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ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow and Paleoceanography

Proposal 510-Rev 1

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P. K. Swart & F. Anselmetti

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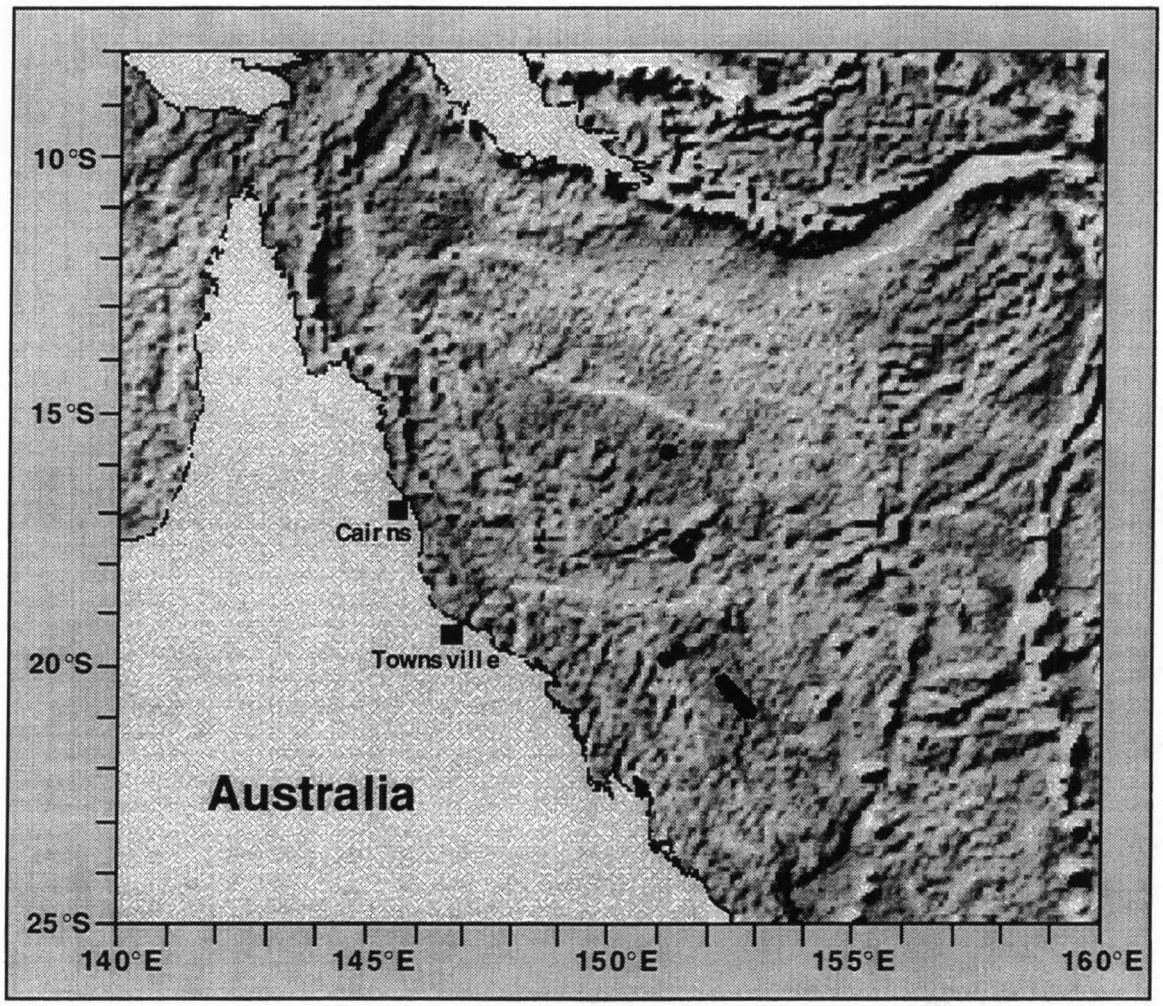

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TABLE OF CONTENTS

PREFACE TO PROPOSAL 510-REV 1

This proposal has been significantly altered from the initial submission (Proposal 510) in order to address reviewer comments made at the interim SSEP meeting in January, and the first SSEP meetings in June, 1997. In response to these comments we have made the following changes to the original proposal:

- we have addressed fundamental questions concerning the tectonic influences on the Marion Plateau sedimentary record in regard to sea level variations;
- we have reviewed the sites which were proposed for the sea level objectives and have determined that all are needed, although drilling strategies at each site may be altered;
- we now propose that the sites on the Marion Plateau, at which we will investigate sea level fluctuations, are also ideal to study fluid flow characteristics, in conjunction with the two sites on the Queensland Plateau. This will greatly improve the efficiency of the drilling transect;
- we have removed most of the sites involved with paleoceanographic objectives, as reviewers indicated that these objectives detracted from the focus of the proposal. We have retained the proposed site in the eastern Queensland Plateau sediment drift, as we argue that a high quality paleoclimatic record from this area will be important for correlation with sea level and fluid flow objectives of this proposal.

Due to the new page restrictions for proposals, some of the geologic and oceanographic background for the western Coral Sea, included in Proposal 510, is omitted from this revision. The original submission should be consulted if further information is necessary.

In addition to the above, the interim SSEP felt that it was unclear how Proposal 510 related to previous drilling in the area, in particular to results from Leg 133. Leg 133 drilling was primarily aimed at understanding factors controlling carbonate platform evolution, and drillsites were not optimally placed to study the objectives outlined in this proposal. Nevertheless, results from Leg 133 provide the preliminary groundwork for most of the objectives outlined here, and we view the present proposal as complementing and building on the results obtained by Leg 133.

ABSTRACT

The proposed multi-objective series of drillholes in the western Coral Sea provide a superb opportunity to address three of the major themes identified as important for understanding the dynamics of the Earth's environment, as outlined in the ODP Long Range Plan; namely, the causes, effects, and magnitude of sealevel change, fluid flow and diagenesis within carbonate platforms, and climatic and paleoceanographic change in tropical and sub-tropical environments. In particular, the drilling transects on the Marion and Queensland Plateau will provide fundamental and exciting information regarding the magnitude of Miocene sea level variations and the influence of these variations on fluid flow processes and sediment diagenesis within carbonate platforms.

Cretaceous rifting in the western Coral Sea formed continental fragments which are now capped by carbonate platforms. The location and water depth of these platforms, and the nature of the sediment capping them, provide ideal drilling targets to investigate the aforementioned themes. Coral Sea drilling will build on the achievements of earlier ODP/DSDP drilling in the region (Legs 21, 30, 133), and accordingly will be able to specifically target sequences capable of resolving major scientific problems with a high likelihood of success.

We propose to investigate the following:

- **Causes, effects, and magnitude of sealevel change:**
  - to calibrate the amplitude of the major Middle Miocene (N12-N14) sealevel fall;
  - to refine the Miocene eustatic sealevel curve;
  - to study the effects of sealevel variations on carbonate platform development.
- **Fluid flow and diagenesis within carbonate platforms:**
  - To determine the factors controlling fluid flow and the rates at which it is occurring within the Queensland and Marion Plateaus;
  - To document the importance of sea level variations on fluid flow within the carbonate platforms;
  - To compare fluid flow processes within the different sedimentological and depositional environments of the Queensland (isolated oceanic plateau) and Marion (continental margin plateau) Plateaus;
  - To determine the importance of fluid flow in relation to the extensive diagenesis which has occurred within the mixed carbonate/siliciclastic system of the Marion Plateau and the pure carbonate system of the Queensland Plateau;
  - To infer fluid flow pathways within the Queensland and Marion Plateaus;
  - To determine the role of sediment physical properties as controls on fluid movement.
- **Climatic and paleoceanographic change in tropical and sub-tropical environments:**
  - To describe variations in surface and intermediate water circulation occurring since the Oligocene in the Coral Sea;
  - To compare climatic variations seen in the western Coral Sea to sea level and fluid flow changes in order to determine whether there are causal relationships between these processes;
  - To understand the development and variability of the western Pacific warm water pool since the Miocene.

1. SCIENTIFIC RATIONALE AND OBJECTIVES

Scientific drilling in the western Coral Sea (Fig. 1) provides a superb opportunity to address three of the major themes identified as important for understanding the dynamics of the Earth's environment, as outlined in the Long Range Plan (JOIDES Planning Committee, 1996). In this proposal, these themes are integrated to develop a comprehensive understanding of the interaction between eustatic, paleoceanographic, and diagenetic variations in mixed siliciclastic/carbonate and pure carbonate sediment systems. Specifically, the main aims of this proposal are:

- **To describe the magnitude of Miocene sealevel change, and its effects on carbonate platform sedimentation and sediment diagenesis;**
- **To describe fluid flow and diagenesis within pure carbonate and mixed siliciclastic/carbonate depositional environments;**
- **To understand the role of climatic and paleoceanographic change, in the tropical South Pacific, as influences on eustatic and diagenetic variations within the carbonate platforms.**

1.1. Absolute sealevel variations

The objectives proposed here will provide fundamental information to improve our understanding of the absolute magnitude of eustatic variations. It is important to note that, despite the two Atlantic Ocean ODP Legs devoted to investigating sea level variations and their relation to sequence stratigraphy, there as yet have been no similar investigations in the Pacific Ocean. The sites proposed here will provide the information necessary to support improved understanding of the global relationship between eustatic sea level variations and sequence stratigraphy.

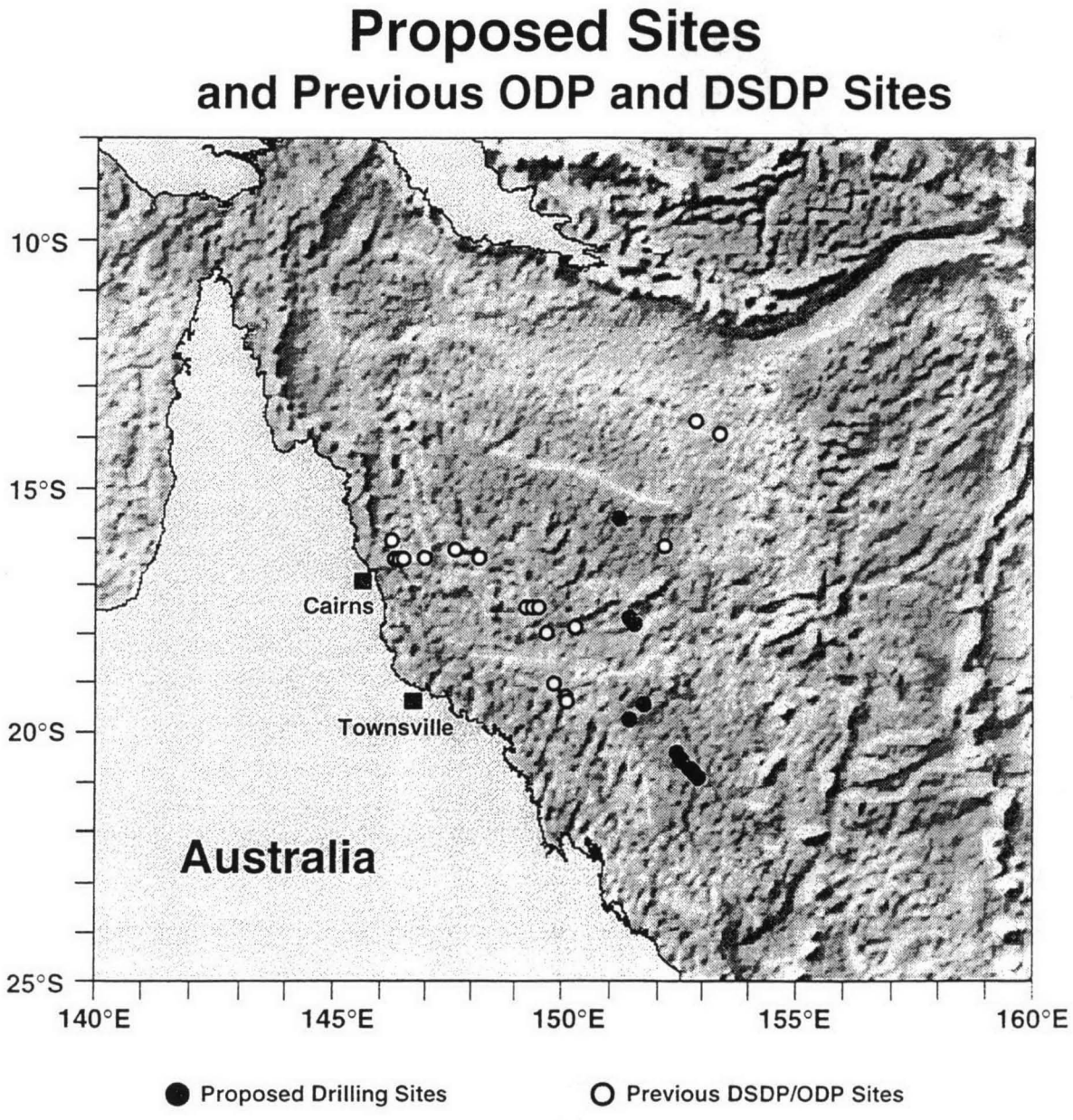

Figure 1. Gravity data in the western Coral Sea, together with proposed and previous drillsites in the area. Black dots are the sites proposed here, and the white dots are previous DSDP/ODP sites.

1.1.1. Sealevel : Objectives

The principle sealevel objectives are:

- to calibrate the amplitude of the major Middle Miocene (N12-N14) sealevel fall;
- to refine the Miocene eustatic sealevel curve;
- to determine the effects of sealevel variations on carbonate platform development.

The Marion Plateau has several attributes that make it an ideal location to test sealevel concepts, as a component of the global strategy to test sealevel. These attributes include:

- a well-preserved shallow water sequence on a marginal plateau in water depths of 300 - 500m;
- a simple subsidence regime since the Oligocene;
- an excellent data set, including extensive seismic data complemented by earlier ODP drilling (Leg 133) in the region;
- Leg 133 experience and a shallow basement indicate no safety problems.

1.1.2. Sealevel : Rationale

Measuring the amplitude and timing of eustatic sealevel fluctuations has proved to be a difficult problem, whose resolution is essential to the establishment of an accurate eustatic sealevel curve for the Phanerozoic. Several attempts have been made to determine the amplitude of glacioeustatic fluctuations, including passive-margin sequence stratigraphy (Vail et al., 1977; Vail and Hardenbol, 1979; Haq et al., 1987); modeling of sedimentary depositional regimes (Watts and Thorne, 1984); calibration of the oxygen isotope curve (Majors and Mathews, 1983; Miller et al., 1987; Williams, 1988); and analysis of the depositional history of carbonate sediments on atolls (Schlanger and Premoli-Silva, 1986; Halley and Ludwig, 1987; Moore et al., 1987; Lincoln and Schlanger, 1987, 1991). These analyses yield a wide range of results, but as Sahagian and Watts (1991) have pointed out, "While there is often agreement between independent data sets regarding the timing of sealevel events, there is little precision or even agreement about the magnitude of these events."

The establishment of a eustatic sealevel curve has major implications for global stratigraphic correlation and basin analysis, and defining the amplitude of such a curve remains one of the major challenges in sealevel research (COSOD II, 1987; Sahagian and Watts, 1991; JOIDES Planning Committee, 1996). In this proposal, we suggest that the excellent record of Miocene sealevel fluctuations preserved in the carbonate platforms of the Marion Plateau in the southern Coral Sea, provides an ideal opportunity to test sealevel models and curves.

To determine the sealevel event stratigraphy it will be necessary to establish:

1. the depositional history of the Miocene carbonate platforms of the Marion Plateau by:
   - establishing a detailed chronostratigraphy for each platform phase;
   - determining the depositional environment of each platform phase;
   - determining the age and duration of each unconformity;
   - inferring the paleo-water depth of each phase; and
   - establishing the total thickness of each platform.
2. the amplitude of the Middle Miocene (N14-N12) sealevel fall by:
   - determining the age, depth and paleo-water depth of the older (MP2) platform (Fig. 2);
   - determining the age, depth and paleo-water depth of the initial phase of the younger (MP3) platform.

Figure 2 shows a compilation of stratigraphic events recorded by the Miocene and Pliocene carbonate platforms of the Marion Plateau, inferred to be fundamentally controlled by sealevel fluctuations. There is an excellent correspondence between the event stratigraphy (that is, the number and inferred ages of platform phases) and the number of cycles proposed by Haq et al., (1987) for this interval of the Miocene (Fig. 3). The older (MP2) platform (early-middle Miocene) has four platform phases, and each is assumed to be related to a rising and highstand sealevel event. Four highstand events (MP2a -MP2d) occur between N7 and N10 time. A further highstand event (MP2e) during N12 is seen below the MP2d event. This inferred highstand occurred after the first stage of Middle to Late Miocene eustatic sealevel fall (based on neritic N12 sediments intersected at ODP

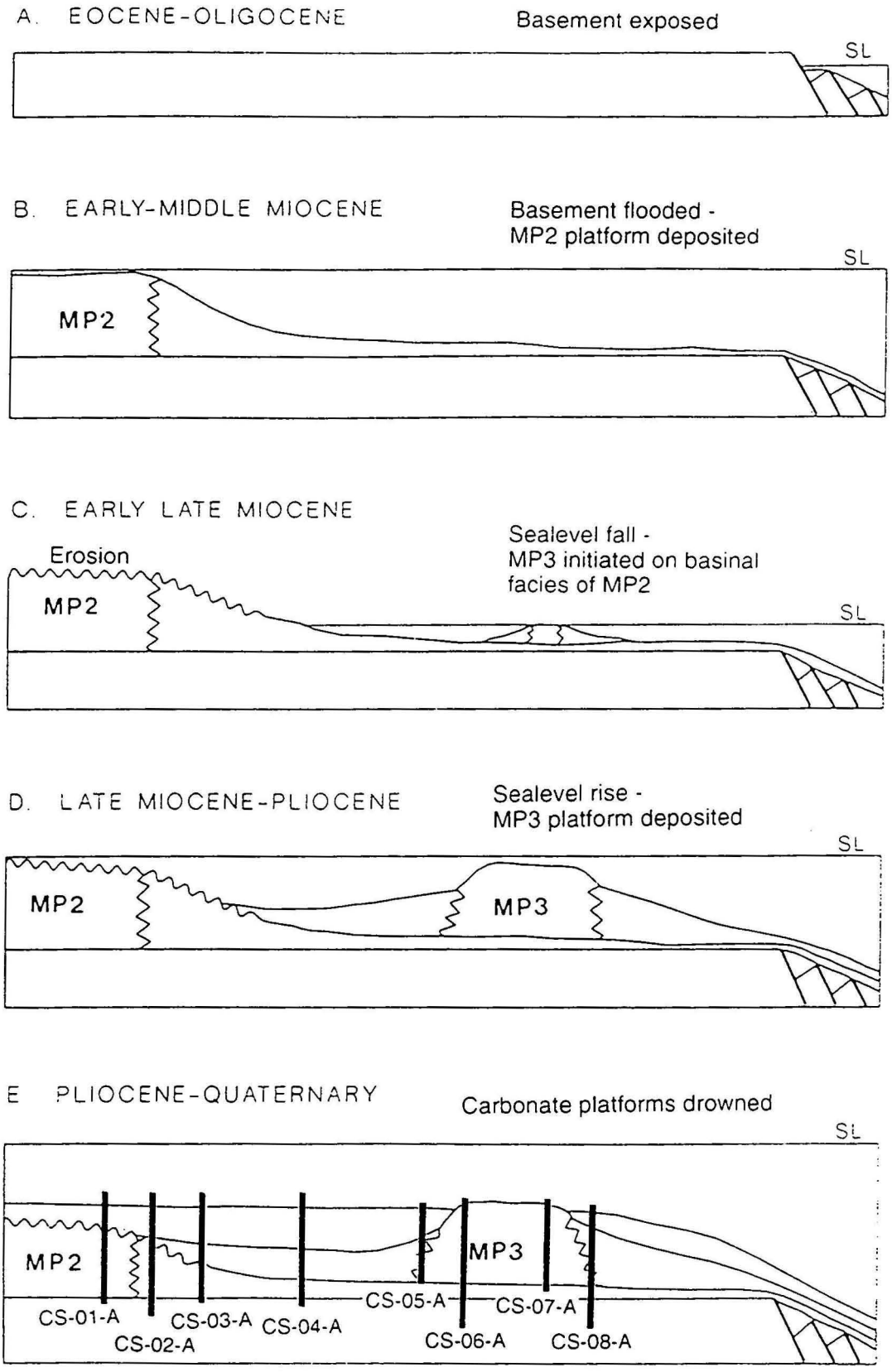

Figure 2 Schematic depositional history for MP2 and MP3 phases of Miocene to Pliocene carbonate platform development on the Marion Plateau illustrating the lowstand nature of the initial MP3 phase. Proposed drilling sites are marked on E.

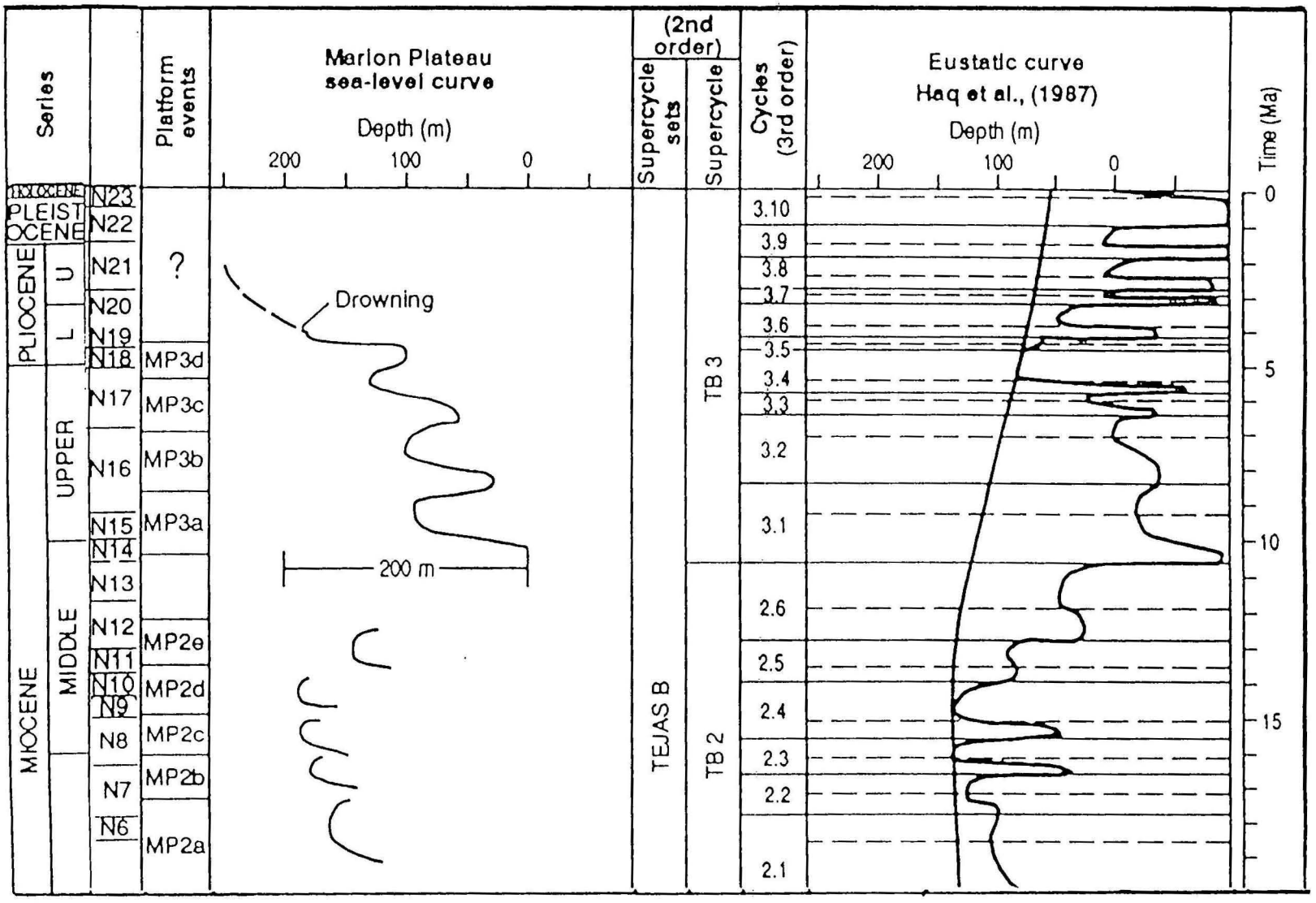

Figure 3 Marion Plateau sealevel events vs age compared to those from Haq et al., 1987.

Site 815). The sealevel curve for the Late Miocene is shown with four cycles (MP3a-MP3d), based on the number of growth phases recognized within both MP3 and other platforms on the northern margin of the plateau (Pigram et al., 1993). MP3d corresponds to the last phase of platform growth, and records a rapid relative rise in the early Pliocene that led to the drowning of most of the plateau.

The MP2 and MP3 platform growth phases preserve the critical relationship that records the amplitude of the Miocene eustatic sealevel fall. The MP2 platform formed as a series of transgressive and highstand system tracts, whereas MP3 began to form during the following second-order lowstand i.e., the initial shallow-water phase of MP3 was deposited on the bathyal outer slope sediments of MP2. The MP3 phase subsequently evolved into a series of highstand systems tracts, but remained structurally lower than the top of MP2 for most of its history (Fig. 2). It is this highstand-lowstand relationship between the MP2 and MP3 phases of platform development that records the major global fall in sealevel during the Late Middle to Late Miocene. This approximately 200m offset between the MP2d and MP3a events (Pigram et al., 1992) is of similar magnitude to the middle to early late Miocene eustatic fall in sealevel recorded elsewhere (e.g. Haq et al., 1987).

In order for the top of the older platform (MP2) and the site of formation for the younger platform (MP3) to be an accurate measure of the Miocene (N14-N12) sea level fall, there needs to be negligible differential subsidence between the two sites. As the Marion Plateau is a planated surface, the depths to basement contours can be considered as isosubsidence lines (Fig. 4). The maximum subsidence on the plateau is to the north and east, and a hypothetical northwest-trending hinge line for this subsidence is located beneath the Great Barrier Reef shelf. The proposed drillsites are located essentially strike parallel to the hinge line. There is no evidence for a structural zone or a significant basement gradient between the proposed sites, providing support for the argument that the sites have undergone essentially identical subsidence histories.

The issue of potential tectonic influence on the sea level curve of the Marion Plateau was examined by Liu et al. (in press), who used SEDPAK to examine the relative influence of a range of factors on the development of sedimentary geometries on the Marion Plateau. SEDPAK is a 2D simulation program that

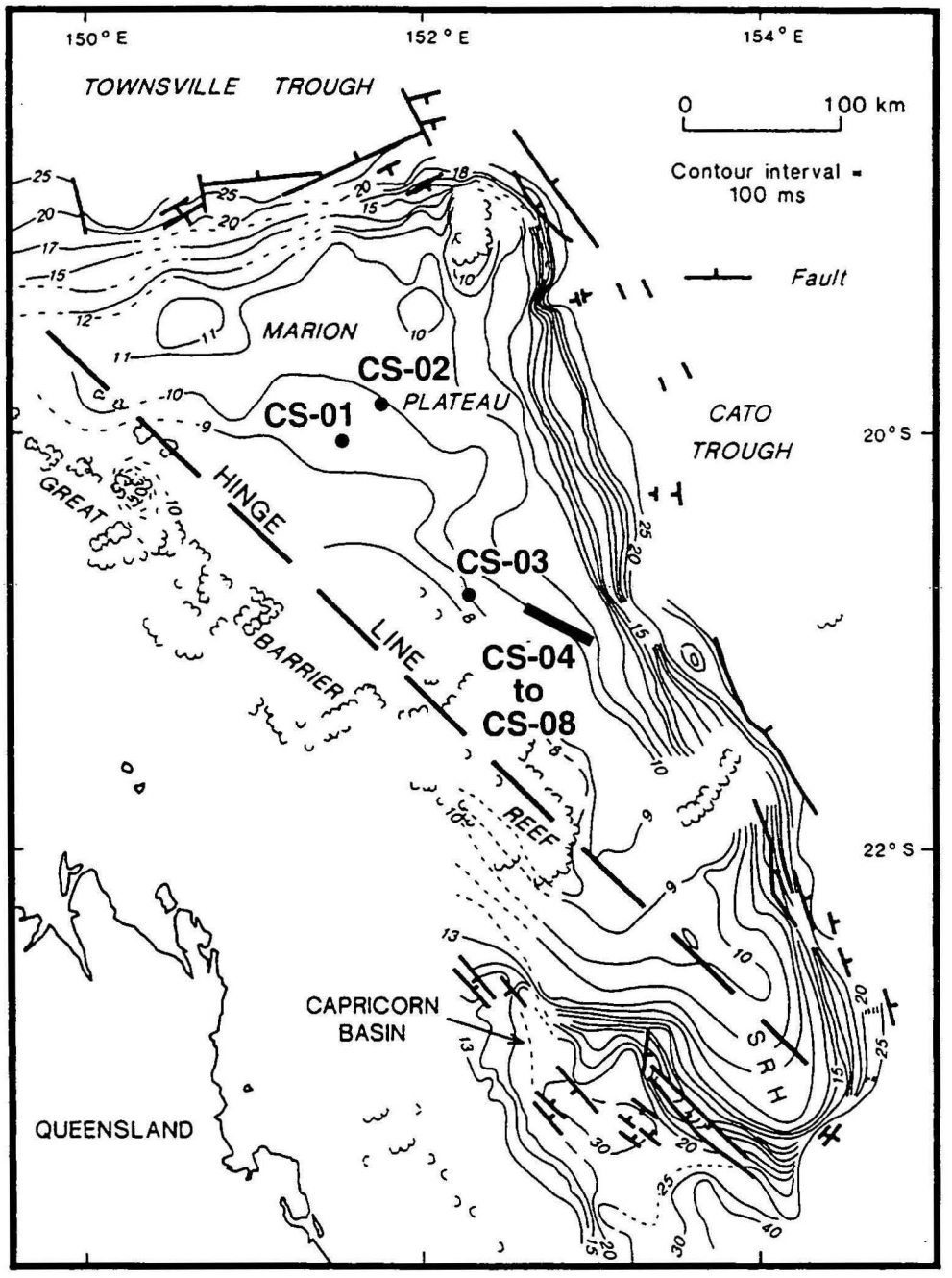

Figure 4. Structure contour map for basement of the Marion Plateau. Contours are effectively isosubsidence lines for total subsidence of basement and show that the hypothetical hinge line for this subsidence is located beneath the adjacent shelf and is oriented along a northwest-southeast axis. Locations of proposed drillsites are shown. Note that the sites are generally strike parallel to the flexural axis and have undergone the same total subsidence (after Pigram et al., 1992).

forward-models the sedimentary fill of basins through time, using linear differential equations to represent geological assumptions. The program simulates the development of sedimentary basins in two dimensions by considering principally four major geological processes: eustatic sea level, tectonic movement, sediment accumulation, and the initial and evolving basin geometry. The carbonate algorithm within SEDPAK mimics the growth of reefs and platforms as it happens in nature and has the capacity to simulate various scenarios of carbonate deposition with the fluctuations of relative sea level and carbonate production rates. This modeling study showed that the distribution and geometry of platforms in the Miocene could only be reproduced in a very slowly subsiding regime, with a mid Miocene second order sealevel fall of around 200m. The introduction of tectonic influences during the Miocene into the models did not allow the geometric relationship between MP2 and MP3 to be reproduced.

The amplitude of sea level falls will tend to be underestimated by the proposed drilling on the Marion Plateau, since sea level and subsidence are operating in the same direction. Therefore, subsidence which may not be accounted for in the present geohistory model for the Marion Plateau (constructed using Leg 133 data and extensive seismic data) will not act to increase the apparent magnitude of sea level change. Attempts to measure amplitudes during times of sea level rise will always overestimate changes because sea level and subsidence are operating in opposite directions.

Calibration of eustatic sea level variations can only be realistically estimated on slowly-subsiding, structurally simple margins where an accurate subsidence history can be established, and where sites of equal subsidence, that have both the highstand and the lowstand history preserved, can be located. The advantage of such areas is that although sea level is following the subsidence substrate during the sea level fall, the original starting point is self-correcting, because it subsides by the same amount. The Marion Plateau fulfills the above criteria and therefore, the drillsites we have proposed will provide an excellent means to determine eustatic sea level fluctuations in the Pacific.

1.2. Fluid flow through the Queensland Plateau

1.2.1. Fluid flow: Objectives

Fluid movement is a critical component of elemental geochemical cycles due to the uptake and removal of various elements during diagenetic alteration of sediments, combined with other reactions occurring in interstitial waters. Investigations of fluid flow have been highlighted as a critical element of ODP's Long Range Plan, in recognition of the global importance of this process.

A major objective of this proposal is to integrate the understanding of eustatic sea level variations and fluid flow within an isolated oceanic carbonate plateau (Queensland Plateau) and a carbonate plateau adjacent to a continental margin (Marion Plateau). We predict that the different physiographic locations of these two plateaus will have resulted in different structural controls on fluid flow. In addition, tropical to sub-tropical carbonate sediments have a high diagenetic potential due to the presence of metastable carbonate minerals, and fluid circulation within carbonate platforms is a critical control on the physical and chemical alteration of the sediments. The different sediment types on the Queensland (pure carbonate) and Marion (mixed carbonate/siliciclastic) Plateaus provide an excellent opportunity to compare the geochemical and diagenetic effects of fluid movement in different sedimentary environments.

The primary fluid flow objectives are:

- To determine the factors controlling fluid flow and the rates at which it is occurring within the Queensland and Marion Plateaus;
- To document the importance of sea level variations on fluid flow within the carbonate platforms;
- To compare fluid flow processes within the different sedimentological and depositional environments of the Queensland (isolated oceanic plateau) and Marion (continental margin plateau) plateaus;
- To determine the importance of fluid flow in relation to the extensive diagenesis which has occurred within the mixed carbonate/siliciclastic system of the Marion Plateau and the pure carbonate system of the Queensland Plateau;
- To infer fluid flow pathways within the Queensland and Marion Plateaus;
- To determine the role of sediment physical properties as controls on fluid movement.

1.2.2. Fluid flow: Rationale

The mechanisms, rates, and distributions of fluid transport through carbonate platforms and reef structures are critical to the understanding of diagenetic processes (Buddemeier and Oberdorfer, 1986) and elemental geochemical cycling. Fluids have the ability to chemically alter the mineralogic composition of sediment by converting metastable minerals such as high Mg-calcite and aragonite to more stable low Mg-calcite and dolomite (Mullins et al., 1984; Simms, 1984). Alteration of carbonate sediments to dolomite has been significant in both the Bahamas carbonate platform (Varenkamp et al., 1991; Swart et al., in press) and those off northeast Australia (McKenzie et al., 1993; Davies, McKenzie, and Palmer-Julson, 1991).

The Queensland Plateau is one of very few areas of carbonate sedimentation where fluid flow has been conclusively shown to be occurring, as indicated by $^{87}Sr/^{86}Sr$ data and the Sr composition of interstitial waters at several Leg 133 sites (Elderfield et al., 1993). In addition, $^{87}Sr/^{86}Sr$ data from Leg 133 carbonate sediments off northeast Australia have indicated that the sediments were dolomitized by multi-generational fluids flowing through the Queensland and Marion Plateaus, and that the age of dolomitization events correspond well with major increases in eustatic sea level (McKenzie et al., 1993).

Fluid flow is also significant in that it can alter the sedimentary structure, permeability, and porosity of a sediment deposit. This has important effects on flow pathways and reservoir potential and therefore is of critical interest to the petroleum industry.

Although the existence of fluid flow has been described in tropical carbonate platforms such as the Queensland Plateau (Elderfield et al., 1993) and the Great Bahama Bank (Melim et al., 1994; Eberli, Swart, Malone et al., 1996), the mechanisms causing this flow are neither well documented nor understood. Numerous theories have been put forward to explain fluid flow through carbonate platforms (Whitaker and Smart, 1990):

- Variations in hydraulic head across a carbonate platform: hydraulic head differences can be caused by tides, waves, or ocean currents. Generally, these processes would be significant only on shallow platforms.

- Variations in fluid density between waters within and around the carbonate platform:
  - Buoyant circulation - during banktop emergence, the fresh meteoric lens will mix with underlying seawater. These mixed waters then flow seaward which necessitates an inflow of saline water at depth.
  - Reflux - on a shallow carbonate bank, high rates of evaporation on the platform surface result in very dense water, which can then flow into the platform and displace less dense water.

  As with variations in hydraulic head, variations in fluid density are generally believed to only be significant on shallow platforms.
- Fluid flow resulting from geothermal heat flux (Kohout Convection): when the fluids surrounding a carbonate platform are cooler than those heated by geothermal heat fluxes within the platform, the temperature difference may be significant enough to generate thermal convection. In this scenario, cold waters are drawn into the platform at depth and then heated. This heating lowers the fluid density, and the waters rise and discharge along the platform margin.

It is possible that, during different time intervals since the early Miocene many or all of these processes could have occurred within the Queensland and Marion Plateaus either alone, or in conjunction with each other. The most significant of these mechanisms are likely to be flow resulting from variations in hydraulic head during times that the plateau surfaces were shallow (thus responding to sea level variations), and geothermal flow (Kohout Convection).

Recent modeling using seismic data, together with permeability and porosity data from cores on the Great Bahama Bank, show that geothermal convection is the most significant mechanism responsible for fluid movement in such platforms (Swart et al., in press). In addition, these modeling results predict fluid recharge along the platform margins, and therefore a net movement of water inward towards the platform center. This modeling was supported by data collected on Leg 166, which drilled the flanks of Great Bahama Bank. Using a combination of geochemical and geothermal measurements, Leg 166 data showed that there is an a upper zone in the sediments in which active advection of bottom seawater was taking place. A closely spaced transect of holes near the margin of the Great

Bahama Bank platform revealed that this water was penetrating into the platform (Swart et al., in press).

We propose to investigate fluid flow on the Queensland Plateau by drilling a transect of two holes to the southeast down the southern slope of the Queensland plateau. In addition, we will investigate fluid flow at the eight sites on the Marion Plateau sea level transect. The proposed techniques and drilling/sampling strategy are outlined in Section 6.3.

1.3. Paleoceanography of the Coral Sea

1.3.1. Paleoceanography: Objectives

Specific paleoceanographic objectives of this proposal are:

- To describe variations in surface and intermediate water circulation occurring since the Oligocene in the Coral Sea, particularly with respect to restriction of western Pacific circulation resulting from northward movement of the Indo-Australian Plate;
- To compare climatic variations seen in the western Coral Sea to sea level and fluid flow changes in order to determine whether there are causal relationships between these processes;
- To understand the development and variability of the western Pacific warm water pool since the Miocene.

1.3.2. Paleoceanography: Rationale

We propose the drilling of a sediment drift on the eastern Queensland Plateau in order to investigate paleoceanographic variations in the Coral Sea, and to correlate these variations with changes in sea level and fluid flow investigated as the main aims of this proposal. The site proposed will also add to the existing latitudinal transect in the western Pacific, extending from the Southern Ocean to the Ontong Java Plateau.

- Variations in circulation patterns with northward movement of the Australian Plate

Circulation patterns in the western Pacific were modified both by the movement of continental fragments resulting from local rifting events, and also by the northward movement of the Indo-Australian Plate and its collision with the

Asian Plate. The constriction of surface water flow caused by this collision significantly changed the pattern of circulation in the western Pacific.

• Changes in climate resulting from plate motion and global climate change -

Northward movement of the Indo-Australian caused significant variations in climate due to movement across climatic boundaries. These changes, in addition to global climatic variations, had dramatic influences on the depositional environments in the Coral Sea which today are dominated by tropical carbonates. The site drilled will help to describe these variations.

• Development of the western Pacific warm water pool - The warmest waters in the ocean can be found in the western Pacific. High sea surface temperatures, along with a high influx of heat to the surface waters and substantial freshwater gain, have significant effects on regional and global climate and circulation.

The Indonesian warm pool developed due to closure of the Indonesian seaway from the middle Miocene, resulting in a "build-up" of water in the western Equatorial Pacific that was unable to be entirely removed due to the weak poleward currents in the region. It is unclear how and at what rate the warm pool expanded in the Neogene. Data from Leg 133 show that during the Quaternary, SST's increased from approximately 22°-23°C near 0.5 Ma to modern temperatures of 26-28°C (Isern et al., 1996; Peerdeman et al., 1993). With the small spatial distribution of Leg 133 sites, it is unclear whether this warming was connected to changes seen in the large Indonesian warm pool north of New Guinea, or whether the warming was a local change seen in the westernmost Coral Sea.

The proposed Coral Sea site has a wider spatial distribution, samples more open ocean conditions than the Leg 133 sites, and is in an environment with a lower diagenetic potential due to the lack of reefal detritus. Accordingly, the site proposed here has the potential to refine our understanding of the processess and history of this important global cimatic element.

2. GEOLOGIC BACKGROUND

2.1. Tectonics of northeast Australia and the Coral Sea

Cretaceous rifting in the Coral Sea basin created numerous continental fragments which are now capped by carbonate platforms (Fig. 1). Rifting in the Coral Sea was an extension of late Cretaceous (80 Ma) seafloor spreading in the Tasman Basin, which extended to the north to form the Cato Trough and the Coral Sea Basin by 65 Ma (Fig. 5) (Weissel and Hayes, 1971; Weissel, 1977; Hayes, 1973; Shaw, 1978). Spreading is believed to have ceased along the length of the system by the earliest Eocene (56 Ma). Thus, the main physical elements of the western Coral Sea were likely to have been in place in the early Tertiary (Davies et al., 1989). Although the exact structural style and development history of the rift system is still not completely understood, it is clear that rifting controlled the gross architecture of the margin in addition to the form of the high-standing structural elements on which the numerous carbonate platforms in the area are located.

The tectonic histories of the Marion and Queensland Plateaus are well constrained by Leg 133 drillholes and extensive multi-channel seismic data. These data show that once active spreading ceased in this area, the tectonic regimes of the plateaus were controlled by simple, gradual subsidence over time. This conclusion is supported by recent modeling results from Liu et al. (in press), which show that the only way to reproduce the distribution and geometry of the carbonate platforms on the Marion Plateau is by very slow and gradual subsidence.

2.2. Stratigraphy of the Queensland and Marion Plateaus: evidence from prior drilling

Stratigraphies for the Queensland and Marion Plateaus were obtained during DSDP Leg 21 and ODP Leg 133 (Fig. 6), and both of these plateaus have been extensively surveyed with seismic data (Fig. 7). The available drillcores have allowed the general description of the depositional histories for these two plateaus. Initiation of shallow marine carbonate sedimentation on the central Queensland Plateau began during the late Eocene or early Oligocene, as the sea transgressed across the metasedimentary basement of the plateau (Davies, McKenzie, Palmer-Julson, et al., 1991). Sedimentary facies and correlation to seismic profiles indicate that tropical reef development was initiated on the

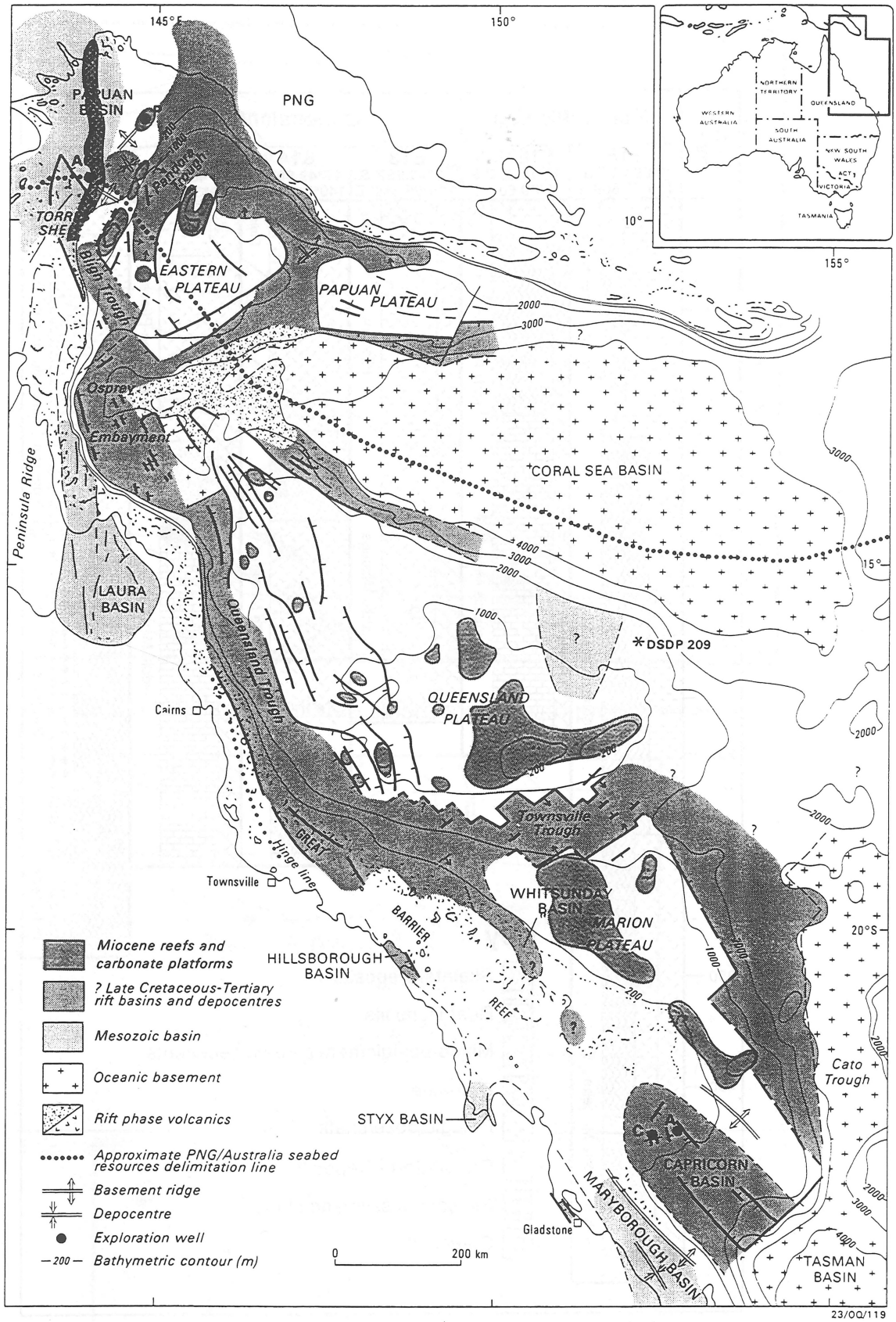

Figure 5 Map showing the major structural features of the Coral Sea

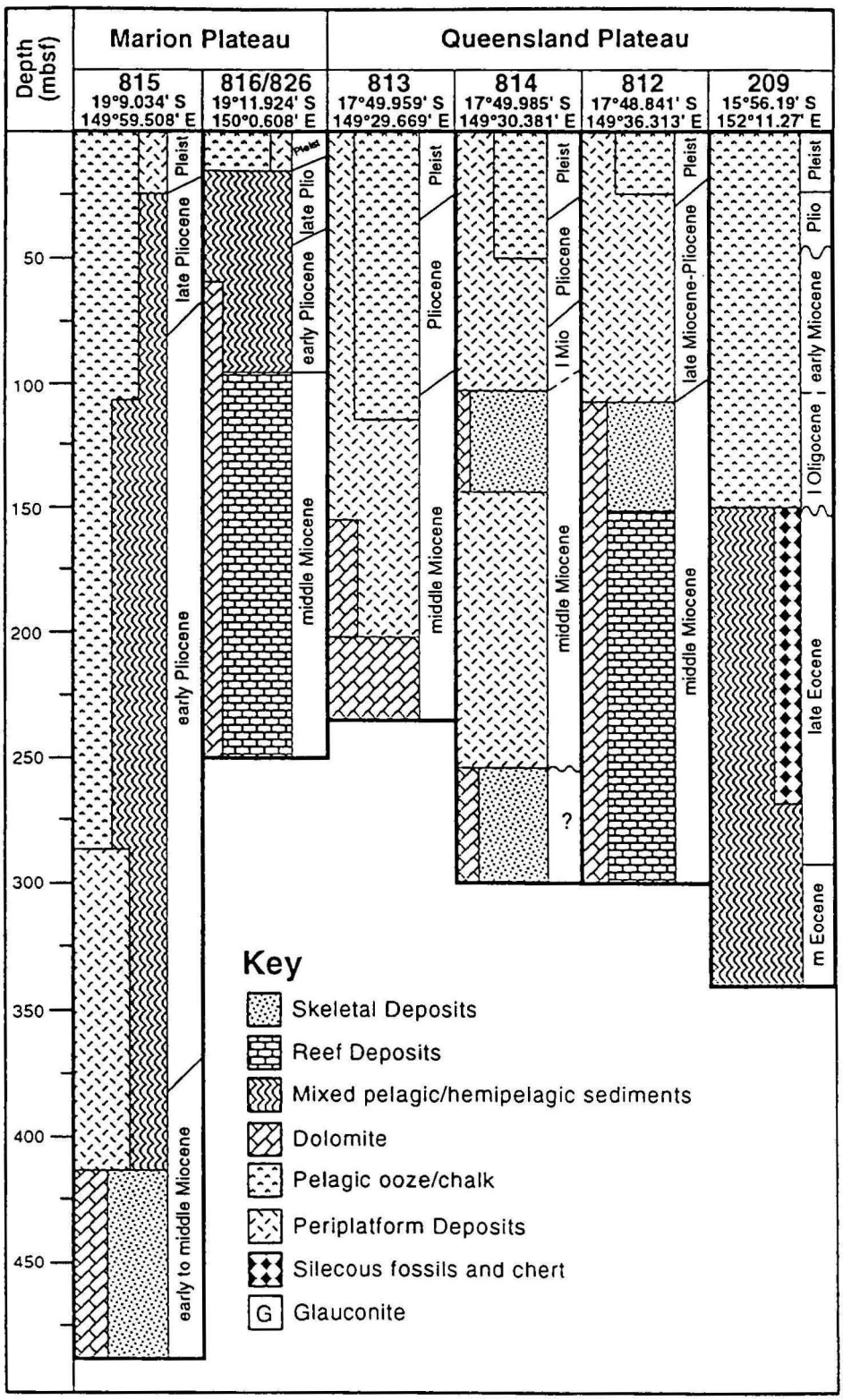

Figure 6 Stratigraphic summary of sites near proposed drilling areas. All sites were drilled during Le133 except for Site 209 which was drilled during DSDP Leg 21.

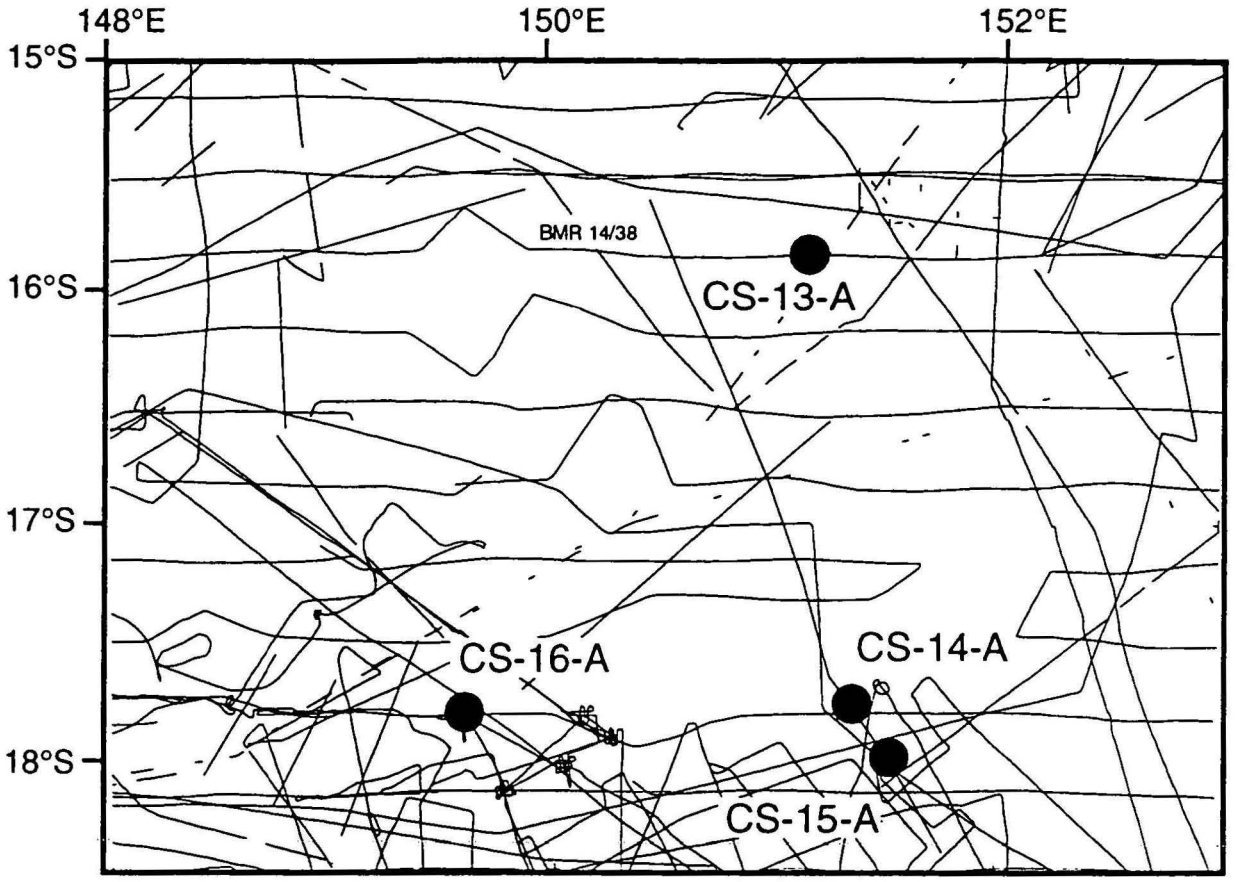

Figure 7a Navigation tracks of available seismic data with proposed sites

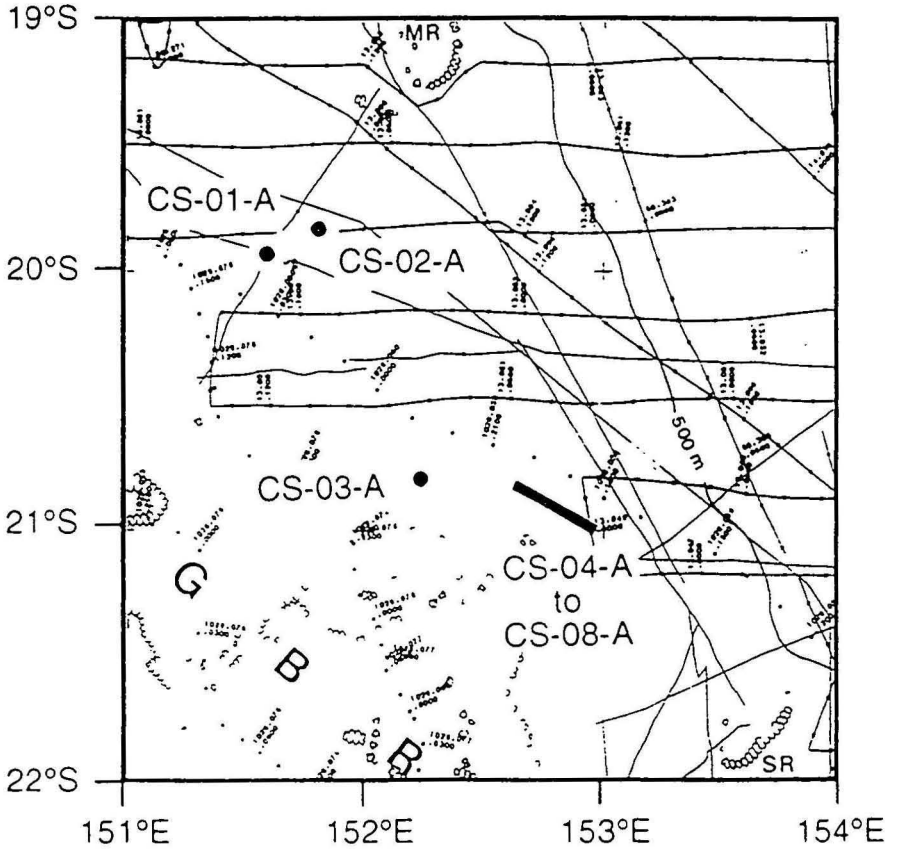

Figure 7b Track map of the Marion Plateau region showing pre-1987

Queensland Plateau in the early Miocene and, by the middle Miocene, there was extensive reef growth on both the Queensland and Marion Plateaus (Davies, McKenzie, Palmer-Julson et al., 1991). In the late middle Miocene, carbonate bank productivity rapidly diminished on both the Queensland and Marion Plateaus, as shown by a diminished fine-grained, bank-derived component in slope sediments. On the Marion Plateau, the decline was the result of subaerial exposure resulting from a sealevel regression. A subsidence pulse prior to this regression prevented the Queensland Plateau from being exposed, and evidence from Leg 133 shows that sea surface temperature changes were also a critical control on the diminished carbonate sedimentation.

During the transition from the late Miocene to early Pliocene, sedimentation rates continued to decrease in the margin and slope sediments of the Queensland Plateau, and condensed sequences developed on shallower areas of the plateau. The ratio of pelagic to bank-derived carbonate in the slope sediments increased at this time, indicating continued decline of shallow carbonate bank productivity. Increased slumping and debris flows into the deeper waters of the Queensland Trough during the Miocene/Pliocene transition record the release of unstable sediments from nearby slopes during rearrangements of shorelines resulting from sealevel variations (Betzler et al., 1995).

Reef growth on the Queensland Plateau did not reappear until the late Pliocene but, by this time, a majority of the plateau surface had subsided below the photic zone and reef growth was restricted to a few isolated locations on the platform top. Renewed reefal development on the Marion Plateau was even more limited, as increased terrigenous input from the Australian continental margin in the late Neogene produced increased turbidity in the water column, preventing sufficient coral growth to re-establish reefs.

The sedimentary history of the eastern margin of the Queensland Plateau is only known from DSDP Site 209, which had excellent preservation but poor recovery due to rotary drilling. Site 209 recovered a condensed section of Eocene to recent pelagic sedimentation with increased amounts of terrigenous detritus in the

Eocene (Fig. 6). A lengthy hiatus is present from the late Eocene to the late Oligocene (Burns, Andrews, et al., 1973).

3. EXISTING DATA

3.1. Seismic data of the Marion and Queensland Plateaus

In the early 1970's, poor to moderate quality 6-channel sparker data was collected by the Australian Bureau of Mineral Resources (now AGSO) continental margin survey. In the 1970's and early 1980's, higher quality multi-channel airgun data were collected by the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), various exploration companies, and the Bureau of Mineral Resources. In addition to these data sets, there are also high-resolution watergun data for Leg 133 site surveys collected by the Bureau of Mineral Resources on both the Queensland and Marion Plateaus.

3.2. Previous ODP/DSDP Sites in the Coral Sea

There have been 18 previous sites drilled in the Coral Sea (Fig. 1). The stratigraphy for some of these holes has been summarized in section 2.3 (Fig. 6). Fifteen sites were drilled in two transects in the far western Coral Sea Basin during Leg 133 (Sites 811-826), primarily to study the evolution of the carbonate platforms off northeast Australia. The two sites drilled in the deep Coral Sea Basin (Sites 210 and 287) were drilled to study the age, history and biostratigraphy of the Coral Sea. Site 209 on the eastern Queensland Plateau was drilled during Leg 21 to examine the age and structural history of the Queensland Plateau.

4. TECHNICAL AND SAFETY CONSIDERATIONS

4.1. Safety issues

Previous drilling during ODP Leg 133 and DSDP Leg 21 have demonstrated that there are no significant safety concerns for drilling on either the Queensland or Marion Plateaus. The seafloor depth range for the sites is 293-975 m. Seismic data show no evidence that sites overlie closures.

4.2. Drilling Technology

The completion of the drilling proposed here will require technology currently available (APC, XCB, and RCB). It is expected that the sediments drilled at the sites on the Queensland Plateau will generally be unindurated pelagic and periplatform oozes. The presence of variably-cemented carbonate horizons on some of the Marion Plateau sites will make it beneficial to have the MDCB available during drilling but it will not be essential.

4.3. Site Surveys

A proposal for shiptime to complete site surveys has been submitted to the Science Operator of the ORV Franklin, one of Australia'a primary scientific research vessels. If the proposal for shiptime is successful, we anticipate that the site surveys can be completed in January 1999. Prior to the cruise we will liase with SSP to ensure that we collect all necessary site survey.

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6. PROPOSED DRILL SITES

6.1. Drilling Strategy for Sealevel Objectives

The Marion plateau basement is overlain by a Miocene to Holocene carbonate platform comprised of several shallow-water accretion phases separated by unconformities (Fig. 2). The oldest and most extensive shallow-water phase (MP2) occupies the northern part of the plateau and is of early (?) to middle Miocene age (N7? to N10-12) (Chaproniere and Pigram, 1993). Two Leg 133 sites drilled on the Marion Plateau intersected the top of the MP2 platform (Davies, McKenzie and Palmer-Julson, et al., 1991). The late Miocene (N16? to N17) second phase of platform development (MP3) is confined to the eastern side of the plateau (Fig. 2). The MP3 phase has been sampled by dredging along the northern edge of the southern platform, and consists of latest Miocene age rhodolith-bearing wackestone.

The establishment of a sealevel curve for the Miocene in the Coral Sea region is critically dependent on determining the facies and age of each of the MP2 and MP3 platforms. Typically, precise dating of warm shallow water carbonate platforms is not possible due to the broad stratigraphic range of larger foraminifers and diagenetic alteration of the sediments. Therefore, the drilling strategy described here involves paired drillholes chosen so that one is located within predicted shallow water facies, and a second is located downslope to obtain correlative facies in which planktonic forms are preserved for high resolution dating.

To accomplish the sealevel objectives, eight sites have been chosen following the strategy outlined above. All sites are to be drilled to basement and form a transect from a position within the shallow facies of MP2, across the platform edge and down slope to MP3. Several sites between the two shallow phases of platform facies are designed to establish whether lowstand signals can be detected in slope sediments. If such signals can be seen, it may be possible to establish rates as well as amplitudes of sealevel fluctuation. All of the sites outlined here are necessary to achieve the sealevel (and fluid flow) objectives outlined in this proposal.

Site CS-01-A: This site is positioned near the eastern edge of the early to middle Miocene MP2 platform in order to intersect all four platform phases of MP2.

The following objectives will addressed at Site CS-01-A:

- to determine the age of each phase of platform development, particularly the initial phase of MP2 platform;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the total thickness of MP2;
- to determine the age of initial marine transgression;
- to determine the age and nature of the basement.

Site CS-02-A: This site is positioned near the eastern edge of the early to middle Miocene MP2 platform on the inner slope facies to intersect the proximal slope facies of all four platform phases of MP2. The site presents the best opportunity for the development of a high quality MP2 chronostratigraphy.

The following objectives will addressed at Site CS-02-A:

- to determine the age and facies of each phase of platform development, particularly the initial phase of MP2 platform;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the age of initial marine transgression;
- to determine the age and nature of the basement.

Site CS-03-A: This site is located to intersect the distal slope facies of both the MP2 and MP3 platforms. Site CS-02-A will enable the identification of low stand sealevel signals and provide the opportunity to measure rates of sealevel fluctuations in an environment where there should be a complete sedimentary record for the Miocene.

The following objectives will addressed at Site CS-03-A:

- to determine the complete age range for the MP2 and MP3 platforms. The record here should be complete whereas sites CS-01-A & CS-02-A will have gaps and unconformities;
- to determine the age of initial marine transgression;

- to determine the age and nature of the basement.

Site CS-04-A: This site intersects the distal slope facies of both the MP2 and MP3 platforms, and is approximately mid way between the southern edge of the shallow water phase of MP2 and the western edge of shallow water phase of MP3. The site is situated to identify sealevel lowstand signals and to provide the opportunity to measure rates of change in sealevel fluctuation in an environment where there should be a complete sedimentary record for the Miocene.

The following objectives will addressed at Site CS-04-A:

- to determine the complete age range for the MP2 and MP3 platforms. The record here should be complete whereas the record at sites CS-01-A & CS-02-A will have gaps and lost section due to unconformities.;
- to determine the age of initial marine transgression;
- to determine the age and nature of the basement.

Site CS-05-A: This site is located west of MP3 to intersect the distal slope facies of both MP3 and the condensed section equivalent to the MP3 platforms. Site CS-05-A will enable the identification of low stand sealevel signals and provide the opportunity to measure rates of sealevel fluctuations in an environment where there should be a complete sedimentary record for the Miocene. This site is approximately mid way between the southern edge of the shallow water phase of MP2 and the western edge of shallow water phase of MP3.

The following objectives will addressed at Site CS-05-A:

- to determine the age of each phase of platform development, particularly the initial phase of MP3 platform;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the age of the initial phase of MP3;
- to determine the age and nature of the condensed section equivalent to MP2;
- to determine the age and nature of the basement.

Site CS-06-A: This site is located near the western edge of the late Miocene MP3 platform and will intersect all four platform phases of MP3.

The following objectives will addressed at Site CS-06-A:

- to determine the age and facies of each phase of platform development, particularly the initial phase of MP3 platform;
- to determine the palaeowater depth of the initial phase of MP3;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the total thickness of MP3;
- to determine the age and nature of the condensed section equivalent to MP2;
- to determine the age and nature of the basement.

Site CS-07-A: This site is located near the eastern edge of the late Miocene MP3 platform to intersect all four platform phases of MP2.

The following objectives will addressed at Site CS-07-A:

- to determine the age and facies of each phase of platform development; particularly the initial phase of MP3 platform;
- to determine the palaeowater depth of the initial phase of MP3;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the total thickness of MP3;
- to determine the age and nature of the condensed section equivalent to MP2;
- to determine the age and nature of the basement.

Site CS-08-A: This site is located east of MP3 to intersect the proximal slope facies of MP3 and the condensed section equivalent to the MP2 platforms.

The following objectives will addressed at Site CS-08-A:

- to determine the age of each phase of platform development, particularly the initial phase of MP3 platform;
- to determine the age and duration of the unconformities separating each platform phase;
- to determine the age and nature of the condensed section equivalent to MP2;
- to determine the age and nature of the basement

6.2. Drilling strategy for fluid flow objectives

Although previous studies have demonstrated the presence of fluid flow within the Queensland Plateau (Leg 133; Elderfield et al., 1993), the information collected did not allow any estimate of the extent of the flow or the driving mechanism. In addition, drilling during Leg 133 did not address the possibility of fluid flow within the Marion Plateau. Evidence from post-cruise investigations has shown that this is likely to be occurring. Therefore, we propose an investigation of fluid flow processes within the mixed carbonate/siliciclastic system of the Marion Plateau and the pure carbonate Queensland Plateau.

Drillsites for fluid flow investigations on the Marion Plateau are the same as those proposed to investigate sea level. This strategy has two advantages:

- It will allow a direct comparison of the influence of sea level change on fluid flow processes and the resulting sedimentary diagenetic variations ;
- It is a higly efficient use of drilltime, as the two main objectives of this proposal will utilize the same sites.

In order to achieve fluid flow objectives, we propose the following approach at each of the fluid flow sites (CS-01 to CS-08; CS-10 to CS-11):

- High resolution heatflow measurements to be measured at each site using the ADARA and WSTP tools at a spacing of one every core over the upper 100 m of the holes.
- High resolution pore fluid geochemistry (one sample every core) on sediment samples to:
  - trace the fluid source, pathway and residence times of fluids within the platforms;
  - determine the relationship between pore fluids and sedimentary diagenesis;
- Petrographic and geochemical analyses of retrieved sediments to:
  - determine the original mineralogy, texture, and composition of the sediments;
  - enable the determination of temporal variations in diagenetic patterns;

In addition to Sites CS-01 to CS-08 discussed above, the following two sites will be drilled in a transect to the southeast off the southern margin of the Queensland

Plateau to study fluid movement, using the methods proposed above. All fluid flow sites have similar aims.

Site CS-10-A: The site is positioned in on the upper slope of the platform south of Tregrosse and Lihou Reefs (Fig. 1).

Site CS-11-A: The site is positioned deeper on the platform slope southeast of CS-10-A on the southern margin of the Queensland Plateau south of Tregrosse and Lihou Reefs (Fig. 1).

An added benefit of the location chosen for the Queensland Plateau drilling transect is that it will allow for a better understanding of the controls on carbonate platform development in the western Coral Sea as the sediments will record variations in reefal shedding in a location near reefs which have most likely been active since the middle Miocene.

6.3. Drilling strategy for paleoceanographic objectives

The single site chosen for paleoceanographic investigations is located on the Queensland Plateau.

Site CS-09-A: This site is positioned on a sediment drift northeast of DSDP Site 209 on the western side of the Plateau (Fig. 8). This thick layer of sediment has presumably resulted from the flow of Antarctic Intermediate Water around the shallower portions of the Plateau. Site 209 sampled the thinner distal part of the drift (Fig. 8), but we propose to drill to the NE where the sequence is approximately 500 m thicker. Sediments recovered from Site 209 are mainly foraminifer and nannofossil oozes (Burns, Andrews, et al., 1973) with excellent microfossil preservation (Isern et al., 1993), as the site is away from areas of reef growth and therefore contains only minor amounts of metastable carbonate. This is essential for ensuring minimal sediment diageneis for paleoceanographic reconstructions.

Queensland Plateau

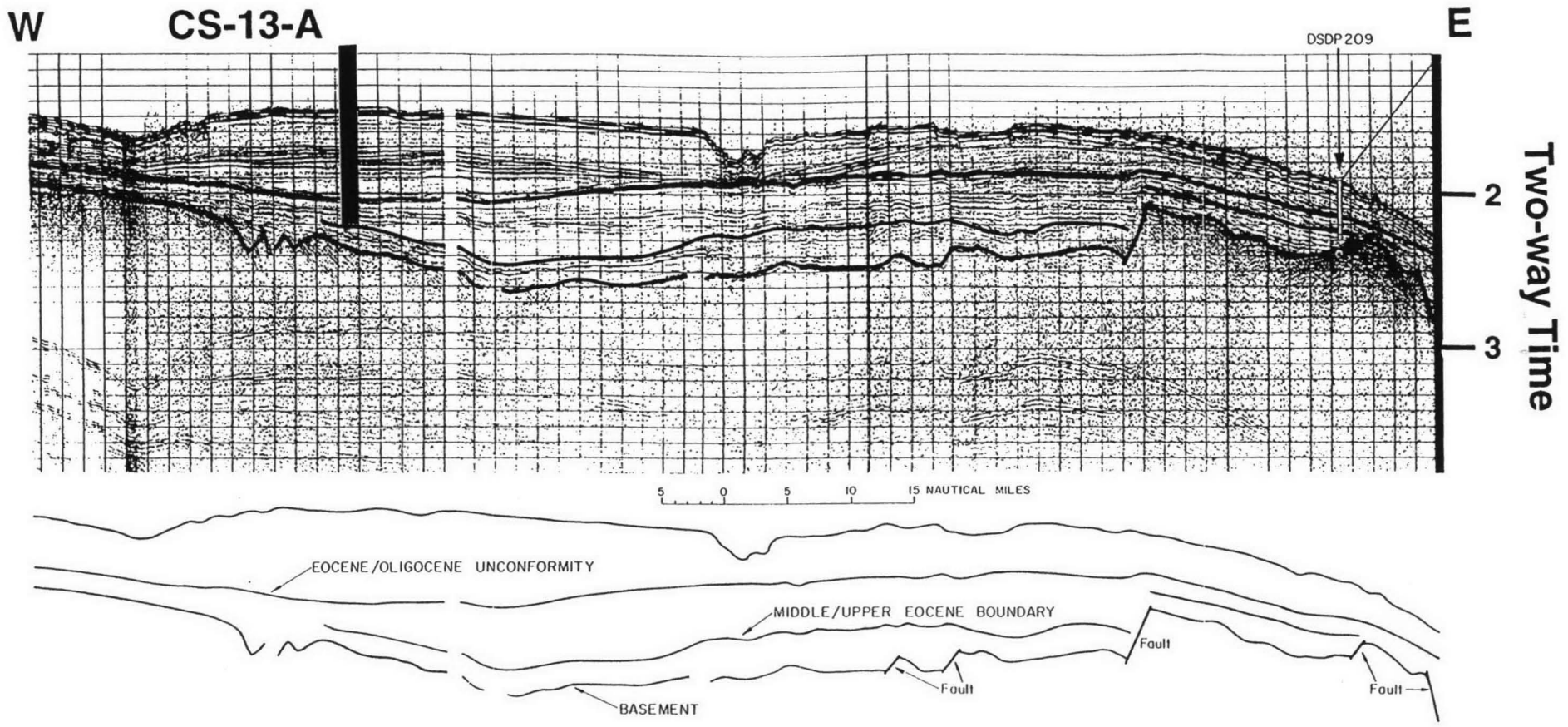

Figure 8 Interpreted BMR seismic line 14/038 showing a west to east line on the Queensland Plateau across a sediment drift to DSDP Site 209. The location of Site CS-13-A is shown.

The following objectives will addressed at Site CS-09-A:

- to determine the variations in surface and intermediate water circulation resulting from northward movement of the Indo-Australian Plate;
- to determine the environmental changes as a result of northward movement of the Indo-Australian Plate;
- to determine the development history of the warm pool in the Coral Sea;
- to continue the DSDP Leg 90 longitudinal transect northward.

Proposal 510-Rev 1

Townsville to Townsville

Site Name	Latitude N Longitude W	Water Depth (m)	Penetr'n (m)	Location	Operations (mbsf)	Transit 10.5 kt (days)	Coring Time (days)	Total (days)
CS-01A	19°55.6 S 151°36.2 E	354	694	Marion Plateau	A: 0-80 APC; 80-180 XCB B: 180-694 RCB Logging 20	1.1	1.1 4.8 0.8	7.8
CS-02A	19°49.8 S 151°54.7 E	363	626	Marion Plateau	A: 0-80 APC; 80-160 XCB B: 160-626 RCB Logging 20	0.1	1.0 3.7 0.8	5.6
CS-03A	20°48.0 S 152°17.7 E	318	600	Marion Plateau	A: 0-150 APC; 150-230 XCB B: 230-600 RCB Logging 20	0.3	1.2 3.1 0.8	5.4
CS-04A	20°55.7 S 152°37.8 E	319	610	Marion Plateau	A: 0-150 APC; 150-240 XCB B: 240-610 RCB Logging 20	0.1	1.3 3.2 0.8	5.4
CS-05A	20°58.1 S 152°44.6 E	309	570	Marion Plateau	A: 0-100 APC; 100-280 XCB B: 280-570 RCB Logging 20	0.0	1.4 2.5 0.8	4.7
CS-06A	20°58.6 S 152°46.1 E	293	720	Marion Plateau	A: 0-10 APC; 10-100 XCB B: 100-710 RCB Logging 20	0.0	0.9 6.1 0.8	7.8
CS-07A	21°03.7 S 153°01.6 E	326	610	Marion Plateau	A: 0-45 APC; 45-100 XCB B: 100-610 RCB Logging 20	0.0	0.8 3.9 0.8	5.5
CS-08A	21°04.3 S 153°03.2 E	326	580	Marion Plateau	A: 0-70 APC; 70-200 XCB B: 200-580 RCB Logging 20	0.0	1.2 3.1 0.8	5.1
CS-09A	15°42.6 S 151°07.5 E	975	660	Queensland Plateau	A: 0-250 APC; 250-660 XCB B: 0-200 APC Logging 12	0.9	2.6 0.8 0.5	4.8
CS-10A	17°46 S 151°28 E	575	350	Queensland Plateau	A: 0-250 APC; 250-350 XCB	0.5	1.6	2.1
CS-11A	17°53 S 151°35 E	700	350	Queensland Plateau	A: 0-250 APC; 250-350 XCB	0.0	1.6	1.6
Transit from CS-11A - port: Townsville						1.3		1.3
					Est. Time=	4.3	52.8	57.2
					Available Time =	5.0	55.0	60.0

Appendix 2: Transit times

GREAT CIRCLE DISTANCE

PROPOSAL	510	Rev 1
Coral Sea		

Yellow cells are for data entry.
Blue cells are calculated answers based on embedded formulas.

Travel Time between coordinate points is based on a speed of:
>>>>> 10.5 KNOTS = nmi/hr <<<<<

	INITIAL POINT		FINAL POINT		MILES	TIME	TIME
	[deg.]	[min.]	[deg.]	[min.]	[nmi]	[hours]	[days]
	Townesville		Site CS-1A				
					[nmi]	[hours]	[days]
LAT	19	16	19	55.6	274.4	26.13	1.09
LONG	146	48	151	36.2			
	Site CS-1A		Site CS-2A				
					[nmi]	[hours]	[days]
LAT	19	55.6	19	49.8	18.3	1.75	0.07
LONG	151	36.2	151	54.7			
	Site CS-2A		Site CS-3A				
					[nmi]	[hours]	[days]
LAT	19	49.8	20	48	62.1	5.91	0.25
LONG	151	54.7	152	17.7			
	Site CS-3A		Site CS-4A				
					[nmi]	[hours]	[days]
LAT	20	48	20	55.7	20.30	1.93	0.08
LONG	152	17.7	152	37.8			
	Site CS-4A		Site CS-5A				
					[nmi]	[hours]	[days]
LAT	20	55.7	20	58.1	6.79	0.65	0.03
LONG	152	37.8	152	44.6			
	Site CS-5A		Site CS-8A				
					[nmi]	[hours]	[days]
LAT	20	58.1	21	4.3	18.44	1.76	0.07
LONG	152	44.6	153	3.2			
	Site CS-8A		Site CS-10A				
					[nmi]	[hours]	[days]
LAT	21	4.3	17	46	217.67	20.73	0.86
LONG	153	3.2	151	28			
	Site CS-10A		Site CS-11A				
					[nmi]	[hours]	[days]
LAT	17	46	17	53	9.7	0.92	0.04
LONG	151	28	151	35			
	Site CS-11A		Site CS-9A				
					[nmi]	[hours]	[days]
LAT	17	53	15	42.6	133.03	12.67	0.53
LONG	151	35	151	7.5			
	Site CS-9A		Townesville				
					[nmi]	[hours]	[days]
LAT	15	42.6	19	16	326.76	31.12	1.30
LONG	151	7.5	146	48			

Total Transit 4.315

Appendix 3: Coring and logging time estimates

CORING TIME ESTIMATES 12-Sep-97 12:41 PM

Yellow cells are for data entry
Blue cells are calculated answers based on embedded formulas.
1) Default values can be changed. Enter "0" to cancel operation.
2) Choose from the several common coring scenarios listed.
3) Refer to the guidelines below for common coring performance ranges.

LEG: Coral Sea
SITE: CS-01A
WATER DEPTH: 326 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	326	3.0			
APC To:	80	3.2	8	0.4	
Orient:		0.9	5	0.17	
Adara Heat flow:		0.9	3	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	180	8.3	10	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		23.3	Hours=	1.0	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:		0.0			
Trip In:		0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:		0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	326	1.5			
Hole C=		1.5	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	326	3.0			
Drill To:	180	2.6			70
Zone 1, RCB To:	550	50.3	39	0.5	12
Zone 2, RCB To:	600	14.1	5	0.6	4.5
Zone 3, RCB To:	694	37.3	10	0.6	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	0	8.1	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	426	3.2			
Hole D=		138.6	Hours=	5.8	Days
SITE (Holes A-D)=		163.4	Hours=	6.8	Days

SITE: CS-02A
WATER DEPTH: 363 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	363	3.1			
APC To:	80	3.2	8	0.4	
Orient:		0.9	5	0.17	
\dara Heat flow:		0.9	3	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	160	6.7	8	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

Hole A= 21.7 Hours= 0.9 Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:		0.0			
Trip In:		0.0			
APC To:		0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			

Hole B= 0.0 Hours= 0.0 Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:	0	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	363	1.5			

Hole C= 1.5 Hours= 0.1 Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	363	3.1			
Drill To:	160	2.3			70
Zone 1, RCB To:	550	53.0	41	0.5	12
Zone 2, RCB To:	626	21.7	8	0.6	4.5
Zone 3, RCB To:		0.0	0	0.0	3.0
Zone 4, RCB To:		0.0	0	0.0	2.0
Trip for Bit:		0.0	4	8.4	
ɜt Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	463	3.3			

Hole D= 111.3 Hours= 4.6 Days

SITE (Holes A-D)= 134.6 Hours= 5.6 Days

SITE: CS-03A
WATER DEPTH: 318 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Survey & Loc Site:		4.0			
Trip In:	318	3.0			
APC To:	150	6.4	15	0.4	
Orient:		2.2	13	0.17	
Adara Heat flow:		1.5	5	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	230	6.7	8	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

Hole A= 26.8 Hours= 1.1 Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	0	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			

Hole B= 0.0 Hours= 0.0 Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	0	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	318	1.5			

Hole C= 1.5 Hours= 0.1 Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	318	3.0			
Drill To:	230	3.3			70
Zone 1, RCB To:	550	43.2	33	0.5	12
Zone 2, RCB To:	600	14.1	5	0.6	4.5
Zone 3, RCB To:	0	0.0	0	0.0	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	4	8.1	
at Hole, Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	418	3.2			

Hole D= 94.8 Hours= 3.9 Days

SITE (Holes A-D)= 123.0 Hours= 5.1 Days

SITE: CS-04A
WATER DEPTH: 319 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Survey & Loc Site:		4.0			
Trip In:	319	3.0			
APC To:	150	6.4	16	0.4	
Orient:		2.2	13	0.17	
Adara Heat flow:		1.5	5	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	240	7.6	9	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		27.6	Hours=	1.2	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	0	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	0	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	319	1.5			
Hole C=		1.5	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	319	3.0			
Drill To:	240	3.4			70
Zone 1, RCB To:	550	41.8	32	0.5	12
Zone 2, RCB To:	610	16.9	8	0.6	4.5
Zone 3, RCB To:		0.0	0	0.0	3.0
Zone 4, RCB To:		0.0	0	0.0	2.0
Trip for Bit:		0.0	0	8.2	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	419	3.2			
Hole D=		96.4	Hours=	4.0	Days
SITE (Holes A-D)=		125.5	Hours=	5.2	Days

SITE: CS-05A
WATER DEPTH: 570 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	570	3.4			
APC To:	100	4.0	10	0.4	
Orient:		1.2	7	0.17	
\dara Heat flow:		0.9	3	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	280	15.5	19	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		32.0	Hours=	1.3	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:	0	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:	570	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	570	1.7			
Hole C=		1.7	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	570	3.4			
Drill To:	280	4.0			70
Zone 1, RCB To:	570	39.2	30	0.5	12
Zone 2, RCB To:		0.0	0	0.0	4.5
Zone 3, RCB To:		0.0	0	0.0	3.0
Zone 4, RCB To:		0.0	0	0.0	2.0
Trip for Bit:		0.0	3	0.0	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	670	3.6			
Hole D=		78.2	Hours=	3.3	Days
SITE (Holes A-D)=		112.0	Hours=	4.7	Days

SITE: CS-06
WATER DEPTH: 720 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	720	3.7			
APC To:	10	0.4	1	0.4	
Orient:		0.3	2	0.17	
\dara Heat flow:		0.0	0	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	100	7.5	9	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		18.3	Hours=	0.8	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	720	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	720	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	720	1.9			
Hole C=		1.9	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	720	3.7			
Drill To:	100	1.4			70
Zone 1, RCB To:	550	61.0	47	0.5	12
Zone 2, RCB To:	600	14.1	5	0.6	4.5
Zone 3, RCB To:	700	39.3	10	0.6	3.0
Zone 4, RCB To:	710	5.6	1	0.6	2.0
Trip for Bit:		9.5	1	9.5	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	820	3.9			
Hole D=		166.6	Hours=	6.9	Days
SITE (Holes A-D)=		186.7	Hours=	7.8	Days

SITE: CS-07A
WATER DEPTH: 326 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Survey & Loc Site:		4.0			
Trip In:	326	3.0			
APC To:	45	2.0	5	0.4	
Orient:		0.3	2	0.17	
Adara Heat flow:		0.6	2	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	100	4.8	6	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		17.8	Hours=	0.7	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	326	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	326	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	326	1.5			
Hole C=		1.5	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	326	3.0			
Drill To:	100	1.4			70
Zone 1, RCB To:	550	61.0	47	0.5	12
Zone 2, RCB To:	610	16.9	6	0.6	4.5
Zone 3, RCB To:		0.0	0	0.0	3.0
Zone 4, RCB To:		0.0	0	0.0	2.0
Trip for Bit:		0.0	4	8.2	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	426	3.2			
Hole D=		113.6	Hours=	4.7	Days
SITE (Holes A-D)=		132.9	Hours=	5.5	Days

SITE: CS-08
WATER DEPTH: 326 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	326	3.0			
APC To:	70	2.8	7	0.4	
Orient:		0.7	4	0.17	
Adara Heat flow:		0.6	2	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	200	11.3	14	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

Hole A= 25.4 Hours= 1.1 Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	326	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			

Hole B= 0.0 Hours= 0.0 Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	326	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	326	1.5			

Hole C= 1.5 Hours= 0.1 Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	326	3.0			
Drill To:	200	2.9			70
Zone 1, RCB To:	550	47.2	36	0.5	12
Zone 2, RCB To:	580	8.5	3	0.6	4.5
Zone 3, RCB To:	0	0.0	0	0.0	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	4	8.1	
at Hole,Drop Bit:		8.0			
Logging:		20.0			
Trip Out to Ship:	426	3.2			

Hole D= 92.7 Hours= 3.9 Days

SITE (Holes A-D)= 119.7 Hours= 5.0 Days

SITE: CS-09A
WATER DEPTH: 975 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	975	4.2			
APC To:	250	10.4	26	0.4	
Orient:		3.9	23	0.17	
Adara Heat flow:		2.7	9	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	660	35.2	43	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

	Hole A=	83.3	Hours=	2.6	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	975	1.0			
Trip In:	2	2.5			
APC To:	200	8.4	21	0.4	
Orient:		3.1	18	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

	Hole B=	15.9	Hours=	0.7	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ove & Spaceout:	975	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	975	2.1			

	Hole C=	2.1	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	975	0.0			
Drill To:	0	0.0			70
Zone 1, RCB To:	0	0.0	0	0.0	12
Zone 2, RCB To:	0	0.0	0	0.0	4.5
Zone 3, RCB To:	0	0.0	0	0.0	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	-1	0.0	
at Hole,Drop Bit:		0.0			
Logging:		12.0			
Trip Out to Ship:	1075	0.0			

	Hole D=	12.0	Hours=	0.5	Days

	SITE (Holes A-D)=	93.3	Hours=	3.9	Days

SITE: CS-10A
WATER DEPTH: 575 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Survey & Loc Site:		4.0			
Trip In:	575	3.6			
APC To:	250	10.4	26	0.4	
Orient:		3.9	23	0.17	
Adara Heat flow:		2.7	9	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	350	8.3	10	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			
Hole A=		35.8	Hours=	1.5	Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	575	0.0			
Trip In:	0	0.0			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			
Hole B=		0.0	Hours=	0.0	Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Move & Spaceout:	575	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	575	1.7			
Hole C=		1.7	Hours=	0.1	Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	575	0.0			
Drill To:	0	0.0			70
Zone 1, RCB To:	0	0.0	0	0.0	12
Zone 2, RCB To:	0	0.0	0	0.0	4.5
Zone 3, RCB To:	0	0.0	0	0.0	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	1	0.0	
at Hole,Drop Bit:		0.0			
Logging:		0.0			
Trip Out to Ship:	675	0.0			
Hole D=		0.0	Hours=	0.0	Days
SITE (Holes A-D)=		37.5	Hours=	1.6	Days

SITE: CS-11A
WATER DEPTH: 700 Meters

APC/XCB CORE 3 HOLES, NO LOGS

Hole A

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ırvey & Loc Site:		4.0			
Trip In:	700	3.7			
APC To:	250	10.4	26	0.4	
Orient:		3.9	23	0.17	
\dara Heat flow:		2.7	9	0.3	
WSTP:		2.0	2	1.0	
Zone 1, XCB To:	350	8.3	10	0.5	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		1.0			

Hole A= 36.0 Hours= 1.5 Days

Hole B

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:	700	0.0			
Trip In:	2	2.5			
APC To:	0	0.0	0	0.0	
Orient:		0.5	3	0.17	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
up to Sea Floor:		0.0			

Hole B= 1.9 Hours= 0.1 Days

Hole C

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
ɔve & Spaceout:	700	0.0			
APC To:	0	0.0	0	0.0	
Zone 1, XCB To:	0	0.0	0	0.0	30.0
Zone 2, XCB To:	0	0.0	0	0.0	20.0
Treat Hole:		0.0			
Logging:		0.0			
Trip out to Ship:	700	1.8			

Hole C= 1.8 Hours= 0.1 Days

DRILL TO APC/XCB REFUSAL, RCB CORE & LOG

Hole D

ACTION	PENETRATION (meters)	TIME (hours)	CORES (number)	TIME/RT (hours)	PEN RATE (meter/hr)
Trip In:	700	0.0			
Drill To:	0	0.0			70
Zone 1, RCB To:	0	0.0	0	0.0	12
Zone 2, RCB To:	0	0.0	0	0.0	4.5
Zone 3, RCB To:	0	0.0	0	0.0	3.0
Zone 4, RCB To:	0	0.0	0	0.0	2.0
Trip for Bit:		0.0	-1	0.0	
ıt Hole,Drop Bit:		0.0			
Logging:		0.0			
Trip Out to Ship:	800	0.0			

Hole D= 0.0 Hours= 0.0 Days

SITE (Holes A-D)= 39.8 Hours= 1.7 Days

Total Drilling 52.8 Days

Appendix 4: Site summary forms

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age of each phase of platform development, particularly the initial phase of MP2 platform; • age and duration of the unconformities separating each platform phase • total thickness of MP2 • age of initial marine transgression; age and nature of the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-01A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 19°	Min: 55.6 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 151°	Min:36.2 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	354

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	0.54 sec TWT; 684 m	10 m
General Lithologies:	60 m ooze, 624 m dolomitized framestone; packstone	?Palaeozoic phyllite and slate
Coring Plan (circle):	1-~~2-3-~~**APC** ~~VPC*~~ **XCB** ~~MDCB* PCS~~ **RCB** ~~Re-entry HRGB~~ ** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 5.9 days	Logging: 20 hrs		Total On-Site: 6.7 days
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)			*What is your Weather Window?* None

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*

Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-01A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/25 @ 256:1440 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samples from nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

*

Proposal #: 510-Rev 1	Site #: CS-01A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 354 m	Sed. Penetration (m): 684 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	1
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information*

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age and facies of each phase of platform development, particularly the initiation of MP2; • age and duration of the unconformities separating each platform phase • age of initial marine transgression • age and nature of the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-02A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 19°	Min: 49.8 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 151°	Min: 54.7 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	363

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	540 msec TWT; 616 m	10 m
General Lithologies:	160 m ooze, wackestone; 372 m wackestone 84 m sandstone, mudstone	?Palaeozoic phyllite and slate
Coring Plan (circle):	**1-~~2-3~~-APC ~~VPC*~~ XCB ~~MDCB* PCS~~ RCB ~~Re-entry HRGB~~** ** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 4.7	Logging: 0.8	Total On-Site: 5.6	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*

Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-02A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/25 @ 256:1100 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samples from nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

*

Proposal #: 510-Rev 1	Site #: CS-02A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 363 m	Sed. Penetration (m): 616 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity		
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	2
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information*

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• complete age range for the MP2 and MP3 platforms. • age of initial marine transgression • age and facies of lowstand deposits • age and nature of the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-03A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 20°	Min: 48.0 S	Jurisdiction:	Australia
Longitude:	Deg: 152°	Min: 17.7 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	318 m

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	590 m	10 m
General Lithologies:	230m ooze, wackestone; 260 m wackestone 100m sandstone, mudstone	?Palaeozoic phyllite and slate
Coring Plan (circle):	1-~~2-3~~-**APC** ~~VPC*~~ **XCB** ~~MDCB* PCS~~ **RCB** ~~Re-entry HRGB~~ ** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray

Estimated days:	Drilling/Coring: 4.3	Logging: 0.8	Total On-Site: 5.1
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*
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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-03-A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:0200 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samples from nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-03A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 318 m	Sed. Penetration (m): 590 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	2
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information*

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• complete age range for the MP2 and MP3 platforms. • age of initial marine transgression • age and facies of lowstand deposits • age and nature of the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-04A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 20°	Min: 55.7 S	Jurisdiction:	Australia
Longitude:	Deg: 152°	Min: 37.8 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	319

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	600 m	10 m
General Lithologies:	240m ooze, wackestone; 360 m wackestone	?Palaeozoic phyllite and slate
Coring Plan (circle):	**1-2-3-APC ~~VPC*~~ XCB ~~MDCB*~~ ~~PCS~~ RCB ~~Re-entry~~ ~~HRGB~~** ** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray

Estimated days:	Drilling/Coring: 4.5	Logging: 0.8	Total On-Site: 5.3
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-04A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:0410 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-04A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 319 m	Sed. Penetration (m): 600 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	1
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information*

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age of each phase of platform development, particularly the initiation of MP3; • age and duration of the unconformities separating each platform phase; • age and nature of the condensed section equivalent to MP2; • age and nature of the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-05A		If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 20°	Min: 58.1 S		Jurisdiction:	Australia
Longitude:	Deg: 152°	Min: 44.6 E		Distance to Land:	
Priority of Site:	Primary: X	Alt:		Water Depth:	309 m

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	530 msecsTWT; 560 m	10 m
General Lithologies:	280 m pelagic ooze; 150 m wackestone, packstone; 100 m wackestone, sandstone	?Palaeozoic phyllite and slate
Coring Plan (circle):	**1-~~2-3-~~APC ~~VPC*~~ XCB ~~MDCB*-PCS~~ RCB ~~Re-entry HRGB~~** ** Systems Currently Under Development*	

Logging	Standard Tools		Special Tools	LWD
Plan:	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 3.9	Logging: 0.8	Total On-Site: 4.7	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*

Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-05A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:0700 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-05A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 309 m	Sed. Penetration (m): 570 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	2
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age and facies of each phase of platform development, particularly the initiation of MP3 • paleowater depth of the initial phase of MP3; and the total thickness of MP3 • age and duration of the unconformities separating each platform phase • age and nature of the condensed section equivalent to MP2 and the basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-06A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 20°	Min: 58.6 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 152°	Min:46.1 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	293

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	560 msec TWT; 710 m	10 m
General Lithologies:	10 m pelagic ooze; 600 m of framestone, packstone, wackestone; 100 m wackestone	?Palaeozoic phyllite and slate
Coring Plan (circle):	1-~~2-3-~~**APC** ~~VPC*~~ **XCB** ~~MDCB* PCS~~ **RCB** ~~Re-entry HRGB~~ ** Systems Currently Under Development*	

Logging	Standard Tools		Special Tools	LWD
Plan:	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 7.0 days	Logging: 0.8 hrs	Total On-Site: 7.8 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*

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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-06A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:0720 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-06A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 293 m	Sed. Penetration (m): 710 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	1
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age and facies of each phase of platform development, particularly the initiation of MP3 • paleowater depth of the initial phase of MP3 and the total thickness of MP3 • age and duration of the unconformities separating each platform phase • age and nature of the condensed section equivalent to MP2 and basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-07A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 21°	Min: 03.7 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 153°	Min:01.6 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	326

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	500 msec TWT; 600 m	10 m
General Lithologies:	45 m pelagic ooze; 455 m of framestone, packstone, wackestone; 100 m wackestone	?Palaeozoic phyllite/slate
Coring Plan (circle):	1-2-3-**APC** ~~VPC*~~ **XCB** ~~MDCB*~~ ~~PCS~~ **RCB** ~~Re-entry HRGB~~ ** Systems Currently Under Development*	

Logging	Standard Tools		Special Tools	LWD
Plan:	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 4.7 days	Logging: 0.8 hrs	Total On-Site: 5.5 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

Page	Information needed	Used By	When to submit	Contact for more information
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2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-07A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:1000 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-07A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 326 m	Sed. Penetration (m): 600 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	2
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	• age of each phase of platform development, particularly the initiation of MP3 • paleowater depth of the initial phase of MP3; • duration of the unconformities separating each platform phase; • age and nature of the condensed section equivalent to MP2 and basement • fluid flow processes within the Marion Plateau		
List Previous Drilling in Area:	Leg 133 Sites 815-816/826		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-08A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Marion Plateau
Latitude:	Deg: 21°	Min: 04.3 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 153°	Min:03.2 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	326

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	560 msec TWT; 570 m	10 m
General Lithologies:	70 m pelagic ooze; 400 m wackestone, packstone; 100 m wackestone, sandstone	?Palaeozoic phyllite, slate
Coring Plan (circle):	1-~~2-3-~~**APC** ~~VPC*~~ **XCB** ~~MDCB* PCS~~ **RCB** ~~Re-entry HRGB~~ ** Systems Currently Under Development*	

Logging	Standard Tools		Special Tools	LWD
Plan:	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 4.3 days	Logging: 0.8 hrs	Total On-Site: 5.1 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-08A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 75/64 @ 274:1020 (Julian Time) Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*
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SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-08A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 326 m	Sed. Penetration (m): 570 m	Basement Penetration (m): 10 m

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **20 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity	Geochemical tool: mineralogy, correlation, sedimentology, sediment variations	2
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP	VSP for sediment/seismic correlation	1

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	To penetrate Oligocene to Recent pelagic oozes on the eastern Queensland Plateau in order to provide a record of paleoceanographic change in the western Coral Sea		
List Previous Drilling in Area:	DSDP Leg 21 Site 209; Leg 133 Sites 811/825-814; 817-818		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-09A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Queensland Plateau
Latitude:	Deg: 15°	Min: 42.6 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 151°	Min:07.5 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	975

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	0.6 sec TWT; 660 m	none
General Lithologies:	Pelagic Ooze	
Coring Plan (circle):	**1-2-~~3~~-APC ~~VPC*~~ XCB ~~MDCB* PCS RCB Re-entry HRGB~~** ** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 3.4 days	Logging: 0.5 hrs	Total On-Site: 3.9 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-09A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 14/38 Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-09A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 975 m	Sed. Penetration (m): 660 m	Basement Penetration (m): none

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **12 hours**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity		
Litho-Density	Standard: Porosity, correlation of sediments to logs and physical property data, sedimentology	1
Natural Gamma Ray	Standard: Sediment compositional changes, identification of hard-grounds, core-log correlation, stratigraphic correlation	1
Resistivity-Induction	Standard: Stratigraphic correlation, sediment physical properties	1
Acoustic	Standard: Stratigraphic correlation, core-log correlation, correlation with physical property data	1
FMS	Standard: Stratigraphic correlation, sediment structure, core-log correlation	1
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP		

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	To study fluid movement through the Queensland Plateau		
List Previous Drilling in Area:	DSDP Leg 21 Site 209; Leg 133 Sites 811/825-814; 817-818		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-10A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Queensland Plateau
Latitude:	Deg: 17°	Min: 46 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 151°	Min:28 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	575

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	350 m	none
General Lithologies:	Pelagic and periplatform ooze	
Coring Plan (circle):	1 ~~2 3~~ **APC** ~~VPC*~~ **XCB** ~~MDCB* PCS RCB Re-entry HRGB~~	
	** Systems Currently Under Development*	

Logging	Standard Tools		Special Tools	LWD
Plan:	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 1.6 days	Logging: none	Total On-Site: 1.6 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*
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Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-10A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 14/3 Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*
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SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

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Proposal #: 510-Rev 1	Site #: CS-09A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 575 m	Sed. Penetration (m): 350 m	Basement Penetration (m): none

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **none**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity		
Litho-Density		
Natural Gamma Ray		
Resistivity-Induction		
Acoustic		
FMS		
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP		

*
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For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

ODP Site Description Forms: Page 1 - General Site Information

Please fill out information in all gray boxes **New Revised**

Section A: Proposal Information

Title of Proposal	ODP Drilling in the Coral Sea: Sealevel Variation, Fluid Flow, and Paleoceanography		
Proposal Number:	510-Rev 1	Date Form Submitted:	15 September, 1997
Site Specific Objectives (Must include general objectives in proposal)	To study fluid movement through the Queensland Plateau		
List Previous Drilling in Area:	DSDP Leg 21 Site 209; Leg 133 Sites 811/825-814; 817-818		

Section B: General Site Information*

Site Name: (e.g. SWPAC-01A)	CS-11A	If site is a reoccupation of an old DSDP/ODP Site, Please include former Site #	Area or Location:	Queensland Plateau
Latitude:	Deg: 17°	Min: 53 S	Jurisdiction:	Australia (Queensland)
Longitude:	Deg: 151°	Min:35 E	Distance to Land:	
Priority of Site:	Primary: X	Alt:	Water Depth:	700 m

Section C: Operational Information*

	Sediments	Basement
Proposed Penetration (m)	350 m	none
General Lithologies:	Pelagic and periplatform ooze	
Coring Plan (circle):	1-~~2-3~~-**APC** ~~VPC*~~ **XCB** ~~MDCB* PCS RCB Re-entry HRGB~~	
	** Systems Currently Under Development*	

Logging Plan:	Standard Tools		Special Tools	LWD
	Triple-Combo Neutron-Porosity Litho-Density Natural Gamma Ray Resistivity-Induction	FMS-Sonic Acoustic FMS	Borehole Televiewer Geochemical Resistivity-Laterolog High Temperature Magnetic/Susceptibility	Density-Neutron Resitivity-Gamma Ray
Estimated days:	Drilling/Coring: 1.6 days	Logging: none	Total On-Site: 1.6 days	
Hazards/ Weather	*List possible hazards due to ice, hydrocarbons, dumpsites, cables, etc.* Cyclone season (November-May)		*What is your Weather Window?* None	

Instructions:

Please fill out these forms for each site that you are proposing to drill, including as much detail as possible. The following table describes the purpose of each page, what information is needed, and when each page should be submitted.

*
–

Page	Information needed	Used By	When to submit	Contact for more information
1	General Info. about proposals, site location and basic operational needs	JOIDES Office, Data Bank, Logging Group, ODP/TAMU, SSP, PPSP	When submitting preliminary proposal and when updating site information.	JOIDES Office email: joides@whoi.edu www: http://www.whoi.edu/joides/
2	Information regarding site survey data available and to-be-collected	JOIDES Office, Data Bank, SSP, PPSP	When submitting full proposal and when updating site survey information	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
3	Detailed Logging Plan	JOIDES Office, Logging Group, ODP/TAMU	When submitting full proposal and when updating logging plan	ODP-LDEO Wireline Logging Services email: borehole@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/BRG/brg_home.html
4	Lithologic Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/
5	Pollution and Safety Hazard Summary	JOIDES Office, Data Bank, ODP/TAMU, PPSP	When proposal is placed on Drilling schedule, prior to PPSP review.	Site Survey Data Bank email: odp@ldeo.columbia.edu www: http://www.ldeo.columbia.edu/databank/

ODP Site Description Forms: Page 2 - Site Survey Detail

Please fill out information in all gray boxes **New Revised**

Proposal #: 510-Rev 1	Site #: CS-11A	Date Form Submitted: 15 Sept. 97

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
1	High resolution seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Watergun MCS available; high-res MCS to be collected Site is located on BMR Line 14/3 Crossing Lines(s):
2	Deep Penetration seismic reflection			Primary Line(s): Location of Site on line (SP or Time only) Crossing Lines(s):
3	Seismic Velocity†	X		To be Collected
4	Seismic Grid	X		To be Collected
5a	Refraction (surface)			
5b	Refraction (near bottom)			
6	3.5 kHz	X		Location of Site on line (Time) To be Collected
7	Swath bathymetry			
8a	Side-looking sonar (surface)			
8b	Side-looking sonar (bottom)			
9	Photography or Video			
10	Heat Flow			To be Collected
11a	Magnetics			To be Collected
11b	Gravity			To be Collected

	Data Type	SSP Requirements	Exists In DB	Details of available data and data that are still to be collected
12	Sediment cores			To be Collected: Some samples from nearby Leg 133 Sites
13	Rock sampling			To be Collected: Some samplesfrom nearby Leg 133 Sites
14a	Water current data			To be Collected
14b	Ice Conditions			
15	OBS microseismicity			
16	Navigation			To be Collected
17	Other			Water-column samples to be collected during site survey

*

SSP Classification of Site:	SSP Watchdog:	Date of Last Review:
SSP Comments:		

X=required; X*=may be required for specific sites; Y=recommended; Y*=may be recommended for specific sites; R=required for re-entry sites; T=required for high temperature environments; † Accurate velocity information is required for holes deeper than 400m.

ODP Site Description Forms: Page 3 - Detailed Logging Plan

New Revised

*

Proposal #: 510-Rev 1	Site #: CS-09A	Date Form Submitted: 15 Sept. 97
Water Depth (m): 700 m	Sed. Penetration (m): 350 m	Basement Penetration (m): none

Do you need to use the conical side-entry sub (CSES) at this site? **No**

Are high temperatures expected at this site? **No**

Are there any other special requirements for logging at this site? **No**

If "Yes" Please describe requirements:

What do you estimate the total logging time for this site to be: **none**

Measurement Type	Scientific Objective	Relevance (1=high, 3=Low)
Neutron-Porosity		
Litho-Density		
Natural Gamma Ray		
Resistivity-Induction		
Acoustic		
FMS		
BHTV		
Resistivity-Laterolog		
Magnetic/Susceptibility		
Density-Neutron (LWD)		
Resitivity-Gamma Ray (LWD)		
Other: Special tools (CORK, PACKER, VSP, PCS, FWS, WSP		

*

For help in determining logging times, please contact the ODP-LDEO Wireline Logging Services group at: borehole@ldeo.columbia.edu http://www.ldeo.columbia.edu/BRG/brg_home.html Phone/Fax: (914) 365-8674 / (914) 365-3182	Note: Sites with greater than 400 m of penetration or significant basement penetration require deployment of standard toolstrings.

Appendix 5: Scientific Background of Proponents

Alexandra R. Isern

PERSONAL DETAILS

DATE OF BIRTH:	6 February, 1966
BIRTHPLACE:	West Palm Beach, Florida, USA
NATIONALITY:	USA and Australia
ADDRESS:	12 Hartley St. Rozelle, NSW 2039

EDUCATION:

BSC (HON)	University of Florida	1987
MSC	University of Rhode Island (Oceanography)	1990
	Thesis: *Accumulation Rates of Carbonate and Organic Carbon Along a Transect of the Equatorial Pacific*:	
PHD	Swiss Federal Institute of Technology	1993
	Dissertation: *Carbonate Platform Development off Northeast Australia: The Importance of Paleoceanographic and Environmental Change.*	

PROFESSIONAL EXPERIENCE:

Physical Properties Specialist on Ocean Drilling Program Leg 166, Bahamas Drilling Transect (Co-Chief Scientists: Dr. G. Eberli and Dr. P. K. Swart) (2/96-4/96).

Director Stable Isotope Facility, Department of Geology and Geophysics/Marine Studies Centre, University of Sydney (10/95-Present).

Research Cruise on the R/V Franklin to the Australian Southern Margin to investigate the patterns and influences on temperate water carbonate deposition (6/94). Responsible for the analysis of nutrients in samples from vertical water column profiles.

Lecturer, Department of Geology and Geophysics/Marine Studies Centre, University of Sydney. Courses taught (in part or whole): Introductory Marine Science, Marine Chemistry, Paleoceanography and Climate Change, Environmental Geology (5/94-Present).

Professional Officer, Australian Geological Survey Organisation, Environment and Groundwater Group (2/94-5/94).

Visiting Research Scientist, Department of Geological Sciences, Queens University, Kingston Ontario, Canada (8/93-1/94). Assisting in the compilation of data for an Ocean Drilling Program Drilling Proposal.

Graduate Research Assistant and Doctoral Candidate, Geological Institute, Swiss Federal Institute of Technology, ETH-Zentrum, 8092 Zürich, Switzerland (6/90-7/93). Responsible for operation of the VG 903 and PRISM Mass Spectrometers.

• Inorganic Geochemist on Ocean Drilling Program Leg 133, Northeast Australian Margin (Co-Chief Scientists: Dr. J. A. McKenzie and Dr. P. J. Davies) (8/90-10/90). Responsible for inorganic geochemical measurements on sedimentary pore fluids.

Graduate Research Assistant (URI/GSO) responsible for operation of the VG 602-D Mass Spectrometer and the UIC Columetrics Inorganic and Organic Carbon Apparatus (8/87-6/90).

Research Cruise (URI/GSO) to the Equatorial Pacific (Wecoma 8803B) as a preliminary study for the Joint Global Ocean Flux Program (Co-Chief Scientists: Dr. M. Leinen and Dr. M. Bender) (4/88). Responsible for collation of seismic data, preparation of site surveys, and core description.

Teaching Assistant (University of Missouri) Teaching of a supplementary course to complement first year Physical Geography (1/85-6/85).

PUBLICATIONS:

1997 **Isern, A. R.**, C. J. Pigram, P. K. Swart, and D. Kroon. ODP Drilling in the Coral Sea: Sea level variation, paleoceanography, and fluid flow. AGSO Record 1997/3, 66 pages.

1997 **Isern, A. R.**. Influences on water column structure in the eastern Great Australian Bight as shown by CTD and stable oxygen isotopic data. Submitted.

1996 **Isern, A. R.**, J. A. McKenzie, and D. A. Feary. The role of sea surface temperature as a control on carbonate platform development in the western Coral Sea. Paleo. Paleo. Paleo. 124:247-272

1996 **Isern, A. R.** Geology of the atmosphere. Edgeworth-David Day Symposium Conference Publication, Earth Resources Foundation, Sydney.

1995 Langford, R. P., Wilford, G. E., Truswell, E. M., and **Isern, A. R.**, Paleogeographic Atlas of Australia, Volume 10: Cainozoic. Australian Geological Survey, Canberra.

1994 Kuo-Yen Wei, Ze-Wei Zhang, Min-Te Chen, **A. R. Isern**, Chung-Ho Wang, M. Leinen. Latest Quaternary Paleoceanography of the Central Equatorial Pacific: A quantitative record of planktonic foraminiferal, isotopic, organic carbon, and carbonate changes. Journal of the Geological Society of China, 37:475-496.

1993 **Isern, A. R.**, J. A. McKenzie, and D. W. Müller. Paleoceanographic changes and reef growth off the northeast Australian margin: Stable isotopic data from ODP Leg 133 Sites 811 and 817, and DSDP Leg 21 Site 209. *In* J. A. McKenzie, & P. J. Davies (Ed.), Scientific Results of the Ocean Drilling Program: College Station Texas (Ocean Drilling Program), 263-280.

1993 McKenzie, J. A., **A. R. Isern**, H. Elderfield, A. Williams, and P. K. Swart. Strontium isotope dating of paleoceanographic, lithologic, and dolomitization events on the northeast Australian margin, Leg 133. *In* J. A. McKenzie, & P. J. Davies (Ed.), Scientific Results of the Ocean Drilling Program: College Station Texas (Ocean Drilling Program), 489-498.

1993 Swart, P. K., **A. R. Isern**, H. Elderfield, and J. A. McKenzie. A summary of interstitial-water geochemistry of Leg 133. *In* J. A. McKenzie, & P. J. Davies (Ed.), Scientific Results of the Ocean Drilling Program: College Station Texas (Ocean Drilling Program), 705-722.

1993 Murray, R. W., M. Leinen, and **A. R. Isern**. Biogenic flux of Al to sediment in the central equatorial Pacific Ocean: Evidence for increased productivity during glacial periods. Paleoceanography, 8:651-670.

1989 McKenzie, J. A., **A. R. Isern**, A. M. Karpoff, and P. K. Swart. Basal Dolomitic Sediments, Tyrrhenian Sea, Scientific Results Ocean Drilling Program Leg 107 Volume B, pp. 141-151.

NAME: CHRISTOPHER JOHN PIGRAM
DATE OF BIRTH: 28 February 1952

ACADEMIC QUALIFICATIONS:
1974 B.App.Sc. (Hons) University of New South Wales; 1994 PhD, The Australian National University.

CURRENT APPOINTMENT:
Chief of Division (Level2), Petroleum and Marine Division, Australian Geological Survey Organisation (AGSO)

PREVIOUS APPOINTMENTS:
August 1996-May 1997: Acting Chief of Divsion (level 2), Minerals Division. AGSO.
May 1993 - August 1996 - Acting Chief of Division, Marine Geoscience and Petroleum Geology and subsequently Marine Petroleum and Sedimentary Resources Division.
August 1994 - appointed Senior Principal Research Scientist, Division of Marine Geoscience and Petroleum Geology, Australian Geological Survey Organisation, Canberra, Australia.
March 1991 - appointed Principal Research Scientist, Division of Marine Geoscience and Petroleum Geology, Bureau of Mineral Resources, Canberra, Australia.

PROFESSIONAL AFFILIATIONS:
Geological Society of Australia;
American Association of Petroleum Geologists
Petroleum Exploration Society of Australia

AWARDS:
1985 - HAROLD RAGGAT AWARD - coauthor best paper BMR Symposium.
1988 - coauthor - PESA BEST PRESENTED PAPER AT APEA CONFERENCE
1991 - Australia Day Award presented to the Northeast Australia Group.

REFEREEING
GEOLOGY - member of editorial panel 1992-1994; associate editor 1994-1996;
Marine Geology
TECTONICS
South East Asian Journal of Earth Sciences
Indonesian Petroleum Association
Bulletin of the Geological Research and Development Centre
Third Circum Pacific/AAPG Terranes volume
Australian Journal Of Earth Sciences
2nd PNG Petroleum Conference Editorial Panel
AGSO Journal of Australian Geology and Geophysics
Reviewed Research Proposals for the National Research and Environment Council of the U.K. and reviewed final research report at the end of the grant period.

PUBLICATIONS
P.J. Davies, P.A. Symonds, D.A. Feary and **C.J. Pigram**, 1987 - Horizontal plate motion - a key allocyclic factor in the evolution of the Great Barrier Reef of Northeastern Australia. Science, 238, 1697-1700.
P.J. Davies, P.A. Symonds, D.A. Feary and **C.J. Pigram**, 1988 - Facies models in exploration - the carbonate platforms of northeast Australia. The APEA Journal, 123-143.
P.J. Davies, P.A. Symonds, D.A. Feary and **C.J. Pigram**, 1989 - The evolution of the carbonate platforms of northeast Australia: Society of Economic Paleontologists and Mineralogists, Special Publication No. 44, p 233- 258.
C.J. Pigram, P.J. Davies, D.A. Feary, and P.A. Symonds 1989 - Tectonic controls on carbonate platform evolution in southern Papua New Guinea :passive margin to foreland basin. Geology, 17, 199-202.

C.J. Pigram, P.J. Davies, D.A. Feary, P.A. Symonds and G.C.H. Chaproniere, 1990 - Controls on the Tertiary Carbonate Platform Evolution in the Papuan Basin: New Play Concepts. in Carman, G.J., & Carman, Z., (eds), Petroleum Exploration in Papua New Guinea: Proceedings of the first PNG Petroleum Convention, Port Moresby.

Feary, D.A., Davies, P.J., **Pigram, C.J.**, and Symonds, P.A., 1991. Climatic evolution and control on carbonate deposition in Northeast Australia. Palaeogeography, Palaeoclimatology, Palaeoecology (Global and Planetary Change Section) 89, 341-361.

Feary, D.A., **Pigram, C. J.**, Davies P.J., Symonds, P.A., Droxler, A., W., Peerdeman, F., 1990. Ocean Drilling Project - Leg 133 Safety Package. Bureau Mineral Resources Australia Record 1990/6.

C.J. Pigram, Davies, P.J., Feary, D.A., and Symonds P.A., 1989. Tectonic controls on carbonate platform evolution in southern Papua New Guinea: passive margin to foreland basin. Geology, 17, 199-202.

C.J. Pigram, Davies, P. J., Feary, D. A., Symonds, P. A., and Chaproniere, G. C. H., 1992. Absolute magnitude of the second-order Middle to late Miocene sealevel fall, Marion Plateau, Northeast Australia. Geology 20, p. 858-862.

C.J. Pigram and P.A. Symonds, 1993 - Eastern Papuan Basin - a new model for the tectonic development, and implications for petroleum prospectivity. *in* Carmen G. J. and Carmen Z., Eds., Petroleum Exploration and Development in Papua New Guinea: Proceedings of the Second PNG Petroleum Convention, Port Moresby, p. 213-231.

C.J. Pigram, Davies, P.J., and Chaproniere, G.C.H., 1993. Cement stratigraphy and the demise of the early to middle Miocene carbonate platform on the Marion Plateau: *in* McKenzie, J.A., Davies P.J., Palmer-Julson, A.A., Proceedings Ocean Drilling Program Scientific Results, 133: College Station, Texas, Ocean Drilling Program.

D.A. Feary, P.A. Symonds, P.J. Davies, **C.J. Pigram**, and R. D. Jarrard, 1993. Geometry of Pleistocene facies on the Great Barrier Reef outer shelf and and upper slope - seismic stratigraphy of ODP sites 819-821. *in* McKenzie, J.A., Davies P.J., Palmer-Julson, A.A., Proceedings Ocean Drilling Program Scientific Results, 133: College Station, Texas, Ocean Drilling Program.

G.C.H.Chaproniere, and **Pigram, C.J.**, 1993. Miocene to Pleistocene foraminiferal biostratigraphy of dredge samples from the Marion Plateau, offshore Queensland, Australia. AGSO Journal of Australian Geology and Geophysics, p1-20.

Liu, K., **Pigram, C .J.**, Paterson, L., and Kendall, C.G. St C., in press. Computer simulation of a Cainozoic carbonate platform, Marion Plateau. International Association of Sedimentology Special Publication.

PETER KOENRAAD SWART

BIOGRAPHICAL INFORMATION

ADDRESS Marine Geology and Geophysics, RSMAS, University of Miami
4600 Rickenbacker Causeway, Miami Fl 33149
305 361 4103
305 361 4632 (swart@rsmas.miami.edu)

POSITIONS HELD

1979-1982	Postdoctoral Research Fellow, University of Cambridge,U.K.
1983-1984	Postdoctoral Fellow, RSMAS University of Miami.
1984-1986	Research Assistant Professor, RSMAS, University of Miami.
1986-1988	Assistant Professor, RSMAS, University of Miami.
1990-1993	Chairman Marine Geology and Geophysics
1994-1994	Professor of Environmental Science, University of Sussex.
1988-	Associate Professor, RSMAS, University of Miami.
1995	Chairman MGG

SERVICES AS REFEREE

Geochemica Cosmochimica Acta, Nature, Journal Sedimentary Petrology, Earth Science Reviews, Sedimentology, Geology, Petroleum Research Foundation, National Science Foundation, Palaeo 3X, Earth Planet. Sci. Letts, Jour. Geo. Res., Science

OCEAN EXPERIENCE

1986	Leg 101 Ocean Drilling Project - inorganic geochemist.
1987-1988	Submersible Dives on Bahamas escarpment.
1987	Leg 115 Ocean Drilling Project - inorganic geochemist.
1988	Black Sea Cruise RV Knorr
1990	Drilling in the Bahamas MV Southern Cross
1990-1991	Research cruises aboard RV Calunus
1990	Leg 133 Ocean Drilling Project - inorganic geochemist
1996	Leg 166 ODP Chief Scientist

PUBLICATIONS

81 PUBLICATIONS IN REFEREED JOURNALS

Relavent Publications

Burns, S. and **Swart, P.K.,** 1992. Diagenetic process in shallow water carbonate sediments:Florida Bay Mudbanks and islands, Sedimentology, 39:285-304.

Eberli, G.P., **Swart, P.K.** McNeill, D.F., Kenter, J.A.M., Anselmetti, F.S., Melim, L.A. and Ginsburg, R.N., 1997. A synopsis of the Bahamas Drilling Project: results from two deep core borings drilled on Great Bahama Bank, In: Eberli, G.P., **Swart, P.K.,** Malone, M. et al. Proc. ODP Init. Repts., 166:College Station, TX (Ocean Drilling Program).

Meyers, J., **Swart, P.K.,** and Meyers, J., 1993. Geochemical evidence for groundwater behavior in an unconfined aquifer, South Florida, Jour. Hydrology. 148:249-272.

Swart, P.K., 1993. The Formation of Dolomite in Sediments from the Continental Margin of N.E. Queensland, In: McKenzie, J.A., Davies, P.J., Palmer-Julson, A. et al., Proc. ODP Sci. Res., 133: College Station, TX (Ocean Drilling Program), 513-524.

Elderfield, H., **Swart, P.K.,** McKenzie, J., and A. Williams, 1993. The Sr-isotopic composition of pore water from Leg 133, In: McKenzie, J.A., Davies, P.J., Palmer-Julson, A. et al., Proc. ODP Sci. Res., 133: College Station, TX (Ocean Drilling Program), 473-480.

Swart, P.K., Isern, A., Elderfield, H., and McKenzie, J.,1993. A synthesis of pore water results from Leg 133 ODP, In: McKenzie, J.A., Davies, P.J., Palmer-Julson, A. et al., Proc. ODP Sci. Res., 133: College Station, TX (Ocean Drilling Program), 705-722.

Recent Publications

Swart, P.K., Dodge, R.E. and Hudson, H.J. 1996. A 240-year stable oxygen and carbon isotopic record in a coral from South Florida: Implications for the prediction of precipitation in southern Florida, Palaios, 11:362-375.

Leder, J.J., **Swart, P.K.**, Szmant, A and Dodge, R.E. 1996. The origin of variations in the isotopic record of Scleractinian corals: I Oxygen, Geochimica Cosmochimica Acta, 60:2857-2870.

Swart, P.K., Leder, J.J. Szmant, A and Dodge, R.E. 1996 The origin of variations in the isotopic record of Scleractinian corals: II Carbon, Geochimica Cosmochimica Acta, 60:2871-2886.

Swart, P.K. , Healy,G Dodge, R. Kramer, P., Hudson, H., Halley R., & M. Robblee 1996. The Stable Oxygen and Carbon Isotopic Record from a Coral Growing in Florida Bay: A 160 Year Record of Climatic and Anthropogenic Influence, Palaeogeography, Palaeoclimatology, Palaeoecology, 123:219-238.

Stanley, G.D. Jr., and **Swart, P.K.,** 1995. Evolution of the coral-zooxanthellae symbiosis during the Triassic: A geochemical approach, Paleobiology, 21:179-199.

CURRICULUM VITAE

Flavio Stefano Anselmetti

Date of Birth: September 3, 1965

Place of Birth: Basel

Nationality: Swiss

Address: Geologisches Institut
Swiss Federal Institute of Technology ETH
Sonneggstrasse 5, CH-8092 Zürich, Switzerland
Tel.: 41-1-632 6569, Fax.: 41-1-632 1080
e-mail: flavio@erdw.ethz.ch
home: Freyastrasse 11, CH-8004 Zürich
Tel.: 41-1-241 5692

Current Position: Research Associate, ETHZ

Research Interests: Acquisition, processing and interpretation of seismic data
Petrophysical rock properties
Petrography and diagenesis of carbonates
Seismic modelling
Seismic records of lakes as indicator for environmental change

Geological Education:
1984-1990: Diploma student at the Geological Institute of the University of Basel, Switzerland.

1990: Diploma in Geology and Geophysics. Diploma thesis: Geologie und Tektonik der frontalen Wildhorndecke in der Morgenberghorn-Dreispitzgruppe (Suldtal - Kiental / Berner Oberland). Supervisor Prof. H.P. Laubscher, Basel.

1990-1994 Ph.D. student at the Geological Institute of the Swiss Federal Institute of Technology, Zürich, Switzerland. Supervisors Prof. D. Bernoulli, ETH Zürich and Prof. G. Eberli, RSMAS-MGG, Univ. of Miami, U.S.A.

1991-1993: Visiting student at the Rosenstiel School of Marine and Atmospheric Science, Division of Marine Geology and Geophysics, University of Miami, U.S.A.

September '94: Ph.D. defense at the ETHZ, Thesis title: Physical properties and seismic response of carbonate sediments and rocks.

October '94: Postdoctoral Asscociate at RSMAS/MGG, University of Miami
Fellowship from Swiss National Science Foundation. Acquisition, processing and interpreation of multichannel seismic data from site survey for ODP Leg 166 (Bahamas Transect).

Jan. 1996: Research Associate at University of Miami, RSMAS/MGG.

as of June 1997: Assistant at the Geological Institute of ETH Zürich, Switzerland.

Practical Experiences:
February/April 1996: Physical properties specialist onboard R/V Joides Resolution, ODP Leg 166, Bahamas Transect.

1995-1996: Two months consultant for Schlumberger-Doll Research Laboratory, Ridgefield, Connecticut:

May/June 1994: Shipboard scientist for an ODP site survey (Leg 166, Bahamas Transect) on Great Bahama Bank and in the Straits of Florida: Multichannel seismic data acquisition, piston coring.

1991-1993: University of Miami, Rosenstiel School of Marine and Atmospheric Science, sponsored by Shell K.S.E.P.L. Research Laboratory, Rijswijk, Holland. Installation of the Petrophysics Laboratory (high pressure/ultrasonic velocity-meter).

1991: Shipboard scientist during the drilling campaign of the Bahamas Drilling Project, Great Bahama Bank.

1990-1994: Teaching assistant (several classes and field courses) at the ETHZ.

1991: Field assistant of seismic campaign in Central Alps, Switzerland: multichannel seismic data acquisition in context with the new railway tunnels through the the base of the Alps (NEAT).

1988-1989: Drill-site geologist of two geothermal deep drillholes in Riehen/BS, Switzerland.

1988-1990: Teaching assistant at the Geological Institute of the University of Basel, Switzerland, (several classes and field courses).

1987: Summer-employee of the X-ray laboratory of Ciba-Geigy, Basel, Switzerland. Powder diffractometry for mineral identification.

Publications:

Anselmetti, F.S., Eberli, G.P. and Bernoulli, D. (1997), Seismic modeling of a carbonate platform margin (Montagna della Maiella, Italy): Variations in seismic facies and implications for sequence stratigraphy, *in* Palaz, I. and Marfurt K.J. (eds.), Carbonate Seismology, SEG Geophysical Developments Series, 6, 373-406.

Anselmetti, F.S. and Eberli, G.P. (1997), Sonic velocity in carbonate sediments and rocks, *in* Palaz, I. and Marfurt K.J. (eds.), Carbonate Seismology, SEG Geophysical Developments Series, 6, 53-74.

McNeill, D.F., Cunningham, K.J., Guertin, L.A., Melim, L.A., Warzeski, E.R., Anselmetti, F.S., Ginsburg, R.N., Eberli, G.P., and Swart, P.K. (1996), Data report: Tertiary-Quaternary cores from the Florida Keys and Everglades. Miami Geological Society, 98 p.

Anselmetti, F. S., Luthi, S. and Eberli, G.P. (1996), A Study of Carbonate "End Member" Rocks, Part 1: Petrographic Image Analyses - Internal report for Schlumberger-Doll Research Laboratory, Ridgefield, Connecticut, 34 p.

Anselmetti, F.S. (1994), Physical Properties and Seismic Response of Carbonate Sediments and Rocks, Dissertation ETH Nr. 10845.

Anselmetti, F.S. and Eberli G.P. (1993), Controls on sonic velocity in carbonates, Pure and Applied Geophysics 141/2-4, 287-323.

Anselmetti, F.S. (1990), Geologie und Tektonik der frontalen Wildhorndecke in der Morgenberghorn-Dreispitzgruppe (Suldtal - Kiental / Berner Oberland), Diplomathesis at the University of Basel, Switzerland.

Publications (in press):

Anselmetti, F.S., von Salis, G.A., Cunnningham, K.J. and Eberli, G.P. (1997), Controls and distribution of sonic velocity in Neogene carbonates and siliciclastics from the subsurface of the Florida Keys: Implications for Seismic Reflectivity, Marine Geology.

Anselmetti, F.S. and Eberli, G.P. (1997), Sonic velocity in carbonates - a combined product of depositional lithology and diagenetic alterations, *in* Ginsburg, R.N.G. (ed.), Ground Truthing Seismic Stratigraphy of a Prograding Carbonate Platform Margin, Neogene, Great Bahama Bank - Integrated Analysis of Sedimentology, Stratigraphy, Diagenesis and Petrophysics: Concepts in Sedimentology and Paleontology, SEPM.

Melim, L.A., Anselmetti, F.S., and Eberli, G.P. (1997), The importance of pore type on permeability of Neogene carbonates, Great Bahama Bank, *in* Ginsburg, R.N.G. (ed.), Ground Truthing Seismic Stratigraphy of a Prograding Carbonate Platform Margin, Neogene, Great Bahama Bank - Integrated Analysis of Sedimentology, Stratigraphy, Diagenesis and Petrophysics: Concepts in Sedimentology and Paleontology, SEPM.

Eberli, G.P., Anselmetti, F.S., Kenter J.A.M., McNeill, D.F., Melim, L.A., (1997), Facies, diagenesis and timing of prograding seismic sequences on western Great Bahama Bank, *in* Ginsburg, R.N.G. (ed.), Ground Truthing Seismic Stratigraphy of a Prograding Carbonate Platform Margin, Neogene, Great Bahama Bank - Integrated Analysis of Sedimentology, Stratigraphy, Diagenesis and Petrophysics: Concepts in Sedimentology and Paleontology, SEPM.

Eberli, G.P., Anselmetti, F.S., Melim, L.A. and Kenter, J.A.M. (1997), Facies, diagenesis and petrophysics of a prograding carbonate platform margin, Neogene, Great Bahama Bank: Core Workshop Manual, CSPG-SEPM Joint Convention, Calgary, Canada, 18 p.

Publications (submitted):

Anselmetti, F.S. and Eberli, G.P. (in review), The Velocity-Deviation Log: A tool to predict pore type and permeability trends in carbonate drillholes from sonic and porosity/density logs, submitted to: AAPG Bulletin.

Anselmetti, F.S., Lüthi, S. and Eberli, G.P (in review), Quantitative characterization of carbonate pore systems by digital image analysis, submitted to AAPG Bulletin.