Spring 2001 Joint Meeting of the Scientific Steering and Evaluation Panels for the Dynamics of Earth's Interior and Earth's Environment

May 17-19, 2001, Airlie Conference Center, Warrenton, VA

Thursday Morning, May 17, 2001.

I. Introductory Remarks.

ISSEP Chair Julie Morris and ESSEP Chair Neil Lundberg opened the Ninth Joint Meeting of the Scientific Steering and Evaluation Panels. Special guests and observers included members of the newly established iSAS office in Japan, and several members of the interim SSEPs panels. After introduction of panel members, liaisons, and guests, the meeting host, Bridget Chisholm of JOI, offered some information on local logistics of the meeting. The panels thanked Steve Bohlen, President of JOI, for help in arranging an outstanding field trip across the Central Appalachians. They also expressed their appreciation to field trip leaders from the U.S. Geological Survey in Reston, VA. USGS personnel included Scott Southworth, Adam Davis, Mike Ryan, Chuck Naeser, and David Russ, and the trip included visits to terranes spanning the Interstate 66 Corridor, from the Piedmont and the classic Culpepper rift basin to Grenvillian basement and cover sequences. The panels are grateful to Bridget Chisholm, of the JOI office, for the outstanding arrangements for the meeting.

II. JOIDES Office Report: Keir Becker

A. Keir reported on the February 2001 SCICOM/OPCOM meeting and ongoing changes in ODP, explaining issues related to the proposal process through the end of ODP. The JOIDES Office and the iSAS Support Office will coordinate proposal forwarding from ODP to IODP. New proposals and pre-proposals have been submitted to ODP for the March 15 2001 deadline, even though they can't be considered for drilling during ODP. Proponents of these proposals will be invited to have their proposals forwarded to IODP. A draft letter was circulated to SSEP members, written by Hajimu Kinoshita and Ted Moore and to be sent to proponent groups, inviting responses indicating interest in having existing proposals considered by IODP. Response letters are to indicate how proposed drilling addresses themes and /or initiatives outlined in the Initial Science Plan of the IODP. Revised proposals and addenda to existing proposals are to be submitted to the iSAS Office at Japan Marine Science and Technology Center, 2-15 Natsushima-cho, Yokosuka City, Japan, 237-0061. Also circulated was a draft Call for Proposals for the IODP, outlining the multiple drilling platforms planned and envisioned in the new program. Proposals can be submitted electronically (to the iSAS Office at isasoffice@jamstec.go.jp) for deadlines of 1 October and 15 March, or as paper copies by mail to the iSAS Office for deadlines of 1 September and 15 February. Proposal guidelines are posted at the IODP website (www.iodp.org).

B. Keir presented a list of the proposals that will be considered by SCICOM for drilling during the final year of ODP:

Preliminary ODP Prospectus for FY2003
(**MSP** = Mission-Specific Platform)
(***** = outside area of FY2003 JR operations)

1. Proposals Carried Over From FY2002 Prospectus and Ranking

1	533-Full2	Backman	Lomonosov Ridge, Arctic	**MSP**
3	525-Full	Keleman	MAR Peridotite	
6	455-Rev3	Piper	Laurentide Ice Sheet	
9	559-Full	Zachos	Walvis Ridge	
10	564-Full	Miller	New Jersey Shelf	**MSP**
11	539-Full2	Holbrook	Blake Gas Hydrates	
12	512-Full2	Blackman	Core Complex	

13	522-Full2	Wilson, D.	Fast Spreading Crust	
14	577-Full	Wilson, P.	Demerara Rise	
22	519-Full2	Camoin	Sea-Level Rise S. Pac.	**MSP**

2. Proposals Externally Reviewed After May 2001 SSEPs Meeting

561-Full2	Duncan	Caribbean LIP	
584-Full	Rona	TAG Hydrothermal II	
543-Full2	Harris	CORK Hole 642E	
547-Full3	Fisk	Oceanic Subsurface Biosphere	*****
548-Full2	Morgan	Chicxulub: K/T Impact	**MSP**
554-Full4	Kennicutt	GoM Gas Hydrates	
557-Full2	Andreassen	Storrega Slide Gas Hydrates	
572-Full2	Channell	N. Atl. Late Neogene; Distal LISO	
573-Full2	Henriet	Carbonate Mounds, Porcupine Basin	
575-Full3	deMenocal	Gulf of Aden African Climate	*****
581-Add	Droxler	Late Pleistocene Drowned Reefs	**MSP**
589-Full2	Flemings	GoM Overpressures	
594-Full	Tucholke	Newfoundland Margin	

3. Possible Ancillary Program Letters, depending on May, 2001 SSEPs

APL-15	Tamaki	Gulf of Aden Basement	*****
APL-19	Garcia	Nu'uanu Landslide	(Leg 200)
APL-20	Canero	Costa Rica Mud Volcanoes	(Leg 203)
APL-17	Piper	Scotian Margin Cenozoic	

Keir noted that of the 13 new proposals to be considered by SCICOM in August, 2001, two have been flagged for possible safety issues (554 and 589). Keir has asked for a

safety preview at the July SSP meeting. This should also serve to encourage proponents of these proposals to submit data packages that are still required for SSP deliberations.

C. JOIDES panels will continue to meet as needed through the end of ODP drilling. The Interim Science Advisory Structure and Support Office for IODP are expected to phase in during 2001, (as described later in the morning by Ted Moore; see below). The JOIDES Journal will continue to be published. JOIDES and iSAS panels will have coordinated meetings during the transition period, in order to minimize travel support. There is no formal IODP travel funding, which would be necessary for non-JOIDES panel members. One issue remaining to be finalized is the number of representative**s** on each panel of the interim science advisory structure (iPC, iESSEP, iISSEP, and iSSP); for each panel, the germane EXCOM motion proposes 6 each from the US and Japan, plus 6 from other countries, and the OD21 SAC consensus proposes 5 each from US and Japan, plus 5 from other countries. This issue, and nominations for panel membership, are anticipated to be finalized at the IWG meeting to be held in Ottawa in June, 2001.

D. The major JOIDES Office function in 2001-2003 will be documenting and preparing to archive the ODP legacy, including science, cores, data, and technical contributions. The main involvement of the SSEPs will be in the scientific legacy. This will begin with the special issue of the JOIDES Journal planned by SCICOM and currently underway, on "Achievements and Opportunities of Scientific Ocean Drilling," comprising 16 four-page topical chapters. In addition to a new version of ODP's Greatest Hits, envisioned as a series of 1-page summaries highlighting selected achievements, there will be further thematic volumes to be defined, which will require community involvement beyond the JOIDES advisory structure. Input by the SSEPs will be important for the success of this endeavor. As their terms of rotation on the panels are completed, JOIDES SSEPs members will be replaced throughout the transition period.

III. SCICOM Liasions Report: Sherm Bloomer and Steve d'Hondt

A. Sherm presented the results of proposal ranking and proposal dispositions at the August 2000 SCICOM/OPCOM scheduling and ranking meeting, as follows:

SCICOM ranked thirty drilling proposals as follows, adding the four programs noted to the 2001-2002 schedule.

In system for Aug '01	Rank	Notes	Proposal	Mean score	Std. dev.
x	1	MSP	533-Full2 Arctic Ocean	5.20	5.31
	2	sched	534-Full Shatsky Rise	5.80	5.75
x	3		525-Full MAR Peridotite	7.93	6.05
	4	sched	571-Full Peru Biosphere	8.13	4.69
	5	sched	505-Full3 Marianas Conv. Margin	8.93	8.30
x	6		455-Rev3 Laurentide Ice Sheet	9.27	6.65
	7	IODP	482-Full3 Wilkes Land	10.40	5.93

	8	sched	544-Full2	Costa Rica	10.87	7.76
x	9		559-Full	Walvis Ridge	11.73	6.06
x	10	MSP	564-Full	New Jersey Shelf	12.40	6.13
x	11		539-Full2	Blake Hydrates	12.80	6.13
x	12		512-Full2	Core Complex	13.27	6.09
x	13		522-Full2	Fast Spreading	14.93	6.40
x	14		577-Full	Demerara Rise	14.93	9.01
	15	IODP	549-Full2	Arabian Sea OMZ	15.20	6.57
	16	IODP	560-Full	Woodlark Basin	15.33	9.27
	17	IODP	514-Full4	Maldives	15.53	8.14
	18	IODP	537-Full3	Protoseismogenic Zone	17.47	9.79
	19	IODP	551-Full	Hess Deep	17.93	8.09
	20	IODP	489-Full2	Ross Sea	18.47	6.59
	21	IODP	545-Full2	Juan de Fuca Fluid Flow	18.80	5.70
x	22	MSP	519-Full2	Sea-Level Rise S Pac.	19.07	7.89
	23	IODP	553-Full	Cascadia Margin	19.27	3.95
	24	IODP	570-Full	East Pacific Rise	20.47	5.37
	25	IODP	555-Full2	Crete	21.07	6.77
	26	IODP	566-Full3	Nankai Hydrates	22.00	6.37
	27	IODP	477-Full2	Okhotsk and Bering Seas	22.27	8.88
	28	IODP	535-Full2	735-Deep, Slow spreading	24.67	5.26
	29	IODP	521-Full5	Indus Fan	24.87	5.80
	30	IODP	503-Full2	Weddell Basin	25.27	4.70

[Notes:
sched = scheduled for drilling
MSP = mission-specific (alternate) platform required
IODP = recommended forwarded to IODP; out of anticipated areas of operations]

Sherm then outlined main points of the program schedule, as follows. The last leg scheduled at present is Leg 205, planned to end 3 November 2002, tentatively in Panama City. The program itself is scheduled to end 30 September 2003 in a U.S. port, presumably in the Atlantic. JOIDES panels will remain active through September 2003, while iSAS panels will begin in Fall, 2001. ODP Legacy documents are underway, as outlined by Keir.

B. Steve presented highlights of the Shanghai meeting of SCICOM and OPCOM, focusing on the progress and status of planning for Arctic drilling, including input from both the Arctic Climate PPG and the newly formed Arctic DPG. Steve noted that Proposal 533 (Lomonosov Ridge) is currently the highest ranking program at SCICOM, but requires an alternate platform as well as ice-breaker support. The Arctic PPG has submitted their final report (see PPG reports, below).

The Arctic DPG, whose goal is to assess the scientific plans, budget requirements, and technological needs for drilling on the Lomonosov Ridge, has already met once (Jan. 31 to Feb. 1, 2001, in Stockholm) and has submitted an initial report. This report is quite

detailed, including plans for 3 alternate logistic scenarios, termed “Arctic Armadas.” Cost estimates total US $6 to 8M, and so are equivalent to a range from the costs of a normal ODP Leg to $2M more. The mid-cost option is preferred (totalling $7,215,000). This includes the value of the Odin (~US$0.7M), which the Swedish government has agreed to provide, and science support. The bottom line to the program is that the cost will be similar to that of a normal leg.

Keir provided a copy of SCICOM Motion 01-01-06, confirming an OPCOM Consensus on Arctic drilling and on the initial report of the Arctic DPG. These reaffirm that JOIDES desires Arctic drilling to be part of the program, state that the Arctic DPG have shown that the Lomonosov Ridge program is technically feasible, and recommend that ODP Management should continue to investigate the costs and means to meet these costs. They ask the proponents and community to pursue funding from non-ODP sources, and JOI to evaluate, with the help of ODP contractors, to what degree ODP resources might be used to support Arctic drilling. In response to a query about the impact of Arctic drilling on JR drilling, Steve D'Hondt noted that in theory different options have different potential impacts. One option would for Arctic drilling to be supported by money external to the current ODP, in which case there would be minimal effect on JR drilling. Another option could be to end JR drilling one leg earlier than planned and divert its financial support toward Arctic drilling; the contract with the ship's operator states that with notice (90 days), the program could be ended early.

C. Sherm presented a synopsis of several potentially conflicting issues that may be important in planning the remainder of the program. These issues are summarized in a Nov. 1998 report on "Prioritization of Scientific and Programmatic Activities within ODP," prepared by SCICOM with input from the JOIDES Advisory Structure. This report presents a priority list of scientific objectives in the Long Range Plan, considering the degree to which each had been addressed. The themes addressed are divided into two groups, indicating their overall scientific priority, as follows (Group I themes are highest priority):

Group I (in no particular order):

- Oceanographic and Climatic Variability on Milankovitch Time Scales (with emphasis on Arctic drilling)
- Decadal to Millennial-Scale Climate Variability
- Gas Hydrates
- Hydrogeology -- Hydrothermal Systems
- Deep Biosphere
- Seismogenic Zone Preparatory Drilling and In Situ Monitoring
- Intact Section of the Oceanic Crust
- Extreme Warm Climates
- ION Observatory Sites
- Large Igneous Provinces

Group II (in no particular order):

- Plutonic Sections of Oceanic Lithosphere

- Climate-Tectonic Links
- History and Effects of Sea Level
- Mass Balances at Subduction Zones
- Rifting Initiation & Extensional Margins

The report identifies themes in each group that require Special Operating Expenses (costs over those a typical leg) and prioritizes those that are likely to be affected by budgetary constraints (those with high anticipated costs), noting the technological developments and additional resources required.

This report also develops plans to mitigate fiscal constraints, including the following ordered list of scientific themes or program requirements to be eliminated in case of fiscal constraints:

Sequence of Scientific Themes Affected with Increasing Budgetary Constraints
(assuming no additional resources)
1. Elimination of objectives requiring supplementary platforms
2. Elimination of programs requiring ice support vessels
3. Rifting initiation and extensional margins
4. Mass balances at subduction zones
5. Plutonic sections of the oceanic lithosphere
6. Hydrothermal systems

D. Steve also noted that an Ancillary Program Letter was added to the schedule and drilled this year. APL-14, on the Kuroshio Current, was added to Leg 195, drilling 4X APC and XCB to 410 m at a single site NE of Taiwan. Higher than anticipated sedimentation rates provided a very high resolution record of the variability of the Kuroshio current over the past ~120 ky.

IV. JOI Report: Steve Bohlen

A. Steve introduced himself, as recently appointed President of JOI, by providing a brief outline of his professional background and of his vision for providing leadership to JOI during the completion of ODP and the transition to the new program. He reported on the status of restructuring of JOI and CORE, noting that CORE now has its own new President. Whereas CORE deals with directing support for large oceanographic projects and programs, JOI continues oversight of ODP and is looking ahead to the new IODP, including seeking support in Congress for the new program.

B. Planning is moving forward for the ODP phase-out, in terms of labor issues, costs, and related items. NSF is committed to funding the phase out, and a 5-year plan for the phase-out is in the works. JOI is actively involved in developing the legacy of ODP, including bibliographic database, archives, and related issues. This is a challenging task, to meet everyone's expectations, especially considering that scientific results will continue to be developed for years after the drilling ends in 2003. JOI also recently completed a Co-

Chiefs Review, a self-analysis that is mandated periodically, in which co-chiefs evaluate the level of support and assistance provided by ODP. The review went well, and provided constructive input to JOI.

C. JOI is involved in planning for Arctic drilling, by seeking additional funding within the U.S. science-funding structure. JOI is working on many different fronts, working with personnel of the Arctic DPG. For example, the Botnica, the preferred drilling vessel, is under contract with a co-owner of the JR. Steve Bohlen is involved in discussions with Karl Erb, Program Manager of Polar Programs at NSF. The aim is to try to continue JR drilling through the anticipated end of ODP in September 2003 but still be able to add an Arctic drilling leg using an alternate platform. JOI will host the second and final meeting of the Arctic DPG in Washington, including a reception at the Swedish Embassy.

D. Regarding funding for the remainder of ODP, JOI has submitted a proposal to DOE for ~US$1M to augment Legs 201 and 204, and is engaged in conversations with DOE to develop supplemental funding for other potential legs of interest to DOE, typically legs with a gas hydrate or biosphere component. Regarding IODP, JOI is involved in some aspects that NSF is unable to, such as fighting for funding on Capital Hill, a challenging task.

V. IPSC Report: Ted Moore

A. This is a fast-moving subcommittee, and Ted recommended that the best way to keep up with its progress is by monitoring the IODP website (www.iodp.org). Ted announced that the Initial Science Plan is now available. Titled "Earth, Oceans, and Life: Scientific Investigation of the Earth System Using Multiple Drilling Platforms and New Technologies," this document represents the new long-range plan for the new program, and covers an anticipated 10-year period. Major themes include (1) The Deep Biosphere and the Sub-Seafloor Ocean; (2) Environmental Change and its Impact on Life; and (3) Solid Earth Cycles and Geodynamics. Ted outlined specific subthemes and initiatives within these major themes. The Initial Science Plan can be viewed on the IODP website, and a bound copy or a CD-ROM containing high-resolution ISP graphics can be obtained from ODP offices of member countries (in the U.S., from the IWG Support Office at iwgso@brook.edu).

B. Ted outlined the interim Science Advisory Structure (iSAS), charged with initial planning of the new program during the transition period before the formal IDOP Science Advisory Structure is established on 1 October 2003. IODP will continue to be a science-driven and proposal-driven program, and the iSSEPs are the first step in the proposal process. The iSSEPs will continue their mentoring roles, and the two panels will continue to work together and independently. Letters will go to proponents of proposals that will not be drilled by ODP, inviting them to forward or submit their proposals to the IODP Office in Japan. Proponents will be strongly encouraged to submit proposals electronically, in part by later deadlines for electronic submittal. In contrast to the ODP structure, the interim Planning Committee reports directly to IWG, as there is no equivalent of EXCOM in the interim structure. As of now, there is also no equivalent to

the JOIDES Office. The iPC will not rank proposals, but will probably group them in finer categories than have the SSEPs, so that proponents know where they stand. Regarding the active proposals currently in ODP, Ted feels that all fit into the scientific objectives of the new Initial Science Plan. The hope is to make the transition as seamless as possible to proponents.

Julie Morris asked whether there would be a distinction between existing proposals that are "forwarded" to IODP vs. those that are submitted fresh, regarding whether evaluations by the Advisory Structure will be retained and associated with the fresh submittals. Ted responded that there should be little real difference, as we depend on the institutional memory of the advisory panels and committees. Proponents will have opportunities to revise their proposals before ranking for the new program commences.

C. Ted outlined events during the next 6 months in IODP planning. As of the past several months, the JOIDES and OD21 advisory structures have nominated mambers for iPC, iSSP, and the iSSEPs. Following the attendance of iSSEP nominees at this SSEP meeting, the IWG will meet in June 2001 to approve iSAS nominees, and iPC, iSSP, and the iSSEPs will be established. Also in June, the iSAS Office will open; a Call for IODP Proposals will be issued in the JOIDES Journal, and a first round of letters will be sent to proponents of active proposals. In July 2001, iSSP members will attend the JOIDES SSP meeting as observers. In August 2001, iPC members will attend JOIDES SCICOM/ OPCOM meeting as observers; iPC will hold its first official meting; and a second round of “Letters to Proponents” will be sent out. October 2001 will see the first official deadline for semi-annual submision of IODP proposals, and in November 2001 there will be the first joint meeting of the iSSEPS with the JOIDES SSEPs.

Julie Morris asked when both ships will be ready for drilling. Minoru Yamakawa of JAMSTEC reported that the OD21 is scheduled to be ready in 2006 following 18 months of training time in Japan. John Farrell reported that the JR replacement is anticipated to be ready for drilling 12 to 18 months after the beginning of IODP, or as early as 1 October 2004. A call for bids will be issued in late 2001, and CDC will report in late 2002.

Steve d’Hondt asked whether it is important at this point to have high proposal pressure. Ted responded that both the NSF and MIX in Japan have committed to an IODP, even if the U.S. and Japan are the only countries involved. Steve then asked about the other countries, and particularly those not in the European Union. Ted responded that there is currently a complicated set of interactions taking place between funding agencies of a number of countries. The emphasis now is on developing good statements of principles; this will be followed by writing the legal documents necessary. Other points: US $5M is the minimum cost per year for an independent member country. It has not yet been decided how to incorporate smaller contributors, but it is being considered; all are eager to include as many countries as possible. The EU may be involved in an MOU. Someone must be fiscally and legally responsible for a mission-specific platform.

VI. NSF Report

Julie Morris reported that because Bruce Malfait and Paul Dauphin were currently involved in meetings related to planning of the new program, they were unable to attend the SSEPs meeting. Instead, several participants at the recent APLACON meeting were asked to summarize the results of that meeting.

VII. APLACON Meeting Report: Gilbert Camoin

This "Conference on Alternate Drilling Platforms as the 3rd Leg of IODP" was held in Lisbon on May 10-12, hosted by JEODI (Joint European Ocean Drilling Initiative). The meeting had a distinctly scientific focus, in order to complement the focus on technologies of alternate platforms in a previous meeting in Brussels. This meeting also complemented sessions at COMPLEX related to alternate-platform science. A report on the results of this conference is due out in September 2001. The first result is that "Mission-Specific Platform" is a more appropriate term than "alternate platform." There were 4 plenary sessions with distinct scientific foci, although there was only limited opportunity for interchange between groups. The themes were: 1) Extreme Climates, focusing on the Arctic, the Antarctic, and the Cretaceous; (2) Basin and Platform Margins; (3) Magmatic, Tectonic, and Hydrothermal Processes; and (4) Rapid Climate Change. The list of targets based on existing proposals and letters of intent total about 60 projects(!) The bottom line is that MSP can add substantively to work in the deep oceans and on land, in addition to the shallow-water settings that have long been recognized as requiring mission-specific platforms.

Questions asked related to (1) possible relationships with the ICDP (Answer: this is a matter that still needs to be discussed); (2) other vessels, such as ice-support or for long-term monitoring (Answer: yes, we need to incorporate all necessary resources); and (3) was funding discussed (Answer: no, the first need is to identify scientific priorities and potential targets and objectives).

VIII. ODP-TAMU Report: Carlota Escutia & Gary Acton

A. Current Legs: Carlota reported on the 3 legs drilled since our last meeting. Leg 193 (Manus Basin) investigated variability of volcanic-hosted hydrothermal systems in a convergent-margin setting, drilling 4 sites with about 11% core recovery. Highlights: the microbiology program required an MOU with Papua New Guinea and Bionet; also this leg saw the first operational use of the HRRS and ADCB (see Engineering and Operations, below for details). Leg 194 (Marion Plateau) investigated timing and amplitude of sea level changes in a carbonate system, drilling 8 sites with about 5 km of penetration and 41% recovery. Results indicate that amplitudes of sea level changes were greater than expected. The HYACE tool was tested, and ADCB was used in carbonates. Leg 195 successfully installed an ION Seismic observatory in the West Philippine Basin; a CORK in a serpentinite seamount in the Mariana forearc; and drilled a single site NE of Taiwan to investigate the Kuroshio current.

B. Engineering and Operations: Gary reported on the successful deployment of several new systems and tools. The HRRS (Hard Rock Reentry System) was used on 2 holes on Leg 193, including use of RCB and ADCB, and the first free fall of a reentry cone and casing. The system is considered operational, but still needs to be tested in the hard-rock settings for which it was designed. The ADCB (Advance Diamond Core Barrel) was used successfully on Legs 193 and 194, with increased core recovery (slightly higher to 2x and 3x, at 11 to 18%) at the cost of much slower penetration. There is a trade-off between rate of penetration and recovery. Needs that remain include improved core catchers and a bit deplugger. Two HYACE (Hydrate Autoclave Coring Equipment) tools were tested on Leg 194, the HYACE Rotary Pressure Core Sampler (H-PCS) developed at Technische Universitat Berlin and the HYACE/Fugro Vibracore Sampler (HF-VS) developed by Fugro Geotechnical Engineering. Both tools were deployed 4 times, and one run of HF-VS recovered an in-situ pressure sample at 41 bars (although a transfer tool needs to be tested). Both tools are very complex to assemble, with significant manpower and turnaround time requirements; both are also quite long, and they need to be more robust. Additional testing time and money are needed to get either tool operational.

Regarding the HYACE tool, Frank Rack commented that the Berlin group are still waiting for funding of the next development phase. This is not an ODP tool. TAMU felt there should have been more tests of the system onshore, but there was a rush to test it in an appropriate setting.

Ishii asked about the difficulties in drilling several hundred meters in the serpentinite seamount on Leg 195. Gary confirmed this, and noted that there is no tool or system ideal for penetration or recovery of hard clasts in soft material, similar to diamictite.

IX. Logging Report: Tim Brewer and Ulysses Ninneman

Tim reported on several aspects of logging in recent legs. Resistivity measurements while drilling, using the RAB as tested on Leg 193, provides a coarse, gross scale (~15cm) image, but over 360 degrees of the borehole, compared to the finer scale (~1cm) resolution provided by FMS (Formation Micro Scanner), which is limited to 20% radial coverage. The two can be run in conjunction. Also on Leg 193, temperature measurements were collected by a real-time tool to monitor temprerature. Results were compared to data collected by "memory" tools, run later, which allowed modeling of thermal response to drilling and after drilling. By 4 to 5 days after initial drilling, moderate depths (50 to 250 mbsf) of the borehole had cooled relative to the real-time drilling measurements, but the deepest 80 m had heated considerably.

Leg 194 experienced very poor recovery on the Marion Plateau, which contains an acoustic "quiet" zone, as compared to the detailed stratigraphy observed in seismic profiles off the carbonate platform. Logging was successful here, and logging results were used to provide information for cross-hole correlation between several sites on the plateau, and to the large-scale stratigraphy imaged seismically. Logging data (FMS U, Th, and K and caliper logs) apparently imaged a flooding surface at one site. Because

core recovery was biased to well cemented lithologies, sonic velocities measured on cores were consistently higher than those measured by the Integrated Sonic Log, which was confirmed by Checkshot data. Finally, a new MGT (total gamma ray log) tool developed by LDEO provides better, higher resolution of gamma ray data. Tim showed an example from Leg 194 of sediment with apparent high-frequency cyclicity that was not picked up by the standard (HSGR) gamma ray tool.

X. PPG Reports: Liz Screaton and Hans Brumsack, SSEP Liaisons

A. Hydrology PPG: Liz Screaton, ESSEP liaison to the Hydrogeology PPG

Liz reported on the 3rd and final meeting of the PPG, held Feb. 25-26, 2001 in Miami. Visitors who reported to the PPG at this meeting included Billy Moore, who spoke on groundwater flow to the oceans, and Carolyn Ruppel, who spoke on fluid (and energy & mass) flow in gas hydrate investigations. A central point made by the PPG is that hydrogeology issues are important for many other ODP projects and objectives.

There was considerable discussion of the draft of the final report of the PPG, particularly on the following points:

Dedicated hydrology legs are needed to establish long- term hydrogeologic observation stations and to characterize fluid flow systems in a variety of settings. These include mid-ocean ridges; subduction factory and seismogenic zone settings; the coastal zone; carbonate platforms; deep biosphere environments; and gas hydrate settings.

Tools and flow tests must be improved. Tool and testing improvement needs include wireline and drillable packer systems; improved shipboard low-flow pumps and down-hole monitoring of pressure; multiple hole tests & longer shut-in tests; maintain & improve capability of downhole fluid sampling – water sampling temperature probe; improved stored-pressure core sampler; development & improvement of temperature measurement tools, including an APC temperature tool and temperatures measured at depths greater than possible using DVTP; and maintain the newly improved DVTP with pressure measurements.

The PPG recommends that hydrologic data collection should be made routine on non-hydrogeologic legs, and emphasizes the importance of permeability measurements, at core-, and borehole, and cross-hole scales. Other data to be collected include pore pressure, temperature, chemistry, porosity, and stress, with higher frequency of temperature and pressure measurements.

Numerical modeling studies are needed, both prior to cruises, in order to identify driving forces and budgets (sources, outflow) in a conceptual model of the fluid-flow regime, and after cruises, to integrate findings into the numerical model.

The PPG also sees a need for additional hydrology expertise in ODP advisory panels and committees, and recommends planning and funding fluid-focused workshops, in order to encourage broader involvement from the hydrogeologic community.

Ted Moore commented that there are few hydrologists involved in ODP, and asked for suggestions on how to involve more land-based hydrologists. Liz answered that this is part of the reason that so many land-based hydrologists were asked to be members of the Hydrogeology PPG, and that it is hoped that workshops such as those suggested may broaden participation.

B. Arctic Climate PPG: Hans Brumsack, ESSEP Liaison to the Arctic Climate PPG

The Arctic Climate PPG held its third and final meeting, January 29-30, 2001 in Stockholm. The meeting was devoted to work on the Final Report of the PPG, which has since been submitted. Highlights are as follows.

Key scientific questions that can be addressed by Arctic scientific drilling include: the response of the Arctic during periods of extreme polar warmth; variations in the physical and chemical characteristics of the water mass in an evolving polar deep ocean basin, and the oceanographic response to opening of gateways; the history of marine polar biota and fertility, and the history of Arctic sea ice; ice rafting and the history of local versus regional ice sheet developments; processes of methane release of destabilized permafrost-associated gas-hydrate accumulations; and the history of emplacement of LIPs in the Arctic and their environmental impact.

Potential drilling targets include: the Alpha Ridge, which is covered by an undisturbed package of Cenozoic and Mesozoic sediments; the Gakkel Ridge, unique among ocean ridges for its very slow spreading rate; Morris Jesup Rise and northern Yermak Plateau, which geophysical data suggest represent an oceanic LIP; the tectonic evolution of Fram and Bering Straits, which have had a profound impact on global circulation; high-resolution coring on the slopes off the Laptev, Chukchi, and Kara Seas & in the central Arctic ridges; and a destabilized permafrost-associated gas hydrate accumulation on the Arctic shelf. The history of Arctic climate, circulation, and tectonic evolution is so poorly known that any recovery of material would increase our knowledge.

Strategies for successful drilling in the Arctic must include dealing with: jurisdiction; environmental issues; pollution prevention; management issues; health and safety aspects; both short- and long-term strategies; and technology for Arctic drilling.

Requirements for a drilling platform capable of drilling in Arctic sea-ice include: dynamic positioning; a high-Arctic ice-class vessel; an adequate moon pool with a reinforced deck to support a drill rig; deck space for drilling, coring, logging equipment, and tools; provision for modular laboratory containers, including provision of services; sufficient accommodation for crew and scientists; and a helideck and other appropriate navigation and safety features for Arctic work.

Ice management is critical and demands careful planning; experience exists in "Stationary Marine Operations in Drifting Ice," and an appropriate system can be modeled. A capable ice management team is necessary, with access to weather and ice data from all available sources. An officer must be responsible for directing the ice management vessel, and forecasting of weather, ice drift and hazardous ice is necessary. Also needed are definition of hazardous ice and/or weather conditions and of a "T-time," the decision time remaining for different operations; and finally, an abandonment plan. Operational flexibility is needed to maximize chances for success, including a multi-vessel approach, increased (doubled?) fuel capacity, alternate drill sites, and an appropriate ice management plan.

The PPG conclude that scientific drilling can be carried out in permanently ice-covered areas of the Arctic Ocean without harm to the environment, and this can be achieved with present technology. Stationary marine operations in drifting sea-ice require careful ice management planning. At least one primary and one secondary icebreaker may be required; and an appropriate ice management system can by modeled. In the short term, proven systems to drill single-bit holes should be utilized. As operational experience is gained, the system capability can be expanded to include re-entry and multi-cased boreholes with instrumentation. In preparation for a longer-term drilling program in the high Arctic, new geophysical data are urgently needed for drillsite definition. Site survey data exist from sections of the Yermak Plateau, Lomonosov Ridge and the Chukchi Plateau for definition of targets for drilling in next 3 to 5 years. A long-term drilling commitment in the central deep Arctic, where the drilling targets of high scientific priorities are located, will require an icebreaker with deep-water drilling capability; a feasibility study should be made.

Ted Moore commented that oil company personnel have said that industry has all the seismic data it needs in the Arctic. Hans noted that these data are largely in limited, shallow-water regions.

It was noted that the newly formed Arctic DPG has now met once, and reported to SCICOM at their February 2001 meeting (see SCICOM Liaison Report, above).

Thursday Afternon, May 17, 2001.

Separate ISSEP and ESSEP Meetings to Review Proposals

The SSEP chairs reviewed the conflict of interest rules and confidentiality requirements prior to the start of proposal reviews. Proponents are excluded from being in the room during proposal discussion, as are those having active projects closely related to the projects proposed. For Ancillary Program Letters (APL), nominated co-chiefs must recuse themselves. SSEP members at the same institutions as a proponent must identify themselves to the SSEP chairs prior to review discussions.

During the meetings (May 17-19), the SSEPs considered the following proposals:

New and Revised Proposals, Preproposals, and Ancillary Program Letters

Prop. No.	Title	Proponents	SSEP
586-Full2	Hawaiian Reefs and Basalts	Rubenstone et al.	Joint
592-Pre2	Shallow Drilling in Dogger Bank	Andriessen et al.	E/I
595-Full	Indus Fan Riser & Non-Riser Drilling	Clift et al.	I/E
596-Pre	Rockall-Hatton Cretaceous Hotspot	Morrisey et al.	I
597-Pre	High-Res Quaternary, Gulf of Alaska	Cowan et al.	E/I
APL-15-2	Gulf of Aden, Afar Mantle Plume	Tamaki et al.	I
APL-19	Nu'uanu Landslide, Hawaii (Leg 200)	Garcia et al.	E/I
APL-20	Costa Rica Mud Volcano	Ranero et al.	E/I

Proposals with External Reviews and Proponent Responses

543-Full2	(was 580-Full) CORK Hole 642.E	Harris	E
547-Full3	Oceanic Subsurface Biosphere,	Fisk et al.	Joint
548-Full2	Chicxulub: Drilling the K/T Impact Crater	Morgan et al.	E/I
554-Full4	Hydrates in a Petrol. Basin, G. of Mexico	Kennicutt et al.	E/I
557-Full2	Storegga Slide Gas Hydrate	Andreassen et al.	E/I
572-Full2	Late Neogene climate, N Atl: distal LISO	Channell	E/I
573-Full2	Modern Carbonate Mounds, Porcupine Basin	Henriet et al.	E
575-Full3	African Climate, Gulf of Aden	deMenocal	E/I
581-Add	L Pleistocene Drowned Reefs	Droxler & Sager	E
589-Full2	Gulf of Mexico Overpressures	Flemings et al.	E/I
594-Full	Newfoundland Margin	Tucholke et al.	I/E

Other Proposals to be discussed for grouping

561-Full2	Caribbean Large Igneous Province	Duncan et al.	I
584-Full/Add	TAG II: Volcanic-hosted Hydrothermal System	Rona et al.	I/E

Addenda to Proposals at SCICOM

519-Add	Last deglacial sea-level rise, Tahiti	Camoin et al.	E
522-Add2	Oceanic crust spread at superfast rate	Wilson et al.	I
539-Add	Large Gas Hydrate Reservoir, Blake Ridge	Holbrook et al.	E/I
559-Add	Early Cenozoic Climates, Walvis Ridge	Zachos et al.	E

577-Add3	Paleog & Cret. Paleocean., Demerara Rise	Erbacher et al.	E
584-Add	TAG II: Volcanic-hosted Hydrothermal System	Rona et al.	I

The panels ended the afternoon session at 1800.

Thursday Evening, May 17, 2001.

Meetings of Joint SSEP Review Working Groups

2000. Joint ISSEP-ESSEP Working Group Meeting
Airlie House, Federal Room

These joint working groups met Thursday night, after the two panels had separately discussed the proposals of joint interest on these themes. The first job of the working group was to ensure that a single coordinated review, representing both panel perspectives, gets written. This means reconciling different viewpoints between the panels, and deciding individual responsibilities for writing and revising the panel comments. Both panels met together Friday afternoon to discuss proposals of joint interest.

Some working group members had conflicts of interest with a proposal in their working group. Members discussed jointly all those proposals for which there are no conflicts. After that, they discussed those proposals where there is a conflict, with the conflicted person out of the room.

The themes of the working groups, and their numbers have been changed to reflect the changing nature of incoming proposals. Because of the considerable overlap of many of the proposals in these two groups, the group members decided to jointly discuss all proposals being considered by both groups.

Joint Working Group on Deep Biosphere Zone and Gas Hydrates
Members:
Dave Vanko (conflict with 584)
Ingo Pecher
John Hayes, Working Group Leader
Hans Brumsack

Externally reviewed proposals for consideration: 547-Full-3, 554-Full4, 557-Full2
Addenda for consideration: 539-Add, 584-Add

Joint Working Group on Fluids in the Near-surface
Members:
Mike Bickle (conflict with 584)
Mike Mottl
Craig Fulthorpe

Liz Screaton, Working Group Leader

Externally reviewed proposals for consideration: 554-Full4, 589-Full2
Addenda and APL for consideration: 539-Add, 584-Add, APL-20

The two working groups decided to meet jointly , and so all members of both groups were present for discussion of proposals, except where there were conflicts.

The Joint Working Groups session ended at 2300.

Friday Morning, May 18, 2001.

0830. Separate ESSEP and ISSEP meetings to continue discussing proposals of joint interest and externally reviewed proposals not previously discussed.

1100. Joint SSEP meeting to discuss proposals of joint interest.

I. Joint Working Group Reports

After another review of the rules on conflicts of interest, the following Review Working Groups Leaders provided a brief summary of the groups' discussions and final recommendations regarding the proposals considered:
Gas Hydrates and Deep Biosphere: John Hayes
Fluids in the Near-surface: Liz Screaton

II. Joint panels continue discussion of proposals of joint interest

During this joint session, the panels also discussed other proposals considered by both panels. These included Proposals 548, 572, 575, 594, 586, 595, 592, and 597, as well as APL-19. The panels will write a single joint review for each of these proposals.

III. Recommendations and New Business, Julie Morris and Neil Lundberg

A. The SSEPs offered resolutions for outgoing SSEP members.

The SSEPs thank Svante Bjorck for his services to the Ocean Drilling community and his critical but supportive evaluation of so many drilling proposals. The pub group will also miss one of its most reliable members. Svante, there will always be a place for you.

After 3 years of SSEPs meeting Chris Charles has now done his time, and paid his dues to the ocean drilling community. As you rotate off the panel, Chris, we wish to express our appreciation for your efforts on belhalf of the many proposals you have guided through the review process. Your paleoclimate and paleoceanographic expertise has served to strengthen and focus scientific objectives and hypotheses, clearly leading to much improved proposals. The Ocean Drilling Program thanks you for your dedicated

efforts and your SSEPs colleagues look forward to working with you again sometime in the future.

The SSEPs thank Hiroki Matsuda for his service on ESSEP. We appreciate your efforts on the panel, especially helping to improve proposals on corals and climate, and adding your expertise to our discussions. We will miss you, and are pleased that you will be able to join us as an observer at our next meeting, in Japan.

The SSEPs will miss Piera Spadea. Piera's petrologic knowledge, broadly applied, her willing to tackle proposals on a wide variety of subjects, and her deep enjoyment of the scientific discussions made a great panel member. And we'll always remember the wonderful meeting Piera organized in Udine, Italy. Thank you, Piera.

The SSEPs want to express our deep appreciation to Ingo Pecher, who is leaving the panel early as he moves to New Zealand. Ingo's geotechnical know-how, seismic insight and extensive knowledge of gas hydrates made him an essential bridge between the two panels. Good luck with your move, Ingo, and we'll miss you.

The SSEPs are sorry to lose Teruaki Ishii, but look forward to seeing him as an observer at the next meeting in Japan. Teru's knowledge of volcanic arc petrology and explosive volcanism have contributed significantly to panel discussions. Beyond that, Teru has been a force on the panel, photographing the highlights and the routine operations of the panel, and coming on field trips equipped to remind many of us that we are ultimately geologists. Thanks, Teru.

B. New ESSEP Chair:
Neil Lundberg announced that Gilbert Camoin has accepted nomination as the new Chair of ESSEP. Gilbert will attend the August 2001 SCICOM meeting as an observer, and his 2-year term of office will begin with the Fall 2001 SSEP meeting.

C. Next Meeting:
The November 2001 SSEP meeting will be held November 13-16 at JAMSTEC (Japan Science and Technology Center), near Yokohama, Japan. Minoru Yamakawa of JAMSTEC will help organize the meeting, which will be held in association with the first meeting of the interim SSEPs, who will be planning the transition to the new IODP. A field trip to the Miura Peninsula is planned for Monday, November 12.

Friday Afternoon, May 18, 2001.

1300. Separate Meetings of ESSEP and ISSEP to continue reviewing proposals, and to group externally reviewed proposals. See Attachment A for dispositions of all proposals considered.

1700. Joint SSEP Meeting to discuss the results of groupings of externally reviewed proposals.

The joint session was adjourned, and the formal sessions ended Friday at about 6pm.

Saturday Morning, May 19, 2001.

Panel members worked on reviews, and provided panel chairs with electronic copies of reviews. The reviews will be edited and passed around to all panel members before being forwarded to the JOIDES office for transmission to proponents.

Meeting Attendees:

ISSEP
Dick Arculus
Mike Bickle
Peter Clift
Colin Devey
Donald Fisher
Bernie Housen
Benoit Ildefonse
Teruaku Ishii
Julie Morris (Chair)
Mike Mottl
Ingo Pecher
Piera Spadea
David Vanko

ESSEP
Svante Björck
Hans Brumsack
Gilbert Camoin
Chris Charles
Steven Clemens
Gabriel Filippelli (May 17 only)
Craig Fulthorpe
John Hayes
David Hodell
Neil Lundberg (Chair)
Hiroki Matsuda
Dick Norris
Liz Screaton
Juergen Thurow
Kuo-Yen Wei

Liaisons and Guests
Keir Becker, JOIDES chair

Aleksandra Janik, JOIDES
Elspeth Urquart, JOIDES
Steve Bohlen, JOI President
John Farrell, JOI
Frank Rack, JOI
Bridget Chisholm, JOI
Steve d'Hondt, SCICOM liaison to ESSEP
Sherman Bloomer, SCICOM liaison to ISSEP
Steve Lewis, SSP liaison to ISSEP
Dave Mallinson, SSP liaison to ESSEP
Gary Acton, TAMU liaison to ISSEP
Carlota Escutia, TAMU liaison to ESSEP
Ulysses Ninneman, Logging liaison to ESSEP
Tim Brewer, Logging liaison to ISSEP
Ted Moore, IPSC chair
Donna Blackman, iISSEP nominee
Kazuto Kodama, iESSEP nominee
Michelle Kominz, iISSEP nominee
Lincoln Pratson, iESSEP nominee
Izumi Sakamoto, JAMSTEC
Minoru Yamakawa, JAMSTEC

Attachment A: SSEP Decisions on Proposals Reviewed

Disposition of proposals, addenda, ancillary program letters and externally reviewed proposals considered by Joint SSEPs, May 17-19, Airlie House, Warrenton, VA:

New and Revised Proposals, Preproposals, and Ancillary Program Letters

Prop. No.	Title	Lead Prop.	SSEP	Disposition
586-Full2	Hawaiian Reefs and Basalts	Rubenstone	Joint	Revise w/new data
592-Pre2	Shallow Drilling, Dogger Bank	Andriessen	E/I	Full w/add. data
595-Full	Indus Fan Riser & Non-Riser	Clift	I/E	Revise
596-Pre	Rockall-Hatton Cret. Hotspot	Morrisey	I	Full w/add. data
597-Pre	High-Res Quat., Gulf of Alaska	Cowan	E/I	Revised Pre
APL-15-2	Gulf of Aden, Afar Plume	Tamaki	I	Positive comments
APL-19	Nu'uanu Landslide, Hawaii	Garcia	E/I	Positive comments
APL-20	Costa Rica Mud Volcano	Ranero	E/I	Negative comments

Proposals with External Reviews and Proponent Responses

Prop. No.	Title	Lead Prop.	SSEP	Disposition
543-Full2	(was 580-Full) CORK Hole 642.E	Harris	E	to SCICOM
547-Full3	Oceanic Subsurface Biosphere,	Fisk	Joint	to SCICOM
548-Full2	Chicxulub: K/T Impact Crater	Morgan	E/I	to SCICOM
554-Full4	Hydrates in a Petrol. Basin, GoM	Kennicutt	E/I	to SCICOM
557-Full2	Storegga Slide Gas Hydrate	Andreassen	E/I	to SCICOM

572-Full2	Late Neogene climate, N Atl.	Channell	E/I	to SCICOM
573-Full2	Modern Carbonate Mounds	Henriet	E	to SCICOM
575-Full3	African Climate, Gulf of Aden	deMenocal	E/I	to SCICOM
581-Add	L Pleistocene Drowned Reefs	Droxler	E	to SCICOM
589-Full2	Gulf of Mexico Overpressures	Flemings	E/I	to SCICOM
594-Full	Newfoundland Margin	Tucholke	I/E	to SCICOM

Other Proposals to be discussed for grouping

561-Full2	Caribbean Large Igneous Province	Duncan	I	to SCICOM
584-Full/Add	TAG II: Volc-hosted Hydrotherm.	Rona	I/E	to SCICOM

Addenda to Proposals at SCICOM

519-Add	Last deglacial sea-level rise, Tahiti	Camoin	E	at SCICOM
522-Add2	Oceanic crust spread at superfast rate	Wilson	I	at SCICOM
539-Add	Gas Hydrate Reservoir, Blake Ridge	Holbrook	E/I	at SCICOM
559-Add	Early Cen. Climates, Walvis Ridge	Zachos	E	at SCICOM
577-Add3	Paleog & K Paleocean., Dem. Rise	Erbacher	E	at SCICOM
584-Add	TAG II: Volc-hosted Hydrotherm.	Rona	I	at SCICOM