Minutes
Lithosphere Panel
October 9 to October 11, 1995
Nicosia, Cyprus

1. Participants:

Host: Kathy Gillis

Chair: Sherm Bloomer

Attending:	S. Bloomer	P. Castillo	J. Gee
	K. Gillis	J. Ludden (for J. Girardeau)	R. Rihm
	P. Kempton (for G. Fitton)	D. Wilson	R. Koski
	R. Zierenberg	D. Weis	A. Fisher
	M. Coffin	S. Arai	
Liaisons:	J. Miller (ODP-TAMU)	P. Harvey (BRG)	
	H. Dick (PCOM)		
Guests:	S. Humphris	C. Jacobs	
Absent:	A. Sheehan	D. Caress	

2. Meeting Summary:

October 7 and 8: Kathy Gillis and Georges Constantinou led a trip for those members who could attend to parts of the Troodos ophiolite, including some of the sulfide deposits, sheeted dikes, silicic bodies, lower cumulates, and serpentinized peridotites.

October 9: The Panel convened at 0900 and heard reports from liaisons to other panels, reviews of recent legs, reports on other science groups with interests in common with LITHP, and updates on programs and developments of interest to the Panel. Shortly after lunch the Panel began reviews of proposals which were not included in the FY 97 prospectus. The meeting adjourned for the day at 1800.

October 10: The Panel convened at 0830 and finished our reviews of non-Prospectus proposals. We then reviewed each proposal in the Prospectus (or had a synopsis presentation of that proposal if it was not a new version); proposals not within our mandate were not reviewed. The Panel completed these reviews in late afternoon, and then discussed which proposals they wished to rank for the FY 97 prospectus. Four proposals in the prospectus were ranked, and two other programs (Red Sea Deeps and CORKing Site 395A) were added to the list. The panel completed voting on that list of six proposals, reviewed the notes and addenda to accompany the rankings, and adjourned for the day at 1830.

October 11: The Panel convened at 0830 and reviewed other business items including co-chief nominations, panel membership, nominations for a new chair, and recommendations and comments for PCOM. The meeting adjourned at 1300.

3. Recommendations and Comments for PCOM:

3.1 Recommendations to PCOM

Issue #1: The Computer Upgrade (JANUS): LITHP was encouraged with the preliminary plans for the sedimentary and hard rock description interface with the Janus database. In particular, the panel felt that the inclusion of a digital image as part of the core description program would facilitate accurate and timely descriptions. Given the importance of core descriptions as a legacy of the program, we make two recommendations:

LITHP recommends to PCOM that they recommend that JOI take appropriate action to:

i. Insure that the broadening scope and longevity of on-going user groups (as reflected in the much larger than expected product of groups 1 and 2) be closely monitored

and that the time line for development of individudal program modules be rigorously adhered to.

ii. See that the chairs of user groups 4b and 5 are immediately added to the Janus steering committee and that user groups 4b and 5 are started as soon as possible; this step is recommended to insure that core description gets an appropritae priority in the development process.

Issue #2: The Diamond Coring System: **LITHP recommends to PCOM that, pending approval of the ongoing feasibilty studies by TEDCOM and a successful land test, PCOM advise JOI that funds for development of the diamond coring system should be a priority in budgeting for technological innovation.**

The Panel notes that some of the objectives of the new LRP will be best accomplished with a DCS, and that some are likely to require it. The Panel reiterates our comments from Fall, 1994 regarding DCS:

> The Panel believes that diamond coring at sea represents the most innovative engineering that the program has undertaken in that it holds potentially tremendous rewards for the entire scientific drilling community. Diamond drilling onland is standard technology--it drills straight holes, it has very high recovery (90% or more), and it can drill through fractured and brittle intervals that are impenetrable with rotary coring techniques. Moving this technology to sea is, obviously, complicated. But if even a part of its production on land occurs at sea, our results from drilling in nearly every kind of lithology will improve. There are very few rocks (as opposed to sediments) in which RCB coring produces anything near 50% recovery. We still can't penetrate chert-chalk sequences, we can't drill zero-age basalts, we're having tremendous problems drilling in faulted, tectonized terrains, and our recovery in some lower crustal and carbonate sequences is extremely low. Diamond coring is not going to be a panacea fro all these problems, but its success on land clearly suggests that it can ameliorate a number of them.
>
> The Panel believes that there is no more innovative development we can undertake than the construction of an ocean-going diamond coring system. The development of that system likely requires a phased approach, in which we set clearly defined goals for the system, on a clearly defined time line. There are many productive things we can do with a diamond coring system designed to drill 100 m holes in 4500 m or less of water. There are in fact a number of things we can do (on ridges, limestone caps, and fault surfaces) that probably can't be done any other way. A DCS with such capabilities could be set as an interim goal, on the way to the development of a system which can be routinely deployed for drilling deep holes in any water depth.

Issue #3: Offset section Engineering Leg: LITHP greatly appreciates the work of the engineering group at ODP-TAMU in formulating some ideas to solve our problems drilling in the fractured and tectonized rocks that have characterized some offset-drilling legs. LITHP is concerned about there being adequate time and money to develop tools to be tested at sea for an engineering Leg in FY 97. The Panel's review of the proposal said:

> LITHP recognizes the prime importance of engineering development for offset drilling in addressing the high-priority lithospheric objective of obtaining long sections in oceanic crust. To truly advance engineering, the engineers and their equipment must be ready, which requires that time and funds be available for pre-cruise development and planning. LITHP does not anticipate having a highly ranked offset section leg in a fractured environment in the FY 97 schedule; we therefore do not believe it is necessary to rush the scheduling of a full leg for this engineering. We do recommend that PCOM consider designating time on drilling legs in appropriate environments for engineering testing and development (for example in the Atlantis II fracture zone for hard rock drilling or at Costa Rica for the PCS). LITHP emphasizes that extensive site survey data and previous drilling are required, because it is critical that the engineers know as much as possible about drilling conditions prior to actual testing. LITHP does not wish to specify a location of the engineering leg at this time, except to note that these tests should be in fractured rock. Appropriate places might include environments like Mark, Hess Deep, TAG, Manus Basin, Atlanis II FZ, and Woodlark Basin.

LITHP therefore recommends that PCOM discuss the idea of mandating time on specified legs (or perhaps time on certain kinds of legs--hard rock, soft rock, etc.--during certian fiscal years) for the testing and deployment of new enginnering devices and tools. Such regular, phased testing might serve us better than rare engineering legs. Such a practice would require a policy or mandate from PCOM, so that legs could be planned for 45 or 50 days of science and 6 to 10 days of engineering.

Issue #4: Drilling on the East Greenland Margin: LITHP recognizes that scientific ocean drilling is a vital and integral component of comprehensive onshore-offshore geological and geophysical studies of the

East Greenland continental margin, in order to understand its magmatic-tectonic evolution. Therefore, LITHP strongly supports further pursuit of the lithospheric objectives that were begun to be addressed by Leg 163 offshore East Greenland, and welcomes submission of proposal revisions or addenda for East Greenland drilling. **LITHP requests advice from PCOM regarding the future feasibility of using JOIDES Resolution or alternate platforms in addressing the objectives of East Greenland drilling or other high latitude programs.**

The Panel did discuss recommendations for using any extra time available because of the early termination of Leg 163. However, it was clear shortly after the meeting ended that such time would not exist so the issue became moot.

3.2 Comments and Information for PCOM

Issue #5: The prospectus and long-range planning. The Panel understands the circumstances which led PCOM to produce a prospectus which included some programs whose completion does not appear to be logistically feasible in 1997. The Panel offers the following comment:

LITHP endorses the concept that thematic panels should rank proposals based on their relative scientific merit. However, the large theater of operations included in the FY 97 prospectus complicated this approach because of the high probability of logistically difficult and inefficient ship operations. The panel would like to see future prospecti produced so as to include only highly ranked, mature proposals that are consistent with a planned long range ship track. PCOM must be able to work in a manner which allows it to do effective, realistic long-range planning.

Issue #6: Conflict of interest policies: The Panel discussed the changes in the Conflict of Interst Policy at lengh, and appreciates the circumstances which led EXCOM to revise the Conflict of Interest Policy. However,

the rigidity of the phraseology of section 11.04 may make it impossible to retain an effective thematic advisory structure. Taken to its logical conclusion, the policy will require that panel members cannot be proponents of drilling or site survey proposals. Such a limitation will effectively prohibit the most qualified and knowledgeable members of the marine science community from serving in the JOIDES advisory structure. Conflict of interest must be guarded against, but our policy in this regard must be based on some combination of formal policy and informal trust in our colleagues' integrity.

Issue #7: The Long Range Plan: **The Lithosphere Panel would like to express our thanks to all of the people who worked so hard to revise the Long Range Plan.** The draft we saw at this meeting was very much improved from that distributed last Spring and should serve the Program well in its review for renewal. We appreciate the sacrifice of personal time and sweat that so many people who care about the future of ocean drilling have made during the preparation of this document.

The Panel endorses the concept of a two-ship future for scientific ocean drilling, as outlined in the post-2003 section of the LRP. The development of a vessel with the capability to deploy a riser in 2000 m of water could greatly benefit some of LITHP's objectives at convergent margins and shallow parts of the ocean crust. However, a vessel limited to drilling in less than 2000 m water depth and which is committed for many months to single sites is incapable of meeting many of our high priority goals.

Given the diversity of LITHP's objectives, we believe that meeting most of our goals in the LRP (for 1998 and beyond) will continue to require a vessel with the flexibity to drill transects of shallow holes as well as deep holes in old and young geologic environments on the deep ocean floor.

Issue #8: Publication changes: The Panel discussed the proposed changes in publication policy at length. There was a substantial diversity of opinion about what the best course of action was, though there was general agreement that the publication subcommittee has worked very well on a very contentious issue. Specifically, the Panel was concerned that item #5 needed some teeth in it--issues of what constitutes outside publication (submission, review, acceptance?), what constituted unethical use of data, what consequences would ensue if people did not meet the letter and/or spirit of the guidelines all needed to be spelled out in detail. The idea of publishing in the outside literature was viewed as very positive in terms

of making the results of the Program more visible, but there was concern that such a policy would, eventually, gut the SR of any substantial contribution.

More generally, the panel had mixed opinions about what to do about the SR, but there was a general sense that having a leg by leg summary of results provided an important service to the user community. Ideas including retaining the SR essentially as is, providing periodic summary or thematic volumes, trimming it down in page length or by combination with the IR, or sacrificing it entirely if the more important goals are visibility and status of the results (i.e. going to largely outside literature publication). Most members felt the SR has been an important part of the identity and legacy of the program, and that it has served an important role. There was no consensus about its future.

Issue #9: Legacy Holes: The Panel considered this problem in two ways (and also applauded the idea of trying to include this kind of discussion in our long-range planning). The sense in which PCOM is talking about legacy holes, we believe, is that there are holes to which we may want to return for years, either to deepen those holes or to use them as sites for unique experiments. Such holes in the present prospectus include 735B, which may provide a long-term site for study of the lower oceanic crust and Site 395A, which could provide a laboratory for the study of older slow-spread crust. These are long-term legacies of the program.

Another sense in which holes need to be considered as legacies is when there is a specific follow-up program which requires reoccupation of that hole for a specific goal. An example is S6 in the Caribbean. It is proposed to reoccupy that hole as part of a leg devoted to Caribbean basement drilling. Doing this most efficiently requires that the hole be cased to basement when it is drilled during a leg devoted largely to ocean history. This is a difficult case because it involves different groups of proponents. Another example is a deep basement hole at a LIP-one goal of most proposals is to provide at least one deep site. This requires (probably) reoccupying a site drilled on an earlier leg and therefore requires a different type of planning . We suggest that PCOM consider a way to integrate this type of short-term "legacy" into the planning process as well.

Issue #10: Liaisons to Other Programs: The Panel is supportive of the idea of integrating the goals of other program into the Ocean Drilling Program. We are a bit leery of the establishment of formal panels for particular programs. We believe that the most effective way to encourage this integration, at least at the thematic panel level, is by establishing clear and direct lines of communication with other programs. We have tried to name formal liaisons for program like ION and InterRidge, have regular reports from those liaisons, and consider the need for competent liaisons in making nominations for new panel members. We believe this system has worked well for us, and recommend that our best vehicle to other programs is through the development of a robust liaison system.

4. Prospectus Rankings:

The Panel reviewed each of the proposals in the prospectus and determined that 4 were within our mandate and of sufficient matruity to warrant incluison in our voting. Four were judged largely out of our mandate (NJ Sea level, Benguela Current, Blake Nose, and Blake-Bahamas), one was felt to be logistically unreasonable (Woodlark Basin), and one to be scientifically immature (Iberia). The panel elected to add two proposals to the prospectus, 424 CORKing Site 395A and 481 Multi-objetive drilling in the Red Sea.

LITHP Fall 1995 Prospectus Rankings:

Rank	Number	Short title	# of Panel Voting	Average Score	Std. Dev.	Watchdog
1	300	Return to 735B[2]	14	5.79	0.80	Bloomer
2	481	Multi-objective Red Sea Drilling[3]	11	4.00	1.27	
3	480	Caribbean LIP[4]	14	3.71	1.14	Bloomer
4	457	Kerguelan Plateau[5]	12	3.50	1.00	Fitton
5	424	CORK 395A[6]	14	3.29	1.59	
6	468	Transverse ridges, Romanche FZ	14	1.71	0.73	

[1]Note that the 2, 3, 4, and 5 ranks are equal, within the standard deviations. The other proposals in the prospectus were judged to be either outside our mandate or scientifically immature.

2 This ranking is specifically for the first leg of the two-leg program, to deepen and to log Site 735B. It includes (and the Panel endorses) the logging program as outlined by the BRG. The Panel notes that our global ranking of Return to 735B was of the entire program, as a two-leg experiment. The scientific potential of that program remains high, but the second leg awaits additional site survey work.

3 The Panel is aware of the political obstacles to drilling in the Red Sea. However, the proposal outlined here represents an exciting package of multi-disciplinary science. The proponents believe that avenues may exist to facilitate receiving clearances from the Saudi and Sudanese governments, which would allow completion of 90% of the proposed work. The Panel believes that the scientific return from this leg would be sufficiently great to warrant a serious look at any avenue that would allow us to drill the proposed boreholes.

4 The program is scientifically exciting and could be ready to drill in FY 97. The Panel has asked the proponents to clarify the questions about the Beata Ridge and Venezuela Basin sites.

5 The Panel was concerned that there was not a prioritization of sites in this version of the proposal. The ranking is based on our belief that there would be an important scientific return from even one leg of drilling at Kerguelen. The Panel has asked the proponents to provide a one-leg scenario and justification, to be circulated and commented on by the membership before the December PCOM meeting.

6The proposal to CORK Site 395A offers the opportunity for some creative science and important information about the evolution of the ocean crust. The ship will be in the vicinity, perhaps for the last time for many years, and the Panel wants to bring this opportunity to PCOM's attention. We understand that much of the hardware for the installation (thermistor string, data logger) already exist.

5. Proposal Reviews (in numberical order--proposals not in the prospectus were reviewed first during the meeting, followed by proposals which were included in the prospectus).:

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	300-Add2
PROPOSAL TITLE	Return to Site 735B
PROPONENTS	Dick and Natland
CONTACT	Bloomer
DATE REVIEWED	October 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1	x	C2		C3		C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	
E5		E6		E7		E8	x

F. RECOMMENDED ACTION

F1	x	F2	x	F3		F4	

COMMENTS

This proposal continues to be LITHP's highest global priority. The exposures along the shoal bank at the Atlantis II Fracture Zone offer a unique opportunity to conduct an elegant experiment into the composition and structure of the lower oceanic crust. This two-leg program is our highest global priority. The Panel concurs with Site Survey Panel that the specific design of the second leg of drilling here still requires a detailed site survey. However, the Panel also feels that the first leg, to deepen the existing site at 735B, is ready to drill and is of the highest scientific priority. Deepening of Site 735B should proceed as quickly as is possible.

The proponents have framed an interesting hypothesis, based on the recent geophysical data by Minshull et al., concerning the structure of the lower oceanic crust. The geophysical experiment provides much needed control on the gross, regional structure around the site, and will allow the results from deepening 735B to be interpreted much more broadly. The proponents have done a nice job of posing contrasting models, which should be testable in large part with the single deep hole at 735B.

The panel appreciate the proponents' responses to the comments made in our last review, and finds the program much strengthened. We look forward to exciting results from the work at 735B.

The Panel does note that it is critical that the deepened hole be logged *during* the leg. There are many variables concerning the physical state of the oceanic crust which are better represented by downhole logs than even by the core (properties integrated over larger distances). It is also critical that the borehole be carefully imaged. This does not mean that every log known be run, but it does mean that a reasonable, complete suite of downhole data be obtained. Peter Harvey presented to the Panel a preliminary plan for logging at Site 735B, which the Panel endorses. The Panel also recommends conducting a packer experiment in the deepened hole.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	334-Add
PROPOSAL TITLE	Galicia margin S' reflector
PROPONENTS	Boillot et al.
CONTACT	Rihm
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1		A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1		B1.2		B1.3	
B2 LOCATION	B2.1			B2.2		

C. SCIENTIFIC FEASIBILITY

C1		C2		C3		C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1		D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	
E5		E6		E7		E8	

F. RECOMMENDED ACTION

F1		F2		F3		F4	

COMMENTS

This addition presents the objectives of a diving cruise planned for summer 95. LithP hopes that the results of this cruise, the success of which we have up to now not heard about, provide some new evidence to the proponents. For further comments the panel refers to the comments on proposal 461, Iberia rift-to-drift where the Galicia margin site is included.

A copy of the review for that proposal are available from the JOIDES office or the proponents of the Return to Iberia proposal.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	426
PROPOSAL TITLE	Australian Antarctic discordance
PROPONENTS	Christie et al.
CONTACT	Gee
DATE REVIEWED	9-11 October 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2	x	C3		C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	x

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

LITHP recognizes the unique importance of the AAD for the study of mantle geochemical domains, and appreciates the update on site survey plans for the AAD provided by drilling proponents. Realizing that a revised drilling proposal will follow the January 1996 site survey aboard Melville, LITHP will be keenly interested in how drilling might resolve competing models for AAD development following analyses of the site survey, especially dredge data. The proponents are to be applauded for and encouraged to continue development of carefully thought-out drilling strategies.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	431-Rev
PROPOSAL TITLE	Western Pacific Geophysical netwrok
PROPONENTS	Suyehiro et al.
CONTACT	Sheehan
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2		C3		C4	

see written comments

D. PRELIMINARY TECHNICAL FEASIBILITY

D1		D2		D3	x	D4		D5	

see written comments

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	
E5		E6		E7		E8	x

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

LITHP thanks the proponents for a much improved and more complete proposal, and strongly supports the concepts of both the Japan Trench observatory and the installation of at lest one deep-water borehole seismometer. Several important points will need immediate attention if the proposal is to be ready for a possibly narrow operational window in FY 1998. Most important is the probably need to case all of the holes to the top of basement, then log the remaining uncased basement. LITHP estimates that only one Japan Trench site and one WP site can be drilled in a single leg. The proponents should contact the engineering group at ODP-TAMU for more reliable drilling time estimates. A revised proposal should include a prioritization of sites in the event they cannot all be drilled. LITHP is also concerned that it may not be possible to cement the strainmeter into the holes without the use of the drilling ship. Another concern is that water may tend to flow down the holes if they are not completely cemented, creating noise for the seismometers. An expanded discussion of installation procedures would be helpful. Site survey rules will require a sediment core form each site to allow for reentry cones to be planned. Any siting requirements to connect WP-1A to the TPC2 cable should also be discussed as soon as possible. It may also be helpful to include proponents who would be involved in analyzing the basement samples, examining structural, hydrothermal, and alteration evidence in the cores, and doing paleomagnetic work on the samples.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	447-Rev
PROPOSAL TITLE	Woodlark Basin
PROPONENTS	Taylor et al.
CONTACT	

DATE REVIEWED	OCTOBER 9-11, 1995

COMMENTS

Though the proposal was included in the prospectus, this is not a new version of the proposal. The Panel referes to our previous review. It was noted that we aksed what the plan for the leg would be if the first site proved not to be a detachment fault. The Panle is also concerned that the questions the proponents propose to answer though istrumenaiona ndmeasurements in the boreholes are not possible, at least not as outlined. The Panel recommends a more detailed discussion of what kind of measurements are to be taken from the boreholes and how those measurements will be used to solve specific problems.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	448-Add
PROPOSAL TITLE	Ontong Java Plateau
PROPONENTS	Kroenke et al.
CONTACT	Castillo
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1		B1.2	x	B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2	x	C3		C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	x

complete proposal revisin now needed

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

This addition addresses questions posed by LITH-P and TEC-P and is the second addition to a proposal reviewed in 1993. One of the primary objectives of LITH-P is to address the problem of the origin and evolution of LIPS - the OJ plateau is a first order target for such a study. With respect to this addition, the proponents have proposed sites to replace an earlier proposed drilling site into a potential diatreme structure which LITH-P had considered to represent secondary objectives in the evolution of the OJ-Plateau and the site would be technically difficult to assure penetration of the diatreme. The proponents also justify their drilling times based on estimates from other deep basement sites. The estimates for the 200-300 basement sites are reasonable, that for the deep site (1000m) is probably unreasonable.

LITH-P is interested in the OJ-Plateau as a LIP target. Given the new data available, site surveys planned etc., we request that the candidates submit a complete revised proposal incorporating the following :

- a complete tabulation and discussion of the age data (both geophysical and geochron) and an estimate of emplacement rates based on the existing age data
- proposed cross sections of the plateau with details of what aspects will be tested by drilling
- a diagram summarizing the geological evolution of the plateau
- discussion of the data which may indicate rifting of the OJ-Plateau by post LIP emplacement processes
-magnetic and other geophysical information from the entire plateau and the implications of these data on the evolution of the OJ-plateau
-discuss the uplift and subsidence of the plateau - why is the plateau submerged and dominantly submarine - how did this crust mature through time
- dicussion of the geochron data from Malita and Santa Isabel which show events at 124, 122, 90, 60 and 34 Ma
- a discussion of possible locations for the plume that created the LIP and the present signature of the tail of that plume--what is know about that tail?

The revision should include complete drilling time estimates based on a one leg program and a two leg program, bearing in mind that these legs would not be scheduled consecutively. The proponents should identify which objectives could be met with one leg of drilling and which could not. Penetration rates for the deep hole could be obtained from Voring margin drilling where 900m sections of basalts were drilled.

We also note there was a minority opinion on the Panel that the seamount and diatreme sites may represent an important late phase of plateau evolution (not to drive the proponents mad, but to give a complete representation of our discussions!).

We stress that the request to present a new, revised proposal is in the interest of the proponents, in order to give the panel all of the revised information required to review the science in a single, easily followed package.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	457-Rev2
PROPOSAL TITLE	Kerguelan Plateau
PROPONENTS	Frey et al.
CONTACT	Fitton
DATE REVIEWED	October 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2	?	C3	?	C4	

The Panel is not certain that the chemical aspects of the problem can be sorted out; it is also difficult to assess the feasibility in the absence of a prioritization for the sites, given that all of these probably cannot be completed.

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	
E5		E6		E7		E8	x

Prioritization of the sites and detailed time estimates

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

Understanding the origin and evolution of Large Igneous Provinces is one of the highest priorities for LITHP. As such, drilling Kerguelen Plateau and Broken Ridge has a great scientific merit. The scientific objectives in this proposal include geochemical evolution of a mantle plume as the LIP develops (in this case associated with the breakup of continental lithosphere), subsequent tectonism of the LIP, and the effects of those processes on global oceanic and climatic environments. LITHP appreciates the effort of proponents to include sedimentological and ocean history aspects in this revision. The clear discussion of the age and rate of the emplacement of theplateau was also appreciated.

The proponents advocate a complex drilling strategy, including 18 sites in 5 transects over different parts of the plateau and a possible offset-section approach to try to sample somewhat deeper sections of the plateau. Despite the scientific merit of the problem, the Panel found it difficult to evaluate the proposal because estimates of penetration time have not yet been presented. It appears to us that there are likely more than even two-legs of drilling here. LITHP has encouraged 2-leg cruises for the two giant LIP (Ontong Java and Kerguelen/Broken Ridge) in Oceanic Plateau Position Paper (JOIDES Journal, 21, 16-17, 1995), and prioritization and even diminishing of number of drill sites will likely be necessary . The Panel debated the trade-off between concentrating on arrays of shallow holes vs. devoting time to deep holes. The penetration depth for basement igneous rocks is evenly 200 m, which may be too shallow compared to the vast volume of the LIP extrusives and intrusives. We feel, therefore, that part of one leg should be devoted to much deeper penetration (up to 1 km) into the basement, either at a deep hole or with an offset section strategy. The proponents might want to summarize for the panel their feelings about whether a 1000m hole tells you more than a 200 m hole, given the crustal thicknesses (and if you were going to do a 1000 m hole, where would you put it). The Panel had various opinions about this--what can the proponents say about the known variability in flow chemistry with depth and what constitutes an "adequate" characterization of the volcanic section. This question is not unique to Kerguelen, but is common to all LIP drilling. The offset section sites mentioned in the proosal will need additional site survey work.

The Panel was not convinced that the Broken Ridge sites were critical to the project, given their remoteness from the Plateau, and the already difficult time constraints on the proposal. The proponents may want to remove them and devote the time to objectives on the main plateau.

One of the problems with examining LIPs at Kerguelen, and one of the attractions, is that the plateau shows a very complex chemistry because of the influence of continental lithosphere. The Panel asked, in a previous review, how you could distinguish the signature of continental sources form an enriched plume source? That questions still has not been clearly answered. This problem has proved very difficult in many petrologic studies--the point was raised that we did examine the interaction of a mantle plume with continental lithosphere in the E. Greenland drilling, where we knew the plume location, the ridge location, and the margin location. Even there, deciphering some of the chemistry was difficult. The question was asked, can we sort these signals out at Kerguelen, given its complex tectonic history and the complex interplay of ridge, plume, and continental lithosphere? The Panel needs some advice and explanation about sorting out these chemical signatures.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	461
PROPOSAL TITLE	Iberia margin
PROPONENTS	Reston et al.
CONTACT	
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1		A2		A3		A4	x	A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1		B1.2	x	B1.3	

B2 LOCATION	B2.1		B2.2	?

C. SCIENTIFIC FEASIBILITY

C1		C2		C3		C4	x

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	

F. RECOMMENDED ACTION

F1		F2		F3		F4	x

COMMENTS

The mechanics and nature of continental rifting at a non-volcanic margin is an important scientific problem. It is a problem to which drilling can make a valuable contribution. The work along the East Greenland volcanic margin, though shortened due to bad weather, showed how a well-designed drilling program can make a fundamental advance in our understanding of continental rifting. The Iberia margin is a very well studied non-volcanic margin, with detailed seismic imagery and two complete drill transects (Leg 149 and 103). There remain many important questions to be answered about the evolution of the margin. However, given the results of Leg 149, the interpretations presented in the proposal, and the drilling plan presented here, it is the strong opinion of LITHP that further drilling along the Iberian margin is unlikely to provide scientific results significant enough to warrant the expenditure of our scant drilling resources and time. We review here the background of the proposal and outline some of our major concerns about the work.

The West Iberia margin is considered by the proponents as an excellent example of a non-volcanic rifted margin. This margin provides a better site to see faults which penetrate deep into the crust and uppermost mantle than does a volcanic margin and such margins contain the principal record of the break-up that follows continental rifting and the onset off seafloor spreading - both being first-order plate tectonic processes. Geophysical data indicate that the OCT has magnetic and seismic velocity properties which are in some sense transitional between continental and oceanic crust.
The margin has been drilled during Leg 103 and 149 already, at Galicia Bank and Iberia Abyssal Plain respectively. Drilling along both transects documented that serpentinized peridotite constituted an important component of structural highs within the OCT and that the peridotites also contributed to sedimentation along the margin. Mafic rocks were recovered at only one basement site, 900: 56 m of fine- to coarse-grained gabbro were recovered, gabbro which experienced syn-rift dynamic crystallization under granulite facies conditions at 136.4 +/- 0.3 Ma (40Ar/39Ar dating). The proponents argue that drilling during Leg 149 determined landward and oceanward limits to the ocean-continent transition (OCT) off western Iberia by drilling an east-west transect of holes. A peridotite ridge was drilled just to the

landward side of what is geophysically constrained to be mafic oceanic crust created by seafloor spreading at 10mm/yr, constraining the easternmost extent of early mafic ocean crust. Sediments from Site 901 showed tremendous subsidence (ca. 4700 m) and were 23 Ma older than the best estimate for the onset of seafloor spreading at this latitude; the structural and sedimentologic character of the site has been interpreted to confirm the presence of continental crust below Site 901. While the results are not absolutely certain, the interpretations from Leg 149 about the limits of continental and oceanic crust do not seem unreasonable.

Some of the major thematic scientific objectives for the second leg on the margin include:

- determine to what extent rifting was asymmetric;
- characterize the OCT (defined as the part of the lithosphere which includes the crust between the thinned continental crust characterized by tilted fault blocks, and the first oceanic crust formed by seafloor spreading);
- assess the role of low-angle, principally crustal, normal faulting in the rifting process.

There are several specific objectives cited:
1. To sample acoustic basement to characterize tectonic and magmatic processes that dominate the transition from continental to oceanic crust in space and time.
2. To determine the role of syn-rift magmatism in the OCT
3. To sample acoustic basement beneath Site 901 and a site 20 km further west to confirm the existence of continental crust and to determine the approximate level from which it came.
4. To sample the oldest, first-formed oceanic crust, 20 km west of the peridotite ridge
5. To determine the role of detachment fault tectonics in the evolution of the margin by drilling through a detachment on the east side of the high on which Site 900 has already been drilled and drilling a basement high 14 km further west associated with a westward-dipping normal fault, to test models of simple-shear extension of the upper lithosphere.
6. To study the mechanisms of tectonic emplacement of upper mantle rocks (Galicia S' reflector) by drilling a pilot hole above the S' reflector.

These objectives are to be addressed with one hole along the Galicia margin (11.3 days), one hole in the oldest ocean crust (Iberia 10A, 15.1 days, though this is noted as a second priority), and a 3-4 hole transect across the OCT. Realistic time estimates suggest that only three of these can be completed: Iberia 7A, a basement site to test simple-shear models, 21.5 days), Iberia 9A (the shorter of the two possibilities, near Site 900, 13.6 days--alternate site 9B requires 22.6 days), and either Site 901 or Iberia 8A (11 days for the former, 11.3 days for the latter).

The three priority one sites in the OCT and the Galicia margin site constitute 57.4 days of drilling. We infer this makes it unlikely that the older ocean crust site can be drilled. If Galice 1A were replaced by Iberia 10A the leg would be 61.2 days long. This suggests to us that a reasonable scenario is that a leg to Iberia would include 3 sites within the OCT (one of them a reoccupation of 901), and at best one of Galice 1 A or Iberia 10A.

The Panel has some comments on each of these objectives, assuming a logistic scenario as outlined in the paragraph above:

1. Of the three sites in the OCT, one is a deepening of Site 901, into what has persuasively been argued to be known continental crust. A second is to be drilled near Site 900 and is likely to retrieve more of the same mafic rock. This means that one new site will reach basement in a significantly different part of the margin; given the results to date from two legs across the margin drilling basement highs, we believe that it is highly likely that site will reach serpentinized peridotite. This seems a marginal increment in our understanding of objective 1.

2. The role of syn-rift magmatism in the OCT. See 1. Of the three sites in the OCT, one is likely to be in continental crust, one is likely to be in peridotites or lower continental crust (the two cited possibilities) and one is in a mafic terrain we have samples of. The mafic samples in hand (the basement at Site 900 and mafic clasts from other sites) are extremely difficult to interpret. The age of the Site 901 gabbros is syn-rift, but that is likely to be a metamorphic age; the proponents state that it is not known whether the gabbro is syn-rift or pre-rift.

The chemistry of the gabbro, and of the gabbro clasts from further seaward, would appear to be one of the critical components in assessing the results of the Leg 149 work, but they are given only cursory discussion. The data mentioned from Site 900 are very equivocal--the gabbro is clearly <u>not</u> a normal MORB product; it is apparently not even agreed upon whether it is cumulate or not. In the papers mentioned about Leg 149, written by participants in Leg 149, there are apparently 2 or 3 quite different interpretations of the meaning of the basement samples. On one hand, this is an argument for drilling

more holes. On the other, it cautions us that the rocks obtained from these basement highs are very difficult to interpret. It is surprising that no discussion was included about the alkaline to transitional mafic clasts found substantially seaward of Site 900. This would suggest considerable complexity in whatever syn-rift volcanism is occuring in the margin. It does not appear that the geochemical and petrologic data have been thoroughly integrated into a new drilling plan.

The drilling plan as presented is unlikely to recover a single new mafic basement sample (assuming the Site near 900 is in the same terrain). It is hard to see how this will add to our knowledge of syn-rift magmatism.

3. Sampling basement at the eastern end of the OCT. Realistically, we only see one of the two sites being drilled, so we have assumed that would be Site 900. It seems there is little point in going to the trouble of drilling just to confirm the basement is continental. It has been well argued that such crust is there. It might be worth it to get a sample to constrain uplift histories. But how that is to be done is not well presented. The rocks have been significantly metamorphosed--what mineral assemblages are needed to get reasonable estimates of original crustal depths? How accurate are those estimates? How are the effect of pre-rift uplift and exposure of crustal rocks going to be stripped out of the estimates, to identify the amount of uplift/subsidence due to rifting? It is unclear from the proposal that the stated objective can be achieved.

4. Sampling the oldest ocean crust. This is LITHP's principal interest in the leg. However, it is a second priority site and may well fall by the wayside. It is not interesting from the point of view of "is mafic ocean crust there"? The geophysics has pretty well established that. It is interesting from a geochemical point of view, in terms of how it relates to the evolution of mantle sources as the margin rifts apart. This aspect of the problem isn't really discussed in the proposal. By itself, it is certainly not sufficient impetus for a drilling leg.

5. The role of detachment fault tectonics in margin evolution. TECP is in a better position to comment on this than LITHP. We will comment that this was also (as we recall) a major objective of Leg 149. Any discussion of the tectonic results of Leg 149 are notably lacking here--it proved very difficult to address these objectives with the drillstring, in this environment. It is not clear to LITHP what has changed to increase our chances of succeeding in efforts to address this problem.

6. The S' reflector. It is proposed to drill the enigmatic terrain over S'. LITHP does not see how this could be fit into one leg from a logistic stand point. While drilling detachments is important, we note that this site was looked at by the NARM-DPG and determined not to be a priority. It is still unclear that S' is the same reflector as S. There is submersible work scheduled in the area that may help determine what the enigmatic terrain is. We do not see the point of drilling the site--the time would be better spent trying to complete more of the transect within the OCT or the site on old oceanic crust.

The proposal aims at narrowing the uncertainties in characterizing the nature of the continent-ocean crustal transition still remaining after Leg 149 drilling. The panel, as outlined above, does not see how the drilling proposed here (particularly when pared to a one leg program) can make any significant progress towards this goal. We are not saying that this is not an important problem, nor that the proponents have not made many important scientific contributions from their work here. It simply appears to us, given the nature of the margin and the sediment thicknesses, that trying to understand the structure and history of this margin, using a limited number of boreholes, is an intractable problem. LITHP reiterates its interest in sampling the oldest oceanic crust at Site IAP-3C (now Site Iberia 10A) seaward of the peridotite ridge, but considers other aspects of the proposal not of high priority. The panel remains unconvinced by the case made for returning to this margin, based on the available results from Leg 149.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	462
PROPOSAL TITLE	Blake Plateau and Blake Nose
PROPONENTS	
CONTACT	
DATE REVIEWED	October 9-11, 1995

A. THEMATIC RELEVANCE

A1		A2		A3		A4		A5	x

Not within our mandate, except as noted in the comments below.

COMMENTS

LITHP is interested in obtaining basement samples from the Blake Plateau to assess its origin. To our knowledge, basement of the feature has not been sampled, and controversy exists as to whether it is continental, oceanic, or transitional. Two seaward dipping reflector wedges, part of the US East Coast large igneous province, have been identified just to the north of the Blake Plateau (Austin et al., Geology, 1990; Oh et al., Geology, 1995). Circular potential field anomalies on the northwestern Blake Plateau may be volcanic centers. LITHP notes that ODP Proposal 462 includes one site (BN-5A) near the crest of the main plateau, and requests that any opportunities for sampling basement from the Blake Plateau be fully exploited.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	468
PROPOSAL TITLE	Vertical tectonics
PROPONENTS	Bonatti et al.
CONTACT	Rihm/Bloomer
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1		A2		A3	x	A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1		B1.2	x	B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2		C3	x	C4	

see written comments

* scientific feasibility of basement holes, which are the portion of this proposal of potential interest to LithP, need more information (diving, high resolution mapping) to be assessed by the panel.

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2		D3		D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	x

see SSP comments

F. RECOMMENDED ACTION

F1		F2		F3	x	F4	

drill deeper in crust

COMMENTS

This is a well written, very interesting and highly intriguing proposal.

Its scientific objectives, however, are not of high thematic relevance to LithP, unless the option of obtaining long sections of oceanic crust / upper mantle, which the proponents mention in their reply to former LithP comments, is more realistically integrated in the drilling strategy.

Given that this proposal is principally of interest to TecP, as manifested by recent TecP rankings and by constitution of an TecP ad hoc committee to assist the proponents in maturing the proposal, LithP will not be its principal supporter in the present form, but realizes that parts of the proposal might become of higher priority to LithP if developed accordingly.

Some concern still remains with formerly raised questions, namely regarding dating of shallow water carbonates and the nature of the dipping reflectors at site ROMC-2 (see comments of LithP spring meeting, College Station). It is still not clear to the panel that the recovery rates in lithified carbonates and the biostratigraphic resolution in those carbonates will be sufficient to answer the questions posed.

The panel was intrigued by the problem of the old, deformed sediments sitting within younger oceanic crust, suggesting that this piece of crust has been shuttled back and forth between strands of the transform. The problem is fascinating and one that we think should be a focus of the proposal. It is less clear to us, however, how one would use the drill string to investigate the problem and to distinguish between hypotheses for its origin.

The proposal appears to have some site survey deficiencies, but there is a great deal of data in the area which might be sufficient to allow some of the tranverse ridge sites to be drilled. There is also a transverse ridge site at Vema which was ready to be drilled at one point for an engineering leg.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	474
PROPOSAL TITLE	Offset Drilling Engineering Leg Proposal
PROPONENTS	Pettigrew
CONTACT	Gillis
DATE REVIEWED	9-11 October 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1		B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2		C3	x	C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1		D2		D3	x	D4		D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	x

F. RECOMMENDED ACTION

F1	x	F2		F3		F4	

COMMENTS

LITHP recognizes the prime importance of engineering development for offset drilling in addressing the high-priority lithospheric objective of obtaining long sections in oceanic crust. To truly advance engineering, the engineers and their equipment must be ready, which requires that time and funds be available for pre-cruise development and planning. LITHP does not anticipate having a highly ranked offset section leg in a fractured environment in the FY 97 schedule; we therefore do not believe it is necessary to rush the scheduling of a full leg for this engineering. We do recommend that PCOM consider designating time on drilling legs in appropriate environments for engineering testing and development (for example in the Atlantis II fracture zone for hard rock drilling or at Costa Rica for the PCS). LITHP emphasizes that extensive site survey data and previous drilling are required, because it is critical that the engineers know as much as possible about drilling conditions prior to actual testing. LITHP does not wish to specify a location of the engineering leg at this time, except to note that these tests should be in fractured rock. Appropriate places might include environments like Mark, Hess Deep,

TAG, Manus Basin, Atlanis II FZ, and Woodlark Basin.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	475
PROPOSAL TITLE	Deformation, fluid flow ...and ..Physical Properties in Accretionary Prisms
PROPONENTS	Moore et al.
CONTACT	Fisher
DATE REVIEWED	October 7-9, 1995

A. THEMATIC RELEVANCE

A1		A2		A3	x	A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3	

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1	x	C2	x	C3		C4	

The use of LWD is probably the only way to achieve the stated objectives with respect to sediment properties. Utility in basement is unclear, although LWD should contribute to the overall basement characterization effort. The utlity of the technique for mass balance questions is also unclear.

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2	x	D3		D4		D5	

Some problems may persist with penetrating the negative-amplitude areas of the Barbados prism.

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	

Good.

F. RECOMMENDED ACTION

F1		F2		F3		F4	

COMMENTS

This proposal is for LWD at the Costa Rica and Barbados margins. The components of these programs of greatest interest to LITHP include the logging to take place in the basement, particularly across the basement-sediment interface, and the characterization of the sediment and basement section as a contribution to the mass balance effort. These goals are clearly of lesser importance to the proponents than are goals related to fluid flow, faults, and consolidation characterization. The program seems well justified scientifically, in fact, the main goals can probably be achieved through LWD without the need for additional coring at these sites. Increasing penetration in basement is strongly enocuraged by LITHP, as this would further crustal characterization and shallow hydrothermal objectives. The Panel did note that LWD could not be completed at Costa Rica until *after* appropriate holes had first been cored.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	478
PROPOSAL TITLE	Eastern Nankai
PROPONENTS	Tokuyama et al.
CONTACT	Castillo
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1		A2		A3	x	A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1		B1.2	x	B1.3	

B2 LOCATION	B2.1		B2.2	x

C. SCIENTIFIC FEASIBILITY

C1		C2		C3		C4	x

D. PRELIMINARY TECHNICAL FEASIBILITY

D1		D2		D3		D4	x	D5	

E. PROPOSAL COMPLETENESS

E1		E2		E3	x	E4	

E5		E6		E7		E8	x

F. RECOMMENDED ACTION

F1		F2		F3		F4	x

COMMENTS

This proposal is primarily relevant to TECP's objectives. However, the recovery of oceanic layers II and II, fluid migration, and fluid chemistry could be of interest to LITHP. The proposal appears over ambitious; it needs to be revised and address some of the scientific and technical problems that will prevent the proponents from attaining their objectives. It is not all clear that fluid flow/flux objectives could be met even if all operational goals are achieved. Barbados, Nankai, and Peru drillings have not resulted in quantifying fluxes - how will this project be different? The technology does not exist to do the cross-hole tomography experiment, nor is the experimental likely to work in this tectonized environment. Will CORKS and PACKERS be used in the project - how will they be done without reentry holes? How will temperature logs help in recently-drilled holes? How will holes be cased/screened? Flow is much less restricted along faults here than in Barbados, how can we be sure we can observe effects of fluxes? There are also weather and current problems at these sites - see Leg 131 results.

A rationale for the proposed deployment of downhole seismometers in the drill holes must also be included in the revised version. The planned SHINKAI 2000 and 6500 dives and pseudo-3D MCS survey in 1996 must be tailored to follow the ODP site survey guidelines to prepare the sites.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

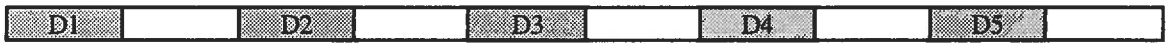
PROPOSAL NUMBER	479
PROPOSAL TITLE	Felsic volcanics, E. Manus Back-arc
PROPONENTS	Binns et al.
CONTACT	Koski
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

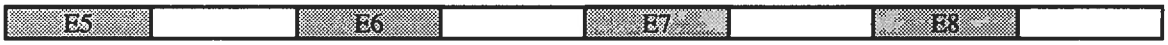
B. SCIENTIFIC MERIT

C. SCIENTIFIC FEASIBILITY

D. PRELIMINARY TECHNICAL FEASIBILITY



E. PROPOSAL COMPLETENESS



F. RECOMMENDED ACTION

COMMENTS

LITHP had a very positive reaction to this proposal. The proposal describes a drilling program that is highly relevant to LITHP objectives regarding the three-dimensional architecture of sea-floor hydrothermal systems, processes at convergent margins, and arc-related ore deposits. It is recognized that a hydrothermal vent site in felsic volcanic rocks in a convergent-margin tectonic setting has not yet been drilled, and that the PACMANUS site is probably the best known candidate for pursuit of the ODP objectives stated above.

The panel encourages the proponents to proceed in this endeavour. At this stage, detailed and systematic site surveys of the proposed PACMANUS drill locations at appropriate scales are needed. The model for the sites is intereting, but it is not very well constrained; for example, do we know that there are no structural controls tothese deposits? The site surveys should include high-resolution bathymetry, sonar mapping, and sub-bottom geophysics; submersible studies for geologic mapping, fluid and rock sampling, biologic data, and environmental/ecological assessment; deployment of markers; and heat flow. Video coverage of the drill sites is especially important. All sample and marker locations and survey tracklines require accurate and precise navigation tied to existing Hydrosweep and (or) SeaBeam bathymetry. A target siting guide prepared by Dr. Jay Miller of Texas A & M University will be sent to the proponents to assist in this effort. It is also recommended that the proponents consider the site preparation activity that preceded recent drilling at other ocean-floor hydrothermal sites, especially TAG and Middle Valley, before conducting site surveys and submission of a revised proposal.

A revised proposal should contain a clear description of the proposed drilling technology, for example, motor driven core barrel, drill-in casing, and diamond coring system (not now feasible) for the PACMANUS site.

The proponents are advised that collection of temperature data and sampling of hydrothermal fluids in mounds during drilling are not feasible. It is recommended that the proponents contact Dr. Andrew Fisher at the University of California, Santa Cruz, for information about current hydrogeological technology. The proponents need to develop much more detailed and more realistic lans for what can be accomplished with measurements in theboreholes.

LITHP further recommends that other proponents (geophysicists, geochemists, biologists, petrologists) be added to the project in order to address multidisciplinary goals. Some more discussion of the existing database on petrology, biology, etc. would also be useful.

In summary, LITHP recognizes the relevancy of the PACMANUS site to program objectives and invites and encourages the proponents to proceed. The probability of success for the project will increase if carefully planned and executed site surveys are completed prior to drilling.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	480
PROPOSAL TITLE	Caribbean Basalt Province
PROPONENTS	Donnelly et al.
CONTACT	Fisher
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3		

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2	x	C3		C4	

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	x	D2	x	D3		D4		D5	

drill in casing needs, depth limits at Venezuela Basin site, bare rockspud-in at Beata Ridge?

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	

E5		E6		E7		E8	x

geologic cross-sections, include and consider all MCS data, look for shallower sites--

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

This proposal is is a substantial revision of earlier Caribbean basement drilling proposals. It includes only one of the sites included in the earlier proposals, S-6. The other primary sites (BR 1,2 and VB 1) are completely new. These sites were selected primarily on the basis of new Ewing survey data and will be refined after results are known from an anticipated Nautile dive program.

LithP was enthusiastic about the new proposal, at least as conceptually proposed. We like the idea of deeper drilling into the Caribbean LIP (and we agree completely with the proponents that the CCBP is a LIP) to evaluate the nature and timing of extrusive volcanism is greatly preferred over drilling a slightly greater number of holes with shallower basement penetration. In addition, LithP views favorably the geographical (and thus, geological) distribution of holes in the new proposal, at least in terms of addressing the various scientific goals of the program. LithP also endorses the approach of drilling through tectonic windows to reach stratigraphically deeper sections of the CCBP. LithP is excited about the degree of heterogeneity of in basalt types and the tight constraints now placed on the age of this LIP. THe abundance of primitive basalt compositons and the diversity of surrounding on-land exposures make this an attractive target for LIP drilling. We also believe the plate tectonic problems to be addressed by this drilling to be of first-order importance. In summary, LithP views the scientific program extremely favorably, but must admit that the revision of sites and the availability of new data (from Ewing and upcoming Nautile programs) makes this new proposal less mature operationally. We encourage the proponents to revise the proposal accordingly to address our technical (and limited scientific) concerns.

LithP does have several concerns regarding the evolution of this proposal and the technical feasibility of the program. Why is there no reference to the older French seismic data? We understand that new Ewing data are now available, but it was surprising that the old strategy and site placement were not mentioned in this version of the proposal. Perhaps the proponents could contrast the new strategy with the old

strategy and clearly explain why the new strategy is preferred. Also, it would be helpful to have a single map showing the locations of all the seismic lines, the Ewing lines as well as the older data. While the conceptual model presented in Figure 8 was appreciated by some LithP members, others were frustrated that it was difficult to place the proposed sites in the context of this model. It would be very helpful if the proponents would revise this geological model to explicitly include the locations of the sites.

LithP will require fully (or more fully) processed Ewing data in order to evaluate the selection of Beata Ridge sites. The seismic sections and BR sites included in this version of the proposal are a little frightening; perhaps a less compressed display would help these sites to be understood in a broader context. In particular, how fractured will the rocks be, and how easy will it be to place the cored rocks in a geological context? The jury also remains out on how easy drilling is expected to be. There was great interest in seeing results of the Nautile dive program to help answer these questions, and to know more about expected rock types accessable through the BR tectonic windows. The success of drilling of the BR sites would be greatly assured if it did not rely on hard-rock spud-ins. Can good sites be selected with enough sediment overlying basement to allow the use of traditional reentry systems? Again, we look forward to seeing Nautile results to answer this question. Will it really be possible to drill 400-500 m at BR-1 and BR-2 without a reentry system at each site? Full reentry systems would require significantly more time.

Similarly, we wonder how reliable the velocity estimates are for the Venezuala Basin sites, as significant errors could place basement beyond the reach of the drill ship. We recognise that proponent Diebold is an expert on this topic, and would appreciate some kind of estimate of uncertainty. The panel also has concerns that operations during Leg 165 may not provide the preliminary work necessary for the S-6 work (i.e., a hole drilled and cased completely through the sediments and into upper basement, with perhaps 150 m of penetration in basement). Success at S-6 relies heavily on Leg 165 operations. Perhaps PCOM would consider S-6 operations during Leg 165 as comprising an important 'Legacy' opportunity. In this case, the Leg 165 co-chiefs and scientific party should be directed to prepare this site accordingly, so that additional basement penetration can be made at a later time (either as part of a mature CCBP drilling program that grows out of this proposal, or out of a later proposal).

LithP likes this proposal and encourages the proponents to prepare a revised proposal as soon as site survey data are available.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	481
PROPOSAL TITLE	Red Sea Deeps
PROPONENTS	Ludden et al.
CONTACT	Koski
DATE REVIEWED	OCTOBER 9-11, 1995

A. THEMATIC RELEVANCE

A1	x	A2		A3		A4		A5	

B. SCIENTIFIC MERIT

B1 OBJECTIVES	B1.1	x	B1.2		B1.3		

B2 LOCATION	B2.1	x	B2.2	

C. SCIENTIFIC FEASIBILITY

C1		C2		C3	x	C4	

see comments

D. PRELIMINARY TECHNICAL FEASIBILITY

D1	?	D2		D3		D4		D5	

questions about drilling in the brine pools

E. PROPOSAL COMPLETENESS

E1		E2		E3		E4	
E5	x	E6		E7		E8	x

needs better presentation of seismic data

F. RECOMMENDED ACTION

F1		F2	x	F3		F4	

COMMENTS

The panel is very excited by this proposal and are particularly pleased to see its multidisciplinary nature. The panel did, however, identify a few deficiencies it felt needed to be addressed. In particular, better explanation of the strategy for fluid sampling in the hydrothermal experiment needs to be given. How are 'direct' fluid samples to be taken? The proposal also implies that drilling young basalts will be required. What technology do the proponents envisage to do this? The panel also appreciate the necessity to site holes in 'evaporite windows' for practical resaons, but wonder if avoiding this important lithology will seriously impact upon a complete understanding of the hydrothermal system, i.e. the formation of the brines. The panel also wonder if by focussing on a single deep hole in the Atlantic II deep that information on the whole hydrothermal system will be achieved, i.e. on both the recharge as well as the emergent part of the system.

The panel would like to see the section on tectonic/magmatic transect strengthened. For example, more data on the tectonic transect sites are needed. Seismic data are referred to, but not provided, and balanaced cross sections across critical areas identified for drilling should be included. The panel would like to see an explanation for why the transect the transect is oblique rather than perpendicular to the rift axis. In addition, a more complete discussion giving hypotheses to be tested by drilling is needed, particularly with respect to the relationship between Red Sea initiation and evolution and the Afar plume. The existence of very depleted basalts in the rift axis is equated with large degrees of partial melting, yet the area is one of very slow spreading and thus low magma production rate. Can the proponents identify ways in which drilling can contribute to resolving this apparent inconsistency?

Although well written, easy to read and full of interesting background information, the proposal would benefit by highlighting the important objectives/hypotheses, stating the fundamental processes being addressed by drilling in this area.

Finally, the panel recognize the political and technical challenges associated with drilling in the Red Sea may be prohibitive, but would like to encourage the proponents to push these things forward as far as possible in order to achieve the exciting objectives outlined in their proposal.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	LOI 60
PROPOSAL TITLE	Return to TAG Hydrothermal Field
PROPONENTS	Rona et al.
CONTACT	
DATE REVIEWED	OCTOBER 9-11, 1995

COMMENTS

The original proposal for drilling in the TAG Hydrothermal Field proposed a three leg plan for systematically attacking the three dimensional structure of the active hydrothermal mound. This letter of intent, which includes representatives from the original TAG proposal, participants from Leg 158 and other interested parties, seeks support for a second leg of drilling at TAG. The emphasis of the proposed second leg of drilling is oriented primarily at the formation of massive sulfide deposits and includes significant drilling at relict massive sulfide deposits near the active TAG mound. LITHP was a strong supporter of the original TAG drilling proposal, which clearly presented scientific problems and the methods to be used to address those problems, as well as providing documentation of the existing data so that the chances of success could be evaluated. This letter of intent proposes comparison of sulfide deposits in different stages of evolution as a means for evaluating the genesis of massive sulfide deposits. This approach is potentially a useful addition to the existing proposal for drilling at TAG. This letter of intent raises several questions to be addressed by a second leg of drilling. Even though this is not a

mature proposal, the means by which these questions would be addressed are not stated in the letter. In many cases, the panel felt the problems are not addressable by our present drilling technology. A few examples illustrate the point. The proponents wish to address upflow at the TAG mound by drilling a few holes north of the sulfide mound. Have areas with sufficient sediment cover to stabilize the drill bit been identified, or are the proponent suggesting installing a hard rock guide base on sediment-free basalt? Areas with thin sediment cover over basalt are not amenable to drilling by the Resolution. Also, how does this approach fit with the observation from Leg 158 drilling that the upflow zone is highly focused? The proponents wish to examine the present thermal structure (internal temperature and gradients) of the mounds and compare this to anomalously high heat flow measured at the seafloor. What tools can be used to make meaningful measurements of this type in this environment and how will this problem be approached? The proponents wish to know how much hydrothermal fluid is retained as pore fluid, what its composition is, and what reactions control the composition. These are important questions, but the means of answering them are not known to the panel. Will this all be done by fluid inclusion analysis? If so, what are the limitations to this approach. The proponents wish to know the volcanic stratigraphy of the adjacent pillow lava domes, whether the flows are episodic, and if the chronology is related to that of sulfide deposits. Are the proponents suggesting bare rock drilling on the pillow domes? How will the chronology of the flows be established and how will it be compared with the sulfides? There are many other issues raised by this letter that suggest that these problems and their potential solutions have not been carefully considered by the proponents, in particular with regard to the technical capabilities of the drill ship. The panel remains supportive of the concept of further drilling in the TAG hydrothermal field, as outlined in the original TAG proposal, and the approach of comparing sulfide deposits in different stages of evolution could be an important part of further drilling efforts. However, in order for further drilling to be considered for scheduling, the panel will need to receive a mature proposal that 1) incorporates the results of both the extensive pre-drilling site surveys and the results from drilling, 2) poses well stated scientific objectives and outlines the approach to be used to address these objective, and 3) demonstrates an understanding of the technical capabilities of the drill ship. The panel also felt that the Mir and Alvin zones are not mapped in sufficient detail at present to justify drilling or to enable proper siting of drill holes. Extensive site survey work similar to that performed at the active mound, including high resolution microbathymetry and placement of seafloor markers, will need to precede drilling. Special attention should be paid to high precision navigation during this work. The panel invites these proponents to collaborate with the proponents of the original TAG proposal to produce a mature proposal for consideration of a second leg of drill in the TAG hydrothermal field.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	LOI 58
PROPOSAL TITLE	Slow-spread lithosphere at MARK
PROPONENTS	Cannat et al.
CONTACT	
DATE REVIEWED	OCTOBER 9-11, 1995

COMMENTS

LITHP is in agreement that an engineering leg and/or engineering development is required in order to further our objectives for drilling in difficult environments. The panel considers MARK to be one of areas that is appropriate for such a leg. The proponents are referred to our comments concerning proposal #475, which are repeated here:

LITHP recognizes the prime importance of engineering development for offset drilling in addressing the high-priority lithospheric objective of obtaining long sections in oceanic crust. To truly advance engineering, the engineers and their equipment must be ready, which requires that time and funds be available for pre-cruise development and planning. LITHP does not anticipate having a highly ranked offset section leg in a fractured environment in the FY 97 schedule; we therefore do not believe it is necessary to rush the scheduling of a full leg for this engineering. We do recommend that PCOM consider designating time on drilling legs in appropriate environments for engineering testing and development (for example in the Atlantis II fracture zone for hard rock drilling or at Costa Rica for the PCS). LITHP emphasizes that extensive site survey data and previous drilling are required, because it is critical that the engineers know as much as possible about drilling conditions prior to actual testing. LITHP does not wish to specify a location of the engineering leg at this time, except to note that these tests should be in fractured rock. Appropriate places might include environments like Mark, Hess Deep, TAG, Manus Basin, Atlanis II FZ, and Woodlark Basin.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	LOI 55
PROPOSAL TITLE	A non-accretionary convergent margin
PROPONENTS	Fryer et al.
CONTACT	
DATE REVIEWED	OCTOBER 9-11, 1995

COMMENTS

The proponents suggest further drilling in the Mariana region to assess the chemical mass balance and tectonic history of a non-accretionary convergent margin. Although not of particulalry high relevance for LITHP, parts of the proposal could be of interest to the panel. Some concerns exist over the ability to adequately unravel compositional variations in the fluids (e.g. seawater influx might be a potential problem) but the general idea was viewed as an interesting approach in a region where we have little information on fluid fluxes. A question was raised about how serpentine bodies with a fluid signal dominated by the slab component (as opposed to entrained seawater) could be distinguished from those at which seawater has signficiantly diluted that signal. The results form 125 showed that many of the serpentine bodies had a largely seawater signature--does this experiment require finding serpentine bodies like that drilled at Conical Seamount (or whichever had the storng slab signature)? If so, is there a way to identify those prioir to drilling?

The panel suggests that the propoents contact supporters of Proposal 435 Izu-Mariana mass balance (Plank et al.) with the aim of integrating or coordinating portions of these related experiments.

The Panel recommends that PANCH discuss the general interest in this letter, given its interdisciplinary nature.

ODP PROPOSAL EVALUATION THEMATIC PANEL: LITHP

PROPOSAL NUMBER	LOI 61
PROPOSAL TITLE	Seychelles Microcontinent
PROPONENTS	Plummer et al.
CONTACT	
DATE REVIEWED	OCTOBER 9-11, 1995

COMMENTS

The panel appreciates the potential significance of delineating the extent of continental crust in the region of the Seychelles Plateau. Concern was expressed over the limited global significance of the problem and about the number of deep penetration holes that would be required. The LOI does not address high priority objectives of LITHP and is therefore unlikley to become a highly ranked proposal for this panel.

The following proposals and LOIs were judged not to be wihtin the mandate of the Lithosphere Panel and were not reviewed:

LOI 54	Water circulation and sediment history: Indian Ocean	Davies
LOI 56	A Paleogene Equatorial Pacific APC transect	Lyle
LOI 57	Abyssal anoxic basins, Southwest Pacific	Kroenke
LOI 59	Monsoon history in the South China Sea	Wang Pinxian
355-Rev5	Peruvian margin-gas hy., tectonic erosion	von Huene et al.
455-Rev	Deformatioin, fluids in Nankai Prism	Moore et al.
450-Add	Taiwan arc-continent collision	Lundberg et al.
455-Rev	High resoultion transects of Laurentide ice sheet outlets	Piper
473-Add	High resolution paleooceanographic record, Saanich Inlet	Bornhold
476	Hudson Apron Submarine Slope Stability Transect	Pratson
477	Sea of Okhotsk glacial-integlacials	Takahashi
*348	New Jersey TIE (NJ sea level revisited)	
*354	Benguela Current and Angola/Namibia upwelling	
*404	NW Atlantic Sediment Drifts	
*464	South Atlantic Paleooceanography	

6. Co-chief recommendations:

The panel reocmmends the following peole for consideration as co-chiefs for the appropirate legs:

Leg	Nominees			
Caribbean Basalt Provnice	Mauffret	Diebold	Donnelly	
Return to 735B	Dick	Natland		
Drilling the Kerguelan Plateau	Frey	Munschy	Weis	Coffin
Multi-objective drillingin the Red Sea	Ludden	Stoffers	Rihm	Pigott
CORKing Site 395A	Becker			
Tranverse ridges on the Romanche FZ	Bonatti			

7. Future Meeting Dates:

The Spring, 1996 meeting will be held in Corvallis, Oregon on March 6, 7 and 8 and will be hosted by Sherm Bloomer. The Fall, 1996 meeting will be in Kanazawa, Japan and will be hosted by Shoji Arai, on dates to be determined.

8. Current Liaisons:

Because of the burden of asking panel members to attend two additional meetings, we have identified two liaisons for each relevant panel, one for the U.S. meetings and one for meetings outside the U.S.

OHP	Jeff Gee	Roland Rihm
SGPP	Kathy Gillis	Jacques Girardeau
TECP	Randy Koski	Dominque Weis

In addition, rather than designating liaisons to the service panels, we have identified watchdogs. These people will be the principal contacts between LITHP and the service panel, and will (only as really necessary) attend the service panel meetings as a formal liaison. We view their principal role as insuring clear communication between LITHP and the service panels:

SMP	Godfrey Fitton	IHP	Jay Miller (ODP-TAMU liaison, or his succesor as LITHP liaison, since the staff scientists are often best aware of these issues)
TEDCOM	Andy Fisher	DMP	Jeff Gee

We also reviewed liaisons to various national and international programs. The current liaisons from LITHP to various panels and programs are:

InterRidge:	Pat Castillo, Roland Rihm
IAVCEI	Mike Coffin
ION/OSN	Anne Sheehan

9. Panel membership Issues

The panel discussed the replacement of four members and nominated candidates fro the next chair.

Dave Caress, Doug Wilson, and Rob Zierenberg have all reached the end of their rotation with the panel. Dave Caress has had to miss several meetings during his tenure because of his change of positions. He believes he can make the next two meetings andwould like to continue on the Panel. We need someone with Dave's expertise in geophysical techniques and the Panel recommends keeping Dave on for the next two meetings.

Rob Zierenberg is serving his second term on the Panel, at our request, but now has to concentrate on other matters. Rob's expertise in hydrothermal systems has been filled in large part by Randy Koski, so we thought we could explore expand the panel's expertise in making recommendations to fill Rob's space. The Panel recommends, first, Jim Moore, and second, Jackie Eaby-Dixon to fill Rob Zierenberg's place.

Mike Coffin has brought an expertise in marine geophysics to the panel, but as importantly has also brought a knowledge of large igneous provinces and links to IAVCEI. The panel feels that our

marine geophysics expertise will be adequately covered by continuing and new panel members; we feel the links to IAVCEI and to the problem of LIPs are the important criteria for Mike's replacement. The panel recommends first, John Mahoney, and second, Fred Frey to replace Mike Coffin.

Doug Wilson has expertise in marine geodynamics and mid-ocean ridge dynamics. The Panel would like to replace him with someone of similar expertise and recommends frist Suzanne Carbotte, and second Dave Naar.

The chair will contact the nominees and if they are willing to serve will forward vitae to the JOIDES office.

The Panel had a lengthy discussion about a replacement for Sherm Bloomer as chair, since he will be chairing his last meeting in the Spring in Corvallis. The Panel wishes to appoint a new chair now, so that the nominee can attend the Spring meeting and get a feeling for the workngs of the group. The Panel recommended the following people:

Dave Clague	Director, Hawaiian Volcano Observatory
Albrecht Hoffman	Max Planck Institut
John Ludden	
Stan Hart	Woods Hole Oceanographic Institution
Kathy Gillis	University of Victoria

The Panel's first choices are David Clague or Al Hoffman, but the Panel feels that any of these people would provide excellent leadership for LITHP at an important time in the development of the Ocean Drilling Program.

The chair will contact the nominees and if they are willing to serve will forward vitae to the JOIDES office.

10. Reports at the meeting:

PCOM--Henry Dick. Henry reviewed the principal business at the August PCOM meeting in Portland and flagged a number of issues for the panel to comment on. Colin Jacobs provided some comments about the status of the long range plan.

SGPP: Zierenberg and Ludden. Rob reviewed the rankings and discussion at the Spring, 1995 meeting. Extensive discussion were conducted regarding issues such as the draft range of the ODP Long Range Plan, the status of the Janus computer data base upgrade project, and the proposed changes to the ODP publication procedures. In each of these cases, the issues are too complex and the range of opinions of the panel members are too broad to warrant summary, interested parties are referred to the full text of the SGPP minutes. The panel was updated on the planning for the Leg 164, which will focus on Gas Hydrates. On going work by ODP/TAMU engineers to modify the Pressure Core System was summarized. The panel was please to see some action on this tool, which will provide important quantitative information about gas hydrates, but remains concerned that it seems unlikely the tool will be tested prior to Leg 164. SGPP had previously expressed concern about the increasing number of proposal that included CORKed holes as an integral part of the scientific objectives. Therefore, Bob Carson presented an overview of the concepts behind CORKs, the practicalities of their deployment, and the successes and failures of previous use of CORKs at the Middle Valley hydrothermal site, and in subduction zone settings at the Cascadia Margin and on the recent Barbados leg. John provided some notes about the Fall meeting in Copenhagen.

TECP: Wilson. Doug provided brief comments about the Spring 1995 meeting and the formation of a working group to help develop the Romanche proposal.

SMP: Miller. Jay provided an update on the acquisition of a new cryogenic magnetometer and on third party tool development.

Leg 163: Miller. Jay provided what information he had about the events during Leg 163 and the status of the ship.

JANUS project: Gillis, Miller. Kathy presented a synopsis of an SMP sponsored meeting on core description held over the summer in College Station. Jay gave a review of the presetnstatus of the JANUS project and gave a demonstration of a prototype core description module that Steve Hurst had developed.

DCS update: Miller. Jay reviewed the current status of DCS testing, talked briefly about other tool developments, and reviewed staffing changes at ODP-TAMU.

InterRidge Steering Committee: Rihm The 1995 IRSC meeting was held Sept 11-13 at Geomar, Kiel, Germany. InterRidge is presently approaching phase 2 of its program plan, which is devoted to implementation of a number of specific InterRidge projects, as they were discussed and defined during a series of workshops in 1993-94: Global working groups major focus is the Southwest Indian Ridge, for which a science plan is being developed, aiming at 1 - 2 cruises in the southwestern part of SWIR and 6 - 7 cruises at its northeastern part. Drilling, in addition, is viewed as an integral part of this science plan. A second major focus of the Global WG is the Arctic, where, however, ODP drilling is not likely to occur in the near future. Two projects are in advancing discussion at the meso-scale working group:
1 - the "bathtub experiment", aiming at quantification of all fluxes into and out of one individual ridge segment and 2 - the "4-D architecture" experiment.

IAVCEI: Coffin. Mike discussed IAVCEI's mission, including its sponsorship of the upcoming meeting on Drilling the Ocean Crust at Woods Hole in the Spring and a request from NSF for IAVCEI to develop a plan for the study of Large Igneous Provinces.

STA/JAMSTEC: Bloomer, Miller, and Jacobs each presented briefly what information they had about STA/JAMSTEC's plans to design and build a riser equipped vessel for OD 21.

Results of Leg drilling at TAG: Susan Humphris. Susan reviewed the scientific and technical results from TAG. The presentation gave the panel a much better understanding of the scientific return from TAG, and also highlighted some important areas in which tools performed both better and worse than expected. There was considerable interest in the potential for the motor driven core barrel.

Planning for Sedimented ridges II: Zierenberg. Rob brought the panel up to date on planning and staffing for Sed. Ridges II.

Planning for Eastern Juan de Fuca: Fisher. Andy provided some information on the recently completed site survey cruise on the Eastern Juan de Fuca and on plans for the Leg.

Updates on Other Programs: Bloomer briefly presented updates on plans and site survey work for Nicaragua Mass Balance, Tonga Forearc Drilling, and Evolution of the Ocean Crust.

11. Other Business:

The Panel would like to thank Kathy Gillis for her hard work in preparing and hosting our meeting at Cyprus. It was a particularly daunting task given the distance to our venue, but the field trip, the meeting, and the dining were all resounding successes. We would also like to thank Dr. George Constantinou, Director of the Cyprus Geological Survey, for his help in arranging the field trip and his guidance during our first morning in the field.

The panel bids farewell to Doug Wilson, Mike Coffin, and Rob Zierenberg. They have been excellent colleagues and enjoyable company. Doug has always provided us with careful, well-thought out advice, and his counsel will be missed. Mike has helped us greatly in developing a strategy to assault large igneous provinces with a drillstring and has been instrumental in helping us explain the importance of these remarkable bodies of rock to the rest of the community. And of course Rob....we had considered simply leaving Z's seat vacant and labeling it the Zierenberg Memorial Chair of Wisdom, but decided it would go to his head. Rob's work on behalf of the Panel and the Program has been invaluable. His willingness to serve a second term has helped us maintain continuity in our discussions and has provided an irreplaceable link to SGPP. It is with great appreciation that the Panel bids him adieu, but notes that we're expecting great things from his work on Sedimented Ridges II and that we expect to see him back in the ODP advisory structure soon.