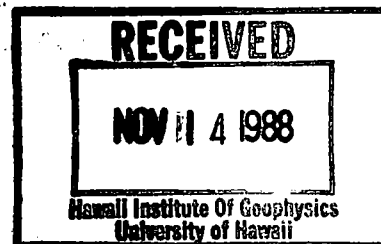


SOHP MEETING MILAN ITALY
3, 4, 5, OCTOBER 1988

DRAFT MINUTES



In attendance:

| | |
|------------------------------|---------------------------|
| W. Berger - SIO | B. Normark USGS |
| G. Brass - Miami (PCOM) | I. Premoli-Silva - ESF |
| A. Droxler- Rice Univ | T. Saito - Japan |
| F. Froelich-LDGO | A. Schaaf - France |
| B. Garrison- UCSC | N. Shackleton - UK |
| M. Goldhaber- USGS Denver | W. Sliter - USGS (CEPAC) |
| D. Kent - LDGO | R. Stein - Germany |
| L. Mayer - Canada (Chairman) | E. Vincent - France |
| P. Meyers - Michigan | U. von Rad -Germany(PCOM) |

Tuesday 3 October 1988:

1.0 Meeting was called to order at 0845.

The Chairman made introductions, and asked Isabella Premoli-Silva to detail logistical instructions. The Chairman explained the time constraints that PCOM (and thus this Panel) were under to produce a long-term plan. Because of the pressing nature of the long-term plan, and because of the large amount of work that the SOHP had to do to finish its contribution to the long-term plan, the Chairman outlined an agenda that called for completion of the PCOM report and discussion of WEPAC and CEPAC issues on the first day of the meeting and devotion of the following two days to white-paper and long-term plan discussion.

The absence of Erwin Suess, new chairman of the SGPP was noted with dismay. We all understood that he was to come to this meeting (Isabella received a Telex from the JOI Office confirming his reservations a few days before the meeting). Search parties were dispatched.

2.0 PCOM Report:

G. Brass reported on the Oxford PCOM meeting.

Budget:

The Panel was encouraged by the budget figures which appear to be slightly higher than the target values.

The SOHP applauds PCOM's decision to extend Leg 124 by two days for testing of drilling into chert/chalk sequences. The ability to recover material in sequences of alternating lithologies is critical to a number of upcoming high priority SOHP legs; these techniques must be well established before these legs begin.

New panel mandates:

The mandates for the new Ocean History Panel and the Sedimentary and Geochemical Processes Panel were read to the Panel. As has consistently been our policy, the SOHP is thrilled at this division of responsibility and believe that it will create a much more manageable program. We questioned, however, how come there had been no request for input into the new mandates from the existing Panel or especially from the new chairmen. An immediate concern raised was the apparent overlap in mandate between SGPP and several of the other panels. Our concern is that when more than one panel is mandated to cover a particular subject, the possibility arises that each Panel will think that the other will do it and it will 'fall through the cracks' (as was the case with fluids in the past). G. Brass explained that the lack of consultations was simply a question of timing and that these were 'living documents' (a term he must have picked up in Washington). He encouraged the new Panels to offer constructive criticism of their mandates.

The Panel also wondered if any scheme for inter-thematic liaisons had been established and suggested that this might be necessary -- especially between OHP and SGPP.

1990-1993 Planning Process:

The planning process adopted for 1990-1993 was described. The SOHP is encouraged by the sincere effort to see the program driven thematically and hopes that in adopting this approach PCOM does not forget the need for long-term, global planning.

Also, the need for a coherent approach to long-term planning of site surveys was discussed.

WEPAC

A brief report on the status of WEPAC was presented. Of greatest concern to SOHP is the status of the NEA Margin program. The remaining NEA issue seems to be the question of safety. The Chairman has spoken to Peter Davies and encouraged him to make a presentation to the safety panel as soon as possible (hopefully at their Hawaii meeting) so as to flag any potential problems.

Given PCOM's guidelines for scheduling only mature programs, the SOHP questions why a Nankai geotechnical leg has been scheduled.

The SOHP is pleased to see Leg 129E scheduled as another engineering leg. These dedicated engineering legs must continue if we are to see major technical improvements.

The SOHP recommends the following people as co-chiefs for upcoming WEPAC legs:

| | |
|------------|-------------------------|
| Lau Basin | -Ulrich von Steckleberg |
| | - Dave Cronan |
| | - Jim Hawkins |
| NEA Margin | - Peter Davies |
| | - Andre Droxler |
| | - Judy Mckenzie |
| | - Bob Ginsberg |

For potential CEPAC legs that may be drilled in FY90 we make the following recommendations:

| | |
|-------------|-------------------|
| Old Crust | -Yves Lancelot |
| | - Roger Larson |
| | - Peter Vogt |
| Ontong Java | -Larry Mayer |
| | - Wolf Berger |
| | - Nick Shackleton |
| | - Judith Resig |

G.Brass presented the PCOM reaction to the draft white paper produced at our two day Corvallis meeting.

The seven issues raised in the PCOM Chairman's August 30th letter to the SOHP were presented. The criticisms expressed by PCOM were of two kinds, those of content and those of form. The SOHP was somewhat taken aback by the criticisms of form (lack of prioritization, lack of phasing, requests for it to be in the format of the Lith long-term planning document, etc) inasmuch as we had been explicitly instructed NOT to prioritize, phase, etc. We had been told to write a white paper (a discussion of scientific objectives) at our Corvallis meeting, not a long-term plan (which we had been instructed to write at this meeting). Brass admitted that perhaps this fact had not been adequately transmitted to PCOM.

We will attempt to address the questions of content raised at PCOM in our second draft of the White Paper (and in the Long-term Planning document) but must point out that while PCOM consistently criticizes our objectives for lack of focus, their requests for changes in content only add to the broadening of our document (more on evolution, more on fluids, more on sedimentary processes). These requests are not

surprising, they merely reflect the ridiculously broad mandate that our panel has been saddled with. This mandate has finally been split, but inasmuch as we must still work under the old mandate in producing our White Paper and Long-term Plan, the expectation of a narrowly focussed document is ludicrous.

3.0 Report on Leg 122:

Ulrich von Rad gave a brief report on the highlights of Leg 122. Despite the disappointment in not recovering Jurassic, the leg was a paleoceanographic success with the recovery of excellent Cretaceous biostratigraphies, an almost complete Aptian to Recent section (762), a unique record of the early Tethys, and a good calibration of the seismostratigraphic record. Credit must be given to the co-chiefs and to PCOM for exhibiting the flexibility necessary to pull success out of the jaws of failure. The failure to recover Jurassic where the seismic interpretation implied it would be, emphasizes the critical importance of using the drill to ground truth the seismic record.

4.0. CEPAC

It is our normal procedure to systematically review each new proposal that has come in for a given region and see where it fits in our scheme of thematic priorities. Since our last meeting approximately 10 new CEPAC proposals have come in. These have been distributed to all members for review. Because of the pressing nature of Long-term Plan, and because PCOM has requested responses to questions about specific CEPAC programs, we decided to discuss the programs PCOM had questions about but defer the discussion of new proposal until the next meeting of the panels.

PCOM requested responses to several questions concerning the CEPAC prospectus. Despite the specific request of the Panel, SOHP members were not sent copies of the CEPAC prospectus. We wonder how we are expected to make informed decisions if we are not provided the necessary materials.

ATOLLS AND GUYOTS:

Problems with the recovery of shallow water carbonates are well documented within the drilling program (Legs 115, 122). If recovery cannot be improved over present capabilities it would be difficult to justify this program (except on Ogasawara where recovery shouldn't be a problem). Because of the important objectives of Atoll and Guyot drilling (identified by both the SOHP and the COSOD II Report), we urge

PCOM to push for the technological developments necessary to resolve these problems. It is hoped that vibracore/percussion or mining systems may provide the solution and that these systems can be adequately tested in an appropriate environment on Legs 124E and 129E. We also suggest that the TAMU engineers speak with those responsible for the successful drilling of Eniwetak (S³ of La Jolla, we believe) to find out what techniques were used there. Logging can help, but may not be useful if the holes are unstable. In addition, logging cannot provide ages which will be critical to meeting the objectives of this program.

The fundamental question is how much does the recovery need to be improved to make the program viable. The SOHP discussed this issue and concluded that it is most appropriately addressed by the proponents. A letter will be drafted to the proponents asking what sort of resolution/recovery is deemed necessary to meet their objectives.

THE SOHP NOTED THAT THEIR RECOMMENDATION FOR DRILLING ON THE APRON OF ENIWETAK WAS NOT INCLUDED IN THE CEPAC PROSPECTUS. ENIWETAK OFFERS THE BEST ATOLL-BASED CORE RECOVERY AT PRESENT AND A COMPLIMENTARY APRON SITE WOULD BE EXTREMELY USEFUL.

NEOGENE PALEOCEANOGRAPHY -- E. EQ. PACIFIC TRANSECT:

The SOHP unquestionably supports the viability of this program even if the western transect cannot be drilled, BUT finds it difficult to believe that the western sites cannot be drilled. First, we have faith that the site survey proposal will be funded. Second, while we are sure that the proponents have carefully examined existing profiles in the area and the flexibility in adjusting sites, we wonder if it is not possible to find even a 3.5 kHz record in an appropriate area that might suffice to select potential drill sites. Finally, we suggest that given our general knowledge of the sediments and geologic history of the region, and, the extensive seismic data base in the general region, that these sites may only require a pre-drilling site survey by the JOIDES RESOLUTION.

NORTH PACIFIC NEOGENE:

In order to meet the objectives of our highest priority themes (high-frequency and long-term paleoceanographic and paleoclimatic change), the SOHP has called for a global series of drilling transects across major oceanographic fronts and watermasses. Particularly critical to meeting these objectives are transects in the high latitudes that are most

sensitive to variations in insolation and have experienced more extreme climatic changes. The North Pacific is a key component in this global climate/circulation system and yet we have remarkably little core data from the region. Questions as fundamental as the existence of a source of deep water in the N.W. Pacific remain unresolved.

Given our high level of interest in the region, the SOHP was pleased to see three proposals (not including Bering Sea) addressing high-frequency (Neogene) problems in the N. Pacific (199/E, 247/E, 259/E). Faced with the PCOM constraint of formulating a MINIMUM program for the CEPAC, the SOHP attempted to combine these proposals into a single program. In combining sites from the three proposals we sought to establish an E-W N. Pacific transect that would address the following questions:

1. Establish the presence or absence of N.P Deep Water -- if it existed what was its relationship to the N. Pacific sediment drifts (Meiji 1 and 2, PM1).
2. Establish the timing of the initiation of glaciation in the N.W. Pacific (Meiji 1 and 2, NW 1,3,4, PM 1).
3. Examine the spectral response of the earth's climate system in moderately high latitude (Meiji 1,2, NW 1,3,4, PM1).
4. Establish a high resolution biostratigraphic reference section for this region (Meiji 1,2, PM1).
5. Examine a major change in global biogeochemical cycles -- the rapid increase in siliceous sedimentation in the m. Miocene in the N. Pacific and restriction of siliceous deposition in the Atlantic (NW1,3,4).
6. Cenozoic history of eolian sedimentation and its relationship to aridity and atmospheric circulation (NW1,3,4,PM1)
7. The response of the N. Pacific to global oceanographic events and variations in the Subarctic Front (NW1,3,4, PM1).
8. Testing models of allopatric vs parapatric species evolution (NW1,3,4, PM1)
9. Evaluating variations in fertility, carbonate dissolution and nutrient supply during the Neogene (PM1).

The Panel was concerned that the easternmost site (PM-1) would not have carbonate contents sufficient to provide useful paleoceanographic

information. Recent analyses performed by Pederson et al, however, suggest that (at least for the last 150K years) there is enough carbonate for useful studies. Given the apparent viability of the PM site, the SOHP recommends that it be maintained in order to give a much broader extent to the transect.

A large amount of new survey data has recently been collected and is in various states of analysis. Given the clear importance of this region to SOHP objectives, the number of proponents involved, and the large amount of, as yet, unreported recent data, the **SOHP REQUESTS THAT A DETAILED PLANNING GROUP BE ESTABLISHED** to evaluate the latest data and determine the best drilling approach to addressing the objectives expressed above.

Recommended members of the DPG include:

C. Sancetta, L. Keigwin, B. Bornhold, D. Scholl, J. Morley, D. Kent (SOHP), M. Leinen, and D. Rea.

SHATSKY RISE:

Three issues were discussed relative to Shatsky rise drilling: 1) core recovery; 2) the position of Shat-1 and; 3) site survey data. The objectives of the Shatsky Rise program (cause of OAE's, timing and vertical extent of the events, chemistry of the ocean at these times) absolutely require better recovery than has previously been demonstrated in chert/chalk sequences. If there is no improvement in chert/chalk recovery, we cannot support this program. Logging can provide information on the vertical extent of the events but will not yield critical data on their timing. Because of the importance of the Shatsky Rise objectives we urge a concerted engineering effort to improve recovery in chert/chalk sequences. As part of this effort we recommend that Leg 129E spend some time testing new coring systems ON SHATSKY RISE. Engineering trials on Shatsky rise will directly address the key technical issues and, may provide an opportunity for additional site survey data (see below).

The SOHP agrees with PCOM that a shallower site might be somewhat better than Shat-1 in delineating the extent of the O₂ minimum zone, though we believe that Shat-1 is adequate if a shallower site cannot be found. We are unfamiliar with the existing survey data base and will contact Sy Schlanger to find out if a slightly shallower site can be located. We will also ask about the overall site survey data base and plans, if any, for further site survey work.

Tsuni Saito will also check on the availability of Japanese data and plans for future Japanese cruises in the area. While we believe that

further site survey data would improve the chances of meeting all drilling objectives, we do not consider the lack of additional site survey data serious enough to jeopardize the program in that a drilling strategy can be devised that would optimize the chances of recovering the appropriate sections.

ONTONG JAVA:

The SOHP is confident that the Ontong Java site surveys scheduled for December 1988 will clearly delineate appropriate drill sites and that the Ontong Java program will become 'mature'. The SOHP emphasizes that our interests in the Plateau go beyond the Neogene and call for the inclusion of deeper drilling at AT LEAST one site on the plateau. The Ontong Java Plateau will provide the best opportunity for unraveling the physical and chemical history of the Pacific Ocean throughout the Cenozoic and much of the Mesozoic. Despite the diagenetic effect on some signals, the sites will contain excellent faunal sequences (including the K/T boundary); a potentially excellent magnetic record; the best possible Pacific ^{13}C record; an ^{18}O record that should span at least the whole Cenozoic; evidence for the oxidation state of the oceans during the Cretaceous (presence or absence of anoxic events is a key issue); a long history of ocean carbonate chemistry; and an ideal data set to study the relationships amongst water mass structure, benthic foraminiferal assemblages and ^{13}C . The relatively shallow depth of the Plateau also implies that material will be recovered that will be suitable for evaluating evolutionary trends in planktonic and benthic communities and their relationship to chemical and physical parameters.

BERING SEA:

The SOHP was quite disturbed to see the PCOM directive to remove the Bering Sea from the CEPAC prospectus. The Bering Sea program (particularly Souder Ridge) has always been of very high priority to the SOHP. Our only concern about this program was the uncertainty in the age of Souder Ridge and the sediments on it. This uncertainty added an element of risk to the program. When PCOM mandated the SOHP to provide a MINIMUM CEPAC program, we chose not to put forth Bering Sea because of this uncertainty. Given the planning directive (which as we understand should make CEPAC programs just as eligible as any others for 1992-1993 drilling), and particularly given the large amounts of new data and analyses that have recently taken place, we believe that it is inappropriate to dismiss the Bering Sea from future CEPAC drilling at this time.

The SOHP recommends that the DPG that we requested to address N. Pacific drilling also be asked to comment on the expected ages of the Souder Ridge and its sediments and be asked to include the Bering Sea and SOHP's low-frequency, pre-Neogene objectives in formulating the N. Pacific plan.

5.0 OTHER ISSUES:

Erwin Suess was located in Kiel on Wednesday afternoon. Erwin had called the JOI Office to ask if he should attend the SOHP meeting and was informed that he was not on the attendance list and therefore shouldn't go. He had commitments for Thursday and could not make it to our meeting.

Recommendations for new members of SGPP and OHP:

| <u>SGPP</u> | <u>OHP</u> |
|---------------------|------------------------|
| P. Swart | L. Peterson |
| D. Stow | E. Boyle or P. Delaney |
| R. Flood or A. Shor | W. Berggren |
| R. Karlin | P. Davies |
| L. Pratt | E. Baron or J. Parish |
| M. Underwood | P. Vail or T. Loutit |
| S. Brassel | J. Lipps |
| J. Mienert | R. Halley |
| D. Piper | |
| S. Dreiss | |
| F. Prah | |
| A. Taira | |

Next Meetings:

OHP - 4- 6 April Miami Fl., G. Brass, host

SGPP - 14 - 16 March Denver; Colo., M. Goldhaber; host

The rest of the meeting was devoted to work on the White Paper and the Long-term Planning Document. These reports are submitted separately.