

APR 03 1992

EXECUTIVE SUMMARY

Meeting description. The Ocean History Panel held its spring ^{Ans'd} 1992..... meeting at the Department of Marine Sciences, University of South Florida, St. Petersburg, FL, hosted by Dr. Al Hine. OHP again strongly urges international representatives who will be absent to notify their alternates in sufficient time for them to be able to attend. OHP enthusiastically welcomed the presence and participation of Tom Janecek, the TAMU-ODP liaison. (Minutes, Table of Contents, item 1)

Diamond coring system. OHP is extremely concerned that continuing problems with the development of the Diamond Coring System will prohibit progress on several major thematic areas of interest requiring the continuous recovery of alternating soft/hard sediment lithologies, and in particular, of chalk/black shale/chert sequences in Paleogene and Cretaceous sediments. We have highly ranked proposals of significant thematic interest which require this technology; these will be more highly ranked when this recovery capability is achieved. Therefore, we strongly recommend that high priority be given to providing both adequate shorebased resources and adequate ship time for the development of the DCS to ensure a fully operable system as rapidly as possible, ideally within the next several years as originally indicated in the long-range plan. (Minutes 2d)

Sediment recovery with the APC/XCB. Based on high-priority objectives involving high-resolution studies of sediments, OHP strongly advises:

(a) The JOIDES Resolution be equipped with computer capability to allow real time hole-to-hole and core-to-log correlations, with the capabilities at least those demonstrated useful on Leg 138.

(b) TAMU engineers should evaluate the problem of sediment stretching/distortion with the APC and provide improvements of the system to minimize this problem. Leg 138 provided very complete documentation of these problems, which may be of use in these evaluations.

(c) TAMU engineers should evaluate the issues involved in obtaining complete XCB-sections, and provide needed improvements to minimize these problems.

These capabilities and improvements will be particularly useful in achieving the scientific objectives on upcoming legs including Leg 145 (North Pacific Transect), Leg 150 (New Jersey margin/Mid Atlantic Transect) and Leg 151 (North Atlantic/Arctic Gateways, Leg I). (Minutes 2d)

Santa Barbara Basin Drilling. While recognizing the scientific importance of further drilling in the oceanic crustal section at 504B and of drilling at the Hess Deep (Leg 147), OHP unanimously recommends that a single site in the Santa Barbara Basin with multiple APC sampling, as discussed in proposal 409 (received 10/4/91 at the JOIDES office) and in proposal 386 as site CA-10, be scheduled on Leg 147 or 148 as well. This site is ideally suited to ultra-high resolution studies of marine records with regard to issues of importance in global change and understanding the global carbon

cycle; this sediment record will allow detailed resolution of climatic fluctuations over a substantial portion of the Quaternary record in this important upwelling system. The small investment of time required, while not substantially affecting the progress possible at Hess Deep or Hole 504B, will result in multiple scientific yields important in understanding global change.

We note also as further support for this recommendation that the drilling of a Santa Barbara site was strongly endorsed by OHP at both its Fall 1990 and Fall 1991 meetings (see those minutes). (Minutes 4c)

GLOBAL PRIORITY LIST OF HIGHLY RANKED PROGRAMS. (Minutes 5e)

Ranking	Proposal number and abbreviated title	Fraction awarded/available points	Ready for FY94 drilling?
1	388+388-Add Ceara Rise	0.98	yes
2	NAAGII + possible additions	0.84	yes (FY95)
3	415+403-Rev Caribbean K/T	0.77	yes?
4	354-Rev Angola/Namibia/Benguela	0.74	yes
5	253-Rev Ancestral Pacific	0.71	no (DCS needed)
6	386-Rev CA current	0.68	yes?
7	404/406 L Neogene N Atlantic	0.54	yes?
8	412 Bahamas Transect	0.50	no?
9	Bering Sea (CEPAC)+390	0.43	yes
10	337 EXXON SL test, N Zealand	0.40	no
11	347 Cenozoic S-equat Atlantic	0.38	no?
12	363-ADD NR1-3 paleo record	0.28	yes
13	345+345-Add W. Florida margin	0.23	no
14	338 NE Aust, Marion Plateau	0.10	no

See minutes (5f) for a more complete statement of drilling readiness for each proposal to justify the yes/maybe/no indications given above.

Two recommendations (minutes 5f) regarding priorities 2 and 3 were made:

RECOMMENDATION: Given the scheduling of NAAG-I as Leg 151 (summer 1993), OHP again recommends that PCOM set up a DPG to meet early in 1993 and again almost immediately after this leg ends to finalize a program for a second leg that can be considered at the fall 1993 OHP and PCOM meetings for drilling in summer 1995. This gives more scientists the opportunity to have input into the planning process and will result in even higher scientific returns than the already highly regarded plans.

RECOMMENDATION: Given the strong interest in drilling in the Caribbean region in several highly ranked proposals, we recommend that PCOM establish a DPG to synthesize objectives for drilling legs, resulting in definition of common sites of interest and drilling strategy to achieve these objectives. The DPG should have members with expertise in Neogene, Paleogene, and Cretaceous paleoceanography, as well as members with expertise in tectonic

reconstructions of the circum-Caribbean region and in seismic stratigraphy. The DPG should include scientists from countries bordering the Caribbean in this planning stage for scientific drilling.

Non-engineering needs. The prioritized list for non-engineering needs, with references to the more complete descriptions given in the minutes (6), is:

1. Computing improvements to facilitate core-to-core and core-to-log correlation (OHP item IVa).
2. Core barrel magnetometer (OHP item IIIa).
3. High resolution magnetic susceptibility logging tool (OHP item IIa).
4. Micropaleontological reference collections, with strong emphasis on collection maintenance and completeness (OHP item Va).
5. MST upgrade for natural gamma and possibly spectral gamma core logging (OHP item IIIb).
6. Resistivity equipment for discrete core measurements (OHP item IIIc).
7. Carbonate autosampler and replacement coulometer (OHP item IIIId).
8. MST color scanning capabilities, in incremental progression as described (OHP item IIIe).

Of equal priority:

- 9.5 Software for synthetic seismograms (OHP item IVb).
- 9.5 High-resolution geochemical logging tool (OHP item IIB).
11. Sidewall sampling capabilities (OHP item IIC).
12. Stratal geometry seismic software packages (OHP item IVc).

Leg 151 planning. (Minutes 7a) OHP endorsed the following motion with regard to North Atlantic-Arctic Gateway, Leg I (Leg 151) drilling:

1. OHP strongly advises that a teamed Oden (or similar icebreaker)-JOIDES Resolution operation be scheduled for Leg 151; this operation may only be necessary for part of Leg 151 drilling.
2. This operation should be allowed to penetrate into partially ice-covered areas, as described in the Liljeström report to NAD. We foresee that this will imply the capability to reach all the Yermak Plateau Sites mentioned in the NAAG-DPG report.
3. OHP advises that Sites YERM 1 and ARC 2A be included as chief objectives of Yermak Plateau drilling.

Co-chief nominations for Leg 151. These are Eystein Jansen, William Ruddiman, and Jorn Thiede. (Minutes 7b)

Deep drilling. OHP formulated a target description for TEDCOM of an OHP deep drilling objective. (Minutes 8)

OHP business. We reviewed the status of OHP White Paper, panel membership and panel expertise. (Minutes 9 and 10)

Next meeting. The next meeting is tentatively scheduled for 30 September-2 October 1991 in Marseilles with Edith Vincent as host. (Minutes 11)

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1. INTRODUCTIONS AND MEETING LOGISTICS

The Ocean History Panel held its spring 1992 meeting at the Department of Marine Sciences, University of South Florida, St. Petersburg, FL, hosted by Dr. Al Hine. The meeting opened with introductions of all present, and with gracious welcomes from Al Hine, host, and Prof. Peter Betzer, Chair of the USF Department of Marine Sciences. In attendance were the following panel members:

John Barron, Timothy Bralower, James Channell, Margaret Delaney (chair), Timothy Herbert, Albert Hine, Eystein Jansen (ESF), Tom Loutit, Hisatake Okada (Japan), Lisa Pratt, Maureen Raymo, Edith Vincent (France), Philip Weaver (United Kingdom), Gerold Wefer (Germany), and James Zachos,

with the following liaisons:

Robert Duncan (PCOM), Tom Janecek (TAMU-ODP), Guy Smith (LITHP), and Peter Swart (SGPP; attended day 1 only because of overlapping OHP/SGPP meeting dates).

Regrets had been received from Ivan Basov, Russia (in response to meeting invitation to Leonid Dmitriev, Russia). No response had been received from Peter Davies (C-A), and he was absent for a third meeting in sequence.

The expertise of panel members is sorely missed in their absence. OHP again strongly urges international representatives who will be absent to notify their alternates in sufficient time for them to be able to attend. Continuing representation at these meetings is seen as significant. The participation of alternates, when the designated member is unable to attend, is welcomed as a means to ensure this.

OHP enthusiastically welcomed the presence and participation of Tom Janecek, the TAMU-ODP liaison, and conveys our strong hope that this representation will continue. Close communication between TAMU-ODP and the panel, as facilitated by this liaison, greatly aids our progress.

2. PRIOR MINUTES

No comments or changes were required.

3. REPORTS FROM LIAISONS

a. PCOM Report Bob Duncan

In response to questions from the panel, Duncan discussed PCOM views on the role of proponents of drilling proposals in panel consideration of these proposals. Panel discussion and voting should be structured so that proponents do not unfairly influence the process by their presence, and, in particular, should not be allowed to lobby for their proposals. However, with suitable safeguards, proponents may remain in the room during discussion and voting, and can respond to questions and requests for clarification about their proposals. Given the long process from proposal to drilling leg, the

valuable expertise of each panel member in our deliberations, the likelihood that panel members may be motivated to be proponents during their term of service, either by panel request or by their own science, and the numerous safeguards in place throughout the system, OHP commends this healthy balance in proponent participation in proposal review.

Duncan reviewed the 1991 PCOM annual meeting, presenting the FY 93 schedule through leg 152. He reviewed the major actions taken, including: the recommendation to increase the number of technical support staff on board, the investigation of deep drilling capabilities, the progress of the sea level working group, the decisions about the various S-proposals reviewed, and the discontinuation of S proposals in general. Proposals for less-than-a-leg should be integrated into appropriate thematic packages early on in the process. PCOM urges foreign members to use similar rotation schedules as U.S. members for advisory panels. Proponents should be reminded to send site survey data to the ODP databank promptly, ensuring that the SSP has adequate time for review. The status of ODP renewal was reviewed as well.

In response, OHP notes our thanks for the OSN-2 decline, given the major impact it would have had on the scientific objectives of that leg. We also note that, given the impact of a larger technical crew and an additional international member on the size of the scientific party, that support for shore-based scientists becomes more important.

b. SGPP report Peter Swart, liaison from SGPP

Swart reviewed results from the recent fluid sampling workshop and the current status of various sampling techniques. He commented on SGPP panel meetings during the past year and reviewed the SGPP ranking of proposals from the North Atlantic prospectus.

c. LITHP report Guy Smith, liaison from LITHP. See their minutes.

d. TAMU-ODP report Tom Janecek, TAMU-ODP liaison.

Janecek reported on the current news from Leg 142 on DCS testing; this discouraging progress, with a probable minimum of 1 year until further DCS testing can take place, means that Leg 148 will not be an engineering leg to further test DCS.

The following statement was reached by panel consensus:

OHP is extremely concerned that continuing problems with the development of the Diamond Coring System will prohibit progress on several major thematic areas of interest requiring the continuous recovery of alternating soft/hard sediment lithologies, and in particular, of chalk/black shale/chert sequences in Paleogene and Cretaceous sediments. We have highly ranked proposals of significant thematic interest which require this technology; these will be more highly ranked when this recovery capability is achieved. Therefore, we strongly recommend that high priority be given to providing both adequate shorebased resources and adequate ship time for the development of the DCS to ensure a fully operable system as rapidly as possible, ideally within the next several years as originally indicated in the long-range plan.

Janecek reviewed the status of staffing, both shipboard and shorebased. Shipboard scientist staffing is complete through Leg 144; suggestions are needed for Leg 145 for a geophysicist and a physical properties specialist and for Leg 146 for paleomagnetists and paleontologists. Janecek reviewed ODP staffing changes, with current recruitments for a Science Operations Manager (to replace Meyer) and for the new position of Manager of Information Services (ideally a scientist with strong computer background). There is a staff scientist opening, with expertise desired in either geochemistry or physical properties. Janecek reviewed the shipboard reorganization of the technical staff, the existence of sea-going only technical positions, and the addition of systems managers so that there will now be 2 per leg.

A long-standing OHP request has been that some technicians should be trained in and have primary shipboard responsibility for assisting in the micropaleontology lab. Although TAMU-ODP is aware of this, co-chief scientists of legs for which this is a high priority should make specific note of this during the pre-cruise meeting.

Janecek reviewed the status of publications, and, in response to questions about problems in the past, described the current improvements in producing range charts.

In response to questions, Janecek reviewed the planned test of shallow water drilling using the JOIDES Resolution on the atolls and guyots leg, and the current status of investigations into the use of alternate platforms.

A key item of discussion was the issue of APC (and XCB) coring distortions especially with regard to depth in core. In particular, careful attention to hole-to-hole correlations producing a composite depth scale (in mcd or meters composite depth) for Leg 138 sites demonstrated substantial offsets from total drilling depth (mbsf or meters below sea floor) in both APC and XCB sections. Offsets are apparently larger than those which would be estimated solely from the pressure overburden and physical properties of the lithologies sampled.

The following statement was approved by panel consensus:

One of the highest ranking OHP objectives is high-resolution coring of Neogene sedimentary sequences to reconstruct in detail environmental gradients, climate evolution, and ocean circulation in different ocean basins. This effort depends heavily on double (and triple) APC coring to ensure complete recovery of the whole stratigraphic column without loss of sediment at core breaks. In addition, high priority objectives involve high-resolution work on similar oceanographic problems in older sediments, with this work in the near future increasingly relying on multiple coring to obtain complete records.

Recent experiences from Leg 130 and particularly from Leg 138 point to several issues relevant to this topic:

(1) The presence of a shipboard stratigraphic coordinator with rapid, efficient computer access to core and logging records enables real-time evaluation of hole-to-hole correlations for stratigraphic completeness with good overlap between holes, and can be used to guide drilling strategy to

ensure the completeness of the drilled record.

(2) There are problems with the APC which lead to stretching or expansion of the sediments; this typically leads to apparent over-recovery, with a greater length of sediment recovered than was actually drilled. This causes problems when producing depth scales, correlating records hole-to-hole, and comparing core and downhole logging records.

(3) Similar problems apparently occur with the XCB in more indurated sediments. This affects the possibilities for high-resolution studies on stratigraphically complete records in older sediments.

By panel consensus, OHP therefore strongly advises:

(a) The JOIDES Resolution be equipped with computer capability to allow real time hole-to-hole and core-to-log correlations, with the capabilities at least those demonstrated useful on Leg 138.

(b) TAMU engineers should evaluate the problem of sediment stretching/distortion with the APC and provide improvements of the system to minimize this problem. Leg 138 provided very complete documentation of these problems, which may be of use in these evaluations.

(c) TAMU engineers should evaluate the issues involved in obtaining complete XCB-sections, and provide needed improvements to minimize these problems.

These capabilities and improvements will be particularly useful in achieving the scientific objectives on upcoming legs including Leg 145 (North Pacific Transect), Leg 150 (New Jersey margin/Mid Atlantic Transect) and Leg 151 (North Atlantic/Arctic Gateways, Leg I).

4. REVIEWS OF NEW PROPOSALS

a. **Procedures.** Discussion centered on several points relevant to proposal reviewing. Since proposals are the documents from which the drilling program is constructed, it is important to emphasize that reviews are not judgements on proponents. Panel members are selected and valued for their expertise, but care is taken to ensure that proponents do not influence the reviewing or ranking process. Reviews reflect the collective opinion of the panel. Contact with proponents by panel watchdogs is encouraged, with the sample letter used by TECP as a guide; this was handed out at the meeting. Attention was called to the revised review form, and to the proposal submission deadlines of 1 August and 1 January.

b. **Summary of reviews.** Discussion then proceeded on the thirteen new proposals, with panel views summarized in the written reviews (to be circulated to all panel members, as well as submitted to the JOIDES office). These proposals are listed below by ranking, with OHP watchdogs listed for ones within our thematic interests. Proponents who were present for the discussion of a proposal are also noted in this list. Consistent with PCOM advice, proponents were allowed to remain in the room for discussion of a proposal, and were allowed to respond to questions and requests for clarification, but were not allowed to lobby for a proposal.

No.	Title	OHP Watchdogs	Proponents present
<i>Ranking -- Addresses high priority objectives of this panel</i>			
409	High Resolution Late Quaternary Paleoclimatic and Sedimentary Record, Santa Barbara Basin, CA	Herbert Raymo Wefer	
<i>Ranking -- Addresses high-priority objectives, but with deficiencies, as noted</i>			
412	The Bahamas Transect: Neogene/ Quaternary Sea-Level Fluctuations and Fluid Flow...	Hine Loutit Vincent	Swart
354-Rev	Neogene history of Bengueala Current and Angola/Namibia Upwelling System	Barron Bralower Vincent	Wefer
415	Proposal for Drilling the Cretaceous-Tertiary Boundary in the Caribbean Sea	Bralower Herbert Zachos	
403-Rev	Revised Proposal to Drill the KT Boundary, Gulf of Mexico	Bralower Herbert Zachos	
<i>Ranking--Is of secondary interest to this panel if it is of high priority to some other panel</i>			
411	Proposal for drilling the Caribbean Basalt Province	Bralower	Duncan
059-Rev3	Continental Margin Sediment Instability: ...Drilling Abyssal Plains	Hine Loutit Vincent	Weaver
<i>Ranking -- Proposal objectives are not within panel mandate</i>			
361-Add	Site Survey, TAG Hydrothermal Field, MAR		
410	A Proposal for Deepening Hole 504B...		
413	Magmatic and Tectonic Evolution of Oceanic Crust: the Reykjanes Ridge		
414	Rates, Effects, and Episodicity... Northern Barbados Ridge Accretionary Prism		
332-Rev3	Florida Escarpment Drilling Transect		
333-Add	Update to: ...Drilling Transect across the Cayman...		

c. Recommendation for Santa Barbara Basin Drilling

It is apparent from the DCS test results from engineering Leg 142 that the DCS system will not be ready for further testing on Leg 148, currently an engineering leg scheduled from 25 January-23 March 1993 (Panama-Panama). The back-up for this leg is listed as a return to Hole 504B, presumably based on proposal 410 (received 12/2/91 at JOIDES office).

While recognizing the scientific importance of further drilling in the oceanic crustal section at 504B and of drilling at the Hess Deep (Leg 147), OHP unanimously recommends that a single site in the Santa Barbara Basin with multiple APC sampling, as discussed in proposal 409 (received 10/4/91 at the JOIDES office) and in proposal 386 as site CA-10, be scheduled on Leg 147 or 148 as well. This site is ideally suited to ultra-high resolution studies of marine records with regard to issues of importance in global change and understanding the global carbon cycle; this sediment record will allow detailed resolution of climatic fluctuations over a substantial portion of the Quaternary record in this important upwelling system. The small investment of time required, while not substantially affecting the progress possible at Hess Deep or Hole 504B, will result in multiple scientific yields important in understanding global change.

We note also as further support for this recommendation that the drilling of a Santa Barbara site was strongly endorsed by OHP at both its Fall 1990 and Fall 1991 meetings (see those minutes).

Barron and Pratt are contacting the proponents to address the issues of available site surveys and refinement of site selection in accord with the written review.

5. GLOBAL RANKING

a. Strategy for global ranking, voting procedures, and limits on proponent participation

The approach agreed upon was as follows. Existing proposals which had previously been ranked and/or which had been reviewed at the fall meeting as addressing high priority thematic objectives are given an overview by their watchdogs for the benefit of the panel, with panel discussion and an assessment of drillability. Existing proposals of secondary interest to the panel are also reviewed to see if their status had changed since original review. During these presentations, proponents are allowed to remain in the room, with their presence noted for the panel. They are allowed to respond to questions and give clarifications, but are not allowed to lobby for a proposal. Some proposals may be eliminated from consideration at this stage; no proponent on any proposal is allowed to suggest the elimination of any other proposal from final ranking.

From the existing proposals addressing high priority objectives and from highly ranked proposals reviewed at this meeting, thematic groupings of proposals are constructed. Proposals may be included within more than one thematic group. When appropriate, proposals with common thematic interests are packaged into drilling legs. This categorization by thematic areas is viewed as a tool for ensuring the broad objectives of our mandate are

addressed, and as a guide for evaluating where additional proposals are needed. Within these thematic groups, proposals are ranked based on a combination of scientific importance relative to our thematic objectives, scientific maturity, and drilling readiness. These rankings are only guides to final voting and are not binding in later voting by individual panel members (i.e., an individual panel member can vote a different priority order on his/her final list for proposals in a thematic group).

From these thematic lists, each panel member then produces a final list of proposals ranked from highest to lowest priority; if 14 proposals are under consideration, the highest ranked proposal is given 14 points and so forth to the lowest ranked being given 1 point. Proponents are not allowed to vote for their own proposals. If an individual is a proponent on one proposal of 14 being ranked, his/her final list ranks the other proposals from highest to lowest priority by awarding 13 points to 1 point. If an individual is a proponent on two proposals, the ranked list awards points from 12 to 1, etc. Voting sheets are submitted in writing, with signatures, and retained by the panel chair. The points awarded for each proposal on the individual lists are totaled and divided by the total number of points potentially available for that proposal if every voter eligible to rank that proposal gave it highest priority. This produces the final list, with proposals ranked by the fraction of available points awarded. After voting (and ideally after an overnight break), the list is reviewed to reiterate the scientific objectives and importance and drilling readiness of each proposal.

b. Sea level working group progress report

To help frame the issues relevant to OHP in our global ranking, Loutit, an OHP liaison to the SL-WG, reviewed its progress to date. This includes definition of the major questions with regard to sea level to be addressed, the general strategy to follow in addressing these questions, and the studies for which the drill ship is the appropriate tool. Of particular interest to OHP are issues relevant to determining the timing, magnitude, and rate of the eustatic sea level signal as it is recorded in sediments and sedimentary rocks; also of potential interest is determining the mechanisms of eustatic change, when these mechanisms have relevance to OHP objectives. Loutit presented, in more detail, the general criteria developed for proposals targeted at determining the timing of stratigraphic events, and the technical issues involved. Discussion ensued on the age intervals of interest, and of the importance of the use of multiple stratigraphic techniques for the definition of synchronicity.

c. Re-review of existing proposals

In preparation for our global ranking of existing and new proposals ranked as addressing high-priority thematic objectives of this panel, all panel members had been sent the global listing of active proposals, and encouraged to review these. The new "statute of limitations" on proposal lifetime was noted. Two proposals ranked by OHP in the past (296 Ross Sea and 313 Equatorial Atlantic) fall in this category; no action on these was deemed necessary at this time.

The panel listed the existing proposals to be discussed; proponents present are noted in parentheses following the proposal number: 388+388-Add,

NAAG-II (Jansen), 406 (Raymo), 372, 345+345-Add, 404, 347 (Wefer), 386-Rev (Barron), Bering Sea+390, 253-Rev, 337, 338, 363-Add, 356-Rev. For these existing highly ranked proposals, watchdogs presented the objectives and sites, reiterated the points made in our formal reviews done in previous panels, noted any current activities on these proposals, and gave a brief assessment of the proposal's drilling readiness. During these discussions, we also considered appropriate programmatic packages. These comments, as well as the justifications for packaging of some proposals together, are summarized in the detailed final ranking list.

Proposals 391+391-Add and 408 (Hine, proponent) which had been ranked as "of secondary interest to this panel if of high priority to another panel" were also discussed to see if a change in ranking was now viewed as suitable to include them in our global listing; no such change was deemed necessary. We do anticipate further activity on both these proposals, and await future developments. The Mediterranean outflow site from 372 was not included in the final ranking, while the North Atlantic intermediate water site from this proposal was grouped with a similar site from proposal 406. Proposal 356-Rev, which proposes some sites already included in the NAAG-DPG, was not ranked and was referred to the planning for NAAG, Leg II.

d. Thematic groupings

The thematic groupings, with proposals listed by priority order within each group, were as follows:

HIGH-RESOLUTION OCEANOGRAPHIC/CLIMATOLOGICAL STUDIES, PRIMARILY NEOGENE

388+388-Add Neogene deep water circulation and chemistry, Ceara Rise NAAG, Leg II (possibly including the higher latitude North Atlantic sites on the Feni drift and the Hatton Bank/Rockall Plateau 406 and 372, new proposals for this region, etc., dependent on outcome of Leg 151)
 404/406 Bermuda Rise, Blake-Bahama outer ridge, NW Atlantic sites (and, if not incorporated in NAAG-II, the Feni drift and Hatton Bank/Rockall Plateau sites from 406/372)
 347 Late Cenozoic Paleoceanography, South-equatorial Atlantic

INVESTIGATIONS IN ANCIENT OCEANS

NOTE: Within this general group, proposals were ranked by their relative strengths on Cretaceous objectives, K/T boundary objectives, and Paleogene objectives. 1 is highest rank, 5 lowest rank in these lists.

	Cretaceous	K/T boundary	Paleogene
253-Rev Ancestral Pacific	1.5	2.5	1.0
415, 403-Rev Caribbean	1.5	1.0	4.0
Bering Sea/390	3.0	?	3.0
363-Add NR1-3, Paleo record	4.0	2.5	5.0
388+388-Add Ceara Rise		?	2.0?

UPWELLING SYSTEMS

Of equal priority:

354-Rev Angola/Namibia, Benguela Current and 386-Rev CA Current (409)

Note: If our strong recommendation to drill the single site from proposal 409 on an upcoming leg is not endorsed, 409 is grouped with 386-Rev for ranking purposes; 386-Rev proposes a similar site (CA-10).

SEA LEVEL

412 Bahamas Transect

337 Tests of EXXON Sea Level Curve, New Zealand

345+345-Add Sea Level and Paleoclimate, West Florida Margin

338 Sea-level fluctuations, Marion carbonate plateau, NE Australia

e. Global ranking

There were 14 proposal packages under consideration. Fifteen panel members were present for voting. Two panel members were proponents on one of the proposals: Barron on 386-Rev and Jansen on NAAG-II. Two panel members were proponents on two: Raymo on package of NAAG-II (with 406) and on package of 404/406 and Wefer on 347 and on 354-Rev. The eleven panel members who were not proponents ranked proposals from 14 points for highest priority to 1 point for lowest priority. The two panel members who were proponents on one proposal each ranked all other proposals from 13 points for highest priority to 1 point for lowest priority; the two panel members who were proponents on two proposals ranked all other proposals from 12 points for highest priority to 1 point for lowest priority. Proponents could not vote for their own proposals.

Listed below for each proposal/package, given in final ranked order, are the number of eligible voters, the maximum points available if all eligible voters ranked that proposal highest, the total number of points awarded in voting, and, for two different views of final ranking, the mean score (total points awarded/number of eligible voters) and the fraction of total available points awarded (total points awarded/total points possible). Recall that the highest priority endorsement of a proposal by a proponent of any other proposal(s) has slightly less weight (in this vote by 1 or 2 points) than the highest priority endorsement of a non-proponent. The highest possible mean is therefore 13.6 for a proposal with no proponents present (and 0.1-0.2 higher for proposals with one and two proponents present respectively); the lowest possible mean is 1. The highest possible fraction of total available points awarded is 1, and the lowest is 0.07. The fraction of total points awarded is the more accurate indicator of ranking than mean points.

#	Proposal number and abbreviated title	No. voting	Total points possible	Total points awarded	Mean score	Fraction awarded/available points
1	388+388-Add Ceara Rise	15	204	199	13.3	0.98
2	NAAGII + possible additions	13	179	150	11.5	0.84
3	415+403-Rev Caribbean K/T	15	204	157	10.5	0.77
4	354-Rev Angola/Namibia/Benguela	14	192	143	10.2	0.74
5	253-Rev Ancestral Pacific	15	204	145	9.7	0.71
6	386-Rev CA current	14	191	129	9.2	0.68
7	404/406 L Neogene N Atlantic	14	192	104	7.4	0.54
8	412 Bahamas Transect	15	204	101	6.7	0.50
9	Bering Sea (CEPAC)+390	15	204	88	5.9	0.43
10	337 EXXON SL test, N Zealand	15	204	81	5.4	0.40
11	347 Cenozoic S-equat Atlantic	14	192	72	5.1	0.38
12	363-ADD NR1-3 paleo record	15	204	58	3.9	0.28
13	345+345-Add W. Florida margin	15	204	46	3.1	0.23
14	338 NE Aust, Marion Plateau	15	204	20	1.3	0.10

f. Ranked proposals: assessment of drilling readiness, brief statement of scientific importance

1. Neogene deep water circulation and chemistry, Ceara Rise, from proposals 388 and 388-Add.

DRILLING READINESS: Site survey cruise scheduled for August-September 1992, with complete data set and site selection expected.

JUSTIFICATION: This proposal centers on high resolution Neogene climatic and oceanographic variability on a depth transect in a critical area for ocean circulation, and will produce important tropical isotopic and biostratigraphic records. These objectives are of high priority in COSOD-II and the OHP White Paper. The upcoming site survey cruise will define the potential for Paleogene (and Late Cretaceous?) objectives at these sites.

2. North Atlantic and Arctic Gateways (NAAG), Leg II, from NAAG-DPG and new proposals.

DRILLING READINESS: Sites identified in the NAAG-DPG report are generally ready to be drilled, with needed additional data collection/processing underway. Sites from other proposals which may be incorporated need site survey data (e.g., Feni Drift sites from proposal 406).

JUSTIFICATION: The second leg of this highly ranked program is justified based on the scientific importance of understanding both the northern and southern gateway aspects of the circulation system in this critical oceanographic region, as well as maximizing the potential for reaching sites for which ice conditions may prove difficult in a given year. Other sites from highly ranked existing proposals (and any new proposals) can be incorporated in this planning as well. Assuming Leg 151 is successful in

reaching its high priority targets, the Feni Drift and Hatton Bank/Rockall Plateau sites from proposal 406, North Atlantic climate variability, could be incorporated in NAAG-II; the Hatton Bank/Rockall Plateau site could be more profitably sited as the one described in proposal 372, Cenozoic circulation and chemical gradients in the North Atlantic, for the reoccupation of DSDP 116. These southern gateway sites will be important in developing the history of intermediate water circulation and in addressing millennial-scale change critical for correlation with other high-resolution records, such as ice cores.

RECOMMENDATION: Given the scheduling of NAAG-I as Leg 151 (summer 1993), OHP again recommends that PCOM set up a DPG to meet early in 1993 and again almost immediately after this leg ends to finalize a program for a second leg that can be considered at the fall 1993 OHP and PCOM meetings for drilling in summer 1995. This gives more scientists the opportunity to have input into the planning process and will result in even higher scientific returns than the already highly regarded plans.

3. Drilling the Cretaceous-Tertiary boundary in the Caribbean Sea from proposals 415 and 403-Rev.

DRILLING READINESS: Site selection needs to be revised, with more site survey work possibly needed, especially to accommodate other objectives of potentially high ranking.

JUSTIFICATION: The main focus of this program is to drill the Cretaceous/Tertiary boundary in the Caribbean, near the site of the presumed impact crater. There is also strong promise of obtaining important tropical, primarily intermediate water records, through the Paleogene and Cenozoic. There are other proposals for drilling in this region with various thematic objectives.

In addition to this highly ranked program (based on 415 and secondarily on 403-Rev), proposal 408, on Testing two interpretations, N. Nicaragua Rise, is of strong secondary interest to OHP and is currently in revision. Proposal 411, for drilling the Cretaceous Caribbean Basalt Province, has some sites in common with proposal 415. Several major paleoceanographic enigmas, including thematic interests of OHP, would be strongly addressed by a drilling program in the Caribbean Sea. This area has not been the target of drilling since DSDP Leg 15 (1971). Ocean History objectives include: (1) extinctions at the Cretaceous-Tertiary boundary, with the probability of the Chicxulub Crater as the site of impact; (2) the origin of Cretaceous organic carbon-rich sediments in an area of economically important accumulations which are also being investigated in land sections from Mexico, Costa Rica, Cuba, Columbia, Venezuela, and Trinidad; (3) Paleogene paleoceanography and evolution; and (4) implications of the formation of the Isthmus of Panama for deep- and surface-water circulation, faunal/floral exchange and high-resolution variability of intermediate water chemistry in the Atlantic Ocean. These scientific objectives have high visibility and a drilling program in the Caribbean Sea may prove a critical component of ODP.

RECOMMENDATION: We therefore recommend that PCOM establish a DPG to synthesize objectives for drilling legs, resulting in definition of common sites of interest and drilling strategy to achieve these objectives. The DPG

should have members with expertise in Neogene, Paleogene, and Cretaceous paleoceanography, as well as members with expertise in tectonic reconstructions of the circum-Caribbean region and in seismic stratigraphy. The DPG should include scientists from countries bordering the Caribbean in this planning stage for scientific drilling.

4. Neogene history of the Benguela Current and the Angola/Namibia Upwelling System from proposal 354-Rev.

DRILLING READINESS: Site survey cruises are complete or scheduled. Site selection should be refined, along with realistic time estimates for drilling, etc.

JUSTIFICATION: This proposal focuses on the evolution of this upwelling system and on heat transport in the Neogene. The transects are well-designed, and high sedimentation rates in some areas may mean that resolution of high-frequency changes in this region are possible.

5. Deposition of organic carbon-rich strata, ancestral Pacific from proposal 253-Rev.

DRILLING READINESS: The sites are well-located, with information basically complete. These objectives ideally require the use of the DIAMOND CORING SYSTEM. This proposal would potentially rank higher if the tests of this system were producing more optimism.

JUSTIFICATION: The program designed here focuses on answering questions about the paleo-depth and paleo-latitudinal distribution of organic carbon-rich strata in the mid-Cretaceous, ancestral Pacific. This drilling will fill critical gaps in knowledge of the Paleogene and Cretaceous history of the Pacific Ocean.

6. Paleoceanography of the California current from proposal 386-Rev.

DRILLING READINESS: More site survey data is needed, although information may result from upcoming USGS cruises (by Gardner) and other cruises to the region.

JUSTIFICATION: This proposal focuses on the history and development of an important upwelling/current system, with implications for the history of carbon storage and climate change. There will be important links of the drilled records to on-land records, and there are objectives of tectonic interest in this proposal. A revision will be available for review at the next round of panel meetings.

7. High-resolution Neogene paleoceanography and climatic variability from proposals 406 and 404.

DRILLING READINESS: The Bermuda Rise site (404) and the Hatton Bank/Rockall Plateau site (from 406, but resited according to 372) are ready to drill. The Blake-Bahama Outer Ridge transect needs better site location and justification, possibly from existing seismic data, and the Northwest Atlantic and Feni Drift sites need site surveys.

JUSTIFICATION: These proposals focus on resolving North Atlantic climatic history, deep- and intermediate-water circulation changes, and changes in the heat and carbon budgets on millennial-scale resolution. They include important intermediate water sites and the resolution of characteristics along both depth transects and north-south gradients.

8. The Bahamas Transect: Neogene/Quaternary Sea-Level Fluctuations from proposal 412.

DRILLING READINESS: More information from the shallow sites already drilled is anticipated. A more complete seismic grid would be useful in separating regional and local signals in sediment distribution.

JUSTIFICATION: This proposal will address the issues of sea level with respect to synchronicity, if stratigraphy issues are resolved, and potentially with respect to amplitude, both strong OHP interests. The carbonate bank setting, with drilling already completed on two shallow water holes, provides an important complement to the New Jersey Margin/Mid-Atlantic Transect drilling scheduled for Leg 150. Similar time intervals are considered in parts of this proposal, providing a test of synchronicity of sea level change and its stratigraphic expression in a different geological and climatic setting.

9. Bering Sea from CEPAC prospectus and Drilling in the Shirshov Ridge region from proposal 390.

DRILLING READINESS: Site survey data is complete for sites from the CEPAC prospectus; drilling in the Shirshov Ridge region would require site surveys.

JUSTIFICATION: This program of drilling is potentially high-yield, filling an enormous gap in knowledge about North Pacific biota and climate; this is an important oceanographic region, with little known. Site selection may need to be modified to accommodate Paleogene/Cretaceous objectives.

10. Tests of Exxon Sea-Level Curve, New Zealand from proposal 337.

DRILLING READINESS: No particular sites are yet proposed, and existing site survey data for this region needs to be integrated.

JUSTIFICATION: This proposal could represent an important component of a global strategy for assessing the synchronicity of high-frequency Miocene sea level changes. The proponents could benefit from contact with the sea level working group's results.

11. Late Cenozoic Paleoceanography, South-Equatorial Atlantic from proposal 347.

DRILLING READINESS: Although no particular sites have been selected yet, there have been recent site surveys with the Meteor (December 1991), specifically evaluating depth transects focusing on the two most easterly transect regions. We anticipate a proposal addendum with this information, and that this proposal will be more highly ranked at that time.

JUSTIFICATION: This focuses on high-resolution Neogene objectives on east-west

transects in this important upwelling system, and is viewed as a program highly complementary to the objectives of the highly ranked Ceara Rise drilling.

12. Paleoceanographic record at sites NRI-3 from proposal 363-Add.

DRILLING READINESS: This is basically ready to be drilled.

JUSTIFICATION: There is the potential for obtaining Late Cretaceous to Paleogene calcium carbonate-containing records in this critical region. These objectives were secondary to the purposes of the rifted margin proposal 363, which was not incorporated into the drilling plans of the NARM-DPG.

13. West Florida Margin Sea Level and Paleoceanography from proposals 345 and 345-Add.

DRILLING READINESS: More site survey data, ideally with a seismic grid for sites to be chosen, are needed; some may already exist in industry data.

JUSTIFICATION: This proposal will address issues of sea level changes with respect to synchronicity and magnitude for the Middle Miocene and Paleogene; the sea-level objectives are more thoroughly justified than the secondary objectives with respect to paleocirculation of the region.

14. Sea level fluctuations, Marion Carbonate Plateau, NE Australia from proposal 337.

DRILLING READINESS: This needs site survey data, and will require the recovery capabilities of the DCS.

JUSTIFICATION: This has the potential of contributing valuable information about Neogene sea level changes. Results from Leg 133 need to be integrated, and the proponents would benefit from incorporating the results produced by the sea level working group.

6. PRIORITIZED LIST OF NON-ENGINEERING NEEDS

a. Ranking within categories. In response to PCOM's request for the panels to give a priority order to the non-engineering needs relevant to their thematic interest, OHP undertook a ranking of these needs. We first reviewed the items listed on the unprioritized 3/3/92 list circulated by Humphris to the panel chairs. We added several items as a result of discussion (see list below). We also chose to eliminate some items from our consideration. We first ordered items within the identified categories as given below; this ordering was done by general panel consensus. We also give a brief statement about the item, and examples of high-priority legs with OHP objectives for which it will be useful.

I. Items prioritized by PCOM 4/91...

None of OHP interest listed; none prioritized.

II. Items for downhole measurements and sampling

- a. High resolution downhole logging tool for magnetic susceptibility, with resolution of the order of 2.5 cm or better.

Useful in core-log integration, definition of depths, understanding of sedimentological variations. Useful for Leg 145, important for Legs 150 and 151.

- b. High resolution downhole logging tool for geochemistry, with resolution of the order of 5 cm or better. Elements of particular interest, depending on lithology, include Ca, Al, Si, Fe, and U, among others.

Increasingly useful in poorly recovered lithologies and for core-log integration. Would be useful on Atolls and Guyots legs, important for later legs such as Leg 150.

- c. Sidewall sampling capabilities, with discussion indicating that such tools are available from industry sources.

This would allow some sample to be recovered from critical intervals missed by drilling, but obvious on the logs (e.g., black shale intervals, important geologic boundaries).

III. Items for shipboard lab

- a. Core barrel magnetometer for measuring/monitoring the field in core barrel, to ensure successful demagnetization.

Leg 138 had consistent problems with at least one core barrel; such a device would have been useful then, and should certainly be available on upcoming legs (145, 150, 151).

- b. MST (multi-sensor track system) upgrade for natural gamma core logging device (and possibly spectral gamma as well, depending on incremental cost).

- c. Resistivity equipment for discrete core measurements.

- d. Carbonate autosampler and replacement coulometer for calcium carbonate measurements.

Shipboard measurements of percent calcium carbonate are increasingly important in calibration/documentation of the results from other continuous measurements (e.g., GRAPE data); high-resolution data, relying on substantial numbers of measurements, are important in paleoceanographic interpretation as demonstrated on Legs 130 and 138. An autosampler is a more cost-efficient means to achieve this than the expenditure of substantial amounts of time by shipboard scientists and technicians to achieve high sample throughput.

- e. Additional MST core color scanning capabilities in the following priority order: i. sediment color scanner and necessary hardware and software for efficient shipboard data handling, with the capabilities of spectral analysis from color reflectance and digital color imaging and fluorescence. ii. Infrared scanning system, which could distinguish carbonate, quartz, clays,

opal, etc., based on IR reflectance spectrum. iii. Major element XRF scanning system, for correlation and lithologic characterization. iv. Digital X-ray system.

It is recognized that these core scanning capabilities will be developed in an incremental fashion, and we suggest the above order as a guide based both on the maturity of the system and its documented and potential scientific return. These capabilities are significant both in core-to-core correlation and in more sophisticated lithologic and sedimentary structure interpretations at high resolution. A color scanning system prototype was used on Leg 138, and demonstrated useful in core-to-core correlation; the greater scientific potential of these data are currently being more thoroughly investigated and documented by the scientists involved. The IR scanning system works on powdered samples, and T. Herbert is currently talking to Perkin-Elmer about designing a system. A prototype of the major element XRF system functioned in the past at SIO, and one is now in existence in the Netherlands.

IV. Computing improvements

a. Hardware and software capabilities to facilitate rapid core-to-core correlations, shipboard construction of composite sections, and rapid core-to-log data integration. Important characteristics include: user-friendly, real-time response, flexibility, incorporation of all shipboard data (including micropaleontology and chemistry lab results), widespread access shipboard, capability of constructing composite sections (mbsf and mcd), and ease of expansion.

The presence of a shipboard scientist dedicated to stratigraphic coordination, and the real-time synthesis of all available data, was important on Leg 138 in guiding drilling strategy to ensure complete recovery and in guiding shipboard micropaleontological and sediment lithology sampling. The first priorities is the capability for core-to-core correlation and the construction of composite sections, allowing the adjustment of drilling strategy to ensure complete stratigraphic sections. This capability will be important as early as Leg 145, as well as for Legs 150 and 151. The second priority is core-to-log integration, which becomes increasingly important as recoveries decrease, and will be important by Leg 150.

b. PC-based software for producing synthetic seismograms from lithologies, requiring also the acquisition of the source signal for the gun.

c. Forward modeling packages for stratal geometry predictions on margins and in basins.

Both items (b) and (c) will be important for the objectives of Leg 150 and subsequent legs with sea-level objectives.

V. Other items

a. Micropaleontology reference slide collections, both high and low latitudes (foraminifers, nannofossils, diatoms, and radiolarians). Critical factor, after consultation with experts to develop collection, is the MAINTENANCE of these collections, which should continue to be accessible in complete form to shipboard scientists. Important on all legs requiring sediment age

determinations.

b. Ranked global list of non-engineering needs

This list was produced by sequential run-off voting among the top-ranked item in each category; i.e., panel members voted for their first choice between items IIa, IIIa, IVa, and Va. The top-ranked item in this comparison was then placed on the global list, and the next vote then compared the newly top-ranked item in that category with the top-ranked items in all other categories. The prioritized list, with references to the more complete descriptions given above, is:

1. Computing improvements to facilitate core-to-core and core-to-log correlation (item IVa).
2. Core barrel magnetometer (item IIIa).
3. High resolution magnetic susceptibility logging tool (item IIa).
4. Micropaleontological reference collections, with strong emphasis on collection maintenance and completeness (item Va).
5. MST upgrade for natural gamma and possibly spectral gamma core logging (item IIIb).
6. Resistivity equipment for discrete core measurements (item IIIc).
7. Carbonate autosampler and replacement coulometer (item IIId).
8. MST color scanning capabilities, in incremental progression as described (item IIIe).

Of equal priority:

- 9.5 Software for synthetic seismograms (item IVb).
- 9.5 High-resolution geochemical logging tool (item IIb).
11. Sidewall sampling capabilities (item IIc).
12. Stratal geometry seismic software packages (item IVc).

7. NORTH ATLANTIC AND ARCTIC GATEWAYS LEG I (NAAG-I) DRILLING, LEG 151

a. Drilling plans.

Jansen, an OHP representative to the Nansen Arctic Drilling Program, reviewed for the panel the main conclusions of the recent feasibility study on drilling in the Arctic Ocean. This study (the Liljeström report), commissioned by the Nansen Arctic Drilling (NAD) initiative, clearly shows the advantages of teaming the JOIDES Resolution with an icebreaker of the capabilities of the Oden, i.e., with a Polar Class ice-breaker with a towing notch, for the success of the program. This will enable penetration of the Resolution into the marginal ice zone, and ensure that the top priority drill

sites for the NAAG drilling can be reached and drilled. This configuration also allows penetration to the sites on the northern flank of the Yermak Plateau, where the NAAG-DPG identified highly interesting sites (e.g., Site ARC-2A) deemed inaccessible at the time the DPG wrote its recommendations. The new feasibility study clearly indicates that this may now be within reach.

The ice probability study of Wadhams (reported to ODP-TAMU) shows that all the Yermak Plateau sites may be inaccessible in bad ice years. Sites YERM 1, 3, and 5, which based on the new high resolution seismic survey undertaken by Polarstern in 1991, should be the highest priority targets, also are the most unfavorable from a sea ice point of view. This puts additional weight on the desirability of the JOIDES Resolution-icebreaker solution.

Due to the pioneer nature of these areas for scientific drilling, and the lack of quality seismic data for the northernmost site (Site ARC 2A), a viable option could be to use the Oden or alternate icebreaker to survey in detail during the period immediately before the drilling, so as to optimally position the site.

OHP also notes that this combination opens possibilities for drilling in the Chukchi Sea in conjunction with a potential Bering Sea leg.

OHP endorsed the following motion:

1. OHP strongly advises that a teamed Oden (or similar icebreaker)-JOIDES Resolution operation be scheduled for Leg 151; this operation may only be necessary for part of Leg 151 drilling.
2. This operation should be allowed to penetrate into partially ice-covered areas, as described in the Liljeström report to NAD. We foresee that this will imply the capability to reach all the Yermak Plateau Sites mentioned in the NAAG-DPG report.
3. OHP advises that Sites YERM 1 and ARC 2A be included as chief objectives of Yermak Plateau drilling.

b. Co-chief nominations.

We then addressed the issue of co-chief nominations for Leg 151; Jansen was asked to leave the room for this discussion. The following nominations were agreed to by panel consensus:

1. Eystein Jansen. Jansen is the highest priority of the panel as co-chief. He was a proponent of proposal 320 on Paleooceanography and Paleoclimatology in the Nordic Seas; many of the high-priority sites selected by the NAAG-DPG for Leg I are from this proposal. He was an active and valued participant in the NAAG-DPG, and has expended consistent effort in bringing these drilling targets to maturity. He has the skills and outlook suitable for leadership on a high-latitude drilling leg.
2. William Ruddiman. Ruddiman was the leader of the NAAG-DPG, skillfully guiding the crafting of two high-priority legs from three proposals for drilling in this region. He is a scientific leader in these areas of investigation, and has the suitable skills and outlook for leadership on

such a leg.

3. Jorn Thiede. He was the lead proponent of proposal 336 on Arctic to North Atlantic Gateways; sites from this proposal were selected by the NAAG-DPG as high-priority targets for NAAG-II and as alternates (based on weather conditions) for NAAG-I. He has served in this capacity in the past.

8. DEEP DRILLING--ADVICE TO TEDCOM

In response to a PCOM request about the panel requirements envisioned for scientific objectives requiring deep drilling with the JOIDES Resolution, OHP approved the following:

Significance and objectives of deep drilling in the Somali Basin

The Somali Basin in the north western part of the Indian Ocean provides an opportunity to recover a complete Late Jurassic-Cretaceous record developed during rifting of Gondwanaland and opening of an oceanic gateway between Tethys and the Southern Ocean. This deep hole will enable investigations of Late Jurassic-Cretaceous biomagnetostratigraphy, Tethyan floral/faunal migration, early evolution of planktonic foraminifers and calcareous nannoplankton, and development of sediment-starved passive margins.

In order to enable drilling in the Somali Basin, ODP needs to develop the technology to drill in water depths up to 5 km and sediment depths approaching 4 km. Potential recovery problems include interbedded limestone and chert, which would be ideally drilled by a system with recovery capabilities expected of the diamond coring system. Continuous monitoring for hydrocarbons and hydrogen sulfide, as well as pressure, will be important given the probable presence of both evaporites and black shales at this site. These may indicate the need for a riser in drilling.

If OHP liaisons to a deep drilling working group are needed, Lisa Pratt and Tim Bralower were suggested by the panel as suitable choices.

9. OTHER PANEL BUSINESS

OHP reviewed the first four themes of the SOHP White Paper (JOIDES Journal, February 1989); these sections constitute our current white paper. These themes are: Neogene paleoceanography, history of sea level, pre-Neogene paleoceanography, and the carbon cycle and paleoproductivity. As part of this consideration, we also compiled a list of past and planned ODP legs grouped according to OHP thematic objectives. The current sections of the white paper are generally considered in good form and reflective of the broad objectives of our thematic mandate. Panel members agreed to undertake revisions and updates for consideration at the fall meeting. Revisions should be sent to the panel chair, who will coordinate the production of a new version of the white paper.

OHP is also formulating a written guide to our process of proposal review and ranking, primarily for the orientation of new members; this is currently in draft form and will be circulated to all members for further revision.

10. PANEL MEMBERSHIP AND LIAISONS

It was noted that normal length of panel membership is three years, and that panel members now routinely rotate off after the fall meeting. Panel members who were initially named for a fall meeting should anticipate serving to the end of a calendar year. Two members will rotate off after the fall meeting: Tim Bralower, with expertise in nannofossil biostratigraphy and evolution and Mesozoic paleoceanography, and Tom Loutit, with expertise in sequence stratigraphy, sea level history, paleoclimate, and basin analysis. Panel members were requested to think of possible nominees for replacements (from both the academic and industry communities), and preliminary discussion ensued on some of these.

In addition, it was noted that rotation of several representatives of other member nations should be anticipated. Panel members identified their areas of particular interest and expertise; panel composition currently reflects both balance and diversity relative to OHP thematic objectives. Future nominations should continue this balanced representation of expertise on the panel.

Guy Smith, at his last meeting as LITHP liaison, was thanked for his effective and reliable performance as that panel's liaison to OHP; it is hoped that a willing replacement for him be identified by LITHP. Jim Zachos, new OHP member, has agreed to serve as our liaison to SGPP.

11. NEXT MEETING

The fall 1992 OHP meeting is scheduled for 30 September-2 October 1992 (Wednesday-Friday), in Marseilles, France; Edith Vincent has agreed to serve as host.

It was noted that the Ceara Rise site survey cruise on the Maurice Ewing is scheduled to end on 26 September 1992 in Barbados. Given the high ranking of this proposal and the importance of this site survey in evaluating the Paleogene and Late Cretaceous sedimentary objectives possible in this location in addition to further definition of the highly ranked Neogene objectives, OHP intends to request the presence of participants in this cruise (Bill Curry or Jan Backman) at its fall 1992 meeting.

OHP regrets that we were unable to schedule a joint meeting with SGPP for this fall given the constraint placed by this cruise on our timing and their choice of dates; we look forward to this possibility for a meeting in the near future. OHP members should be aware that the fall SGPP meeting is scheduled for 26-28 September 1992 in Kiel (immediately post-ICPIV) and are encouraged to attend the first day of that meeting as guests as per the invitation of Chair McKenzie. There is some possibility that the dates and/or locations of the fall SGPP and OHP meetings given above may change to allow for a joint session.