JOIDES TECTONICS PANEL
SPRING 1996 MEETING
San Luis Obispo, CA. 4-6th March 1996.

EXECUTIVE SUMMARY

Attendees:

TECP Members — Juichiro Ashi, Univ Tokyo; Tim Bryne, Univ. Conn; Kevin Brown, Scripps; Gerry Karner, Lamont; Steve Hurst, Duke U.; Juan Lorenzo, U. Loius; Alain Mauffret, Villefranche-sur-Mer: Dieter Muller, U. Sydney; Jian Lin, Woods Hole: Alastair Robertson, Univ Edinburgh; Dave Scholle, USGS, Menlo Pk; Jakob Skogseid, Univ Oslo; Roland Von Huene, Kiel; An Yin, UCLA

Liaisons: — from ODP/JOI - Dave Falvey; from PCOM - Tom Shipley, UT Austin; from SGPP - Mike Underwood, from TAMU - Carl Richter

Host: — Mike Underwood

1. Ranking of Proposals

Global Ranking

Table 1

No.		AVE	S.D
450	Taiwan	5.2	4.7
447	Woodlark	5.5	3.7
431	W. Pac. Seismic Net	7.2	5.7
445	Nankai	7.5	5.0
442	N. Mariana Rift	7.6	5.2
484	Monsoon History S China Sea	8.4	6.4
451	Tonga	9.5	7.4
Crust Struc (Gen)		9.9	6.8
Mass bal. (Gen)		10.6	7.4
457	Kerguelen Lip	13.3	6.4
463	Shatsky Rise Lip	13.6	6.3
492	"Taiwan 2"	13.7	7.8
470	Red Sea	13.8	6.6
Earthquakes (Gen)		13.9	9.6
Vert. tectonics (Gen)		14.4	7.8
475	Phys. props accret. wedge	14.8	6.2
low-angle faults (Gen)		15.4	8.7
355	Peru/Gas Hydrates	16.2	6.8
334	Galicia	16.6	6.7
448	Ongtong Java Lip	16.7	7.3
back-arcs		17.0	6.1
479	Felsic Volc. E Manus Back-arc	17.3	6.2
478	E Nankai cont. margin	17.8	5.3
466	CAB	18.1	4.9
480	Caribbean Lip	19.8	5.2
NARM (Gen)		20.6	3.7
476	Hudson Apron	20.6	4.2

NOTES:

The Panel listed for ranking all those currently active proposals of thematic interest in terms of the Long Range Plan; the Panel further noted those proposals that could be ready for scheduling in 1996. Scientific importance, however, was the sole criteria for ranking. The voting followed previous procedures; participants did not vote for their own proposal(s). The ranking included a number of generic topics (Gen) of potential future interest.

2. After discussions TECP adopted the following recommendations. Background information is given in the minutes below:

2.1 JANUS "structures" initiative.
TECP recommends to PCOM that PCOM recommend to JOI Inc that JOI Inc direct TAMU to ensure that the integration of structural (and related sedimentary) data is completed within the JANUS project.

Notes:
TECP fully endorses the content of the August 1995 "Core Description Workshop" and wishes to see rapid and effective integration within the JANUS project. TECP strongly advocates immediate purchase of an inexpensive (<$20,000) digitising system (already demonstrated to work) and definitely does not want to wait for possible availability of a much more expensive (>$150,000) digitising system that is far in excess of TECP's present needs.

2.2 Diamond Coring System DCS
TECP recommends to PCOM that PCOM recommend to JOI Inc direct TAMU to continue development and testing to DCS, but subject to the qualifications below

NOTES
i) Alternate means of deep drilling (with hole control) should be properly evaluated before a commitment to proceed further with DCS (e.g. motorised core barrel); ii) Value of DCS is greatly reduced if instrumentation of the bore hole will not be possible (i.e. if the hole diameter is too small); iii) Development of DCS should not rule out control use of LWD or CORKS in upcoring legs, because of financial constraints. If so, DCS development should be scaled down to liberate funds for LWD and CORKS.

2.3 Riser Drilling
TECP continues to support the concept of riser drilling.
TECP recommends to PCOM that PCOM recommend to JOI Inc advise TAMU that TECP continues to support the concept of riser drilling.

NOTES
Use of riser drilling from TECP would include drilling of i) Seismotectonic zones and ii) Deep drilling of rifts and passive margins

2.4 Core Orientation Techniques
TECP recommends to PCOM that PCOM request the Downhole Measurements Panel (DMP) to institute a review of existing and possible future techniques that aim to achieve orientation of core.

NOTES
A new technique to determine the stress tensor in 3D is needed as the sonic core monitor (for hard rocks) has been withdrawn and the tensor tool is of questionable accuracy.

2.5 TAMU savings
TECP recommends to PCOM that PCOM recommend that JOI Inc notify TAMU that **a small number of items are essential for TECP and should be preserved.** The specific items are i) Student work force for repository and science support work, ii) that part of the JANUS project related to tectonic (and sedimentary) structures, iii) funds for inexpensive digitising system that is needed immediately (<$20,000); iv) some funds for split core MST evaluation.

NOTES
1) TECP believes some funds must be retained for LWD and CORKS, even if DCS development is delayed as a consequence.
2) TECP believes that XRD is essential on the ship, but that XRF is not (for TECP).

2.6 JR refit 1998

TECP recommends to PCOM that PCOM recommend to JOI Inc that they propose to TAMU the following possible improvements: i) Noise abatement in key working areas, ii) Improved ventilation in key working areas, iii) Addition of floor to lab sack to increase space, iv) Lengthen the smoke stack on the Helideck to improve it as recreational facility.

2.7 Liaison rôle

TECP recommends to PCOM that they instigate a policy to restrain proposal length.

NOTE
Many proposals have become progressively longer and more cumbersome. Suggestion: text max. 20 pages + 10 Figs.; single spaced, single sided, Font size 12.

2.9 Drilling Implementation Plan

TECP responds to PCOM Chair's request for a draft implementation plan in the context of the LRP, as follows:

Phase II to 1998:
- Study of low-angle detachment fault, e.g. Woodlark
- Study of collisional settings, e.g. Taiwan
- Study of convergent margins incl. LWD, e.g. Nankai.
- Study of Forearc and Backarc Processes, e.g. Tonga, N. Mariana.

Phase III 1998-2003
- Instrument low-angle active detachment fault, e.g. Aegean.
- Mass Balance Convergent margin, e.g. Mariana, Nicaragua.
- Monitoring Subduction Systems, LWD etc.
- Earthquake processes and seismic network. e.g. off Japan, off Hawaii, off Central America.
- Oceanic Crust Structure and Seismic reflectors, e.g. S Atlantic, off Australia, N. Atlantic.
- Deep structure of rifts and passive margins (incl. conjugates), e.g. Iberia S, Newfoundland Basin, S. Australia margin; S China Sea.
- Continental climate/tectonic interactions, e.g. monsoon studies - S. China Sea.

Phase IV post 2004.

Both continued drilling without a riser and riser drilling will be essential to achieve LRP thematic objectives, i.e.:

1. Without riser "JR-2"
   - Instrumentation of young active systems.
   - Seismic observations to study earthquake processes (inc. seismic network).
   - Studies of deformation and fluid flow.
   - Climate/tectonic interaction studies and tectonic controlled ocean gateway studies.

2. With riser "OD-21" (<2.5 km water depth)
   - Seismotectonic zones of active margins, e.g. Cascadia.
   - Deep drilling of divergent margins and rifts.

Notes:
1. TECP is encouraged that top thematic objectives in the 1995 whitepaper are mainly included in the LRP. TECP believes it can work effectively within the ORP context.
2. The implementation plans allow for innovation, e.g. borehole instrumentation, LWD, DCS, riser drilling.
3. TECP notes the need for improved consideration between groups of proponents on allied thematic proposals (e.g. deep structure oceanic crust; seismic observatories [may exist, but not reported to TECP].
4. TECP notes that a backlog of mature or nearly mature relevant proposals for drilling in the Pacific has built up while the ship has been in the Atlantic (e.g. Woodlark, Nankai, Tonga, N. Mariana, Japan seismic network. Existing highly ranked mature proposals in the Pacifica area should not lose out by implementation of the LRP.
5. As explicit in the LRP TECP wants flexibility to remain to allow outstanding new proposals concerning additional topics not necessary foreseen in the LRP still to be considered for future drilling.

2.10 Review of Panel Structure

TECP embarked on a stimulating, wide-ranging discussion of possible revision of panel structures. TECP feels that there is a perception that the present panel structure is too cumbersome, introspective and apparently does not share the support of outside community. TECP also feels thata form of peer review of proposals will be essential to maintain and enhance wider community confidence in the excellence of ODP science.

TECP puts forward the following model for a radically altered panel structure.

1. THEMATIC PANEL STRUCTURE
   This would consist of:

   a) SCIENTIFIC STEERING COMMITTEE (single, unified).
   - to evaluate thematic relevance of all initially submitted proposals and LOI'S
   - to obtain mail reviews to confirm potential excellence of science involved in initial proposals in LOI'S.
   - to instigate a limited number of short-term working groups to help advance proposals to maturity.

   b) WORKING GROUPS
   - Members of working group to come from Scientific Steering Committee plus ad hoc additional experts from wider community (e.g. 4-6 total). Proponents not to be on Working Groups. Working Groups to have limited life and be dissolved when proposals are mature. Report to the Scientific Steering Committee and Science Review Panel.

2. SERVICE PANEL STRUCTURE

   a) SERVICE PANEL (single unified) covering all aspects to identify and prioritise service functions.
   - To solicit international mail review of service priorities.
   - To set up limited life Working Groups).
   - To interact with Science Steering Committee, PCOM, etc.

   b) WORKING GROUPS
   - To cover specific functions as existing service panels (e.g. TEDCOM), but also to aid development of specific tools.

3. SCIENCE REVIEW PANEL (single, unified).

   - Composed of acknowledged international senior scientists who are not themselves members of other ODP structures (to improve community confidence in decision making).
   - To obtain mail review of mature proposals from wider international community.
   - To prioritise mature drilling results and report this to PCOM.

4. PCOM

   - To carry out duties essentially as at present, and would schedule already prioritised and mature scientific proposals.

Notes. The proposal/structure has the following advantages:
1. A bold new plan for new programme; aids renewal.
2. Increases confidence of wider non-ODP community.
3. Streamlines decision making.
4. Separate ODP structures from ultimate evaluation of mature drilling proposals; again aids confidence.
5. Eliminates overlap and duplication in present service and thematic panel structure.

But one possible disadvantage: Working Groups could get out of control, so limite size and life, and number to be firmly controlled by Science Steering Committee.

3. Liaisons

DMP	Jacob Skogseid (Re-assignment)
IHP	Steve Hunt (Re-assignment) and Joann Stock (alt)
LITHP	Jian Lin (Girardeau after next meeting)
SGPP	Tim Bryne (alt. Kevin Brown)
SMP	Kevin Brown (until Fall'96)
XEDCOM	Steve Hunt (alt. Dietmar Müller)
OHP	An Yin (Alt. Gerry Karner).
SSP	Dave Scholle (member assigned to support SSP when necessary)

Note: TECP attaches importance to liaison to OHP (other liaison attendance will be reduced if cost is limiting factor).

4. Thanks

Sincere thanks were given to Roland von Huene (rotating off) for his outstanding contribution to TECP

5. Next Meeting

Sultan Qaboos University, Oman 18-21st October (provisional) with pre-meeting fieldtrip to study structure of emplaced Oman passive margin and ophiolite.
Hosts: Samir Hanna (Sultan Qaboos Uni) , Alastair Robertson.

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1. Introduction

The meeting began with a round of introductions, including welcoming new panel members and Dave Falvey (Director of ODP at JOI). Thanks were expressed to Mike Underwood for acting as host and organising an excellent, very relevant field excursion to the Franciscan geology of coastal southern California.

2. Minutes

The prior minutes were endorsed without further discussion.

3. Liaison reports

Dave Falvey (ODP/JOI)
Dave Falvey reported on the status of the renewal and attempts to increase ODP membership (see PCOM April 1996 minutes for details).

Tom Shipley (PCOM)
Tom Shipley commented on PCOM current interests and noted the dynamic for change within the project. He noted the items that TECP needed to comment on at this meeting.

Carl Richter (TAMU)
Carl noted items from TAMA to be discussed.

Mike Underwood
No prior SCPP meeting, therefore little new to report.

Jian Lin (LITHP)
The Spring 1996 LITHP will be held immediately after this TECP meeting, which Jian Lin will attend. There was little news to report since our last TECP meeting. An important ODP-InterRidge-IAVCEI workshop on "The Oceanic Lithosphere and Scientific Drilling into the 21st Century" will be held in Woods Hole, Massachusetts on 26-28 May 1996. More than 100 scientists from the international community have expressed interests in attending the meeting.

Kevin Brown (SM)
A report was given on the status of the structural data implementation plans in the context of the JANUS project (see later).

Steve Hurst (TEDCOM)
A report was given on current discussions including the status of DCS (see recommendations).

4. Recent Scientific results (Carl Richter, TAMU)
Brief summaries of the successful results of the gas hydrates and Caribbean legs were given. There was little TECP component in these legs.

5. Review of New and Revised Proposals and Letters of Intent
. Prior the voting TECP discussed a LRP implementation plan (see later)

Notes:
TECP discussed all those proposals and LOI's text were considered relevant to the panel's mandate.

. The revised proposal criteria were employed.
. 493 was not received and not reviewed (late submission)
. As in the past, proponents left the meeting room and any potential conflicts of interest were identified to the Chair in advance.

Proposals
334 add2 & add3 Galicia Margin S' reflector

The addendum, outlining the preliminary results of the GRANAUTILE II diving cruise, and slightly reformulating the objectives and drilling strategy, retains high TECP thematic relevance. The status of the proposal in terms of TECP priority is, however, dependent on the results from the scheduled Leg 173 Iberia Margin drilling. The view of TECP with respect to the Long Range Plan (LRP) is that the proposal may fit into the initiative of "exploring the deep structure of continental margins" likely to be addressed during phase III and IV. TECP encourage the proponents to work up the results, e.g. P/T history, etc., of the rocks sampled during the diving cruise; include these results in a broad hypothesis testing tectono-magmatic model for the formation of low-angle detachments on passive margins in general, and for the Galicia margin in particular. This will possibly also address LRP scientific themes such as "exploring the transfer of heat and material to and from the earth interior" and "investigating deformation of the lithosphere --- ". TECP recommends the proponents to make sure the proposal retains an active status within the review system.

Ranking: A1,B1.2,B2.1,C1,D1,F3.

421-Rev2: Alkali-acidic rocks of the Volcano Trench.

The proponent is commended for his efforts in revising the proposal in the light of comments from the Tectonic Panel. This revision is a significant improvement compared to earlier forms. However, the proposal has yet to present a set of hypotheses for the origin of the southern Isu-Bonin region that can be unambiguously tested by drilling. Clearly, the views presented in this proposal concerning the formation of the Isu-Bonin trench and its island-arc system differ markedly from that existing in the literature. This is not a problem providing the proponent can define the problems with earlier interpretations. As part of this, the proponent needs to show the complete data coverage in the region (e.g. gravity, seismics, ODP & DSDP well data, etc.), thereby explaining why new data is required to test the hypotheses presented. For example, it is not clear why further dredging might not help solve the various objectives being posed as opposed to drilling. Most importantly, seismic data (both single channel and multichannel) need to be presented showing how the proposed well sites and the dredge sites related to one another. The seismics would also help to see if turbidites and debris flows may be an important mass wasting process from the various coral-capped seamounts in the area. With respect to the objectives, TECP are concerned with the basic foundation of the proposal, that the existence of high silica and alkali melts necessarily imply thick continental crust. On the other hand, if the proponent can demonstrate unambiguously that the coral reef limestones dredged at 4000-5000 metres water depths are in fact in-situ, this would be a very important result. The figures presented in the proposal do little to help the reader decipher the ideas being advanced by the proponent, or indeed, place the proposal area into a larger geological and tectonic perspective. Attention needs to be paid to this issue and also the general layout of the proposal. To help with the revision process, TECP have enclosed an example of a successful ODP proposal that might be useful in guiding the layout of any future proposal.

Ranking: A5, B1.3, C3, F4

441-Rev1. Southwest Pacific Gateway: Palaeohydrography of the Deep Pacific Source.

In order to understand the evolution of Pacific palaeoceanography, this proposal addresses the necessity of stratigraphic and high-resolution time-series data from sediments under the influence of the DWBC system. The proponents also plan to penetrate unconformities and folded strata for determining the date of a tectonic event which shaped the major Neogene bathymetric features of the eastern New Zealand Plateau. The former is mainly focusing on OHP objectives. The latter addresses topics highly relevant to TECP objectives, although we must consider that all proposed sites for tectonic aspects are not of primary interest to the proponents. Development of sediment source-transport-sink system is strongly associated with plate tectonics in this region. TECP encourages the proponents to add information about relations between sedimentation and deformation during ocean-basin evolution. TECP also encourages the tectonics component nt to be lost sight of in later revisions of the proposal.

Ranking: A3, B1.2, B2.1, C4, F3

442-Add--Magmatic and tectonic evolution of rift initiation in backarc basins--drilling the northern mariana trough

Proponents of Mariana rift-inititation drilling expressed concerned in 441-Add that their proposal was being "orphaned" between LITHP and TECP because the drilling objectives fell somewhat between the thematic previews of these panels. TECP panel members acknowledge this situation and noted that the spirit of the LRP documented now more clearly defined support of problem oriented drilling whose objectives blend across present thematic boundaries. The scientific question, in this example, processes of backarc rift initiation and propagation, is the issue to be addressed. The panel recognizes this circumstance and further notes that the proposal clearly falls with the LRP's general themes of DYNAMICS OF EARTH INTERIOR and its subcategories of (1) Transfer of heat and materials to/from Earth and (2) deformation of the Earth.

The panel remains concerned that the rift propagation hypotheses, whether initiated by stretching of existing crust or magmatic additions/injections, can be tested by the drilling scenario set forth in the original proposal. The panel recognizes that gaining fundamental knowledge about backarc rifting and related processes is the fundamental scientific objective, not proving or disproving a particular process of rift advancement. To provide the information needed to guide the proposed rift-investigations, TECP had expressed hope that 6-channel seismic reflection data would be become available. The panel also requested an opportunity to examine unpublished data discussed by Martinez et al. with respect to rifting in the northern Mariana Trough. Unfortunately, new seismic data will not be forthcoming and none of the Martinez et al data set have been submitted to ODP, and thus made available to the panel for study and reflection. The panel thus remains concerned that field data adequate to control the collection of drilling data that will identify the essential rifting processes operating in the northern Mariana Trough remain lacking. The panel thus strongly encourages the proponents to at least provide the Martinez et al data, in particular considering that a new data-acquisition is not likely in the near future.

The panel's recommendations with respect to its review criteria are A1 (Highly relevant to top thematic objectives) and F2 (proposal is high priority but recommends revisions as indicated), in particular as linked to the need for better data to plan a drilling strategy to achieve primary scientific objective.

Ranking: A1, F2

445 Deformation and Fluid flow, Nankai prism

The panel again views the objectives of the proposal very favorably and supports the transect comparison approach. However, the rewritten proposal is less concise than past versions and difficult to read because of wonderments, and assertions that detract from the scientific core. Considering the present competition for drilling, the possibility of a second leg with corks and perhaps packer experiments are probably remote until the results of the first are known and considered. The comparison of two differing sections is desirable and the core of the proposal. Hopefully other sediment flooded margins will be modelled in the same manner (ie Oregon, Alaska, S. Chile) for comparison. The proponents must justify the added expense of LWD and show what new information might be gained over already good physical properties information. They are encouraged to make this a

strong 1 leg proposal and tie it to the new Long Range Plan, the light of realistic assessment of the funds available eg. for LWD.

Ranking: A1, B1.1 (B1.2), B2.1, C1, D1, F2

447-Rev2: Active continental extension in the western Woodlark basin

This a mature proposal that deals with a major theme of both the LRP and of TECP, that of defining and constraining the history of deformation of a low- angle, active, detachment. The panel was impressed by the frankness of the proponents concerning the recent dredging results from Moresby seamount. The dredging of late Pliocene sedimentary rocks from the top of the Moresby seamount questions somewhat the validity of the metamorphic core complex interpretation, a fact noted by the proponents. The panel agrees with the modification to the first primary objective of the proposal, that Moresby seamount is either a complicated detachment or that it is simply the footwall of a major, low-angle fault. While the panel discussed the wisdom of presenting the detachment hypothesis in terms of metamorphic core complexes, the point remains that the power of the proposal lies in drilling an active fault system. It is disappointing then that the proponents did not take the advice o develop the necessary BHTV, PACKER & CORK experiments proposed to define the in-situ physical properties across the low-angle fault zone. These experiments need to be developed in some detail before the proposal can be completely endorsed by TECP. One concern raised by the panel dealt with the location of ACE-8a. If the fault surface to be drilled at ACE-8a is indeed a detachment, what use are the in-situ physical property measurements from the base of the syn-rift section compared to those from the base of the hangingwall block? (and recognizing of course that drilling to intersect the hangingwall block is technically challenging).

The internal reflectors within the Moresby seamount coupled with the new dredging results implies an implausible geometry for an extensional detachment surface. The panel are therefore inclined to accept the footwall rebound explanation for the origin of Moresby seamount. A serious question was raised about the "true" activity of this imaged fault zone. Teleseismic events are spread over a broad spatial region, none of which clearly define the target fault per-se. Is an OBS survey warranted to help define the activity of the fault? The panel was not convinced of the south-dipping high angle fault shown interpreted in Fig. 24. This is critical because it supposedly offsets the seafloor, thereby dating the young-nature of the fault. Rather, the upper syn-rift section appears continuous through the interpreted high-angle fault. While the lower section is indeed faulted, the evidence is poor for suggesting that this same fault offsets the surface. The surface escarpment could possibly represent a slump scar or current scouring. Thus the question becomes, exactly what is the evidence for the present-day activity of the low-angle fault? The panel recommends that this issue be addressed by finalizing the processing and interpretation of the various vintages of multichannel seismic data in the area (e.g. EW9203 & EW9510) and a structure map of the region presented. In this way, the distribution and thickness of the syn-rift packages and the along-strike variability of fault systems can be assessed. In the next reincarnation of this proposal, the panel recommends that the proponents shorten significantly their proposal, concentrating on data presentation that helps to constrain/ define: 1) the present-day activity of the low-angle fault, 2) the 3D location of teleseismic events determined from waveform modeling (with errors indicated), 3) the general structural fabric of the Moresby seamount region, and 4) the in-situ physical property experiments.

Ranking: A1, F2, E8

451 - Rev3, Ocean drilling in the Tonga forearc

This revised proposal has improved substantially over the previous version by providing a nice summary of drill site objectives in the text and Tables 1 and 2. The main body of the proposal, however, is still unnecessarily long and cumbersome, especially in section 4 "Scientific objectives and methodology" (pages 14-33). Such cumbersome text makes it difficult for readers to quickly grasp the key issues of discussion in this part of the proposal. TECP has recommended ODP to consider limiting proposal pages in the future.

The TECP aspects of the proposed program are in general well formulated. A few questions were nevertheless raised regarding specific drilling strategy: (1) Panel members recommended the proponents to consider adding a "bench mark" site south of 26 deg S, where the aseismic Louisville Ridge is currently intersecting the Tonga Trench. It is envisioned that by comparing this "bench mark" site, where the Louisville influence is small, with the more affected northern sites, the effects of the Lousville Ridge could be best demonstrated (Objective 2 of the proposal). (2) Some panel members questioned whether the sediment and basement data to be collected will be sufficient to test adequately the "episodic" vs. "steady-state" erosion models (Objective 4 of the proposal).

We are pleased to see that additional site survey data will soon be collected in the study area, making the proposal more mature and soon ready to drill.

Ranking: A1,B1.2,B2.1,C2,D1,E8(add a structural map of the forearc),F2

457-Rev2: Future ODP drilling on the Kerguelen Plateau and Broken Ridge.

This proposal outlines some most important problems related to formation of large igneous provinces on the oceanic floor in light of first-order plate tectonic reconstruction and their initiation mechanisms (i.e., supercontinental breakup, active versus passive rifting/plume formation). This proposal is more relevant to LITHP objectives, however, the proposal could be specifically strengthened by development of several tectonic objectives. We would like to reiterate our previous suggestions for the development of this proposal.

1. We would like to see the proponents to address what insights and new information can be gained by the proposed drilling regarding the age and style of deformation in the plateau. Establishing structural evolution of the plateau may be critical as it will help answer the question of how magmatic emplacement was accomplished and how it was related to deformation (e.g., normal faulting, diking, etc.).

2. Clearly, additional site survey data need to be collected, especially on the southern parts of the plateau, to more clearly show the possible structural features. It is important to show structural features (faults, folds, etc.) on the site map. This knowledge will provide a firm geologic basis for interpreting the drilling results.

3. We would like to see the proponents to construct cross-sections based on seismic and gravity data. This will indicate the exact structural position of the proposed drilling sites.

4. We are pleased to see that the proponents will use the structural complexity to their advantage and intend to drill a series of offset holes. We agree with the proponents that this approach will explore the deeper and possible older part of the plateau. Following this line of thinking, we strongly encourage the proponents to investigate the structural framework of the plateau carefully so that the base/oldest part of the Kerguelen plateau may be sampled by the drilling. The *initiation* age of the Kerguelen plateau is the key to differentiating whether it was induced by continental breakup or post-rifting eruption on the ocean floor. If the initiation age were significantly older than the known radiometric dates available, it would suggest that the plateau originated during the continental breakup as the age of the oceanic crust west and south of the plateau was poorly constrained, and formation of the southern plateau was likely involved with the continental crust. This relationship between LIP emplacement and tectonic breakup should be clearly developed and siting of holes related to this problem clearly discussed.

5. Testing the end-member model of passive versus active rifting model requires the knowledge of uplift or subsidence prior to volcanic eruption. How this information will be obtained was not discussed in the proposal. But this is the key to differentiating the two rift-formation models.

In addition, several figures either seem to be missing or ineffective at illuminating the proposal aims.

Ranking: A3, B1.1, B2.1, C1, D1, E8, F2

461 add2 and 3.

Rift to drift processes within the ocean-continent transition west of Iberia.

TECP appreciate the new data and site proposal put forward. TECP will, however, leave it to the assigned co-chiefs together with TAMU to make the final site locations, as long as the main objectives in the proposal is well taken care of.

463-Add: Shatsky Rise Plume Impact Hypothesis

This is a very mature proposal that clearly states the hypothesis of plume impact and subsequent development. TECP would like some additional review of the implications for plume-triple junction (or plume-plate in general) interaction and how the specific sites selected will further the knowledge of this tectonic aspect of the proposal.

Ranking: A3, B1.1, B2.1, C1, D1, F5(F2?)

472-Rev Marianas-Izu Mass Balance

The mass balance problem in a subduction system has been considered as a goal of the long range plan of the ODP and has been regarded as an important aspect of the Tectonics Panel's interest in general. On one hand, we understand that drilling through the oceanic crust in the western Pacific is the first step to approach the mass balance problem in a relatively simple arc setting, the Marianan-Izu arc system. We have to start somewhere and sooner it better. On the other hand, however, we feel that even the proposed holes are drilled, the problem may remain wide open because of the uncertainty in heterogeneous composition of the oceanic crust, the possibly compositional difference between the subducted oceanic slab that generated the arc volcanism and the oceanic crust to be sampled by the proposed drilling. We would like the proponents to provide the uncertainty of the analysis assuming the holes will be drilled and tell us at what confident level the problem will be solved. We would also like to understand the detailed mass balance scheme and assumptions involved, so we can better evaluate the validity and feasibility of the proposed research.

Ranking: A1, B1.2, B2.1, C2, D1, D5, E8, F2.

Proposal 476 The Hudson apron submarine slope stability transect

The causes and timing of slope failure and their societal impact are important. The proponents clearly state their objectives. However, the TECP is not completely convinced of the incipient nature of failure at HAT 3B. Improved processing and future three dimensional study of other sites, as the proponents state, may not confirm the existence of active slope failure and therefore may only serve as reference points for a stable slope. In addition it was not clear how the timing and nature of faulting would be established for inactive features? It appeared that at most only the latest period of activity could be "dated". Moreover is the resolution of the well-seismic correlation of the same scale as needed by the proponents? Mapping of this incipient slump could help clarify some of these aspects.

Ranking: A3 B1.2 C2 D1/D2 E8 F3

478-Add. Multiple Crustal Shortening in the Eastern Nankai Trough due to Arc-Arc Collision of Izu-Ogasawra and Honshu Arcs

This addendum to proposal 478 (originally submitted, fall 95) addresses several of the concerns and questions TECP had with original proposal. TECP also still considers the proposal to be highly relevant to its thematic objectives and recognizes that the proposed research has important implications for the tectonic development of continental margins, the growth of continental crust through collisions, the earthquake cycle and the relation of fluids to all of these processes.

At the same time, several serious questions raised by TECP were not addressed and should be considered by the PI's before the area can be considered high priority for drilling. In addition, a couple of new concerns were recognized with the observations and interpretations presented in the "Addendum." Specifically, TECP is concerned with the following:

Old Concerns:

1. The interpretation that the "shallow decollement" is actually a decollement is weak and needs to be better supported. Specifically, what is the evidence that this discontinuity (Fig. 13a & 13b) is a fault rather than a tilted unconformity or an onlap unconformity? In addition, why does this structure (if it's a thrust) appear to be so different than the frontal thrust shown in Figure 6a?

2. Could the Zenisu fault be dominated by normal rather than thrust displacements? Fig 6b is difficult to interpret but the lack of deformation of the sediments south of the Zenisu ridge suggests that the fault is steep and may be south dipping; thus, the fault would be a normal fault, possibly related to flexure of the subducting Philippine Sea plate. In addition, the magnetic anomaly data (Fig. 5, inset) suggest that the Zenisu fault may be reactivating an east-northeast fracture zone, consistent with the steep fault geometry suggested by the seismic reflection data (Fig. 6b). TECP would like the PI's to specifically address the question of shortening across this zone.

Concerns with the Addendum:

1. The logic for drilling the Tokai thrust needs to be more completely developed. For example, what is the evidence that the Tokai thrust has been more, or less, seismically active compared to all of the faults this area? Why drill this fault instead of one of the other faults in this area (i.e., area of Iida, 1985). Is there **any** evidence to say that this fault will be active in the near future?

2. Site EN5 does not seem to be correctly located. A comparison of Figures 3, 4 and 12, and the Lat. Long. provided in the Site Summaries indicates that EN5 is seaward of the trace of the Tokai thrust. Because this thrust dips north, EN5, as located, will not transect this thrust.

3. In addition, how is the Tokai thrust related to the "Limit of the Backstop" as suggested on page 8?

4. What are "U-shaped depressions" and "fan-shaped structures" discussed on page 5?

5. What are the "X's shown in Fig. 7, earthquakes? If so, how well located are they?

Ranking: A1, B1.2 C2, D1 F2

484 East Asia Monsoon History/South China Sea

This proposal focuses on one of the most exciting interdisciplinary problems in the geological, oceanographic, and atmospheric sciences: the interrelationship among the tectonic evolution of the Tibetan plateau, global climate change, and ocean sedimentation history. The Tectonics Panel strongly endorses the proposed research and regards it as an opportunity for the ODP program to achieve in our understanding of the role of plateau formation in controlling diverse geologic processes. In view of recent intense effort by numerous international groups to investigate in the Late Cenozoic deformation history of Asia during indentation of India and the related uplift history of the Tibetan plateau, the proposed drilling in South China Sea will provide a vital component to the research of this global-scale hypothesis on the interaction of atmospheric circulation, lithospheric deformation, asthenospheric flow/convection for removing the lithospheric root, and biospheric evolution as a consequence of the change in climate. Despite a generally strong supportive feeling about the proposed project, we consider that the tectonic aspect of the project is weak in two aspects: (1) it did not review the evolution of South China Sea in terms of most up-to-date studies in the area, and (2) it did not integrate the detailed Late Cenozoic history of continental deformation in Asia. Particularly, the integration of the continental tectonic history and the opening history of South China Sea should be considered when interpreting the deposition history of South China Sea. Several recent publications on the Red River fault and South China Sea are extremely relevant to the proposed research. For example, the change in sedimentation rate in the Yingge Hai and Pearl River deltas may reflect the change in tectonic style along the Red River fault: which began its normal right-slip history at 5 Ma. The

following references may provide a start to integrate the history of continental tectonics to the paleo-climate study of the South China Sea:
D. Heys et al. (JGR, 1995; South China Sea, 3 papers)
H. Leloup (JGR, 1993; Red River fault. Please look for references by C. Allen on the Pleistocene and Quaternary history of the Red River fault and the reference by Anne Briea on using magnetic anomalies to reconstruct the history of the South China Sea)
Harrison et al. (JGR, 1992; Red River fault)
Molnar et al. (Annual Review of Earth and Planetary Sciences, 1993).

In addition to the general concern on the lack of discussion on the regional tectonic history, many of the panel members expressed concerns on whether the industrial well data in South China Sea will be available to the international community when needed to support the publication of the final drilling results. We also would like to know the data quality and appropriateness to the proposed ODP drilling in South China Sea. Thus, we would like the proponents to address the following questions:

(1) how much of the industrial well data are available to the proposed research?
(2) are they open to the scientific community for examination in supporting both preparation of the proposed drilling as well as the final publication of the ODP results if this proposal is funded?
(3) justify why ODP drilling is needed in South China Sea when so many industrial wells are available?

We understand that a proposal on the tectonic history of the South China Sea is also in progress. It does not make sense that the two proposals are not integrated.

Ranking: A1, B1.1, B2.1, C2 (more structural geology data in South China Sea are needed to further strengthen the tectonic component), D1, E4 (please indicate the regional geology of both ocean and continent), E7 (needs more up-to-date references on regional tectonics), F2.

487 - Palau-Kyushu Ridge and Shikoku Basin

Although the general problem of origin of the Palau-Kyushu Ridge and its role in the evolution of the Phillipine Sea plate is of tectonic interest, we feel that the current proposal lacks some critical information, making it difficult to evaluate the scientific merit of the proposal. The missing information includes: 1) sufficient information on regional and local geology and geophysics of the drill sites, including data on the magnetic dipole anomaly; 2) specific hypotheses that can be addressed by drilling at each of the proposed sites; and 3) justification of the selected sites, hole penetration depths, drilling strategy, etc. To help revising the proposal, we recommend the proposal proponents to contact JOIDES for obtaining example proposals.

Ranking: A5, B1.3, C3, E3, E7, E8, F4

Proposal 491- drilling of defined oceanic crustal categories to a better understanding of cyclic crustal accretion

The TECP finds crustal accretion processes of great interest. The seismic data presented is of great quality but is the Angola Basin the ideal location for the experiment proposed. For example, the proximity of the Walvis Ridge may actually skew the interpretation of crustal accretion processes. Perhaps other sites globally are better suited or perhaps sites on either side of the South Atlantic adjacent to South Africa and Brazil away from the Walvis Ridge should be considered.

It remains unclear whether sampling only the upper few hundred meters of layer 2A will provide the necessary information to distinguish between the various crustal categories proposed. Future versions of this proposal should clearly explain the geochemical/lithospheric models that can be tested. A better connection between drilling and objectives needs to be established.

In addition, a better formulated proposal could be achieved by (1) more extensive referencing, (2) labelling of figures (line name, horizontal scale), (3) locating all seismic data shown in maps, (4) including ESP analysis results.

Ranking: A3 F5 B1.3 B2.2 C D1 E4 E7 E8

ODP Proposal 492 -- Taiwan Arc-Continent Collision 2: Record of Collision and Post-collisional Stages

This new proposal addresses a fundamental problem in structural geology and tectonics - the collision and accretion of magmatic arcs to continental margins. Specifically, PI's are asking to drill up to 8 holes in the northern part Taiwan arc-continent collision in order to understand: (1) the age of the initial collision, (2) the transition from collision to back-arc extension and (3) history of the Ryukyu arc and subduction complex beneath which the "collided" arc is now being subducted.

Because this proposal addresses the collision initiation, it complements ODP proposal 450 which addresses the active parts of this collision and the transition from subduction to collision in the region south of Taiwan.

Questions and Comments:

1. TECP is very concerned about the ability of testing the various models the PI's have proposed. Specifically, although TECP appreciates the general importance of dating the collision initiation, they would like to see more detailed discussions of what is known from onland studies and how a more well constrained date of initiation would better constrain specific models.

2. TECP would also like to see a more detailed discussion of how drilling will better constrain the model presented in Fig. 15. How will the uplift/subsidence history of the Hoping basin be used to constrain this model?

3. Several members of TECP would also like to see a discussion of possible kinematic models that include plate motion vectors for the Philippine Sea, Eurasia and Okinawa forearc.

TECP fully recognizes the "in progress" state of this proposal and looks forward to a revised proposal that includes processed seismic reflection profiles and swath-bathymetric coverage.

Ranking: A1, B1.2, C3, F3

495 Seychelles microcontinent

It is not clear to the panel how the processes that create microcontinents differ from the processes that result in the breakup of larger plates. The proponents mention the testing of "tecono-magmatic" models; however it remains unclear exactly which models they wich to test. In particular there is a model published by Steckler and Ten Brink (EPSL, year ?) which attempts to explain the formation of small lithospheric slivers as a function of rift propagation and lithospheric inhomogeneities. Such a model would be testable. The proponents make a case for a relatively large Seychelles microcontinent. A logical step to test this idea based on existing data would be a number of plate reconstructions (how does it fit?). This could be easily accomplished using the PLATES software and data base. This way a better conceptual model could be presented as to what the implications of existing data are for the breakup of this part of Gondwana. Even though a large amount of existing data are presented, TECP feels that the data could be exploited more thoroughly to make a case for (1) why the Seychelles are a prime example for a microcontinent (how is it similar or does it differ from other microcontinents?) and (2) what distinguishes microcontinents from larger plates in terms of their formation, and exactly which tectonic models will be tested to explain how microconreintnts form? Major revisions are necessary to create a research proposal more relevant to TECP themes.

Ranking: A5, B1.3, C3, D6, F3

LETTERS OF INTENT

LOI 63 - H_20 Seafloor Observatory

TECP supports the concepts put forward in the Long Range Plan concerning the integration of the drilling of seismic observatories with the broader ocean going communities objectives. We now wish to see a full proposal so that priorities and the scientific merit of all the proposed individual seismic observatory sites (including the Japanese Observatory) can be judged in a broad a context as possible.

The panel, thus, greatly encourages the proponents to include a broad a group of proponents as possible so that the full potential of the sites can be developed.

LOI 64, Dike-gabbro transition - Central Cocos Plate

TECP considers the dike-gabbro transition aspect of this LOI addresses primarily LITHP thematic interests. Other aspects, i.e., intra-plate stresses, permeability, and fracture-fluid interactions, are clearly of TECP relevance. Since a "legacy" deep hole likes the one proposed here is rare, there should be extensive discussion regarding drill site selection and drilling strategy, perhaps by a working group.

LOI 65, Eastern Australian Margin

The present letter does not have any tectonic relevance. However, the panel noted that interesting tectonic problems exist at this margin. In particular Figure 3 indicates that there is an onlapping sedimentary unit overlying basement which is distinctly different from the prograding clinoforms in package. 1. Questions of interest might be how the sedimentary packages of the margin are related to (1) syn-rift flexural rift shoulder uplift and subsequent erosion, (2) slow thermal subsidence and basement tilting seaward of the rift shoulder, (3) global climate changes in the Miocene, (4) the northward motion of the Australian plate, (5) epeirogenic uplift of the Blue Mountains, and (6) various combinations of the above. TECP encourages the proponents to submit a proposal which includes tectonic perspectives and a tectonophysics proponent.

LOI 66- Basement of the Marsili (South Tyrrenian Sea)

TECP does see opportunities to develop interesting projects in this region that are directly aimed at objectives in the new Long Range Plan and active processes in particular. As written this proposal did not fair well during review mainly because TECP is now constrained to operate mainly within the Long Range Plan and it not clear how this multi-objective topic would fit in. To be worth drilling in the LRP context the topic to be drilled must effectively be one of the, if not the best example in the world. A mainly regional interest is not enough. We note however that the Tyrrhenian Sea could be one of the best areas worldwide for study of rifting in a back-arc setting and exploration of the continent-ocean boundary. Active processes involved in the initiation and development of an extensional system and/or the behaviour of active extensional faults are of strong thematic interest in terms of the Long Range Plan. We encourage the proponents to obtain a copy of the Long Range Plan and formulate their objectives to conform to as many of the main themes as possible.

LOI 67- W. Pacific ION/OSN Seafloor Observatories

TECP supports the concepts put forward in the Long Range Plan concerning the integration of the drilling of seismic observatories with the broader ocean going communities objectives. We now wish to see a full proposal so that priorities and the scientific merit of all the proposed individual seismic observatory sites (including the Japanese Observatory) can be judged in as broad a context as possible. The panel, thus, greatly encourages the proponents to include a broad a group of proponents as possible so that the full potential of the sites can be developed.

6. Global Ranking

The Panel listed for ranking all those currently active proposals of thematic interest in terms of the Long Range Plan; the Panel further noted those proposals that could be ready for scheduling in 1996. Scientific importance, however, was the sole criteria for ranking. The voting followed previous procedures; participants did not vote for their own proposal(s). The ranking included a number of generic topics (Gen) of potential future interest.

Table 1

No.		AVE	S.D
450	Taiwan	5.2	4.7
447	Woodlark	5.5	3.7
431	W. Pac. Seismic Net	7.2	5.7
445	Nankai	7.5	5.0
442	N. Mariana Rift	7.6	5.2
484	Monsoon History S China Sea	8.4	6.4
451	Tonga	9.5	7.4
Crust Struc (Gen)		9.9	6.8
Mass bal. (Gen)		10.6	7.4
457	Kerguelen Lip	13.3	6.4
463	Shatsky Rise Lip	13.6	6.3
492	"Taiwan 2"	13.7	7.8
470	Red Sea	13.8	6.6
Earthquakes (Gen)		13.9	9.6
Vert. tectonics (Gen)		14.4	7.8
475	Phys. props accret. wedge	14.8	6.2
low-angle faults (Gen)		15.4	8.7
355	Peru/Gas Hydrates	16.2	6.8
334	Galicia	16.6	6.7
448	Ontong Java Lip	16.7	7.3
back-arcs		17.0	6.1
479	Felsic Volc. E Manus Back-arc	17.3	6.2
478	E Nankai cont. margin	17.8	5.3
466	CAB	18.1	4.9
480	Caribbean Lip	19.8	5.2
NARM (Gen)		20.6	3.7
476	Hudson Apron	20.6	4.2

7. Watchdogs: Assignments were revised as follows

Divergent margins:	Jacob Skogseid
Translateral margins and oceanic transforms	Juan Lorenzo
Convergent margins:	Kevin Brown
Stress and in-situ measurements:	Kevin Brown
Microstructures and strain:	Tim Bryne
Back-arc and fore-arc settings:	Dave Scholle
Geophysical observatories:	Ashisan
Continent ocean integration and ocean history aspects	An Yin
Oceanic lithosphere	Jian Lin, Girardeau (future)
Geomagnetism and palaeomagnetics	Ulrich Bleil (future)
Geomagnetism and palaeomagnetics plate dynamics	Dietmar Müller

8. Liaisons:

	To
DMP	Jacob Skogseid (re-assignment)
IHP	Steve Hunt (re-assignment) and Joann Stock (alt)
LITHP	Jian Lin (Girardeau after next meeting)
SGPP	Tim Bryne (alt. Kevin Brown)
SMP	Kevin Brown (until Fall'96)
TEDCOM	Steve Hunt (alt. Dietmar Müller)
OHP	An Yin (alt. Gerry Karner).
SSP	Dave Scholle (member assigned to support SSP when necessary)

Note: TECP attaches importance to liaison to OHP (other liaison attendance will be reduced if cost is limiting factor).

9. Liaison's rôle.
TECP notes that different panels permit interaction of liaisons to differing extents. Some service panels appear to restrict thematic panel liaisons to comments on strictly their panels' interests. TECP suggests PCOM review liaisons' rôles with a view to maximising discussions and interactions of aspects of the panels' business (i.e. thematic liaising should be free to speak freely on all relevant aspects).

10. J.R. refit 1998.
After discussion, the following recommendation was made (see executive summary). TECP notes TAMU'S preliminary plans for J.R. refittings and suggests the following items could be considered for improvement: 1. Noise abatement in key working areas, 2. Improved ventilation in key working areas, 3. Additional space by adding floor to lab. stock, 4. Raising the smoke stack on the Helideck to improve recreational facilities".

11. Proposal length.
TECP notes that some proposals are now very long, cumbersome and difficult to evaluate. TECP suggest PCOM instigate a policy to limit proposal size (e.g. Text 20 pages, Figures 10, single spaced, single sided, Font size 12).

12. Diamond coring System DCS
TECP reaffirms its long-standing support for the principal of deep drilling in challenging settings (e.g. young oceanic crust, fractured rocks, chert). However, at present TECP has the following concerns:
1. Alternative means of deep drilling (with hole control) in the above settings should be properly evaluated before commitment to proceed further with DCS.
2. TECP believes that instrumentation of such deep drilled holes will be essential to achieve thematic aspects of LRP (i.e. instrumentation initiative). Will this be possible?
3. TECP is concerned that financial commitment to DCS could inhibit use and development of other initiative techniques of thematic interest (i.e. LWD, MWD, CORKING, completion of JANUS). If this were to be the case TECP would suggest scaled down funding of DCS until further funding is achieved, thereby allowing other work to continue.

13. Riser drilling.
TECP reaffirms its longstanding support for riser drilling (see Kyoto "Drilling in 21st Century, 1995). TECP envisages using riser for key LRP thematic objectives including 1. drilling seismotectonic zones, 2. deep drilling of rifts and divergent margins.

14. Core orientation techniques.
TECP requests DMP to review the status of existing and possible future techniques to achieve orientation of core. This will assume greater importance in the future for key TECP LRP thematic work (e.g. study of seismotectonic zones). TECP notes that the sonic core monitor for hard-rock orientation has been withdrawn as it does not work; the tensor tool is deployed but gives variable and sometimes questionable results. A new approach is needed whereby core orientation is achieved as core is cut and enters the core barrel. The goal is to record the stress tensor in three dimensions (ie the principal stress is needed and not just the horizontal stresses).

15. TAMU savings
TECP discussed the list of possible financial savings put forward by TAMU. However, a **number of these are extremely important to the panel's key thematic interests** in terms of the LRP **and should be preserved.**

1. Student work force for repository work and science support.
2. Part of JANUS project related to processing of sedimentary and tectonic structures (Ca. $\frac{1}{3}$).
3. A small part of the Digital Imaging item. Note TECP urgently needs an inexpensive Imaging system to purchase and put into operation within several months at most (at cost <$20,000 - see below).
4. Split core MST. TECP is very interested in this longterm.
5. TECP strongly believes some funds must be maintained for CORK and LWD, or innovation in key LRP thematic interests will end.
6. TECP believes XRD on board is essential, but XRF is not essential for the panel's thematic interests.

16. JANUS "structures" initiative.
Steve Hurst reported the following:

Groups concerned with core description of sedimentary, igneous and metamorphic rocks and structures met in January to determine the requirements for the JANUS applications that will provide the data entry and data recovery interface for the new JANUS database. The groups agreed to a common framework for the database that will enter, store, display and report core description data that is similar to that described in the Core Description Workshop Report of August 1995 (Kevin Brown report). As currently scheduled, preliminary data entry programs will be developed by May 1996.

The development of the data entry program for core description, depends on the development of hardware for the digital imaging of core. This requires separate funding from JANUS and a separate development process. Technology is available for inexpensively and quickly providing adequate digital images for core description. Alternative, high-resolution, high-quality imaging systems suitable for longer-term implementation are also being evaluated. The JANUS groups strongly supported a quick implementation of available technology for imaging in time for the initial implementation of the JANUS database, that can be upgraded in the longer term.

Construction of the barrel sheets for publication should be an automated process where the shipboard scientist exercises some control over what data from the database is contained in the sheet. Alternative formats and content for the barrel sheets should be considered in the light of the significant changes that the JANUS database will have on the storage, display and reporting of data.

Members of TECP should review the detailed feature list and data necessary for structural purposes. The list will be available via email within the month of March, 1996. Suggestions, criticisms and additions should be forwarded to the JANUS Group 5 chair, Steve Hurst.

In addition, Kevin Brown reported on the Core Description Workshop that he had chaired and he also demonstrated the imaging programme on a MAC powerbook. The system was clearly workable and TECP was very impressed with the results achieved and is anxious to proceed to the next phase as soon as possible.

In respsonse to the above, TECP wants to see integration of sedimentary and structural data completed, if necessary in an extended JANUS project (as endorsed by PCOM, e.g. Nov 1995. In addition, TECP endorses the contents of the 'Core Description Workshop, August 1995". "Brown Report" and wishes to see rapid and effective integration into the JANUS project. TECP wishes that IHP consider how JANUS can be used to maximise extraction and utilisation of Janus-related data. For core description TECP requires immediate implementation of process for digitising core and integration with JANUS data. An inexpensive digitising system test is already developed and should be introduced within several months at cost of a few tens of thousand dollars, maximum.

This inexpensive digitising system is adequate for most TECP needs and should certainly take precedence over a much more expensive digitising system at a cost of hundreds of thousands of dollars that may take years to become available. Nevertheless TECP shares a long-term interest in more sophisticated digitising processes, but not at expense of short-term needs.

At present, TECP has the following concerns:
1. That budget cuts should not prevent completion of this part of JANUS (as noted above TECP would recommend savings from e.g. ACS if necessary).
2. TECP is concerned that rotation of panel members on IHP takes place to ensure relevant expertise is in place to assist JANUS project with sedimentary and structural data (i.e. Members whose work is completed should rotate off).
3. Introduction of inexpensive digitising system should not be delayed.

17. Drilling Implementation Plan
TECP responds to PCOM Chair's request for a draft implementation plan in the context of the LRP, as follows:

Phase II to 1998:
- Study of low-angle detachment fault, e.g. Woodlark
- Study of collisional settings, e.g. Taiwan
- Study of convergent margins incl. LWD, e.g. Nankai.
- Study of Forearc and Backarc Processes, e.g. Tonga, N. Mariana.

Phase III 1998-2003

- Instrument low-angle active detachment fault, e.g. Aegean.
- Mass Balance Convergent margin, e.g. Mariana, Nicaragua.
- Monitoring Subduction Systems, LWD etc.
- Earthquake processes and seismic network. e.g. off Japan, off Hawaii, off Central America.
- Oceanic Crust Structure and Seismic reflectors, e.g. S Atlantic, off Australia, N. Atlantic.
- Deep structure of rifts and passive margins (incl. conjugates), e.g. Iberia S, Newfoundland Basin, S. Australia margin; S China Sea.
- Continental climate/tectonic interactions, e.g. monsoon studies - S. China Sea.

Phase IV post 2004.

Both continued drilling without a riser and riser drilling will be essential to achieve LRP thematic objectives, i.e.:

1. Without riser "JR-2"
   - Instrumentation of young active systems.
   - Seismic observations to study earthquake processes (inc. seismic network).
   - Studies of deformation and fluid flow.
   - Climate/tectonic interaction studies and tectonic controlled ocean gateway studies.

2. With riser "OD-21" (<2.5 km water depth)
   - Seismotectonic zones of active margins, e.g. Cascadia.
   - Deep drilling of divergent margins and rifts.

Notes:

1. TECP is encouraged that top thematic objectives in the 1995 whitepaper are mainly included in the LRP. TECP believes it can work effectively within the LRP context.
2. The implementation plans allow for innovation, e.g. borehole instrumentation, LWD, DCS, riser drilling.
3. TECP notes the need for improved consideration between groups of proponents on allied thematic proposals (e.g. deep structure oceanic crust; seismic observatories [may exist, but not reported to TECP].
4. TECP notes that a backlog of mature or nearly mature relevant proposals for drilling in the Pacific has built up while the ship has been in the Atlantic (e.g. Woodlark, Nankai, Tonga, N. Mariana, Japan seismic network). These should not lose oaut by the switch to the LRP (in fact, they fit the plan OK).
5. As explicit in the LRP TECP wants flexibility to remain to allow outstanding new proposals concerning additional topics not necessary foreseen in the LRP still to be considered for future drilling.

18. Revision of panel structure

TECP embarked on a stimulating, wide-ranging discussion of possible revision of panel structures. TECP feels that there is a perception that the present panel structure is too cumbersome, introspective and apparently does not share the support of outside community. TECP is particularly concerned about the lack of subject area balance in PCOM that may influence selection of drilling proposals. TECP also feels that a form of peer review of proposals is essential to maintain and enhance wider community confidence in the excellence of ODP science.

TECP puts forward the following model for radically altered panel structure.

1. <u>THEMATIC PANEL STRUCTURE</u>
   This would consist of:

   a) SCIENTIFIC STEERING COMMITTEE (single, unified).
      - to evaluate thematic relevance of all initially submitted proposals and LOI'S
      - to obtain mail reviews to confirm potential excellence of science involved in initial proposals in LOI'S.
      - to instigate a limited number of short-term working groups to help advance proposals to maturity.

   b) WORKING GROUPS

. Members of working group to come from Scientific Steering Committee plus ad hoc additional experts from wider community (e.g. 4-6 total). Proponents not to be on Working Groups. Working Groups to have limited life and be dissolved when proposals are mature. Report to the Scientific Steering Committee and Science Review Panel.

2. SERVICE PANEL STRUCTURE

a) SERVICE PANEL (single unified) covering all aspects to identify and prioritise service functions.
. To solicit international mail review of service priorities.
. To set up limited life Working Groups).
. To interact with Science Steering Committee, PCOM, etc.
b) WORKING GROUPS
. To cover specific functions as existing service panels (e.g. TEDCOM), but also to aid development of specific tools.

3. SCIENCE REVIEW PANEL (single, unified).

. Composed of acknowledged international senior scientists who are not themselves members of other ODP structures (to improve community confidence in decision making).
. To obtain mail review of mature proposals from wider international community.
. To prioritise mature drilling results and report this to PCOM.

4. PCOM

. To carry out duties essentially as at present, and would schedule already prioritised and mature scientific proposals.

Notes. The proposal/structure has the following advantages:
1. A bold new plan for new programme; aids renewal.
2. Increases confidence of wider non-ODP community.
3. Streamlines decision making.
4. Separate ODP structures from ultimate evaluation of mature drilling proposals; again aids confidence.
5. Eliminates overlap and duplication in present service and thematic panel structure.

But one possible disadvantage: Working Groups could get out of control, so limited size and life and number to be firmly controlled by Science Steering Committee.

19. Next meeting.

1st priority - Sultan Qaboos University, Sultantate of Oman.
Host, Dr Samir Hanna, Alastair Robertson.
With field excursion to study excellently exposed thrust belt, foredeep and ophiolite.
2nd priority - Thessaloniki, N. Greece
Host, Alastair Robertson
With field trip to study Jurassic marginal basin and microcontinental structure.

Dates preferably 15th-21st October (to be confirmed)

20. Thanks

The meeting concluded by recording TECP's sincere thanks to Roland Huene for his outstanding assistance with the panel's work. His great knowledge, of particularly convergent margin settings and historical perspectives, have been of immense value, and TECP wishes him and his family good fortune and continued scientific endeavour in the future.

Date: Thu, 26 Oct 1995 16:59:36 -0600 (CST)
From: WEATHERFORD@COOK.TAMU.EDU
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JOIDES Tectonics Panel, Fall Meeting, Antalya, Turkey, 19-21st October 1995

JOIDES TECTONICS PANEL
FALL 1995 MEETING
Antalya, Turkey 19-21st October, 1995
Executive Summary

Attendees:
TECP Members: Juichiro Ashi, Univ Tokyo; Kevin Brown, Scripps Institution; Tim Byrne, U. Connecticut; Yves Lagabrielle, Univ Bretagne; Jian Lin - Woods Hole; Greg Moore, SOEST; Alastair Robertson, Univ Edinburgh; Jacob Skogseid, Univ. Oslo; Mike Steckler, Lamont Doherty; Phil Symonds, Australian Geol. Survey; Uri Ten Brink, USGS-WHOI; Roland Von Huene, Kiel; An Yin, UCLA.

Liaisons: PCOM - Greg Moore (acting), TAMU - Carl Richter, SGPP - Mike Underwood, Phillipe Pezard - WLS, Dave Falvey - JOI

Host: Alastair Robertson

1. Ranking of proposals

Note: Proposal 475 (LWD/Barbados) was added to the prospectus. Otherwise TECP voted on only those proposal in the Prospectus that are substantially within the panel's mandate.

Rank	Proposal		points	Stdv
1.	461	Iberia 5.8	1.5	
2.	475	Barbados	5.0	1.9
3.	447	Woodlark	4.9	1.7
4.	468	Romanche	3.8	1.6
5.	457	Kerguelen	3.5	1.9
6.	300	735B	2.6	1.6
7.	480	Caribbean	2.4	1.3

2. Recommendations
2. After discussion TECP adopted the following recommendations. Further details of the number of the issues are given in the minutes below.

2.1. TECP recommends to PCOM that PCOM recommend to JOI Inc that JOI Inc seeks funds to enable obtaining Logging-While-Drilling data as part of the scheduled leg of drilling on the Costa Rica active margin.

Note: TECP reaffirms its belief in the scientific benefits to be obtained by using LWD technology. TECP accepts that for LWD to be carried

out this would involve elimination of routine wireline logging, that accounts for ca. 8 days of operation time. In addition, several additional days of LWD time would have to come from planned drilling operations. Notwithstanding TECP's support for LWD, it is clearly essential that sufficient drilling is carried out to enable accurate determination of the mass balance parameters at the Costa Rica active margin since this remains the primary drilling objective.

2.2. TECP recommends to PCOM that PCOM recommend to JOI Inc that JOI Inc directs ODP/TAMU to ensure that integration of structural (and related sedimentary) data remains a high priority within any planned extension of the JANUS computerization project.

TECP is concerned that the Janus contract will finish before the input of structural information to the data base is dealt with. TECP recommends that excessive sideways expansion in user groups 1 - 3 is reasonably contained so the basic framework of the core descriptions input program is completed for groups 4b and 5 within the Tracor contract period. If groups 4 and 5 are not completed within the specified window of the Janus project additional funds should be found to complete this portion of the Janus project.

2.3. TECP recommends to PCOM that PCOM recommends to JOI Inc that JOI Inc. directs ODP/TAMU to further investigate the development of tools capable of recovering (and analyzing) fluids and gases that record in-situ formation temperatures and pressures. TECP further requests that JOI Inc. devise means to redirect the necessary funding for the required engineering developments to take place.

Note: TECP remains disappointed that so little concrete progress has been made with certain engineering developments (e.g., with PCS) that are important for a number of highly ranked active proposals (e.g., Taiwan, Woodlark). TECP advocates that a review be undertaken to determine if the òend of the roadó has been reached with current developments and if so, to consider if entirely different and new systems should be considered for development.

2.4. Scheduling and staffing of legs
TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to give careful consideration to the possibility of in future scheduling legs in a more flexible manner such that òmini-legsó can more easily be accommodated. It may also be necessary to devise new and more flexible means of scientific staffing to facilitate multi component legs.

Note: Based on the content of highly ranked active proposals, TECP believes that there will in future be a demand for òmini-legsó (e.g., for LWD).

2.5. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to keep under careful review the new system for IR volume publication and to institute any necessary changes if the new system should prove to be detrimental to ODP science in any way.

Note: TECP suspects that the new IR system will result in a serious drop in quality of the actual content and presentation of the

shipboard database. TECP would have preferred to see the IR volume remaining essentially in its present form, with the main financial economies being made in the SR volume.

2.6. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to put in place the modifications suggested by PCOM to the format and content of the SR volume.
Note: Publication in the open literature at any time is OK providing safeguards are strictly adhered to. Six months later submission of papers is not a serious problem. However, TECP warns that the standard of the SR volume is likely to decline, ending up as weaker papers, data reports, and several synthesis articles.
2.7. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to ensure that (brief) summaries of the achievements of individual legs are published in the JOIDES Journal at the earliest possible time after completion of a leg. In addition, TECP suggests that a complete list of the titles of papers in SR volumes be published as soon as available in the open literature (e.g., in EOS, GSA Today, etc.).

Note: TECP members believe the switch to publication of leg Preliminary Reports on the Internet will simply result in them being mainly ignored. Only òhard copy on individualõs deskó is likely to be read routinely. TECP appreciates that financial economies in publication are necessary, but suggests that rapid publication of achievements of individual legs would benefit the wider community. TECP also feels that publication of a list of SR titles for each volume in the open literature would be an effective way of informing the wider community of the latest ODP results.

2.8. Legacy holes
TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to safeguard the long-term integrity of òlegacy holesó as proposed by PCOM.

Note: TECP endorses PCOMõs perception that the recognition of òlegacy holesó is useful. TECP recommends that the following sites be considered for future ôlegacy holeó status: I) JT sites off Japan; ii) Costa Rica, if suitable lithologies are drilled (but time may be insufficient on this leg: LWD has a higher priority for TECP); iii) Woodlark Basin active detachment system (when a suitable site is finalized).

2.9. TECP recommends to PCOM that PCOM recommends to JOI Inc. that steps are taken to ensure that potential conflict of interest situations are avoided throughout the entire ODP panel structure.

Note: TECP fully endorses EXCOMõs recent advice concerning the need for possible conflict of interest situations to be avoided. In the past TECP has guarded against such situations by routinely requiring panel members who are proponents of any drilling proposal to be absent during formal presentation of their proposal. TECP intends to further strengthen safeguards by, whenever possible: I) avoiding having any proposal presented by a panel member who is from the same institution as a named proponent; ii) avoiding having a panel

member present a proposal that could be seen as being in competition with one of which he/she is a proponent; iii) ensuring that any material not formally included in the submitted proposal is cleared with the panel chair prior to presentation as part of any proposal under discussion.

2.10. Management of ODP/TAMU

TECP supports the concept that changes in the structure of management (i.e., a move to accepted industry project oriented management) may well be necessary at ODP/TAMU in order in future to ensure effective work scheduling and timely completion of engineering developments and the integration of such technology with seagoing operations.

Note: TECP is disappointed by the delay in delivery of several engineering developments, e.g., DCS that remain relevant to high priority thematic objectives. TECP suspects that the situation would be improved by a move to more project oriented management. This way, problems could at least be identified at an early stage allowing corrective measures to be taken.

2.11. Peer review of proposals. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs the thematic panel structure to carry out a process of peer review with regard to highly ranked proposals.

Note: There is apparently a perception in these cash-starved times that huge sums of money are being devoted to drilling ODP proposals that have not been adequately peer reviewed. While this is largely an erroneous perception, TECP feels it could well be useful to obtain peer reviews of highly ranked proposals (only those), with a view to I) obtaining input from others with different expertise; ii) seeking different points of view (e.g., on hypotheses to be tested by drilling). Such peer review material could carry its own problems in interpretation (e.g., potential bias, uncertain accuracy, conflicts of interest, etc.) and would be seen only as supplementary to the panelõs normal review process.

2.12. Availability of log data. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to ensure that all log data remain available to the scientific community in a readable form.
As for standard downhole measurements, TECP recommends that BHTV acoustic images of the borehole surface are made available to the ODP community using a standard media (such as CD-ROM) and standard data format readable by anybody (such as BinHex). This recommendation should apply both to future datasets and to existing ones, including those obtained by DSDP

3. Suggested US panel member replacements
Replacement for Greg Moore (convergent margins): 1. Dave Scholl, Stanford, 2. Nathan Bangs, UT Austin, 3. Mark Cloos, UT Austin, 4. Dan Davis, Stoneybrook.
Replacement for Mike Steckler (divergent margins): 1. Garry Karner, Lamont, 2. Debby Hutchinson, USGS/Woodshole, 3. Marcia McNutt (MIT); 4. Fernando Martinez, U Hawaii.
Replacement for Uri ten Brink (vertical and translational tectonics): 1. Ann Trehu, Oregon State, 2. Juan Lorenzo, LSU, 3. Sue Mcgeary

(Delaware), 4. Paul Mann (UT Austin).
Note: 1 is highest priority.

4. Next meeting
A mid California location (Santa Barbara, Monterey or San Louis Opisbo) from 4-6 March, 1996; host Mike Underwood; fieldtrip 1-3 March, led by Mike Underwood.

JOIDES Tectonics Panel, Fall Meeting, Antalya, Turkey, 19-21st October 1995

JOIDES TECTONICS PANEL
FALL 1995 MEETING
Antalya, Turkey 19-21st October, 1995

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1. Introduction

The meeting began by welcoming Tim Byrne (new panel member) and Dave Falvey (Director of ODP at JOI).

2. Minutes

The prior minutes were endorsed without further discussion.

3. Liaison reports

3.1. JOI
Dave Falvey provided an update on the three safety incidents/accident that had occurred during and then terminated Leg 163. He indicated that ODP/TAMU had initiated a review of the top drive incident and that SEDCO was already reviewing the moonpool accident and the storm damage. EXCOM decisions from the July meeting were then summarized:

Project Management. The concept was presented and discussed. There was general support from the Panel for a system that required a greater level of operational and science delivery planning, that matched the current high level of science planning. There was also support for the concept of a òproject managerô for legs of science.

Communications Strategy. This initiative was briefly discussed.

Cooperative Technology R&D. Also discussed briefly.

Internationalization Strategy. There was considerable interest in and support for the attempts currently underway to recruit new members of the program.

Nansen Arctic Drilling Program. The new cooperative relationship that has been accepted, in principle, between NAD and ODP was noted. The relevance of this concept to cooperation between many other international programs and ODP was discussed.

Conflict of Interest. There was general support for the revisions to the ODP Policy Manual covering conflict of interest. It was pointed out that TECP had always followed these guidelines. There were several members of the Panel who were of the view that even the revisions did not go far enough. A more proscriptive code, covering òsoftó conflict of interest was suggested.

Long Range Plan. The current iteration of the LRP, including the most recent input from EXCOM and the International Review, was discussed. The structure if the two major science themes and the interrelated ònew initiativesó was presented. Despite the comprehensive history of consultation that had led to the current version of the plan, there was a perception, amongst some Panel members, that the level of discussion with the community had been inadequate.

3.2. PCOM
Greg Moore summarized some of the April PCOM meeting results.

3.3. TAMU
Carl Richter gave additional information on the ship status. Repairs are currently carried out in Halifax and will not be finished before October 27. Scheduled first day of Leg 164 portcall is October 28 - a delay for Leg 164 is unlikely. Biggest repair item is # 1 thruster.

Personnel changes at ODP/TAMU
1. New director: Jeff Fox (URI)
2. Manager of engineering: Open
>60 applicants, 2 offers, 2 declines
3. Manager of Information Services: Russ Merrill replaced John Coyne
4. Manager of Publications: Ann Klaus
5. New Staff Scientists:
    Paul Wallace (Volcanology/Igneous Petrology, Sedimentology)
    Mitch Malone (Carbonate Geochemistry)
    Garry Acton (Paleomagnetism)

Staffing Status
Co-chiefs and staff scientists for all scheduled legs have been nominated. Staffing of Leg 164-167 is completed and underway for Leg 168-170.

Drilling operations requirements for upcoming legs:
Leg 164-166: R/E hole and casing; PCS
Leg 167: routine APC
Leg 168: Two CORKS; MDCB; DIC
Leg 169: Four CORKS in cased R/E holes

Leg 170: cased R/E hole

PCS: three new cutting shoes were designed. Landtesting in the beginning of October demonstrated good recovery. System will be employed at Leg 164.

DCS: Stress Engineering and Parvus began working on Phase II of the Controller Development on August 1, 1995, as scheduled. Developing and testing will continue on as many controller schemes as possible to find one that works best. It is from the results of this phase that the TEDCOM DCS Subcommittee will decide on feasibility.

Database upgrade: Steering committee met Sept. 15 in Austin and was pleased with what has been accomplished so far, although complete functionality of the UG-1 applications was not achieved. UG-1 (Corelog, Leg/Site/Hole, Curation, Ops, Depth), UG 2A (MST, Geochem and quad combo logs), UG-3 (physical properties) will be ready for testing on Leg 165. Currently, UG-1 is being finished and 2A and 3 usergroups are meeting. Difficult to set arbitrary deadlines other than the leg that the software is supposed to be tested on. The scope of the various usergroup applications is unknown until the usergroups have actually met and discussed their needs.

Publications: new publications policy (mandated by PCOM) is in place with the beginning of Leg 164. New IR Volume will have 100 pages of written text (contents to be determined by co-chiefs and staff scientist) and prime data (barrel sheets and core photographs, 50% of the current size). Additional text and figures can be put on CD ROM (not edited by ODP/TAMU). SR Volume will have a size limit (500 pages) and editorial support will be reduced.

3.4. LITHP

Jian Lin reported the information provided by Doug Wilson on the results of LITHP meeting that occurred immediately before the TECP meeting. Proposals that were discussed at LITHP and that shared some TECP proposals include 468 (Romanche), 300 (Return to 735B), 480 (Caribbean Basalt), 474 (offset Engineering Drilling), 431 (west Pacific Geophysical Network), 481 (Red Sea), and 457 (Kerguelen).

3.5. SGPP

Mike Underwood summarized the results of the Fall 1995 meeting that was held in Copenhagen, September 27-29. Discussions involved the shallow-water hazards associated with the New Jersey sea-level transect. A detailed high-resolution seismic survey to detect shallow gas has been completed, and efforts are underway to process and interpret the data using an outside consultant. Technology developments of importance to SGPP include the VPC (in limbo) and the PCS. SGPP remains concerned that the modified PCS was not tested prior to Leg 164 (gas hydrates). In addition to the gas hydrate targets, many of the proposals of high thematic interest to SGPP will require a working PCS to maximize success. Unlike most years in the past, the Prospectus for FY 1997 did not include any proposals of high interest to both SGPP and TECP. The top six proposals, in rank order, were 348 (New Jersey), 481 (Red Sea Deeps), 354 (Benguela), 476 (Hudson apron LWD), 464 (Southern Ocean), and 475 (Barbados LWD). Proposals 481, 476, and 475 were inserted into the Prospectus. SGPP invited Dave Goldberg to present background information concerning existing LWD technology and

future developments. SGPP recommended that LWD be added to the drilling plan for Leg 170 (Costa Rica). Future balance among the thematic disciplines of panel members is of some concern, as three sedimentologists have rotated off the panel and have been replaced by geochemists. To help stabilize the panel, Underwood has been asked to remain on the panel for one additional year and to remain as liaison to TECP. The next SGPP meeting is scheduled for March 7-9, 1996, to be hosted by Miriam Kastner in La Jolla.

3.6. DMP

Sue Agar had rotated off and there was a need to identify a additional liaison to DMP. This would be done at the spring 1996 meeting when 5 new panel members would be in place.

3.7. WLS report

Philippe Pezard reported on recent results from the logging program. Besides Leg 158 (TAG) and 163 (SE Greenland 2) where no data acquisition was attempted, the recording of downhole measurements over the past 12 months (Legs 158 to 163) has been very successful in terms of logging data acquisition. While logging was impeded during Leg 159 by hole stability at most sites, high quality logging data and electrical images were obtained on a regular basis at several sites during Leg 160 (Western Mediterranean), Leg 161 (Eastern Mediterranean) and 162 (NAAG 2). Magnetic susceptibility and total field measurements were also obtained during legs 160 (2 sites) and 162 (3 sites) with the GHMT. Remnant magnetic data, hence paleomagnetic inversion description versus depth should be derived from the post-cruise analysis of magnetic susceptibility and total field. Also, acoustic (BHTV) and electrical (FMS) images were obtained in the metamorphic basement section of Hole 976B, Alboran Sea, during Leg 161.

New methods

The recording of GHMT magnetic data (Legs 160 and 162) and BHTV acoustic images (BHTV) constitute the highlight of recent results and new methods for downhole measurements. Both types of data require substantial processing prior to be translated into geological results (continuous vertical timescale and stress field evaluation, respectively) at a given site. The logging contractor can provide a standard processing routine at high additional cost to ODP and that will not necessarily be focussed on the specifics of a given geological context. The WLS group of ODP is consequently evaluating at present the possibility of performing such initial processing within

Data recorded during Leg 160 and 161 (Mediterranean) were also presented to the panel.

Leg 160 - Eastern Mediterranean - Downhole measurements including geophysical measurements were performed at 7 sites, with FMS at 5 of them, GHMT (total magnetic field and susceptibility) at two sites close to the Erastosthenes seamount, and GLT (geochemical logs) at one of the previous two. Downhole measurements prove to be extremely useful for a leg where core recovery was generally low. For example, the unrecovered Messinian evaporites are measured from logs as 6 m-thick in Hole 967E (Erastosthenes seamount), and made of gypsum due to contact metamorphism identified from geochemical logs. The GHMT data, although obtained at nearby sites, cover very different periods with a tertiary sequence in Hole 966F

and a mostly secondary sequence in Hole 967E. The tertiary data will be analyzed to identify reversals of the magnetic field, this in order to refine the depth-time tie at Site 971. The secondary sequence offers a quite unique opportunity to study in a continuous fashion the variations in the intensity of the Earth field during the Cretaceous "quiet" period.

Leg 161 - Western Mediterranean - Downhole measurements including geophysical measurements were performed at 5 sites, with FMS at 4 of them, GLT (geochemical logs) at 3 sites, and BHTV acoustic images in the lower part of Hole 976B, in metamorphic basement. As for the previous leg, one of the two scientific objectives was not addressed by logging as most sapropels layers where found in the first tens of meters below sea-floor, where the drillpipe was kept during logging operations. For downhole measurements, the most significant result of the leg consist in the recording of a very complete dataset in metamorphic basement. The different lithotypes should be precisely identified from geochemical data. For example, the leucogranites are directly identified from photo-electric measurement (Pef). FMS and BHTV images of the borehole surface were recorded for the first time over the same interval in ODP. The comparison should prove to be very valuable for understanding individual biases of each imaging technique. Elsewhere, the preliminary analysis of BHTV transit-time data in terms of hole shape shows a fairly undeformed hole throughout basement and the absence of "classic" borehole breakouts. However, evidences of strain with the shearing of the borehole along a few fault planes are obtained, revealing a trans-tensional environment in basement at this site.

4. Recent Scientific results

Leg 159 (East Equatorial Atlantic Transform)
Carl Richter gave a short overview mainly over the tectonic results of Leg 159. Drilling during Leg 159 represented the first application of deep-sea drilling to the tectonic study of transform margin development. Sites 959 through 962 were drilled on the Ivory Coast-Ghana Marginal Ridge, a prominent marginal ridge that defines the continental margin along this fossil transform boundary. The syn-rift and syn-transform deposits document the early evolution of the active transform margin and its subsequent development as a passive margin.
Strong deformation with normal and reverse faults, veins, breccias, folding, and slumping was observed at all sites in the oldest, i.e., Cretaceous (Turonian and older) sediments. The early Cretaceous consists of intra-continental sediments followed by a marine transgression. The deformation features are the results of continuous shearing that the margin suffered during the period of intra-continental transform.
Tilting and uplift inferred from the sediments reflect generation of the Marginal Ridge due to transform deformation, causing flexural uplift and/or crustal thickening.

Leg 160 (E Mediterranean)

Alastair Robertson (Co-chief) outlined the main results. The "sapropels" part of the leg had achieved all its objectives. The tectonic part mainly involved drilling of the Eratosthenes Seamount

and the mud volcanoes on the Mediterranean Ridge. Both were successful. Drilling of the Eratosthenes Seamount charted the history of initial collision and collapse of the crustal block with a trench-active margin to the north (Cyprus). Drilling on the Mediterranean Ridge had confirmed that the "mud domes" were true mud volcanoes dominated by the extrusion of debris flows, had revealed their anatomy and shows that these unusual structures were >1 million years old. Post-cruise studies will help improve understanding of collisional processes in general.

Leg 161 (W Mediterranean)

The objectives of Leg 161 focussed on the origin and evolution of the Alboran Sea as an example of an extensional basin developed in a collisional setting and on reconstruction of Atlantic-Mediterranean water exchange and the Cenozoic paleoceanography of the western Mediterranean. Site 976 was drilled on a structural high at the Southern Spanish Margin with the objective to penetrate the sedimentary cover and drill at least 200 m into the basement to yield information on the origin and evolution of the Alboran Sea as a typical òMediterranean backarcó basin. 259 m of high grade metamorphic rocks were cored. The contact between the middle Miocene and the basement is sharp and indicates a major fault. Breccias indicate faulting of the basement. All rocks have a well-developed foliation and show evidence of ductile and brittle deformation. Resemblance to rocks from the Betic Cordillera (Spain), which have an early Miocene radiometric age, is obvious. First estimates of pT conditions suggest that the basement underwent significant pressure decrease at a constant (or increasing) temperature, which points to tectonic exhumation of middle crustal rocks accompanied by substantial heating.

5. Reviews of New and Revised Proposals and Letters of Intent

As in the past care was taken to ensure that proponents left the meeting room during discussion of their individual proposal(s).

355-Add. Drilling the Peruvian Convergent margin for Geophysical Determination of Gas Hydrate Properties, Investigating Vertical Tectonism and Quantification of Fluid Flow.

Portions of this proposal still interest TECP but the panel feels that this proposal is not sufficiently focused to achieve fundamental advances in its main objectives. The tectonic component could certainly be strengthened. It was acknowledged by the panel that it might be possible to establish a record of the vertical motion of the margin along the proposed transect across the margin. The result would, however, be a two-dimensional analysis of a very three dimensional system. In addition, the uncertainties involved in estimating the amount of subsidence due to erosion are very large. The tectonic objectives would be much enhanced if more could be done to increase the chances of defining and quantifying the mechanisms that produce such vertical motions and resulting deformation in the forearc. As stated previously, in order build upon the tectonic component to the proposal the panel felt that the proponents should make develop a better three dimensional view of the region and particularly the Lima basin stratigraphy and structure (i.e. including an along strike components) so that any drilling can be put in its full structural context. Apparently, this might necessitate the collection of more seismic data The resulting analysis might then

translate into the proposal for further drill sites along strike. This would, however, imply that some of the other objectives would have to be dropped or reduced in number.

Ranking: A2, B1.2, C2, D1, F2-F3

426-Rev. Mantle reservoir and mantle migration associated with Australian-Antarctic rifting.

TECP is pleased to see this revision of a proposal that address priority tectonic/interdisciplinary objectives, but considers it to be immature until results from the planned site survey are available.

Some of TECP's main objections to the original proposal, such as dredging versus drilling and the doubt about the ability to obtain satisfactory elements ratios in real time, are accounted for in the revision, whereas the remaining objections await data and results from the site survey. The chapter "major objectives" tends to focus on drilling strategy and logistics only. TECP would like to see an upgrade of the tectonic/scientific perspectives that relate to the mantle reservoir and migration hypothesis. The second revision should also contain H=V scaled seismic cross-sections over the proposed drill sites. This is considered a general request from the panel to allow a judgement of the feasibility of reaching the main drilling objectives. Site specific objectives and hypothesis-testing questions should be clearly stated for each drill site also on the ODP site summary forms.

Ranking: A3, B1.2, B2.2, C1, D1, E3, E6, F2

431-Rev. West Pacific network

The Panel considers the JT sites of great interest, highly relevant to the panel interests, and supports planned site surveys for future drilling. It is not clear whether the JT holes need casing to remain open long enough for the down hole experiments. At DSDP Sites 438-439 hole instability was experienced. The decided advantage of a down hole seismic instrument over a surface instrument with a shallow buried sensor at WP1, was not considered certain. Certainty may be further clarified during the site 843B experiment off Hawaii and the Panel waits for those results before reaching a final decision of the WP holes. Therefore the WP holes were considered of second priority recognizing their high relevance to ODP objectives but awaiting clarification on the advantage of a down-hole seismometer. The strain and tilt meters at this locality will potentially contribute less than at the JT sites.

Ranking: A1, B1.1, B2.1, C1, D1, E1, E2, E3, E4, E7, E8, F1

445-Add. Nankai
The panel continues to view the objectives of the proposal favorably as in the past. The risks of achieving a 1700 m hole are still a concern to some panel members considering the difficulties

From: **Linda_Weatherford@odp.tamu.edu**
Date: **Tue, 31 Oct 95 11:25:48 CDT**
To: **joides@cardiff.ac.uk**
Subject: **TECP Official Mins Part II**

445-Add. Nankai
The panel continues to view the objectives of the proposal favorably as in the past. The risks of achieving a 1700 m hole are still a concern to some panel members considering the difficulties encountered in previous attempts, the thicker trench sediment section, and the anticipated sandy rather than pelagic nature of the section to be drilled. If most of the objectives can be attained without penetrating full 1700m to the decollement then the potential returns from a high risk - one hole leg is weakened. Two legs in one area appears difficult considering the present competition for drill time.
Ranking: A1, B2, D1, C2, E8, F2

475. Deformation fluid flow, seismic imaging and changes in physical properties in accretionary prisms

Traditional logging has presented us with repeated poor performances and failures throughout decades of drilling in accretionary wedges (e.g, Barbados, Cascadia, Nankai). TECP recommends that LWD should now form a normal part of future drilling in accretionary wedges. The previous Barbados LWD results proved that this technique can achieve important advances in accretionary wedge studies. The panel is, thus, a strong supporter of the general aims of this proposal. The proposal in its current form is not practical due to the great distance between the two regions of interest. After discussion it was decided that it would be best to combine the LWD proposed for Costa Rica margin with Leg 170. LWD would replace the "traditional logging" that has been proposed for this Leg.

The panel has split off and included the second portion of the LWD proposed for Barbados as a mini-leg in the prospectus. The proposal ranked second and thus received wide panel support.

Ranking: A1, B1.1, C1, D1, F1.

478. Multiple Crustal Shortening in the Eastern Nankai Trough due to Arc-Arc Collision of Izu-Ogasawra and Honshu Arcs
This proposal presents a new ocean drilling project to study the structural and fluid flow history of an arc- arc collision. Specifically, the PI's propose 5 drilling sites in south-central Japan where the Honshu and Izu-Ogasawra arcs are actively colliding. The proposed drilling sites can be divided into three overlapping and inter-related projects: I) the collapse of the subducting Izu-Ogasawra arc where two sites are proposed, II) the fluid and deformation history of the frontal thrust of the Nankai (i.e., Honshu) accretionary prism (where two additional sites are proposed and III) the role of out-of-sequence thrusts (i.e., faults landward of the

toe of the accretionary prism) in the fluid and deformation history of convergent margins..
TECP considers the proposal to be highly relevant to its thematic objectives and recognizes that the proposed research has important implications for the tectonic development of continental margins, the growth of continental crust through collisions, the earthquake cycle and the relation of fluids to all of these processes.
To strengthen the proposal TECP has the following comments and suggestions:
1) include a discussion of the global significance of the proposed research. Specifically, TECP would like to see a brief discussion in the Introduction that places the proposed research in the context of the current "state of the science" along convergent plate boundaries. For example, it would be helpful to include a discussion of the relevance of the proposed research to the growth of continental crust, the relation of fluids to deformation or the earthquake cycle.
2) include plate kinematic data and suggest models for the partitioning of plate convergent-related strains, possibly including the area of the Kobe earthquake.
3) include data (e.g., fault plane solutions, higher resolution seismic reflection data) to support the interpretation that the Zenisu fault has thrust (rather than normal) displacement. TECP specifically wondered if this fault could be a normal fault related to Izu-Bonin arc tectonics rather than to the collision (?).
4) consider the use of a detailed OBS survey rather than cross-well tomography for developing the high resolution acoustic map of the shallow dcollement. In the context of this aspect of the proposed study, TECP is under the impression that land seismic tomographic studies indicate a maximum hole spacing of 200 m which is substantially less than the 500 m proposed here.
5) clarify what is meant by "shallow dcollement". On the one hand this might mean "shallow dipping" but the PI's seem to mean a dcollement at shallow structural levels. In addition, if the sketch in Fig. 20 is correct, the Zenisu Fault, rather than the Frontal Thrust (i.e., the shallow dcollement), is actually the dcollement.
6) better document and clarify the significance of the "blind faults". Specifically, if the faults are blind, they should not cut the surface as shown in Fig. 20.
7) include data (e.g., along strike variations in total displacement) that show or suggest SW propagation of the Zenisu fault.
8) elaborate on the available stratigraphic data and how these data can be correlated with the seismic reflection data. For example, the PI's might include a table or schematic stratigraphic chart of ages for different areas.
9) Expand the descriptions in the figure cations to explain the various stipples, symbols, ages etc in each figure.

Rankings: A1, B1.1 B2.1, C2, D2, F2

476. Hudson apron submarine slope stability transect

It is peculiar that many submarine slides in clastic passive continental margins occur at the middle and lower slope, which are less steep than the upper slope. This proposal seeks to test the hypothesis that low stand sea level triggers the failure. The objectives of the proposal are (1) to establish the temporal relationship between slope failure, sedimentation and sea level, (2) to determine the variations in physical, sedimentological, and geochemical properties from the unfailed to the failed area, and (3) to sample the above variations in the unperturbed slope clinoforms. TECP is interested in the mechanisms of slope failure and in the characterization of the surface over which sliding occurred. The present proposal, however, has several shortfalls. The seismic data are very poor and indicate only a single failure. Correlation of a single failure to sea level record is fortuitous. Can multiple failures be detected in the new high-resolution seismic data? It is not clear from the current proposal how deeply buried is the top of the failed layer, and therefore, whether drilling is necessary. Can't dredging or shallow coring of the upper edge of the scarp provide the age of failure? Measured variations in pore pressure are likely to be transient and, therefore, unless slope failure is recent, may not represent the pore pressure regime at the time of failure. Traditional coring and logging (particularly FMS) may provide a more direct detailed record of debris flows.

Rankings: A3, B1.3, C3, F3

479. Felsic volcanics Manus Backarc

The new proposal 479 by R.A Binns and S.D Scott is designed to drill through an active hydrothermal field, the Pacmanus massive sulfide field, located at the top of a volcanic ridge, the Pual Ridge, that connects two major faults in the eastern part of the presently opening Manus Basin, north of the active New Britain arc. Andesites, rhyolites and basalts are found as the major components of the ridge. The major interest of this proposal is that it attempts to drill into an active system located within a felsic environment of an incipient back-arc. Such type of drilling cruises has been a success at various mid-ocean ridge environments (TAG, Juan de Fuca). As it now stands, this proposal addresses objectives which are mostly relevant to LITHP and SGPP, however 2 of the proposed sites (EMB 4 and 5) have objectives which fit with TECP thematic interest. Drill holes EMB-5 and -4 are planned to sample paleo-arc basement, a presumed normal fault and the recent sedimentary section of a basin nearby the volcanic ridge, in order to constrain the tectonic and stratigraphical history of the eastern Manus basin. TECP is very interested in the structural environment of the sites. More portions of this proposal could become relevant to high TECP priorities if the proponents expand the discussion on the regional and tectonic settings and on hydrological considerations concerning the hydrothermal system. More geochemical and petrological considerations are also needed as the felsic composition of

the lavas emplaced in such extensional environment is not common. TECP therefore strongly recommends that scientists with expertise in tectonics, regional kinematics, sedimentology and petro-geochemistry be added to the proponent team.

Ranking: A3, B1.2, B2.1, C2, D1, E1, E2, E3, E4, E6, E7, E8, F3

481. Red Sea Deeps

This proposal for drilling in the Red Sea contains three major components: a transect of the rifted margin to oceanic crust transition, metallogenesis in the Atlantis II deep, and Pliocene-Holocene paleoclimatic evolution. While the panel expressed some interest in the tectonic aspects of the latter two, the primary interest of the Tectonics Panel in drilling the transect from the oceanic crust to the early stage oceanic crust or transitional crust.

The Tectonics Panel has always maintained an extremely high level of interest in possible Red Sea drilling. Achieving tectonic goals in the Red Sea by drilling is hampered by the presence of thick salt deposits that present a significant safety hazard. The basic drilling strategy for the tectonic transect is good, drilling four holes from the extend landward from the present axis. While the interpretation of the development of the early pull-apart type oceanic crust is controversial, the drilling results would be significant and of interest whether the RS1 site encounters pull apart crust or extended continental crust. We strongly endorse the approach.

We have some concerns, however, over the obliquity of the proposed transect. Because the transect extends along-strike from a deep to an intertrough area, it will be unclear if the differences between the holes represents a time evolution of the Red Sea or along strike variations. We recognize that the transect is aligned along one of available OBS refraction lines, but the oblique orientation of the transect compromises some of the objectives of this suite of holes. We recommend the transect be reoriented to much closer to perpendicular to the rift axis.

The other concern is for the ability to site the off axis holes into locations without salt or in windows through the salt. No seismic reflection lines across the sites were included in the proposal. Examination of the Egloff et al. (1991) refraction line and several of the Izzeldin (1982) reflection lines do not clearly establish the sites RS1 and RS2 are positioned in locations without salt, or that it will be easy to find salt-free locations for a revised transect. We strongly encourage the proponents to present seismic reflection lines through the proposed drilling sites in future revisions of the proposal.

The tectonic panel has an interest in the tectonic aspects of

deep formation and control of hydrothermal activity, however, these aspects of the drilling in the deeps are not well expressed in the current drilling plan and our interest in this part of the program is secondary. Similarly, TECP is interested in the development of the monsoonal climate system in the region only insofar as it reflects the tectonic control of the climate system in this region.

Ranking: A3, B1.1, B2.2, C2, D1, E8, F3

448-Add2. Assessing the origins, age, and post emplacement history of the Ontong Java Plateau through basement drilling.

The panel is pleased with the newly added site that addresses the nature of the rift-dipping reflectors. However, since no new structural data have been added since our last comments, we remain the same position as that of the last panel meeting and urge the proponents to conduct more detailed site survey.

Ranking: the same as that of the last panel meeting.

450-Add. Taiwan arc-continent collision

This addition points out various aspects of fluid flow processes that can be addressed by drilling in the Taiwan collision zone. TECP is interested in these aspects and encourages the proponents to develop a revised proposal based on the new MCS data collected in September, 1995. Because the questions asked by TECP in its Spring 1995 review have not been addressed in this addition, we will not modify our previous ratings:
A1, B1.2, C2, D1, F2.

457-Rev2. Future ODP drilling on the Kerguelen Plateau and Broken Ridge.

This proposal outlines some most important problems related to formation of large igneous provinces on the oceanic floor in light of first-order plate tectonic reconstruction and their initiation mechanisms (i.e., supercontinental breakup, active versus passive rifting/plume formation). Although the proposed work is more relevant to the thematic interest of the LITHP, some members of the TECP are enthusiastic about its implications for southern-ocean reconstruction and large-scale mantle-crustal processes. Despite the general supportive feeling among the panelists, we found that the following aspects of the proposal should be strengthened.
1. The panel strongly urge the proponents to focus more on the tectonic aspects of the proposed drilling. In addition to obtaining knowledge about the age of the plateau formation, we would like to see the proponents to address what insights and new information can be gained by the proposed drilling regarding the age and style of deformation in the plateau. Establishing structural evolution of the plateau is critical as it will help answer the question of how magmatic

emplacement was accomplished and how it was related to deformation (e.g., normal faulting, diking, etc.).
2. It is important to show structural features (faults, folds, etc.) on the sample-site map. If this cannot be done at present, then further site survey is needed. This knowledge will provide a firm geologic basis for interpreting the drilling results.
3. We would like to see the proponents to construct cross-sections based on seismic and gravity data. This will indicate the exact structural position of the proposed drilling sites.
4. We are pleased to see that the proponents will use the structural complexity to their advantage and intend to drill a series of offset holes. We agree with the proponents that this approach will explore the deeper and possible older part of the plateau. Following this line of thinking, we strongly encourage the proponents to investigate the structural framework of the plateau carefully so that the base/oldest part of the Kerguelen plateau may be sampled by the drilling. The initiation age of the Kerguelen plateau is the key to differentiating whether it was induced by continental breakup or post-rifting eruption on the ocean floor. If the initiation age were significantly older than the known radiometric dates available, it would suggest that the plateau originated during the continental breakup as the age of the oceanic crust west and south of the plateau was poorly constrained, and formation of the southern plateau was likely involved with the continental crust.
5. Testing the end-member model of passive versus active rifting model requires the knowledge of uplift or subsidence prior to volcanic eruption. How this information will be obtained was not discussed in the proposal. But this is the key to differentiating the two rift-formation models.

Ranking: A3, B1.1, B2.1, C1, D1, E8, F2

461. Rev Rift-to-drift processes within the ocean continent transition west of Iberia

TECP was pleased to see this new version of 461 incorporating new results from Leg 149, deep-tow magnetometer profiles, improved processing of seismic data over some sites, and a more extensive discussion of tectonic and magmatic models of the ocean-continent transition. It contains an additional site (IBERIA-08A) to drill possible mid- to upper continental crust. An up-date on the July/August Discovery Cruise 215 mentioned in the proposal that was sent to the TECP Chair, indicated that new and better sites are likely to be found on this multichannel seismic data set across the Iberia transect e.g a new and shallower IBERIA-08 site.

TECP remains strongly supportive of the proposal, and to the completion of characterization of the OCT. However, it still has concerns and comments on some specific sites as discussed below.
Site IBERIA-07A - a possible volcanic cap on top of basement was mentioned in our last review, and remains a concern that

needs further consideration by the proponents. The TOBI deep-tow magnetometer data appears to indicate that the 07A basement high has a somewhat different magnetic character to adjacent blocks. If volcanics are possible at this site then it will need to be shifted west to ensure basement sampling.
Site IBERIA-10A - designed to sample first-formed ocean basement seaward of peridotite ridge. Although magnetic modelling suggests that this high is composed of oceanic basement, its seismic character and general form indicate that it may be somewhat anomalous. How do we know that it is not another peridotite ridge for instance?
Site IBERIA-08 - there was some preference for drilling a new continental basement high such as this rather than extending Site 901 to basement, as the Late Jurassic section at this site is already strongly suggestive of underlying continental basement.
Sites IBERIA -09A/09B - TECP has a preference for 09B as this site should give the best chance of the detachment zone being intact - that is, both upper and lower plates preserved.

Rating: A1, B1.1, B2.1, C1, D1, E8, F1

480. Caribbean Basalt Province

This proposal has a primary LITHP objective of understanding large igneous provinces (LIPs). Specific TECP interest in this proposal is in VB sites and we compliment proposal proponents for their inter-disciplinary approaches. TECP in general supports the idea of sediment studies of the VB sites in order to determine the sources of oldest sediments on the Caribbean plate in the hope of understanding the relative paleo positions of Caribbean and South American plates. However, some questions were raised regarding the technical feasibility of VB sites, especially on two issues: (1) considering the great depth (~2 km) at VB sites, it is not certain that a hole could realistically reach the basement; and (2) it is questionable that using traditional sediment provenance techniques alone would be sufficient to link the Caribbean terrigenous sediments to the proposed source regions on the South American plate because of potential problem of sediment alternation. It was suggested that more diagnostic techniques, such as fission track and isotope analyses, be considered in the sediment provenance studies. We encourage the proponents to address these questions in a revised proposal.

Ranking: A3, B1.2, B2.1, C4, D1, F4

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Subject: **TECP Official Mins - Part III**

300 Add-1. Return to 735B

This proposal is for a two-leg drilling with leg one devotes to deepening 735B plus logging and leg two to offset drilling. TECP had a chance to examine the recently available OBS seismic refraction data near drill sites and review lithospheric and tectonic interests. The panel agrees that leg one (i.e., deepening 735B plus logging and downhole experiments) has very clear LITHP objectives; it also contains TECP interests, especially regarding the nature of brittle and ductile shearing in a magmatically active environment. Leg one is clearly ready to be drilled. TECP wish to emphasize that logging and downhole experiments are an important component of leg one in order to fully achieve the original LITHP and TECP objectives.

We agree with the evaluation of Site Survey Panel (SSP) that leg two (i.e., offset drilling of transact holes) should wait for a detailed near-bottom survey. Some panel members inquired the feasibility of MCS survey in this area to better resolve Moho and sub seafloor tectonic features. Our ranking of this proposal was based on a single leg scenario (i.e., deepening 735B plus logging and downhole experiments).

Ranking: A3, B1.1, B2.1, C2, D1, E3, F4

334 - Add. Galicia margin S' reflector

This addendum outlines the objectives of a July August 1995 GALINAUTE II diving cruise using the submersible NAUTILE, and has been planned to acquire observations and samples to support drilling the S' reflector on Galicia Bank, West Iberia margin. The proposal sets out a drilling strategy for the GAL-1 site that is the same as that for the identical GALICE 01A site in 461-Rev (Rift-to-drift processes within the ocean-continent transition west of Iberia). Both proposals suggest an initial 700 m hole to sample the so-called Enigmatic Terrane (ET) overlying S', which is thought to be a detachment fault that has controlled the emplacement of the adjacent peridotite ridge and the development of tilt blocks to the east. The S' reflector, and the even better defined S reflector remain important priorities for TECP. They are still the only features that are well imaged seismically, that offer the chance of drilling a margin-forming detachment system - one of TECP's highest priorities. Indeed, S' at GAL-1 and a proposed detachment near Site 900 on the Iberia transect of 461-Rev, are the only sites that have been proposed to this stage that offer the possibility of margin detachment drilling with current technology.

Just prior to TECP's fall meeting a further addendum to this proposal (334-Add2) was received via the JOIDES Office. It presented the preliminary results of the GALINAUTE II cruise, and their implications for drilling at GAL-1. TECP was very excited by the sampling results, the range of lithologies obtained, and their widespread distribution throughout the Galicia Bank region. It was particularly interesting to see that some lithologies that were not extensively sampled on Leg 149, were recovered at several locations throughout the Galicia Bank region (e.g. gabbroic rocks, tectonic breccia) thus confirming their significance to the evolution of the region. TECP agrees with the proponents suggestion that the sampling results provide a new impetus to proceed directly to deep drilling (1700 m) through S', while still recognizing the importance of characterizing the ET, which was not sampled, perhaps via a shorter hole.

The assemblage of rocks sampled during GALINAUTE II adds considerable weight to the interpretation of S' as a major detachment, and its importance as a drilling target. TECP encourages further revision of the proposal following more detailed analysis of the samples - petrogenetic studies, dating etc. It would also like to see greater integration of these results with those of Leg 149. TECP commends the proponents for their rapid inclusion of the initial results from the submersible work.

Rating: A1, B1.2, B2.1, C2, D1, E8, F2

Letters of intent

LOI 55. Drilling in a non-accretionary convergent margin

While the letter of intent was not directed strongly at TECP interests, a full proposal could included strong tectonic and structural elements. We strongly encourage the proponents to expand their group and include a relevant structural geologist. With some development of the tectonic aspects this proposal could receive positive backing from TECP

LOI 58. Slow spreading lithosphere MAR/Kane

The future of science on hard rocks legs is strictly linked to the development of new tools. An engineering leg dedicated solely to testing new hardware and techniques would be extremely valuable and would allow to reach the scientific objectives which are determined by the strategy of "offset drilling".
The main technological problems that remain to be solved are :
- to stabilize the bit when starting the hole even on moderate slopes and to allow re-entry.
- to maximize borehole penetration by keeping the hole clean
- to increase the recovery.
The letter of intent submitted by M. Cannat et al. is a cover sheet for an engineering leg proposal by T.L. Pettigrew and also includes a copy of the proposal for offset drilling in

the MARK area as well as outlines of results of leg 153. TECP strongly support the idea to schedule a leg allowing to develop new tools devoted to perform deep holes in hard rocks at ocean-ridge sites. This appears to be one of the way to achieve objectives defined in the LRP.

LOI 60. Return to TAG

This LOI seeks to carry out further drilling related to hydrothermal processes in the important TAG hydrothermal field.
Particularly drilling would be deeper than before and explore magmatic and tectonic interactions. TECP is likely to be interested in such a proposal only, if the tectonic aspects of hydrothermal plumbing feature strongly.

LOI 61. Tectonic Development of the Seychelles Microcontinent and Associated Magmatism

The objectives of this proposed research are to: (1) determine the extent and composition of Seychelles microcontinent and (2) examine the relation between this microcontinent and the Madagascar flood basalts, the Amirante Ridge volcanics, the Deccan Traps and the Reunion Hotspot.

The proposed research, as outlined in the LOI, appears to be highly relevant to the thematic objectives of the Tectonics Panel. The panel also recognizes the available of a substantial amount of pre-drilling data (e.g., multiple deep drilling sites (ODP and DSDP), commercial wells and seismic reflection profiles). At the same time, the panel is concerned about the feasibility of drilling through possibly 1km of basalt and perhaps 100's of m to perhaps 1-2 km of sediments to reach basement. Overall, the panel is cautiously optimistic and would like to encourage the PI's to submit a more developed proposal that includes relevant seismic and bore hole data.

6. Watch Dog Reports

Translational settings

Southern Ocean Transect (466) on the prospectus has a site on the Agulhas Ridge (TSO-2) which may shed light on the formation of transverse ridges.

Collisional settings

There are currently three proposals in the system that deal with collisional tectonic settings: #450-add on the Taiwan collision zone and #478, Eastern Nankai Trough, both of which were reviewed at this meeting; #340 Australia/eastern Indonesia collision has not been reviewed since spring 1993. TECP encourages the proponents of this proposal to revise it soon so that it is not removed from the system. These three proposals deal with various aspects of collisions and

represent the best regions to study these processes, so further proaction by TECP is not necessary.

Large-scale Continent-Ocean Tectonic Interaction

The fact that the Iberia proposal becomes the top ranked TECP project reflects the need to address the role of detachment faulting during continental breakup. The progress of site survey for preparing drilling in Taiwan has gone well, and we are eager to see more new supporting data to come in near future. The two projects address some of the most fundamental questions in global tectonics such as how passive continental margins form and how arc continent collision is accomplished. We are aware of several continental-drilling initiatives in progress in both Europe and the United States. Some of the proposed continental drilling sites are directly related to the thematic interests of TECP. The panel will collaborate with these continental-drilling proponents to obtain useful information for the ODP community. The effects of tectonic development of the Tibetan plateau on initiating the Monsoonal system has been extensively discussed in the international tectonics and atmospheric sciences communities in the past 6-7 years. Oxygen isotopic studies, geologic investigations, and detailed geochronological investigations from sediments in the Himalayas foreland and northern Africa indicate that the Monsoonal system began at about 8 Ma. Drilling in the northern Indian and western Pacific oceans aiming at testing the initiation and effect of the Monsoon and its interplay with Cenozoic continental and oceanic tectonics of Eurasia will be a new exciting area to explore. In addition, the age of the Indus fan will be important in constraining the age and magnitude of denudation and the uplift history of the Himalayas and the Tibetan plateau.

Oceanic Lithosphere

A number of new developments occurred since our 1995 spring TECP meeting. A joint InterRidge-ODP symposium on "Drilling the oceanic lithosphere into year 2000" has been proposed for April-May, 1995 in Woods Hole, MA, USA. The primary goal of the meeting is to obtain consensus from international research communities and to identify fundamental scientific problems that could be addressed in future phases of ODP beyond 1998. Major scientific themes to be discussed include fields such as the 4-D architecture of the oceanic lithosphere, large igneous provinces, oceanic heat and chemical fluxes, etc. The general concept of this symposium has been approved by the US RIDGE Steering Committee, which will provide partial support for US participants, and is pending approval from USSAC. A symposium organization committee will be composed of international scientists of interests on broad aspects of oceanic lithospheric processes.

An international meeting on the dynamics of subducted oceanic lithosphere was recently held in Japan. The meeting discussed the direction of research in this field in the next few years concerning geological, geophysical, and seismological studies.

The meeting pointed out exciting new opportunities of studying seismogenic processes in subducted oceanic lithospheric plates using multi-disciplinary approaches including 3-D deep seismic imaging.

Several proposals related to oceanic lithospheric processes are in the ODP review system, including a few in the prospectus: 300 (Return to 735B), 468 (Romanche FZ), 480 (Caribbean Basalt), and 457 (Kerguelen). TECP wish to re-emphasize its long term interests on drilling into reflecting interfaces in oceanic crust. A proposal to drill Argo abyssal plan (469-Stagg and Symonds) was last reviewed by TECP in Spring 1995 and another proposal to drill old Atlantic crust (438-Mutter and Karson) was last reviewed in Spring 1994.

Stress strain observatories

The Sites JT-1 1A and 2A proposed as part of the western Geophysical Network (431-rev) represent a good opportunity to study some aspects of the strain during active faulting. TECP encourages the proponents to focus on developing the science related to these sites.

Divergent margins

A range of divergent margin proposals are still active in the ODP system. Several of these related to Iberia non-volcanic margin drilling and were largely examined at this meeting through proposal review. Other important proposals are the West Woodlark Basin (447-Rev), the GAB continental margin, southern Australia (466), and the Gulf of Aden (LIO). New data has just been collected to support the West Woodlark Basin proposal and we look forward to a revised proposal taking into account TECP's Spring 1995 comments. Deep-seismic data across the Great Australian Bight (GAB) proposed drilling area is likely to be collected early in 1996. These new data will improve site selection and imaging of the features to be drilled. A revised GAB proposal incorporating TECP's Spring 1995 comments is expected to be submitted in time for the Spring 1996 meeting. The funding proposal for the collection of seismic data over the Gulf of Aden study area has been re submitted. The drilling proposal is expected to be submitted in time for the Spring 1996 meeting. TECP looks forward to seeing this proposal as it should allow us to examine conjugate margin problems in an active system with along-strike variation from a volcanic to non-volcanic style. The Woodlark and Gulf of Aden proposals fit well with TECP's new thrust to examine tectonic problems in young and active areas.

7. Ranking of Proposals

The panel decided to vote on only those proposals in the Prospectus that included a major components relevant to TECP thematic objectives. One proposal was added to the prospectus and voted on. The voting followed previous procedures; proponents did not vote for their own proposal(s).

Rank	Proposal	points	Stdv
1.	461 Iberia	5.8	1.5
2.	475 Barbados	5.0	1.9
3.	447 Woodlark	4.9	1.7
4.	468 Romanche	3.8	1.6
5.	457 Kerguelen	3.5	1.9
6.	300735B	2.6	1.6
7.	480 Caribbean	2.4	1.3

Note: Woodlark was voted on in the knowledge that it would probably not be ready for drilling in the FY 97.

8. Logging while Drilling at Costa Rica
In response to PCOM's request for information, TECP decided that utilization of LWD at Costa Rica was scientifically well justified. The panel accepted that deletion of conventional wireline logging was acceptable as little would be learned at Costa Rica using these techniques. TECP however stresses that use of LWD should not be allowed to reduce the drilling time necessary for the fundamental aims of determining the mass balance of an accretionary system to be determined. A recommendation concerning LWD at Costa Rica is included in these minutes.

9. Shipboard structural science; Computing

Following PCOM's endorsement of TECP's structural science implementation plan (Dec. '94). TECP is in the process of producing a structural science "cookbook" for use by shipboard scientist. This will be submitted and the JANUS usergroup.

The tectonics panel endorses the general conclusions put forward in the Core Descriptions Working group. The use of a digital template onto which observations could be added at the core description table would greatly accelerate the acquisition rate and improve the consistency of core based data collection. TECP would like to reiterate some of the following points concerning the core descriptions process and the Janus project.

1) The panel notes that in order to facilitate the use of a digital image as a template for the core descriptions process additional funds will have to be obtained to purchase the necessary cameras etc. It also seemed clear that some personnel would have to be assigned to this project in order to develop the necessary hardware and the method by which the digital image is input to the core descriptions program in an efficient manner.

2) Every effort should be made to start the development of a digital image input method soon so that it can be properly integrated with the core descriptions program during the period in which Tracor is working on this aspect.

3) The method of production of the barrel sheets, one of the main duties of the core descriptions scientist, is currently a

highly inefficient processes and detracts from the effectiveness of the core description operation. The method core data input proposed by the Core descriptions working group lends itself to the direct production of publication quality barrel sheets. Direct barrel sheet production should be a natural outcome of the Janus up grade. If this exceeds the Janus objective then additional funds should be assigned to insure it occurs.

4) The panel also endorsed the view that every effort should be made to include as much of the electronic visual core description data as possible on the CD in the initial scientific reports volume along with digital images of important supporting data duct as thin section and smear slide data.

5) Post cruise internet access to data in the Janus data base must be made possible within a few a few months of the end of the cruise and certainly before the first post cruise meeting. post cruise.

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Subject: TECP Official Mins - Part IV

10. Publications
TECP discussed aspects of publication policy: I) the change in IR volume status, ii) PCOM's suggestions for changes to the SR volume.

I) IR Volume; Previously, TECP has questioned the value of the SR volume. TECP is therefore disappointed that the decision was made to downgrade the IR volume, while leaving the SR volume essentially intact. For typical TECP supported legs the bulk of the data and interpretation of the leg are currently included in the IR volume. Publication provided an incentive to high quality work at sea, backed by professional editing at ODP/TAMU. In the new system (summary publication plus CD ROM), quality is likely to suffer, with the lack of professional editorial back-up being a major disadvantage. TECP accepts that the new system maybe in tune with other panels needs (e.g., LITHP), but feels that the wrong decision was probably made in terms of TECP's publication needs.

ii) SR Volume: TECP notes that the current PCOM suggestions are broadly in line with TECP's earlier views. TECP accepts that publication in the open literature is probably acceptable with certain safeguards (getting full agreement by shipboard colleagues). Those publishing in the open literature should be required a data report in the SR volume, if all their supporting data were not adequately published. If the new system is adopted it will be essential to maintain publication of substantial review and syntheses articles in the SR volume.

TECP also suspects that additional financial saving could be made following completion of the JANUS project (e.g., production of final barrel sheets on the ship).

12. Legacy holes
TECP endorses PCOM's perception that the recognition of "legacy holes" is useful. TECP recommends that the following sites be considered for future 'legacy hole" status: I) JT sites off Japan; ii) Costa Rica, if suitable lithologies are drilled (but time may be insufficient on this leg: LWD has a higher priority for TECP); iii) Woodlark Basin active detachment system (when a suitable site is finalized).

13. Panel membership and liaisons
TECP notes that in all 5 panel members (3 US, 2 non US) are retiring posing problems in maintaining continuity and balance in the panel. Replacements for US members should be sought consistent with the fields of expertise of retiring members (those with recent ODP shipboard experience are also favored).
Replacement for Greg Moore (convergent margins): 1. Dave Scholl, Stanford, 2. Nathan Bangs, UT Austin, 3. Mark Cloos, UT Austin, 4. Dan Davis, Stoneybrook.
Replacement for Mike Steckler (divergent margins): 1. Garry Karner, Lamont, 2. Debby Hutchinson, USGS/Woodshole, 3. Marcia

McNutt (MIT); 4. Fernando Martinez, U Hawaii.
Replacement for Uri ten Brink (vertical and translational tectonics): 1. Ann Trehu, Oregon State, 2. Juan Lorenzo, LSU, 3. Sue Mcgeary (Delaware), 4. Paul Mann (UT Austin).
Note: 1 is highest priority.
TECP decided not to appoint liaisons until the new panel next meets.

13. Recommendations to PCOM and JOI

13.1. TECP recommends to PCOM that PCOM recommend to JOI Inc that JOI Inc seeks funds to enable obtaining Logging-While-Drilling data as part of the scheduled leg of drilling on the Costa Rica active margin.

Note: TECP reaffirms its belief in the scientific benefits to be obtained by using LWD technology. TECP accepts that for LWD to be carried out this would involve elimination of routine wireline logging, that accounts for ca. 8 days of operation time. In addition, several additional days of LWD time would have to come from planned drilling operations. Notwithstanding TECP's support for LWD, it is clearly essential that sufficient drilling is carried out to enable accurate determination of the mass balance parameters at the Costa Rica active margin since this remains the primary drilling objective.

13.2. TECP recommends to PCOM that PCOM recommend to JOI Inc that JOI Inc directs ODP/TAMU to ensure that integration of structural (and related sedimentary) data remains a high priority within any planned extension of the JANUS computerization project.

TECP is concerned that the Janus contract will finish before the input of structural information to the data base is dealt with. TECP recommends that excessive sideways expansion in user groups 1 - 3 is reasonably contained so the basic framework of the core descriptions input program is completed for groups 4b and 5 within the Tracor contract period. If groups 4 and 5 are not completed within the specified window of the Janus project additional funds should be found to complete this portion of the Janus project.

13.3. TECP recommends to PCOM that PCOM recommends to JOI Inc that JOI Inc. directs ODP/TAMU to further investigate the development of tools capable of recovering (and analyzing) fluids and gases that record in-situ formation temperatures and pressures. TECP further requests that JOI Inc. devise means to redirect the necessary funding for the required engineering developments to take place.

Note: TECP remains disappointed that so little concrete progress has been made with certain engineering developments (e.g., with PCS) that are important for a number of highly ranked active proposals (e.g., Taiwan, Woodlark). TECP advocates that a review be undertaken to determine if the "end of the road" has been reached with current developments and if so, to consider if entirely different and new systems should

be considered for development.

13.4. Scheduling and staffing of legs
TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to give careful consideration to the possibility of in future scheduling legs in a more flexible manner such that "mini-legs" can more easily be accommodated. It may also be necessary to devise new and more flexible means of scientific staffing to facilitate multi component legs.

Note: Based on the content of highly ranked active proposals, TECP believes that there will in future be a demand for "mini-legs" (e.g., for LWD).

13.5. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to keep under careful review the new system for IR volume publication and to institute any necessary changes if the new system should prove to be detrimental to ODP science in any way.

Note: TECP suspects that the new IR system will result in a serious drop in quality of the actual content and presentation of the shipboard database. TECP would have preferred to see the IR volume remaining essentially in its present form, with the main financial economies being made in the SR volume.

13.6. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to put in place the modifications suggested by PCOM to the format and content of the SR volume.
Note: Publication in the open literature at any time is OK providing safeguards are strictly adhered to. Six months later submission of papers is not a serious problem. However, TECP warns that the standard of the SR volume is likely to decline, ending up as weaker papers, data reports, and several synthesis articles.

13.7. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to ensure that (brief) summaries of the achievements of individual legs are published in the JOIDES Journal at the earliest possible time after completion of a leg. In addition, TECP suggests that a complete list of the titles of papers in SR volumes be published as soon as available in the open literature (e.g., in EOS, GSA Today, etc.).

Note: TECP members believe the switch to publication of leg Preliminary Reports on the Internet will simply result in them being mainly ignored. Only "hard copy on individual's desk" is likely to be read routinely. TECP appreciates that financial economies in publication are necessary, but suggests that rapid publication of achievements of individual legs would benefit the wider community. TECP also feels that publication of a list of SR titles for each volume in the open literature would be an effective way of informing the wider community of the latest ODP results.

13.8. Legacy holes

TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to safeguard the long-term integrity of "legacy holes" as proposed by PCOM.

Note: TECP endorses PCOM's perception that the recognition of "legacy holes" is useful. TECP recommends that the following sites be considered for future 'legacy hole" status: I) JT sites off Japan; ii) Costa Rica, if suitable lithologies are drilled (but time may be insufficient on this leg: LWD has a higher priority for TECP); iii) Woodlark Basin active detachment system (when a suitable site is finalized).

13.9. TECP recommends to PCOM that PCOM recommends to JOI Inc. that steps are taken to ensure that potential conflict of interest situations are avoided throughout the entire ODP panel structure.

Note: TECP fully endorses EXCOM's recent advice concerning the need for possible conflict of interest situations to be avoided. In the past TECP has guarded against such situations by routinely requiring panel members who are proponents of any drilling proposal to be absent during formal presentation of their proposal. TECP intends to further strengthen safeguards by, whenever possible: I) avoiding having any proposal presented by a panel member who is from the same institution as a named proponent; ii) avoiding having a panel member present a proposal that could be seen as being in competition with one of which he/she is a proponent; iii) ensuring that any material not formally included in the submitted proposal is cleared with the panel chair prior to presentation as part of any proposal under discussion.

13.10. Management of ODP/TAMU

TECP supports the concept that changes in the structure of management (i.e., a move to accepted industry project oriented management) may well be necessary at ODP/TAMU in order in future to ensure effective work scheduling and timely completion of engineering developments and the integration of such technology with seagoing operations.

Note: TECP is disappointed by the delay in delivery of several engineering developments, e.g., DCS that remain relevant to high priority thematic objectives. TECP suspects that the situation would be improved by a move to more project oriented management. This way, problems could at least be identified at an early stage allowing corrective measures to be taken.

13.11. Peer review of proposals. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs the thematic panel structure to carry out a process of peer review with regard to highly ranked proposals.

Note: There is apparently a perception in these cash starved times that huge sums of money are being devoted to drilling ODP proposals that have not been adequately peer reviewed. While this is largely an erroneous perception, TECP feels it could well be useful to obtain peer reviews of highly ranked

proposals (only those), with a view to I) obtaining input from others with different expertise; ii) seeking different points of view (e.g., on hypotheses to be tested by drilling). Such peer review material could carry its own problems in interpretation (e.g., potential bias, uncertain accuracy, conflicts of interest, etc.) and would be seen only as supplementary to the panel's normal review process.

13.12. Availability of log data. TECP recommends to PCOM that PCOM recommends to JOI Inc. that JOI Inc. directs ODP/TAMU to ensure that all log data remain available to the scientific community in a readable form.
As for standard downhole measurements, TECP recommends that BHTV acoustic images of the borehole surface are made available to the ODP community using a standard media (such as CD-ROM) and standard data format readable by anybody (such as BinHex). This recommendation should apply both to future datasets and to existing ones, including those obtained by DSDP

14. Next meeting

A mid California location (Santa Barbara, Monterey or San Louis Opisbo) from 4-6 March, 1996; host Mike Underwood; fieldtrip 1-3 March, led by Mike Underwood.

15. Thanks to retiring panel members.
TECP expressed its strongest possible vote of thanks for the outstanding service rendered to the panel and the international community by the 5 panel members who were retiring. Each individual has made an invaluable contribution to the panels activities and each member will be greatly missed.