Other Business

A. Proposal Grouping

Propose replacing the five bulleted statements with:

→ Following discussions on what format to us in ranking or grouping mature proposals (e.g., grouping “E” and “I” separately or together), the iSSEP Chairs decided to continue working with the SSEP members (via e-mail etc.) in order to reach a consensus in time for the iPC/SciCom meeting in March. This preliminary consensus, including comments from iPC, will then be considered by the iSSEP members at their May meeting.

- As indicated by iPC at the 2001 August meeting, iSSEPs will group all proposals by 2003 Spring iSSEPs meeting.
- The necessary number of watchdogs assigned to each proposal is at least two for the

evaluation of large number of proposals.

- They recommended that the iSAS office should take a role to contact the proponents of carried-over and active proposals to notify both the age limit of 3 years and the change in the Initial Science Plan and to encourage them to activate their proposals.
- The grouping will be done purely in science independently from drilling platforms.
- They recognized that iPC is responsible in the treatment of any multi-platform or long term projects and that project planning could start after the interim period.

B. Next Meeting

The next meeting will be held at the University of California at Santa Cruz from June 3-6, 2002 (Note: Santa Cruz meeting dates were changed to June 6-9, 2002 after the meeting). Christina Ravelo will host the meeting. A field trip is planned for June 2.

C. Resolutions to outgoing members

Craig Fulthorpe, Kyo-Yen Wei, Bernie Housen, Harold Tobin, Steve Clemens, Don Fisher, Peter Clift, Masao Nakanishi:

The JOIDES chairs and the iSSEPs greatly appreciate the generosity of the JOIDES panelists who traveled to this meeting. Their knowledge, enthusiasm and experience greatly eased the transition to the interim program.

ISSEP will miss Chris Small's thoughtful insight, his combination of geologic, tectonic and geophysical expertise, and his excellent work between the panels, especially with sea level and climate-tectonic proposals.

The SSEPs have greatly benefited from Mike Bickle's intellectual rigor, the breadth and depth of his interests and knowledge, and his fierce delight in scientific debate, conducted with energy and humor.

ISSEP would like to thank Don Fisher for his unstinting dedication to the work of the panel. His thorough and insightful presentations of proposals were a joy to experience. His concise, well-formulated comments at all times during panel work helped keep the discussion focused and moving along.

The members of the panel grew to respect his expertise in all aspects of tectonics deeply. We will miss his charming, reserved and self-effacing nature. Working with you was a real pleasure, Don.

The SSEPs thank Steve Clemens for his numerous and razor sharp comments on all aspects of high-resolution paleoceanography not only to the southwest of Afghanistan but on a truly global scale.

Only few of us had the chance to experience the humorous side of Steve (he just didn't attend enough field trips), those who did will never forget. The others will be sad to lose a panel member who is so outspoken and knowledgeable.

ESSEP deeply appreciates the consistent, always precise and very constructive input of Juergen Thurow. He served on ODP panels both as a German and British representative, clearly indicating his broad international affiliation.

The panel will lose a lot of expertise and “memory” and feels happy that he’ll possibly serve as an alternate member for some time.

We thank Julie for nurturing us as well as the proposals. She has carried the program to new heights. Whether it was 654-full3 or APL-35, she knew who wrote it, what it was about, and who was conflicted. We will all be conflicted without her.

Byrne thanked the iSAS Office and JAMSTEC for hosting the meeting and closed the meeting at 12:00

List of Attachments:

- Attachments 1: MEXT summary
- Attachments 2: NFS news
- Attachments 3: JOIDES Office and SCICOM report
- Attachments 4: iSAS Office report
- Attachments 5: iPC Report
- Attachments 6: ODP TAMU Report
- Attachments 7: Logging Report
- Attachments 8: Hydrogeology Report
- Attachments 9: ODP Legacy, part 1
- Attachments 10: New proposal review form
- Attachments 11: ODP Legacy, part 2

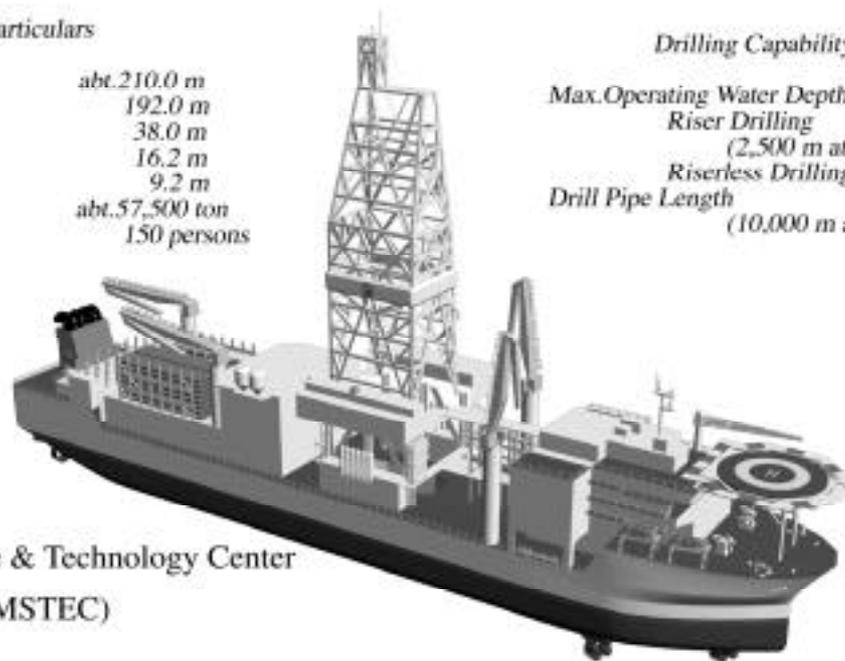
Deep-Sea Scientific Drilling Vessel “CHIKYU”

Principal Particulars

<i>Length Overall</i>	<i>abt. 210.0 m</i>
<i>Length (bpp)</i>	<i>192.0 m</i>
<i>Breadth (mid)</i>	<i>38.0 m</i>
<i>Depth (mid)</i>	<i>16.2 m</i>
<i>Draught (mid)</i>	<i>9.2 m</i>
<i>Gross Tonnage</i>	<i>abt. 57,500 ton</i>
<i>Max. Complement</i>	<i>150 persons</i>

Drilling Capability

<i>Max. Operating Water Depth</i>	
<i>Riser Drilling</i>	<i>4,000 m</i>
	<i>(2,500 m at 1st stage)</i>
<i>Riserless Drilling</i>	<i>7,000 m</i>
<i>Drill Pipe Length</i>	<i>12,000 m</i>
	<i>(10,000 m at 1st stage)</i>



Japan Marine Science & Technology Center
(JAMSTEC)



Nov. 6, 2001

NSF Highlights

- FY 2001 (1 Oct 2000-30 Sept. 2001) budget increased by \$420,000 above \$46.1M to support planning for long-term data archiving, JANUS database transition to IODP, and to cover increased ODP fuel
- FY 2001 ODP Program Operations: ~64% NSF, ~36% international
- FY2002 target budget for operations: \$46.2M with fuel costs budgeted at \$250/metric ton. If greater, NSF will consider request for additional resources.
- NSF requested ODP Program plan for 2003 and phase-out 2004-2007, by 1 March 2002 for consideration by National Science Board, summer 2002. NSF plans to support ODP phase-down activities 2004-2007, without partner contributions. Phase out plan includes: complete demobilization before end of FY 2003; completion of legacy documentation; presentation of ODP scientific & physical assets (transfer to IODP to extent possible).
- NSF Division of Ocean Sciences reorganization:
 - division director: James Yoder
 - Ocean Section (Biological, physical & chemical oceanography): Larry Clerk
 - Integrative Programs Section (ship ops, instrumentation and tech. Services): Mike Reeve
 - Marine Geosciences Section (ODP, Marine Geology & Geophysics): Don Heinrichs, interim

NSF Highlights II

NSF support of ODP Science: USSSP (\$5.5M, FY 2001)
& unsolicited proposals (\$10M in FY 2001)

Field Programs Supported in 2001:

- 1) MCS & OBS, Gulf of Aden rifting
- 2) MCS, Mid-Atlantic Ridge megamullions
- 3) Heat flow, eastern Cocos plate
- 4) MCS, Gulf of Corinth
- 5) Nankai CORK instrumentation (Leg 196)
- 6) Wire-line CORK installation, E. Pacific

Field Programs, FY 2002:

- 1) Sediment drifts in N. Atlantic
- 2) Fluid venting, Mariana arc
- 3) VSP on Hydrate Ridge (Leg 204)
- 4) Heat flow, E. Cocos plate
- 5) Gulf of Mexico gas hydrates
- 6) Return to CORKs in Galapagos area
- 7) CORK instrumentation, Costa Rica (Leg 205)
- 8) MCS, OBS program (US/Japan), Mariana arc
- 9) MCS study, Gulf of California

**August 2001 SCICOM Global Rankings
Forwarded to OPCOM**

Rank Proposal			Mean	S.D.	
1	533	Arctic Ocean	2.53	2.80	MSP
• 2	525	MAR Peridotite	3.60	2.56	
• 3	559	Walvis Ridge	6.60	3.31	
• 4	522	Fast Spreading	7.53	5.82	
• 5	577	Demerara Rise	9.33	5.56	
6	519	S. Pac. Sea-Level	9.93	3.97	MSP
+ 7	557	Storrega Hydrates	10.47	5.12	
8	564	New Jersey Shelf	10.93	4.88	MSP
+ 8	594	Newf. Margin	10.93	6.43	
10	548	Chicxulub	11.00	5.21	MSP
11	575	G. of Aden	11.27	5.88	
+ 12	539	Blake Hydrates	11.40	4.56	
+ 13	455	Laurentide Ice Sheet	11.53	6.19	

Four OPCOM scheduling options:

Each has 5 JR legs ending Sept for Galveston de-mob

- 4 top-rated JR programs in every option for normal leg length

Modest transit penalty for Walvis: 35 of 45 requested on-site days

- + One more N. Atl. Program in each option

Why 4 options?

- statistical closeness of ranks 7 and higher
- transit penalty for Storrega: only ~30 days on site

Option #1: Top 4 legs plus shortened Storrega hydrates

Option #2: Top 4 legs plus Newfoundland Margin

Option #3: Top 4 legs plus Blake hydrates

Option #4: Top 4 legs plus LISO

AUGUST 2001 MOTIONS AND CONSENSUS ACTIONS

II. FY2003 SCHEDULING

SCICOM Consensus 01-02-09 : SCICOM defines the pool of programs to be ranked for FY2003 to comprise all the full proposals included in the FY03 Drilling Prospectus.

SCICOM Consensus 01-02-10: SCICOM forwards the top 13 ranked drilling proposals to OPCOM for possible scheduling in FY2003.

SCICOM Motion 01-02-12:

SCICOM approves the following option presented by OPCOM for the FY03 operations schedule:

Leg	Proposal
Leg 206	An in-situ section of oceanic crust spread at superfast rate
Leg 207	Demerara Rise: equatorial Cretaceous and Paleogene paleo. transect
Leg 208	Early Cenozoic extreme climates: the Walvis Ridge transect
Leg 209	Drilling mantle peridotite along the Mid-Atlantic Ridge from 14° to 16°N
Leg 210	Drilling the Newfoundland half of the Newfoundland-Iberia transect

Pisias moved, Robertson seconded, 15 in favor, none opposed

SCICOM Consensus 01-02-14: SCICOM endorses the OPCOM consensus to switch Legs 203 (Costa Rica) and 205 (Equatorial Pacific ION Observatory).

SCICOM Motion 01-02-11: SCICOM forwards APL-19 "Nu'uanu Landslide" to OPCOM for consideration in the drilling schedule.

Wiens moved, Fryer seconded, 14 in favor, none opposed, 1 abstention (Rea)

SCICOM Consensus 01-02-15: SCICOM accepts OPCOM Consensus 01-02-05 for scheduling APL 19 if the ship leaves port for Leg 200 one day early.

August 2001 SCICOM Global Rankings

Rank Proposal			Mean	S.D.	
1	533	Arctic Ocean	2.53	2.80	MSP
2	525	MAR Peridotite	3.60	2.56	209
3	559	Walvis Ridge	6.60	3.31	208
4	522	Fast Spread Crust	7.53	5.82	206
5	577	Demerara Rise	9.33	5.56	207
6	519	S. Pac. Sea-Level	9.93	3.97	MSP
7	557	Storegga Slide	10.47	5.12	
8	564	New Jersey Shelf	10.93	4.88	MSP
8	594	Newf. Margin	10.93	6.43	210
10	548	Chicxulub	11.00	5.21	MSP
11	575	G. of Aden	11.27	5.88	
12	539	Blake Hydrates	11.40	4.56	
13	455	Laurentide Ice Sheet	11.53	6.19	
14	572	N. Atl. Neogene	12.20	5.06	
14	547	Subsurface Biosphere	12.20	5.81	
16	512	MAR Core Complex	12.93	5.16	
17	561	Caribbean LIP	14.07	5.72	
18	584	TAG II	15.33	4.01	
19	589	GoM Overpressures	15.87	6.36	
20	573	Carbonate Mounds	16.67	6.70	
21	543	CORK hole 642E	17.47	5.29	
22	581	GoM Coralgal Reefs	20.47	2.61	MSP
23	554	GoM Hydrates	21.47	1.55	

JOIDES Office 2001-2003 Transition in Advisory Structure

- JOIDES panels will continue to meet as needed through end of ODP drilling
 - Interim Science Advisory Structure and Support Office for IODP are expected to phase in during 2001, as described by Ted Moore
 - JOIDES and iSAS panels will have coordinated meetings during transition period
 - JOIDES Office and iSAS Support Office will coordinate proposal forwarding from ODP to IODP
-
-

EXCOM Motion 00-2-5: EXCOM requests SCICOM to develop an ODP legacy that includes, among other things, the following:

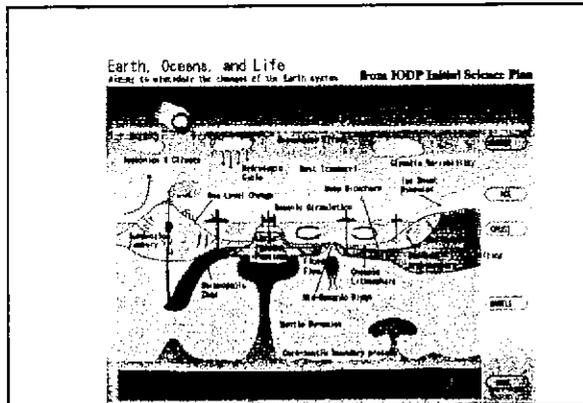
- a list of ODP's greatest hits,
- a database of publications related to ODP results, as already begun by JOI and TAMU,
- written documentation from SCICOM, the SSEPs, and other panels about major ODP-related results, by field, to accompany the list of greatest hits and the publications database,
- a description of major technical developments, from TEDCOM with help from LDEO and TAMU,
- a reply to the question "How well did ODP do in answering the questions originally asked?" This study should consider all phases of ODP (*i.e.*, it should extend back to COSOD 1).

EXCOM would like to receive a draft report on the ODP legacy at its June 2001 meeting.

Harrison moved, Comas seconded; 14 in favor, 1 absent (Raleigh).

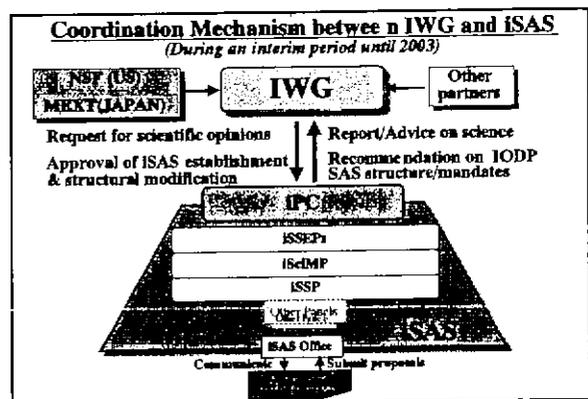
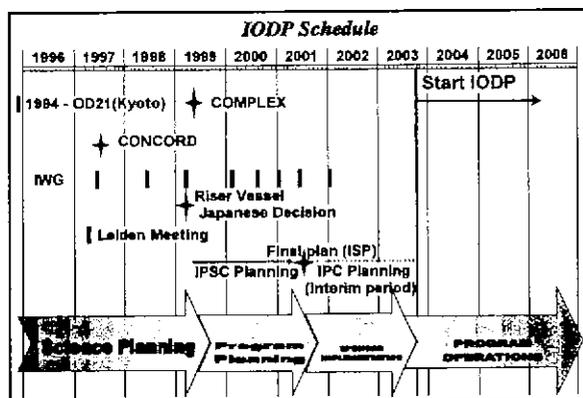
iSAS Proposal Process

Stage	I. Preliminary proposal	II. Full proposal	IIIa. External review	IIIb Seismic data	IV. Categorization
Duration	6 months	6 months	6 months		4 months
Step 1	Proponents prepare preliminary proposal and submit to iSAS Office.	Proponents prepare full proposal and submit to iSAS Office.	iSAS Office obtains external reviews and forwards them to proponents and iSSEPs. External reviewers remain anonymous.	Proponents prepare seismic data and submit to ODP site-survey data bank.	iPC reviews and categorizes proposal within framework of IODP Initial Science Plan and writes summary for proponents.
Step 2	iSSEPs review proposal and advise proponents how to proceed.	iSSEPs review proposal and advise proponents how to proceed.	Proponents prepare response to external reviews and submit to iSAS Office before next iSSEPs meeting.	iSSP and iPPSP review seismic data and classify readiness of proposal for drilling.	
Step 3	Proponents repeat Stage I or advance to Stage II, as advised by iSSEPs	Proponents repeat Stage II or advance to Stage III, as advised by iSSEPs	iSSEPs review entire proposal package and write summary for iPC. Proposal advances automatically to Stage IV.		



IODP Membership Principles

- **Member's Rights**
 - Participate in all drilling cruises
 - Represented on all panels
 - Represented on IWG/its successor
 - Have access to data/samples/scientific & technical results
 - Submit proposals to the advisory structure



Functions of iPC

- Report and advise to IWG
- Facilitate establishment of IODP SAS
- Develop guidelines for evaluations on proposals
- Continue scientific planning of IODP

Responsibilities of iSSEPs

- Examine & review proposals
- Nurture to maturity by interacting with proponents & PPGs
 - Provide proponents with review & comments
 - Select proposals for external comments
 - Provide iPC with review & comments

Motion1-02: The iPC will accept the chairs of the panels in the JOIDES SAS as the chair of the corresponding panels in the iSAS.

Consensus 1-03: The iPC approves the following nominees to serve as co-chairs of the iESSEP, and the iSSP.

iESSEP: G. Camion & K. Takahashi

iISSEP: T. Byrne & H. Mikada

iSSP: S. Kuramoto & R. Scrutton

Chairs propose: Initial grouping will be done by grouping scientific theme. Then categorize the proposals in each main thematic thrust (see ISP) as I, II, or III based on level of maturity. Chairs expect that iPC would receive mostly Category I and II proposals and very few from Category III. Chairs assert that IODP and the proponents will benefit if the iPC could somehow limit the number of proposals that the environmental (IODP) PC would initially have to consider.

***ODP SCIENCE OPERATOR'S
REPORT TO THE SCIENCE STEERING
AND EVALUATION (SSEP) PANEL***

JAMSTEC

14-17 November 2001

**Review of Activities
May-November 2001**



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Recent Activities	2
Ship schedule	4
Scientific Staffing	6
Summary of Leg Operations/Overhead Copies	8

Recent Activities

Sample Distribution, Data Distribution, and Publications Policy Revision:

The Sample Distribution, Data Distribution, and Publications Policy was revised in May 2001 as follows:

- 1) Reference to policy guidelines for Legs 160 through 174 were removed from Section 4.4.b. and Appendixes A and B.
- 2) The acknowledgement requirements in the publication guidelines were presented in greater detail:
 - Acknowledge ODP in all publications that result from the data collected from ODP samples using the following wording:

This research used samples and/or data provided by the Ocean Drilling Program (ODP). ODP is sponsored by the U.S. National Science Foundation (NSF) and participating countries under management of Joint Oceanographic Institutions (JOI), Inc. Funding for this research was provided by _____.
 - Include the words "Ocean Drilling Program," "scientific ocean drilling," and/or "ocean drilling" as key words provided to the journal or book publisher of the manuscript. (This will allow the legacy of ODP to be tracked by bibliographic databases such as GeoRef.)

Legacy documents

As part of the ODP phase-out, ODP/TAMU is committed to provide legacy documentation, including databases, drill and lab equipment, core repositories and other legacies. This process is currently being planned in conjunction with JOI and EXCOM and will carry on through FY'07. The compilation of legacy documentation is an integral part of the ODP contract and will be conducted with input from the scientific community, including SciMP. A list of ship equipment by lab and a list of associated lab manuals (cookbooks) is available, but the format and level of detail of the other requested items has not been established. The main mission of ODP/TAMU is currently to provide high-quality services on the ship, whereas work on the legacy documentation is a major component of the ODP phase-out that will be conducted over the next 2-5 years.

Changes in JOIDES Resolution arrival and departure times

Currently port calls are scheduled for up to five days starting with the *JOIDES Resolution* arriving at 0600 hr and departing at 0600 hr. Historically, the ship has tended to arrive early because of uncertainties associated with estimating long transit times. Since the off-going ODL crew typically flies out on the afternoon of the day the ship is scheduled to arrive in port, delays in clearing Customs and Immigration can create problems. To maximize on-site time, it has been proposed that the agreed upon arrival and departure times should be changed to the afternoon (1500 hr.). This would typically allow Customs formalities to be taken care of the day of the ship's arrival. The off-going crew (ODL and ODP/TAMU) and scientists would remain on board the night after the ship's arrival and crossover and crew change would still take place as

planned on the first full day of port call. The ship's departure would similarly be moved up to the afternoon of the day port call activities are completed. Before making a final decision to change, the proposed arrangement will be tried on a trial basis on Leg 199

Security

Following the tragic events of September 11, security has been heightened throughout the U.S. ODP is no exception. New port call security measures have been introduced. The principal changes are:

- a security guard will be present on the ship at all times;
- a photo ID will be required of everyone wishing to board the ship (staff and visitors) and this will be matched with a roster provided to the guard;
- there will be no more open tours for the general public; tours or private visits will be by prior arrangement only.

Credit Cards:

On Leg 199 we will begin on a trial basis allowing the use of credit cards to purchase ODP store items and e-mail on the ship. Accepted credit cards are Visa and MasterCard.

Core Digital Imaging

The new GeoTek digital imaging system (DIS) was delivered to ODP/TAMU in early July. This system incorporates a linescan camera and has the capability to sequentially scan four core sections at a time. After testing and acceptance, the system was shipped to Yokohama and installed on *JOIDES Resolution* at the beginning of Leg 198 (end of August). The DIS ran well during Leg 198 and no major problems were encountered. The scanner carried out a total of 2,483 images of core sections at 254 dpi resolution. Compressed (1 Mb) versions of the images are available on the ship and can be downloaded using the MrSid (plugin and stand alone application). Conventional film photography of the cores continues, with the film being the primary archive of image. Presently we are reviewing data usage for ODP publication purposes. Information Services is examining how to concatenate the core section images chosen (now done by the science party) and providing spectral analysis capabilities (e.g., RGB values)

Microbiology

We expect the next big "push" for microbiology studies within ODP to occur on Leg 201 (Feb.-April, 2002) which is focussed on deep biosphere studies along the Peru margin. The planned use of radioisotopes on Leg 201 will be a new development. In late September an order was placed for a portable van, based on UNOLS standards, for use on *JOIDES Resolution* for radio isotope studies. Delivery to TAMU is scheduled for the beginning of January 2002. Additional equipment will then be installed before shipping the van to San Diego, CA. The van will be installed on *JOIDES Resolution* in San Diego at the beginning of Leg 201.

Funds from the WHOI LexEn grant have been used to purchase a scintillation counter for installation in the radioisotope van. The instrument was purchased by WHOI and shipped to ODP/TAMU in late September. Other equipment items for the van will be ordered over the coming couple of months.

Ship Schedule

Schedule of Science Operations for the *JOIDES Resolution*: May, 2001 – September, 2003

	Leg	Port (Origin)	Dates ¹	Total Days (port ² /sea)	Days at Sea (transit/on site)	TAMU Contact	LDEO Contact
196	Nankai II [*]	Keelung	3 May – 2 July '01	60 (5/55)	9/46	A. Klaus	S. Saito
197	Hotspots	Yokohama	2 July – 28 August '01	57 (5/52)	17/35	D. Scholl	F. Einaudi
198	Shatsky Rise	Yokohama	28 August – 24 October '01	57 (5/52)	17/35	M. Malone	TBN
199	Paleogene Pacific	Honolulu	24 October – 17 December '01	54 (5/49)	13/36	C. Escutia	P. Fothergill
200	H ₂ O Observatory	Honolulu	17 December – 31 January '02	45 (5/40)	12/28	G. Acton	Y. Sun
201	Peru Biosphere	Mazatlan	31 January – 2 April '02	61 (5/56)	21/35	J. Miller	TBN
202	SE Paleooceanography	Valparaiso	2 April – 1 June '02	60 (5/55)	20/35	P. Blum	U. Niinemann
203	Eq. Pac. ION	San Francisco	28 September – 3 November '02	36 (5/31)	15/16	G. Acton	TBN
204	Gas Hydrates ³	San Francisco	31 July – 28 September '02	59 (5/54)	6/48	C. Richter	D. Goldberg
205	Costa Rica	Panama City	1 June – 31 July '02	60 (5/55)	12/43	A. Klaus	TBN
206	Fast Spreading Crust	Balboa	6 Nov '02 - 5 Jan '03	60 (5/55)	6/49	TBN	TBN
	Transit	Balboa	5-13 January	8 (2/6)	0/8	TBN	TBN
207	Demerara Rise	Barbados	13 Jan. - 8 Mar. '03	54 (3/51)	13/38	TBN	TBN
208	Walvis Ridge	Rio de Janeiro	8 March - 9 May	62 (5/57)	18/39	TBN	TBN
209	MAR Peridotite	Rio de Janeiro	9 May - 10 July	62 (5/57)	17/40	TBN	TBN
210	Newfoundland Margin	Bermuda	10 July - 9 September	61 (5/56)	6/50	TBN	TBN
	Transit	St. John's	9-21 September	12 (1/11)	11/0	TBN	TBN
	Demobilization ⁴	Galveston	21-30 September	9 (9/0)	0	TBN	TBN

Notes:

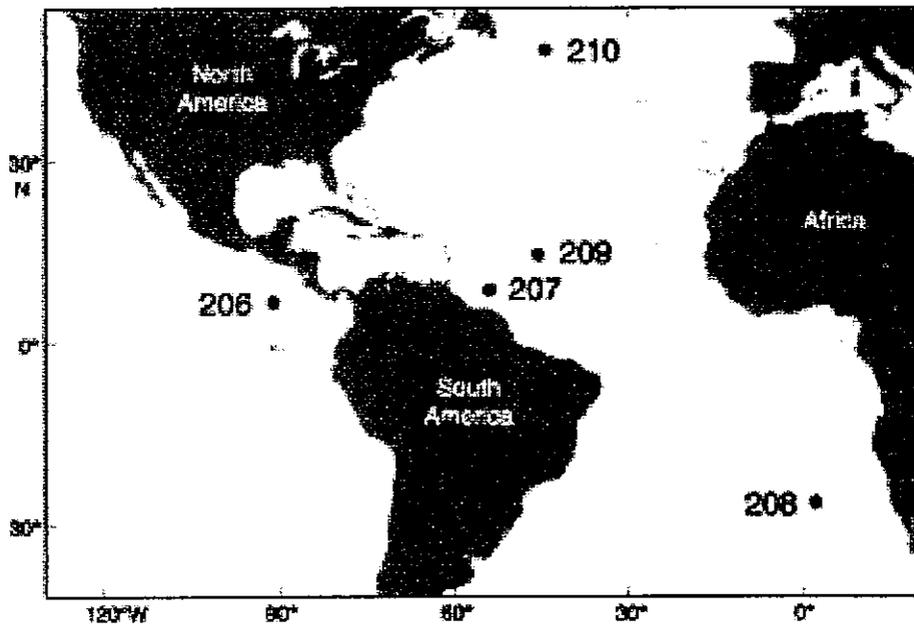
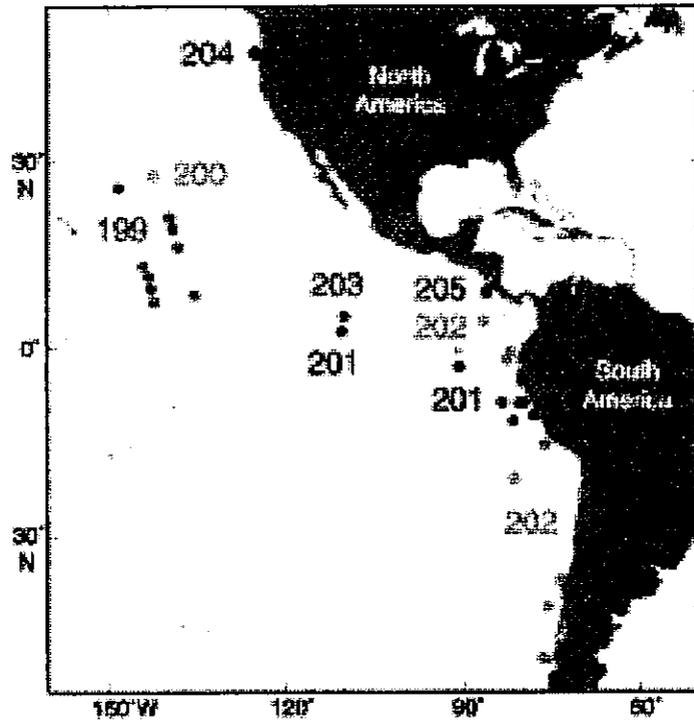
¹Start date reflects the first full day in port. This is the date of the ODP and ODL crossover meetings. The JR is expected to arrive late the preceding day. Port call dates have been included in the dates that are listed.

²Although 5-day port calls are generally scheduled, the ship sails when ready.

³A mid-leg port call will occur for Leg 204.

⁴Demobilization assumes a seven day (+2 day port call) period tentatively scheduled for Galveston.

Updated 21 September 2001



Scientific Staffing

Co-Chief Scientists for Legs 196-205:

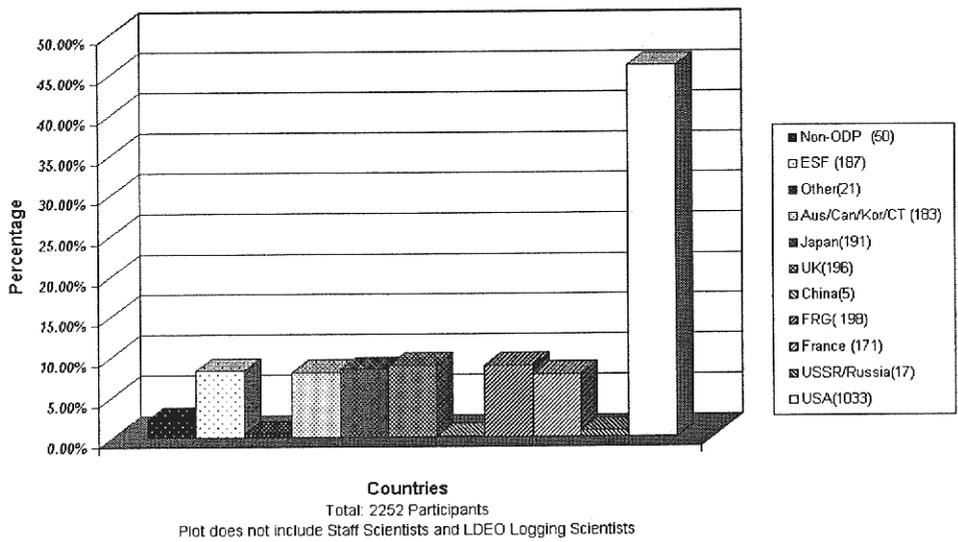
	Leg	Co-Chief Scientists
196	Nankai II	K. Becker (CORK) H. Mikada (both) J.C. Moore (LWD)
197	Hotspots	J. Tarduno R. Duncan
198	Shatsky	T. Bralower I. Premoli Silva
199	Paleogene	M. Lyle P. Wilson
200	H ₂ O	R. Stephen J. Kasahara
201	Peru	S. D'Hondt B. Jorgensen
202	SE Paleocceanography	A. Mix R. Tiedemann
203	Eq. Pac. ION	J. Orcutt A. Schultz
204	Gas Hydrates	A. Trehu G. Bohrmann
205	Costa Rica	J. Morris H. Villinger
206	Fast Spreading Cruse	D. Wilson* TBN
207	Demerara	Erbacher* TBN
208	Walvis Ridge	J. Zachos* D. Kroon*
209	MAR Peridotite	Keleman* Kikawa*
210	Newfoundland Basin	TBN TBN

* Invited

Scientific Party Staffing:

Staffing through Leg 200 is completed. Staffing for Legs 201-205 is in progress. The numbers of applications for berths on future legs seem to have rebounded and are now moving closer to historic levels of 45-75 per leg. The drop-off in applications noted a year ago seems to have been largely a consequence of earlier uncertainties in the schedule and lack of information readily accessible to the community. Legs 196, 200, 203 and 205 are primarily concerned with implanting downhole instrument packages or CORKs, rather than coring, which likely accounts for the relatively low numbers of applicants for those legs.

**Shipboard Participant Tally
Leg 101-Leg 196**



Recent Activities

- * A new portable van for radioisotope use has been ordered for the JR and will be installed in San Diego before Leg 201.
 - ◆ a scintillation counter has been purchased and will be installed in the van
- * New security protocols in ports
 - ◆ A security guard will be present on the ship at all times
 - ◆ A photo ID will be required of everyone wishing to board the ship (staff and visitors). This will be matched with a roster provided to the guard
 - ◆ There will be no more open tours for the general public; tours or private visits will be by prior arrangement only
- * Use of credit cards to purchase ODP store items and e-mail on the ship will begin on a trial basis on Leg 199. Accepted credit cards are Visa and MasterCard.
 - ◆ One byte of email: \$0.000033
 - ◆ Two month cruise on the JOIDES Resolution: priceless!



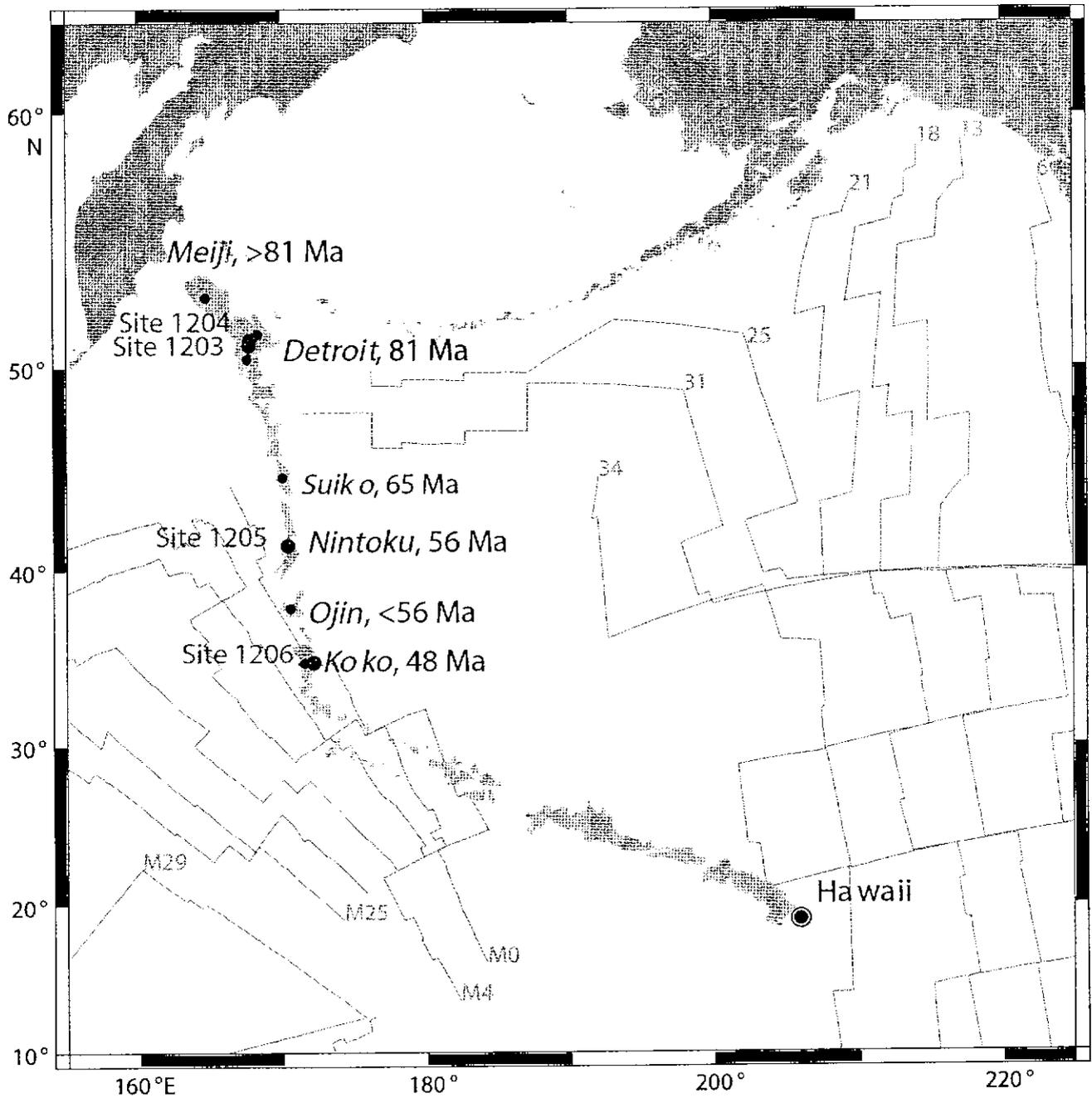
Publications

- * Initial Reports: up to Leg 191 published and on the web
- * Scientific Results: up to Leg 174 published and on the web, with chapters from up to Leg 182 beginning to appear
- * Prospectuses on the web for upcoming cruises through Leg 201
- * Preliminary Reports: up to Leg 197 published and on the web
- * Web citation list growing
 - ◆ includes IRs; articles in SRs; published, in press, or submitted book or journal articles, & papers presented at conferences (when ODP notified)
- * Acknowledgment statement & keywords added to publication policy
 - ◆ Acknowledgment: *This research used samples and/or data provided by the Ocean Drilling Program (ODP). ODP is sponsored by ...*
 - ◆ Keywords: *Include the words "Ocean Drilling Program," "scientific ocean drilling," and/or "ocean drilling" ... to assist with tracking ODP science in bibliographic databases*

Leg 197 Hawaiian Hotspot

- * Four sites cored in three seamounts (Detroit, Nintoku, and Koko)
 - ◆ Total penetration 3410 m, with 1220 m of basement penetration
 - ◆ 1481 m cored, with 753 m of recovery (50.8%).
- * Basement coring sampled transition from tholeiitic shield stage to alkalic post-shield stage at all three seamounts
 - ◆ Extrusives deposited in subaerial to shallow-water setting at Detroit and Koko Seamounts and in waning subaerial setting at Nintoku Seamount. Post-erosional stage only sampled as cobbles in a conglomerate above basement at Site 1205 (Nintoku).
- * Compositional variation of extrusives at Detroit sites covers most of the variability observed in the volcanoes of the Island of Hawaii
- * Paleolatitude estimates consistent with prior results, which indicate that the Hawaiian Hotspot has moved 10-20° southward since ~80 Ma

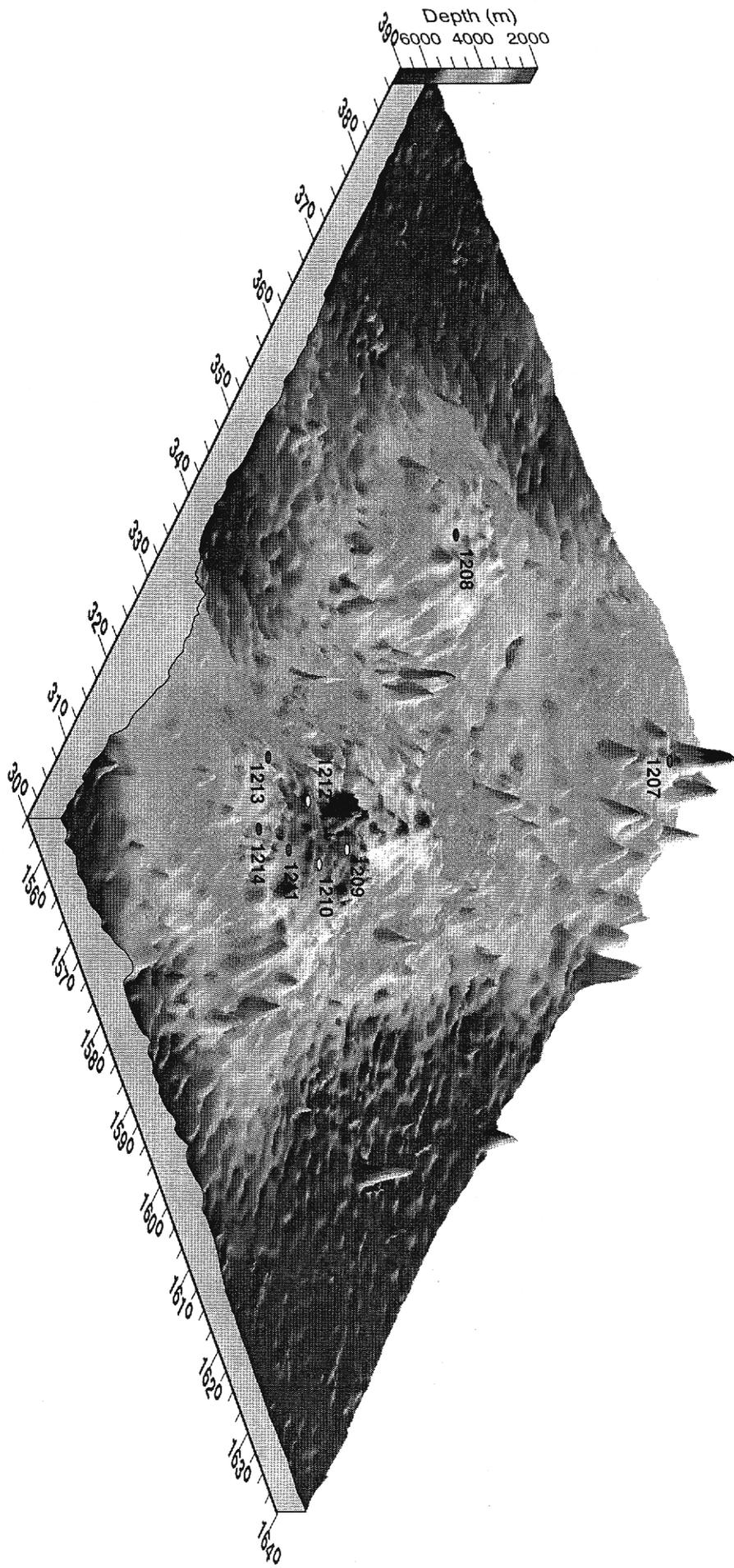
Leg 197





Log 198-Shatsky Rise

- * Objectives: address causes and effects of Cretaceous and Paleogene global warmth
- * Drilled 8 sites on a depth transect
- * Recovered a near complete section from present to Jurassic/Cretaceous boundary and cored the first Shatsky Rise igneous rocks
- * The LPTM was recovered in 10 holes at 4 sites in the Southern High
- * Expanded, mixed siliceous-calcareous Neogene sequences recovered from the Central and Northern Highs with great potential for:
 - ◆ 1) high-quality paleoceanographic records,
 - ◆ 2) significant advances in biochronology and magnetostratigraphy, and
 - ◆ 3) development of a paleomagnetic intensity record for the Pacific Ocean

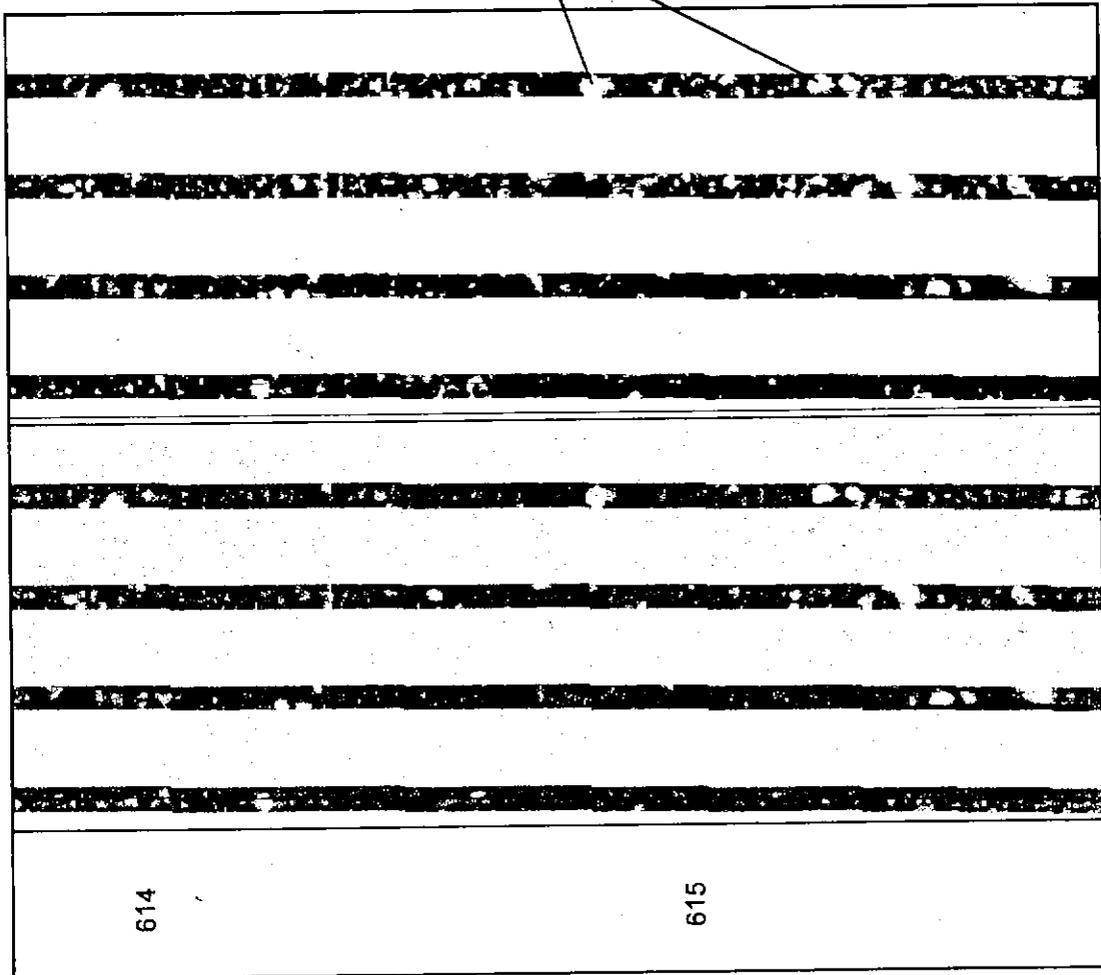


Digital Imaging System (DIS)

- * The Digital Imaging System ran well and no major problems were encountered during Leg 198
- * The scanner carried out a total of ~2483 images of core sections
- * Images are 254 dpi: ~45 Mb a section and are compressed to 1 Mb
- * Compressed versions available on the ship and on shore ~ 3 weeks after the leg ends
- * Working on details about data storage, use of images in publications, pasting images from sections together, etc.

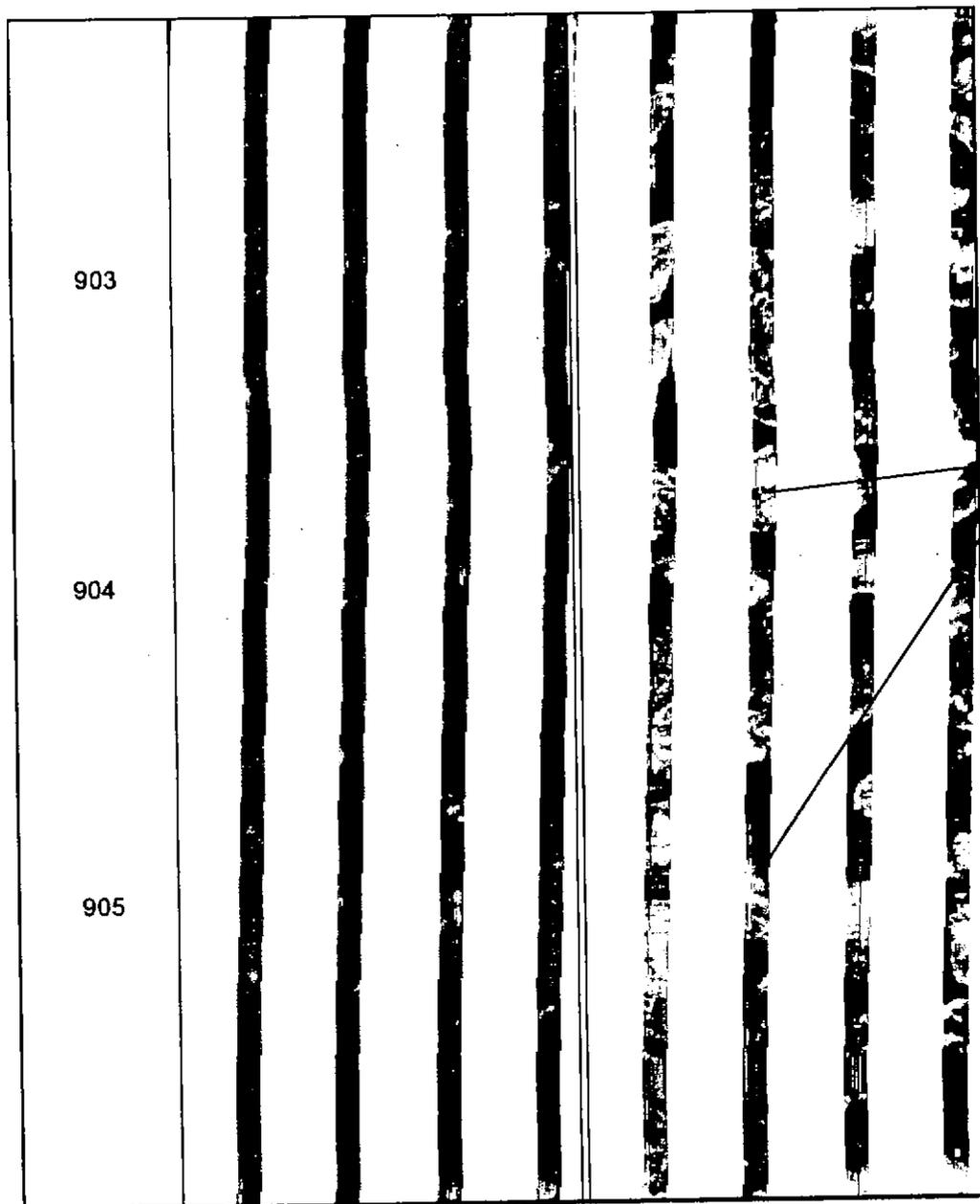


Unrolled core image of volcaniclastic breccia



DYNAMIC FMS image

STATIC FMS image



903

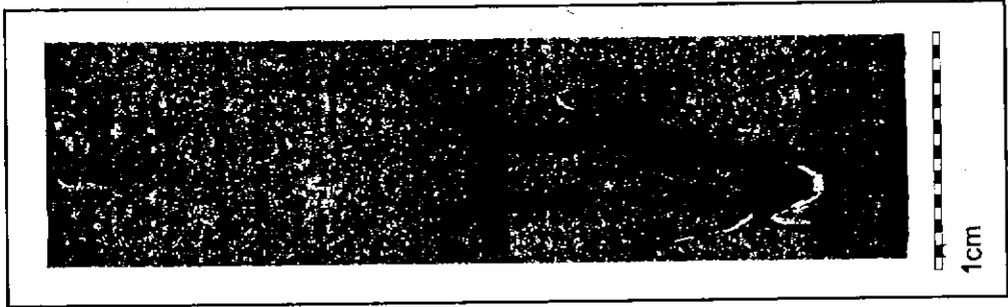
904

905

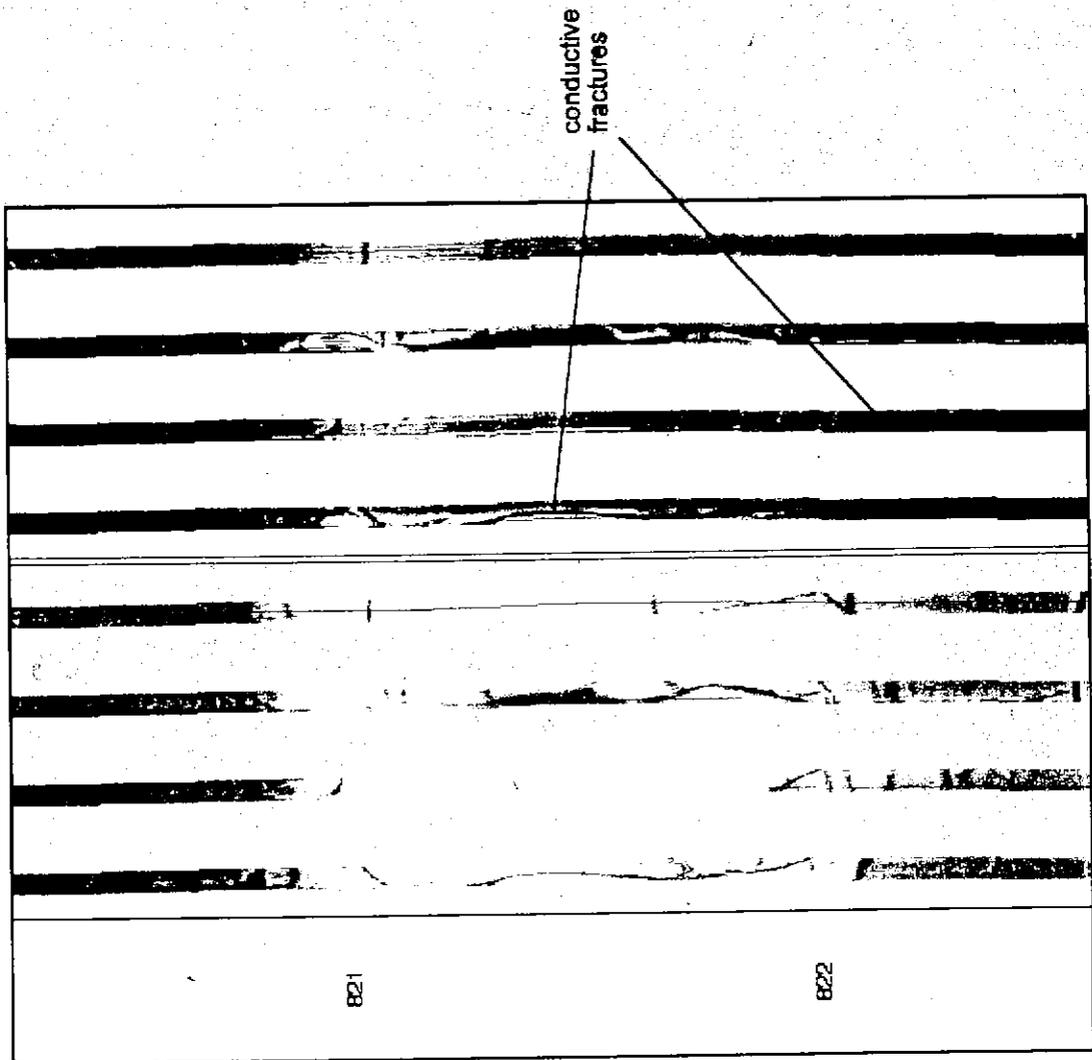
pillow lavas

STATIC FMS image

DYNAMIC FMS image



Unrolled core image of
basalt



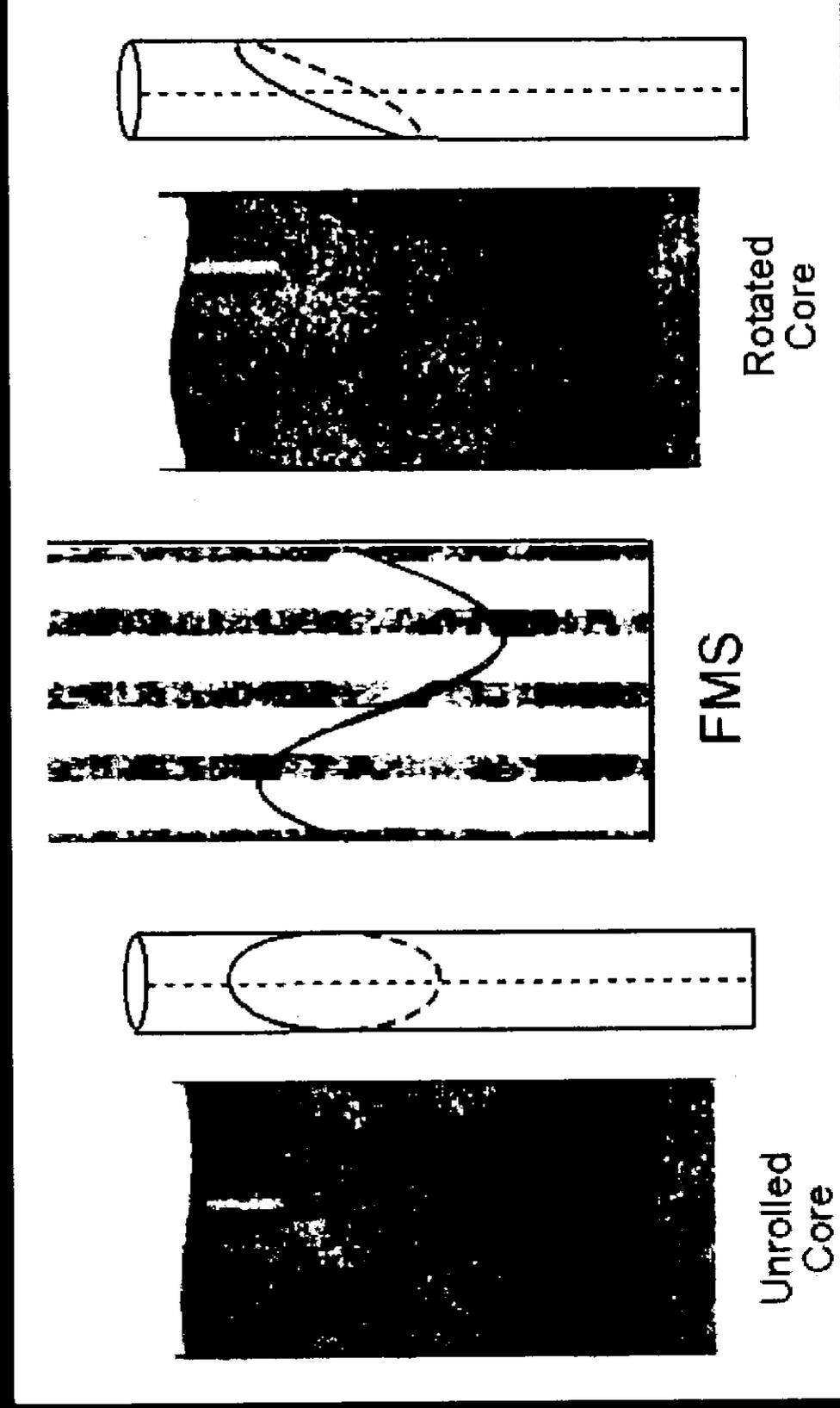
DYNAMIC FMS image

STATIC FMS image

821

822

Reorientation of Core 176-735B-77R-2 using the fracture imaged by the FMS



Hydrogeology Program Planning Group

Overall Goal

Define and prioritize the main problems in submarine hydrogeology in terms of their overall global significance.

Summarize our current understanding of the processes and effects of fluid flow in different submarine hydrogeologic environments.

Explain how studies of these environments will relate to those of analogous subaerial formations

Mandate

Identify the most cost-effective field and modeling strategies for studying submarine fluid flow and its effects on physical, chemical, and biological systems.

Develop strategies for handling critical issues such as the influence of geological heterogeneity on heat and solute transport.

Assess the requirements for site surveying, pre- and post-drilling hydrogeologic studies, and the use of long-term observatories.

Identify future needs for either novel approaches or new adaptations of land-based methods to seafloor environments, and promote the development of these methods by PPG members and other interested parties.

Encourage involvement of the continental hydrogeologic community, with the dual purpose of broadening and the interest in submarine hydrogeologic processes and increasing the human resources and skill base needed for scientific advance.

Encourage and nurture the development of drilling proposals.

Timeline

1st meeting

April 9-10, 200, University of Colorado, Boulder, USA

Participants: all PPG members; ESSEP liaison, Barbara Bekins; guests, Kevin Brown (Scripps), Adam Klaus (Texas A&M), Roger Morin (USGS), and Elizabeth Screatton (Univ. Florida)

Reported by Shemin Ge to SSEPs, May, 2000, Cambridge, UK

2nd Meeting

September 23-24, 2000, Ecole normale superieure, Paris

Participants: all PPG members except Earl Davis; ESSEP liaison, Barbara Bekins; guests: Kevin Brown, Dave Goldberg (Lamont), Warner Brueckmann (JOIDES)

3rd meeting

February 25-26, 2001, University of Miami

Participants: all PPG members; ESSEP liaison, Elizabeth Screatton; guests: Keir Becker (Univ. Miami), Barbara Bekins (USGS), Kevin Brown (Scripps), Carolyn Ruppel (Georgia Tech), William Moore(Univ. North Carolina)

Reported by Shemin Ge to SCICOM, March2001, Shanghai, China

Final Report: Dec.2001

Table of Contents of the Final Report

0. Executive Summary

1. Introduction

2. Key Science Questions

3. Review of Fluid Flow in Geological Process

4. Methodologies in Hydrogeologic Study

5. Type Settings

6. Recommendations

7. Appendixes

Type Settings

Middle Oceanic Rides

Subduction Factory

Seismogenic Zone

Coastal Zones

Carbonate Platforms

Deep Biosphere

Gas Hydrate

SSEP's Role in the ODP Legacy

provide insight and guidance to the interim and future SSEPs
maximize impact of ODP on our scientific constituencies

1.) Nominate subjects, authors for a new Greatest Hits volume, coordinated by the JOI office and intended for wide international distribution
2.) Identify major scientific initiatives worldwide, specify the role of ocean drilling in those initiatives and develop mechanisms for ensuring communication.
3.) Identify scientific areas that are ripe for review articles or special volumes in journals. Identify/solicit heroes on and off the panels to take on job of writing articles or editing volumes.
4.) Identify scientific areas ripe for IODP sponsored synthesis workshops and publications. Find heroes.
5.) Help the SSEPs work more effectively:
 - a) Liaison with tech. & science measurement panel
 - b) Consistent SSP liaison
 - c) PPGs: interaction with PPGs, new ones to propose
 - d) SSEPs role in very long term, multi-stage projects (e.g. seismogenic zone, Mohole drilling etc)
 - e) scientific issues lacking progress for technical reasons

JOI Greatest Hits suggestions (more non-American, multi-authored contributions)

- verification of plate tectonics.
- Demonstration of orbital forcing of climate.
- Development of the field of palaeoceanography.
- The rapidity of past climate change.
- The variation of past oceanic circulation patterns.
- The significance of hydrothermal fluid flow for global geochemical cycles.
- The discovery and dynamic nature of gas hydrates/
- Fluid flow associated with active faults.
- Structure of the ocean crust/
- Discovery of the deep biosphere (Parks and Hayes)
- Biomarker geochemistry
- Mediterranean sapropel cycles
- Arctic drilling initiative
- Monsoon reconstructions (Dick Kroon and Warren Prell)
- Active margins and ophiolites (Sherm Bloomer, Chris MacLeod)
- Ocean records of past atmospheric CO₂ (Hayes, Broecker, Sanyal, Pagani)
- G/IG ocean circulation patterns (Adkins, Chris Charles)
- Ocean nutrient changes (Sigman and Boyle, Elderfield, Filippelli, Hodell)
- Ocean methane (Dickens)
- Ocean records of continental hydrology (Rea, Hovan)
- Subduction zone forearc structures, fabrics, fluid flow (Moore, Bangs, Maltman, Tobin)
- Physical oceanography of the earth's subseafloor ocean (Andy Fisher)
- Chemical oceanography of the earth's subseafloor ocean (Mike Mottl)
- Fore-arc serpentinites & fluid flow (Fryer)

3. Review Articles/ Special Volumes

- Climate-tectonic coupling and orogenesis in Asia (Peter Clift, Dave Rea, Christian France-Lanord)
- The deep biosphere
- Abrupt climate change in past & very high resolution records of ocean circulation during deglaciations.
- Paleoproductivity in the Southern Ocean (Filipelli)
- Deciphering the multiple controls that shape margins and control margin stratigraphy, sea level being one such control. Fulthorpe, ed?
 - Isotopes & paleostratigraphy (Ken Miller)
 - sedimentologists (Steve Hesselbo)
 - carbonate equivalent (Gregor Eberli?)
 - modelers (mike Steckler, LDEO?)
 - basin analysis (Michelle Kominz?)
- Hydrates
- Oceanic crustal structure
- Fate of sediments and fluids at subduction zones – a combo of SubFac type stuff and acc prism results
- Synthesis of decollement structure and hydrology, Barbados, Costa Rica, Nankai, on land. Harold Tobin and Alex Maltman
- Sub-seafloor oceans: Vanko (editor)
 - physical mech. of fluid flow – Andy Fisher
 - chemistry – Mike Mottl
 - biology Baross, Parkes
 - water-rock interaction – sed
 - water-rock interaction – basement

4. Synthesis workshops/special volumes

“ Writing a synthesis paper seems almost like buying a computer. There is always justification to postpone it a little longer to get maximum benefit out of the expenditure, but that can go on indefinitely. Even incremental syntheses are useful to anyone who wants to know the current state of the art.”

Continent – Ocean Interactions within the East Asian Marginal Seas, Peter Clift, Chapman Conference, AGU monograph, scheduled for 2002

Chemical records of paleotemperature in the ocean, Paul Baker

Cenozoic records of changing ocean chemistry, Gabe Filipelli with Karl Follmi, pursue EU or other European funding

And those from 3, above

5. Changing SSEPs practices

A. The Panels themselves:

- members could read the proposals
- more consistency in review focus and tone, even as panel members rotate
- clearer sense of a proposals relative standing prior to final grupings.
- nice but effective means of discouraging uncompetitive proposals
- best discussions at the SSEPs have been in the cross-panel working groups. In IODP, some of the big initiatives will not fall into the traditional I vs. E breakdown, for example Biosphere, Hydrates, Seismogenic Zone.
- ditto. Suggestion: one panel, many working groups?
- stronger sense of what drives SCICOM scheduling decisions

B. Liaison to/from technical and science measurement panel.

Yes. Important to know about site survey, technical problems early on the advise proponents while still time to do something about it.

C. Consistent SSP liaison. Yes, important.

D. PPGs: interaction with PPGs, new ones to propose more effective use of PPGs by SSEPs needed.

E. Role of SSEPs for very long term, multi-stage projects (e.g. seismogenic zone, Mohole drilling)

“The “front line” for maintaining the continuity and consistency of the scientific focus during the evolution of the project.”

Critical to have long term corporate memory

F. Scientific issues lacking progress for technical reasons

iSAS/IODP PROPOSAL EVALUATION FORM

for Preliminary Proposal

Proposal No.	
Proposal Title	
Contact Proponent	
Date of Review	

Relevance to IODP ISP	
Links to Global Research Programs	

Watchdog information	
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Recommendation	
Develop to Full Proposal	Revise

Environment/Interior iSSEP Comments

iSAS/IODP PROPOSAL EVALUATION FORM for Full Proposal

Proposal No.	
Proposal Title	
Contact Proponent	
Date of Review	

Links to Global Research Programs	
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Watchdog information	
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Recommendation	
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Environment/Interior iSSEP Comments

General Comments
1. The iSSEPs feel that this proposal does not require additional review at this time.
2. How does the proposal relate to the initial science Plan
3. Are the proposed sites (including number of sites, site locations and penetration depths) optimal for addressing the scientific questions?
4. Are there aspects of the science which could be better developed by adding new expertise to the proponent group?
5. Do the aims of this proposal require new shipboard technology?

Content of Proposal			
1. Background	Excellent	Good	Fair
2. Objectives	Excellent	Good	Fair
3. Hypotheses	Excellent	Good	Fair
4. Methods	Excellent	Good	Fair

Presentation		
1. Is the proposal concise and clear?		
2. Are all the figures necessary?		
3. Are more figures required?		
4. Is the abstract informative?		
5. Site survey information		
Available	Pending	Not available

Suggested Platform		
Riser	Non-Riser	MSP

iSSEPs Structure and Procedures

- iSSEPs considered alternative panel structure, and endorse 2-panel structure (E- and I-iSSEPs) during interim and note the critical role of joint working groups to foster interdisciplinary proposals

- recommend that OD21 and JOIDES coordinate panel rotations to ensure necessary expertise. iSSEP chairs should be contacted about expertise needed on panel

- recommend that iSAS office approve guest invitations to an iSSEP meeting as deemed necessary by iSSEP chairs, to ensure necessary expertise

- will work with iSAS office to increase time between proposal deadlines and panel meetings to 6 weeks

- iSSEPs have revised proposal review form to allow clearer communication with proponents. Copy attached for information purposes

-recognize scientific focus of iSSEPs but note the need for greater technical expertise at panels, as well as need for logging, operations input during interim. Recommendations:

1. iSSEP liaison attend annual joint meeting of Technical Advisory Panel and iSciMP
2. liaison from TAP/iSciMP attend iSSEPs meetings

-to improve coordination with other organizations, recommend that iSAS add to cover sheet:

Companion proposal? Yes or No

If yes, which organization?

If ICDP companion proposal, iSSEP chairs can invite ICDP watchdog to panel meeting

-recommend that iSSP establish more consistent liaison with iSSEPs, ideally in form of permanent liaison with 2-3 year terms. iSSEP and iSSP chairs should exchange watchdog assignments and panel reviews at earliest opportunity

-with >70 proposals in system, iPC may wish to consider adding criterion for considering proposals at scheduling meeting:
iSSP readiness level >_____

SSEPs and PPGs

-urgently request SSEP chairs and PPG chairs to finalize outstanding PPG reports and post on web site for use in interim and IODP proposal preparation

-endorse an important role for PPGs in future program, and believe that now is the time to establish some

-believe that conflict between PPGs as proponent group and advisory group is manageable

-recommend that PPG minutes be posted on web site before iSAS office approves next meeting

-recommend that PPG chairs report to SSEPs after final meeting

-Recommend that PPG proposals may originate from scientific community as well as iSSEPs, SCICOM and iPC. PPG proposals should include brief description of need for, focus of, and expected product from PPG

-believe that SSEP involvement in staffing PPG must occur early in process

?? Do iSSEPs wish to propose a PPG?

iSSEPs and Long-term projects

-iSSEPs already receiving multi-leg and riser proposals. IODP guidelines must be established with all deliberate speed

-emphasize that any long-term riser programs require commitment to site surveys, technical developments, and science funding as well as drilling. A mechanism to ensure these essential activities in timely manner must be developed

-suggest that iSAS develop new format for proposal deemed to be long term project by iSSEPs, with increased page limits. Based on pre- or full proposals, iSSEPs invite proponents to submit proposal for long-term projects

-recommend that iSAS annually forward to iPC proposals for long term projects, for information purposes and discussion

-encourage workshops as part of proposal development process to ensure maximum expertise and input, community support, open process

?? do SSEPs wish to forward flow chart to iPC as straw-person?

SSEPs and Legacy activities

-Note that it is desirable to develop legacy activities that can also broaden IODP constituency and participation, necessary to staff program with MSP, riser and riserless drilling

-recognize and appreciate the educational and outreach aspects of web-based “Greatest Hits”. Respectfully note that 100-200 contributions unlikely to all be “Greatest”. Recommend professional preparation of selected contributions in hard copy for funding agencies

-note that “Achievements and Opportunities” volume, published in a place such as Scientific American, could be great outreach

-recommend that IODP build library of high quality downloadable figures for educators (from A and O, JOI distinguished lectures, Leg highlights....)

-recommend that iSAS/JOIDES websites include links to wide range of science programs and initiatives with ties to ocean drilling. SSEPs list attached

-recommend that iSAS/JOIDES websites establish Legacy section that briefly describes, and where possible provides links to, legacy documents, workshops, publications

SSEPs members propose to undertake, as individuals, a range of legacy activities intended to maximize impact of ODP on our scientific communities:

Review articles:

Chemistry of fluids in subduction zone, M. Mottl

Synthesis of decollement structure & hydrology in accretionary prisms, H. Tobin

Thematic volumes (journal publication recommended)"

Asian monsoons on Milankovitch and sub-milankovitch time scale, S. Clemens, et., Marine Geology

Geomagnetism & ocean drilling, under discussion, B. Housen

Synthesis workshops and publications:

Organic rich sediments as paleoclimate indicator, J. Thurow, Geol. Soc. London

Continent Ocean interactions within E. Asian Marginal Seas, P. Clift, Chapman conference & AGU monograph