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Draft Minutes of the Sediments and Ocean History Panel (SOHP)

Meeting 12-14 Nov. 1984

Carmel, California

Present:

M. Arthur	W. Ruddiman
R. Embley	R. Sarg
W. Hay	M. Sarnthein
L. Mayer	N. Shackleton
F. Meyers	E. Suess
H. Schrader (PCOM)	Y. Takayanagi
	L. Tauxe
	A. Palmer

Guests:

D. Scholl (CEPAC-12Nov.)

J. Curray (IOP-12Nov.)

E. Silver (WPAC-14Nov.)

A) Michael welcomed us to beautiful Carmel

-Agenda distributed by M. Arthur was approved

-minutes of May, 1984, SOHP meeting approved

Meeting began with some general discussions: -PCOM will meet 1st week in January and SOHP has been asked to make recommendations on several issues including Indian and Southern Ocean drilling.

Results of SOHP ranking by mail poll on uncommitted legs

as requested for PCOM September meeting:

1) Deep Moroccan Hole

- 2) Peru margin
- 3) distant third-Ionian Sea

B) PCOM report (H. Shrader):

There have been 2 PCOM meetings since our last meeting.

Paris meeting: was summed up in material distributed in June to panel members by Mike Arthur.

Hawaii meeting:

-Foreign membership: PCOM is forging ahead with assumption that all uncommitted foreign members will join - if not - emergency meeting of PCOM will be called. No contingency plans at moment.

-Panel memberships were not discussed. This is an issue with many concerns about non-representation. This issue will be discussed at next PCOM meeting.

-Frozen OG samples will be collected and maintained as in past.

-Publications of DSDP Legs will not be delayed.

-Lists of ODP drilling proposals received will be published in JOIDES Journal. There was concern expressed (at PCOM) over favoritism and procedures of submission. Panels must be careful to avoid this and not necessarily have proponents make presentations (even at their own expense).

-Labrador Sea: needs to be discussed by SOHP.

-PCOM is adamant that vessel will not spend 3rd

austral summer in Southern Ocean.

-PCOM ranking for 3 uncommitted legs:

- 1) Peru Margin
- 2) Chile Triple Junction
- 3) EPR
- 4) Yucatan
- 5) Moroccan Rise deep hole
- 6) 504B

Moroccan deep hole was ranked just below Yucatan (by 1 vote).

Schrader explained that this was the result of long philosophical discussion. PCOM does not (at this point) want to drill areas that have been drilled before (even if recovery was very poor).

Mandate is to do new things. Chile Triple Junction was looked at as new and exciting.

-SOHP in discussion members expressed concern that a Chile Triple Junction proposal has never been presented to this panel and therefore we had no knowledge of objectives and no input into the decision.

Schrader also commented that the two proposals for Moroccan Deep Hole (Winterer & Hinz/Hayes et al.) should be evaluated to see if they can be combined. Hope should not be lost - it is possible that 2 legs may open up (if bare rock drilling is not possible). SOHP should

-staffing will be just ODP staff scientists -
there may be a post-cruise publication.

-hopefully a re-entry cone will be set at deep
site-no location for deep site has been selected
yet.

-Leg 101 will depart 22 Jan from Ft. Lauderdale. This is
17 day delay in entire schedule - and affects order of
drilling of Sites for Leg 105 because of Baffin Bay
weather window.

-Leg 101 is fully staffed and
there will be logging on Leg 101 with
41 operational days

order of sites: Little Bahama Bank
Florida Straits
Exmouth Plateau

-Leg 105-drilling times checked out

-Rob Kidd arrived at TAMU

-There are presently 4 staff scientists.

-Amanda will see that all members will get copy of
technical capabilities report on drilling vessel

-Sedco has permitted informal naming of ship:

'JOIDES RESOLUTION'-name will not be painted on
ship

Amanda will check with TAMU on:

1-status of core orientation device

2-status of MAR sites (for L. Mayer who

has

Action Item
ODP

re-evaluate Morroc Rise deep hole and decide if it is still a high priority - if so we should be prepared with a consolidated and well structured proposal - this will be discussed later in the meeting.

-Schrader suggested that SOHP not prioritize objectives with ratings like 1A, 1B; no matter what we intend this will still be viewed as a ranking so we must be careful when 'lumping' priorities.

-Regional and thematic panels are of equal stature-therefore it is extremely important that liaisons be established between panels.

-Norwegian Sea drilling: appears to be strictly a tectonics leg even though J. Thiede is co-chief (see Norwegian Sea discussion later).

-Winterer has stepped down from FCOM and has been replaced by M. Kastner as SIO rep.

C) ODP report: (Amanda Palmer):

Sedco/BP 741 will be out of drydock late Dec., turnover to Sedco 24 Dec, turnover to ODP about 2 Jan.

20 day shakedown cruise: on Florida slope:

2 Florida slope sites (FL1,FL2) and deep (>2500m water) site; ODP needs site survey information for FL1 and FL2-especially FL2

C-1 Action Rick Sarg will look into whereabouts/ accessibility of Exxon data.

**SOHP
ACTION
ITEM**

to do site survey).

D) Panel Membership:

-The following SOHP members were appointed as informal liasons to regional panels:

E. Suess - Southern Ocean Panel

PCOM note: (atl. Shackleton)

L. Tauxe - Indian Ocean Panel

(alt. W. Hay)

P. Meyers - Atlantic Regional Panel

(alt. R. Sarg)

N. Shackleton- W. Pacific

(alt. Y. Takayanagi)

R. Embley - Central & Eastern Pacific

(alt. E. Suess)

OSOHP views on possible additional member of SOHP (noting apparent criticism from community of lack of coverage of certain subject areas) were already expressed to PCOM - in minutes of November meeting. However, SOHP does not agree with statements made in letter from G. Jenkins (and others) regarding structure of Panel.

E) Norweigan Sea:

1.) -M. Arthur expressed concern over apparent quota system (re. letter from Larson to Arthur re. Labrador Sea extension) and if we push for Norwegian Sea extension in order to achieve any serious paleoceanographic objectives we will apparently have to give up other sites.

-Bill Ruddiman

letter from D. Warnke (Cal. State, Northridge)-which concerned apparent lack of SOHP input into Norwegian Sea drilling plans.

In J. Thiede's reply to Warnke he, however, seems satisfied with plans for Norwegian Sea leg as they stand. K. Miller thought not much new could be learned from further rotary drilling but HPC at a few sites will provide important information. Schrader disagrees. Ruddiman thinks at least small E-W transect is in order and suggests:

Site 2B-which is priority 1 and site 4 or 5 (priority 2) to equal at least 2 site transect.

2)-Schrader is hesitant to attack SOHP objectives at this time (within constraints of tectonic leg). We should work for working group with greater paleo-sed. interests to look at future drilling there. - Plan for future leg with more SOHP priorities.

PCOM Note: (E-3)

SOHP recommends complete HPC of Neogene section at sites drilled (as possible)- but we emphasize that this will not satisfy most SOHP interests- endorse Thiede's response to Warnke -(comments on alternate sites).

PCOM Note: (E-4)

4.)-SOHP was not consulted in planning for Norwegian Sea leg because it had a FCOM mandate to concentrate on dipping reflector problem. - we see justification for forming a working group to look at paleoenvironmental

objections in Northern high latitudes and especially .
Norwegian Sea - with plans for future drilling.

F) Lab. Sea/Baffin Bay (Leg 105)

-Agree that BB-3 is highest priority and maximum of 28 days approx. drilling to 2 kms.

-If we want to drill LA5 also - what can we give up?

-ENA3? The total operation time for Leg 105 53 days.

-Discussion was postponed.

G-1) Discussion of NJ-6:

-SOHP encourages drilling of NJ-6 but we place it as second priority relative to Site 603 work and well behind our Baffin/Bay/Lab Sea drilling.

SOHP urges proponents of NJ-6 to stress global ramifications of their work.

G-2) Galicia Bank - no proposal available to SOHP - some paleo objectives - but mostly structural and tectonic objectives not much more to be gained in terms of paleo-sed. objectives than from Site 398 and Bay of Biscay (Leg 80) sites.

-therefore limited interest from SOHP.

H) N.W. Africa-Equat. Atlantic Leg:

1.) M. Arthur questioned how well Ruddiman and Sarnthein have meshed their programs into one leg.

Will be discussed later (Items M,V).

2.) Weaver et al. Madeira Abyssal Plain proposal:

-timing of turbidites with respect to sea level changes; can document dissolution cycles through Pleistocene--from piston core--where shifts to red clay at 2.4 myBP;

Hypothesis - turbidites correlated to regressions
- claim can correlate with fairly high resolution
based on lithology (and nannos w/in turbidites),
rather than normal pelagic intervals.

Other objectives:

- geotechnical data for red waste disposal
- eastern basin seismic strat.
- dating timing of abyssal plain formation
- 'burn down' of organic carbon - geochemical
record of turbidite deposition.

Problems: 1)-biostrat resolution

2)-no aeolian record

3)-is this best place to test hypothesis

-higher sed rate better?

-Other site on lowermost cont. rise - to link turbidites
to slumping and slides on upper cont. rise.

-At present no high resolution red clay stratigraphic

-tool - can turbidites provide time lines?

-Is preservation good enough for dating - Nanno's in
turbidites appear to be close in age to turbidite events.

What other choices if we had to prioritize or wanted add
sites to Leg?

Ruddiman - equat. Atlantic divergence

Sarnthein - upwelling cell

Sarg -previous research and future drilling in Bahamas
region has and will, in part, address this problem.

-M. Arthur: Can long piston cores be used to develop a

longer-term record?

-In principal - we support program but compared to other sites that we have dropped on this leg we rate it as 2nd priority.

SOHP Recomm.

We suggest that Giant PC be used initially to address these objectives. *(Madern A.P. - Wenner et al. proposal)*

We suggest that other sites be examined as potential lists of hypotheses involved.

12:30 - Adjourn for lunch

SOHP - Monday afternoon

- Amanda Palmer-note the following (as per phone call to TAMU)

-ODP on schedule re bare rock drilling

-core orientation - renting core orientation device

core orientation multishot-compass/camera can be used on any HFC

I. Indian Ocean Drilling: (Joe Curray reporting:)

-Indian Ocean Panel endorses proposed Southern Ocean Panel Kerguelen program.

-65-70 proposals were submitted to Panel grouped into superproposals (regional) and generated priorities.

Summary document from Curray -distributed to SOHP members.

Proposed 2 Kerguelen austral summer programs with Indian Ocean sites interspersed.

-11-top priority programs (not prioritized)

1-Agulhas Plateaus

2-West Somali Basin

3-Red Sea

4-Maccran Basin

5-Arabian Sea

6-Chagos-Lacadive Ridge

7-Central Indian Ocean Basin

8-Kerguelan

9-Southeast Indian Ocean Ridge

10-Northwest Australian Margin

11-Eastern Southern Ocean Basin and

Rodrigues Triple Junction

J. Curry summarized objectives as follows:

-Agulhas-Plateau (1-2 sites approx. 18 days)

Paleoceanic- interocean seaways-

Changes in bottom water circ.-to Cret./Tert.
bound.

Tectonic history-nature of basement.

-Problems with hiatuses and incomplete section discussed -
will be looked into in further detail.

Western Somali Basin: 1 deep site approx. 20 days

tectonic-anomalously thin oceanic crust.

basement at anomaly M12

paleo-evolution of Indian Ocean-history of
circulation.

Red Sea - (1 leg)

-tectonic

asked FCOM for multidisciplinary working group on
Red Sea

-concentrate on axial troughs

-metagenesis evaporites, pre-evaporite deposits.

-can't drill through thick evaporites outside of
axial trough.

Ma~~K~~ran- tectonic-deformation of sediments as accreted
into accretionary wedge -to study nature and style
of deformation (some support for Sunda Arc on
tectonics panel)

1-leg 7 sites) accretionary prism transect
rates of uplift-timing of uplift.

Arabian Sea (1 leg)

-evolution of monsoonal upwelling

-anoxic sediments, O₂-min.

-long-term evolution of Indus Fan

monsoonal upwelling-Owen Ridge/Oman- 15 days, 2

HPC sites - 500 m

Indus Fan (distal) 15 days, 2 HPC sites 500 m

Chagos-Laccadive Ridge - favored over 90°E Ridge because
never

been drilled before (1 Leg) Hot spot trace-

N-S-tectonic objectives

E-W depth transect-paleoceanographic objectives.

Central Indian Ocean Basin:

area of anomalous seismicity; intraplate

deformation

Southeast Indian Ridge Transect: (1 Leg)

with lithosphere panel (nature of oceanic crust)

paleoceanographic transect-(polar front, etc.)

Northwest Australia-tectonic-transect to Argo Abyssal

Plain-oldest oceanic crust

Eastern Southern Australian Margin

Rodriguez Triple Junction: lithosphere objectives.

will prioritize these objectives at next meeting of Indian
Ocean Panel (at AGU)

2nd priorities:

Crozet Basin

Crozet Plateau-lower priority than Kerguelan

Davie Ridge

Gulf of Aden

Seychelles

N. Somali Basin

Upper Indus Fan

90°E Ridge-EW transect and lithology

Broken Ridge-complete Tertiary and Lt. Cretaceous
section

Wharton Basin

Andaman Sea-analogous to Gulf of Calif.

Sunda Arc-tectonic-accretionary prism

J) CEPac - Dave Scholl reporting:

CEPac-2 meetings so far-devoted to "self discovery"

1-how did eastern and central Pacific

form? basic themes

2-effects of what happened.

SOHP interest (as summarized by panel members in discussion)

1-Paleoclimate

2-Sea level fluctuations

3-Mesozoic sedimentation

**CEPAC
NOTE:**

-redrill Hess rise (problems w/recovery in chert)

-redrill Shatsky rise (same)

4-High latitude Paleogene sections-seamounts in Bering Sea with pelagic cap buried under turbidites on Early Cretaceous(?) sea floor

5-What was Pacific like in middle Tertiary and before-we need strategy to attack this problem because much of older crust from mid to high latitudes has been subducted.

-SOHP refers Dave to minutes of 2nd meeting-"major themes" of SOHP" for further information.

-Dave encourages us to provide input to his panel.

M. Arthur will send 'SOHP' themes for future focus' to T. Shipley and D. Scholl.

According to D. Scholl there will be a series of workshops in order to generate Pacific drilling proposals. H. Schrader urged that these be advertised to the international community.

Next SOHP panel meeting agenda item will be to put

together a "wish list" of Pacific drilling priorities.

K) Southern Ocean Panel: E. Suess reporting (Indian Ocean Region)

2 of Indian Ocean objectives overlap with SOP and 5 more for Indian Ocean portion of S. Ocean

1. E. Ant cont. margin: Fydz Bay-4 sites-3 on margin 1 in deeper with 3 objectives.

climatic history-glacial history

breakup/separation of India & Antarctica

2. Kerguelen Plateau/Hurd Plateau

-N-S transect together with S.E. Ind. ridge

12 sites originally: when hopes for 2 summers of drilling

a) history of polar front-in pelagic sequences above CCD

b) Cenozoic bottom-water and intermed. water-mass history

c) subsidence history of Kerguelen Plateau

3.-AA continental

margin-Adelie

coast-Wilkesland

(French IFP)-3 sites

-regional unconformities

-breakup Australia & Antarctica

-magmatic processes

-loess record-westerlies

-correlate Asian land record to Pacific record

SOHP Action Item P-4

-Sarnthein will investigate-M. Arthur will send Sarnthein info re: Duce/Leinen/Rea work on modern dust distribution.

5. Sea of Okhotsk

-high sed. rates, high organic content, high geothermal gradient =>safety panel problems(??)

SOHP Action Item P-5

-A. Palmer will try to find old site survey/safety panel data re Sea of Okhotsk and send to Shackleton.

-deep water formation in N. Pacific

-high latitude paleoclimate

-contact Hays, Morley, Sancetta

-Siberian land climatic extremes-

margin melt back-pollen

6. Bering Sea:

-Pacific-Cretaceous-Paleogene-"low latitude"

(N. Hemisphere)

-Arctic-Pacific exchange

7. Arctic Ocean-site of opportunity-in basin?

ice free ever?

-10-15 my record

SOHP Action Item ~~P-7~~

L. Mayer will provide ice info re Western Arctic

4-SE Ind. ridge transect: 4 sites

- extension of Kerguelen Plateau transect
 - develop of AA circumpolar current
 - mantle geochem. along flow lines
 - ridge- crest hydrothermal activity.
- will be reconciled with Indian Ocean Panel's transect.
- +lithospheric targets on slow spreading ridges and fracture zones

5-Agulhas Plateau (2 sites) 1 paleocean. 1 tecton.

- shallow plateau
- Eocene-Miocene calcareous record
- tectonic history of plateau

6-Crozet Plateau (1 site) - same objectives as Agulhas

no tentative ship track yet

constraint-leaving Weddell Sea-Jan 1988

SOHP recomm.

to S.O.P.

SOHP priorities are highest for Kerguelen Plateau because of lack of terrigenous input and Amery Basin because of potential for pristine - Cretaceous-Recent section. (see Section L)

Indian Ocean: SOHP priorities

The SOHP discussed in some detail the objectives and relative merits of Indian Ocean-Southern Ocean Sites or Legs in

-also see if tectonic problems can be addressed through paleodepth (subsidence) curves rather than transect of basement penetration sites.

-Adelie Margin will have to wait for next go around.

-End 12 Nov. 5:30 P.M.

13 Nov. 85

8:30 am:

N.B.: Phil Meyers will be liason on ARP rather than Lancelot as result of brief discussion of availability. For various reasons we have never had a representative at an ARP meeting.

(M) N.W. African Margin (Leg 108) Feb-Mar.86 (Sarnthein/Ruddiman)

49 days total:

Marseille=>Las Palmas=>28 days operation

21 days steaming

SOHP Action Item

-all sites less than 400m - M. Sarnthein asks can logging be dropped?

-need clarification from ODP-A. Palmer will check.

-first priority sites take up 25 days; would like to add 2 more sites-another 8 days=>54 day leg (total of 33 days drilling).

-Schrader pointed out that very strong scientific arguments will have to be made for additional sites because of earlier decisions of SOHP as reflected in minutes of LaJolla meeting (May, 1984).

-Sarnthein requests ODP to re-evaluate Marseilles port stop-could it be changed to Azores, thereby adding additional time for operations, not steaming.-

Sarnthein & Ruddiman will present rationale for leg with prioritized sites and drilling times tomorrow morning (see

Item V).

N) Southern Ocean Panel (E. Suess reporting)-Weddell Sea
and region

-S.O. panel did not spend too much time discussing Wedell
Sea

-2 legs discussed: Wedell Sea and Subantarctic Leg

-Subantarctic leg appears to have been dropped because of
SOHP ranking of this leg as 2nd priority.

Subantarctic leg: South Atl.-Sandwich Island trench-to
Agulhas Plateau transect

8 sites planned-history of AABW into S. Atlantic
and some tectonic objectives - Sand. Island chain;
also conjugate sites on other side of MAR.

-One problem with leg is that it does involve some
redrilling of places where drilling has been done before
We should present clear indication to South Ocean Panel of
our feelings relative to subantarctic

-South Ocean Panel priorities:

1-Weddell Sea-highest priority, 12 sites-super leg

Bransfield St.

Weddell Sea Margin

Maud Rise

S. Shetland Plateau

Astrid Ridge

-2-Subantarctic leg-2nd priority

paleo & tectonic objectives

tectonics new but paleoceanog.-is probably in part

a rerun of earlier legs.

SOHP Recomm. to FCOM

and SOP

SOHP strongly supports the Weddell Sea program as highest priority. Subantarctic drilling is of 2nd priority; of the proposed Weddell Sea sites we consider Maud Rise and Astrid Ridge of greatest importance-voted unanimous

Weddell Sea:

- 1) Maud Rise, Astrid Ridge-recovery of carbonate record
- 2) Weddell Sea-look at turbidites, magnetic anisotropy to =>current direction
- 3) S.W. part of S. Shetland Plateau-outcropping reflectors objective to get complete stratigraphic section
- 4) Bransfield St-development of back-arc basin
-glacial history (recent)
- 5) Caird Margin-tectonic objectives-opening of Weddell Sea-5 sites

All of these sites are of 1st priority except for Bransfield Strait site which is of 2nd priority.

There is some question of the ability to date basement on Caird Margin transect.

O) Indian Ocean Discussion (continued from K,L)

M. Arthur offered a "straw-man" proposal of SOHP high priority objectives as follows:

- 1) Somali Basin-remnant of paleotethys-

-long Mesozoic-Cenozoic record-adjacent to Africa
also tectonic history.

-2-3 km hole-companion to Moroccan Rise deep hole
monsoonal upwelling (part of Arabian Sea transect)
if site can be moved north

-relationship between Neogene-Quat. continental
and marine climate (as proposed by Kennett et al.)

2) Oman-Owen Ridge-upwelling-monsoon

general agreement-strong support for program

3) Indus fan:

-well studied continental record (Siwalik)

-could use HPC on distal fan to tie seismic record
and history of fan development

-good way to study sediment mass balance/sea level
and Himalayan Uplift.

4) N.W. Australia-starved passive cont.

margin-carbonates-lots of industry data-margin

subsidence-black shales-not very well understood.

-coupled with Amery basin=> N-S transect of
Cretaceous.

-much MCS site survey will be (and has been) done
there by the Australians.

5) S.E. Indian Ridge (also Southern Ocean) - Suess

concerned that compromise between tectonic and
paleoc. objectives might compromise too much.

6) Kerguelen (also SOP)- general support

but must prioritize sites-N-W transect probably

most important.

Closer look at Kerguelen/SE Ind. Ridge-SOHP objectives

-50-62°S 4 sites (minimum)-Paleogene-Cretaceous

-1 deep site approx. 57°S to basement

S.E. Indian Ridge:

3 sites: 38°S=> N of Sub Ant. conv.

-43°S=> S of Sub Ant. conv.

-48°S=> N of Polar Front Neogene

approx. 1/2 leg

-61°S Kerguelan (approx. 72° E)

Amery - 4 sites to study breakup and pre-glacial

history

7) Chagos-Laccadive Ridge/Mascarene Plateau: vertical H₂O gradients/N-S climatic gradients in Neogene-high priority but not as high as Kerguelen & SE Ind Ridge & Oman/Owen Ridge

8) 90°E Ridge: 1 site for Paleogene and K-T boundary

-Crozet Plateau-presents serious logistical problems-(3rd priority)

-Agulhas Plateau-perhaps 1 site in transit to Weddell

Sea-not highest priority but could use a

Paleogene and late Cretaceous record as argued by

Shackleton and Hay.

-Red Sea: no SOHP objectives/present technology

prevents SOHP objectives (galt drilling) 3rd/4 priority

SOHP priorities for Indian Ocean drilling

SOHP Recommendation to IOP, SOP and PCOM

1. Kerguelen-Antarctic(Amery) (unam.) 12 votes
2. Oman/Owen Ridge upwelling/anoxic Indus Fan
(distal) 8 for
3. Somali Basin
4. S.E. Indian Ridge transect.
5. Chagos-Laccadive
90°E Ridge - 1 hole pickup
6. NW Australia
Agulhas-1 hole pickup

SOHP Action Item

R.Sarg and W. Hay will come up with good location for Somali Basin site and arguments.

SOHP Action Item

M. Arthur and N. Shackleton will prepare a proposal for K-T boundary site on 90°E Ridge
-E. Suess-pointed out that we overlooked Makran Prism -
we

will discuss this evening.

P) Western Pacific:

The SOHP members then engaged in a free-swinging discussion of objectives of possible interest in the W. Pac.

1. Sulu Sea-completely surrounded by landmasses very sensitive to sea level fluctuations - look at Neogene sedimentation history - dynamics of water masses and carbonate story. Not enough information to judge at this time (a proposal from

R. Thunell has been submitted).

2. South China Sea - isotopic record

- vertical gradient into intermediate water depth
- sediment budget in active margin regime.
- Himalayan uplift (Yangtze River-Okinawa Trough)
- paleomag transitions in high sed. rate environs (Tauxe)
- pore H₂O-chemical exchange during deformation/accretion (Suess)
- diagnostic faunas on accretionary wedges (Banda Arc) (Suess)

3. Izu-Ogasawara (Bonin) Arc Transect (discussed by Y. Takayanagi)

- deep water circulation-Eocene differentiation
 - Neogene history of bottom water circulation
 - tectonic-serpentine-diapirism on ridge
 - long continuous sequence of Neogene seds.
 - high resolution record of climatic change
 - develop of Cenozoic intermed. & deep water masses
- benthic forams
- nannos
- tephra
- unconformities

Proposal has been submitted by Japanese colleagues to
JOIDES office

4. Sea of Japan

- silled basin-fresh water

There was much enthusiasm for possibly routing ship into this part of the Arctic—a total unknown.

Pa.) CEPAC: SOHP outlined a few items of interest in CEPAC, but will spend more time on subject in future:

1. Elusive Jurassic
2. Hess Rise/Shatsky-Mesozoic objectives
 - good carbonate record
3. Ontong-Java depth transect
 - (dissolution gradients)
 - (water mass properties)
 - (seismic stratigraphy)
4. Late Cretaceous-South Pacific; again, a poorly known region
5. Adelie Margin (Antarctic continental margin)/Campbell Plateau Paleogene depth transect
6. Atoll drilling (subsidence history)—selected atolls
 - carbonate diagenesis - sea level record
7. Shallow ridge crest in south Pacific -Anomaly 5-6 high latitude glaciation (Miocene)
8. Peru margin-upwelling (high priority)
9. Equatorial upwelling? (extension of Leg 85 drilling)
10. Dewatering- J. de Fuca (active deformation; pore-water properties)
11. Volcanic episodicity through time (multiple sites) (archipelagic aprons)
12. S.E. Pacific margin (Chile-Neogene)

Q) Moroccan Rise: (SOHP returned to a favorite topic of high

priority)

-Schrader believes that if strong support for deep Moroccan hole can be given and if it fits in with either Hayes or Winterer proposal or both--there is a chance to revitalize it.

-PCOM was not aware that SOHP deep Moroccan site was different from that proposed by Hayes and Winterer.

-Winterer/Hinz proposal is apparently looking for sites with thin sediment cover - not compatible with our objectives--not clear how W/H proposal would test Vial sea level curves.

Mor- 2 of Hayes proposal might serve us well but should justify from global-seistrat/sea level arguments--

R. Sarg

- W. Hay will meet and sketch something out (see Sect. T)

M. Arthur should contact D. Hayes.

P. Meyers

SOHP meeting 14 Nov., 8:30 A.M.

R) Note: Panel membership:

-For second time in a row, the French & ESF representatives have failed to appear; this is disturbing and we miss their input.

SOHP Recomm. to PCOM

SOHP supports the establishment of a Northern Ocean Regional panel

Vote was 12 for (unanimous)

-M. Sarnthein will be SOHP liason

-Suggested members with SOHP interests:

David Clarke (Wisc)

John Andrews (CU)

Joe Morley (LDGO)

J. Thiede (Kiel)

G. Jones

D. Warnke (Col. State)

C. Sancetta (LDGO)

D. Bukry (USGS)

H. Nelson (USGS)

A. Aksu (Halifax)

Sejrup (Norway)

Vorren (Norway)

S) Location and timing of Next meeting: (needs to be several weeks prior to PCDM mtg. in March; a number of SOHP members will be going to Kiel for Paleoc. meeting).

options: 1) _ Capri/Napoli (hosted by B.d'Argenio)

2) Cambridge (hosted by N. Shackleton)

3) Kiel (hosted by M. Sarnthein)

4) Paris? (Y. Lancelot?)

Proposal: in Cambridge England

Thur 21 Feb. 1985

Fri 22 Feb. 1985

w/option of extending to Sat. 23 Feb.

-hosted by N. Shackleton

Unanimous:

T) Morrocan Deep Hole:

1.)-working group-MOR 2 is good site 4200 m water depth - 3000m section (approx. 42 days drilling) landward of Mor 2 is a diapir zone - north of Mor 2 is deformed zone which should be avoided.

want sediment section as old as possible but not on diapirs; objectives:

1-recovery of latest Triassic/Jurassic sequence; deep reflections can be traced all over basin - there is much MCS data including Exxon data that has been released.

2-seismic strat.- global

3-dating of basement

4-nature of basement on transitional crust

(will, in part, deal with objectives of Hayes, et al. proposal)

5-coupled with other deep holes-

Site 603, Somali Basin, N.W. African

margin=>global stratigraphy and syntheses.

6.sea level -"Vail-curve" corroboration or refutation.

SOHP Action Item T-2

2.)-P. Meyers will write letter to ARP expressing our strong interest in this site.

U) Pacific (Western) E. Silver, J. Ingle present.

-E. Silver offered the following:

-W. Pac panel has not set priorities yet but have solicited proposals

-W. Pac panel has little input from SOHP so far

-WPac has been defined as "area west of trenches"

Themes: a) evolution of marginal basins

b) evolution of island arc systems

Regions:

1-Japan region (Japan Sea)

2-Philippine Sea-Nakai Trough

3-South China Sea marginal basin-passive margin development

4-Sulu Sea-tectonic (small basin opening w/oceanic depths)

-paleoc (Thunell proposal)

5-Indonesian region:

a) develop/evolution of Sunda Arc-tectonic prob.

b) develop/evolution of Banda Sea

6-Bismark Sea-marginal basin with rapid spreading

7-Solomon Sea-zone of convergence

8-Coral Sea Basin -Queensland Plateau-older passive margin?

9-arc reversals-Solomons, timing of reversals

10-Tonga-arcs without major

sed accretion

-collisions between arc systems and

seamount chains.

11-Lau Basin-incipient spreading center

12-Lord Howe Rise- S. Fiji basin

J. Ingle: now on WePac Panel- hopes to insert paleoceanographic objectives

Major problems-water mass development as isolated basin develops-can these be natural labs for studying global water mass development?

e.g. Sea of Japan-late Olig.-Recent feature-very shallow sill (approx. 200 m) yet oceanic depths in basin - as SL has risen and fallen => very dramatic effects-responses to land masses because of wind stress=>mixing throughout =>high uranium during low stands-very high prod.

Ingle would like to see utilization of onshore sequences-many islands are uplifted pieces of oceanic sequences, e.g. Okinawa

Phillipine Sea-may hold key to ribbon chert problem

Seamounts that have remained above CCD

-e.g. site 292 complete Eocene to

-Recent carbonate history

-Meiji guyot-collected pelagic seds since Cretaceous Line Islands?

M. Arthur suggested that SOHP would be interested in: Oyashio/Kuroshio current history (transects to examine fluctuations w/climate change in W. Boundary Current)

Sediment budgets on carbonate shelf last 60-70 million years (Arthur, Shackleton, Hay)

(a major problem in constructing mass balances is
S.E. Asian shelf carbonates

SOHP Action Item U

-N-Australia margin

-Borneo-Indonesian shelf

Arthur, Hay and Shackleton w/Sarg will examine
problem further

V) Integration of NW Africa/Equ Atlantic Programs:

(discussion by Ruddiman and Sarnthein)

Additional 2 day S' Eq . divergence

3 days nonupwelling => 42 days of
operation

Justification for additional sites:

1-extending transect to 25° N to link up with Leg

94

2-new results-Con-83 & GEONEOPIX-83 show thermal
equator moving through wide range of latitude.

A) S. Eq. divergence:

1-get some of Benguelan current signal

-max. temp anomalies-glacial/interglacial

2-better signal of S. Hemisphere trades - dust

3-more Si- rich signal (productivity)

4-look at thermal equator changes in time

-possible to reach basement at this site.

B) Non-upwelling site (redrill of Site 139)

1-Unipolar glaciation

2-monitor Canary current at shallow 2900 m water depth

3-compare upwelling vs. Canary current interest

4-trade wind-dust record

5-monitor bottom water currents and isotopes

6-formation of hiatuses

SOHP Action Item V-1

*Bill Ruddiman will provide drilling time table for minutes (see Appendix 3).

These 2 sites should be ranked as first priority but below those sites already agreed upon.

SOHP Recomm. to PCDM

- W) SOHP requests that cores collected as part of site surveys be held at ODP repositories and made available to shipboard scientists.
- X) SOHP will form informal working group to look at carbonate shelf problem in W. Pac.

M. Arthur

R. Sarg

N. Shackleton

J. Mulliman

The Meeting was adjourned at 12:10 pm, Wed. Nov. 14, 1984.

APPENDIX I

PROPOSED ORDER OF SITES AND ESTIMATED OPERATIONS TIMES FOR
 NW AFRICA-EQUATORIAL ATLANTIC LEG
 (communicated by W. Ruddiman)

STAT.	1	139R - MAV	6	15 hrs.
		MAV	5	13 "
		MAV	4	20 "
		SLR	1	50 "
		EQ	3/4/5	33 "
		EQ	6	15 "
		EQ	9	30 "
STAT.	8	EQ	7	<u>68</u> "
				244 hrs. (10.2 days)
		Lodging	--	<u>2</u> "
		Estimated Total	--	12.2 days + steaming time

APPENDIX II (supplied by E. Silver - WPAC Chairman)

PRELIMINARY PROPOSALS FOR DRILLING TARGETS RECEIVED BY THE WESTERN PACIFIC REGIONAL PANEL OF THE OCEAN DRILLING PROGRAM

The following tabulation is meant to keep track of proposals in any form. Some of the proposals were complete, some were letter proposals expressing interest in specific problem areas, and some were developed verbally at one of the panel meetings. Here we are not discriminating either the type or relative merits of proposals.

INDONESIAN REGION

Proponent	Title	Area	Sites/Objectives
Karig/Moore	SUM ABC	Sunda arc - Sumatra	Foot of Forearc slope
"	SUM D	Sunda Arc - Sumatra	Lower slope basin
"	SUM E-F	Sunda Arc - Sumatra	High slope basin
"	JAVA A,B	Java Trench	Lower slope
"	JAVA C	Java Trench	Regional reference
"	JAVA D	Java Trench	Lower slope (mechanics)
"	TIM A	Timor Trough	Lower slope deformation
"	TIM B	Timor Trough	Forearc Structure
"	TIM C	Timor Trough	Neogene Evolution
Huchon	SUNDA 1	Sunda Strait	Extensional Deformation
Audley-Charles	WET 1	Wetar Strait	Vertical Motions
Jonggsma	WEB 1	Weber Deep	Vertical Motions
Schluter	TAN 1	Tanimbar-Kai	Reference Site
"	TAN 2	Tanimbar-Kai	Mechanics of Collision
"	TAN 3	Tanimbar-Kai	Timing of Deformation
Silver	BANDA 1	S. Banda Basin	Age and Origin
"	BANDA 2	N. Banda Basin	Age and Origin
"	BANDA 3	Hardi Basin	Origin of Banda ridges
"	BANDA 4	Lucipara ridge	Origin of Banda ridges



SOUTHWEST PACIFIC REGION

Natland	MAN 1	Manus Basin	Rapid backarc spreading
Stevenson	OJ 1	Solomon Trench	Collision tectonics
"	OJ 2	Solomon Trench	Explosive Volcanism
"	SLOT 1	Solomon's Slot	Arc polarity reversal
"	SLOT 2	Solomon's Slot	Arc polarity reversal
Milson	SOLSEA1	Solomon Sea	Origin of Solomon Sea
Stevenson	LOY 1	Loyalty Ridge	History of ridge
"	D'ENT 1	D'Entrecasteau Ridge	History of Collision

Recy	VAN 1	Vanuatu Forearc	Origin and History
"	VAN 2	Vanuatu Intraarc	Reversal History
"	VAN 3	Vanuatu Rear Trough	Incipient spreading
"	FIJI 1	Fiji Plateau	Seismology Experiment
Stevenson	LAU 1	Lau ridge	Volcanic history
Stevenson	LAU 2	Southern Lau Basin	Magma Chamber
Natland	LAU 3	Northern Lau Basin	0 Age Experiment
"	LAU 4	Lau basin	Re Core Site 203
Stevenson	TONGA 1	Tonga Forearc	Louisville ridge Collision
"	TONGA 2	Osborne Seamount	Collision Tectonics
Symonds	QUE 1	N. Queensland trough	Passive margin rifting
"	QUE 2	N. Queensland plateau	Passive margin rifting
"	QUE 3	N. Queensland plateau	Rift phase volcanism
"	CORSEA 1	Western Coral Sea	Origin of Basin
"	CORSEA 2	Western Coral Sea	Basin Sed. vs. Sea level
Exon/Symonds	LHR 1	Lord Howe Rise	Margin rift history
"	NCAL 1	New Caledonia Basin	Seds. & Ocean History
"	NORF 1	Norfolk Ridge	Origin of aseismic ridge
"	NORF 2	Norfolk Basin	Origin of backarc basins
"	3KR 1	Three Kings Ridge	Origin and History
"	LAU 5	Lau Ridge	Early History
"	TONGA 3	Tonga Ridge	Structure and History
"	TONGA 4	Tonga Forearc	Structure and History

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SOUTH CHINA SEA REGION

Hayes/Lewis	SCS-A 1	S. China Sea, NW margin	Base of slope
"	SCS-A 2	S. China Sea, NW margin	Lower slope
"	SCS-A 3	S. China Sea, NW Margin	Upper slope
"	SCS-A 4	S. China Sea, NW Margin	Outer shelf
Schluter	RB 1	Reed Bank	Conjugate margin
"	RB 2	Dangerous Grounds	Conjugate margin
"	RB 3	Cagayan Ridge	Former Volcanic arc
"	RB 4	Palawan Wedge	Ancient Acc. prism
"	RB 5	Outer Sulu Sea	Deformed forearc basin
"	RB 6	Inner Sulu Sea	Ancient spreading basin
Thunnel	RB 7	Inner Sulu Sea	O ₂ deficient basin
Lewis	MAN 1-?	Manilla trench	Accretion Mechanics
"	MAN ?-?	Manilla trench forearc	Forearc basin formation

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JAPAN - MARIANAS REGION

Kagami et al.	JAPAN 1A	Japan Basin	Rifting backarc
"	JAPAN 1B	Japan Basin	Rifting backarc
"	JAPAN 1C	Yamato Basin	Rifting backarc
"	JAPAN 1D	Yamato Basin	Rifting backarc
"	JAPAN 2A	Japan Basin	Hydrothermal
"	JAPAN 2B	Okushiri ridge	Compression
"	JAPAN 2C	Japan Basin	Hydrothermal
"	JAPAN 2D	Okushiri ridge	Compression
"	JAPAN 3	Yamato basin	Hydrothermal
"	JAPAN 4A	Yamato rise	Early rifting
"	JAPAN 4B	Kita-Yamato trough	Early rifting
Kagami/Taira	NAN 1	Nankai trough	High pore pressure
"	NAN 2	Nankai trough	First thrust sheet
"	NAN 3A	Nankai trough	Duplex structures
"	NAN 3B	Nankai trough	Duplex structures
"	NAN 4A	Nankai trough	Slope basin history
"	NAN 4B	Nankai trough	Slope basin history
Taylor	BON 1	Bonin trench	Reference site
"	BON 2,3	Bonin trench slope	Serpentine diapirs
"	BON 4,5AB,6AB	Bonin forearc	Forearc basin transect
"	BON 7,8	Bonin backarc	Nascent rifting
"	BON 9	Bonin backarc	Older rift history
Seno et al.	KUR 1-?	Kurile backarc	Eur-Nam convergence
Okada	IZU B1	Ab. plain E. of Bonins	Bottom water & tectonics
"	IZU B2	Osagawara forearc	Inner trench history
"	IZU B3	Osagawara forearc	Forearc sed. history
"	IZU B4	Osagawara backarc basins	Tectonic history, SOH
"	IZU B5	E. Shikoku basin	Collisions, bottom curr.
"	IZU B7	Plain S. of Zenisu R.	Intraplate thrusting
"	IZU B8	Nankai Trough	Intraplate thrusting
Kagami	OKI 1	Okinawa Trough	Rifting
Fryer	MARIA 1-?	Mariana backarc	Cross arc volcanoes

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**APPENDIX III: Suggested Alternative SE Pacific
Drill sites (supplied by J. Hays - 10/90)**
South East Pacific Ocean Transect

At least three sites should be continually H P C cored along a North-South transect that crosses the Antarctic Polar Front in the Southeast Pacific Ocean.

Table 1 shows location of Lamont piston cores with sedimentation rates and age of ocean crust.

The piston cores contain both Radiolaria and diatoms with discontinuous preservation of foraminifera and coccoliths. This traverse would monitor oceanographic and climatic conditions of the Western entrance to the Drake Passage.

The faunas and floras of this region can be compared with Atlantic and Indian Ocean assemblages of the mid to late Tertiary that can be used to document the initiation of circum-Antarctic circulation.

Considering the emphasis on Antarctic drilling that will be conducted in the Atlantic and Indian Ocean sectors, it would be a shame to miss the opportunity to establish this important Pacific reference traverse.

Table 1

<u>Lat.</u>	<u>Long.</u>	<u>Depth(m)</u>	<u>Acc. Rate</u> (m/100 y)	
53°04S	78°57'W	4111	4	Oligocene
54°33'S	77°51'W	3928	>3	Eocene
56°00'S	77°17'W	4296	?	Eocene
58°00S	77°00'W	4400	?	Eocene

proposals previously distributed or endorsed by SOP
and IOP.

1.) Kerguelen-no clastic input

-carbonate record

-problem is logistics

Can Amery basin and Kerguelen sites be done on one
leg (approx. 72 day)-?

This would make sense logistically-can both be
done on one leg probably not.

SOHP rates Kerguelen slightly higher priority-we
will focus discussion on Kerguelen sites.

major question:

was there a major Oligocene glaciation in
Antarctic?

can Kerguelen sites answer this? no - not far
south enough.

Bill Hay/N. Shackleton-stress importance of Amery Basin
for Antarctic glaciation.

SOHP Action

Item

SOHP-will establish small working group to see if
Kerguelen and Amery sites can be combined into one long
leg: also see if tectonic objectives can be met at Broken
Ridge rather than at Kerguelan.

Mike Arthur, *Jeff Weisse* and

Jim Kennett will try to meet and discuss
possibilities