# MAGNETIC SUSCEPTIBILITY, CALCIUM CARBONATE AND THE GEOCHEMICAL COMPOSITION OF SEDIMENTS FROM THE AUSTRALIAN CONTINENTAL MARGIN



*by*

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# Magnetic susceptibility, calcium carbonate and the geochemical composition of sediments from the Australian Continental margin.

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# Contents

## EXECUTIVE SUMMARY

Several gravity cores from the west (3), south (3) and east (5) Australian continental margin have been sampled and analysed for magnetic susceptibility, percent calcium carbonate, $Fe_2O_3$, $Al_2O_3$ and $SiO_2$ (% wt) and other trace element contents. The cores sampled from the west Australian continental margin were from the Exmouth Plateau, and the Carnarvon Terrace. Sampling from the south Australian continental margin was from the west Ceduna Terrace and the Eyre Terrace and the cores sampled from the east Australian continental margin were collected offshore Evans Head.

$\delta^{18}O$ isotope data on planktonic foraminifera have been used to provide a chronological control on those cores collected from the western margin, to determine sediment accumulation rates and identify Late Quaternary isotopic stages, including the last glacial maximum (LGM) and the last interglacial (LIG). These same data are not available from other areas surveyed although sedimentation rates of about 1 cm/kyr have been estimated from $^{14}C$ data from the eastern continental margin sediments offshore Evans Head.

The down-core total magnetic susceptibility profiles generally show similar patterns within each survey area. The magnetic susceptibility profiles for those cores from the western margin (Exmouth Plateau and Carnarvon Terrace) show relatively high values in the Holocene and around the LIG, and relatively low values during the LGM. Patterns of down-core variations in magnetic susceptibility could also be recognised in gravity cores from the eastern margin offshore Evans Head. Here, magnetic susceptibilities were relatively high around the LIG (similar to the western margin), but magnetic susceptibility were low in Holocene sediments, perhaps because of diagenetic remobilisation of iron in the core-tops. In general no distinct patterns are recognisable in the down-core magnetic susceptibility profiles from the southern margin.

The down-core profiles of calcium carbonate from the west Australian continental margin show high values during the LGM, and minima in the Holocene and also during the LIG. Similarly, the down-core profile of calcium carbonate shows minimum values during the inferred LIG in eastern margin cores, although this interpretation is based on an approximate sedimentation rate. In general, total magnetic susceptibility is correlated with $Al_2O_3$, $SiO_2$ and $Fe_2O_3$, concentrations in sediments, indicating a control on magnetic susceptibility by terrigenous material contents. Calcium carbonate was found to be a diluent for magnetic susceptibility in these continental margin sediments.

## LIST OF TABLES

## LIST OF FIGURES

# INTRODUCTION

A fundamental relationship between geomagnetic intensity and climate change has been suggested, (Kent, 1982). Periods of low geomagnetic intensity have been proposed to correspond to high air temperatures or warm climate largely on the basis of an apparent correlation in geomagnetic and climatic indices over time scales in the Pleistocene record of paleomagnetic and paleoclimatic data in deep sea sediments. Similarly periods of high geomagnetic intensity correspond to low air temperatures or cold climates. The significance of the correlations of down-core variations of the oxygen isotope composition of planktonic foraminifera, carbonate content and magnetic susceptibility, bears directly on the relationship of magnetic intensities and global climatic changes (Kent, 1982).

The magnetic susceptibility depends not only on the amount of magnetic particles present in the sample (magnetite, maghematite, hematite), but also on the grain-sizes of magnetic particles present. The magnetic susceptibility of grains ranging between 1.5 and 120 microns can vary up to 30%. The magnetic susceptibility does not however depend on the strength of the geomagnetic field in which the sedimentation took place, it is only influenced by the magnetic mineral concentration and the grain sizes of the magnetic minerals (Koenigsberger, 1938). In order to interpret down-core variations in magnetic susceptibility, in relation to global climatic changes (last glacial maximum-LGM and last interglacial-LIG) a chronology has to be established. The $\delta^{18}O$ content of planktonic foraminifera can be used to determine periods of major global climatic change.

The global signal of ice volume changes recorded in the oxygen isotopic composition of foraminifera can be used to compare different oceanographic regions of global climatic change. The degree of similarity in these isotopic records from deep-sea sediments has resulted in the definition of isotopic stages (Psisas and others, 1984). These isotopic stages indicate major global climatic changes and glacial interglacial periods. Ages have been assigned to these stages (Martinson and others, 1987) and sedimentation rates based on these ages can be calculated.

Farrell and Prell (1989), found a strong relationship between calcium carbonate and climate, for deep-sea cores from the central equatorial Pacific, as inferred from the global oxygen isotope record. This relationship is generally characterised by good preservation of calcium carbonate during glacial stages and poor preservation during interglacials. They do, however, suggest that there is a more complex connection between calcium carbonate and climate changes. Available evidence suggests that carbonate accumulation and preservation patterns have varied between and within ocean basins through time e.g. Pacific and Indian Oceans, (Peterson and Prell, 1985). It is noted that the patterns identified for deep sea cores with a carbonate dissolution signal are not appropriate to be compared with the cores discussed here. Most cores presented in this Record were collected from around the Australian Continental Margin at depths generally near to or above the carbonate dissolution depth, and are probably not significantly affected by carbonate dissolution - and reflect primarily deposition signals.

The high inverse correlation between magnetic susceptibility and calcium carbonate shows that the magnetic material approximately occurs in fixed proportions to the non-carbonate fraction which in turn varies comparably to the measured carbonate content. In such circumstances, variations in magnetic susceptibility can be interpreted to have a climatological significance in a similar manner to that of carbonate variations (Kent, 1982). It is well known that high carbonate contents correspond to high global ice volumes or glacial intervals in Pleistocene pelagic sediments from the equatorial Pacific, exactly opposite to the phase relationship interpreted for carbonate variations and climate in the southern Indian Ocean (Peterson and Prell, 1985). Decreased carbonate contents during glacials result in increased concentrations of magnetic material which in turn contributes to higher magnetic intensities/susceptibilities in the southern Indian Ocean, (Kent, 1982).

**Objectives**

1. The primary objective of this work was to assemble a variety of data from several cores from the Australian Continental Margin that may be indicative of variations in (i) terrigenous inputs from the continent, either via wind blown transport or riverine run-off, into the sediments as indicated by magnetic susceptibility and other major and trace element abundances and (ii) the biogenic signal as indicated primarily by calcium carbonate.

2. Specific objectives included (i) to compare and contrast patterns of down-core variations, within a study area, of magnetic susceptibility ($\mu$Gauss oe$^{-1}$.cm$^{3}$) , the percent calcium carbonate and the aluminosilicate contents of sediments and (ii) to compare and contrast patterns in the down-core variations in the above parameters between study areas.

The cores sampled and analysed (Table 1) have been divided into a regional context, the north western Australia continental margin, including cores from Exmouth Plateau 53GC04 and 53GC07 (Choi and Stagg, 1987), and a single core from the Carnarvon Terrace, 57GC19. Other cores include those from eastern Australia (BMR Survey 71 on *Rig Seismic,* offshore Evans Head; O'Brien and Heggie, 1990) and cores from the west Ceduna Terrace and Eyre Terrace, of the Great Australian Bight (BMR Survey 102 on *Rig Seismic* Feary and others, 1993). The areas sampled are highlighted in Figure 1.

Shown in Table 1 are the cores which have magnetic susceptibility analyses completed. These include (i) from the west Australian continental margin two cores from the Exmouth Plateau (53GC04 and 53GC07) were collected approximately 120 km apart in water depths between 956 and 2256 m, Figure 1. These two cores are part of a systematic analysis of a geochemical/paleoceanographic transect across the Exmouth Plateau (McCorkle and others, 1993). Another core was collected from the Carnarvon Terrace in a water depth of 2755 m. This core was collected approximately 192 km south of those cores from the Exmouth Plateau and provides a geographical contrast with that core from the Exmouth Plateau at a comparable water depth. (ii) In those cores from east Australia, several cores were analysed which represent a transect over the continental margin between water depths of 417 and 1989 m, approximately 25 km offshore and 17 km along the coastline or over an area of approximately 425 $km^2$. (iii) Similarly two cores were collected from the Ceduna Terrace on a transect between water depths of 1502 and 3001m approximately 75 km apart. An additional core from the Eyre Terrace 102GC09 was collected in a water depth of 769 m, approximately 225 km from the cores on the west Ceduna Terrace. One core was collected from the Eyre Terrace so that a transect between the deeper outer-shelf and shallower upper-shelf could be investigated. There was little or no recovery in the cores collected in shallow waters from the Ceduna Terrace.

These cores from these areas noted above were analysed in this way to provide both a local comparison of data at different water depths, and also a regional comparison between different cores at comparable water depths (e.g. upper-slope/mid-slope/lower-slope).

Shown in Table 2 are the analyses conducted on these cores displayed in Table 1. Magnetic susceptibility and calcium carbonate data have been analysed on all cores. In order to interpret the down-core variations in magnetic susceptibility and calcium carbonate and other geochemical parameters, it is essential to establish a down-core chronology, such that major climatic/oceanographic periods can be identified. The oxygen isotope content of the planktonic foraminifera have been analysed from the Exmouth Plateau and Carnarvon Terrace, and these data have been used to identify the last glacial maximum (LGM) at around 16 000 yrs (McCorkle and others, 1993) and the last interglacial (LIG) at around 130 000 yrs (McCorkle and others, 1993). These analyses will be conducted on those cores from the Ceduna Terrace. There are no $\delta^{18}O$ data from the eastern Australia continental margin. However, there are some data on sedimentation rates as inferred from $^{14}C$ analyses in sediments, although these are not yet sufficient to identify precisely climatic periods. Hence, at this time a detailed study of down-core variations has not yet been assembled from these cores.

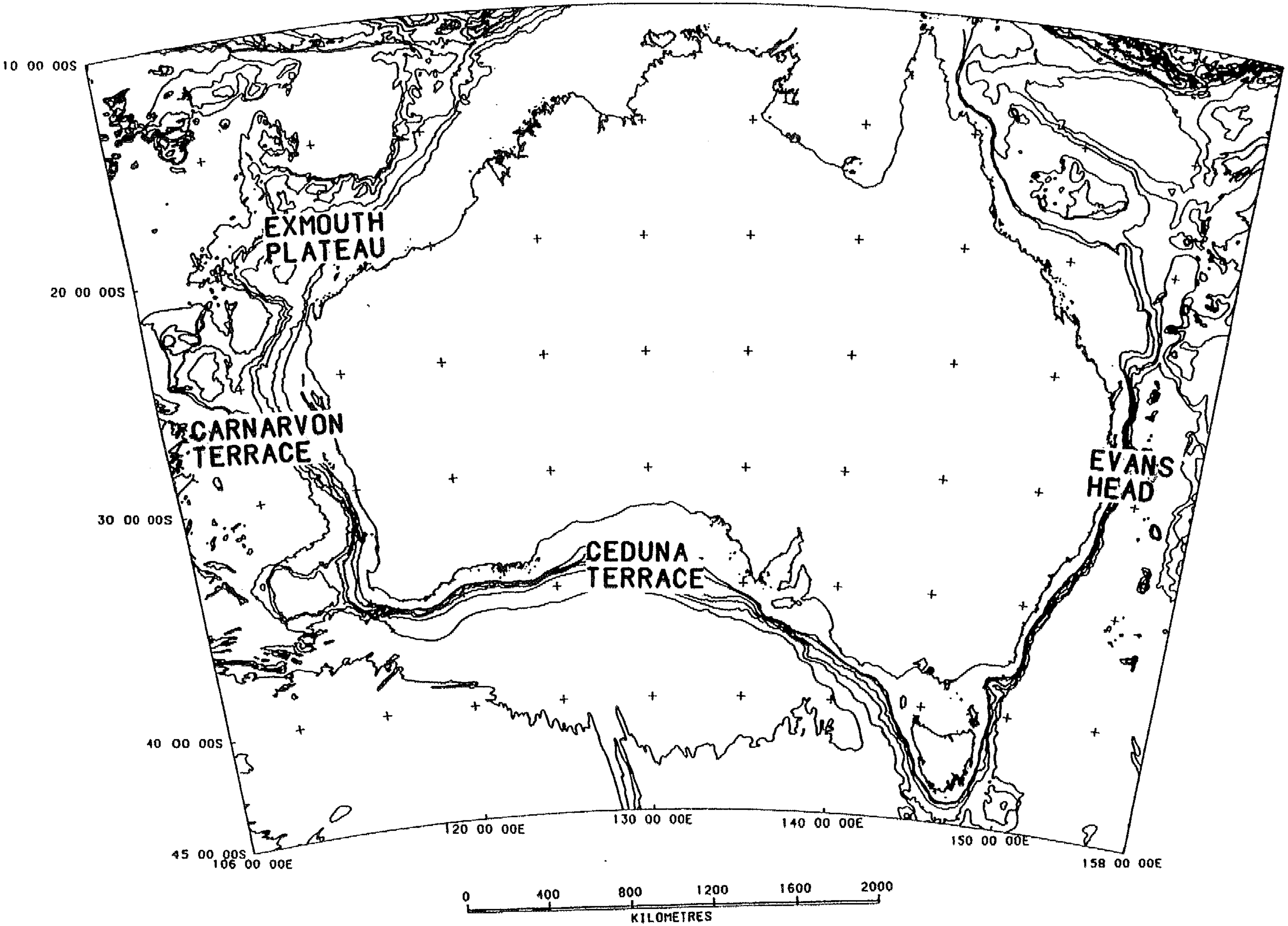


Figure 1 Figure 1 Location of cores collected from the Western Australia continental margin, Eastern Australian continental margin and Southern Australian continental margin

Table 1 Locations of cores analysed

| Area | Survey | Core | Latitude (deg, mins) | Longitude (deg,mins) | Water Depth (m) |
|---|---|---|---|---|---|
| WEST AUSTRALIAN CONTINENTAL MARGIN | | | | | |
| Exmouth Plateau | 53 | GC04 | 19 35.109 | 113 32.053 | 956 |
| | 53 | GC07 | 18 53.539 | 112 37.887 | 2256 |
| Perth Basin | 57 | GC019 | 27 19.200 | 111 37.600 | 2755 |
| EAST AUSTRLIAN CONTINENTAL MARGIN | | | | | |
| | 71 | GC047 | 29 18.847 | 153 51.702 | 417 |
| Offshore Evans Head (NSW) | 71 | GC016 | 29 20.018 | 153 50.640 | 595 |
| | 71 | GC024 | 29 15.810 | 153 52.881 | 824 |
| | 71 | GC007 | 29 12.161 | 153 52.510 | 989 |
| | 71 | GC026 | 29 18.614 | 154 04.534 | 1989 |
| SOUTH AUSTRALIAN CONTINENTAL MARGIN | | | | | |
| Eyre Terrace | 102 | GC09 | 33 30.000 | 128 01.51 | 769 |
| Ceduna Terrace | 102 | GC14 | 34 22.490 | 130 25.070 | 1502 |
| | 102 | GC17 | 34 53.450 | 130 03.330 | 3001 |

**Table 2 Analyses performed on the cores sampled**

| Area | Survey | Core | NUMBER OF SAMPLES ANALYSED<br>Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | δO18 | Al2O3 (wt%) | SiO2 (wt%) |
|---|---|---|---|---|---|---|---|
| WEST AUSTRALIAN CONTINENTAL MARGIN | | | | | | | |
| Exmouth Plateau | 53 | GC04 | 45 | 45 | 44 | * | * |
| | 53 | GC07 | 47 | 47 | 46 | 46 | 46 |
| Perth Basin | 57 | GC019 | 40 | 40 | 40 | 40 | 40 |
| EAST AUSTRLIAN CONTINENTAL MARGIN | | | | | | | |
| | 71 | GC047 | 41 | 41 | - | 40 | 40 |
| Offshore Evans Head (NSW) | 71 | GC016 | 17 | 17 | - | 17 | 17 |
| | 71 | GC024 | 18 | 18 | - | 18 | 18 |
| | 71 | GC007 | 40 | 40 | - | - | - |
| | 71 | GC026 | 26 | 26 | - | - | - |
| SOUTH AUSTRALIAN CONTINENTAL MARGIN | | | | | | | |
| Eyre Terrace | 102 | GC09 | 78 | 78 | * | * | * |
| west Ceduna Terrace | 102 | GC14 | 55 | 55 | * | * | * |
| | 102 | GC17 | 41 | 41 | * | * | * |

* analyses in progress

## METHODS

The total magnetic susceptibility, measured in μGauss $oe^{-1}.cm^3$, of each sample was determined using the Digico Bulk Susceptibility Bridge at The Black Mountain Laboratory, operated by the Australian Geological Survey Organisation (AGSO). The samples to be analysed were collected in a plastic cube of approximately $7cm^3$ volume, the sediments may be analysed either in a wet or dry state. The magnetic susceptibility of the sediments is measured by passing the sample through the Digico bulk susceptibility bridge using the SUSB2 data acquisition program. The bridge is calibrated with respect to a reference sample of known susceptibility before measurement can begin. The bridge was re-calibrated after every ten samples were analysed. Detailed procedures for determining the magnetic susceptibility is set out in the Digico Bulk Susceptibility Bridge User Manual, and utilises the SUSB2 data acquisition program running under PALDAS, (Digico Bulk Susceptibility Bridge User Manual, 1992). The total magnetic susceptibility ($\mu Gauss.oe^{-1}.cm^3$) of all cores was measured. In the text and figures the total magnetic susceptibility has been referred to as magnetic susceptibility with shortened units of μGauss.

Percent calcium carbonate was determined with the carbonate bomb (Müller and others, 1971; Dunn, 1979). The procedure used for determination of percent calcium carbonate in a sample using the carbonate bomb is as follows. The samples were oven dried overnight, then ground into a fine powder. One gram of sample was then weighed into a small plastic dish, approximately 10 mls of concentrated hydrochloric acid was added to the bomb with a dispenser. The one gram of sample was placed in the 'bomb', sealed, and then connected to the digital pressure monitor. The 'bomb' was then swirled gently to allow the samples and acid to react, this reaction produces carbon dioxide gas; the gas pressure is displayed on the monitor. A number of standards were analysed after approximately every ten samples to check the accuracy of the 'bomb'. The coefficient of variation determined from the analyses of five samples was found to be ±2 %.

The geochemical contents of the sediments were determined by XRF (X-ray fluorescence) at the AGSO with methods presented in Cruikshank and Pyke (1993).

The isotope data shown here from the Exmouth Plateau and Carnarvon Terrace cores were conducted at Woods Hole Oceanographic Institution (WHOI). Stable isotope analyses were carried out using a VG Micromass 602E mass spectrometer, upgraded with triple collectors. Uncrushed foraminiferal samples were roasted under a vacuum at 370°C, and reacted with 100 percent phosphoric acid at 90°C. The isotopic data are part of a paleoproductivity study of glacial/interglacial cores conducted off north west Australia (McCorkle and others, 1993).

## DATA PRESENTATION

### West Australian Continental Margin

#### Exmouth Plateau

The assemblage of data from Exmouth Plateau, is summarised in Tables 3 through 5. The down-core profiles of $\delta^{18}O$, percent calcium carbonate and magnetic susceptibility are presented in Figure 2 for core 53GC04, and in Figure 3 for core 53GC07. Also included are down-core plots of $Al_2O_3$ and $SiO_2$ for core 53GC07.

The estimated depths for the isotopic stage boundaries in the down-core profile of planktonic foraminiferal $\delta^{18}O$ data for core 53GC04 are indicated by dotted lines, and this interpretation is from McCorkle and others (1993). The percent calcium carbonate profile in the core 53GC04 from the Exmouth Plateau, water depth 956m (Fig.2) shows relatively low carbonate contents (<80 wt%) during the Holocene (core-top), and the last interglacial (LIG, isotope stage 6, $CaCO_3$ <70 wt%), at a depth of 275 cm. The last glacial maximum (LGM, isotope stage 2) corresponds with high carbonate contents (>85 wt%).

The magnetic susceptibility is relatively high (>160 µGauss $oe^{-1}.cm^3$) in the Holocene (core-top) and similarly during the Last Interglacial (>120 µGauss $oe^{-1}.cm^3$), isotope stage 6 at a depth of approximately 290 cm. During the LGM, between isotope stages 2/3 the magnetic susceptibility is low, < 10 µGauss $oe^{-1}.cm^3$ These patterns appear to reflect dilution with carbonate.

The plots of $\delta^{18}O$, percent calcium carbonate, magnetic susceptibility, $Al_2O_3$ and $SiO_2$ for core 53GC07 are assembled in Figure 3. The isotopic stage boundaries in these down-core profiles are again indicated by the dotted lines. The general shape of this down-core profile is similar to that of the $\delta^{18}O$ profile for core 53GC04, but the top section of core 53GC07 appears to be missing. The percent calcium carbonate down-core profile shows relatively low contents in the core-top (<80 wt%) and also during the LIG (<75 wt%) near isotopic stage 6. The LGM (isotope stage 2), corresponds with high carbonate contents (>85 wt%).

The range of magnetic susceptibility down-core for sediments from core 53GC07 is between 0 and 200 µGauss $oe^{-1}.cm^3$. During the LGM, isotopic stage 2/3 the magnetic susceptibility is low (<10 µGauss $oe^{-1}.cm^3$). High magnetic susceptibilities

(>170 $\mu$Gauss $oe^{-1}.cm^3$) occur during the LIG, isotopic stage 6 at a depth of 325 cm. The down-core profile of $SiO_2$ is very similar to that of magnetic susceptibility. Both profiles show low contents of $SiO_2$ and magnetic susceptibility during the LGM (isotope stage 2) at a depth of 25 cm and high abundances of $SiO_2$ and magnetic susceptibility in the core-top and during the LIG (isotope stage 6) at a depth of 325 cm. The down-core profile of $Al_2O_3$ abundances shows some similarities with the general trend of the magnetic susceptibility and $SiO_2$ curve, however, one sample in the $Al_2O_3$ profile shows an unusually high abundance of $Al_2O_3$ (>9.5 wt%) compared with the abundances of the other samples from this core (between 1 and 5 wt%).

### Carnarvon Terrace

The data for core 57GC019, from the Carnarvon Terrace, is summarised in Table 6.

The down-core profiles of $\delta^{18}O$, percent calcium carbonate, magnetic susceptibility, $SiO_2$ and $Al_2O_3$ for core 57GC19 from the Carnarvon Terrace are shown in Figure 4. Estimated depths for isotopic stage boundaries are indicated by the dotted lines and these have also been taken from McCorkle and others (1993).

Percent calcium carbonate contents are low (<80 wt%) in the Holocene, and also during the LIG,(<85 wt%) at isotope stage 6.

The magnetic susceptibility profile for core 57GC19 shows relatively high values(>70 $\mu$Gauss $oe^{-1}.cm^3$) in the core-top. Low values (<30 $\mu$Gauss $oe^{-1}.cm^3$) of magnetic susceptibility correspond with the LGM at isotopic stage 2. At depths between 200 and 300 cm the magnetic susceptibilities of these sediments was not detected indicating little or no presence of magnetic particles or the presence of very small particles of magnetic material. The down-core profile of SiO2 reflects dilution with the down-core profile of calcium carbonate. Low values of $SiO_2$ (<5 wt%) correspond with the LGM at isotopic stage 2, depth 25 cm.

### Exmouth Plateau and Carnarvon Terrace comparisons

A comparison between the $\delta^{18}O$ in each of the three cores is shown in Figure 5. The profiles for cores 53GC04 and 53GC07 from the Exmouth Plateau show similar trends. The main difference in these two trends is in the top section of the core, but the core-top from 53GC07 has probably been lost during the coring process. The planktonic $\delta^{18}O$ profile for core 57GC19 shows a similar trend to core 53GC04, apart from the top section of the profile, where the $\delta^{18}O$ content in the sediments from core 53GC04 is lower than the $\delta^{18}O$ content in the sediments from core 57GC19. The ranges in the $\delta^{18}O$ contents for cores 53GC04 and 53GC07 is between -0.5 through -2.5, while the $\delta^{18}O$ contents for core 57GC19 only range from 0 through to -1.5. Sedimentation rates have been calculated for each of the above three cores (53GC04, 53GC07 and 57GC19) from the $\delta^{18}O$ data and also using excess Thorium-230 data. The sedimentation rates of the two cores 53GC04 and 53GC07 from the Exmouth Plateau are 2.27 cm/kyr and 2.23 cm/kyr respectively McCorkle and others (1993). The sedimentation rate of core 57GC19 from the Carnarvon Terrace was found to be 1.46 cm/kyr.

The three plots of percent calcium carbonate for cores 53GC04, 53GC07 and 57GC19 are shown in Figure 6. All three cores show low carbonate contents in the Holocene, and during LIG at a depth of 300 cm in the Exmouth Plateau cores (53GC04 and 53GC07), and at about 200 cm in that core from the Carnarvon Terrace (57GC19).

The down-core profiles of total magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$) for cores 53GC04, 53GC07 and 57GC19 are shown in Figure 7. Cores 53GC04 and 53GC07 show very similar down-core trends with relatively high values of magnetic susceptibility (>150 $\mu$Gauss $oe^{-1}.cm^3$) in the Holocene (core-tops) and during the LIG (>120 $\mu$Gauss $oe^{-1}.cm^3$) at about 300 cm depth in Exmouth Plateau cores. Low values of magnetic susceptibility (<20 $\mu$Gauss $oe^{-1}.cm^3$)correspond to the approximate time of the LGM, for both cores 53GC04 and 53GC07 from the Exmouth Plateau around isotope stage 2/3.

The down-core profile of magnetic susceptibility in the sediments from the Carnarvon Terrace (57GC19) shows a similar pattern to those down-core magnetic susceptibility profiles from the Exmouth Plateau cores but there are notable differences. Profiles from all cores show high values of magnetic susceptibility (>70 $\mu$Gauss $oe^{-1}.cm^3$) in the Holocene and low values (<25 $\mu$Gauss $oe^{-1}.cm^3$) during the LGM (isotope stage 2). The notable difference between Exmouth Plateau and Ceduna Terrace cores is evident in these sediments deposited prior to the LIG. The magnetic susceptibility in the sediments from the Carnarvon Terrace core (57GC19) was not detectable at depths between 200 and 300 cm In contrast magnetic susceptibility in those sediments from the Exmouth Plateau at comparable depths is > 20 $\mu$Gauss $oe^{-1}.cm^3$.

The ranges in total magnetic susceptibility for the two cores from the Exmouth Plateau and Carnarvon Terrace are different. Data from the Exmouth Plateau (53GC04 and 53GC07) range between 0 and 180 $\mu$Gauss $oe^{-1}.cm^3$ and 0 and 200 $\mu$Gauss $oe^{-1}.cm^3$

respectively. In comparison the core from the Carnarvon Terrace (57GC19) ranges between -10 and 80 μGauss $oe^{-1}.cm^{3}$.

The $SiO_2$ and $Al_2O_3$ (wt %) profiles for cores 53GC07 and 57GC19 are shown in Figure 8. The down-core profiles for each core show similar trends in that there are high aluminosilicate contents in the Holocene (core-tops) and during the LIG at isotope stage 6. The down-core profiles of $Al_2O_3$ for core 53GC07 from the Exmouth Plateau and core 57GC19 from the Carnarvon Terrace show similar down-core patterns of $Al_2O_3$ variation. Both the cores show high $Al_2O_3$ (>2 wt%) abundances in the Holocene (core-tops) and during the LIG, >2.5 wt% $Al_2O_3$ (isotope stage 6). The down-core profile of $Al_2O_3$ for cores 53GC07 from the Exmouth Plateau and 57GC19 from the Carnarvon Terrace is similar to the down-core profiles of $SiO_2$ and magnetic susceptibility for cores 53GC07 and 57GC19 but differences are apparent. One of the samples in both cores has a very high abundance of $Al_2O_3$ (>9.5 wt%) in the sediment. Both the $SiO_2$ down-core profiles for cores 53GC07 and 57GC19 have similar down-core profiles to the magnetic susceptibility down-core profiles of cores from the Exmouth Plateau (53GC04 and 53GC07). All these profiles show low values at isotope stage 2, during the LGM, and high values in the Holocene (core-tops) and at isotope stage 6, during the LIG.

Cross-plots of percent calcium carbonate, and indictors of terrigenous materials, $AL_2O_3$ and $Fe_2O_3$ and magnetic susceptibility from the Exmouth Plateau and Carnarvon Terrace are shown in Figures 9 through 11. The cross-plot of magnetic susceptibility and calcium carbonate from these areas shows calcium carbonate varies over a range between 70 and 90% and magnetic susceptibility varies between -10 and 240/ or over a range of 250 μGauss $oe^{-1}.cm^{3}$. The data indicate dilution of magnetic susceptibility by calcium carbonate. Shown in Figures 10 and 11 are plots of magnetic susceptibility and the $Al_2O_3$ content (Fig. 10) and the total iron content (Fig 11). Both of these plots indicate increases in magnetic susceptibility with both $Al_2O_3$ and $Fe_2O_3$. The core from the Carnarvon Terrace (57GC19) has a relatively lower abundance of $Al_2O_3$ (<3 wt%) and $Fe_2O_3$ (<0.6 wt%) hence a lower abundance of terrigenous material than that core from the Exmouth Plateau at a comparable water depth.

Table 3 Magnetic susceptibility, percent calcium carbonate and dO18 for samples from core 53GC04, Exmouth Plateau

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | δO18 |
|---|---|---|---|---|---|---|
| 53 | GC04 | 5-8 | 7 | 171.05 | 75 | -1.65 |
| | | 18-21 | 19 | 66.50 | 79 | -2.08 |
| | | 32-35 | 33 | 16.44 | 87 | -0.82 |
| | | 42-45 | 43 | 9.16 | 89 | -0.65 |
| | | 52-55 | 53 | 3.26 | 87 | -0.59 |
| | | 57-60 | 58 | 9.32 | 89 | -0.75 |
| | | 62-65 | 63 | 9.40 | 89 | -0.75 |
| | | 67-70 | 68 | 10.54 | 86 | -0.60 |
| | | 72-75 | 73 | 18.01 | 88 | -0.86 |
| | | 77-80 | 78 | 19.12 | 87 | -0.89 |
| | | 82-85 | 83 | 17.03 | 87 | -1.03 |
| | | 87-90 | 88 | 14.47 | 87 | -0.91 |
| | | 92-95 | 93 | 14.71 | 88 | -0.83 |
| | | 97-100 | 98 | 10.71 | 86 | -1.02 |
| | | 102-105 | 103 | 10.87 | 87 | -1.01 |
| | | 112-115 | 113 | 15.32 | 86 | -0.97 |
| | | 122-125 | 123 | 25.60 | 85 | -1.09 |
| | | 132-135 | 133 | 31.85 | 84 | -0.86 |
| | | 142-145 | 143 | 37.91 | 85 | -0.98 |
| | | 152-155 | 153 | 24.60 | 83 | -0.81 |
| | | 162-165 | 163 | 35.82 | 84 | -0.72 |
| | | 172-175 | 173 | 36.70 | 84 | -1.16 |
| | | 182-185 | 183 | 39.90 | 85 | -1.16 |
| | | 192-195 | 193 | 24.97 | 86 | -1.56 |
| | | 202-205 | 203 | 33.65 | 84 | -1.18 |
| | | 212-215 | 213 | 28.37 | 87 | -1.53 |
| | | 222-225 | 223 | 17.65 | 88 | -1.32 |
| | | 232-235 | 233 | 16.78 | 87 | -1.71 |
| | | 242-245 | 243 | 20.58 | 88 | -1.83 |
| | | 252-255 | 253 | 33.72 | 86 | -2.16 |
| | | 262-265 | 263 | 59.16 | 79 | |
| | | 272-275 | 273 | 86.23 | 71 | -1.98 |
| | | 282-285 | 283 | 126.86 | 71 | -2.03 |
| | | 292-295 | 293 | 68.47 | 75 | -1.46 |
| | | 302-305 | 303 | 14.02 | 84 | -0.86 |
| | | 312-315 | 313 | 36.10 | 83 | -1.10 |
| | | 322-325 | 323 | 32.09 | 84 | -0.94 |
| | | 332-335 | 333 | 48.02 | 82 | -0.79 |
| | | 342-345 | 343 | 61.15 | 83 | -1.09 |
| | | 352-355 | 353 | 32.41 | 84 | -0.98 |
| | | 362-365 | 363 | 36.74 | 84 | -1.06 |
| | | 372-375 | 373 | 40.38 | 84 | -1.16 |
| | | 382-385 | 383 | 41.39 | 83 | -1.35 |
| | | 392-395 | 393 | 31.63 | 80 | -1.06 |
| | | 402-405 | 403 | 45.83 | 77 | -1.48 |

Table 4 Magnetic susceptibility, percent calcium carbonate, dO18, SiO2 and Al2O3 for samples from core 53GC07, Exmouth Plateau

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | δO18 | SiO2 (wt%) | Al2O3 (wt%) |
|---|---|---|---|---|---|---|---|---|
| 53 | GC07 | 14.5-17.5 | 15.5 | 84.43 | 77 | | | |
| | | 16.5-19.5 | 18.5 | 149.16 | 77 | -2.03 | 9.27 | 2.79 |
| | | 21.5-24.5 | 22.5 | 111.53 | 81 | -1.90 | 7.53 | 2.06 |
| | | 26.5-29.5 | 28.5 | 109.10 | 84 | -1.25 | 6.08 | 1.5 |
| | | 31.5-34.5 | 32.5 | 95.09 | 85 | -1.22 | 5.56 | 1.21 |
| | | 51.5-54.5 | 52.5 | 98.57 | 82 | -0.75 | 7.53 | 1.45 |
| | | 56.5-59.5 | 57.5 | 89.68 | 79 | -0.69 | 9.27 | 1.53 |
| | | 61.5-64.5 | 62.5 | 11.25 | 79 | -0.72 | 9.26 | 1.71 |
| | | 66.5-69.5 | 67.5 | 8.37 | 80 | -0.68 | 8.78 | 1.75 |
| | | 71.5-80.5 | 76.5 | 37.19 | 81 | -0.81 | 8.83 | 1.81 |
| | | 82.5-85.5 | 83.5 | 37.64 | 83 | -0.89 | 7.22 | 1.42 |
| | | 104.5-107.5 | 106.5 | 76.78 | 80 | -0.93 | 8.76 | 1.7 |
| | | 134.5-137.5 | 136.5 | 99.68 | 77 | -0.90 | 10.49 | 9.99 |
| | | 144.5-147.5 | 145.5 | 109.13 | 76 | -1.01 | 10.8 | 2.46 |
| | | 154.5-157.5 | 155.5 | 108.43 | 77 | -1.13 | 10.68 | 2.28 |
| | | 164.5-167.5 | 165.5 | 90.62 | 78 | -1.14 | 9.32 | 2.05 |
| | | 174.5-187.5 | 175.5 | 126.85 | 80 | -1.40 | 7.36 | 1.83 |
| | | 194.5-197.5 | 195.5 | 112.83 | 81 | -1.67 | 7.38 | 1.73 |
| | | 204.5-207.5 | 205.5 | 132.29 | 81 | -1.77 | 7.34 | 1.74 |
| | | 214.5-217.5 | 215.5 | 24.31 | 85 | -1.75 | 5.74 | 1.25 |
| | | 224.5-227.5 | 225.5 | 67.40 | 86 | -1.70 | 5.21 | 1.16 |
| | | 234.5-237.5 | 235.5 | 91.60 | 85 | -1.87 | 5.82 | 1.37 |
| | | 244.5-247.5 | 245.5 | 116.01 | 82 | -1.48 | 7.19 | 1.78 |
| | | 254.5-257.5 | 255.5 | 117.78 | 79 | -1.92 | 8.91 | 2.26 |
| | | 264.5-267.5 | 265.5 | 126.85 | 76 | -1.74 | 10.29 | 2.66 |
| | | 274.5-277.5 | 275.5 | 132.23 | 75 | -2.04 | 10.68 | 2.93 |
| | | 284.5-287.5 | 285.5 | 171.82 | 72 | -2.08 | 12.39 | 3.64 |
| | | 294.5-297.5 | 295.5 | 202.84 | 70 | -2.28 | 13.72 | 4.24 |
| | | 304.5-307.5 | 305.5 | 188.56 | 70 | -2.06 | 13.54 | 4 |
| | | 312.5-315.5 | 313.5 | 173.03 | 74 | -1.89 | 11.52 | 3.21 |
| | | 322.5-325.5 | 323.5 | 81.66 | 81 | -1.03 | 7.8 | 1.6 |
| | | 332.5-335.5 | 333.5 | 91.54 | 77 | -0.70 | 9.8 | 1.96 |
| | | 342.5-345.5 | 343.5 | 14.29 | 78 | -0.80 | 9.99 | 2.33 |
| | | 352.5-355.5 | 353.5 | 53.31 | 76 | -0.89 | 10.92 | 2.66 |
| | | 362.5-365.5 | 363.5 | 88.03 | 76 | -0.85 | 11.16 | 2.6 |
| | | 372.5-375.5 | 373.5 | 81.92 | 77 | -0.67 | 9.98 | 2.14 |
| | | 382.5-385.5 | 383.5 | 74.91 | 77 | -0.73 | 9.75 | 1.9 |
| | | 402.5-405.5 | 403.5 | 27.70 | 78 | -1.02 | 9.44 | 1.98 |
| | | 413.5-416.5 | 414.5 | 58.70 | 80 | -1.24 | 8.68 | 2.13 |
| | | 424.5-427.5 | 425.5 | 31.74 | 78 | -1.10 | 9.51 | 2.27 |
| | | 434.5-437.5 | 435.5 | 54.00 | 78 | -0.71 | 9.7 | 2.09 |
| | | 444.5-447.5 | 446.5 | 57.47 | 76 | -0.76 | 10.48 | 2.48 |
| | | 454.5-457.5 | 455.5 | 79.24 | 75 | -1.22 | 10.94 | 2.99 |
| | | 464.5-467.5 | 465.5 | 101.13 | 73 | -1.35 | 11.86 | 3.56 |
| | | 474.5-477.5 | 475.5 | 81.63 | 74 | -1.35 | 11.28 | 3.35 |
| | | 484.5-487.5 | 485.5 | 48.65 | 81 | -1.08 | 7.97 | 2.11 |
| | | 494.4-497.5 | 495.5 | 54.87 | 79 | -1.33 | 8.55 | 2.22 |

Table 5 Major and trace element analyses for core 53GC07

| Survey | Core | Sample Depth (cm) | SiO2 (wt%) | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | S (ppm) | LOI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | GC07 | 0.5 - 3.5 | 8.92 | 0.05 | 2.52 | 1.06 | 0.97 | 0.08 | 0.04 | 0.82 | 43.27 | 1.89 | 0.39 | 0.09 | 1000 | 40.75 |
| | GC07 | 5.5 - 5.8 | 9.2 | 0.06 | 2.69 | 1.13 | 1.04 | 0.08 | 0.05 | 0.81 | 43.24 | 1.83 | 0.41 | 0.09 | 1000 | 40.32 |
| | GC07 | 10.5 - 13.5 | 9.1 | 0.06 | 2.76 | 1.21 | 1.12 | 0.08 | 0.04 | 0.82 | 43.01 | 1.9 | 0.4 | 0.08 | 1000 | 40.45 |
| | GC07 | 16.5 - 19.5 | 9.27 | 0.07 | 2.79 | 1.21 | 1.1 | 0.1 | 0.07 | 0.78 | 43.12 | 1.69 | 0.38 | 0.08 | 900 | 40.35 |
| | GC07 | 21.5 - 24.5 | 7.53 | 0.05 | 2.06 | 0.89 | 0.77 | 0.11 | 0.11 | 0.66 | 45.47 | 1.69 | 0.39 | 0.08 | 900 | 40.82 |
| | GC07 | 26.5 - 29.5 | 6.08 | 0.03 | 1.5 | 0.67 | 0.56 | 0.1 | 0.04 | 0.56 | 47.33 | 1.51 | 0.28 | 0.07 | 800 | 41.67 |
| | GC07 | 31.5 - 34.5 | 5.56 | 0.01 | 1.21 | 0.56 | 0.45 | 0.1 | 0.09 | 0.54 | 47.58 | 1.53 | 0.19 | 0.07 | 900 | 42.41 |
| | GC07 | 36.5 - 39.5 | 5.46 | 0 | 1.01 | 0.44 | 0.35 | 0.08 | 0.02 | 0.53 | 47.65 | 1.6 | 0.18 | 0.06 | 900 | 42.84 |
| | GC07 | 41.5 - 44.5 | 7.37 | 0.01 | 1.27 | 0.56 | 0.46 | 0.09 | 0.01 | 0.52 | 46.21 | 1.58 | 0.21 | 0.06 | 900 | 42.01 |
| | GC07 | 46.5 - 49.5 | 7.62 | 0.01 | 1.36 | 0.59 | 0.49 | 0.09 | 0.01 | 0.54 | 45.72 | 1.71 | 0.23 | 0.06 | 1000 | 41.95 |
| | GC07 | 51.5 - 54.5 | 7.53 | 0.02 | 1.45 | 0.64 | 0.55 | 0.08 | 0.01 | 0.5 | 46.21 | 1.52 | 0.24 | 0.06 | 800 | 41.6 |
| | GC07 | 56.5 - 59.5 | 9.27 | 0.04 | 1.53 | 1.52 | 1.42 | 0.09 | 0.03 | 0.7 | 44.17 | 1.72 | 0.32 | 0.06 | 900 | 40.49 |
| | GC07 | 61.5 - 64.5 | 9.26 | 0.02 | 1.71 | 1.02 | 0.91 | 0.1 | 0.01 | 0.69 | 44.31 | 1.74 | 0.32 | 0.07 | 900 | 40.69 |
| | GC07 | 66.5 - 69.5 | 8.78 | 0.03 | 1.75 | 0.66 | 0.54 | 0.11 | 0.01 | 0.61 | 44.98 | 1.68 | 0.29 | 0.07 | 900 | 40.97 |
| | GC07 | 71.5 - 74.5 | 8.83 | 0.05 | 1.81 | 0.84 | 0.72 | 0.11 | 0.02 | 0.63 | 45.16 | 1.5 | 0.29 | 0.07 | 900 | 40.63 |
| | GC07 | 77.5 - 80.5 | 7.97 | 0.03 | 1.68 | 0.66 | 0.52 | 0.13 | 0.01 | 0.59 | 45.51 | 1.79 | 0.35 | 0.07 | 900 | 41.16 |
| | GC07 | 82.5 - 85.5 | 7.22 | 0.01 | 1.42 | 0.57 | 0.45 | 0.11 | 0.01 | 0.57 | 46.31 | 1.71 | 0.26 | 0.07 | 900 | 41.67 |
| | GC07 | 87.5 - 90.5 | 7.17 | 0.02 | 1.33 | 0.58 | 0.46 | 0.11 | 0.01 | 0.57 | 46.4 | 1.63 | 0.22 | 0.07 | 900 | 41.81 |
| | GC07 | 92.5 - 95.5 | 6.92 | 0.01 | 1.28 | 0.47 | 0.34 | 0.12 | 0.01 | 0.54 | 46.38 | 1.67 | 0.24 | 0.07 | 900 | 42.23 |
| | GC07 | 96.5 - 99.5 | 8.15 | 0.02 | 1.47 | 0.72 | 0.58 | 0.13 | 0.02 | 0.61 | 45.35 | 1.92 | 0.31 | 0.08 | 1000 | 41.15 |
| | GC07 | 104.5 - 107.5 | 8.76 | 0.03 | 1.7 | 0.74 | 0.58 | 0.14 | 0.02 | 0.61 | 44.92 | 2.14 | 0.44 | 0.08 | 1000 | 40.41 |
| | GC07 | 114.5 - 117.5 | 10.02 | 0.05 | 1.81 | 1.35 | 1.21 | 0.13 | 0.02 | 0.73 | 43.6 | 1.78 | 0.33 | 0.08 | 1000 | 40.06 |
| | GC07 | 124.5 - 127.5 | 9.6 | 0.05 | 1.88 | 0.68 | 0.54 | 0.13 | 0.02 | 0.62 | 44.02 | 1.94 | 0.34 | 0.07 | 1000 | 40.62 |
| | GC07 | 134.5 - 137.5 | 10.49 | 0.06 | 9.99 | 1.09 | 0.97 | 0.11 | 0.02 | 0.86 | 43.36 | 2.06 | 0.6 | 0.08 | 1000 | 31.23 |
| | GC07 | 144.5 - 147.5 | 10.8 | 0.06 | 2.46 | 1.1 | 0.97 | 0.12 | 0.02 | 0.7 | 42.72 | 1.65 | 0.38 | 0.08 | 900 | 39.82 |
| | GC07 | 154.5 - 157.5 | 10.68 | 0.06 | 2.28 | 0.89 | 0.75 | 0.13 | 0.03 | 0.65 | 42.89 | 1.69 | 0.37 | 0.08 | 1000 | 40.21 |
| | GC07 | 164.5 - 167.5 | 9.32 | 0.03 | 2.05 | 0.87 | 0.74 | 0.12 | 0.03 | 0.57 | 43.94 | 1.52 | 0.34 | 0.08 | 800 | 41.07 |
| | GC07 | 174.5 - 177.5 | 7.36 | 0.03 | 1.83 | 0.69 | 0.55 | 0.13 | 0.03 | 0.55 | 44.71 | 1.47 | 0.29 | 0.08 | 1000 | 42.79 |
| | GC07 | 184.5 - 187.5 | 10.07 | 0.06 | 2.26 | 0.8 | 0.68 | 0.11 | 0.03 | 0.62 | 44.91 | 1.61 | 0.34 | 0.08 | 1000 | 39.06 |
| | GC07 | 194.5 - 197.5 | 7.38 | 0.04 | 1.73 | 0.8 | 0.68 | 0.11 | 0.03 | 0.58 | 45.58 | 1.48 | 0.28 | 0.08 | 900 | 41.85 |
| | GC07 | 204.5 - 207.5 | 7.34 | 0.04 | 1.74 | 0.7 | 0.53 | 0.15 | 0.03 | 0.58 | 45.66 | 1.55 | 0.25 | 0.08 | 900 | 41.87 |
| | GC07 | 214.5 - 217.5 | 5.74 | 0.01 | 1.25 | 0.61 | 0.51 | 0.09 | 0.04 | 0.49 | 47.41 | 1.5 | 0.21 | 0.07 | 1000 | 42.47 |
| | GC07 | 224.5 - 227.5 | 5.21 | 0 | 1.16 | 0.5 | 0.38 | 0.11 | 0.04 | 0.48 | 48.18 | 1.31 | 0.21 | 0.07 | 800 | 42.62 |
| | GC07 | 234.5 - 237.5 | 5.82 | 0.02 | 1.37 | 0.63 | 0.5 | 0.12 | 0.04 | 0.52 | 47.48 | 1.41 | 0.22 | 0.08 | 900 | 42.18 |
| | GC07 | 244.5 - 247.5 | 7.19 | 0.04 | 1.78 | 0.82 | 0.68 | 0.13 | 0.04 | 0.58 | 46.05 | 1.41 | 0.28 | 0.07 | 900 | 41.51 |
| | GC07 | 254.5 - 257.5 | 8.91 | 0.05 | 2.26 | 1.04 | 0.88 | 0.14 | 0.03 | 0.69 | 44.03 | 1.56 | 0.35 | 0.08 | 900 | 40.8 |
| | GC07 | 264.5 - 267.5 | 10.29 | 0.09 | 2.66 | 1.11 | 0.91 | 0.18 | 0.03 | 0.85 | 42.69 | 1.69 | 0.41 | 0.08 | 900 | 39.97 |
| | GC07 | 274.5 - 277.5 | 10.68 | 0.08 | 2.93 | 1.2 | 1.02 | 0.16 | 0.03 | 0.85 | 42.25 | 1.6 | 0.41 | 0.08 | 1200 | 39.76 |
| | GC07 | 284.5 - 287.5 | 12.39 | 0.1 | 3.64 | 1.5 | 1.32 | 0.16 | 0.03 | 0.98 | 40.21 | 1.73 | 0.5 | 0.09 | 1000 | 38.7 |
| | GC07 | 294.5 - 297.5 | 13.72 | 0.15 | 4.24 | 1.83 | 1.63 | 0.18 | 0.03 | 1.08 | 39.1 | 1.55 | 0.57 | 0.09 | 1000 | 37.49 |
| | GC07 | 304.5 - 307.5 | 13.54 | 0.14 | 4 | 1.86 | 1.68 | 0.16 | 0.03 | 1.09 | 38.98 | 1.56 | 0.56 | 0.09 | 1100 | 38.03 |
| | GC07 | 312.5 - 315.5 | 11.52 | 0.12 | 3.21 | 1.39 | 1.07 | 0.29 | 0.03 | 0.93 | 41.25 | 1.66 | 0.48 | 0.08 | 1000 | 39.2 |
| | GC07 | 322.5 - 325.5 | 7.8 | 0.05 | 1.6 | 0.96 | 0.83 | 0.12 | 0.04 | 0.69 | 45.29 | 1.6 | 0.29 | 0.07 | 1000 | 41.44 |
| | GC07 | 332.5 - 335.5 | 9.8 | 0.05 | 1.96 | 1.46 | 1.23 | 0.21 | 0.04 | 0.75 | 43.3 | 1.54 | 0.33 | 0.08 | 1700 | 40.53 |
| | GC07 | 342.5 - 345.5 | 9.99 | 0.07 | 2.33 | 0.88 | 0.75 | 0.12 | 0.03 | 0.65 | 43.71 | 1.38 | 0.36 | 0.08 | 1100 | 40.28 |
| | GC07 | 352.5 - 355.5 | 10.92 | 0.09 | 2.66 | 1.11 | 0.98 | 0.12 | 0.04 | 0.71 | 42.79 | 1.45 | 0.42 | 0.08 | 1100 | 39.52 |
| | GC07 | 362.5 - 365.5 | 11.16 | 0.08 | 2.6 | 1.01 | 0.88 | 0.12 | 0.04 | 0.7 | 42.38 | 1.58 | 0.39 | 0.08 | 1100 | 39.77 |
| | GC07 | 372.5 - 375.5 | 9.98 | 0.07 | 2.14 | 0.86 | 0.73 | 0.12 | 0.03 | 0.68 | 43.38 | 1.62 | 0.36 | 0.07 | 1100 | 40.65 |
| | GC07 | 382.5 - 385.5 | 9.75 | 0.05 | 1.9 | 1.14 | 1.01 | 0.12 | 0.04 | 0.72 | 43.41 | 1.7 | 0.33 | 0.08 | 1300 | 40.74 |
| | GC07 | 392.5 - 395.5 | 9.7 | 0.05 | 2.1 | 1.01 | 0.83 | 0.16 | 0.04 | 0.73 | 43.41 | 2.09 | 0.42 | 0.08 | 1100 | 40.2 |
| | GC07 | 402.5 - 405.5 | 9.44 | 0.06 | 1.98 | 0.97 | 0.74 | 0.21 | 0.04 | 0.7 | 43.86 | 1.63 | 0.32 | 0.08 | 1000 | 40.75 |
| | GC07 | 413.5 - 416.5 | 8.68 | 0.06 | 2.13 | 0.78 | 0.66 | 0.11 | 0.04 | 0.63 | 44.74 | 1.78 | 0.4 | 0.08 | 1100 | 40.48 |
| | GC07 | 424.5 - 427.5 | 9.51 | 0.07 | 2.27 | 0.94 | 0.77 | 0.15 | 0.03 | 0.7 | 43.76 | 1.82 | 0.42 | 0.08 | 1200 | 40.22 |
| | GC07 | 434.5 - 437.5 | 9.7 | 0.06 | 2.09 | 1.08 | 0.92 | 0.14 | 0.03 | 0.74 | 43.74 | 1.45 | 0.34 | 0.08 | 1100 | 40.54 |
| | GC07 | 444.5 - 447.5 | 10.48 | 0.08 | 2.48 | 1.21 | 1.05 | 0.14 | 0.04 | 0.79 | 42.81 | 1.51 | 0.41 | 0.08 | 900 | 39.9 |
| | GC07 | 454.5 - 457.5 | 10.94 | 0.09 | 2.99 | 1.13 | 0.85 | 0.25 | 0.03 | 0.83 | 42.26 | 1.48 | 0.48 | 0.08 | 900 | 39.48 |
| | GC07 | 464.5 - 467.5 | 11.86 | 0.12 | 3.56 | 1.38 | 1.18 | 0.18 | 0.03 | 0.95 | 40.97 | 1.65 | 0.55 | 0.08 | 900 | 38.67 |
| | GC07 | 474.5 - 477.5 | 11.28 | 0.11 | 3.35 | 1.3 | 1.14 | 0.14 | 0.03 | 0.93 | 41.65 | 1.5 | 0.49 | 0.09 | 900 | 39.09 |
| | GC07 | 484.5 - 487.5 | 7.97 | 0.05 | 2.11 | 0.88 | 0.75 | 0.12 | 0.04 | 0.74 | 45.11 | 1.52 | 0.35 | 0.08 | 800 | 40.95 |
| | GC07 | 494.5 - 497.5 | 8.55 | 0.06 | 2.22 | 1.1 | 0.97 | 0.12 | 0.04 | 0.8 | 44.41 | 1.52 | 0.36 | 0.07 | 800 | 40.68 |

Table 5 (cont)

| Survey | Core | Sample Depth (cm) | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) | Nb (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | GC07 | 0.5 - 3.5 | 0 | 2.5 | 545 | <2 | 8 | 0 | 16 | 5 | 25 | 3 | <0.5 | <2 | 9 | 0 | 432 | <2 | 2 |
| | GC07 | 5.5 - 5.8 | 0 | 2.5 | 373 | <2 | 7 | 0 | 11 | 4 | 29 | 3 | <0.5 | <2 | 3 | 0 | 325 | <2 | <2 |
| | GC07 | 10.5 - 13.5 | 0 | 3 | 336 | <2 | <5 | 0 | 11 | 9 | 21 | 3 | <0.5 | <2 | 2 | 0 | 277 | <2 | 2 |
| | GC07 | 16.5 - 19.5 | 0 | 1.5 | 386 | <2 | <5 | 0 | 11 | <3 | 22 | 3 | <0.5 | <2 | 5 | 0 | 399 | <2 | 2 |
| | GC07 | 21.5 - 24.5 | 0 | 2 | 646 | <2 | 13 | 0 | 12 | 8 | 24 | 2 | <0.5 | <2 | 5 | 0 | 926 | <2 | <2 |
| | GC07 | 26.5 - 29.5 | 0 | 1.5 | 713 | <2 | 6 | 0 | 7 | 7 | 18 | 1 | <0.5 | <2 | 7 | 0 | 440 | <2 | <2 |
| | GC07 | 31.5 - 34.5 | 0 | 2 | 697 | <2 | 6 | 0 | 6 | 8 | 19 | 2 | <0.5 | <2 | 9 | 0 | 939 | <2 | <2 |
| | GC07 | 36.5 - 39.5 | 0 | 1 | 579 | <2 | <5 | 0 | 5 | 15 | 17 | <1 | <0.5 | <2 | 7 | 0 | 229 | <2 | <2 |
| | GC07 | 41.5 - 44.5 | 0 | 0.5 | 525 | <2 | <5 | 0 | 6 | 4 | 16 | 2 | <0.5 | <2 | 7 | 0 | 133 | <2 | <2 |
| | GC07 | 46.5 - 49.5 | 0 | 0.5 | 604 | <2 | <5 | 0 | 6 | 8 | 19 | <1 | <0.5 | <2 | 9 | 0 | 132 | <2 | <2 |
| | GC07 | 51.5 - 54.5 | 0 | 1.5 | 759 | <2 | 9 | 0 | 8 | 13 | 18 | <1 | <0.5 | <2 | 13 | 0 | 222 | <2 | <2 |
| | GC07 | 56.5 - 59.5 | 0 | 1 | 353 | <2 | <5 | 0 | 5 | 7 | 10 | 2 | <0.5 | <2 | <2 | 0 | 183 | <2 | 2 |
| | GC07 | 61.5 - 64.5 | 0 | 2 | 358 | <2 | <5 | 0 | 6 | 6 | 21 | 2 | 0.5 | <2 | 3 | 0 | 111 | <2 | <2 |
| | GC07 | 66.5 - 69.5 | 0 | 2.5 | 420 | <2 | 9 | 0 | 5 | 9 | 19 | <1 | <0.5 | <2 | 5 | 0 | 134 | <2 | <2 |
| | GC07 | 71.5 - 74.5 | 0 | 2.5 | 409 | <2 | 6 | 0 | 7 | 4 | 13 | 2 | <0.5 | <2 | 5 | 0 | 153 | <2 | <2 |
| | GC07 | 77.5 - 80.5 | 0 | 2.5 | 423 | <2 | 13 | 0 | 7 | 4 | 17 | <1 | <0.5 | 2 | <2 | 0 | 150 | <2 | <2 |
| | GC07 | 82.5 - 85.5 | 0 | 3.5 | 434 | <2 | 11 | 0 | 6 | <3 | 13 | 1 | <0.5 | <2 | 5 | 0 | 167 | <2 | <2 |
| | GC07 | 87.5 - 90.5 | 0 | 2.5 | 528 | <2 | <5 | 0 | 5 | 3 | 14 | 1 | <0.5 | <2 | 10 | 0 | 204 | <2 | <2 |
| | GC07 | 92.5 - 95.5 | 0 | 3 | 437 | <2 | 5 | 0 | 5 | 7 | 14 | 2 | <0.5 | <2 | 4 | 0 | 169 | <2 | <2 |
| | GC07 | 96.5 - 99.5 | 0 | 4.5 | 524 | <2 | 13 | 0 | 6 | 4 | 28 | 2 | <0.5 | <2 | 6 | 0 | 201 | <2 | <2 |
| | GC07 | 104.5 - 107.5 | 0 | 3 | 357 | <2 | <5 | 0 | 6 | <3 | 18 | 2 | 0.5 | <2 | 6 | 0 | 159 | <2 | <2 |
| | GC07 | 114.5 - 117.5 | 0 | 2.5 | 360 | <2 | 6 | 0 | 6 | 5 | 17 | 2 | <0.5 | <2 | <2 | 0 | 180 | <2 | <2 |
| | GC07 | 124.5 - 127.5 | 0 | 2.5 | 322 | <2 | <5 | 0 | 6 | <3 | 20 | 2 | <0.5 | <2 | <2 | 0 | 164 | <2 | 2 |
| | GC07 | 134.5 - 137.5 | 0 | 3 | 323 | <2 | <5 | 0 | 8 | 9 | 15 | 2 | <0.5 | <2 | 4 | 0 | 208 | <2 | 2 |
| | GC07 | 144.5 - 147.5 | 0 | 2.5 | 629 | <2 | 10 | 0 | 12 | 10 | 27 | 3 | <0.5 | <2 | 3 | 0 | 321 | <2 | <2 |
| | GC07 | 154.5 - 157.5 | 0 | 3 | 363 | <2 | <5 | 0 | 10 | 8 | 27 | 2 | <0.5 | <2 | 5 | 0 | 231 | <2 | <2 |
| | GC07 | 164.5 - 167.5 | 0 | 3 | 368 | <2 | 9 | 0 | 8 | <3 | 25 | 2 | <0.5 | <2 | 6 | 0 | 218 | <2 | <2 |
| | GC07 | 174.5 - 177.5 | 0 | 2.5 | 328 | <2 | 5 | 0 | 8 | 6 | 14 | 3 | <0.5 | <2 | 3 | 0 | 258 | <2 | <2 |
| | GC07 | 184.5 - 187.5 | 0 | 3.5 | 269 | <2 | 5 | 0 | 6 | 9 | 40 | 1 | <0.5 | <2 | 4 | 0 | 239 | <2 | <2 |
| | GC07 | 194.5 - 197.5 | 0 | 4 | 292 | <2 | <5 | 0 | 7 | 7 | 23 | <1 | <0.5 | <2 | 5 | 0 | 254 | <2 | 2 |
| | GC07 | 204.5 - 207.5 | 0 | 3.5 | 278 | <2 | 8 | 0 | 5 | 7 | 27 | 2 | <0.5 | <2 | 7 | 0 | 261 | <2 | <2 |
| | GC07 | 214.5 - 217.5 | 0 | 3.5 | 465 | <2 | 10 | 0 | 7 | 9 | 35 | 2 | <0.5 | <2 | 7 | 0 | 426 | <2 | <2 |
| | GC07 | 224.5 - 227.5 | 0 | 1 | 667 | <2 | <5 | 0 | 7 | 18 | 15 | 2 | <0.5 | <2 | 6 | 0 | 576 | <2 | <2 |
| | GC07 | 234.5 - 237.5 | 0 | 2 | 769 | <2 | 13 | 0 | 13 | 12 | 24 | 2 | <0.5 | <2 | 11 | 0 | 536 | <2 | <2 |
| | GC07 | 244.5 - 247.5 | 0 | 1.5 | 787 | <2 | 7 | 0 | 17 | 15 | 32 | 3 | <0.5 | <2 | 12 | 0 | 473 | <2 | 3 |
| | GC07 | 254.5 - 257.5 | 0 | 2.5 | 672 | <2 | 6 | 0 | 16 | 8 | 25 | 2 | <0.5 | 3 | 13 | 0 | 441 | <2 | <2 |
| | GC07 | 264.5 - 267.5 | 0 | 2 | 200 | <2 | 6 | 0 | 9 | <3 | 17 | 3 | <0.5 | <2 | 3 | 0 | 187 | <2 | <2 |
| | GC07 | 274.5 - 277.5 | 0 | 3 | 224 | <2 | <5 | 0 | 9 | <3 | 38 | 3 | <0.5 | <2 | 3 | 0 | 179 | <2 | 3 |
| | GC07 | 284.5 - 287.5 | 0 | 3 | 216 | <2 | <5 | 0 | 10 | 3 | 17 | 3 | <0.5 | <2 | 2 | 0 | 161 | <2 | 3 |
| | GC07 | 294.5 - 297.5 | 0 | 2.5 | 319 | <2 | 12 | 0 | 18 | 5 | 33 | 5 | <0.5 | <2 | 8 | 0 | 214 | <2 | 3 |
| | GC07 | 304.5 - 307.5 | 0 | 3 | 179 | <2 | <5 | 0 | 8 | <3 | 22 | 4 | <0.5 | <2 | <2 | 0 | 151 | <2 | 3 |
| | GC07 | 312.5 - 315.5 | 0 | 2 | 225 | <2 | 9 | 0 | 12 | 6 | 24 | 4 | 0.5 | <2 | <2 | 0 | 186 | <2 | <2 |
| | GC07 | 322.5 - 325.5 | 0 | 2.5 | 358 | <2 | 13 | 0 | 4 | <3 | 31 | 1 | <0.5 | <2 | 3 | 0 | 259 | <2 | <2 |
| | GC07 | 332.5 - 335.5 | 0 | 3 | 539 | <2 | 7 | 0 | 12 | 9 | 20 | 3 | <0.5 | <2 | 8 | 0 | 392 | <2 | <2 |
| | GC07 | 342.5 - 345.5 | 0 | 2 | 860 | <2 | 10 | 0 | 16 | 10 | 29 | 3 | <0.5 | <2 | 13 | 0 | 480 | <2 | 2 |
| | GC07 | 352.5 - 355.5 | 0 | 1.5 | 659 | <2 | 13 | 0 | 16 | 4 | 24 | 1 | <0.5 | <2 | 7 | 0 | 404 | <2 | 2 |
| | GC07 | 362.5 - 365.5 | 0 | 1.5 | 603 | <2 | 10 | 0 | 13 | 10 | 26 | 2 | <0.5 | <2 | 10 | 0 | 401 | <2 | 3 |
| | GC07 | 372.5 - 375.5 | 0 | 2 | 297 | <2 | 7 | 0 | 9 | 6 | 23 | 1 | <0.5 | <2 | 7 | 0 | 228 | <2 | <2 |
| | GC07 | 382.5 - 385.5 | 0 | 2.5 | 234 | <2 | 8 | 0 | 8 | 5 | 24 | 3 | 1 | <2 | <2 | 0 | 198 | <2 | <2 |
| | GC07 | 392.5 - 395.5 | 0 | 2.5 | 505 | <2 | 12 | 0 | 10 | 6 | 17 | 2 | <0.5 | <2 | 8 | 0 | 361 | <2 | 2 |
| | GC07 | 402.5 - 405.5 | 0 | 2 | 350 | <2 | 9 | 0 | 9 | <3 | 28 | 2 | <0.5 | <2 | 5 | 0 | 290 | <2 | 2 |
| | GC07 | 413.5 - 416.5 | 0 | 1.5 | 580 | <2 | 10 | 0 | 11 | 13 | 16 | 2 | <0.5 | <2 | 4 | 0 | 384 | <2 | 2 |
| | GC07 | 424.5 - 427.5 | 0 | 2.5 | 495 | <2 | 9 | 0 | 15 | 7 | 29 | 3 | <0.5 | <2 | 6 | 0 | 307 | <2 | 2 |
| | GC07 | 434.5 - 437.5 | 0 | 3.5 | 330 | <2 | <5 | 0 | 8 | <3 | 32 | 2 | <0.5 | 2 | 5 | 0 | 247 | <2 | 3 |
| | GC07 | 444.5 - 447.5 | 0 | 2.5 | 570 | <2 | 8 | 0 | 14 | 10 | 41 | 3 | 0.5 | <2 | 10 | 0 | 358 | <2 | 3 |
| | GC07 | 454.5 - 457.5 | 0 | 2 | 716 | <2 | 5 | 0 | 20 | 7 | 21 | 4 | <0.5 | <2 | 9 | 0 | 393 | <2 | 3 |
| | GC07 | 464.5 - 467.5 | 0 | 2 | 413 | <2 | 9 | 0 | 19 | 7 | 18 | 4 | <0.5 | <2 | 4 | 0 | 285 | <2 | 4 |
| | GC07 | 474.5 - 477.5 | 0 | 2 | 431 | <2 | <5 | 0 | 19 | 10 | 18 | 3 | <0.5 | <2 | 4 | 0 | 265 | <2 | 4 |
| | GC07 | 484.5 - 487.5 | 0 | 1.5 | 486 | <2 | <5 | 0 | 12 | 9 | 14 | 1 | <0.5 | <2 | 10 | 0 | 350 | <2 | <2 |
| | GC07 | 494.5 - 497.5 | 0 | 1 | 361 | <2 | <5 | 0 | 11 | 4 | 18 | 3 | <0.5 | <2 | <2 | 0 | 324 | <2 | 2 |

| Nd (ppm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 14 | 22 | <2 | 8 | 17 | <1 | <2 | 1225 | 5 | <2 | <0.5 | 18 | 5 | 18 | 27 | 29 |
| 4 | 12 | 6 | 6 | 9 | 11 | <1 | <2 | 1221 | <2 | 2 | <0.5 | 8 | <3 | 17 | 24 | 31 |
| <2 | 12 | 5 | 4 | 10 | 8 | <1 | <2 | 1240 | <2 | 3 | 1 | 9 | 6 | 16 | 23 | 32 |
| 2 | 21 | 7 | <2 | 9 | 12 | <1 | <2 | 1377 | <2 | 2 | <0.5 | 8 | <3 | 17 | 24 | 35 |
| 7 | 16 | 5 | <2 | 6 | 14 | <1 | <2 | 1602 | <2 | <2 | 1 | 11 | <3 | 17 | 23 | 29 |
| 7 | 6 | 3 | 4 | 3 | 12 | <1 | <2 | 1630 | 3 | <2 | 1 | 13 | 4 | 16 | 21 | 27 |
| 11 | 11 | 3 | <2 | <1 | 16 | <1 | <2 | 1591 | <2 | <2 | 1 | 9 | 4 | 18 | 20 | 24 |
| 8 | 1 | 4 | <2 | <1 | 13 | <1 | <2 | 1433 | <2 | <2 | 1.5 | 6 | <3 | 17 | 15 | 25 |
| 8 | 1 | 5 | 3 | <1 | 12 | <1 | <2 | 1313 | <2 | <2 | <0.5 | 5 | 5 | 19 | 16 | 35 |
| 5 | 3 | 7 | 3 | 1 | 13 | <1 | <2 | 1264 | 3 | 2 | <0.5 | 9 | 7 | 20 | 18 | 30 |
| 5 | 4 | 4 | 4 | 3 | 12 | <1 | <2 | 1265 | <2 | <2 | <0.5 | 8 | <3 | 21 | 19 | 25 |
| <2 | 4 | 6 | 4 | 3 | 7 | <1 | <2 | 1101 | <2 | <2 | <0.5 | 5 | 6 | 19 | 19 | 26 |
| 3 | 6 | 9 | 2 | 6 | 7 | 2 | <2 | 1154 | 3 | <2 | 2.5 | 13 | 5 | 20 | 20 | 29 |
| 5 | 6 | 12 | <2 | 5 | 9 | <1 | <2 | 1170 | 2 | 3 | 4 | 8 | 4 | 18 | 23 | 28 |
| 7 | 8 | 11 | 2 | 6 | 8 | <1 | <2 | 1200 | <2 | 3 | 3.5 | 9 | <3 | 19 | 20 | 29 |
| 9 | 6 | 11 | <2 | 6 | 8 | <1 | <2 | 1254 | <2 | <2 | 1.5 | 11 | <3 | 18 | 20 | 29 |
| 4 | 4 | 11 | <2 | 4 | 10 | <1 | 3 | 1274 | <2 | <2 | 1.5 | 5 | <3 | 17 | 20 | 27 |
| 3 | 5 | 10 | <2 | 3 | 11 | <1 | <2 | 1272 | <2 | 3 | 2.5 | 9 | 5 | 17 | 24 | 26 |
| 4 | 5 | 13 | <2 | 2 | 8 | <1 | <2 | 1265 | <2 | 2 | 1.5 | 7 | <3 | 18 | 20 | 24 |
| 5 | 8 | 46 | <2 | 4 | 9 | <1 | <2 | 1275 | <2 | 2 | 1.5 | 12 | 7 | 18 | 72 | 28 |
| 5 | 7 | 14 | <2 | 6 | 5 | <1 | <2 | 1215 | <2 | <2 | 1.5 | 7 | <3 | 16 | 21 | 26 |
| 3 | 14 | 11 | <2 | 6 | 8 | <1 | <2 | 1215 | <2 | <2 | 1.5 | 9 | 4 | 17 | 27 | 30 |
| <2 | 9 | 15 | <2 | 7 | 8 | <1 | <2 | 1201 | 3 | <2 | 3 | 6 | <3 | 15 | 25 | 33 |
| 7 | 13 | 14 | <2 | 9 | 7 | <1 | <2 | 1172 | <2 | 3 | 2 | 10 | 6 | 19 | 27 | 36 |
| 8 | 22 | 7 | 5 | 8 | 17 | <1 | <2 | 1179 | 3 | 2 | 1.5 | 25 | 5 | 23 | 33 | 36 |
| 7 | 17 | 15 | 3 | 9 | 7 | <1 | <2 | 1205 | <2 | 2 | 1.5 | 9 | 4 | 24 | 30 | 33 |
| 5 | 12 | 13 | <2 | 9 | 9 | <1 | <2 | 1226 | 5 | 3 | 2.5 | 10 | <3 | 23 | 26 | 33 |
| 4 | 9 | 12 | 8 | 9 | 10 | <1 | <2 | 1234 | <2 | 2 | 1.5 | 14 | <3 | 19 | 21 | 31 |
| 10 | 12 | 13 | <2 | 6 | 6 | <1 | <2 | 1243 | <2 | <2 | 1 | 8 | 5 | 17 | 25 | 27 |
| 3 | 10 | 78 | 3 | 6 | 6 | <1 | <2 | 1245 | <2 | <2 | 1.5 | 9 | 5 | 17 | 24 | 27 |
| 4 | 10 | 14 | 2 | 6 | 7 | <1 | <2 | 1255 | <2 | 3 | 1 | 8 | 5 | 19 | 21 | 27 |
| 9 | 10 | 5 | 4 | 3 | 17 | <1 | <2 | 1315 | 4 | <2 | 2 | 15 | 3 | 18 | 26 | 20 |
| 5 | 6 | 5 | 4 | 2 | 14 | <1 | <2 | 1354 | <2 | <2 | 1 | 12 | <3 | 16 | 20 | 18 |
| 17 | 16 | 5 | 4 | 7 | 15 | <1 | <2 | 1297 | 4 | <2 | 2 | 21 | 6 | 17 | 25 | 26 |
| 8 | 20 | 5 | <2 | 7 | 15 | <1 | <2 | 1213 | <2 | <2 | 0.5 | 22 | <3 | 19 | 28 | 31 |
| 9 | 20 | 6 | <2 | 8 | 15 | <1 | <2 | 1203 | <2 | <2 | 1 | 17 | 4 | 19 | 28 | 31 |
| 3 | 10 | 12 | 4 | 11 | 5 | <1 | <2 | 1125 | 4 | 2 | 1.5 | 6 | <3 | 20 | 24 | 34 |
| 4 | 12 | 16 | <2 | 13 | 4 | <1 | <2 | 1088 | 3 | <2 | <0.5 | 7 | <3 | 18 | 29 | 34 |
| 3 | 10 | 15 | <2 | 16 | 5 | <1 | <2 | 1069 | <2 | 3 | <0.5 | 6 | <3 | 19 | 24 | 40 |
| 5 | 17 | 18 | <2 | 21 | 5 | <1 | <2 | 1083 | <2 | 4 | <0.5 | 14 | 4 | 18 | 33 | 41 |
| 3 | 12 | 17 | <2 | 20 | 5 | <1 | <2 | 1079 | 3 | 3 | <0.5 | 9 | <3 | 18 | 28 | 41 |
| <2 | 15 | 12 | 2 | 14 | 7 | <1 | <2 | 1136 | <2 | <2 | <0.5 | 11 | 3 | 16 | 29 | 37 |
| 4 | 14 | 8 | <2 | 5 | 8 | <1 | <2 | 1212 | <2 | <2 | 1 | 10 | <3 | 16 | 25 | 25 |
| 7 | 21 | 5 | 3 | 8 | 9 | <1 | <2 | 1181 | <2 | 3 | 2.5 | 12 | <3 | 18 | 26 | 30 |
| 14 | 22 | 6 | 3 | 11 | 14 | 1 | <2 | 1235 | 2 | 3 | 5.5 | 30 | 5 | 20 | 35 | 35 |
| 9 | 21 | 7 | 6 | 13 | 12 | <1 | <2 | 1184 | <2 | 3 | 4 | 24 | 3 | 20 | 39 | 38 |
| 15 | 20 | 8 | 3 | 12 | 12 | <1 | <2 | 1199 | <2 | 2 | 2 | 19 | 5 | 21 | 37 | 37 |
| 4 | 14 | 10 | <2 | 8 | 8 | <1 | <2 | 1147 | 4 | 3 | 1.5 | 10 | 8 | 20 | 27 | 30 |
| 3 | 17 | 13 | 3 | 7 | 8 | <1 | <2 | 1139 | 3 | <2 | 1 | 6 | 7 | 19 | 28 | 30 |
| 6 | 15 | 10 | <2 | 6 | 10 | <1 | <2 | 1135 | <2 | 2 | 2 | 17 | <3 | 19 | 24 | 31 |
| 3 | 24 | 10 | <2 | 7 | 9 | 2 | <2 | 1228 | <2 | <2 | 3.5 | 11 | 5 | 19 | 42 | 31 |
| 8 | 14 | 9 | 6 | 7 | 10 | <1 | <2 | 1227 | 3 | <2 | 1.5 | 10 | <3 | 19 | 32 | 31 |
| 9 | 30 | 8 | 4 | 9 | 11 | <1 | <2 | 1239 | 2 | <2 | 1 | 19 | <3 | 22 | 34 | 34 |
| <2 | 21 | 10 | <2 | 8 | 9 | <1 | <2 | 1198 | 3 | <2 | 1 | 9 | 6 | 20 | 29 | 31 |
| 6 | 33 | 7 | <2 | 12 | 14 | <1 | <2 | 1268 | 4 | 2 | 2 | 23 | 6 | 23 | 36 | 35 |
| 10 | 18 | 7 | <2 | 15 | 14 | <1 | <2 | 1257 | <2 | 2 | 1 | 26 | 4 | 22 | 31 | 38 |
| 5 | 17 | 7 | 4 | 18 | 13 | <1 | <2 | 1197 | 6 | 3 | 1 | 15 | <3 | 21 | 27 | 41 |
| 7 | 15 | 9 | <2 | 18 | 12 | <1 | <2 | 1238 | <2 | 4 | 1 | 17 | 7 | 21 | 30 | 36 |
| 4 | 8 | 7 | <2 | 10 | 11 | 1 | <2 | 1317 | 5 | 2 | 1 | 12 | 3 | 17 | 21 | 24 |
| 7 | 14 | 6 | <2 | 10 | 10 | <1 | <2 | 1354 | <2 | 3 | <0.5 | 8 | <3 | 16 | 27 | 23 |

Table 6 Magnetic susceptibility, percent calcium carbonate, dO18, SiO2 and Al2O3 for samples from core 57GC19, Perth Basin

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | δO18 | SiO2 (wt%) | Al2O3 (wt%) |
|---|---|---|---|---|---|---|---|---|
| 57 | GC019 | 1.5-4.5 | 3 | 57.89 | 80 | -1.17 | 8.5 | 2.26 |
| | | 9.5-12.5 | 11 | 71.05 | 80 | -1.01 | 7.84 | 2.14 |
| | | 14.5-17.5 | 16 | 42.81 | 84 | -0.77 | 6.01 | 1.38 |
| | | 19.5-22.5 | 21 | 45.33 | 84 | -0.8 | 6.12 | 1.35 |
| | | 24.5-27.5 | 26 | 26.53 | 88 | -0.13 | 4.11 | 0.59 |
| | | 29.5-32.5 | 31 | 28.26 | 88 | -0.26 | 4.78 | 0.63 |
| | | 34.5-37.5 | 36 | 27.84 | 87 | -0.06 | 5.17 | 1.18 |
| | | 39.5-42.5 | 41 | 34.70 | 87 | 0.03 | 5.24 | 0.85 |
| | | 44.5-47.5 | 46 | 32.14 | 87 | -0.15 | 5.03 | 0.82 |
| | | 49.5-52.5 | 51 | 32.75 | 87 | -0.16 | 5.05 | 0.76 |
| | | 54.5-57.5 | 56 | 34.79 | 88 | -0.34 | 4.26 | 0.7 |
| | | 59.5-62.5 | 61 | 32.39 | 89 | -0.52 | 4.19 | 0.6 |
| | | 65.5-68.5 | 67 | 39.04 | 89 | -0.41 | 4.18 | 0.61 |
| | | 70.5-73.5 | 72 | 33.58 | 89 | -0.4 | 4.45 | 0.68 |
| | | 75.5-78.5 | 77 | 35.39 | 88 | -0.42 | 4.59 | 0.74 |
| | | 85.5-88.5 | 87 | 43.15 | 88 | -0.61 | 4.98 | 0.86 |
| | | 92.5-95.5 | 94 | 49.34 | 87 | -0.33 | 5.34 | 0.94 |
| | | 99.5-102.5 | 101 | 0.52 | 86 | -0.16 | 5.86 | 1.07 |
| | | 109.5-112.5 | 111 | 22.16 | 84 | -0.27 | 7.14 | 1.26 |
| | | 119.5-122.5 | 121 | 24.53 | 87 | -0.68 | 6.28 | 9.57 |
| | | 131.5-134.5 | 133 | 28.71 | 87 | -0.83 | 5.26 | 0.98 |
| | | 141.5-144.5 | 143 | 30.71 | 89 | -0.5 | 4.88 | 0.92 |
| | | 151.5-154.5 | 153 | 20.68 | 89 | -0.88 | 4.52 | 0.82 |
| | | 161.5-164.5 | 163 | 28.26 | 88 | -1.03 | 4.67 | 0.93 |
| | | 171.5-174.5 | 173 | 29.57 | 87 | -0.74 | 5.25 | 1.13 |
| | | 181.5-184.5 | 183 | 26.72 | 85 | -0.91 | 6.69 | 1.49 |
| | | 191.5-194.5 | 193 | 21.55 | 83 | -0.4 | 7.62 | 1.72 |
| | | 201.5-204.5 | 203 | -1.77 | 89 | -0.09 | 4.11 | 0.63 |
| | | 209.5-212.5 | 211 | -2.25 | 91 | | 3.61 | 0.59 |
| | | 219.5-222.5 | 221 | -3.15 | 90 | -0.35 | 3.71 | 0.62 |
| | | 231.5-234.5 | 233 | -2.35 | 89 | -0.44 | 4.12 | 0.78 |
| | | 241.5-244.5 | 243 | -2.71 | 87 | 0.18 | 5.69 | 1.01 |
| | | 251.5-254.5 | 253 | -1.35 | 86 | 0.1 | 6.2 | 1.03 |
| | | 261.5-264.5 | 263 | -2.58 | 87 | -0.21 | 5.64 | 0.93 |
| | | 271.5-274.5 | 273 | -2.31 | 89 | -0.09 | 4.5 | 0.83 |
| | | 281.5-284.5 | 283 | -4.34 | 90 | -0.36 | 3.56 | 0.69 |
| | | 291.5-294.5 | 293 | -3.64 | 92 | -0.26 | 3.11 | 0.58 |
| | | 301.5-304.5 | 303 | 61.61 | 82 | -1.33 | 7.54 | 1.99 |
| | | 311.5-314.5 | 313 | 27.44 | 89 | -0.38 | 4.19 | 0.62 |
| | | 321.5-324.5 | 323 | 34.70 | 88 | -0.08 | 4.96 | 0.7 |

Table 7 Major and trace element analyses for core 57GC019

| Survey | Core | Sample Depth cm | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | LOI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | GC019 | 8.5 | 0.05 | 2.26 | 0.86 | 0.78 | 0.07 | 0.03 | 0.67 | 44.79 | 1.35 | 0.3 | 0.08 | 40.91 |
| | | 7.84 | 0.03 | 2.14 | 0.81 | 0.65 | 0.14 | 0.02 | 0.67 | 45.05 | 1.44 | 0.29 | 0.08 | 41.43 |
| | | 6.01 | 0.01 | 1.38 | 0.53 | 0.43 | 0.09 | 0.02 | 0.55 | 47.19 | 1.33 | 0.22 | 0.07 | 42.46 |
| | | 6.12 | 0.01 | 1.35 | 0.52 | 0.42 | 0.09 | 0.02 | 0.56 | 47.13 | 1.4 | 0.22 | 0.07 | 42.36 |
| | | 4.11 | 0 | 0.59 | 0.26 | 0.17 | 0.08 | 0.03 | 0.43 | 49.57 | 1.23 | 0.12 | 0.06 | 43.35 |
| | | 4.78 | 0 | 0.63 | 0.29 | 0.18 | 0.1 | 0.08 | 0.41 | 49.45 | 1.21 | 0.12 | 0.06 | 42.72 |
| | | 5.17 | 0 | 1.18 | 0.31 | 0.2 | 0.1 | 0.04 | 0.43 | 48.96 | 1.22 | 0.13 | 0.06 | 42.24 |
| | | 5.24 | 0.01 | 0.85 | 0.34 | 0.24 | 0.09 | 0.03 | 0.43 | 48.91 | 1.22 | 0.13 | 0.06 | 42.52 |
| | | 5.03 | 0 | 0.82 | 0.35 | 0.25 | 0.09 | 0.01 | 0.44 | 48.71 | 1.26 | 0.14 | 0.06 | 43.01 |
| | | 5.05 | 0 | 0.76 | 0.33 | 0.22 | 0.1 | 0 | 0.42 | 49.02 | 1.19 | 0.12 | 0.06 | 42.8 |
| | | 4.26 | 0 | 0.7 | 0.31 | 0.2 | 0.1 | 0 | 0.41 | 49.5 | 1.2 | 0.12 | 0.06 | 43.19 |
| | | 4.19 | 0 | 0.6 | 0.28 | 0.16 | 0.11 | 0.01 | 0.41 | 49.67 | 1.22 | 0.12 | 0.06 | 43.2 |
| | | 4.18 | 0 | 0.61 | 0.29 | 0.11 | 0.16 | 0.02 | 0.38 | 49.76 | 1.07 | 0.11 | 0.06 | 43.3 |
| | | 4.45 | 0 | 0.68 | 0.3 | 0.19 | 0.1 | 0.01 | 0.39 | 49.71 | 1.17 | 0.12 | 0.06 | 42.91 |
| | | 4.59 | 0 | 0.74 | 0.33 | 0.22 | 0.1 | 0.02 | 0.4 | 49.4 | 1.15 | 0.13 | 0.06 | 42.97 |
| | | 4.98 | 0 | 0.86 | 0.39 | 0.27 | 0.11 | 0.01 | 0.4 | 49.19 | 1.16 | 0.15 | 0.07 | 42.58 |
| | | 5.34 | 0 | 0.94 | 0.42 | 0.32 | 0.09 | 0 | 0.44 | 48.52 | 1.21 | 0.16 | 0.07 | 42.7 |
| | | 5.86 | 0.02 | 1.07 | 0.48 | 0.37 | 0.1 | 0.01 | 0.48 | 47.93 | 1.23 | 0.19 | 0.07 | 42.48 |
| | | 7.14 | 0.03 | 1.26 | 0.51 | 0.39 | 0.11 | 0.01 | 0.49 | 47.27 | 1.29 | 0.23 | 0.06 | 41.52 |
| | | 6.28 | 0.03 | 9.57 | 0.42 | 0.3 | 0.11 | 0.01 | 0.62 | 48.76 | 1.2 | 0.36 | 0.07 | 32.48 |
| | | 5.26 | 0 | 0.98 | 0.34 | 0.23 | 0.1 | 0.01 | 0.41 | 48.95 | 1.18 | 0.17 | 0.07 | 42.42 |
| | | 4.88 | 0.01 | 0.92 | 0.35 | 0.25 | 0.09 | 0.01 | 0.44 | 49.59 | 1.06 | 0.16 | 0.08 | 42.28 |
| | | 4.52 | 0 | 0.82 | 0.31 | 0.2 | 0.1 | 0.01 | 0.43 | 49.72 | 1.1 | 0.15 | 0.07 | 42.67 |
| | | 4.67 | 0.02 | 0.93 | 0.36 | 0.23 | 0.12 | 0.01 | 0.44 | 49.41 | 1.07 | 0.15 | 0.07 | 42.67 |
| | | 5.25 | 0.02 | 1.13 | 0.44 | 0.32 | 0.11 | 0.01 | 0.49 | 48.82 | 1.13 | 0.19 | 0.07 | 42.24 |
| | | 6.69 | 0.03 | 1.49 | 0.57 | 0.44 | 0.12 | 0 | 0.56 | 47.48 | 1.18 | 0.23 | 0.08 | 41.48 |
| | | 7.62 | 0.04 | 1.72 | 0.67 | 0.54 | 0.12 | 0.01 | 0.65 | 46.48 | 1.2 | 0.26 | 0.07 | 41.08 |
| | | 4.11 | 0 | 0.63 | 0.35 | 0.24 | 0.1 | 0.02 | 0.45 | 50.02 | 1.09 | 0.13 | 0.06 | 42.94 |
| | | 3.61 | 0 | 0.59 | 0.26 | 0.13 | 0.12 | 0.02 | 0.41 | 50.75 | 0.98 | 0.11 | 0.06 | 42.99 |
| | | 3.71 | 0 | 0.62 | 0.25 | 0.11 | 0.13 | 0.02 | 0.42 | 50.51 | 1.01 | 0.12 | 0.06 | 43.07 |
| | | 4.12 | 0.01 | 0.78 | 0.3 | 0.17 | 0.12 | 0.02 | 0.42 | 50.05 | 1.03 | 0.14 | 0.06 | 42.86 |
| | | 5.69 | 0.01 | 1.01 | 0.39 | 0.22 | 0.15 | 0.01 | 0.47 | 48.76 | 1.1 | 0.19 | 0.06 | 42.1 |
| | | 6.2 | 0 | 1.03 | 0.48 | 0.31 | 0.15 | 0.01 | 0.48 | 48.31 | 1.11 | 0.19 | 0.06 | 41.92 |
| | | 5.64 | 0.01 | 0.93 | 0.37 | 0.21 | 0.14 | 0.01 | 0.44 | 48.99 | 1.1 | 0.17 | 0.06 | 42.07 |
| | | 4.5 | 0 | 0.83 | 0.31 | 0.08 | 0.21 | 0 | 0.43 | 49.81 | 1.07 | 0.15 | 0.06 | 42.64 |
| | | 3.56 | 0 | 0.69 | 0.26 | 0.15 | 0.1 | 0.01 | 0.39 | 50.47 | 1.05 | 0.12 | 0.06 | 43.18 |
| | | 3.11 | 0 | 0.58 | 0.19 | 0.03 | 0.14 | 0.01 | 0.36 | 51.34 | 0.9 | 0.1 | 0.06 | 43.15 |
| | | 7.54 | 0.04 | 1.99 | 0.76 | 0.63 | 0.12 | 0.03 | 0.62 | 45.95 | 1.3 | 0.28 | 0.08 | 41.18 |
| | | 4.19 | 0 | 0.62 | 0.27 | 0.14 | 0.12 | 0.02 | 0.42 | 49.88 | 1.11 | 0.11 | 0.06 | 43.06 |
| | | 4.96 | 0 | 0.7 | 0.31 | 0.14 | 0.15 | 0.1 | 0.39 | 49.42 | 1.12 | 0.13 | 0.06 | 42.56 |

Table 7 (cont)

| Survey | Core | Sample depth (cm) | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | GC19 | 1.5 - 4.5 | 0 | 2.5 | 481 | <2 | 10 | 0 | 16 | 8 | 24 | 3 | <0.5 | <2 | 7 | 0 | 332 | <2 |
| | GC19 | 9.5 - 12.5 | 0 | 2 | 448 | <2 | 7 | 0 | 14 | 10 | 21 | 3 | <0.5 | <2 | 13 | 0 | 296 | <2 |
| | GC19 | 14.5 - 17.5 | 0 | 2 | 498 | <2 | 8 | 0 | 9 | 6 | 17 | 2 | <0.5 | <2 | 6 | 0 | 279 | <2 |
| | GC19 | 19.5 - 22.5 | 0 | 2 | 488 | <2 | 6 | 0 | 11 | 21 | 21 | 2 | <0.5 | <2 | 8 | 0 | 300 | <2 |
| | GC19 | 24.5 - 27.5 | 0 | 1 | 530 | <2 | 7 | 0 | 5 | 15 | 15 | <1 | <0.5 | <2 | 13 | 0 | 548 | <2 |
| | GC19 | 29.5 - 32.5 | 0 | 1.5 | 570 | <2 | <5 | 0 | 6 | 18 | 18 | 1 | <0.5 | <2 | 10 | 0 | 1009 | <2 |
| | GC19 | 34.5 - 37.5 | 0 | 1 | 675 | <2 | 6 | 0 | 5 | 13 | 14 | 1 | <0.5 | <2 | 7 | 0 | 569 | <2 |
| | GC19 | 39.5 - 42.5 | 0 | 1 | 636 | <2 | 15 | 0 | 5 | 12 | 11 | <1 | <0.5 | <2 | 16 | 0 | 466 | <2 |
| | GC19 | 44.5 - 47.5 | 0 | 1.5 | 0 | <2 | 0 | 0 | 0 | 0 | 13 | 1 | <0.5 | <2 | 0 | 0 | 0 | <2 |
| | GC19 | 49.5 - 52.5 | 0 | 1 | 496 | <2 | 12 | 0 | 5 | 22 | 19 | <1 | <0.5 | <2 | 12 | 0 | 143 | <2 |
| | GC19 | 54.5 - 57.5 | 0 | 1 | 499 | <2 | 9 | 0 | 8 | 16 | 13 | 1 | <0.5 | <2 | 11 | 0 | 160 | <2 |
| | GC19 | 59.5 - 62.5 | 0 | 0.5 | 500 | <2 | <5 | 0 | 7 | 20 | 10 | <1 | <0.5 | <2 | 9 | 0 | 258 | <2 |
| | GC19 | 65.5 - 68.5 | 0 | 4.5 | 394 | <2 | <5 | 0 | 5 | 6 | 18 | 1 | <0.5 | <2 | 15 | 0 | 259 | <2 |
| | GC19 | 70.5 - 73.5 | 0 | 1.5 | 307 | <2 | <5 | 0 | 5 | 16 | 9 | 1 | <0.5 | <2 | 3 | 0 | 159 | <2 |
| | GC19 | 75.5 - 78.5 | 0 | 2 | 369 | <2 | <5 | 0 | 6 | 11 | 14 | 2 | <0.5 | <2 | 10 | 0 | 278 | <2 |
| | GC19 | 85.5 - 88.5 | 0 | 1.5 | 389 | <2 | 10 | 0 | 6 | 19 | 19 | 1 | <0.5 | <2 | 14 | 0 | 209 | <2 |
| | GC19 | 92.5 - 95.5 | 0 | 0.5 | 342 | <2 | 6 | 0 | 8 | 16 | 12 | <1 | <0.5 | <2 | 8 | 0 | 152 | <2 |
| | GC19 | 99.5 - 102.5 | 0 | 2 | 285 | <2 | <5 | 0 | 6 | 8 | 17 | <1 | <0.5 | <2 | 8 | 0 | 130 | <2 |
| | GC19 | 109.5 - 112.5 | 0 | 0.5 | 393 | <2 | 15 | 0 | 8 | 7 | 10 | <1 | <0.5 | <2 | 11 | 0 | 155 | <2 |
| | GC19 | 119.5 - 122.5 | 0 | 1.5 | 452 | <2 | <5 | 0 | 7 | 11 | 8 | 2 | <0.5 | 2 | 8 | 0 | 184 | <2 |
| | GC19 | 131.5 - 134.5 | 0 | 1.5 | 493 | <2 | <5 | 0 | 9 | 13 | 9 | <1 | <0.5 | <2 | 6 | 0 | 197 | <2 |
| | GC19 | 141.5 - 144.5 | 0 | 1 | 515 | <2 | 9 | 0 | 9 | 23 | 22 | <1 | <0.5 | 3 | 2 | 0 | 224 | <2 |
| | GC19 | 151.5 - 154.5 | 0 | <0.5 | 469 | <2 | <5 | 0 | 5 | 15 | 13 | <1 | <0.5 | <2 | 14 | 0 | 222 | <2 |
| | GC19 | 161.5 - 164.5 | 0 | 1.5 | 480 | <2 | <5 | 0 | 10 | 9 | 22 | <1 | <0.5 | <2 | 11 | 0 | 241 | <2 |
| | GC19 | 171.5 - 174.5 | 0 | 1 | 494 | <2 | 5 | 0 | 8 | 17 | 46 | 2 | <0.5 | <2 | 8 | 0 | 184 | <2 |
| | GC19 | 181.5 - 184.5 | 0 | 1 | 599 | <2 | <5 | 0 | 13 | 20 | 8 | 2 | <0.5 | <2 | 7 | 0 | 187 | <2 |
| | GC19 | 191.5 - 194.5 | 0 | 1.5 | 493 | <2 | 13 | 0 | 16 | 14 | 7 | 2 | <0.5 | <2 | 14 | 0 | 240 | <2 |
| | GC19 | 201.5 - 204.5 | 0 | 1 | 396 | <2 | <5 | 0 | 5 | 11 | 9 | <1 | <0.5 | <2 | 4 | 0 | 335 | <2 |
| | GC19 | 209.5 - 212.5 | 0 | 1 | 463 | <2 | <5 | 0 | 5 | 22 | 9 | <1 | <0.5 | <2 | 8 | 0 | 357 | <2 |
| | GC19 | 219.5 - 222.5 | 0 | 1 | 432 | <2 | <5 | 0 | 10 | 10 | 11 | 2 | <0.5 | <2 | 12 | 0 | 269 | <2 |
| | GC19 | 231.5 - 234.5 | 0 | 1.5 | 415 | <2 | <5 | 0 | 6 | 20 | 18 | <1 | <0.5 | <2 | 13 | 0 | 263 | <2 |
| | GC19 | 241.5 - 244.5 | 0 | <0.5 | 428 | <2 | 12 | 0 | 10 | 17 | 22 | 2 | <0.5 | <2 | 7 | 0 | 166 | <2 |
| | GC19 | 251.5 - 254.5 | 0 | 1.5 | 526 | <2 | 16 | 0 | 9 | 18 | 35 | <1 | <0.5 | <2 | 16 | 0 | 179 | <2 |
| | GC19 | 261.5 - 264.5 | 0 | 1.5 | 505 | <2 | 10 | 0 | 10 | 16 | 31 | 1 | <0.5 | <2 | 12 | 0 | 147 | <2 |
| | GC19 | 271.5 - 274.5 | 0 | 1 | 431 | <2 | <5 | 0 | 8 | 11 | 27 | 1 | <0.5 | <2 | 6 | 0 | 149 | <2 |
| | GC19 | 281.5 - 284.5 | 0 | 1.5 | 366 | <2 | <5 | 0 | 7 | 23 | 53 | <1 | <0.5 | <2 | 5 | 0 | 153 | <2 |
| | GC19 | 291.5 - 294.5 | 0 | 1.5 | 366 | <2 | 9 | 0 | 5 | 25 | 7 | <1 | <0.5 | <2 | 10 | 0 | 184 | <2 |
| | GC19 | 301.5 - 301.5 | 0 | 2 | 599 | <2 | <5 | 0 | 16 | 9 | 22 | 2 | <0.5 | <2 | 10 | 0 | 349 | <2 |
| | GC19 | 311.5 - 314.5 | 0 | 1.5 | 581 | <2 | 14 | 0 | 7 | 23 | 14 | 2 | <0.5 | <2 | <2 | 0 | 409 | <2 |
| | GC19 | 321.5 - 324.5 | 0 | 1.5 | 637 | <2 | 12 | 0 | 4 | 14 | 18 | <1 | <0.5 | <2 | 13 | 0 | 1232 | 2 |

| Nb (ppm) | Nd (ppm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | S (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 11 | 10 | 16 | 2 | 8 | 800 | 15 | <1 | <2 | 1300 | <2 | <2 | <0.5 | 13 | <3 | 17 | 23 | 26 |
| 2 | 3 | 9 | 9 | 3 | 9 | 800 | 16 | <1 | <2 | 1393 | <2 | <2 | <0.5 | 11 | 4 | 15 | 21 | 25 |
| <2 | 9 | 8 | 4 | <2 | 4 | 800 | 14 | <1 | <2 | 1582 | <2 | <2 | 0.5 | 8 | 5 | 15 | 17 | 14 |
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| <2 | 10 | 17 | 2 | 6 | <1 | 700 | 7 | <1 | <2 | 1723 | <2 | <2 | <0.5 | 4 | 5 | 20 | 14 | 8 |
| <2 | 20 | 20 | 2 | <2 | <1 | 700 | 10 | <1 | <2 | 1675 | <2 | <2 | 0.5 | <2 | 8 | 23 | 17 | 15 |
| <2 | 16 | 5 | 3 | 5 | 1 | 700 | 9 | <1 | <2 | 1635 | <2 | <2 | 0.5 | 7 | <3 | 23 | 16 | 15 |
| <2 | 19 | 3 | 3 | <2 | 1 | 700 | 11 | <1 | <2 | 1651 | <2 | <2 | <0.5 | 6 | <3 | 24 | 15 | 15 |
| <2 | 0 | 1 | 3 | 0 | 1 | 700 | 0 | <1 | <2 | 1624 | <2 | <2 | 0.5 | 0 | 6 | 23 | 15 | 17 |
| <2 | 17 | <1 | 3 | 3 | <1 | 700 | 11 | <1 | <2 | 1680 | <2 | <2 | 0.5 | 4 | 3 | 22 | 16 | 17 |
| <2 | 11 | <1 | 3 | <2 | <1 | 700 | 9 | <1 | <2 | 1720 | 3 | <2 | <0.5 | 4 | 7 | 21 | 16 | 17 |
| <2 | 9 | <1 | 7 | 4 | <1 | 700 | 4 | <1 | <2 | 1698 | <2 | <2 | <0.5 | 6 | 5 | 20 | 15 | 10 |
| <2 | 11 | 1 | 57 | <2 | <1 | 600 | 15 | <1 | <2 | 1553 | 34 | <2 | <0.5 | 4 | 4 | 19 | 14 | 11 |
| <2 | 9 | <1 | 4 | 3 | <1 | 600 | 10 | <1 | <2 | 1485 | <2 | <2 | 0.5 | 6 | <3 | 21 | 13 | 12 |
| <2 | 11 | <1 | <2 | 4 | <1 | 600 | 13 | <1 | <2 | 1494 | 5 | <2 | <0.5 | 6 | 8 | 19 | 14 | 17 |
| <2 | 13 | <1 | 4 | 2 | <1 | 600 | 17 | <1 | <2 | 1474 | 5 | <2 | <0.5 | 9 | <3 | 18 | 14 | 19 |
| <2 | 9 | <1 | 3 | 4 | 2 | 700 | 16 | <1 | <2 | 1423 | 2 | <2 | 1.5 | 6 | <3 | 21 | 13 | 19 |
| <2 | 4 | 3 | 5 | 3 | 3 | 700 | 12 | <1 | <2 | 1357 | <2 | <2 | 1.5 | 6 | 6 | 23 | 18 | 21 |
| 2 | 10 | 3 | 6 | <2 | 3 | 700 | 15 | <1 | <2 | 1355 | <2 | 2 | <0.5 | 9 | 4 | 28 | 18 | 24 |
| <2 | 10 | 2 | 4 | <2 | 5 | 700 | 18 | <1 | <2 | 1367 | <2 | 2 | <0.5 | 9 | <3 | 23 | 18 | 23 |
| <2 | <2 | <1 | 24 | 6 | 3 | 600 | 9 | <1 | <2 | 1402 | <2 | <2 | 1 | 10 | 3 | 20 | 15 | 20 |
| <2 | 10 | 1 | 10 | 6 | 4 | 600 | 11 | <1 | <2 | 1432 | <2 | <2 | <0.5 | 8 | <3 | 18 | 16 | 21 |
| <2 | 13 | <1 | 5 | <2 | <1 | 600 | 10 | <1 | <2 | 1391 | <2 | <2 | <0.5 | 9 | <3 | 19 | 15 | 19 |
| <2 | 4 | <1 | 3 | 2 | 1 | 600 | 18 | <1 | <2 | 1354 | <2 | <2 | <0.5 | 11 | 7 | 17 | 15 | 22 |
| <2 | 11 | 3 | 3 | <2 | 3 | 700 | 19 | <1 | <2 | 1323 | <2 | 2 | 0.5 | 14 | 8 | 18 | 17 | 24 |
| <2 | 11 | 4 | 4 | <2 | 5 | 600 | 16 | <1 | <2 | 1310 | <2 | 2 | <0.5 | 16 | <3 | 21 | 22 | 27 |
| 2 | 10 | 5 | 3 | 6 | 7 | 700 | 14 | <1 | <2 | 1306 | 3 | <2 | 0.5 | 8 | <3 | 20 | 22 | 28 |
| <2 | 10 | 2 | <2 | 4 | <1 | 600 | 11 | <1 | <2 | 1436 | <2 | <2 | <0.5 | 9 | <3 | 17 | 14 | 15 |
| <2 | 12 | 3 | <2 | 4 | <1 | 500 | 11 | <1 | <2 | 1467 | <2 | <2 | 0.5 | 8 | 5 | 16 | 15 | 14 |
| <2 | 10 | 3 | 3 | <2 | 1 | 600 | 11 | <1 | <2 | 1488 | 2 | <2 | 1.5 | 5 | 11 | 17 | 16 | 15 |
| <2 | 11 | 4 | 12 | <2 | 2 | 600 | 9 | <1 | <2 | 1477 | <2 | <2 | <0.5 | 9 | 11 | 21 | 16 | 16 |
| <2 | 16 | 4 | 4 | 5 | 3 | 600 | 14 | <1 | <2 | 1459 | <2 | 3 | <0.5 | 12 | <3 | 26 | 15 | 18 |
| <2 | 13 | 4 | 2 | <2 | 3 | 600 | 13 | <1 | <2 | 1420 | <2 | <2 | 0.5 | 8 | <3 | 25 | 18 | 21 |
| <2 | 12 | 2 | 2 | 9 | 3 | 600 | 15 | <1 | <2 | 1428 | <2 | 2 | <0.5 | 9 | <3 | 25 | 16 | 19 |
| <2 | 8 | <1 | 2 | <2 | 2 | 600 | 13 | <1 | <2 | 1471 | 2 | <2 | <0.5 | 11 | <3 | 20 | 14 | 18 |
| <2 | 5 | 5 | <2 | <2 | 1 | 600 | 13 | 1 | <2 | 1516 | <2 | <2 | 3 | 21 | <3 | 14 | 17 | 14 |
| <2 | 6 | <1 | <2 | 5 | 1 | 600 | 7 | <1 | <2 | 1511 | <2 | <2 | 1.5 | 7 | <3 | 12 | 14 | 14 |
| <2 | 8 | 11 | 4 | <2 | 9 | 800 | 13 | <1 | <2 | 1463 | 4 | 2 | <0.5 | 16 | 8 | 16 | 23 | 25 |
| <2 | 16 | 8 | <2 | 3 | <1 | 700 | 8 | <1 | <2 | 1746 | 2 | <2 | <0.5 | 8 | 3 | 18 | 14 | 15 |
| <2 | 9 | 29 | 3 | 3 | 1 | 700 | 14 | <1 | <2 | 1629 | <2 | <2 | 0.5 | 7 | 6 | 23 | 19 | 15 |

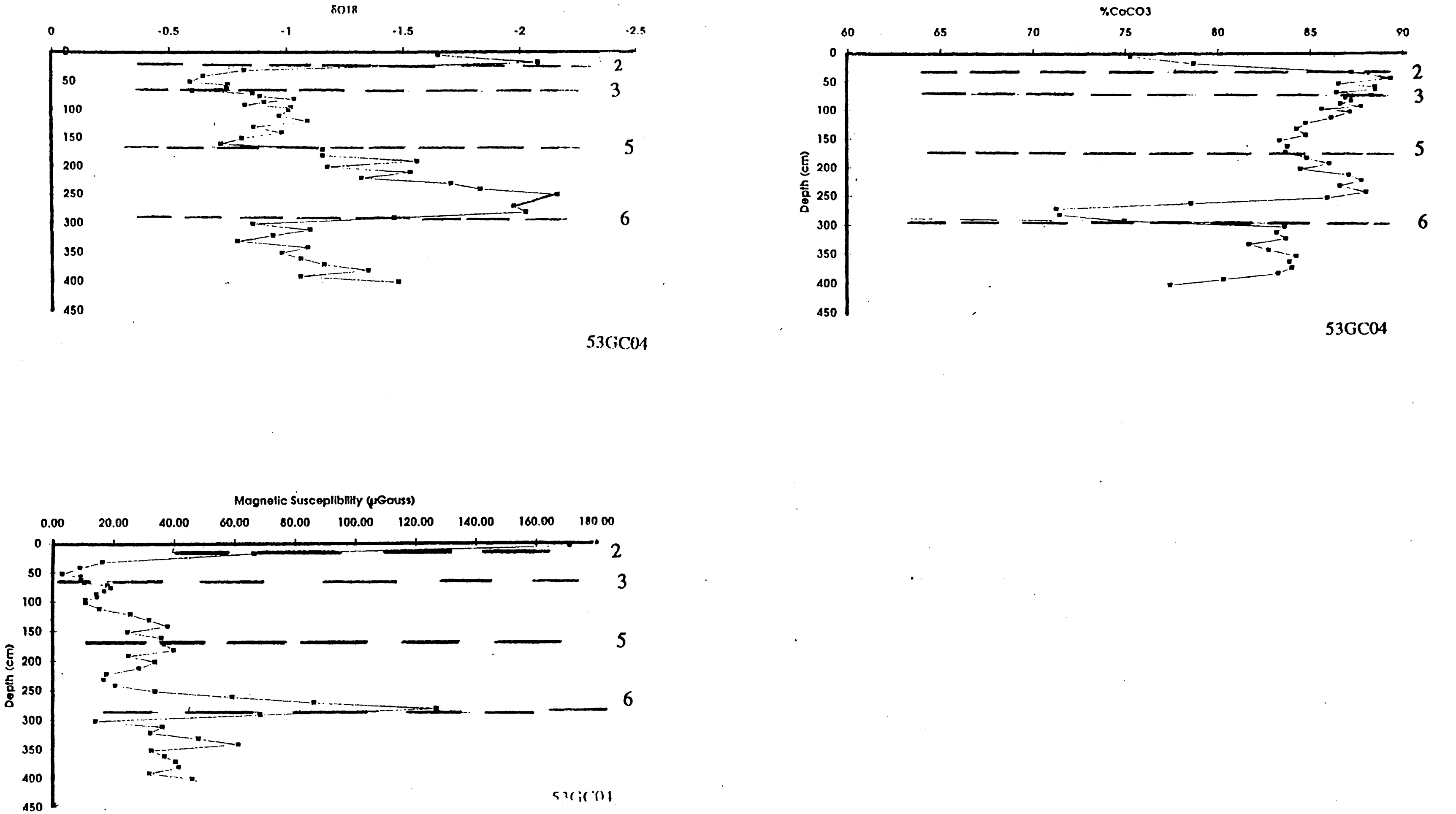



Figure 2 $\delta^{18}O$, percent calcium carbonate and magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$) profiles for core 53GC04

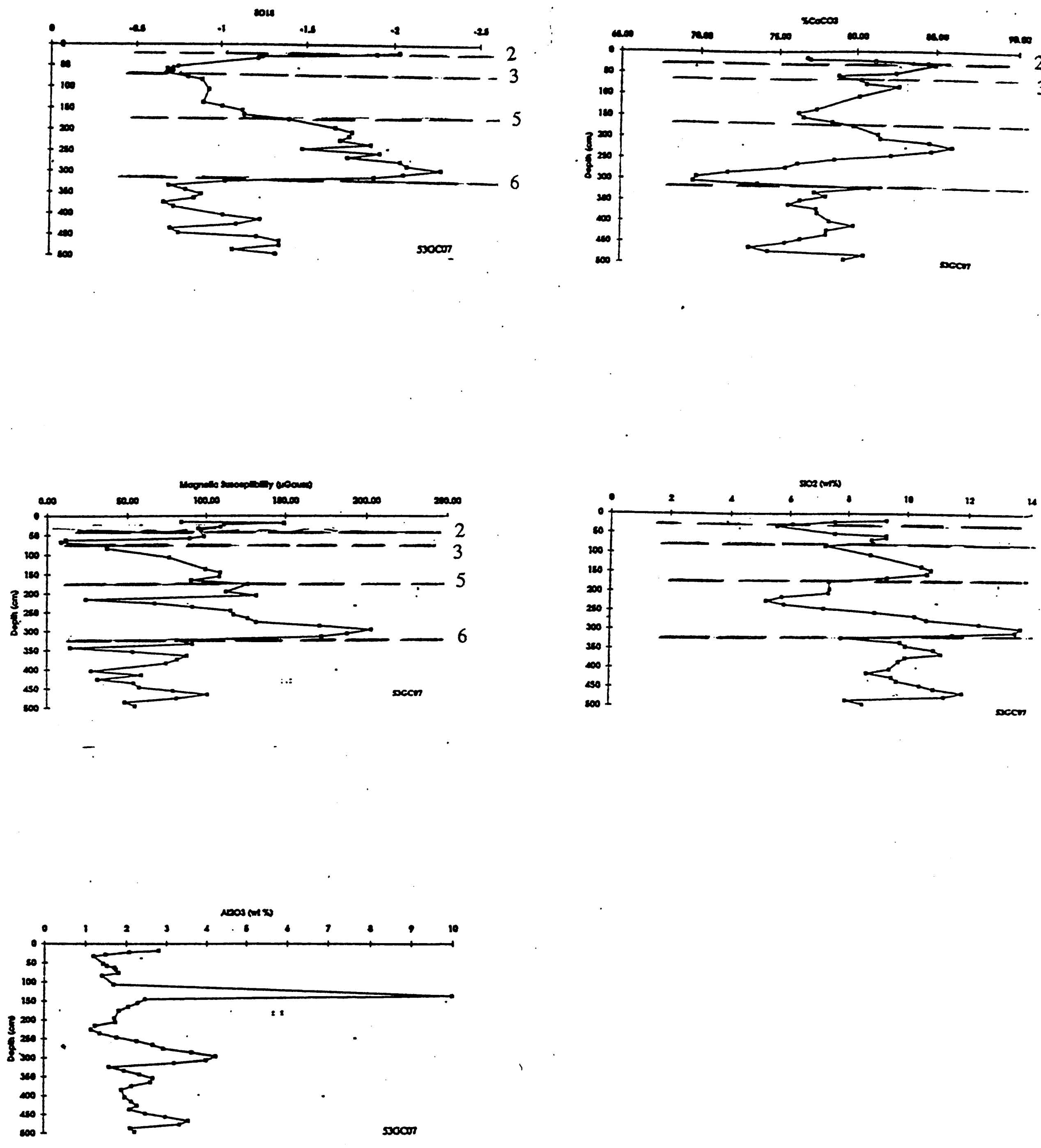



Figure 3 $\delta^{18}O$, magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$), percent calcium carbonate, $SiO_2$ and $Al_2O_3$ (wt %) profiles for core 53GC07

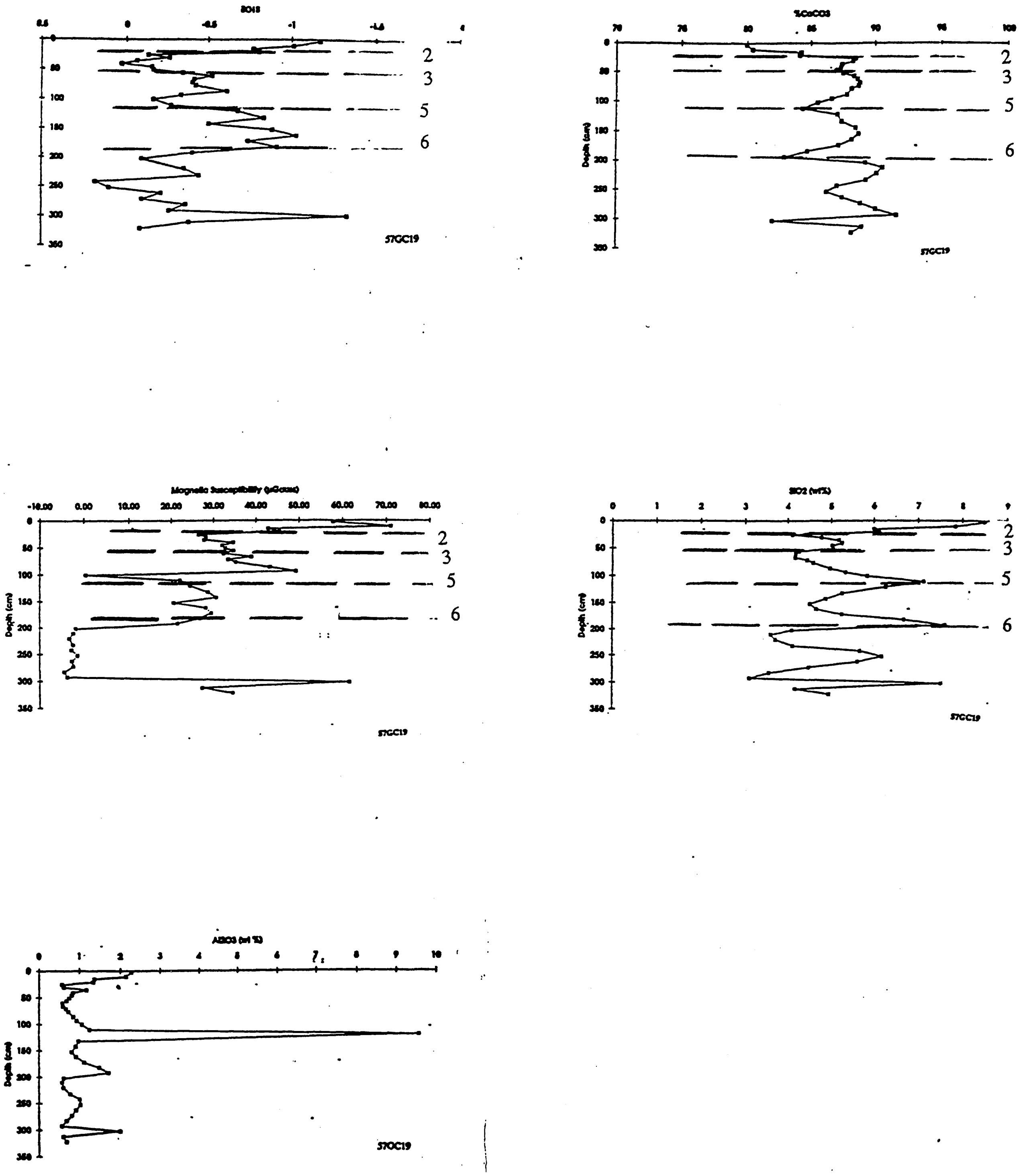



Figure 4 $\delta^{18}O$, percent calcium carbonate, magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$), $SiO_2$ and $Al_2O_3$ (wt %) profiles for core 57GC19

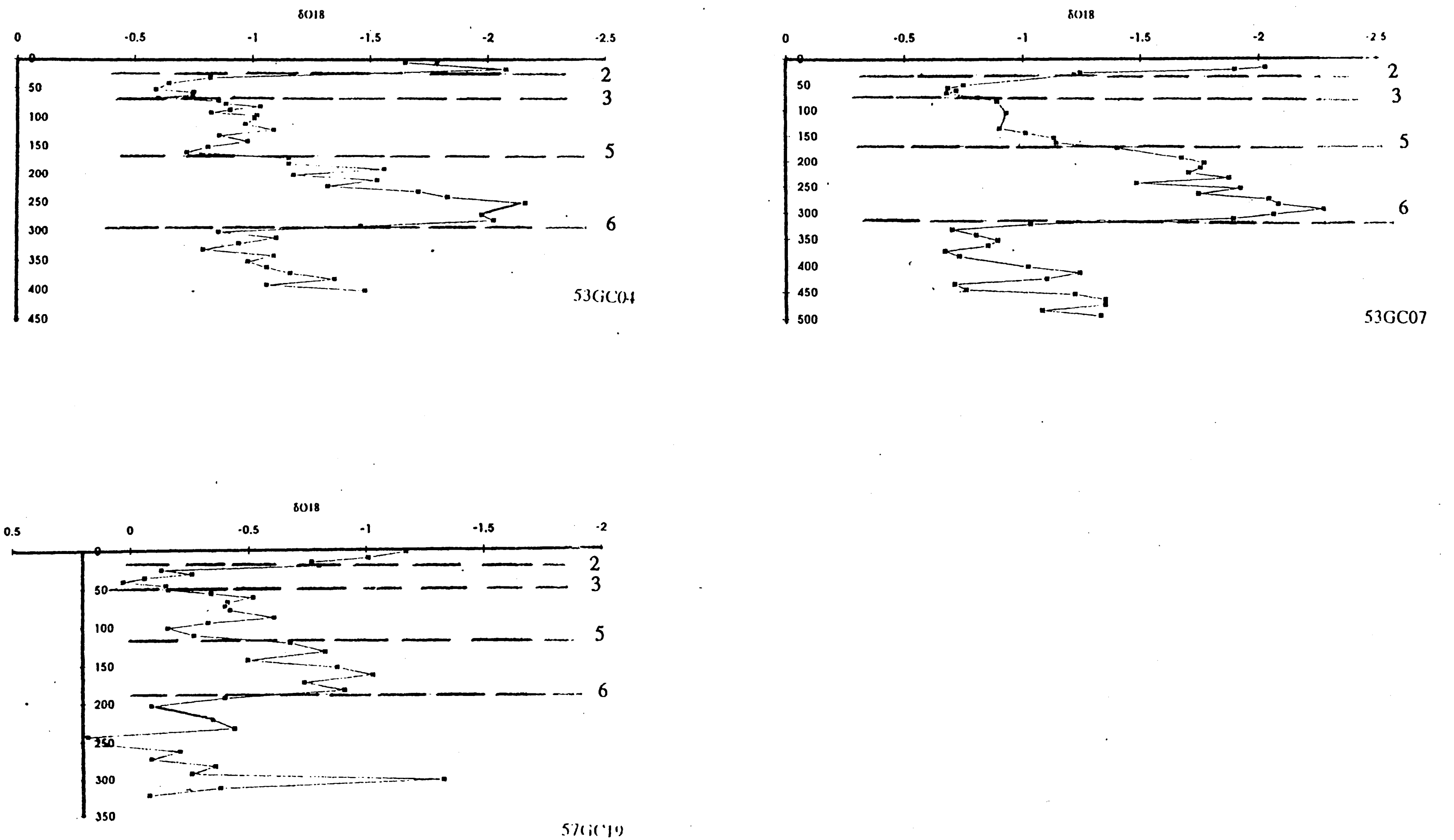



Figure 5 $\delta^{18}O$ profiles for cores 53GC04, 53GC07 and 57GC19

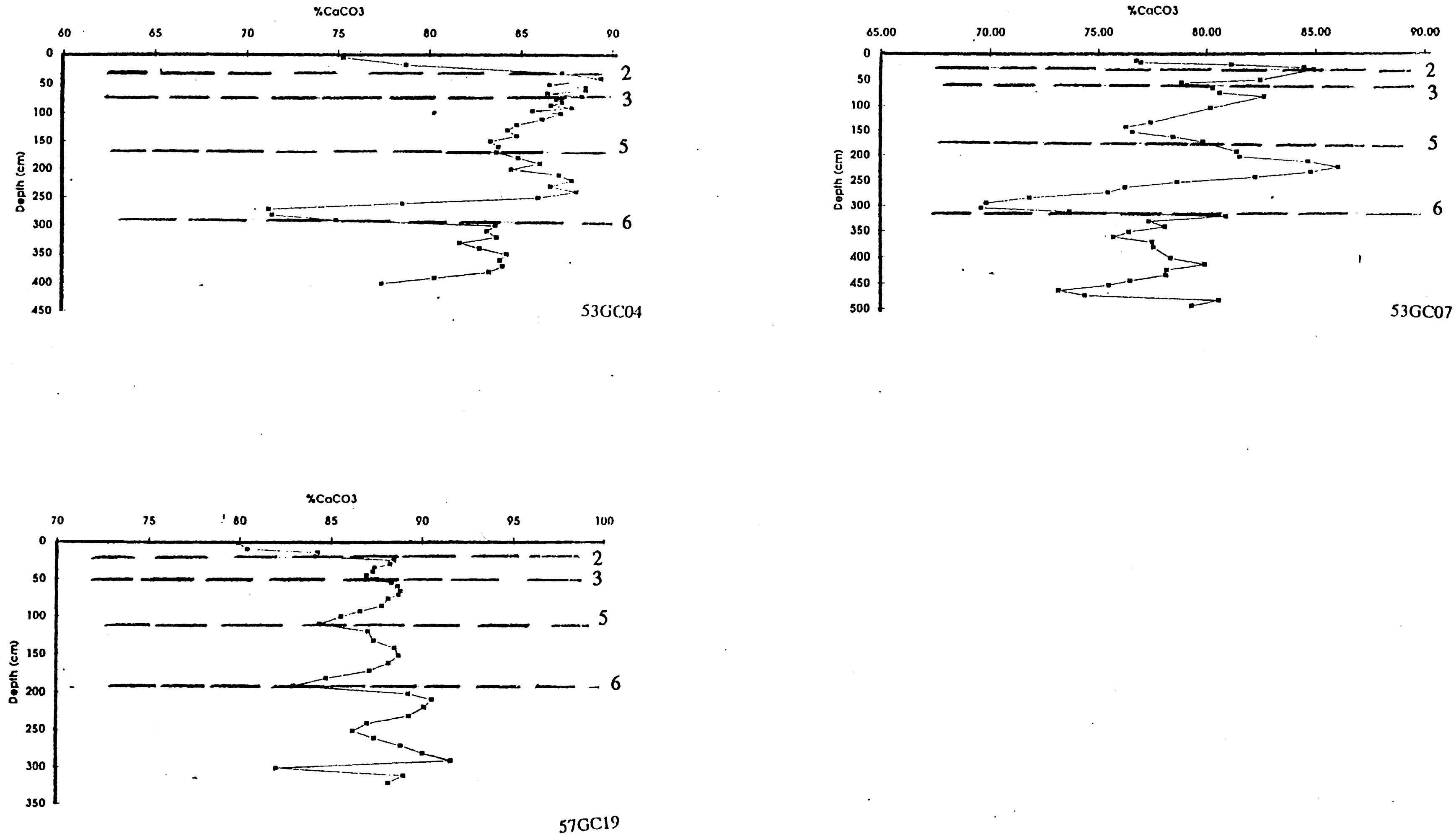



Figure 6 Percent calcium carbonate profiles for cores 53GC04, 53GC07 and 57GC19

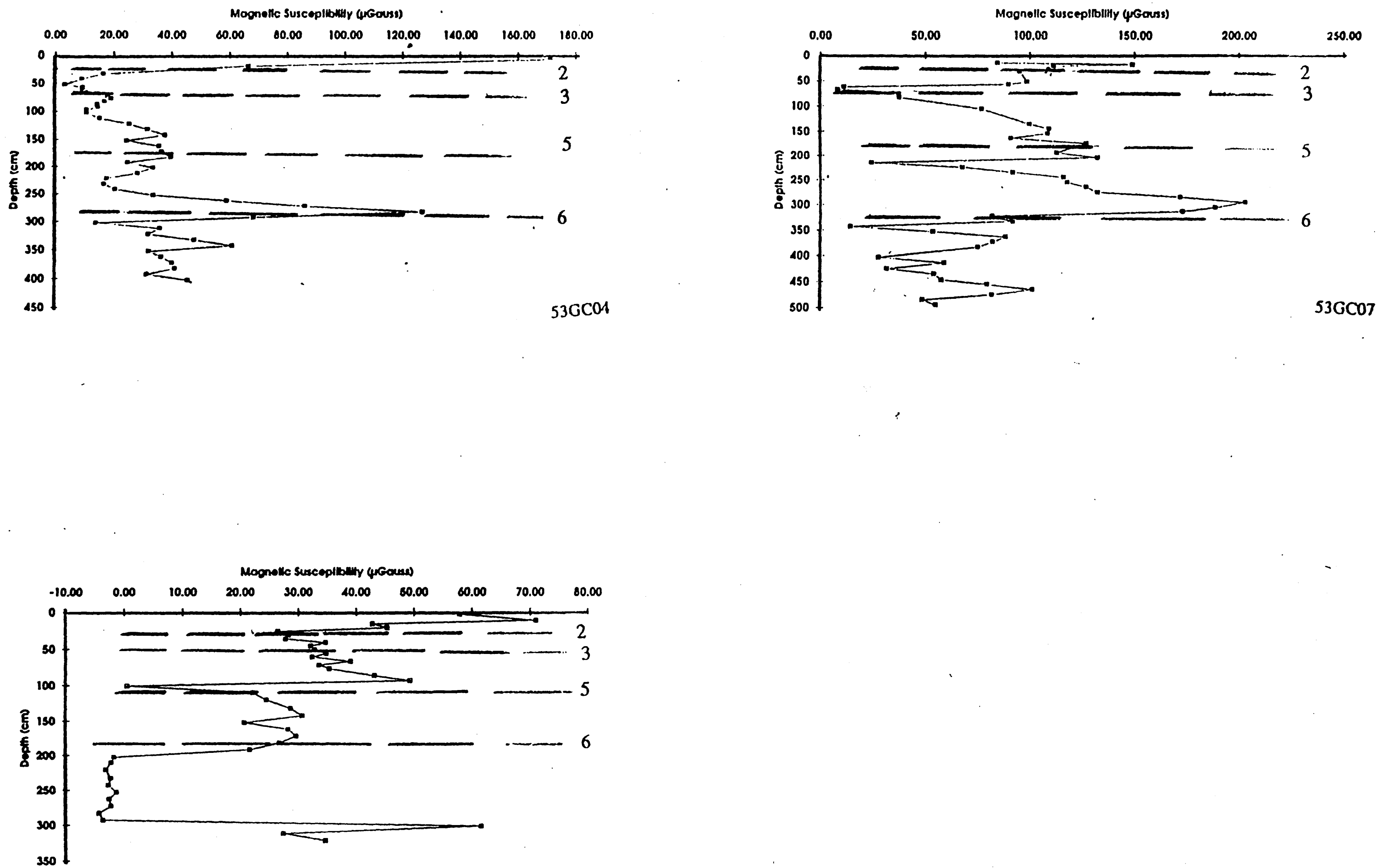



Figure 7 Magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$) profiles for cores 53GC04, 53GC07 and 57GC19

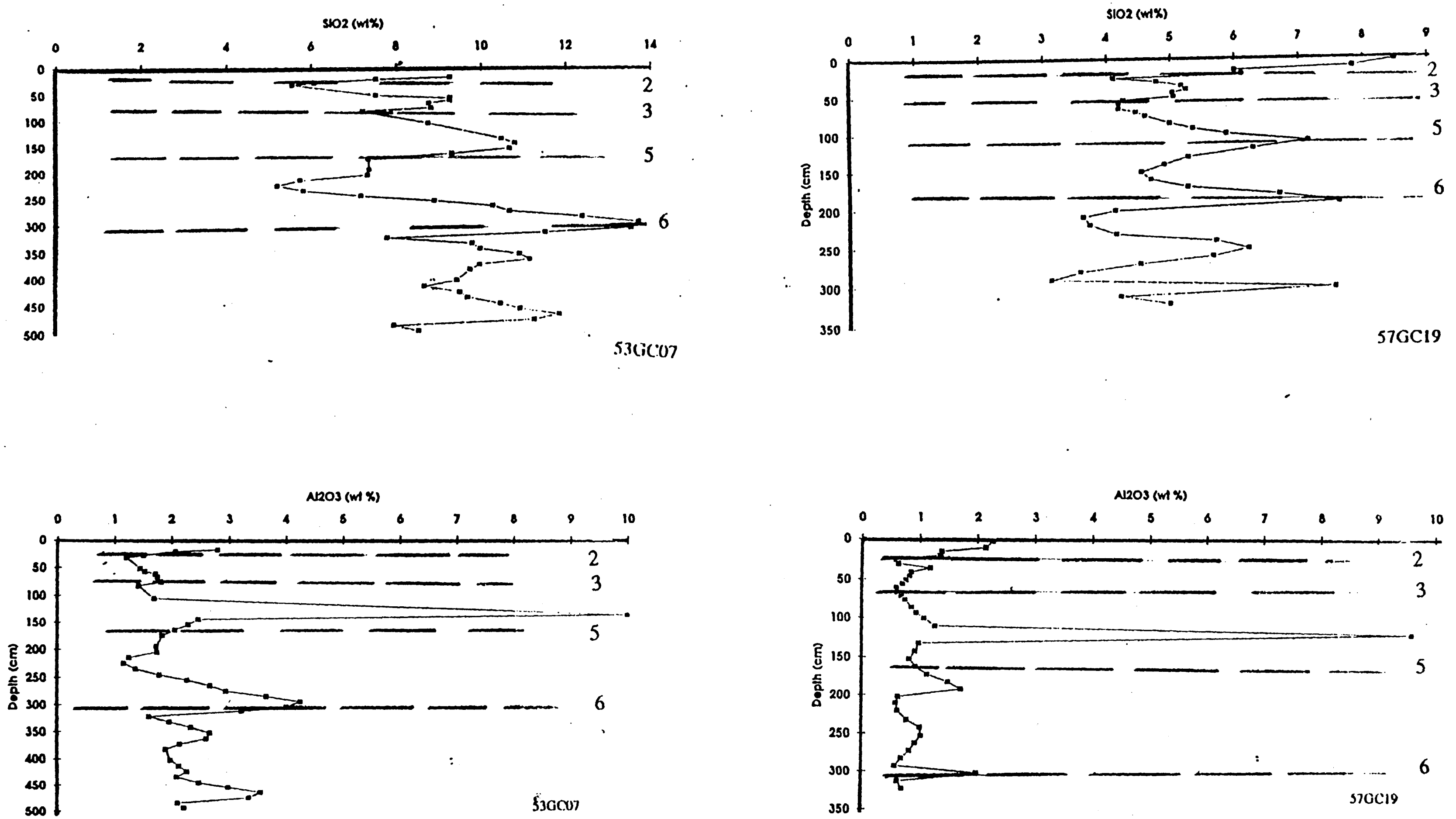



Figure 8 $SiO_2$ and $Al_2O_3$ (wt %) profiles for cores 53GC07 and 57GC19

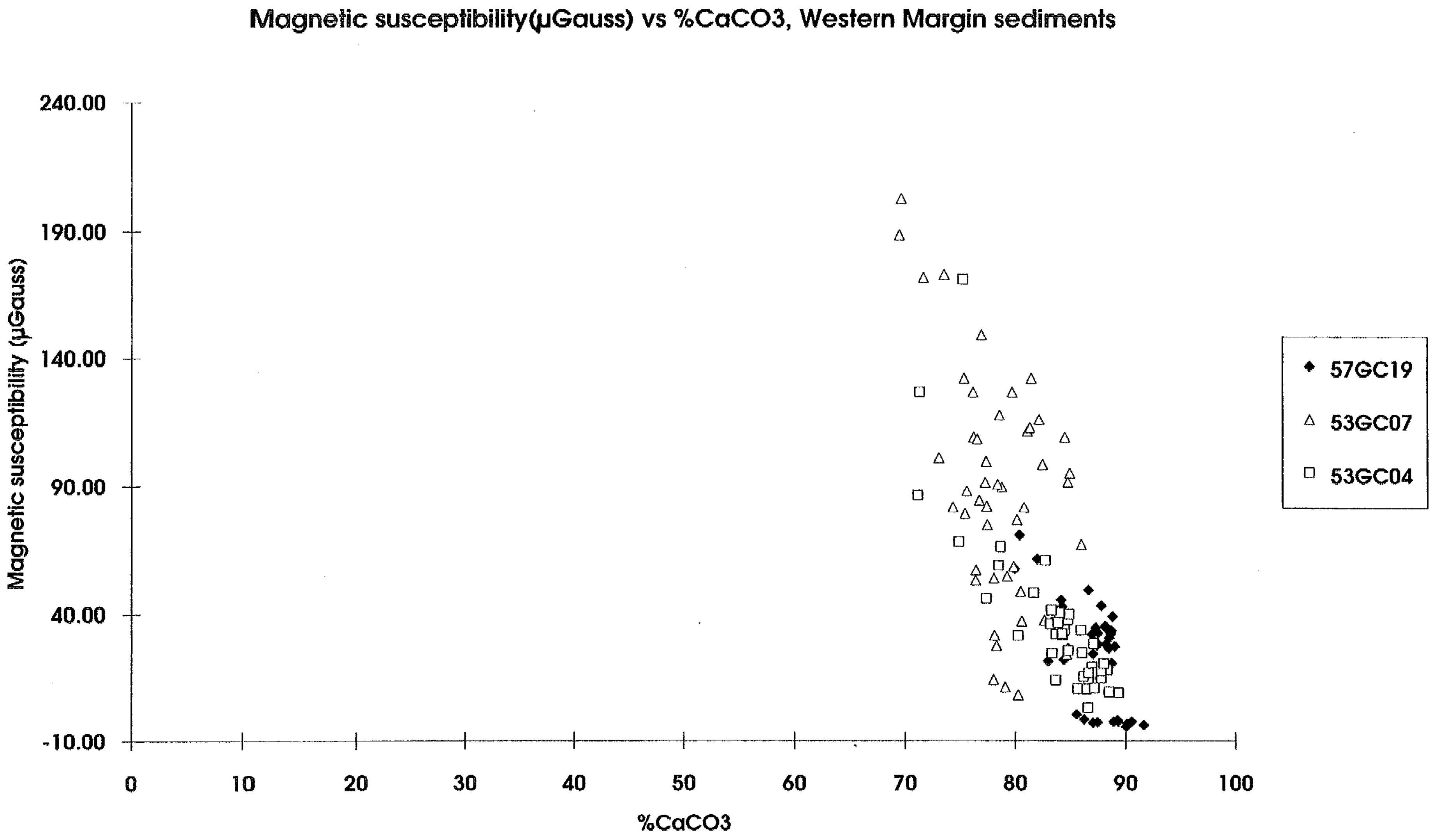



Figure 9 Magnetic susceptibility and percent calcium carbonate cross plot for Exmouth Plateau and Carnarvon Terrace cores

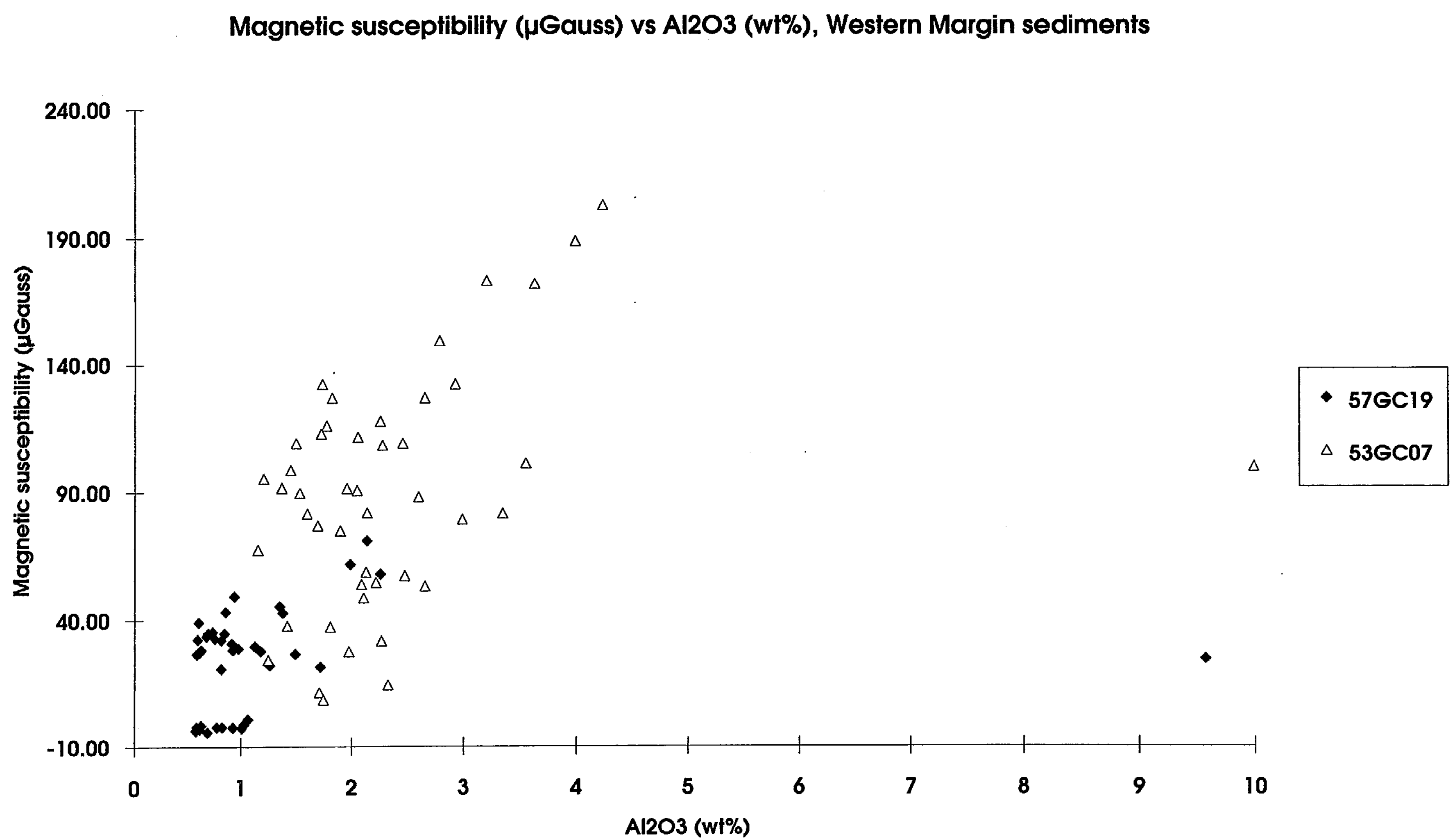





Figure 10 Magnetic susceptibility and $Al_2O_3$ (wt%) cross plot for Exmouth Plateau and Carnarvon Terrace cores

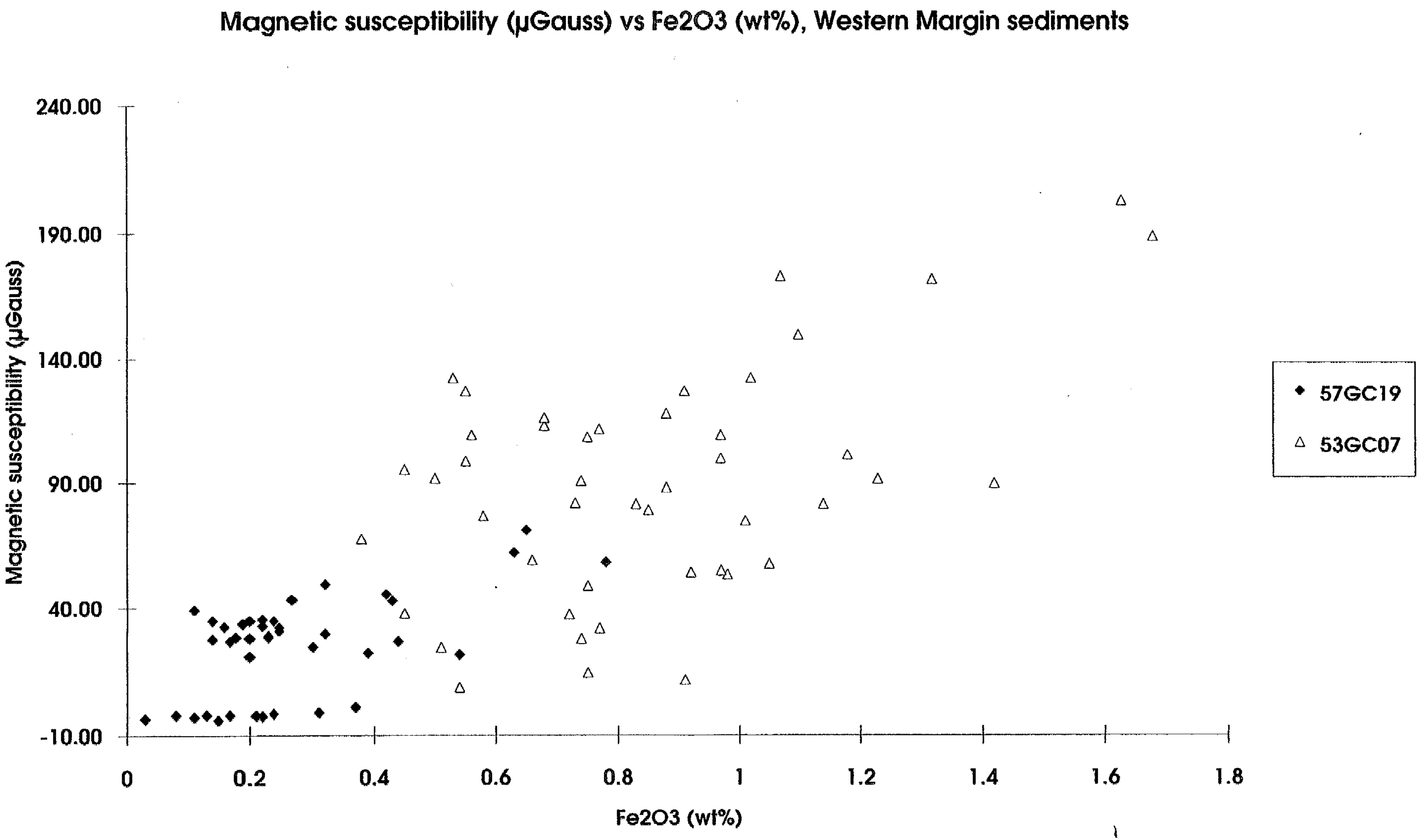





Figure 11 Magnetic susceptibility and $Fe_2O_3$ (wt%) cross plot for Exmouth Plateau and Carnarvon Terrace cores

## East Australian Continental Margin Sediments

### Off Shore Evans Head

We present data from five cores from this part of the Australian continental margin, Tables 1 and 2. The data assembled from this area cannot be interpreted with respect to palaeoceanographic nor paleoclimatic variations, at this time, because these cores have not yet been adequately dated. However, sedimentation rates of about 1 cm/kyr have been measured on the outer continental shelf and upper-slope of this area, and sedimentation rates apparently increase with increasing water depth (O'Brien personal communication). All data from this area are summarised in Tables 8 through 15.

The data assembled for core 71GC007 is presented in Table 10. XRF analyses have not been completed on this core. Percent calcium carbonate versus depth (cm), and magnetic susceptibility are shown in Figure 12. The major feature of the magnetic susceptibility down-core profile for core 71GC007 is the maxima (magnetic susceptibility >350 μGauss $oe^{-1}.cm^3$) at a depth of around 175 cm. The high magnetic susceptibilities (>250 μGauss $oe^{-1}.cm^3$) at depths of between 150 and 200 cm corresponds with the low values of percent calcium carbonate (<40 wt%) at this same depth. The range in calcium carbonate contents varies between 25 and 60 wt%. Magnetic susceptibility of these sediments range between 50 and 450 μGauss $oe^{-1}.cm^3$.

Magnetic susceptibility, percent calcium carbonate, $Al_2O_3$ and $SiO_2$ results for core 71GC16 are summarised in Table 11 and shown in Figure 13. A complete geochemical analysis of this core is summarised in Table 12. The down-core pattern of magnetic susceptibility versus depth (cm) for core 71GC16 is similar to the alumino-silicate down-core profiles for core 71GC16. The down-core profiles of magnetic susceptibility (<150 μGauss $oe^{-1}.cm^3$), $Al_2O_3$ (<40 wt%) and $SiO_2$ (<5 wt%) have relatively low values in the core-tops, which corresponds with the relatively high values of core-top calcium carbonate (>45 wt%). Similarly, between depths of 80 and 140 cm, the magnetic susceptibility (> 250 μGauss $oe^{-1}.cm^3$), $Al_2O_3$ (> 6 wt%) and $SiO_2$ (>40 wt%) profiles show relatively high values. In contrast the calcium carbonate down-core profile shows relatively low values (<40 wt%) at comparable depths.

The data for core 71GC24 are presented in Table 13 and 14, and some data are shown in Figure 14. The down-core profile of percent calcium carbonate versus depth (cm) for core 71GC24 shows relatively high values of percent calcium carbonate (>45 wt%) in the core-top (0 - 5 cm). At a depth of 130 cm there is a minimum in percent calcium carbonate

(<30 wt%) in the sediments. The plots of magnetic susceptibility, $SiO_2$ and $Al_2O_3$ show similar trends in their down-core profiles (Figure 14), and these are similar to those observed in 71GC016 above. Maxima in the magnetic susceptibility (>450 μGauss $oe^{-1}.cm^3$), and down-core $SiO_2$ (>10 wt%) and $Al_2O_3$ (>40 wt%) contents were observed at depths near 130 cm. The down-core profiles of magnetic susceptibility, $Al_2O_3$ and $SiO_2$ appear to reflect dilution with calcium carbonate.

The magnetic susceptibility and percent calcium carbonate data for core 71GC026 have been assembled in Table 15, and these are shown in Figure 15. Magnetic susceptibilities for core 71GC026 range between 60 and 320 μGauss $oe^{-1}.cm^3$ over a depth of 200 cm. Percent calcium carbonate contents vary down-core between 35 and 70 wt%, with the highest carbonate content (>65 wt%) occurring at a depth of 90 cm. This high in calcium carbonate corresponds with a low magnetic susceptibility (<55 μ Gauss $oe^{-1}.cm^3$) at the same depth. Similarly high values of magnetic susceptibility (>320 μGauss $oe^{-1}.cm^3$) at a depth of 130 cm correspond with low values in the carbonate content (<45 wt%) at a comparable depth.

The assemblage of data from core 71GC47 are shown in Table 16 and 17, and calcium carbonate, magnetic susceptibility and $Al_2O_3$ and $SiO_2$ are shown in Figure 16. The magnetic susceptibility down-core profile shows high values (>250 μGauss $oe^{-1}.cm^3$) at depths between about 60 and 140 cm, which corresponds to low carbonate contents (<42 wt%). The down-core profile of $Al_2O_3$ abundances in core 71GC47 shows a similar trend to the down-core profile of magnetic susceptibility for the same core. Both profiles show low values in the core-tops (magnetic susceptibility <150 μGauss $oe^{-1}.cm^3$ and $Al_2O_3$ <37 wt%) with a maxima at depths between 60 and 140 cm. The down-core profile of $SiO_2$ shows very little variation down-core, between 4 and 6 wt% and shows no distinguishable patterns in relation to the magnetic susceptibility and $Al_2O_3$ profiles for this core.

The ranges of calcium carbonate content, magnetic susceptibility, $Al_2O_3$ and $SiO_2$ abundances for each core from the east Australian continental margin are presented in Table 8.

**Table 8 Concentration range of calcium carbonate, magnetic susceptibility, $SiO_2$ and $Al_2O_3$ abundances for cores from the east Australian continental margin**

| Core | Range in $CaCO_3$ content | Range in magnetic susceptibility (μGauss $oe^{-1}.cm^3$) | Range in $SiO_2$ (wt%) contents | Range in $Al_2O_3$ (wt%) contents |
|---|---|---|---|---|
| 71GC47 | 34 - 50 | 100 - 350 | 4 - 6 | 30 - 45 |
| 71GC24 | 25 - 50 | 100 - 510 | 6 - 12 | 28 - 42 |
| 71GC16 | 25 - 50 | 100 - 400 | 4 - 9 | 35 - 50 |
| 71GC007 | 25 - 60 | 50 - 450 | | |
| 71GC026 | 40 - 70 | 50 - 350 | | |

The percent calcium carbonate plots for all the cores from the east Australian continental margin are shown in Figure 17. The calcium carbonate down-core profiles for all cores 71GC007, 71GC16, 71GC24, 71GC026 and 71GC47 show similar trends. They all show high calcium carbonate (>45 wt%) at the core-top and minima in calcium carbonate (<40 wt%) at various depths down-core as summarised in Table 9.

The down-core profiles of magnetic susceptibility for cores 71GC007, 71GC16, 71GC24, 71GC026 and 71GC24 are shown in Figure 18. Cores 71GC007, 71GC16. 71GC24 and 71GC47 all show similar down-core patterns. Magnetic susceptibilities are low in the core-tops with maxima occurring further down-core. The depths at which these maxima occur (>25 μGauss $oe^{-1}.cm^3$) are presented in Table 9. Core 71GC026 shows a somewhat different down-core profile to the cores mentioned above, with relatively high magnetic susceptibility (>200 μGauss $oe^{-1}.cm^3$) in core-top sediments (<40 cm).

**Table 9 Depths for minima $CaCO_3$ and maxima magnetic susceptibility for cores from the east Australian continental margin**

| Core | Depths of $CaCO_3$ minima (<40%) | Depths of magnetic susceptibility maxima (>25 μGauss $oe^{-1}.cm^3$) |
|---|---|---|
| 71GC47 | 80 - 120 | 60 - 140 |
| 71GC24 | 100 - 160 | 100 - 150 |
| 71GC16 | 80 - 140 | 50 - 140 |
| 71GC007 | 100 - 200 | 125 - 225 |
| 71GC26 | 120 - 14 | 120 - 140 |

The down-core plots of $SiO_2$ (wt %) versus depth (cm) for cores 71GC16, 71GC24 and 71GC47 are shown in Figure 19. The down-core profiles of cores 71GC16 and 71GC24 show similar trends over a similar range, 4 - 9 wt% and 6 - 10 wt% respectively. The range of $SiO_2$ abundance in the sediments from core 71GC47 is between 4 and 6 wt%. The down-core profiles of $Al_2O_3$ ( wt %) versus depth (cm) for cores 71GC16, 71GC24 and 71GC47 are shown in Figure 20. As in the down-core profiles of $SiO_2$, cores 71GC16 and 71GC24 show similar $Al_2O_3$ down-core profiles. The down-core profiles of magnetic susceptibility, $SiO_2$ and $Al_2O_3$ contents are similar for cores 71GC16 and 71GC24. These three parameters appear to reflect dilution with calcium carbonate.

Although we do not have a precise chronology for those cores from east Australia, at a sedimentation rate of about 1 cm/kyr, minima in percent calcium carbonate identified here would correspond to time periods between 80 and 200 kyr, encompassing the LIG (130 kyr). This apparent pattern is similar to that observed off the western Australian continental margin.

Summarised in Figures 21 through 23 are cross-plots of magnetic susceptibility and calcium carbonate, $Al_2O_3$ and $Fe_2O_3$. These plots indicate magnetic susceptibility diluted by calcium carbonate and, in general increases in magnetic susceptibility are associated with increases in the terrigenous indicators, although there is considerable variations in these plots. Data from Figure 23 suggests two different trends. One trend includes magnetic susceptibility increasing with total iron content for core 71GC24 and 71GC16, but data from 71GC47 do not generally fall on this trend line. These differences may be related to the extent of iron mineral diagenesis in these cores. The pore-water data for each of these cores (unpublished) shows soluble iron concentrations up to about 50 μM, indicating significant remobilisation of sedimentary iron to these sediments.

**Table 10 Magnetic susceptibility and percent calcium carbonate for samples from core 71GC007, Offshore Evans Head**

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 71 | GC007 | 7-9.5 | 8 | 86.86 | 48 |
| | | 17.5-20 | 19 | 94.81 | 47 |
| | | 30-32.5 | 31 | 87.76 | 47 |
| | | 35.5-38 | 37 | 73.12 | 50 |
| | | 40.5-43 | 42 | 76.45 | 52 |
| | | 51.5-54 | 53 | 94.82 | 47 |
| | | 56-58.5 | 57 | 112.95 | 47 |
| | | 62-64.5 | 63 | 97.71 | 46 |
| | | 66.5-69 | 68 | 94.59 | 45 |
| | | 71.5-74 | 73 | 115.80 | 42 |
| | | 77-79.5 | 78 | 148.48 | 41 |
| | | 81-83.5 | 82 | 111.99 | 42 |
| | | 91-93.5 | 92 | 132.95 | 43 |
| | | 102-104.5 | 103 | 179.55 | 41 |
| | | 107.5-110 | 109 | 162.68 | 39 |
| | | 112.5-115 | 114 | 174.05 | 39 |
| | | 121.5-124 | 123 | 217.66 | 43 |
| | | 126.5-129 | 128 | 269.09 | 35 |
| | | 132-134.5 | 133 | 311.49 | 35 |
| | | 136.5-139 | 138 | 328.92 | 35 |
| | | 142-144.5 | 143 | 317.35 | 35 |
| | | 146-148.5 | 147 | 358.24 | 30 |
| | | 151-153.5 | 152 | 343.57 | 33 |
| | | 158-160.5 | 159 | 389.34 | 31 |
| | | 163-165.5 | 164 | 446.69 | 29 |
| | | 168-170.5 | 169 | 395.87 | 30 |
| | | 173.5-176 | 175 | 334.06 | 33 |
| | | 178.5-181 | 180 | 362.66 | 30 |
| | | 183.5-186 | 185 | 312.94 | 35 |
| | | 187-189.5 | 188 | 312.83 | 34 |
| | | 196.5-199 | 198 | 348.88 | 34 |
| | | 203-205.5 | 204 | 390.96 | 31 |
| | | 208-210.5 | 209 | 275.19 | 39 |
| | | 213-215.5 | 214 | 207.12 | 42 |
| | | 220-222.5 | 221 | 124.12 | 49 |
| | | 225-227.5 | 226 | 103.35 | 58 |
| | | 231-233.5 | 232 | 86.31 | 58 |
| | | 236-238.5 | 237 | 77.45 | 59 |
| | | 247-249.5 | 248 | 57.03 | 60 |
| | | 252-254.5 | 253 | 59.36 | 59 |

Table 11 Magnetic susceptibility, percent calcium carbonate, $SiO_2$ and $Al_2O_3$ for samples from core 71GC16, Offshore Evans Head

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | SiO2 (wt%) | Al2O3 (wt%) |
|---|---|---|---|---|---|---|---|
| 71 | GC16 | 0-4 | 2 | 114.25 | 47 | | |
| | | 4-6 | 5 | 130.98 | 46 | 38.67 | 4.89 |
| | | 6-8 | 7 | 140.34 | 46 | 39.42 | 4.99 |
| | | 8-10 | 9 | 137.01 | 47 | 38.78 | 4.9 |
| | | 20-22 | 21 | 133.26 | 47 | 37.22 | 5.31 |
| | | 25-27 | 26 | 147.74 | 43 | 39.3 | 5.98 |
| | | 30-32 | 31 | 154.62 | 44 | 38.2 | 5.82 |
| | | 40-42 | 41 | 271.12 | 46 | 35.35 | 6.33 |
| | | 45-47 | 46 | 262.80 | 45 | 35.93 | 6.23 |
| | | 50-53 | 52 | 278.78 | 45 | 35.77 | 6.4 |
| | | 70-72 | 71 | 286.47 | 45 | 36.05 | 6.44 |
| | | 80-82 | 81 | 295.67 | 39 | 41.86 | 6.84 |
| | | 90-92 | 91 | 343.50 | 32 | 47.18 | 7.57 |
| | | 103-105 | 104 | 286.10 | 29 | 47.89 | 8.51 |
| | | 110-111 | 111 | 395.38 | 29 | 47.69 | 8.21 |
| | | 120-122 | 121 | 389.81 | 31 | 46.89 | 8.2 |
| | | 140-142 | 141 | 295.04 | 40 | 41.75 | 6.34 |

Table 12 Major element analyses for core 71GC16

| Survey | Core | Sample Depth (cm) | SiO2 (wt%) | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | LOI | S (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC16 | 0-2 | 38.13 | 0.32 | 4.85 | 2.55 | 2.14 | 0.37 | 0.01 | 1 | 25.91 | 1.63 | 0.91 | 0.12 | 24.45 | 800 |
| | GC16 | 2-4 | 37.62 | 0.32 | 4.82 | 2.44 | 2.04 | 0.36 | 0.01 | 0.98 | 26.48 | 1.47 | 0.94 | 0.13 | 24.68 | 800 |
| | GC16 | 4-6 | 38.67 | 0.34 | 4.89 | 2.37 | 1.88 | 0.44 | 0.01 | 0.97 | 25.82 | 1.55 | 0.97 | 0.12 | 24.18 | 800 |
| | GC16 | 6-8 | 39.42 | 0.33 | 4.99 | 2.4 | 1.99 | 0.37 | 0.01 | 0.97 | 25.54 | 1.52 | 0.99 | 0.13 | 23.58 | 800 |
| | GC16 | 8-10 | 38.78 | 0.31 | 4.9 | 2.43 | 2 | 0.39 | 0.01 | 0.98 | 26.13 | 1.55 | 0.98 | 0.1 | 23.7 | 800 |
| | GC16 | 15-17 | 37.38 | 0.32 | 4.97 | 2.27 | 1.83 | 0.4 | 0.01 | 1.06 | 26.5 | 1.56 | 0.94 | 0.12 | 24.74 | 900 |
| | GC16 | 20-22 | 37.22 | 0.33 | 5.31 | 2.36 | 1.9 | 0.41 | 0.01 | 1.16 | 26.1 | 1.54 | 0.98 | 0.16 | 24.64 | 1200 |
| | GC16 | 25-27 | 39.3 | 0.39 | 5.98 | 2.4 | 1.83 | 0.51 | 0.01 | 1.31 | 24.16 | 1.47 | 1.06 | 0.12 | 23.48 | 2000 |
| | GC16 | 30-32 | 38.2 | 0.37 | 5.82 | 2.5 | 1.96 | 0.49 | 0.01 | 1.3 | 24.86 | 1.46 | 1.03 | 0.12 | 23.9 | 2400 |
| | GC16 | 40-42 | 35.35 | 0.42 | 6.33 | 2.86 | 2.28 | 0.52 | 0.01 | 1.52 | 25.54 | 1.44 | 1.05 | 0.14 | 25.01 | 1900 |
| | GC16 | 45-47 | 35.93 | 0.41 | 6.23 | 3.01 | 2.43 | 0.52 | 0.01 | 1.57 | 25.3 | 1.43 | 1.12 | 0.12 | 24.56 | 1800 |
| | GC16 | 50-52 | 35.77 | 0.43 | 6.4 | 2.93 | 2.36 | 0.51 | 0.02 | 1.6 | 25.24 | 1.38 | 1.05 | 0.11 | 24.78 | 1800 |
| | GC16 | 60-62 | 36.72 | 0.46 | 6.64 | 2.77 | 2.2 | 0.51 | 0.02 | 1.64 | 24.37 | 1.46 | 1.05 | 0.11 | 24.38 | 2200 |
| | GC16 | 70-72 | 36.05 | 0.43 | 6.44 | 2.74 | 2.11 | 0.57 | 0.01 | 1.65 | 24.96 | 1.37 | 1.02 | 0.09 | 24.85 | 2300 |
| | GC16 | 80-82 | 41.86 | 0.44 | 6.84 | 2.65 | 2.06 | 0.53 | 0.01 | 1.44 | 21.86 | 1.44 | 1.11 | 0.09 | 21.73 | 2900 |
| | GC16 | 93-95 | 47.18 | 0.63 | 7.57 | 3.14 | 2.4 | 0.67 | 0.02 | 1.22 | 17.93 | 1.66 | 1.38 | 0.19 | 18.01 | 5700 |
| | GC16 | 103-105 | 47.89 | 0.71 | 8.51 | 3.49 | 2.65 | 0.76 | 0.02 | 1.27 | 16.4 | 1.72 | 1.46 | 0.1 | 17.36 | 5700 |
| | GC16 | 110-112 | 47.69 | 0.71 | 8.21 | 3.93 | 3.12 | 0.73 | 0.02 | 1.22 | 16.42 | 1.64 | 1.4 | 0.08 | 16.87 | 9500 |
| | GC16 | 120-122 | 46.89 | 0.71 | 8.2 | 3.57 | 2.74 | 0.75 | 0.02 | 1.25 | 17.34 | 1.64 | 1.4 | 0.09 | 17.72 | 6200 |
| | GC16 | 130-132 | 42.67 | 0.61 | 7.09 | 3.59 | 2.85 | 0.67 | 0.02 | 1.14 | 20.77 | 1.56 | 1.3 | 0.11 | 20.24 | 4800 |
| | GC16 | 140-142 | 41.75 | 0.57 | 6.34 | 3.37 | 2.65 | 0.65 | 0.02 | 1.05 | 22.32 | 1.55 | 1.17 | 0.09 | 20.84 | 5000 |
| | GC16 | 150-152 | 39.95 | 0.57 | 6.37 | 3.28 | 2.58 | 0.63 | 0.02 | 1.05 | 23.53 | 1.45 | 1.17 | 0.11 | 21.81 | 3800 |
| | GC16 | 158-160 | 38.85 | 0.53 | 5.9 | 3.29 | 2.66 | 0.57 | 0.02 | 1 | 24.52 | 1.47 | 1.13 | 0.13 | 22.42 | 4000 |

Table 12 (cont)

| Survey | Core | Sample Depth (cm) | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) | Nb (ppm) | Nd (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC16 | 1 | 0 | 6.5 | 140 | <2 | 20 | 0 | 50 | 10 | 10 | 6 | <0.5 | 6 | 5 | 0 | 154 | <2 | 5 | 10 |
| | GC16 | 2 | 0 | 6 | 153 | <2 | 16 | 0 | 41 | <3 | 8 | 5 | <0.5 | 3 | 6 | 0 | 125 | <2 | 6 | 8 |
| | GC16 | 3 | 0 | 4.5 | 156 | <2 | 21 | 0 | 41 | 4 | 6 | 6 | <0.5 | 3 | 13 | 0 | 118 | <2 | 5 | 11 |
| | GC16 | 4 | 0 | 5 | 149 | <2 | 21 | 0 | 43 | 6 | 0 | 6 | 0.5 | 0 | 5 | 0 | 115 | <2 | 6 | 10 |
| | GC16 | 5 | 0 | 5 | 162 | 3 | 17 | 0 | 52 | 10 | 7 | 7 | 1 | 3 | 9 | 0 | 115 | <2 | 6 | 14 |
| | GC16 | 6 | 0 | 5 | 144 | <2 | 22 | 0 | 47 | 8 | 8 | 6 | 1 | 3 | 10 | 0 | 112 | <2 | 5 | 13 |
| | GC16 | 7 | 0 | 6 | 151 | <2 | 24 | 0 | 49 | 10 | 8 | 6 | 0.5 | 3 | 10 | 0 | 130 | <2 | 6 | 10 |
| | GC16 | 8 | 0 | 10 | 165 | <2 | 29 | 0 | 48 | 8 | 9 | 7 | 1 | 3 | 12 | 0 | 149 | <2 | 6 | 17 |
| | GC16 | 9 | 0 | 9.5 | 162 | <2 | 25 | 0 | 50 | <3 | 8 | 6 | 0.5 | 3 | 11 | 0 | 153 | <2 | 6 | 14 |
| | GC16 | 10 | 0 | 8.5 | 198 | <2 | 35 | 0 | 54 | 12 | 12 | 8 | <0.5 | 4 | 18 | 0 | 175 | <2 | 7 | 19 |
| | GC16 | 11 | 0 | 7.5 | 183 | <2 | 28 | 0 | 52 | 12 | 9 | 9 | 1 | 4 | 12 | 0 | 175 | <2 | 7 | 20 |
| | GC16 | 12 | 0 | 7.5 | 168 | <2 | 33 | 0 | 60 | 11 | 10 | 8 | 1 | 4 | 13 | 0 | 182 | <2 | 6 | 17 |
| | GC16 | 13 | 0 | 10 | 168 | <2 | 32 | 0 | 57 | 13 | 14 | 9 | 1 | 3 | 13 | 0 | 173 | <2 | 7 | 18 |
| | GC16 | 14 | 0 | 11 | 178 | <2 | 21 | 0 | 59 | 9 | 11 | 9 | 0.5 | 3 | 13 | 0 | 173 | <2 | 7 | 11 |
| | GC16 | 15 | 0 | 11.5 | 199 | <2 | 20 | 0 | 63 | 9 | 11 | 8 | 0.5 | 3 | 13 | 0 | 170 | <2 | 8 | 9 |
| | GC16 | 16 | 0 | 10 | 210 | <2 | 27 | 0 | 65 | 5 | 13 | 10 | 1 | 6 | 14 | 0 | 199 | <2 | 8 | 12 |
| | GC16 | 17 | 0 | 7.5 | 220 | <2 | 37 | 0 | 66 | 10 | 12 | 11 | 1 | 5 | 19 | 0 | 204 | <2 | 10 | 18 |
| | GC16 | 18 | 0 | 11 | 223 | <2 | 29 | 0 | 63 | 7 | 12 | 10 | 1.5 | 5 | 13 | 0 | 204 | 2 | 10 | 12 |
| | GC16 | 19 | 0 | 8 | 218 | <2 | 26 | 0 | 60 | 10 | 15 | 11 | 1 | 4 | 14 | 0 | 200 | <2 | 10 | 10 |
| | GC16 | 20 | 0 | 7 | 206 | 2 | 22 | 0 | 73 | 5 | 12 | 9 | 1 | 5 | 9 | 0 | 185 | <2 | 10 | 12 |
| | GC16 | 21 | 0 | 9 | 175 | <2 | 31 | 0 | 60 | 5 | 8 | 7 | 0.5 | 5 | 10 | 0 | 168 | <2 | 8 | 11 |
| | GC16 | 22 | 0 | 6.5 | 157 | <2 | 20 | 0 | 53 | 11 | 12 | 8 | 0.5 | 4 | 12 | 0 | 178 | <2 | 8 | 10 |
| | GC16 | 23 | 0 | 6 | 172 | <2 | 25 | 0 | 57 | 8 | 9 | 7 | 1 | 3 | 12 | 0 | 185 | <2 | 7 | 14 |

Table 12 (cont)

| Survey | Core | Sample Depth (cm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | S (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC16 | 1 | 12 | 6 | <2 | 30 | 800 | 12 | <1 | <2 | 920 | <2 | 5 | 2 | 38 | <3 | 12 | 35 | 154 |
| | GC16 | 2 | 12 | 6 | 3 | 30 | 800 | 13 | <1 | <2 | 925 | <2 | 3 | 1.5 | 37 | <3 | 12 | 34 | 147 |
| | GC16 | 3 | 12 | 7 | <2 | 31 | 800 | 16 | <1 | <2 | 914 | <2 | 3 | 1 | 42 | 4 | 13 | 32 | 149 |
| | GC16 | 4 | 0 | 6 | 3 | 32 | 800 | 12 | <1 | <2 | 923 | 0 | 5 | 1 | 39 | <3 | 14 | 0 | 148 |
| | GC16 | 5 | 13 | 6 | <2 | 32 | 800 | 17 | <1 | <2 | 923 | <2 | 3 | 2 | 46 | 3 | 12 | 35 | 146 |
| | GC16 | 6 | 14 | 6 | 2 | 32 | 900 | 13 | 1 | <2 | 973 | 2 | 3 | 3 | 44 | 8 | 12 | 35 | 151 |
| | GC16 | 7 | 14 | 7 | <2 | 34 | 1200 | 18 | <1 | <2 | 1041 | 3 | 4 | 3.5 | 49 | <3 | 12 | 35 | 135 |
| | GC16 | 8 | 16 | 7 | 3 | 39 | 2000 | 16 | <1 | <2 | 1092 | <2 | 4 | 4 | 47 | 4 | 14 | 37 | 141 |
| | GC16 | 9 | 16 | 8 | 4 | 37 | 2400 | 12 | <1 | <2 | 1083 | <2 | 4 | 4.5 | 53 | <3 | 14 | 37 | 146 |
| | GC16 | 10 | 16 | 8 | 3 | 42 | 1900 | 17 | <1 | <2 | 1101 | <2 | 5 | 4 | 65 | 5 | 17 | 45 | 161 |
| | GC16 | 11 | 16 | 8 | 9 | 42 | 1800 | 16 | <1 | <2 | 1121 | 2 | 4 | 4 | 63 | 6 | 16 | 45 | 167 |
| | GC16 | 12 | 17 | 9 | 6 | 42 | 1800 | 18 | <1 | <2 | 1148 | <2 | 5 | 3.5 | 62 | <3 | 15 | 46 | 166 |
| | GC16 | 13 | 16 | 7 | 6 | 41 | 2200 | 18 | <1 | <2 | 1256 | 2 | 5 | 3.5 | 58 | <3 | 15 | 45 | 170 |
| | GC16 | 14 | 16 | 8 | 3 | 41 | 2300 | 16 | <1 | <2 | 1225 | <2 | 6 | 3 | 58 | <3 | 15 | 45 | 146 |
| | GC16 | 15 | 17 | 8 | 5 | 44 | 2900 | 15 | <1 | <2 | 1176 | <2 | 4 | 3 | 61 | 3 | 14 | 44 | 176 |
| | GC16 | 16 | 19 | 9 | 4 | 52 | 5700 | 16 | <1 | <2 | 959 | <2 | 6 | 3 | 62 | 8 | 15 | 49 | 192 |
| | GC16 | 17 | 22 | 9 | <2 | 55 | 5700 | 17 | <1 | <2 | 939 | <2 | 7 | 2.5 | 68 | <3 | 16 | 54 | 178 |
| | GC16 | 18 | 22 | 10 | 6 | 54 | 9500 | 17 | <1 | <2 | 896 | 4 | 7 | 1 | 69 | <3 | 16 | 55 | 189 |
| | GC16 | 19 | 22 | 10 | <2 | 53 | 6200 | 17 | <1 | <2 | 926 | <2 | 8 | 3 | 72 | <3 | 15 | 56 | 182 |
| | GC16 | 20 | 20 | 8 | 5 | 46 | 4800 | 17 | <1 | <2 | 950 | <2 | 6 | 2.5 | 68 | 6 | 16 | 53 | 173 |
| | GC16 | 21 | 18 | 6 | 2 | 41 | 5000 | 17 | <1 | <2 | 921 | <2 | 5 | 2.5 | 58 | <3 | 13 | 47 | 171 |
| | GC16 | 22 | 18 | 7 | 3 | 41 | 3800 | 16 | <1 | <2 | 986 | <2 | 4 | 3 | 55 | <3 | 14 | 50 | 150 |
| | GC16 | 23 | 17 | 7 | 4 | 38 | 4000 | 17 | <1 | <2 | 982 | <2 | 4 | 3 | 52 | 5 | 12 | 47 | 168 |

Table 13 Magnetic susceptibility, percent calcium carbonate, SiO2 and Al2O3 for samples from core 71GC24, Offshore Evans Head

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | SiO2 (wt%) | Al2O3 (wt%) |
|---|---|---|---|---|---|---|---|
| 71 | GC24 | 0-6 | 3 | 154.24 | 47 | 29.6 | 7.39 |
| | | 6-8 | 7 | 120.97 | 48 | 29.58 | 7.09 |
| | | 8-10 | 9 | 119.63 | 48 | 29.52 | 7.14 |
| | | 30-32 | 31 | 105.03 | 47 | 30.38 | 7.68 |
| | | 35-37 | 36 | 107.05 | 48 | 30.12 | 7.6 |
| | | 45-47 | 46 | 109.84 | 47 | 30.59 | 7.71 |
| | | 50-53 | 52 | 113.33 | 47 | 30.45 | 7.53 |
| | | 55-57 | 56 | 103.44 | 48 | 30.26 | 7.26 |
| | | 60-62 | 61 | 100.01 | 50 | 29.68 | 6.86 |
| | | 65-67 | 66 | 104.18 | 48 | 30.91 | 7.06 |
| | | 80-82 | 81 | 175.47 | 42 | 35.6 | 7.61 |
| | | 90-92 | 91 | 221.52 | 36 | 37.42 | 8.92 |
| | | 100-102 | 101 | 348.07 | 35 | 38.79 | 9.49 |
| | | 110-112 | 111 | 380.69 | 34 | 38.64 | 9.39 |
| | | 120-122 | 121 | 398.40 | 33 | 39.4 | 9.62 |
| | | 130-132 | 131 | 474.54 | 30 | 40.46 | 10.44 |
| | | 140-142 | 141 | 376.34 | 35 | 36.77 | 9.28 |
| | | 147-149 | 148 | 404.61 | 33 | 38.96 | 9.85 |

Table 14 Major element analyses for core 71GC24

| Survey | Core | Sample Depth (cm) | SiO2 (wt%) | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | LOI | S (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC24 | 0-2 | 29.05 | 0.42 | 7.38 | 3.48 | 3.08 | 0.36 | 0.02 | 1.21 | 26.26 | 1.82 | 0.85 | 0.14 | 29.19 | 1000 |
| | GC24 | 2-4 | 29.6 | 0.44 | 7.39 | 3.17 | 2.68 | 0.44 | 0.02 | 1.17 | 26.51 | 1.86 | 0.88 | 0.13 | 28.69 | 1000 |
| | GC24 | 4-6 | 29.6 | 0.43 | 7.36 | 2.95 | 2.47 | 0.43 | 0.01 | 1.16 | 26.55 | 2.05 | 0.99 | 0.13 | 28.62 | 1000 |
| | GC24 | 6-8 | 29.58 | 0.41 | 7.09 | 2.75 | 2.27 | 0.43 | 0.01 | 1.15 | 27.13 | 1.96 | 0.99 | 0.13 | 28.64 | 1000 |
| | GC24 | 8-10 | 29.52 | 0.4 | 7.14 | 2.79 | 2.26 | 0.48 | 0.01 | 1.16 | 27.07 | 1.66 | 0.89 | 0.13 | 29.07 | 1000 |
| | GC24 | 13-15 | 29.52 | 0.47 | 7.47 | 2.88 | 2.37 | 0.46 | 0.01 | 1.19 | 26.6 | 1.6 | 0.86 | 0.13 | 29.07 | 1200 |
| | GC24 | 20-22 | 30.34 | 0.44 | 7.65 | 2.96 | 2.46 | 0.45 | 0.01 | 1.17 | 26.33 | 1.74 | 0.96 | 0.13 | 28.16 | 900 |
| | GC24 | 25-27 | 30.59 | 0.44 | 7.77 | 3.01 | 2.5 | 0.46 | 0.01 | 1.2 | 26.01 | 1.67 | 0.94 | 0.13 | 28.08 | 1000 |
| | GC24 | 30-32 | 30.38 | 0.43 | 7.68 | 3 | 2.49 | 0.46 | 0.01 | 1.2 | 26.41 | 1.76 | 0.96 | 0.13 | 27.91 | 900 |
| | GC24 | 35-37 | 30.12 | 0.42 | 7.6 | 2.88 | 2.36 | 0.47 | 0.01 | 1.19 | 26.74 | 1.58 | 0.92 | 0.13 | 28.26 | 900 |
| | GC24 | 40-42 | 30.16 | 0.43 | 7.69 | 3.02 | 2.46 | 0.5 | 0.01 | 1.22 | 26.38 | 1.52 | 0.93 | 0.13 | 28.38 | 1000 |
| | GC24 | 45-47 | 30.59 | 0.44 | 7.71 | 2.94 | 2.41 | 0.48 | 0.01 | 1.23 | 26.13 | 1.64 | 0.92 | 0.13 | 28.13 | 1000 |
| | GC24 | 50-53 | 30.45 | 0.44 | 7.53 | 2.87 | 2.38 | 0.44 | 0.01 | 1.2 | 26.28 | 1.76 | 0.94 | 0.13 | 28.22 | 1100 |
| | GC24 | 55-57 | 30.26 | 0.43 | 7.26 | 2.72 | 2.2 | 0.47 | 0.01 | 1.18 | 26.91 | 1.5 | 0.87 | 0.13 | 28.57 | 1100 |
| | GC24 | 60-62 | 29.68 | 0.39 | 6.86 | 2.51 | 2.02 | 0.44 | 0.01 | 1.17 | 27.95 | 1.59 | 0.95 | 0.13 | 28.58 | 1100 |
| | GC24 | 65-67 | 30.91 | 0.42 | 7.06 | 2.58 | 2.02 | 0.5 | 0.01 | 1.27 | 26.78 | 1.72 | 0.99 | 0.13 | 27.93 | 1300 |
| | GC24 | 80-82 | 35.6 | 0.47 | 7.61 | 3 | 2.31 | 0.62 | 0.02 | 1.47 | 23.34 | 1.58 | 1.14 | 0.12 | 25.17 | 2700 |
| | GC24 | 90-92 | 37.42 | 0.56 | 8.92 | 3.5 | 2.81 | 0.62 | 0.02 | 1.62 | 20.43 | 1.8 | 1.22 | 0.12 | 23.9 | 2800 |
| | GC24 | 100-102 | 38.79 | 0.6 | 9.49 | 3.66 | 2.92 | 0.67 | 0.02 | 1.64 | 19.52 | 1.77 | 1.32 | 0.14 | 22.67 | 2200 |
| | GC24 | 110-112 | 38.64 | 0.61 | 9.39 | 3.73 | 3.02 | 0.64 | 0.03 | 1.63 | 19.33 | 1.72 | 1.37 | 0.13 | 22.98 | 2600 |
| | GC24 | 120-122 | 39.4 | 0.62 | 9.62 | 3.83 | 3.11 | 0.65 | 0.02 | 1.63 | 18.67 | 1.81 | 1.41 | 0.13 | 22.35 | 2900 |
| | GC24 | 130-132 | 40.46 | 0.68 | 10.44 | 4.27 | 3.51 | 0.68 | 0.03 | 1.73 | 16.64 | 1.9 | 1.45 | 0.13 | 21.67 | 3500 |
| | GC24 | 140-142 | 36.77 | 0.59 | 9.28 | 3.82 | 3.09 | 0.66 | 0.03 | 1.82 | 19.76 | 2.28 | 1.45 | 0.13 | 23.36 | 3900 |
| | GC24 | 147-149 | 38.96 | 0.65 | 9.85 | 4.09 | 3.29 | 0.72 | 0.03 | 1.85 | 18.21 | 1.87 | 1.38 | 0.13 | 22.31 | 3800 |

Table 14 (cont)

| Survey | Core | Sample Depth (cm) | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) | Nb (ppm) | Nd (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC24 | 0-2 | 0 | 0 | 140 | 0 | 17 | 0 | 40 | <3 | 0 | 0 | 0 | 0 | 8 | 0 | 134 | 0 | 0 | 12 |
| | GC24 | 2-4 | 0 | 6 | 155 | <2 | 19 | 0 | 49 | 5 | 69 | 9 | <0.5 | 2 | 11 | 0 | 136 | <2 | 7 | 7 |
| | GC24 | 4-6 | 0 | 4.5 | 132 | <2 | 25 | 0 | 40 | 8 | 14 | 8 | 0.5 | 2 | 8 | 0 | 130 | <2 | 7 | 12 |
| | GC24 | 6-8 | 0 | 4 | 147 | <2 | 14 | 0 | 43 | 5 | 15 | 7 | 0.5 | <2 | 9 | 0 | 137 | <2 | 6 | 10 |
| | GC24 | 8-10 | 0 | 3.5 | 102 | <2 | 21 | 0 | 35 | <3 | 17 | 8 | 1 | 3 | 12 | 0 | 107 | <2 | 7 | 8 |
| | GC24 | 13-15 | 0 | 3.5 | 154 | <2 | 19 | 0 | 47 | <3 | 14 | 8 | 1 | 2 | 14 | 0 | 134 | <2 | 6 | 5 |
| | GC24 | 20-22 | 0 | 3 | 164 | <2 | 19 | 0 | 54 | 7 | 17 | 9 | <0.5 | 3 | 12 | 0 | 150 | <2 | 7 | 8 |
| | GC24 | 25-27 | 0 | 4 | 437 | <2 | 12 | 0 | 6 | 13 | 18 | 9 | 0.5 | 3 | 9 | 0 | 188 | <2 | 7 | 12 |
| | GC24 | 30-32 | 0 | 3.5 | 174 | <2 | 24 | 0 | 53 | <3 | 18 | 8 | 0.5 | 3 | 14 | 0 | 149 | <2 | 8 | 13 |
| | GC24 | 35-37 | 0 | 3.5 | 170 | <2 | 17 | 0 | 53 | 10 | 14 | 8 | <0.5 | <2 | 14 | 0 | 148 | <2 | 6 | 7 |
| | GC24 | 40-42 | 0 | 3.5 | 167 | <2 | 21 | 0 | 58 | 6 | 19 | 9 | 0.5 | 4 | 16 | 0 | 151 | <2 | 7 | 13 |
| | GC24 | 45-47 | 0 | 3.5 | 105 | <2 | 8 | 0 | 37 | 3 | 17 | 9 | <0.5 | 3 | 7 | 0 | 106 | <2 | 7 | 5 |
| | GC24 | 50-53 | 0 | 3.5 | 119 | <2 | 15 | 0 | 46 | 5 | 17 | 8 | <0.5 | 3 | 7 | 0 | 107 | <2 | 7 | 8 |
| | GC24 | 55-57 | 0 | 3 | 157 | <2 | 19 | 0 | 56 | 7 | 19 | 9 | 0.5 | 3 | 9 | 0 | 134 | <2 | 7 | 11 |
| | GC24 | 60-62 | 0 | 4 | 173 | <2 | 15 | 0 | 46 | 7 | 16 | 7 | <0.5 | 2 | 8 | 0 | 140 | <2 | 6 | 9 |
| | GC24 | 65-67 | 0 | 4.5 | 139 | <2 | 13 | 0 | 38 | 10 | 14 | 8 | 0.5 | <2 | 7 | 0 | 131 | <2 | 7 | 6 |
| | GC24 | 80-82 | 0 | 8 | 165 | <2 | 33 | 0 | 50 | <3 | 14 | 9 | <0.5 | 2 | 12 | 0 | 175 | <2 | 7 | 14 |
| | GC24 | 90-92 | 0 | 9 | 189 | <2 | 32 | 0 | 54 | 7 | 16 | 11 | 1 | 4 | 15 | 0 | 202 | <2 | 8 | 16 |
| | GC24 | 100-102 | 0 | 7 | 203 | <2 | 33 | 0 | 54 | <3 | 19 | 12 | 1 | 7 | 17 | 0 | 216 | <2 | 10 | 18 |
| | GC24 | 110-112 | 0 | 8.5 | 237 | <2 | 38 | 0 | 62 | 8 | 23 | 13 | 1 | 3 | 17 | 0 | 238 | <2 | 10 | 16 |
| | GC24 | 120-122 | 0 | 8 | 239 | <2 | 45 | 0 | 60 | 3 | 21 | 13 | 0.5 | 3 | 19 | 0 | 255 | <2 | 10 | 21 |
| | GC24 | 130-132 | 0 | 11 | 240 | <2 | 37 | 0 | 65 | 5 | 20 | 13 | 1 | 5 | 17 | 0 | 267 | <2 | 11 | 18 |
| | GC24 | 140-142 | 0 | 10.5 | 170 | <2 | 28 | 0 | 51 | 6 | 18 | 12 | 0.5 | 4 | 18 | 0 | 221 | <2 | 10 | 17 |
| | GC24 | 147-149 | 0 | 11 | 185 | <2 | 27 | 0 | 57 | 3 | 17 | 12 | 1 | 3 | 14 | 0 | 237 | <2 | 11 | 14 |

Table 14 (cont)

| Survey | Core | Sample Depth (cm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | S (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC24 | 0-2 | 0 | 0 | <2 | 0 | 1000 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 |
| | GC24 | 2-4 | 16 | 8 | <2 | 33 | 1000 | 17 | <1 | <2 | 1109 | <2 | 3 | 2.5 | 51 | <3 | 15 | 41 | 97 |
| | GC24 | 4-6 | 17 | 8 | <2 | 31 | 1000 | 14 | <1 | <2 | 1091 | <2 | 4 | 2 | 48 | 6 | 16 | 46 | 100 |
| | GC24 | 6-8 | 18 | 8 | <2 | 30 | 1000 | 15 | <1 | <2 | 1072 | <2 | 4 | 2.5 | 46 | 5 | 15 | 43 | 98 |
| | GC24 | 8-10 | 20 | 9 | <2 | 31 | 1000 | 10 | <1 | <2 | 1107 | <2 | 4 | 2 | 37 | 9 | 16 | 48 | 99 |
| | GC24 | 13-15 | 17 | 8 | <2 | 32 | 1200 | 15 | <1 | <2 | 1085 | <2 | 4 | 4 | 48 | 4 | 16 | 46 | 97 |
| | GC24 | 20-22 | 22 | 8 | <2 | 36 | 900 | 18 | <1 | 3 | 1093 | <2 | 4 | 2.5 | 52 | <3 | 16 | 52 | 105 |
| | GC24 | 25-27 | 24 | 7 | <2 | 37 | 1000 | 7 | <1 | <2 | 1095 | <2 | 4 | 3 | 6 | 9 | 16 | 53 | 100 |
| | GC24 | 30-32 | 24 | 8 | <2 | 38 | 900 | 17 | <1 | <2 | 1085 | <2 | 4 | 4 | 58 | 4 | 16 | 54 | 102 |
| | GC24 | 35-37 | 19 | 8 | <2 | 35 | 900 | 16 | <1 | <2 | 1067 | <2 | 3 | 3 | 56 | 3 | 16 | 49 | 97 |
| | GC24 | 40-42 | 23 | 8 | <2 | 36 | 1000 | 19 | 1 | <2 | 1091 | <2 | 5 | 4 | 56 | <3 | 16 | 54 | 104 |
| | GC24 | 45-47 | 23 | 8 | 2 | 37 | 1000 | 7 | <1 | <2 | 1077 | <2 | 5 | 3.5 | 39 | <3 | 15 | 52 | 103 |
| | GC24 | 50-53 | 22 | 9 | <2 | 35 | 1100 | 9 | 1 | 6 | 1094 | <2 | 4 | 4 | 38 | <3 | 16 | 50 | 100 |
| | GC24 | 55-57 | 21 | 9 | 4 | 34 | 1100 | 16 | <1 | <2 | 1163 | <2 | 5 | 4 | 43 | <3 | 16 | 49 | 103 |
| | GC24 | 60-62 | 18 | 7 | 4 | 32 | 1100 | 15 | <1 | <2 | 1249 | <2 | 4 | 3.5 | 48 | 5 | 15 | 44 | 104 |
| | GC24 | 65-67 | 18 | 7 | <2 | 35 | 1300 | 12 | <1 | <2 | 1247 | <2 | 5 | 3 | 38 | <3 | 15 | 45 | 103 |
| | GC24 | 80-82 | 18 | 8 | 3 | 43 | 2700 | 16 | <1 | <2 | 1218 | <2 | 5 | 3 | 47 | <3 | 17 | 47 | 121 |
| | GC24 | 90-92 | 22 | 9 | 5 | 51 | 2800 | 14 | <1 | <2 | 1072 | <2 | 7 | 3 | 66 | <3 | 18 | 57 | 136 |
| | GC24 | 100-102 | 23 | 10 | 4 | 55 | 2200 | 17 | <1 | <2 | 1042 | <2 | 6 | 2.5 | 77 | 4 | 20 | 62 | 139 |
| | GC24 | 110-112 | 23 | 11 | 3 | 56 | 2600 | 19 | <1 | <2 | 1012 | 4 | 7 | 4 | 89 | 4 | 20 | 64 | 144 |
| | GC24 | 120-122 | 24 | 12 | 7 | 59 | 2900 | 20 | <1 | <2 | 987 | <2 | 7 | 3.5 | 83 | <3 | 20 | 65 | 146 |
| | GC24 | 130-132 | 26 | 12 | 7 | 61 | 3500 | 20 | <1 | <2 | 916 | <2 | 7 | 2.5 | 88 | 3 | 21 | 67 | 155 |
| | GC24 | 140-142 | 22 | 11 | 3 | 51 | 3900 | 12 | 1 | <2 | 1065 | <2 | 6 | 3.5 | 65 | 3 | 21 | 59 | 133 |
| | GC24 | 147-149 | 23 | 11 | 3 | 54 | 3800 | 16 | <1 | 3 | 994 | <2 | 7 | 2.5 | 70 | 5 | 21 | 61 | 142 |

Table 15 Magnetic susceptibility, percent calcium carbonate for samples from core 71GC026, Offshore Evans Head

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 71 | GC026 | 23-25.5 | 24 | 186.60 | 56 |
| | | 27.5-30 | 29 | 216.47 | 55 |
| | | 36.5-39 | 38 | 219.47 | 55 |
| | | 41.5-44 | 43 | 164.75 | 57 |
| | | 46-48.5 | 47 | 116.17 | 59 |
| | | 70-72.5 | 71 | 127.85 | 55 |
| | | 75-77.5 | 76 | 120.06 | 52 |
| | | 80-82.5 | 81 | 75.28 | 54 |
| | | 85-87.5 | 86 | 58.57 | 66 |
| | | 94.5-97 | 96 | 57.41 | 62 |
| | | 99-101.5 | 100 | 85.98 | 59 |
| | | 104-106.5 | 105 | 126.14 | 51 |
| | | 108.5-111 | 110 | 214.41 | 47 |
| | | 112.5-115 | 114 | 231.29 | 45 |
| | | 123-125.5 | 124 | 309.04 | 40 |
| | | 128.5-131 | 130 | 210.13 | 41 |
| | | 134-136.5 | 135 | 201.62 | 51 |
| | | 139-141.5 | 140 | 236.29 | 55 |
| | | 143.5-146 | 145 | 151.65 | 48 |
| | | 153.5-156 | 155 | 138.98 | 52 |
| | | 162.5-165 | 164 | 141.62 | 59 |
| | | 168-170.5 | 169 | 91.48 | 63 |
| | | 172.5-175 | 174 | 158.65 | 54 |
| | | 176.5-179 | 178 | 123.83 | 61 |
| | | 184-186.5 | 185 | 233.30 | 51 |
| | | 195-197.5 | 196 | 261.12 | 51 |

Table 16 Magnetic susceptibility, percent calcium carbonate, SiO2 and Al2O3 for samples from core 71GC47, Offshore Evans Head

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) | SiO2 (wt%) | Al2O3 (wt%) |
|---|---|---|---|---|---|---|---|
| 71 | GC47 | 0-5 | 3 | 135.13 | 48 | | |
| | | 12-14 | 13 | 177.04 | 45 | 36.18 | 5.03 |
| | | 14-16 | 15 | 182.28 | 44 | 36.77 | 5.2 |
| | | 20-22 | 21 | 176.63 | 45 | 36.15 | 5.03 |
| | | 22-24 | 23 | 140.55 | 45 | 35.7 | 5.59 |
| | | 24-26 | 25 | 124.18 | 46 | 34.86 | 5.52 |
| | | 30-32 | 31 | 138.85 | 49 | 33.39 | 5.11 |
| | | 32-34 | 33 | 150.77 | 47 | 34.03 | 4.87 |
| | | 40-42 | 41 | 166.41 | 44 | 34.76 | 5.44 |
| | | 42-44 | 43 | 153.90 | 46 | 34.48 | 5.21 |
| | | 44-46 | 45 | 150.08 | 46 | 33.12 | 5.11 |
| | | 50-52 | 51 | 160.54 | 45 | 32.51 | 4.86 |
| | | 52-54 | 53 | 153.47 | 47 | 31.32 | 4.68 |
| | | 54-56 | 55 | 172.62 | 43 | 33.7 | 5.36 |
| | | 60-62 | 61 | 268.95 | 42 | 34.35 | 5.38 |
| | | 62-64 | 63 | 213.57 | 44 | 33.01 | 5.28 |
| | | 64-66 | 65 | 239.06 | 42 | 34.61 | 5.72 |
| | | 70-72 | 71 | 241.73 | 43 | 35.23 | 5.41 |
| | | 72-74 | 73 | 241.56 | 40 | 36.72 | 5.59 |
| | | 87-89 | 88 | 308.64 | 40 | 39.96 | 5.43 |
| | | 89-91 | 90 | 340.48 | 36 | 43.98 | 5.88 |
| | | 91-93 | 92 | 330.08 | 37 | 43.37 | 5.71 |
| | | 98-100 | 99 | 244.86 | 43 | 36.54 | 5.53 |
| | | 100-102 | 101 | 246.22 | 43 | 36.81 | 5.08 |
| | | 102-104 | 103 | 242.01 | 42 | 37.72 | 5.02 |
| | | 108-110 | 109 | 284.72 | 41 | 39.52 | 5.14 |
| | | 110-112 | 111 | 337.05 | 36 | 44.82 | 6.03 |
| | | 112-114 | 113 | 320.90 | 40 | 41.82 | 5.7 |
| | | 118-120 | 119 | 314.86 | 45 | 38.61 | 5.42 |
| | | 120-122 | 121 | 309.24 | 44 | 39.26 | 5.46 |
| | | 122-124 | 123 | 321.73 | 43 | 39.03 | 5.48 |
| | | 128-130 | 129 | 290.86 | 43 | 39.64 | 5.43 |
| | | 130-132 | 131 | 298.86 | 43 | 38.78 | 5.76 |
| | | 132-134 | 133 | 280.97 | 43 | 37.05 | 5.28 |
| | | 139-141 | 140 | 150.01 | 50 | 31.93 | 4.5 |
| | | 141-143 | 142 | 154.97 | 47 | 33.79 | 4.6 |
| | | 143-145 | 144 | 159.71 | 45 | 35.25 | 4.83 |
| | | 150-152 | 151 | 139.90 | 47 | 34.29 | 4.46 |
| | | 152-154 | 153 | 146.50 | 45 | 36.07 | 4.35 |
| | | 154-156 | 155 | 152.92 | 45 | 35.94 | 4.43 |
| | | 160-162 | 161 | 168.12 | 43 | 36.33 | 6.02 |

**Table 17 Major and trace element analyses for core 71GC16**

| Survey | Core | Sample Depth (cm) | SiO2 (wt%) | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | LOI | S (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC47 | 0-1 | 28.08 | 0.35 | 6.01 | 2.91 | 2.39 | 0.47 | 0.01 | 1.41 | 28.48 | 1.75 | 0.82 | 0.27 | 29.71 | 1300 |
| | GC47 | 1-3 | 34.05 | 0.26 | 4.19 | 5.02 | 4.55 | 0.42 | 0.01 | 1.35 | 26.69 | 1.31 | 1.15 | 0.28 | 25.58 | 800 |
| | GC47 | 3-5 | 31.63 | 0.26 | 4.3 | 8.65 | 8.08 | 0.51 | 0.01 | 1.68 | 24.79 | 1.25 | 1.66 | 0.41 | 25.26 | 800 |
| | GC47 | 5-10 | 36.23 | 0.35 | 4.94 | 4.25 | 3.64 | 0.55 | 0.01 | 1.54 | 25 | 1.27 | 1.21 | 0.6 | 24.45 | 1200 |
| | GC47 | 12-14 | 36.18 | 0.35 | 5.03 | 3.76 | 3.09 | 0.6 | 0.01 | 1.5 | 25.38 | 1.32 | 1.15 | 0.62 | 24.55 | 1100 |
| | GC47 | 14-16 | 36.77 | 0.34 | 5.2 | 4.06 | 3.45 | 0.55 | 0.01 | 1.57 | 24.53 | 1.3 | 1.22 | 0.22 | 24.6 | 1200 |
| | GC47 | 20-22 | 36.15 | 0.33 | 5.03 | 3.83 | 3.15 | 0.61 | 0.01 | 1.56 | 25.07 | 1.27 | 1.17 | 0.19 | 25.12 | 1700 |
| | GC47 | 22-24 | 35.7 | 0.38 | 5.59 | 3.73 | 3.04 | 0.62 | 0.01 | 1.38 | 25.05 | 1.27 | 1.15 | 0.32 | 24.85 | 3200 |
| | GC47 | 24-26 | 34.86 | 0.38 | 5.52 | 3.96 | 3.28 | 0.61 | 0.01 | 1.34 | 25.54 | 1.39 | 1.16 | 0.26 | 24.91 | 3700 |
| | GC47 | 30-32 | 33.39 | 0.34 | 5.11 | 3.83 | 3.21 | 0.56 | 0.01 | 1.4 | 27.28 | 1.48 | 1.17 | 0.28 | 25.34 | 2200 |
| | GC47 | 32-34 | 34.03 | 0.32 | 4.87 | 4.54 | 3.86 | 0.61 | 0.01 | 1.38 | 26.25 | 1.29 | 1.23 | 0.25 | 25.47 | 2100 |
| | GC47 | 34-36 | 36.29 | 0.36 | 5.21 | 5.04 | 4.34 | 0.63 | 0.01 | 1.43 | 24.45 | 1.61 | 1.34 | 0.23 | 23.64 | 2400 |
| | GC47 | 40-42 | 34.76 | 0.35 | 5.44 | 4.94 | 4.24 | 0.63 | 0.01 | 1.37 | 24.93 | 1.29 | 1.28 | 0.4 | 24.84 | 2400 |
| | GC47 | 42-44 | 34.48 | 0.33 | 5.21 | 4.93 | 4.22 | 0.64 | 0.01 | 1.39 | 25.57 | 1.64 | 1.36 | 0.51 | 24.14 | 2500 |
| | GC47 | 44-46 | 33.12 | 0.3 | 5.11 | 5.35 | 4.66 | 0.62 | 0.01 | 1.45 | 25.99 | 1.42 | 1.34 | 0.57 | 24.94 | 2300 |
| | GC47 | 50-52 | 32.51 | 0.31 | 4.86 | 6.56 | 5.87 | 0.62 | 0.01 | 1.53 | 25.06 | 1.19 | 1.48 | 0.37 | 25.76 | 2200 |
| | GC47 | 52-54 | 31.32 | 0.27 | 4.68 | 6.1 | 5.39 | 0.64 | 0.01 | 1.48 | 26.24 | 1.19 | 1.45 | 0.35 | 26.52 | 2300 |
| | GC47 | 54-56 | 33.7 | 0.35 | 5.36 | 5.94 | 5.2 | 0.67 | 0.01 | 1.49 | 24.36 | 1.23 | 1.34 | 0.38 | 25.36 | 2700 |
| | GC47 | 60-62 | 34.35 | 0.36 | 5.38 | 6.39 | 5.66 | 0.66 | 0.01 | 1.51 | 23.69 | 1.24 | 1.49 | 1.02 | 24.11 | 2600 |
| | GC47 | 62-64 | 33.01 | 0.37 | 5.28 | 6.12 | 5.38 | 0.67 | 0.01 | 1.46 | 24.88 | 1.21 | 1.4 | 1.22 | 24.59 | 2600 |
| | GC47 | 64-66 | 34.61 | 0.43 | 5.72 | 6.23 | 5.6 | 0.57 | 0.01 | 1.45 | 23.53 | 1.21 | 1.48 | 0.33 | 24.5 | 2700 |
| | GC47 | 70-72 | 35.23 | 0.4 | 5.41 | 5.87 | 5.15 | 0.65 | 0.02 | 1.47 | 23.88 | 1.23 | 1.37 | 0.45 | 24.25 | 2400 |
| | GC47 | 72-74 | 36.72 | 0.42 | 5.59 | 6.1 | 5.37 | 0.66 | 0.01 | 1.5 | 22.62 | 1.22 | 1.47 | 0.48 | 23.5 | 2200 |
| | GC47 | 74-76 | 34.81 | 0.38 | 5.14 | 6.39 | 5.63 | 0.68 | 0.01 | 1.48 | 23.88 | 1.24 | 1.5 | 0.77 | 24.12 | 1800 |
| | GC47 | 87-89 | 39.96 | 0.43 | 5.43 | 5.19 | 4.38 | 0.73 | 0.02 | 1.36 | 22.38 | 1.42 | 1.47 | 0.56 | 21.5 | 1800 |
| | GC47 | 89-91 | 43.98 | 0.46 | 5.88 | 5.03 | 4.19 | 0.76 | 0.02 | 1.38 | 20.17 | 1.5 | 1.56 | 0.42 | 19.33 | 1800 |
| | GC47 | 91-93 | 43.37 | 0.46 | 5.71 | 4.65 | 3.83 | 0.74 | 0.02 | 1.33 | 20.66 | 1.6 | 1.46 | 0.9 | 19.52 | 2000 |
| | GC47 | 98-100 | 36.54 | 0.39 | 5.53 | 5.84 | 5.05 | 0.71 | 0.01 | 1.39 | 24.17 | 1.39 | 1.51 | 0.39 | 22.63 | 1500 |

| Survey | Core | Sample Depth (cm) | SiO2 (wt%) | TiO2 (wt%) | Al2O3 (wt%) | Fe2O3t (wt%) | Fe2O3 (wt%) | FeO (wt%) | MnO (wt%) | MgO (wt%) | CaO (wt%) | Na2O (wt%) | K2O (wt%) | P2O5 (wt%) | LOI | S (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC47 | 102-104 | 37.72 | 0.37 | 5.02 | 5.3 | 4.56 | 0.67 | 0.01 | 1.47 | 23.74 | 1.35 | 1.41 | 0.23 | 23.13 | 1600 |
| | GC47 | 108-110 | 39.52 | 0.42 | 5.14 | 4.86 | 4.13 | 0.66 | 0.01 | 1.37 | 23.06 | 1.43 | 1.3 | 0.36 | 22.26 | 1700 |
| | GC47 | 110-112 | 44.82 | 0.46 | 6.03 | 4.55 | 3.72 | 0.75 | 0.02 | 1.38 | 20.18 | 1.42 | 1.49 | 0.11 | 19.22 | 1900 |
| | GC47 | 112-114 | 41.82 | 0.44 | 5.7 | 4.25 | 3.46 | 0.71 | 0.01 | 1.35 | 22.32 | 1.44 | 1.35 | 0.19 | 20.8 | 2000 |
| | GC47 | 118-120 | 38.61 | 0.46 | 5.42 | 3.22 | 2.44 | 0.7 | 0.02 | 1.23 | 24.96 | 1.37 | 1.09 | 0.3 | 23.02 | 1900 |
| | GC47 | 120-122 | 39.26 | 0.42 | 5.46 | 3.07 | 2.33 | 0.67 | 0.01 | 1.31 | 24.62 | 1.51 | 1.09 | 0.42 | 22.53 | 1900 |
| | GC47 | 122-124 | 39.03 | 0.43 | 5.48 | 3.29 | 2.53 | 0.68 | 0.02 | 1.36 | 24.17 | 1.39 | 1.1 | 0.36 | 23.09 | 1800 |
| | GC47 | 128-130 | 39.64 | 0.38 | 5.43 | 2.82 | 2.09 | 0.66 | 0.01 | 1.51 | 24.12 | 1.84 | 1.04 | 0.22 | 22.59 | 2300 |
| | GC47 | 130-132 | 38.78 | 0.41 | 5.76 | 3.29 | 2.57 | 0.65 | 0.01 | 1.47 | 24.15 | 1.47 | 1.11 | 0.13 | 23.02 | 2300 |
| | GC47 | 132-134 | 37.05 | 0.38 | 5.28 | 4.6 | 3.9 | 0.63 | 0.02 | 1.52 | 23.93 | 1.24 | 1.2 | 0.38 | 24.09 | 1900 |
| | GC47 | 139-141 | 31.93 | 0.29 | 4.5 | 3.92 | 3.32 | 0.54 | 0.01 | 1.37 | 27.82 | 1.29 | 1.11 | 0.48 | 27.08 | 1200 |
| | GC47 | 141-143 | 33.79 | 0.27 | 4.6 | 4.44 | 3.87 | 0.51 | 0.01 | 1.49 | 26.22 | 1.23 | 1.22 | 0.62 | 25.91 | 1300 |
| | GC47 | 143-145 | 35.25 | 0.32 | 4.83 | 4.38 | 3.79 | 0.53 | 0.01 | 1.45 | 25.44 | 1.29 | 1.17 | 0.34 | 25.38 | 1000 |
| | GC47 | 150-152 | 34.29 | 0.28 | 4.46 | 3.88 | 3.3 | 0.52 | 0.01 | 1.56 | 26.48 | 1.13 | 1.08 | 0.32 | 26.2 | 1900 |
| | GC47 | 152-154 | 36.07 | 0.26 | 4.35 | 4.15 | 3.51 | 0.58 | 0.01 | 1.55 | 25.42 | 1.14 | 1.21 | 0.43 | 25.09 | 1900 |
| | GC47 | 154-156 | 35.94 | 0.27 | 4.43 | 4.38 | 3.77 | 0.55 | 0.01 | 1.58 | 24.99 | 1.25 | 1.25 | 0.27 | 25.33 | 1800 |
| | GC47 | 160-162 | 36.33 | 0.4 | 6.02 | 4.59 | 3.85 | 0.67 | 0.01 | 1.39 | 23.93 | 1.5 | 1.32 | 0.36 | 23.67 | 2800 |

Table 17 (cont)

| Survey | Core | Sample Depth (cm) | Sample No | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) | Nb (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC47 | 0-1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GC47 | 1(1) | 1(1) | 0 | 7.5 | 76 | <2 | 12 | 0 | 39 | <3 | 11 | 6 | 0.5 | <2 | 9 | 0 | 101 | <2 | 5 |
| | GC47 | 1(2) | 1(2) | 0 | 18 | 144 | <2 | 18 | 0 | 97 | 6 | 9 | 6 | 0.5 | 5 | 14 | 0 | 164 | <2 | 7 |
| | GC47 | 1-3 | 2(1) | 0 | 21 | 118 | <2 | 14 | 0 | 91 | 15 | 5 | 5 | <0.5 | 5 | 9 | 0 | 123 | <2 | 5 |
| | GC47 | 3-5 | 3(1) | 0 | 34.5 | 66 | <2 | 21 | 0 | 132 | <3 | 6 | 5 | 0.5 | 5 | 10 | 0 | 111 | <2 | 5 |
| | GC47 | 5-10 | 4(1) | 0 | 12.5 | 132 | <2 | 27 | 0 | 92 | 9 | 8 | 6 | 0.5 | 6 | 13 | 0 | 127 | <2 | 5 |
| | GC47 | 12-14 | 5(1) | 0 | 12.5 | 143 | <2 | 24 | 0 | 89 | 8 | 8 | 6 | 0.5 | 4 | 19 | 0 | 137 | <2 | 5 |
| | GC47 | 14-16 | 6(1) | 0 | 13.5 | 134 | <2 | 30 | 0 | 88 | 6 | 10 | 6 | 0.5 | 5 | 15 | 0 | 135 | <2 | 5 |
| | GC47 | 20-22 | 7(1) | 0 | 13 | 146 | <2 | 14 | 0 | 70 | 3 | 8 | 6 | 1 | 4 | 13 | 0 | 128 | <2 | 6 |
| | GC47 | 22-24 | 8(1) | 0 | 18 | 144 | <2 | 21 | 0 | 83 | 6 | 9 | 7 | 1 | 5 | 8 | 0 | 138 | <2 | 7 |
| | GC47 | 24-26 | 9(1) | 0 | 20 | 143 | <2 | 20 | 0 | 76 | 10 | 10 | 7 | 0.5 | 4 | 10 | 0 | 132 | <2 | 6 |
| | GC47 | 30-32 | 10(1) | 0 | 14.5 | 126 | <2 | 16 | 0 | 76 | 9 | 9 | 5 | 1 | 3 | 11 | 0 | 126 | <2 | 6 |
| | GC47 | 32-34 | 11(1) | 0 | 18 | 116 | <2 | 24 | 0 | 97 | 13 | 8 | 6 | <0.5 | 6 | 7 | 0 | 115 | <2 | 6 |
| | GC47 | 34-36 | 12(1) | 0 | 21 | 117 | <2 | 21 | 0 | 92 | <3 | 9 | 6 | 0.5 | 5 | 10 | 0 | 111 | <2 | 6 |
| | GC47 | 40-42 | 13(1) | 0 | 22 | 132 | <2 | 20 | 0 | 89 | 11 | 8 | 7 | 0.5 | 4 | 9 | 0 | 123 | <2 | 5 |
| | GC47 | 42-44 | 14(1) | 0 | 22.5 | 123 | 3 | 18 | 0 | 94 | 12 | 8 | 6 | 1 | 3 | 10 | 0 | 116 | <2 | 6 |
| | GC47 | 44-46 | 15(1) | 0 | 21 | 122 | <2 | 15 | 0 | 97 | 9 | 10 | 6 | 0.5 | 3 | 13 | 0 | 114 | <2 | 6 |
| | GC47 | 50-52 | 16(1) | 0 | 27 | 110 | 3 | 19 | 0 | 115 | 15 | 5 | 5 | 1 | 4 | 11 | 0 | 107 | <2 | 5 |
| | GC47 | 52-54 | 17(1) | 0 | 26 | 111 | 2 | 20 | 0 | 108 | 7 | 8 | 5 | 0.5 | 4 | 14 | 0 | 111 | <2 | 4 |
| | GC47 | 54-56 | 18(1) | 0 | 27 | 120 | <2 | 29 | 0 | 107 | 10 | 11 | 7 | <0.5 | 5 | 15 | 0 | 118 | <2 | 6 |
| | GC47 | 60-62 | 19(1) | 0 | 0 | 138 | 0 | 24 | 0 | 103 | 8 | 11 | 0 | 0 | 6 | 11 | 0 | 145 | <2 | 7 |
| | GC47 | 62-64 | 20(1) | 0 | 0 | 120 | 0 | 24 | 0 | 113 | 5 | 9 | 0 | 0 | 4 | 10 | 0 | 134 | <2 | 7 |
| | GC47 | 64-66 | 21(1) | 0 | 0 | 135 | 0 | 30 | 0 | 119 | 9 | 12 | 0 | 0 | 5 | 10 | 0 | 150 | <2 | 7 |
| | GC47 | 70-72 | 22(1) | 0 | 0 | 120 | 0 | 27 | 0 | 114 | 4 | 9 | 0 | 0 | 4 | 12 | 0 | 141 | <2 | 6 |
| | GC47 | 72-74 | 23(1) | 0 | 0 | 133 | 0 | 25 | 0 | 116 | 6 | 8 | 0 | 0 | 5 | 14 | 0 | 154 | <2 | 7 |
| | GC47 | 74-76 | 24(1) | 0 | 0 | 119 | 0 | 30 | 0 | 127 | 6 | 9 | 0 | 0 | 6 | 11 | 0 | 142 | <2 | 7 |
| | GC47 | 89-91 | 2(2) | 0 | 17.5 | 145 | <2 | 22 | 0 | 71 | 6 | 8 | 8 | 0.5 | 5 | 11 | 0 | 167 | <2 | 7 |
| | GC47 | 91-93 | 3(2) | 0 | 17.5 | 151 | <2 | 27 | 0 | 77 | 8 | 10 | 7 | 1 | 6 | 13 | 0 | 174 | <2 | 7 |

Table 17 (cont)

| Survey | Core | Sample Depth (cm) | Sample No | Ag (ppm) | As (ppm) | Ba (ppm) | Bi (ppm) | Ce (ppm) | Co (ppm) | Cr (ppm) | Cs (ppm) | Cu (ppm) | Ga (ppm) | Ge (ppm) | Hf (ppm) | La (ppm) | Li (ppm) | Mn (ppm) | Mo (ppm) | Nb (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GC47 | 98-100 | 4(2) | 0 | 19.5 | 113 | 2 | 25 | 0 | 107 | 4 | 8 | 7 | 1 | 6 | 15 | 0 | 157 | <2 | 6 |
| | GC47 | 100-102 | 5(2) | 0 | 18.5 | 131 | <2 | 28 | 0 | 90 | 17 | 8 | 6 | <0.5 | 4 | 12 | 0 | 142 | <2 | 7 |
| | GC47 | 102-104 | 6(2) | 0 | 19 | 126 | 2 | 22 | 0 | 83 | 5 | 8 | 6 | 1.5 | 4 | 7 | 0 | 146 | <2 | 7 |
| | GC47 | 108-110 | 7(2) | 0 | 17.5 | 133 | <2 | 22 | 0 | 86 | 10 | 6 | 7 | <0.5 | 6 | 12 | 0 | 153 | <2 | 6 |
| | GC47 | 110-112 | 8(2) | 0 | 17 | 163 | <2 | 26 | 0 | 62 | 7 | 6 | 7 | 1 | 7 | 10 | 0 | 168 | <2 | 7 |
| | GC47 | 112-114 | 9(2) | 0 | 15 | 156 | <2 | 20 | 0 | 62 | 8 | 9 | 6 | 1 | 6 | 15 | 0 | 186 | <2 | 7 |
| | GC47 | 118-120 | 10(2) | 0 | 13 | 142 | <2 | 24 | 0 | 60 | 7 | 9 | 7 | 0.5 | 4 | 11 | 0 | 198 | <2 | 7 |
| | GC47 | 120-122 | 11(2) | 0 | 13.5 | 153 | <2 | 19 | 0 | 53 | 7 | 7 | 6 | 0.5 | 5 | 10 | 0 | 198 | <2 | 7 |
| | GC47 | 122-124 | 12(2) | 0 | 12.5 | 154 | <2 | 21 | 0 | 61 | 4 | 9 | 7 | 0.5 | 4 | 11 | 0 | 194 | <2 | 6 |
| | GC47 | 128-130 | 13(2) | 0 | 16.5 | 154 | 2 | 19 | 0 | 54 | 10 | 7 | 6 | 1 | 3 | 6 | 0 | 187 | <2 | 7 |
| | GC47 | 130-132 | 14(2) | 0 | 15.5 | 147 | <2 | 29 | 0 | 56 | 6 | 8 | 8 | 0.5 | 5 | 14 | 0 | 190 | <2 | 6 |
| | GC47 | 132-134 | 15(2) | 0 | 21 | 137 | <2 | 21 | 0 | 90 | 9 | 8 | 7 | 1 | 3 | 12 | 0 | 175 | <2 | 6 |
| | GC47 | 139-141 | 16(2) | 0 | 12.5 | 125 | <2 | 20 | 0 | 85 | 11 | 6 | 5 | <0.5 | <2 | 12 | 0 | 113 | <2 | 5 |
| | GC47 | 141-143 | 17(2) | 0 | 14 | 121 | <2 | 21 | 0 | 99 | 7 | 7 | 6 | 1 | 5 | 13 | 0 | 118 | <2 | 5 |
| | GC47 | 143-145 | 18(2) | 0 | 13 | 123 | <2 | 23 | 0 | 88 | 7 | 8 | 7 | <0.5 | 4 | 9 | 0 | 128 | <2 | 6 |
| | GC47 | 150-152 | 19(2) | 0 | 15.5 | 128 | <2 | 24 | 0 | 81 | <3 | 7 | 6 | 0.5 | 4 | 9 | 0 | 124 | <2 | 5 |
| | GC47 | 152-154 | 20(2) | 0 | 17 | 130 | <2 | 27 | 0 | 84 | 8 | 6 | 5 | 0.5 | 3 | 10 | 0 | 113 | <2 | 5 |
| | GC47 | 154-156 | 21(2) | 0 | 16.5 | 115 | 3 | 17 | 0 | 81 | 3 | 7 | 5 | 1 | 4 | 11 | 0 | 119 | <2 | 5 |
| | GC47 | 160-162 | 22(2) | 0 | 20.5 | 142 | 2 | 20 | 0 | 90 | 10 | 8 | 7 | 0.5 | 4 | 8 | 0 | 130 | <2 | 7 |

Table 17 (cont)

| Survey | Core | Sample Depth (cm) | Sample No | Nd (ppm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | GC47 | 0-1 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GC47 | 1(1) | 1(1) | 8 | 16 | 10 | <2 | 27 | 12 | 1 | <2 | 1068 | 2 | 3 | 8 | 39 | <3 | 15 | 41 | 151 |
| | GC47 | 1(2) | 1(2) | 9 | 15 | 18 | 3 | 46 | 14 | <1 | <2 | 901 | <2 | 5 | 9.5 | 62 | 5 | 15 | 51 | 257 |
| | GC47 | 1-3 | 2(1) | 10 | 13 | 6 | <2 | 32 | 15 | <1 | <2 | 998 | 3 | 3 | 5 | 63 | <3 | 15 | 42 | 193 |
| | GC47 | 3-5 | 3(1) | 11 | 16 | 7 | 2 | 42 | 12 | <1 | <2 | 892 | 4 | 5 | 5.5 | 79 | 8 | 18 | 59 | 276 |
| | GC47 | 5-10 | 4(1) | 12 | 15 | 7 | 3 | 37 | 14 | <1 | <2 | 1120 | <2 | 5 | 16 | 66 | 5 | 17 | 44 | 311 |
| | GC47 | 12-14 | 5(1) | 13 | 15 | 6 | <2 | 38 | 16 | <1 | <2 | 1130 | 5 | 5 | 15 | 65 | 5 | 16 | 42 | 199 |
| | GC47 | 14-16 | 6(1) | 13 | 16 | 6 | 4 | 39 | 13 | <1 | <2 | 1110 | <2 | 5 | 5 | 64 | 5 | 14 | 45 | 203 |
| | GC47 | 20-22 | 7(1) | 12 | 16 | 6 | <2 | 37 | 16 | <1 | <2 | 1153 | <2 | 3 | 7 | 63 | 4 | 15 | 43 | 161 |
| | GC47 | 22-24 | 8(1) | 7 | 20 | 7 | 3 | 38 | 19 | <1 | <2 | 1153 | 3 | 5 | 12.5 | 62 | <3 | 13 | 45 | 177 |
| | GC47 | 24-26 | 9(1) | 12 | 20 | 7 | 3 | 37 | 18 | <1 | <2 | 1148 | <2 | 3 | 10 | 56 | 3 | 13 | 44 | 180 |
| | GC47 | 30-32 | 10(1) | 13 | 16 | 6 | 6 | 36 | 15 | <1 | <2 | 1239 | <2 | 4 | 8 | 49 | 8 | 14 | 40 | 154 |
| | GC47 | 32-34 | 11(1) | 9 | 17 | 7 | 4 | 39 | 17 | <1 | <2 | 1150 | <2 | 4 | 5 | 55 | 6 | 15 | 43 | 176 |
| | GC47 | 34-36 | 12(1) | 12 | 17 | 6 | 4 | 42 | 15 | <1 | <2 | 1085 | <2 | 3 | 5.5 | 53 | 4 | 16 | 47 | 267 |
| | GC47 | 40-42 | 13(1) | 11 | 20 | 5 | 5 | 41 | 18 | 1 | <2 | 1067 | 3 | 3 | 8 | 67 | 6 | 15 | 49 | 175 |
| | GC47 | 42-44 | 14(1) | 11 | 19 | 7 | 3 | 38 | 17 | <1 | <2 | 1089 | <2 | 4 | 8.5 | 70 | <3 | 16 | 47 | 162 |
| | GC47 | 44-46 | 15(1) | 12 | 18 | 9 | 6 | 41 | 18 | <1 | <2 | 1078 | <2 | 3 | 7.5 | 59 | <3 | 15 | 47 | 141 |
| | GC47 | 50-52 | 16(1) | 9 | 19 | 16 | <2 | 43 | 17 | 1 | <2 | 1041 | <2 | 3 | 7.5 | 82 | <3 | 19 | 54 | 174 |
| | GC47 | 52-54 | 17(1) | 12 | 18 | 7 | 3 | 40 | 17 | <1 | <2 | 1092 | <2 | 3 | 8 | 70 | 6 | 16 | 51 | 152 |
| | GC47 | 54-56 | 18(1) | 12 | 20 | 7 | <2 | 43 | 19 | 1 | 2 | 1022 | <2 | 3 | 10.5 | 72 | <3 | 18 | 53 | 166 |
| | GC47 | 60-62 | 19(1) | 13 | 21 | 0 | <2 | 0 | 15 | 0 | <2 | 0 | 5 | 0 | 0 | 77 | 0 | 0 | 53 | 183 |
| | GC47 | 62-64 | 20(1) | 8 | 20 | 0 | 5 | 0 | 18 | 0 | <2 | 0 | 3 | 0 | 0 | 88 | 0 | 0 | 55 | 198 |
| | GC47 | 64-66 | 21(1) | 11 | 22 | 0 | 4 | 0 | 18 | 0 | <2 | 0 | <2 | 0 | 0 | 88 | 0 | 0 | 56 | 200 |
| | GC47 | 70-72 | 22(1) | 9 | 19 | 0 | 2 | 0 | 15 | 0 | <2 | 0 | <2 | 0 | 0 | 86 | 0 | 0 | 54 | 198 |

Table 17 (cont)

| Survey | Core | Sample Depth (cm) | Sample No | Nd (ppm) | Ni (ppm) | Pb (ppm) | Pr (ppm) | Rb (ppm) | Sc (ppm) | Se (ppm) | Sn (ppm) | Sr (ppm) | Ta (ppm) | Th (ppm) | U (ppm) | V (ppm) | W (ppm) | Y (ppm) | Zn (ppm) | Zr (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GC47 | 72-74 | 23(1) | 18 | 19 | 0 | 3 | 0 | 18 | 0 | <2 | 0 | 4 | 0 | 0 | 81 | 0 | 0 | 53 | 209 |
| | GC47 | 74-76 | 24(1) | 13 | 17 | 0 | 3 | 0 | 16 | 0 | <2 | 0 | <2 | 0 | 0 | 84 | 0 | 0 | 56 | 274 |
| | GC47 | 89-91 | 2(2) | 8 | 14 | 7 | 6 | 48 | 18 | <1 | <2 | 848 | <2 | 5 | 8.5 | 67 | <3 | 14 | 48 | 261 |
| | GC47 | 91-93 | 3(2) | 16 | 15 | 6 | <2 | 48 | 16 | 1 | <2 | 846 | <2 | 6 | 14 | 62 | 3 | 15 | 51 | 254 |
| | GC47 | 98-100 | 4(2) | 11 | 17 | 8 | <2 | 44 | 19 | 1 | <2 | 922 | <2 | 4 | 6 | 84 | <3 | 17 | 51 | 218 |
| | GC47 | 100-102 | 5(2) | 10 | 15 | 5 | 6 | 41 | 16 | <1 | <2 | 1002 | 4 | 4 | 7 | 64 | <3 | 15 | 49 | 191 |
| | GC47 | 102-104 | 6(2) | 15 | 15 | 7 | 5 | 42 | 15 | <1 | <2 | 984 | <2 | 5 | 4.5 | 66 | 3 | 15 | 48 | 198 |
| | GC47 | 108-110 | 7(2) | 13 | 14 | 8 | 3 | 42 | 15 | <1 | <2 | 989 | <2 | 5 | 6 | 58 | 4 | 15 | 45 | 249 |
| | GC47 | 110-112 | 8(2) | 12 | 15 | 8 | 3 | 50 | 14 | <1 | <2 | 820 | <2 | 5 | 2.5 | 56 | <3 | 13 | 46 | 237 |
| | GC47 | 112-114 | 9(2) | 8 | 15 | 6 | 3 | 45 | 16 | <1 | <2 | 890 | <2 | 5 | 4 | 51 | <3 | 13 | 44 | 228 |
| | GC47 | 118-120 | 10(2) | 11 | 14 | 8 | <2 | 38 | 16 | <1 | <2 | 983 | 5 | 4 | 6 | 48 | 4 | 13 | 42 | 221 |
| | GC47 | 120-122 | 11(2) | 12 | 14 | 7 | 4 | 37 | 16 | <1 | <2 | 1036 | <2 | 4 | 7.5 | 53 | <3 | 14 | 41 | 212 |
| | GC47 | 122-124 | 12(2) | 11 | 14 | 7 | 2 | 38 | 16 | <1 | <2 | 1038 | <2 | 4 | 6.5 | 57 | 4 | 14 | 40 | 202 |
| | GC47 | 128-130 | 13(2) | 11 | 16 | 6 | 2 | 37 | 16 | <1 | <2 | 1208 | <2 | 4 | 5 | 49 | 4 | 14 | 42 | 160 |
| | GC47 | 130-132 | 14(2) | 14 | 15 | 7 | <2 | 38 | 17 | <1 | <2 | 1111 | 3 | 4 | 3.5 | 53 | 8 | 14 | 40 | 176 |
| | GC47 | 132-134 | 15(2) | 9 | 15 | 8 | 2 | 39 | 17 | <1 | <2 | 1095 | <2 | 4 | 3.5 | 68 | 5 | 16 | 45 | 172 |
| | GC47 | 139-141 | 16(2) | 15 | 14 | 6 | <2 | 34 | 16 | <1 | <2 | 1173 | <2 | 4 | 13.5 | 59 | <3 | 17 | 41 | 177 |
| | GC47 | 141-143 | 17(2) | 9 | 15 | 7 | 5 | 36 | 17 | <1 | <2 | 1219 | <2 | 5 | 15 | 68 | <3 | 15 | 43 | 196 |
| | GC47 | 143-145 | 18(2) | 11 | 15 | 7 | 3 | 36 | 15 | <1 | <2 | 1116 | <2 | 3 | 6 | 66 | 4 | 17 | 41 | 209 |
| | GC47 | 150-152 | 19(2) | 11 | 14 | 6 | 3 | 36 | 16 | <1 | <2 | 1241 | <2 | 3 | 6.5 | 52 | <3 | 15 | 40 | 167 |
| | GC47 | 152-154 | 20(2) | 14 | 13 | 6 | 4 | 37 | 17 | <1 | <2 | 1210 | <2 | 3 | 5.5 | 52 | 4 | 16 | 40 | 182 |
| | GC47 | 154-156 | 21(2) | 10 | 13 | 6 | <2 | 36 | 14 | <1 | <2 | 1212 | <2 | 4 | 6.5 | 51 | <3 | 15 | 40 | 193 |
| | GC47 | 160-162 | 22(2) | 10 | 21 | 8 | 3 | 40 | 18 | 1 | <2 | 1098 | 3 | 3 | 7.5 | 69 | 5 | 16 | 51 | 167 |

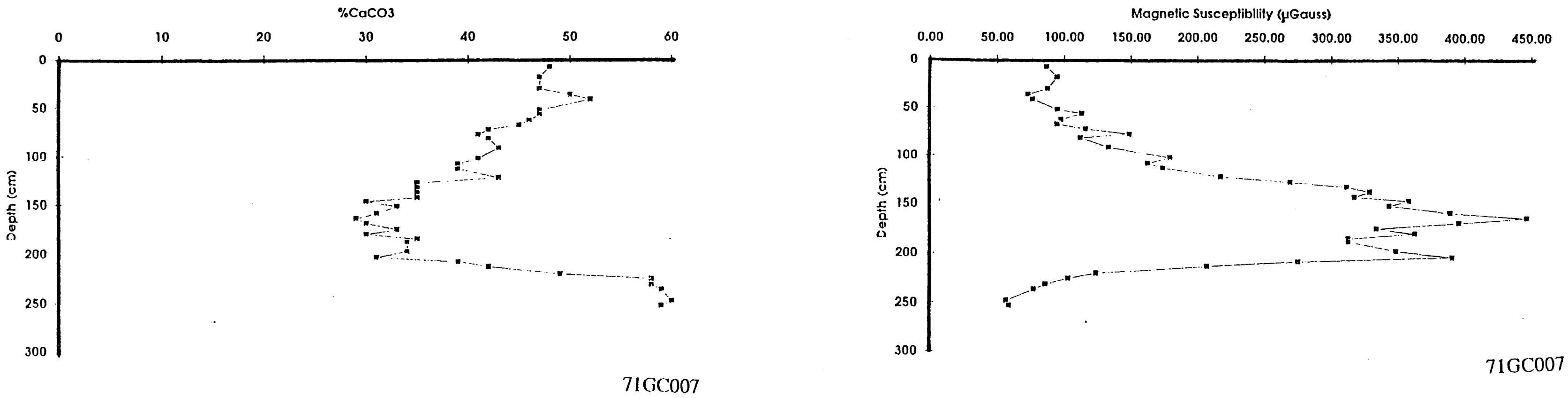



Figure 12 Percent calcium carbonate and magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$) profiles for core 71GC007

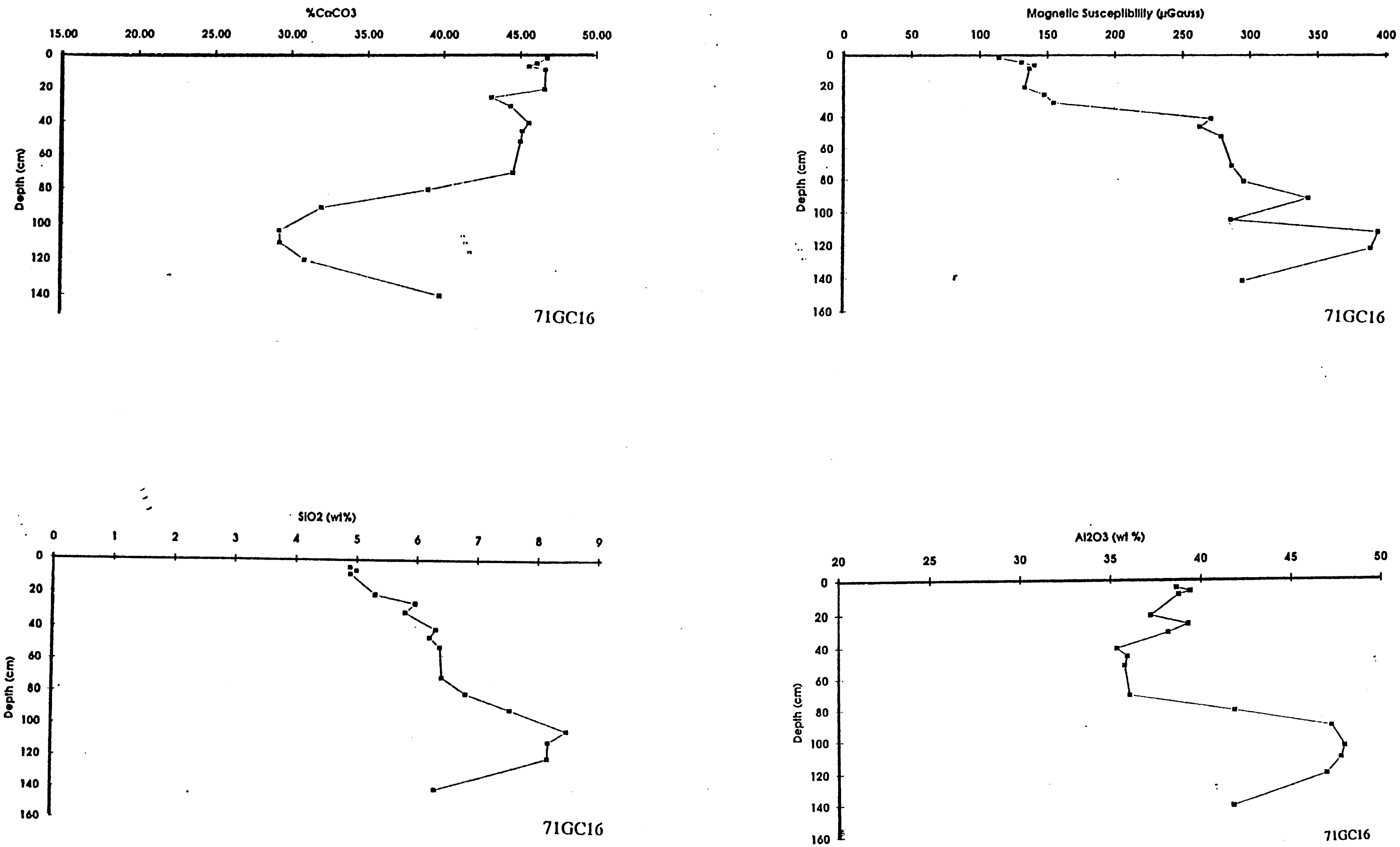



Figure 13 Percent calcium carbonate, magnetic susceptibility (µGauss.oe$^{-1}$.cm$^{3}$), $SiO_2$ and $Al_2O_3$ (wt %) profiles for core 71GC16

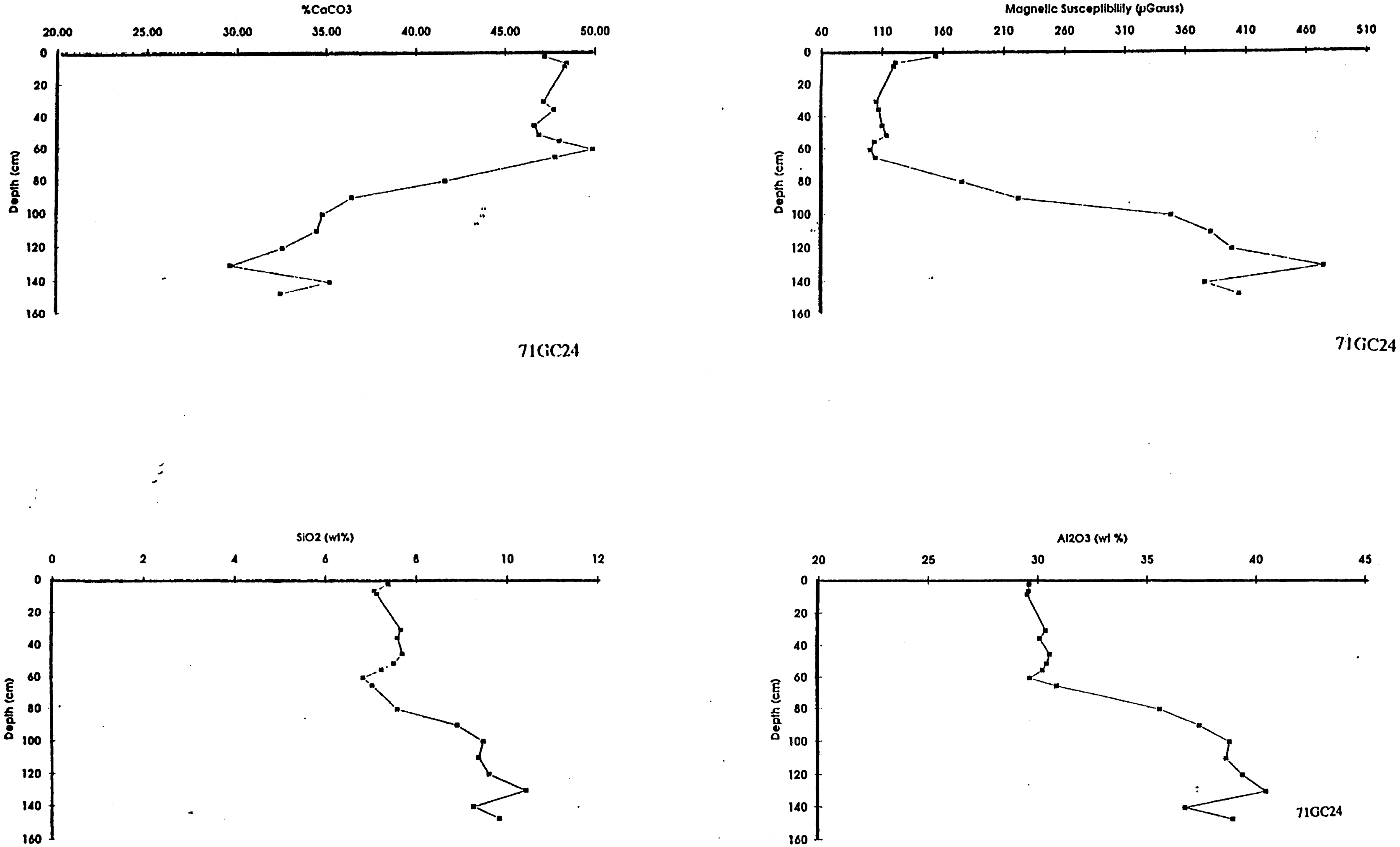
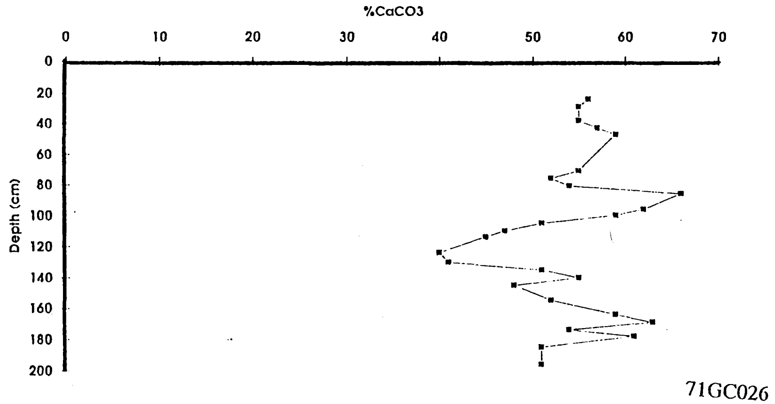



Figure 14 Percent calcium carbonate, magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$), $SiO_2$ and $Al_2O_3$ (wt %) for core 71GC24



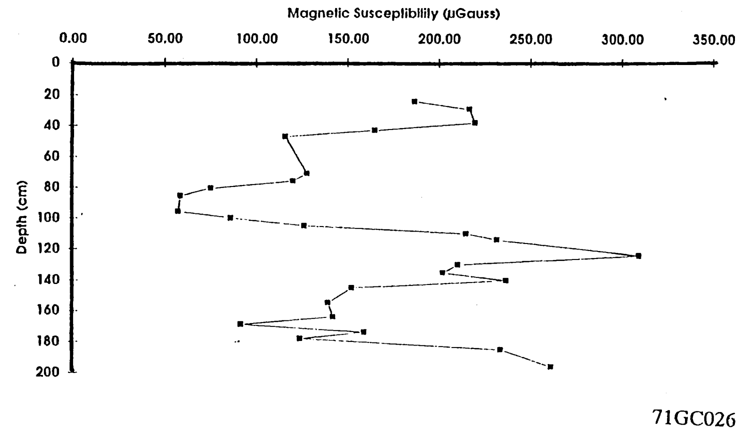




Figure 15 Percent calcium carbonate and magnetic susceptibility (µGauss.oe$^{-1}$.cm$^{3}$) profiles for core 71GC026

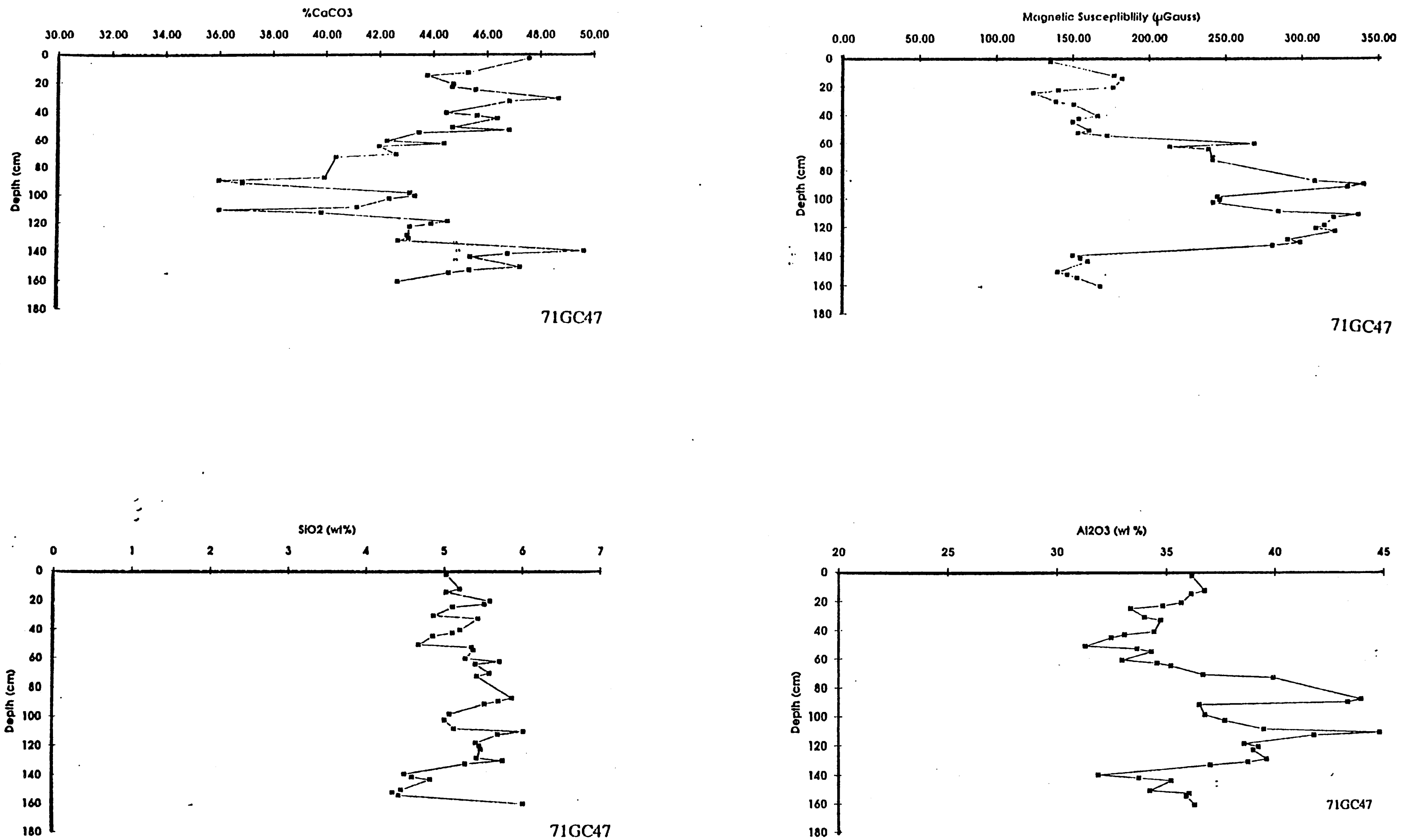



Figure 16 Percent calcium carbonate, magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^3$), $SiO_2$ and $Al_2O_3$ (wt %) profiles for core 71GC47

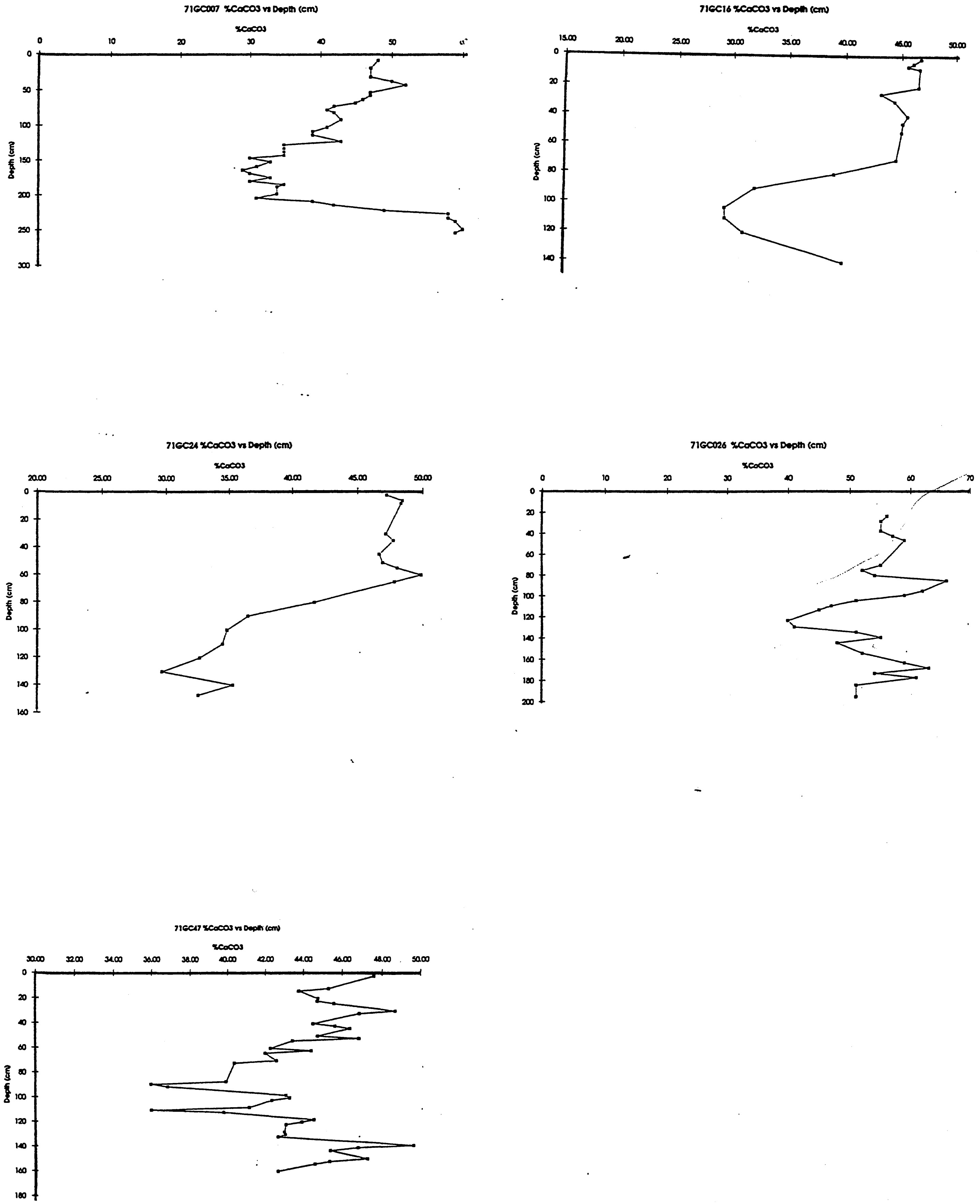



Figure 17 Percent calcium carbonate profiles for cores 71GC007, 71GC16, 71GC24, 71GC026 and 71GC47

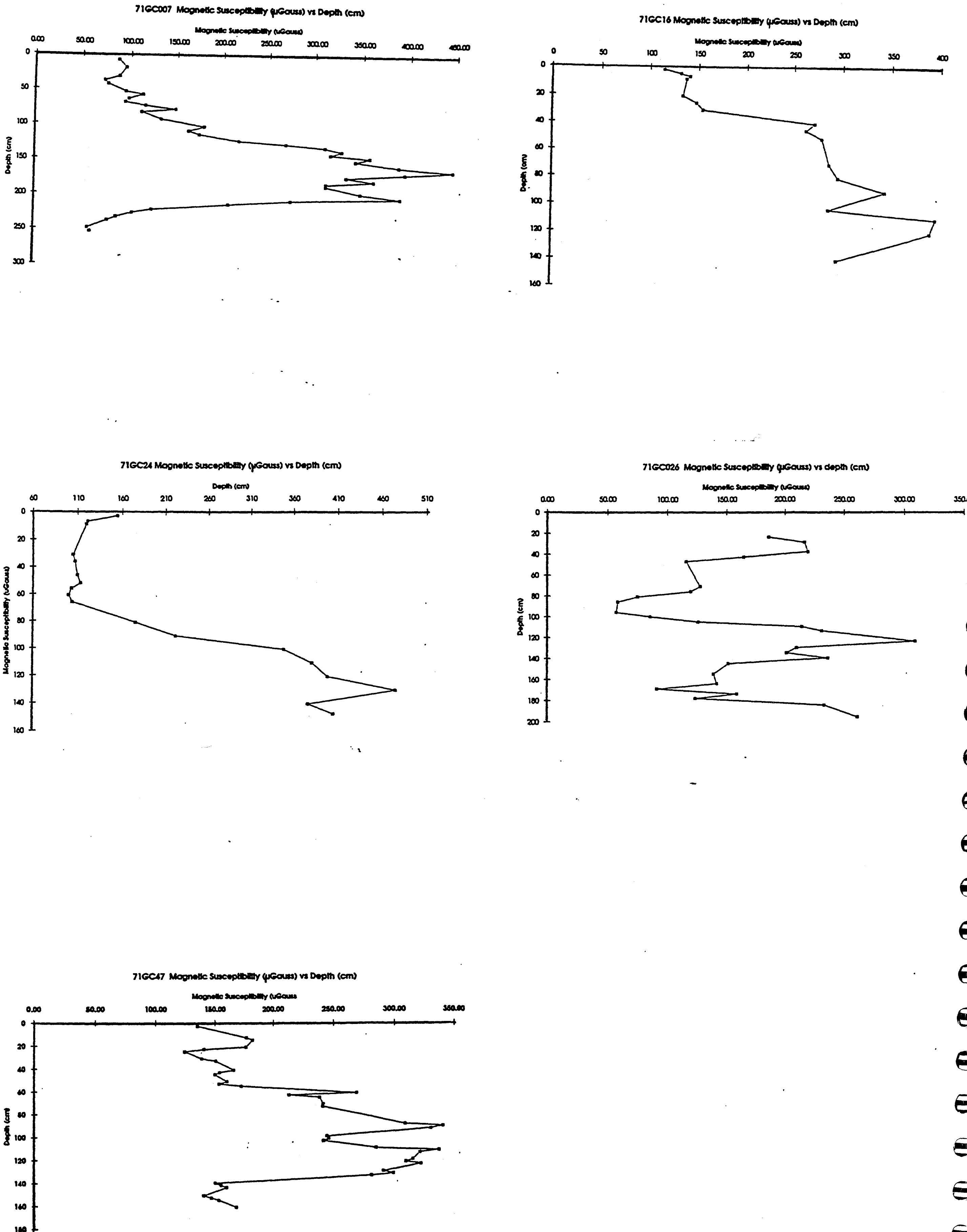



Figure 18 Magnetic susceptibility (µGauss.oe$^{-1}$.cm$^{3}$) profiles for cores 71GC007, 71GC16, 71GC24, 71GC026 and 71GC47

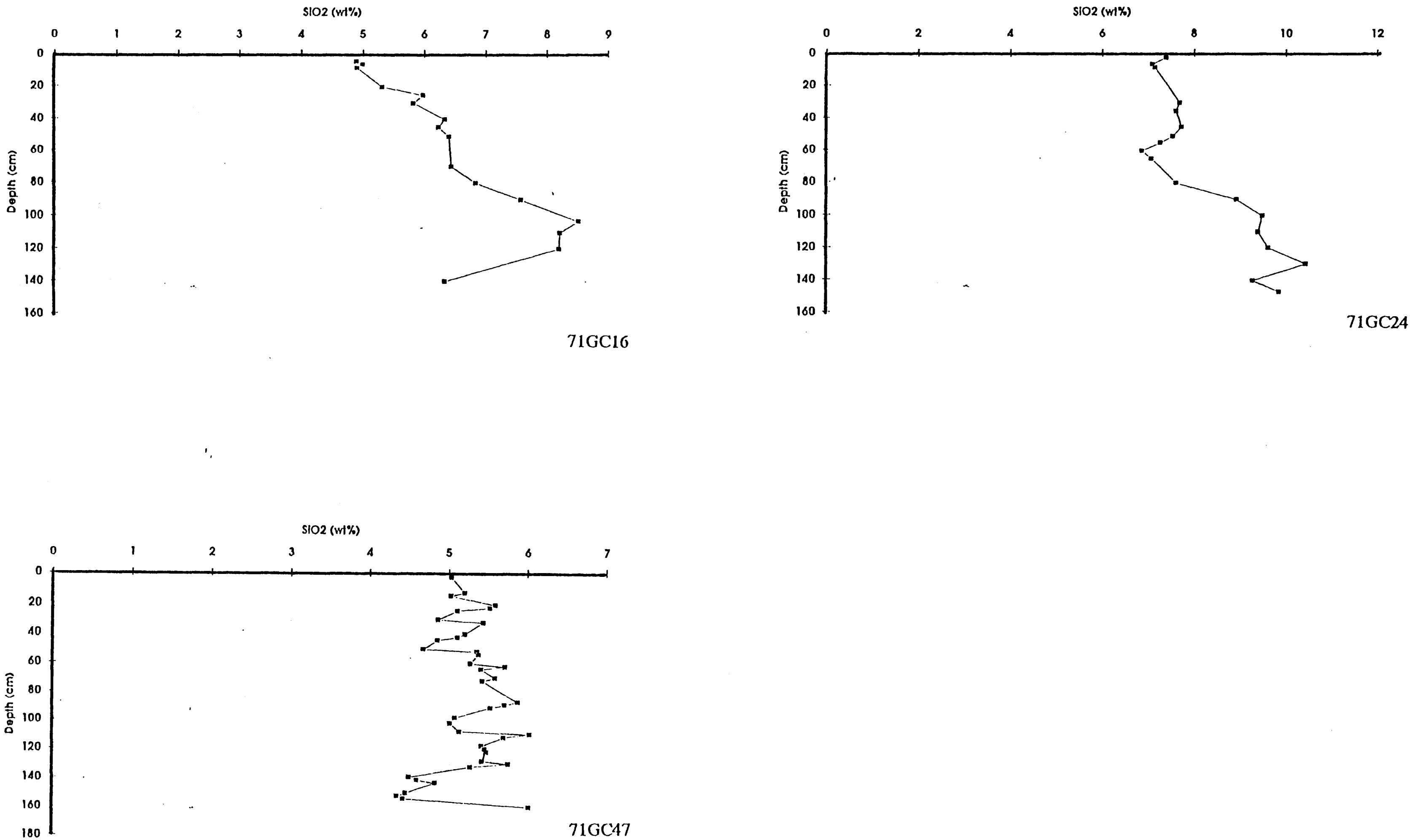



Figure 19 $SiO_2$ (wt %) profiles for cores 71GC16, 71GC24 and 71GC47

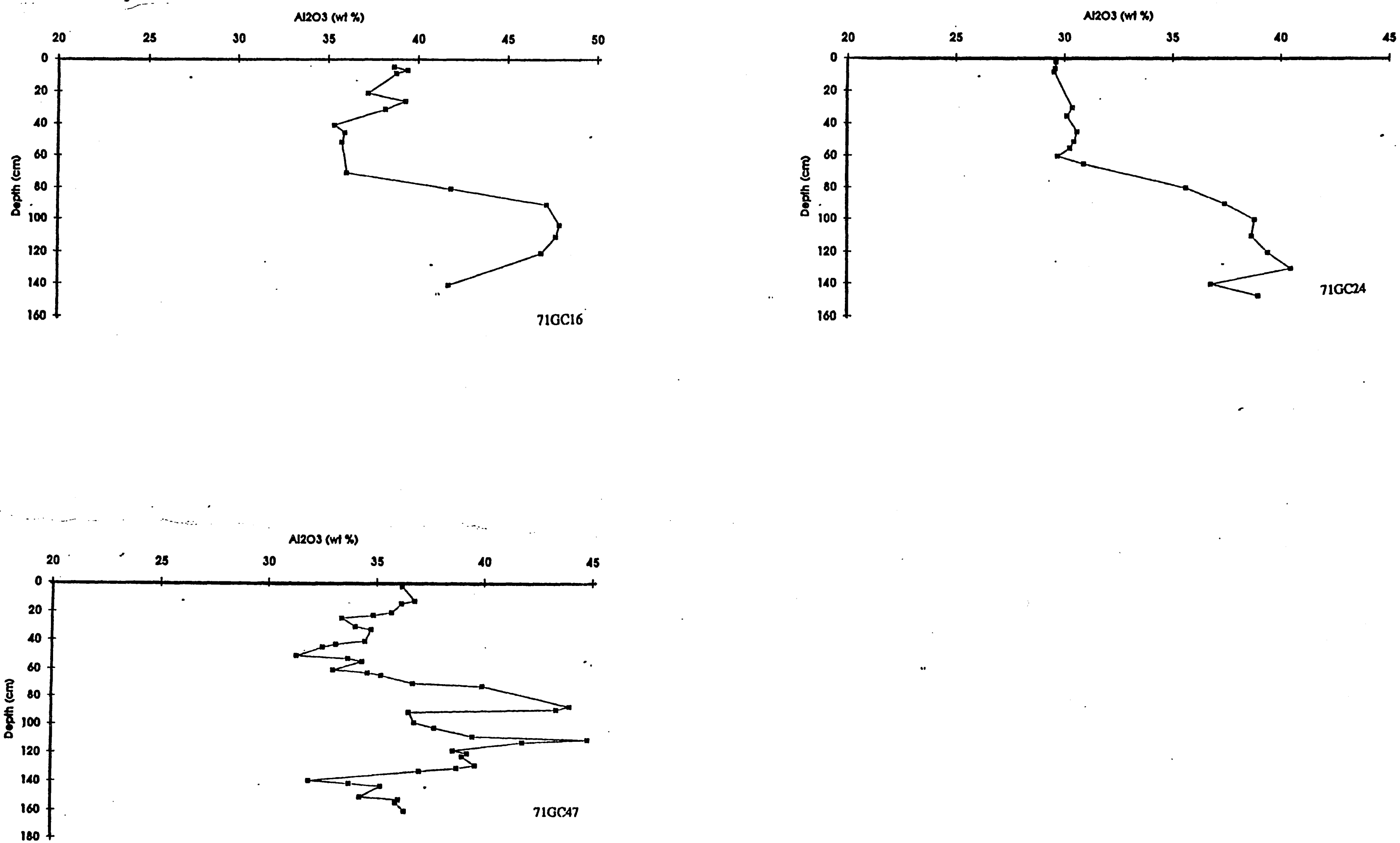



Figure 20 $Al_2O_3$ (wt %) profiles for cores 71GC16, 71GC24 and 71GC47

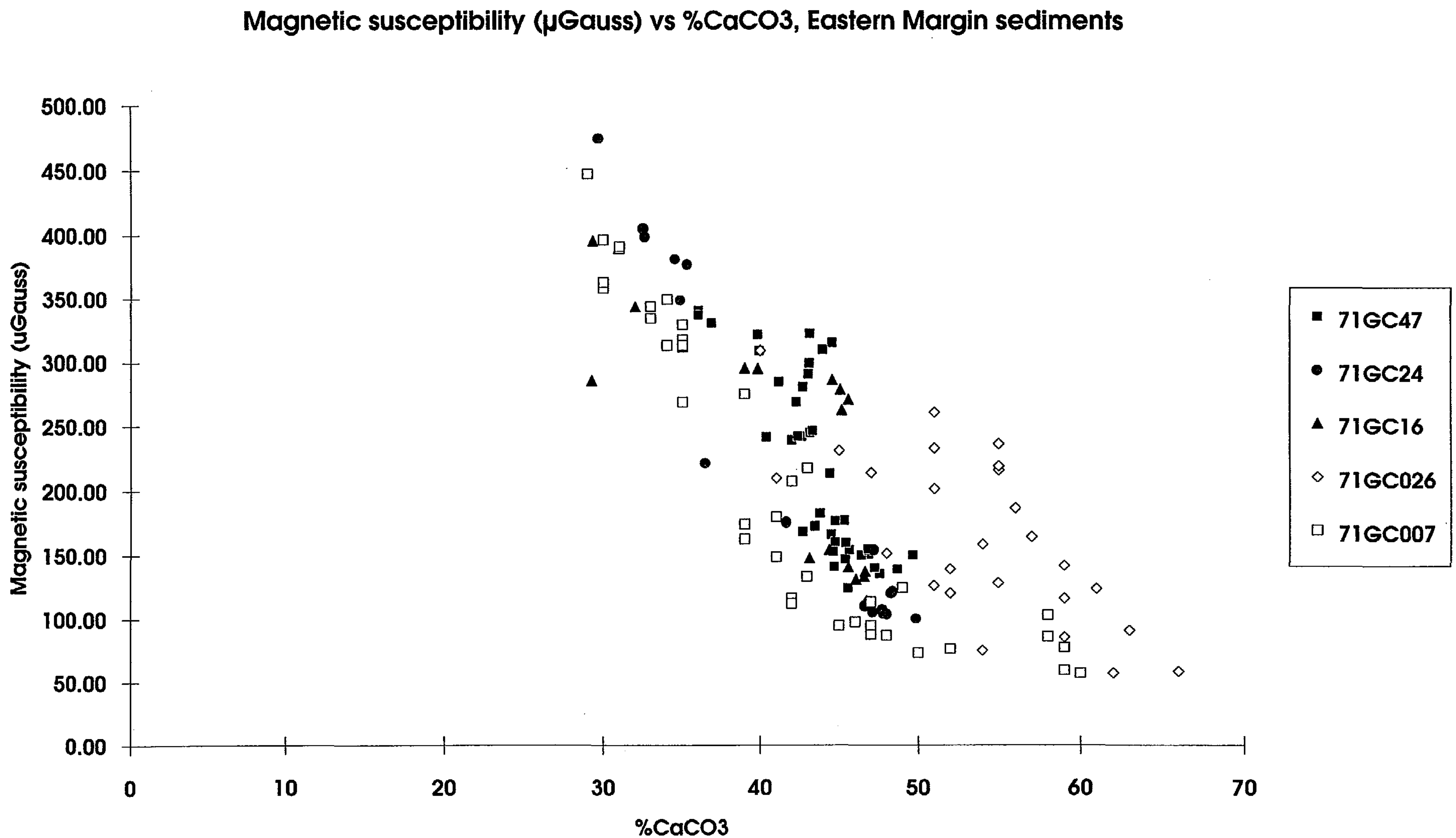



Figure 21 Magnetic susceptibility and percent calcium carbonate cross plot for Eastern Australian cores

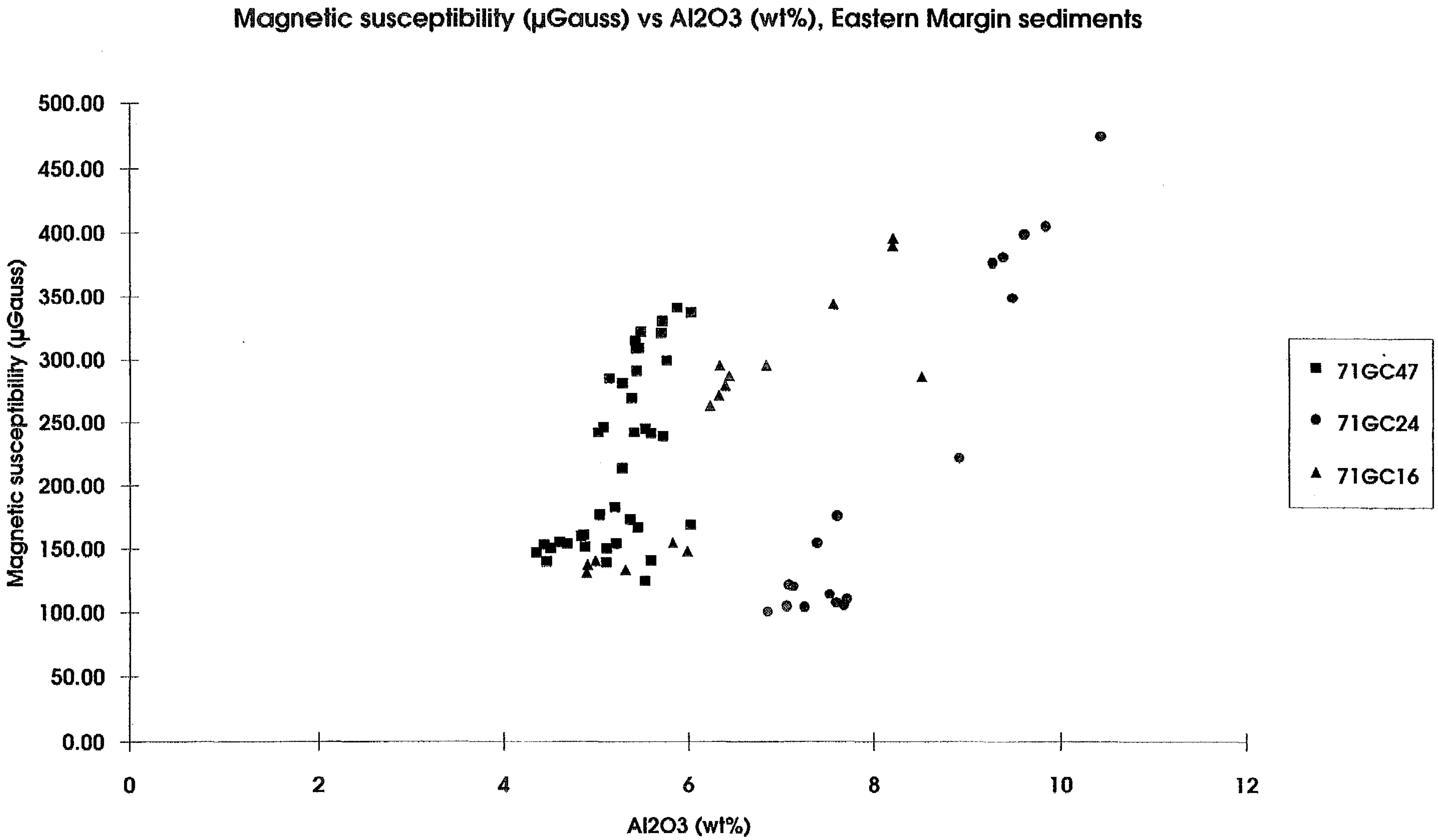



Figure 22 Magnetic susceptibility and $Al_2O_3$ cross plot for Eastern Australian cores

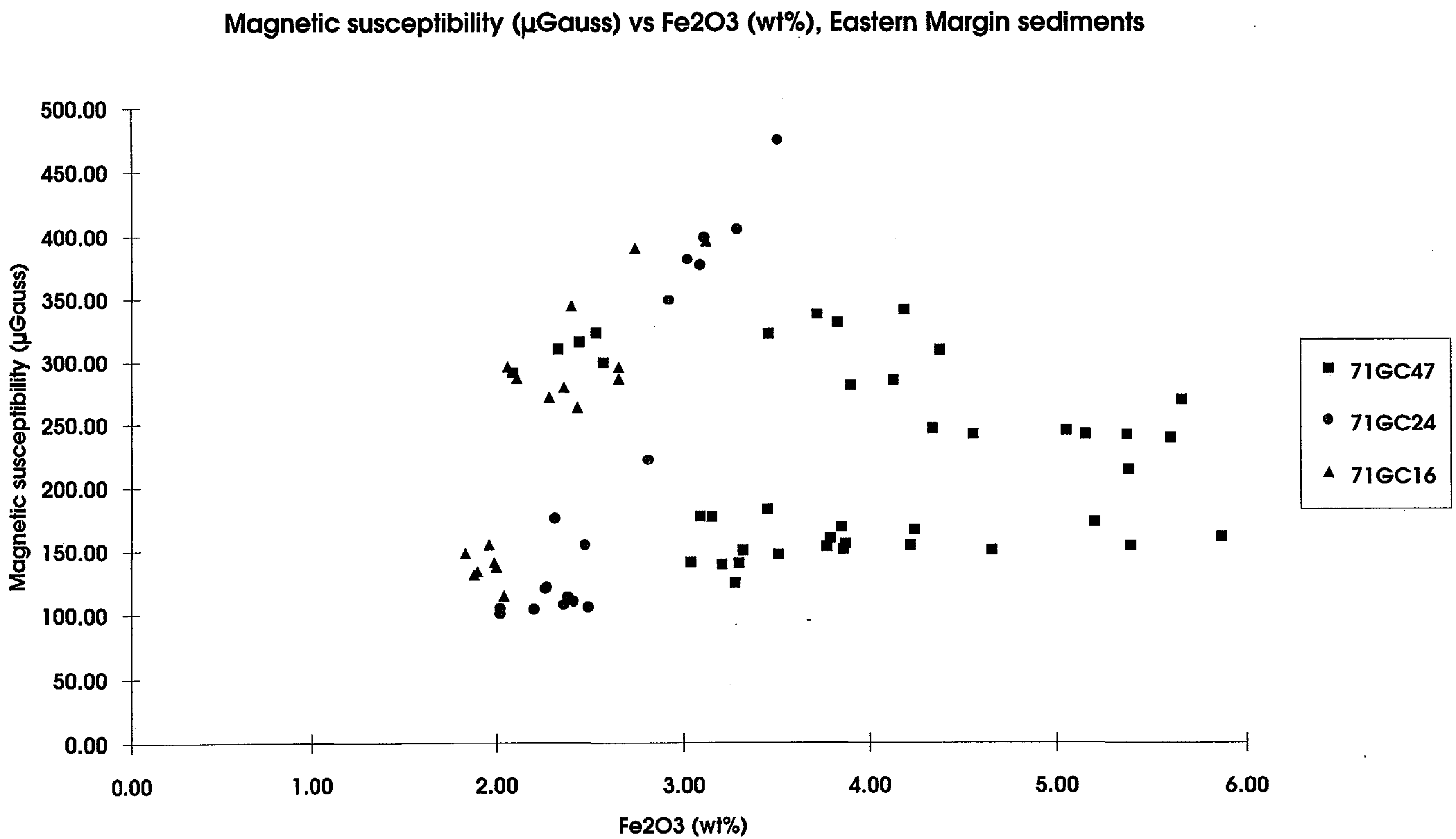



Figure 23 Magnetic susceptibility and $Fe_2O_3$ cross plot for Eastern Australian cores

## South Australian Continental Margin

### West Ceduna Terrace and Eyre Terrace

Two cores from the west Ceduna Terrace (102GC14 and 102GC17) and one from the Eyre Terrace (102GC09) were analysed, Tables 1 and 2. Magnetic susceptibility and percent calcium carbonate data for core 102GC09 are assembled in Table 19 - XRF analyses and planktonic foraminiferal $\delta^{18}O$ analyses have not yet been determined for any of the cores from survey 102.

A comparison between percent calcium carbonate and magnetic susceptibility for core 102GC09 is shown in Figure 24. The magnetic susceptibility down-core profile shows relatively high intensities in the core-top (4 $\mu$Gauss.oe$^{-1}$.cm$^{3}$), this corresponds with relatively low calcium carbonate contents. Notable features in this core include (i) negative magnetic susceptibilities throughout much of the core, except in the core-tops as mentioned above and (ii) no distinguishable pattern in the down-core calcium carbonate profile. The range in down-core concentrations of magnetic susceptibility and percent calcium carbonate are shown in Table 18.

The magnetic susceptibility and percent calcium carbonate data for core 102GC14 is shown in Table 20. The two plots for core 102GC14, percent calcium carbonate versus depth (cm) and magnetic susceptibility versus depth (cm) are shown in Figure 25. There is no distinguishable down-core pattern in the magnetic susceptibility, but magnetic susceptibility in this core (102GC14, water depth 1502m) are frequently >20 $\mu$Gauss.oe$^{-1}$.cm$^{3}$, in contrast to the low magnetic susceptibility measured in core 102GC09 (water depth 769m).

Magnetic susceptibility and percent calcium carbonate from core 102GC17 is presented in Table 21. The plot of percent calcium carbonate versus depth (cm) and magnetic susceptibility versus depth (cm) for core 102GC17 are shown in Figure 26. The down-core profile of magnetic susceptibility versus depth (cm) for core 102GC17, shows relatively low values(<70 $\mu$Gauss.oe$^{-1}$.cm$^{3}$) in the very top section of the core and at depths of between 100 and 120 cm (< 5$\mu$Gauss.oe$^{-1}$.cm$^{3}$) and between 190 and 220 cm (<5 $\mu$Gauss.oe$^{-1}$.cm$^{3}$).

The down-core profiles of percent calcium carbonate versus depth (cm) for cores 102GC09, 102GC14 and 102GC17 are shown in Figure 27. Figure 28 shows the down-core profiles of magnetic susceptibility for cores 102GC09, 102GC14 and

102GC17. The ranges in concentration of percent calcium carbonate contents and magnetic susceptibility are presented in Table 18.

**Table 18 Range in concentrations of calcium carbonate content and magnetic susceptibility for cores from the west Ceduna Terrace and the Eyre Terrace**

| Core | Range in $CaCO_3$ | Range in magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$) |
|---|---|---|
| 102GC09 | 75 - 95 | -8 - 4 |
| 102GC14 | 84 - 96 | -10 - 80 |
| 102GC17 | 80 - 95 | 0 - 140 |

Shown in Figure 29 is a cross-plot of magnetic susceptibility and percent calcium carbonate from the southern margin. These data show calcium carbonate consistently varying between 80 and 100% and magnetic susceptibility between 10 and 140 $\mu$ Gauss.$oe^{-1}.cm^3$. In this plot magnetic susceptibility appears to be independent of calcium carbonate content; while calcium carbonate varies between 80 and 100 %, magnetic susceptibility varies by more than an order of magnitude.

Table 19 Magnetic susceptibility and percent calcium carbonate for samples from core 102GC09, Eyre Terrace

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 102 | GC09 | 0-3 | 1.5 | 4.04 | 96 |
| | | 6-9 | 7.5 | 3.81 | 88 |
| | | 12-15 | 13.5 | 4.07 | 95 |
| | | 18-21 | 19.5 | 3.43 | 88 |
| | | 24-27 | 25.5 | 3.67 | 86 |
| | | 30-33 | 31.5 | 3.76 | 93 |
| | | 36-39 | 37.5 | -4.14 | 89 |
| | | 42-45 | 43.5 | -5.11 | 98 |
| | | 48-51 | 49.5 | -6.41 | 88 |
| | | 54-57 | 55.5 | -4.90 | 95 |
| | | 60-63 | 61.5 | -5.84 | 91 |
| | | 66-69 | 67.5 | -5.86 | 92 |
| | | 72-75 | 73.5 | -4.80 | 94 |
| | | 79-82 | 80.5 | -6.56 | 85 |
| | | 85-88 | 86.5 | -4.30 | 86 |
| | | 91-94 | 92.5 | -6.36 | 95 |
| | | 97-100 | 98.5 | -6.57 | 89 |
| | | 103-106 | 104.5 | -7.15 | 89 |
| | | 109-112 | 110.5 | -7.37 | 88 |
| | | 115-118 | 116.5 | -6.56 | 91 |
| | | 121-124 | 122.5 | -6.96 | 83 |
| | | 127-130 | 128.5 | -7.03 | 95 |
| | | 133-136 | 134.5 | -7.70 | 89 |
| | | 139-142 | 140.5 | -5.08 | 91 |
| | | 145-148 | 146.5 | -6.13 | 97 |
| | | 151-154 | 152.5 | -5.23 | 83 |
| | | 157-160 | 158.5 | -5.80 | 93 |
| | | 163-166 | 164.5 | -6.73 | 95 |
| | | 169-172 | 170.5 | -3.86 | 90 |
| | | 176-179 | 177.5 | -4.69 | 94 |
| | | 182-185 | 183.5 | -4.18 | 86 |
| | | 188-191 | 189.5 | -6.03 | 96 |
| | | 194-197 | 195.5 | -5.62 | 87 |
| | | 200-203 | 201.5 | -5.42 | 87 |
| | | 206-209 | 207.5 | -5.34 | 88 |
| | | 212-215 | 213.5 | -6.05 | 94 |
| | | 218-221 | 219.5 | -5.67 | 89 |
| | | 224-227 | 225.5 | -5.52 | 89 |
| | | 230-233 | 231.5 | -5.97 | 89 |
| | | 236-239 | 237.5 | -4.23 | 97 |
| | | 242-245 | 243.5 | 0.68 | 90 |
| | | 248-251 | 249.5 | -4.40 | 88 |
| | | 254-257 | 255.5 | -4.55 | 89 |
| | | 260-263 | 261.5 | -4.77 | 87 |

Table 19 (cont)

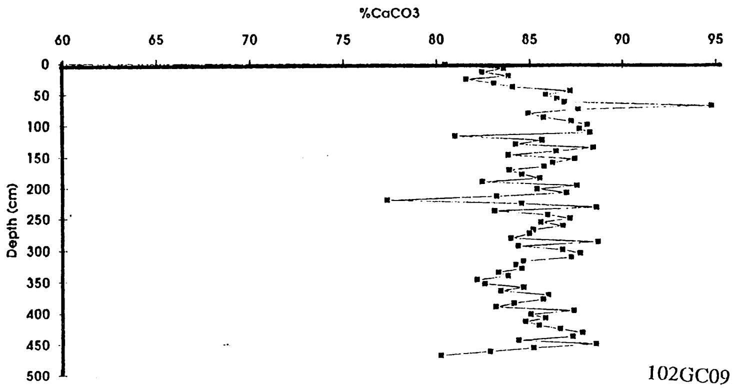
| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 102 | GC09 | 266-269 | 267.5 | -3.44 | 93 |
| | | 272-275 | 273.5 | -5.55 | 96 |
| | | 279-282 | 280.5 | -4.98 | 85 |
| | | 285-288 | 286.5 | -4.85 | 86 |
| | | 291-294 | 292.5 | -3.57 | 94 |
| | | 297-300 | 298.5 | -1.97 | 91 |
| | | 303-306 | 304.5 | -4.18 | 85 |
| | | 309-312 | 310.5 | -4.78 | 87 |
| | | 315-318 | 316.5 | -4.47 | 95 |
| | | 321-324 | 322.5 | -5.03 | 87 |
| | | 327-330 | 328.5 | -4.99 | 95 |
| | | 333-336 | 334.5 | -5.41 | 89 |
| | | 339-342 | 340.5 | -4.15 | 90 |
| | | 345-348 | 346.5 | -6.85 | 93 |
| | | 351-354 | 352.5 | -4.54 | 100 |
| | | 357-360 | 358.5 | -5.35 | 89 |
| | | 363-366 | 364.5 | -4.70 | 96 |
| | | 369-372 | 370.5 | -4.00 | 84 |
| | | 376-379 | 377.5 | -3.84 | 86 |
| | | 382-385 | 383.5 | -3.08 | 98 |
| | | 388-391 | 389.5 | -3.03 | 89 |
| | | 394-397 | 395.5 | -3.72 | 94 |
| | | 400-403 | 401.5 | -2.24 | 96 |
| | | 406-409 | 407.5 | -2.27 | 99 |
| | | 412-415 | 413.5 | -3.73 | 88 |
| | | 418-421 | 419.5 | -1.64 | 97 |
| | | 424-427 | 425.5 | -3.92 | 88 |
| | | 430-433 | 431.5 | -2.31 | 86 |
| | | 436-439 | 437.5 | -3.20 | 88 |
| | | 442-445 | 443.5 | -1.68 | 91 |
| | | 448-451 | 449.5 | -1.97 | 98 |
| | | 454-457 | 455.5 | -0.47 | 85 |
| | | 460-463 | 461.5 | 2.40 | 94 |
| | | 466-469 | 467.5 | 0.97 | 85 |

Table 20 Magnetic susceptibility and percent calcium carbonate of samples from core 102GC14, west Ceduna Terrace

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 102 | GC14 | 0-3 | 1.5 | 35.82 | 94 |
| | | 6-9 | 7.5 | 37.99 | 95 |
| | | 12-15 | 13.5 | 44.09 | 94 |
| | | 18-21 | 19.5 | 57.51 | 91 |
| | | 26-29 | 27.5 | 13.09 | 94 |
| | | 32-35 | 33.5 | 79.29 | 93 |
| | | 38-41 | 39.5 | 54.59 | 91 |
| | | 44-47 | 45.5 | 37.95 | 91 |
| | | 50-53 | 51.5 | 32.94 | 92 |
| | | 56-59 | 57.5 | 26.81 | 92 |
| | | 62-65 | 63.5 | 3.20 | 87 |
| | | 68-71 | 69.5 | 37.44 | 90 |
| | | 71-74 | 72.5 | 27.00 | 89 |
| | | 77-80 | 78.5 | 27.93 | 90 |
| | | 83-86 | 84.5 | 27.03 | 93 |
| | | 89-92 | 90.5 | 20.06 | 89 |
| | | 95-98 | 96.5 | 24.42 | 88 |
| | | 98-101 | 99.5 | 7.08 | 89 |
| | | 104-107 | 105.5 | 41.30 | 89 |
| | | 110-113 | 111.5 | 13.87 | 84 |
| | | 116-119 | 117.5 | 58.63 | 90 |
| | | 122-125 | 123.5 | 2.61 | 93 |
| | | 126-129 | 127.5 | 3.44 | 92 |
| | | 132-135 | 133.5 | 1.49 | 86 |
| | | 138-141 | 139.5 | 12.15 | 88 |
| | | 144-147 | 145.5 | 7.52 | 86 |
| | | 150-153 | 151.5 | 38.57 | 92 |
| | | 156-159 | 157.5 | 27.19 | 91 |
| | | 162-165 | 163.5 | 19.12 | 92 |
| | | 168-171 | 169.5 | 36.70 | 92 |
| | | 174-177 | 175.5 | 15.83 | 86 |
| | | 180-183 | 181.5 | 39.77 | 95 |
| | | 186-189 | 187.5 | 30.31 | 92 |
| | | 192-195 | 193.5 | -0.88 | 84 |
| | | 198-201 | 199.5 | -1.36 | 98 |
| | | 204-207 | 205.5 | -2.91 | 97 |
| | | 210-213 | 211.5 | 24.26 | 94 |
| | | 216-219 | 217.5 | 31.36 | 93 |
| | | 222-225 | 223.5 | 33.81 | 97 |
| | | 229-232 | 230.5 | 33.67 | 97 |
| | | 235-238 | 236.5 | 31.43 | 96 |
| | | 241-244 | 242.5 | 21.82 | 103 |
| | | 247-250 | 248.5 | 8.13 | 98 |
| | | 253-256 | 254.5 | -0.16 | 94 |
| | | 259-262 | 260.5 | -2.61 | 111 |
| | | 265-268 | 266.5 | 11.10 | 102 |
| | | 271-274 | 272.5 | 12.41 | 97 |
| | | 277-280 | 278.5 | 13.52 | 101 |
| | | 283-286 | 284.5 | 19.38 | 97 |
| | | 289-292 | 290.5 | 20.96 | 90 |
| | | 295-298 | 296.5 | 24.48 | 95 |
| | | 301-304 | 302.5 | 20.66 | 87 |
| | | 307-310 | 308.5 | 21.18 | 95 |
| | | 313-316 | 314.5 | 36.57 | 93 |
| | | 319-322 | 320.5 | 49.77 | 93 |

Table 21 Magnetic susceptibility and percent calcium carbonate for samples from core 102GC17, west Ceduna Terrace

| Survey | Core | Depth in Core (cm) | Sample Depth (cm) | Magnetic Susceptibility (uGauss oe-1.cm3) | CaCO3 (%) |
|---|---|---|---|---|---|
| 102 | GC17 | 3-5 | 4.5 | 69.58 | 100 |
| | | 8-10 | 9.5 | 74.60 | 89 |
| | | 14-17 | 15.5 | 123.14 | 90 |
| | | 20-23 | 21.5 | 105.54 | 99 |
| | | 26-29 | 27.5 | 135.05 | 95 |
| | | 32-35 | 33.5 | 139.54 | 91 |
| | | 38-41 | 39.5 | 54.27 | 92 |
| | | 41-44 | 42.5 | 15.53 | 95 |
| | | 46-49 | 47.5 | 50.76 | 95 |
| | | 54-57 | 55.5 | 33.26 | 90 |
| | | 58-61 | 59.5 | 25.62 | 95 |
| | | 66-69 | 67.5 | 64.19 | 94 |
| | | 72-75 | 73.5 | 19.82 | 93 |
| | | 78-81 | 79.5 | 28.53 | 93 |
| | | 84-87 | 85.5 | 16.00 | 93 |
| | | 95-98 | 96.5 | 4.00 | 100 |
| | | 98-101 | 99.5 | 2.74 | 94 |
| | | 107-110 | 108.5 | 7.75 | 93 |
| | | 113-116 | 114.5 | 4.69 | 91 |
| | | 119-122 | 120.5 | 9.50 | 94 |
| | | 125-128 | 126.5 | 20.15 | 96 |
| | | 131-134 | 132.5 | 50.31 | 87 |
| | | 137-140 | 138.5 | 101.40 | 92 |
| | | 143-146 | 144.5 | 48.89 | 99 |
| | | 154-157 | 155.5 | 91.26 | 83 |
| | | 161-164 | 162.5 | 111.80 | 94 |
| | | 167-170 | 168.5 | 107.64 | 94 |
| | | 173-176 | 174.5 | 92.57 | 93 |
| | | 179-182 | 180.5 | 133.90 | 93 |
| | | 185-188 | 186.5 | 92.84 | 95 |
| | | 191-194 | 192.5 | 89.81 | 92 |
| | | 194-197 | 195.5 | 4.08 | 94 |
| | | 200-203 | 201.5 | 8.64 | 98 |
| | | 206-209 | 207.5 | 5.13 | 89 |
| | | 214-217 | 215.5 | 8.06 | 85 |
| | | 220-223 | 221.5 | 43.30 | 85 |
| | | 226-229 | 227.5 | 78.42 | 93 |
| | | 232-235 | 233.5 | 117.28 | 95 |
| | | 241-244 | 242.5 | 103.27 | 89 |
| | | 247-250 | 248.5 | 38.00 | 94 |
| | | 250-253 | 251.5 | 29.88 | 98 |



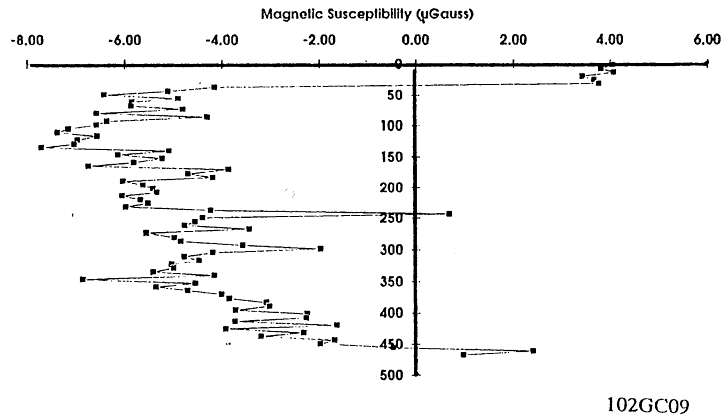
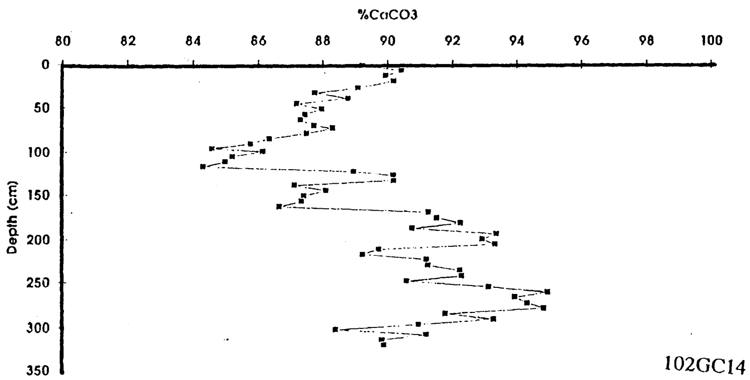




Figure 24 Percent calcium carbonate and magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$) profiles for core 102GC09



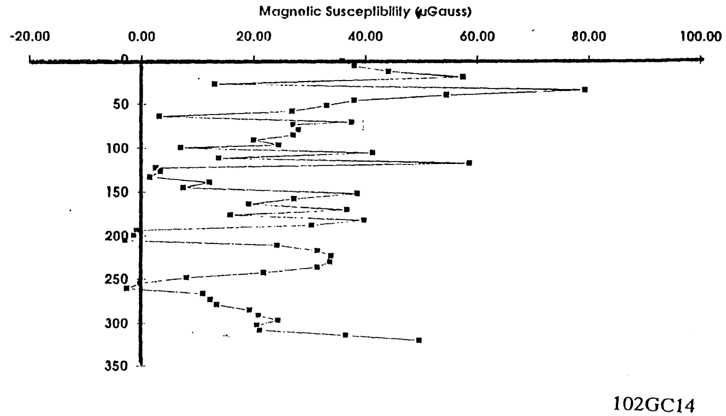




Figure 25 Percent calcium carbonate and magnetic susceptibility ($\mu$Gauss.oe$^{-1}$.cm$^{3}$) profiles for core 102GC14

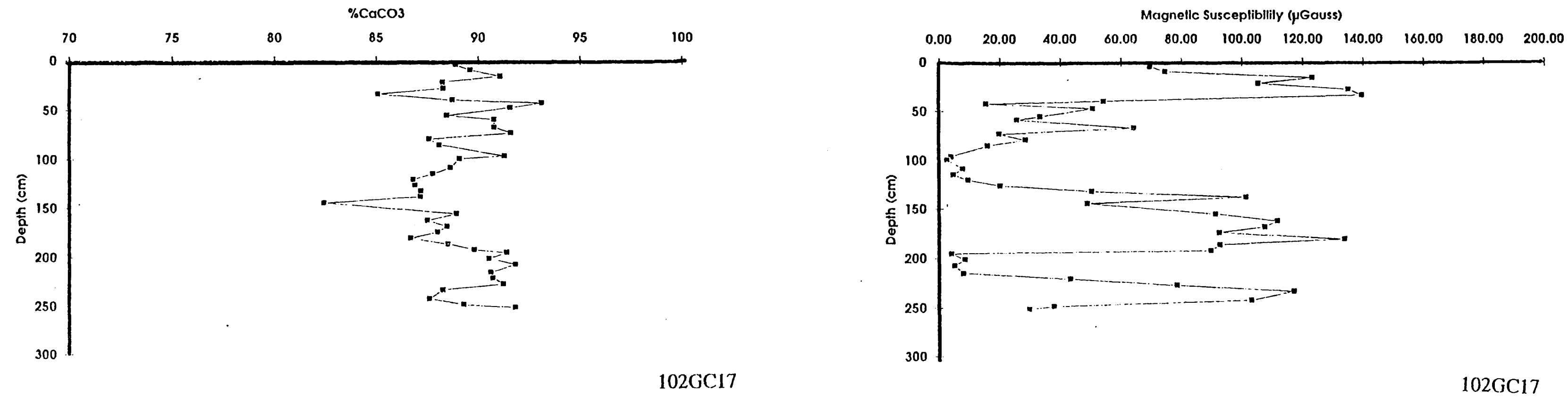



Figure 26 Percent calcium carbonate and magnetic susceptibility (µGauss.oe$^{-1}$.cm$^{3}$) profiles for core 102GC17

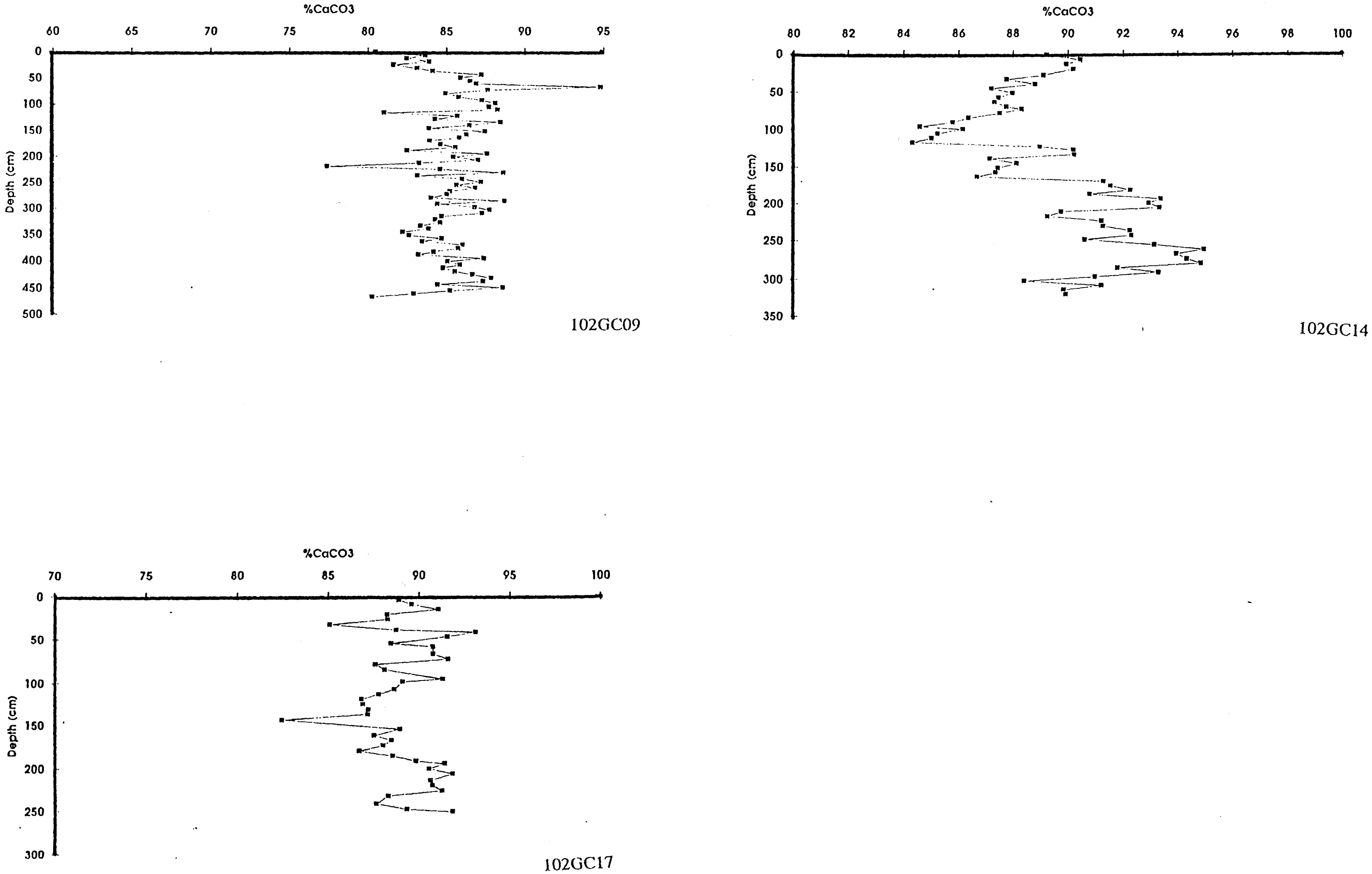



Figure 27 Percent calcium carbonate profiles for cores 102GC09, 102GC14 and 102GC17

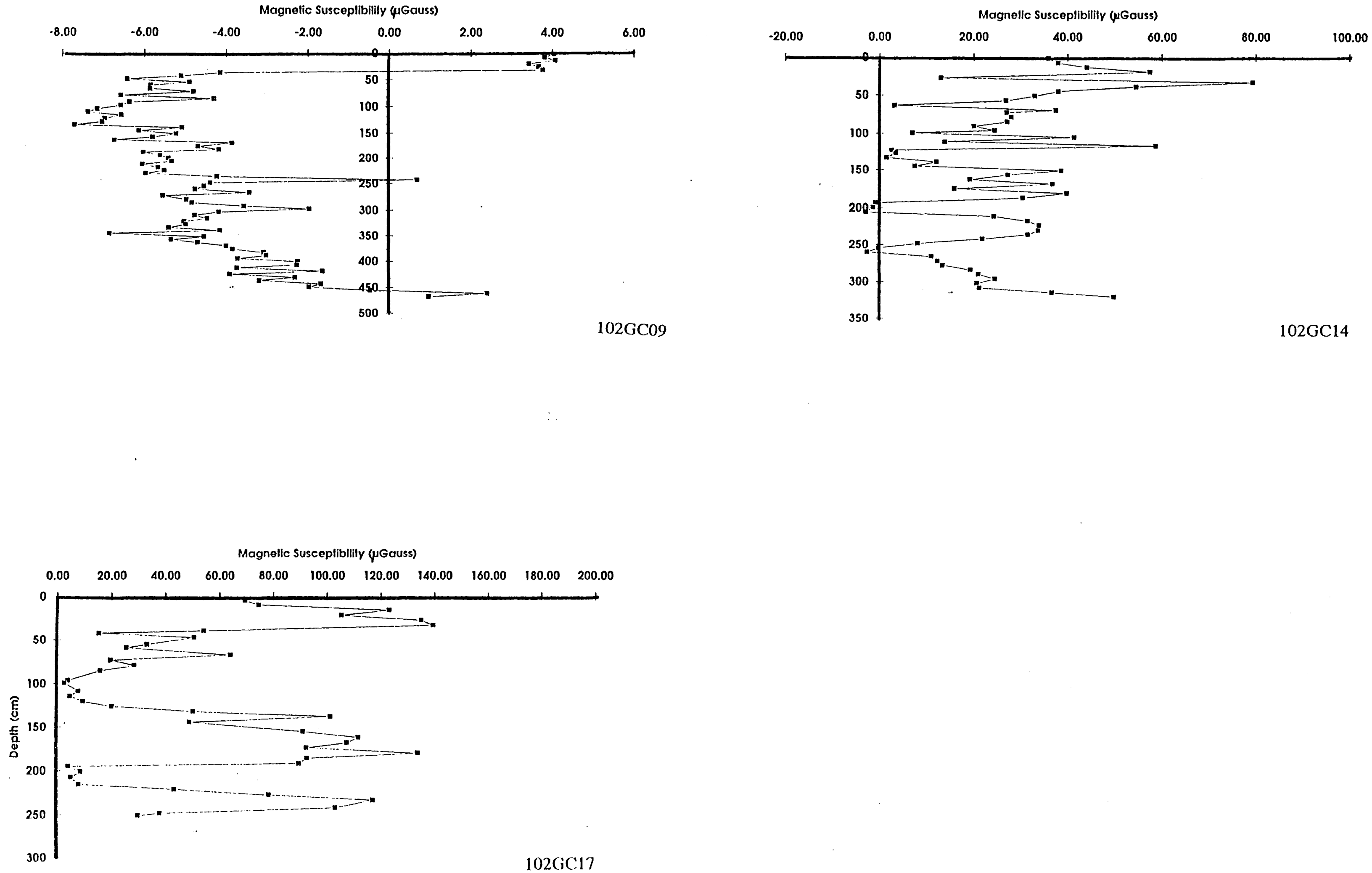



Figure 28 Magnetic susceptibility (μGauss.$oe^{-1}.cm^3$) profiles for cores 102GC09, 102GC14 and 102GC17

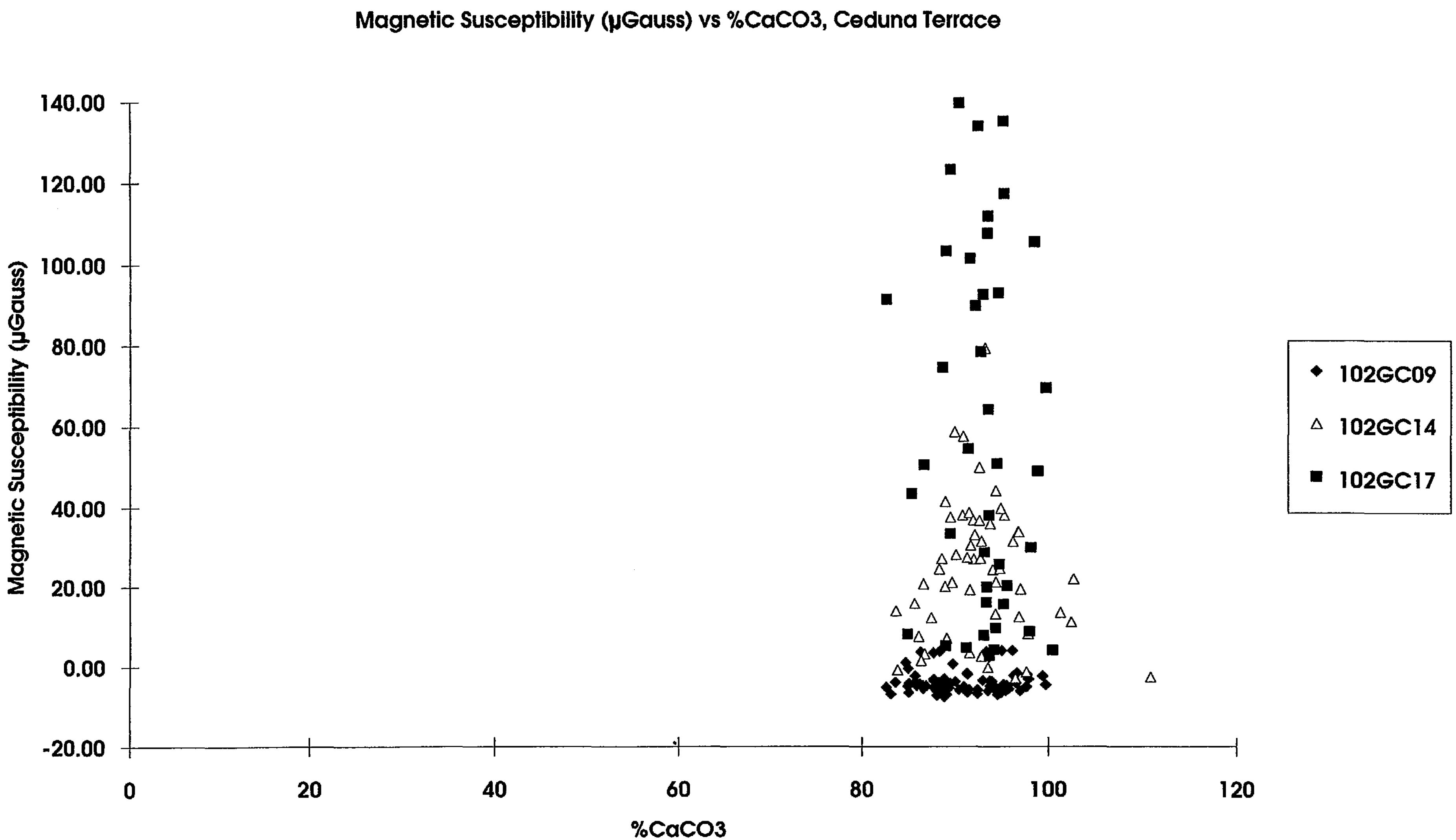



Figure 29 Magnetic susceptibility and percent calcium carbonate cross plot for Ceduna Terrace cores

## SUMMARY

1. A number of gravity cores from the west (3), east (5) and southern (3) Australian continental margin have been analysed for percent magnetic susceptibility, calcium carbonate and trace element contents. The cores sampled from the west Australian continental margin were collected from the Exmouth Plateau and the Carnarvon Terrace. Those cores sampled from the south Australian continental margin were collected from the west Ceduna Terrace and Eyre Terrace, and cores from the east Australian continental margin were collected offshore Evans Head.

2. The down-core profiles of magnetic susceptibility show similar trends within each area, although similar patterns are not recognisable in all cores. For example, from the western margin, where we have reliable sedimentation rates, the magnetic susceptibility is consistently relatively low during the LGM sediments and relatively high in the Holocene and LIG sediments. While we do not have precise sedimentation rate data for the eastern margin sediments, the magnetic susceptibility data, at a sedimentation rate of about 1 cm/kyr, suggests high magnetic susceptibilities during the LIG. This observation is similar to that from the western margin. Because of the relatively low sedimentation rates for the eastern margin sediments, core-top variations in magnetic susceptibility, during LGM times cannot be directly compared with those from the western margin.

3. The down-core profiles of calcium carbonate from the west Australian continental margin show relatively low values (<80 %) in the core-tops (Holocene), and at isotope stage 6, during the LIG. At isotopic stage 2, during the LGM, the calcium carbonate profiles show a maxima (>85 %). In general no distinct patterns are recognisable in the down-core calcium carbonate profiles from the southern margin. Based upon an approximate sedimentation rate of 1 cm /kyr in eastern margin cores, minimum values (<40%) in calcium carbonate are inferred at the LIG, which is similar to those calcium carbonate profiles from the western margin.

4. The cross-plot of magnetic susceptibility and percent calcium carbonate is summarised in Figure 30, and shows in general, decreasing magnetic susceptibility with increasing calcium carbonate. This plot also shows (i) those cores from the southern Australian continental margin have low magnetic susceptibilities (<150μGauss $oe^{-1}.cm^3$) with high calcium carbonate contents (>80%). (ii) Those cores collected from the east Australian continental margin have the highest magnetic susceptibilities (between 50 and 500μGauss

oe$^{-1}$.cm$^3$) with carbonate contents <65%. (iii) Cores collected from the western margin have susceptibilities <240 μGauss oe$^{-1}$.cm$^3$, and carbonate contents between 65 and 95%.

5. The cross-plot of magnetic susceptibility and $Al_2O_3$ (Figure 31) for cores from the eastern and western continental margin of Australia shows increasing magnetic susceptibilities (between -10 and 500 μGauss oe$^{-1}$.cm$^3$) with increasing $Al_2O_3$ (between 0 and 12 wt%). A similar relationship is also evident in the cross-plot of magnetic susceptibility and $Fe_2O_3$ (Figure 32), where increasing $Fe_2O_3$ (between 0 and 3.5 wt%) content corresponds with increasing magnetic susceptibility (between -10 and 500 μ Gauss oe$^{-1}$.cm$^3$), for all cores from the western and eastern Australian continental margin, apart from core 71GC47 (offshore Evans Head on the eastern margin). The data from this core do not fall on the same trend-line as data from the other cores and this difference may be related to the extent of iron- mineral diagenesis in this core.

6. When plotted versus water depth, magnetic susceptibilities from Holocene sediments (in general data from the top 10 cm of cores) show different trends from each area. The data from the western margin show decreasing susceptibilities with increasing water depth. Similarly data from the eastern margin, appear to reflect decreasing magnetic susceptibilities with increasing water depth, although the cores from this area were only collected from the upper-slope in water depths < 2000 m. In contrast, data from the southern margin indicate increasing magnetic susceptibilities with increasing water depth and this may be indicative of an influence on magnetic susceptibility by grain size and down-slope transport of magnetic minerals from the continental shelf, or perhaps an aeolian input to lower-slope sediments.

Magnetic susceptibility (uGauss) vs %CaCO3, Australian continental margin sediments

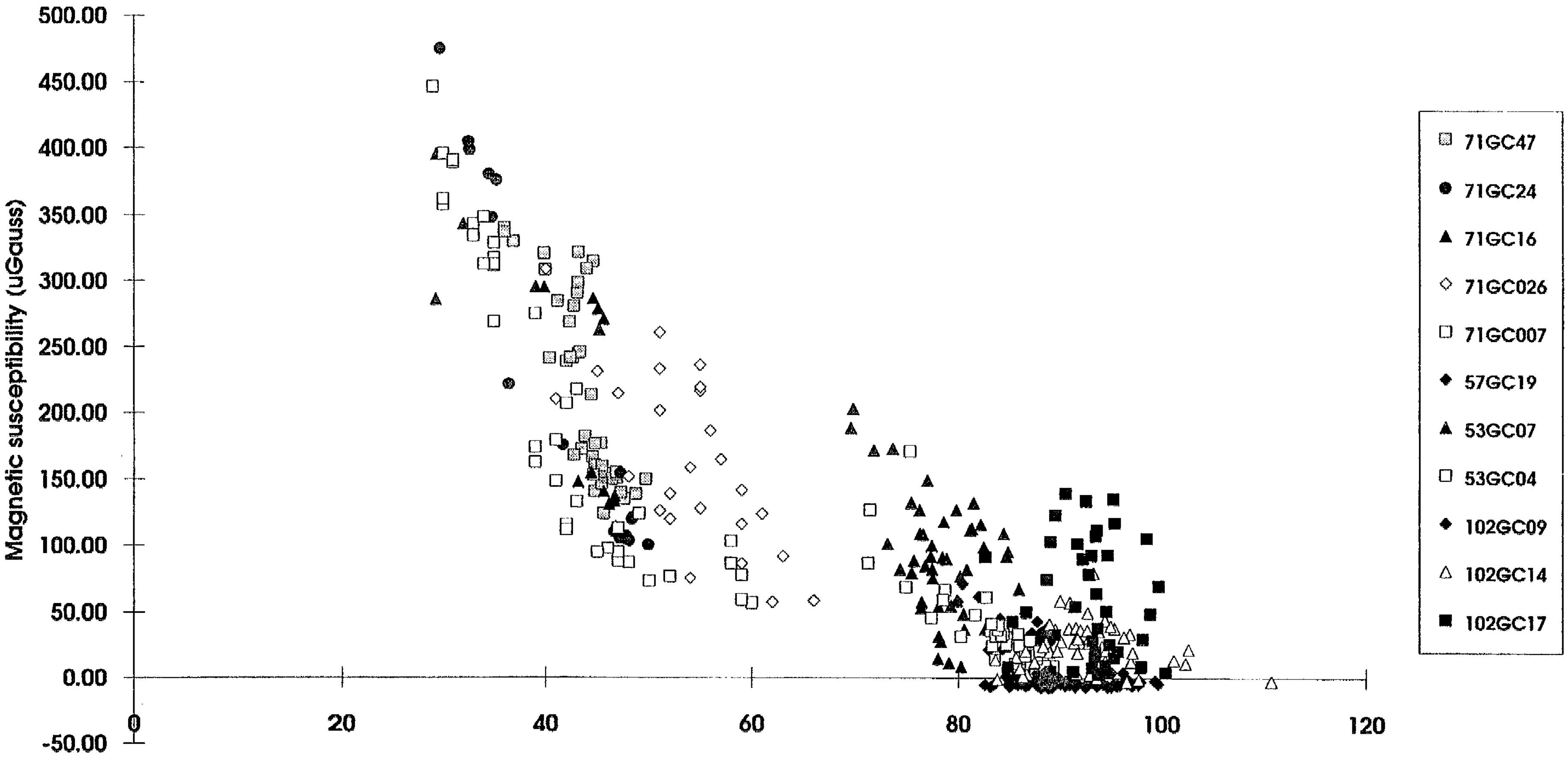



Figure 30 Magnetic susceptibility and percent calcium carbonate cross plot for sediments off the Australian continental margin

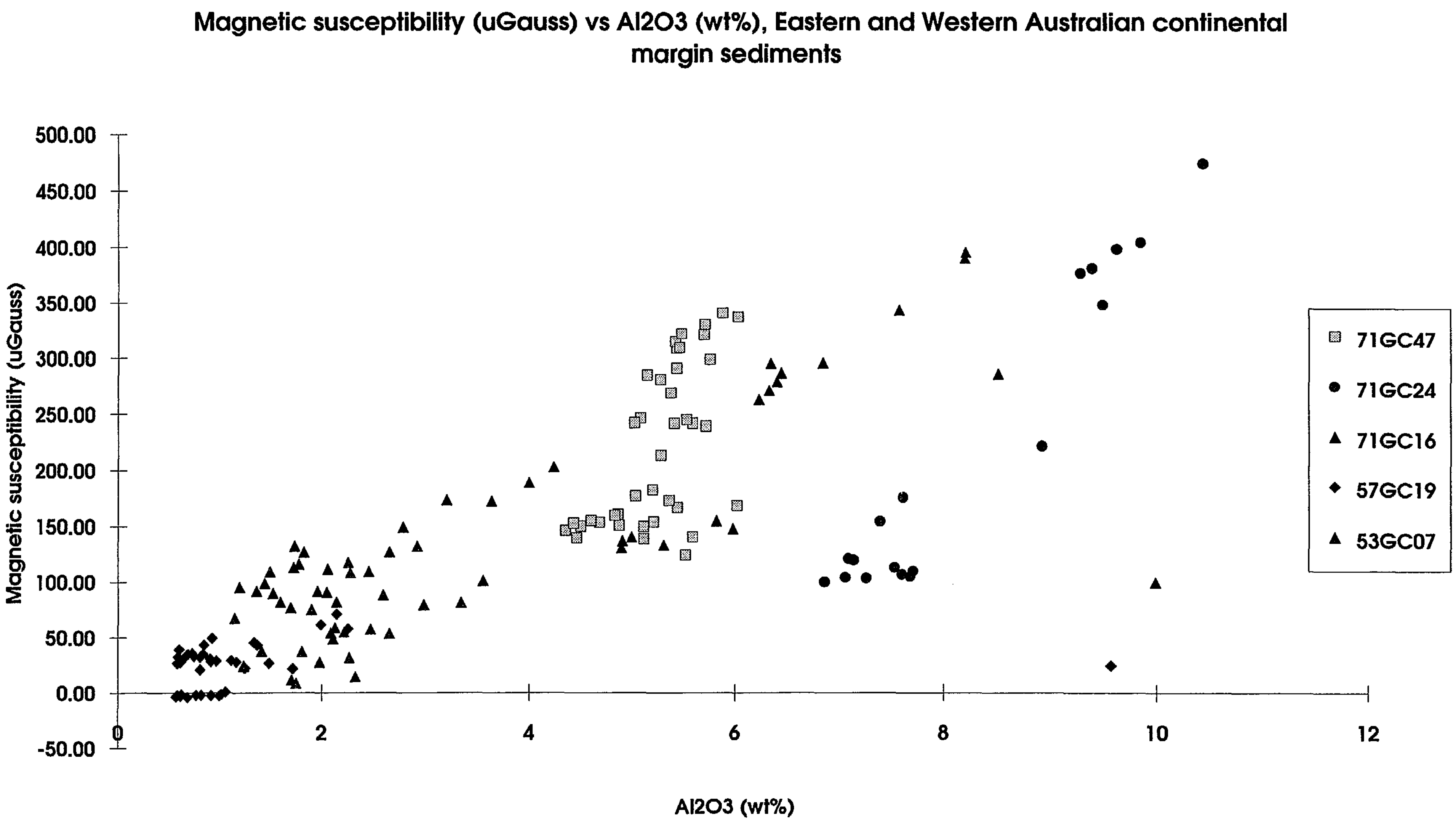



Figure 31 Magnetic susceptibility and $Al_2O_3$ cross plot for cores from the Eastern and Western Australian continental margin

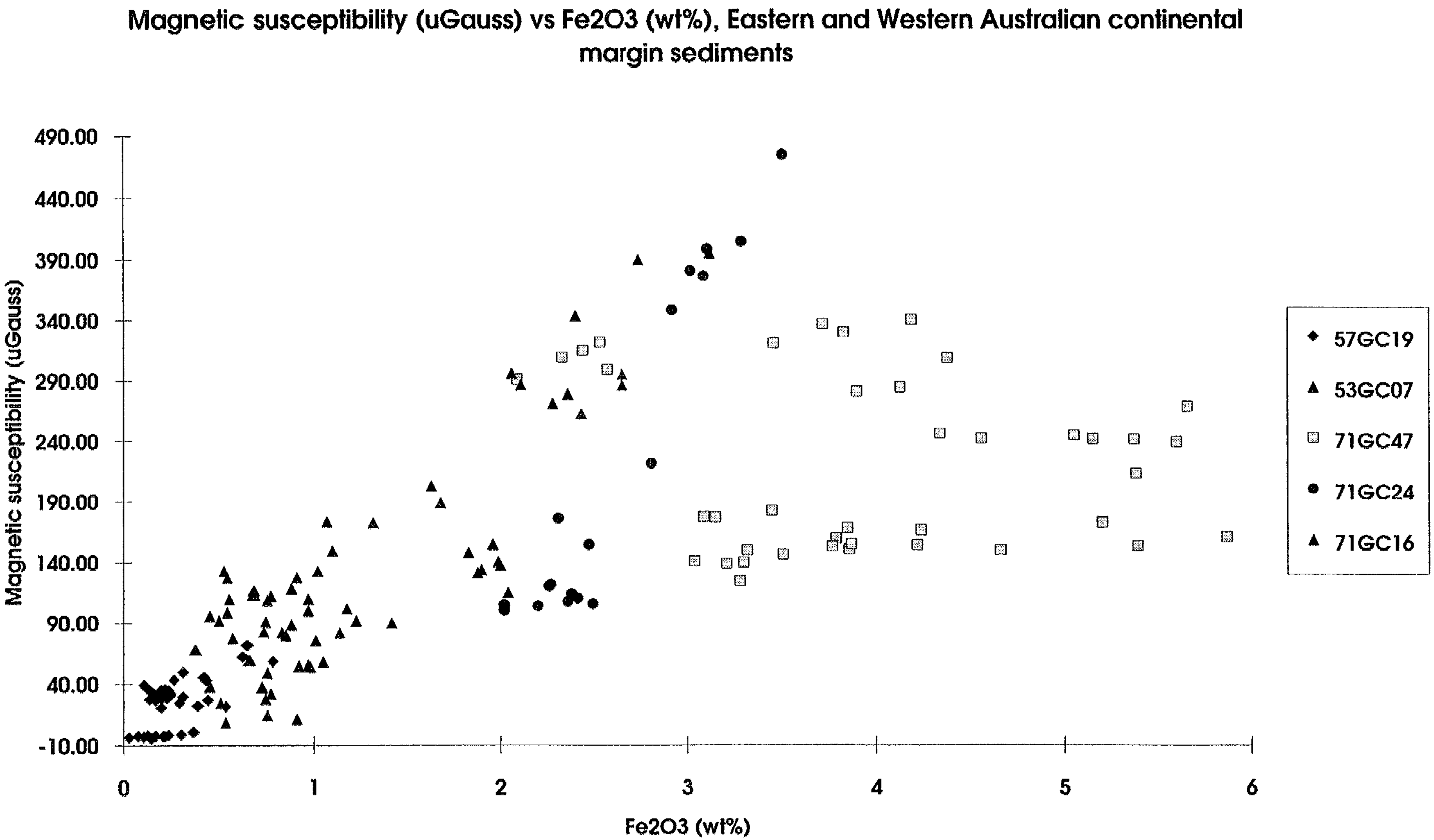



Figure 32 Magnetic susceptibility and $Fe_2O_3$ cross plot for cores from the Eastern and Western Australian continental margin

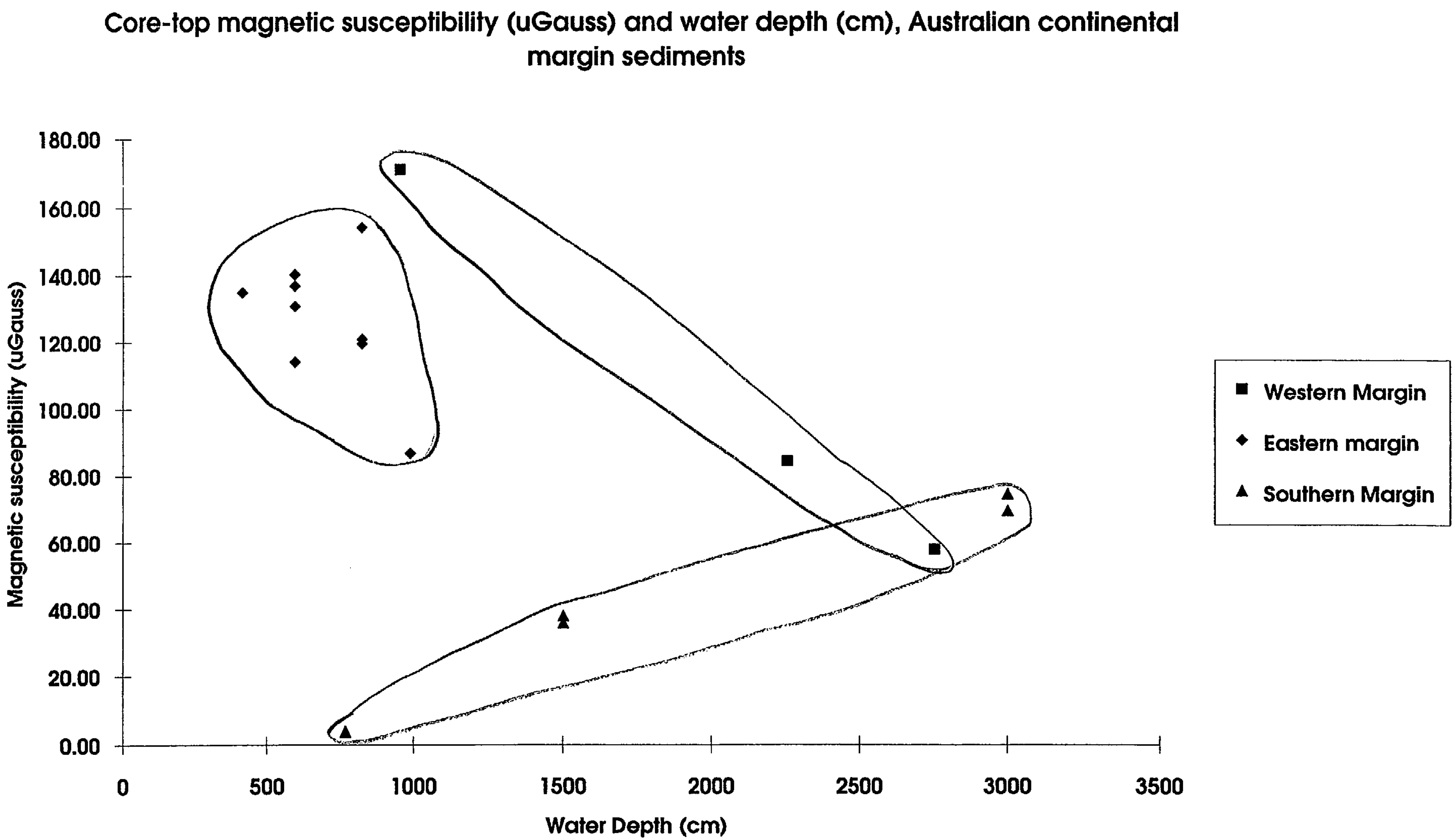



Figure 33 Core-top magnetic susceptibility and water depths for sediments from around the Australian continental margin

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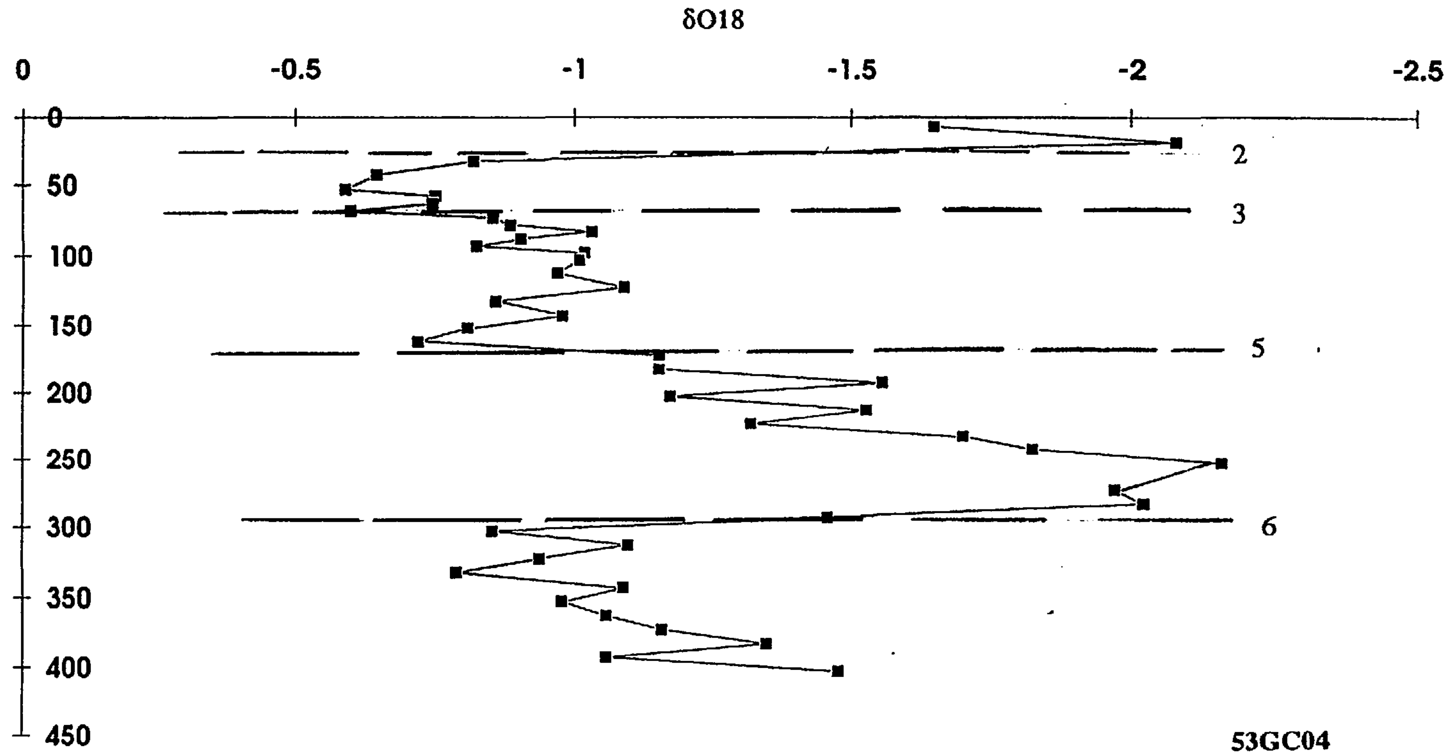
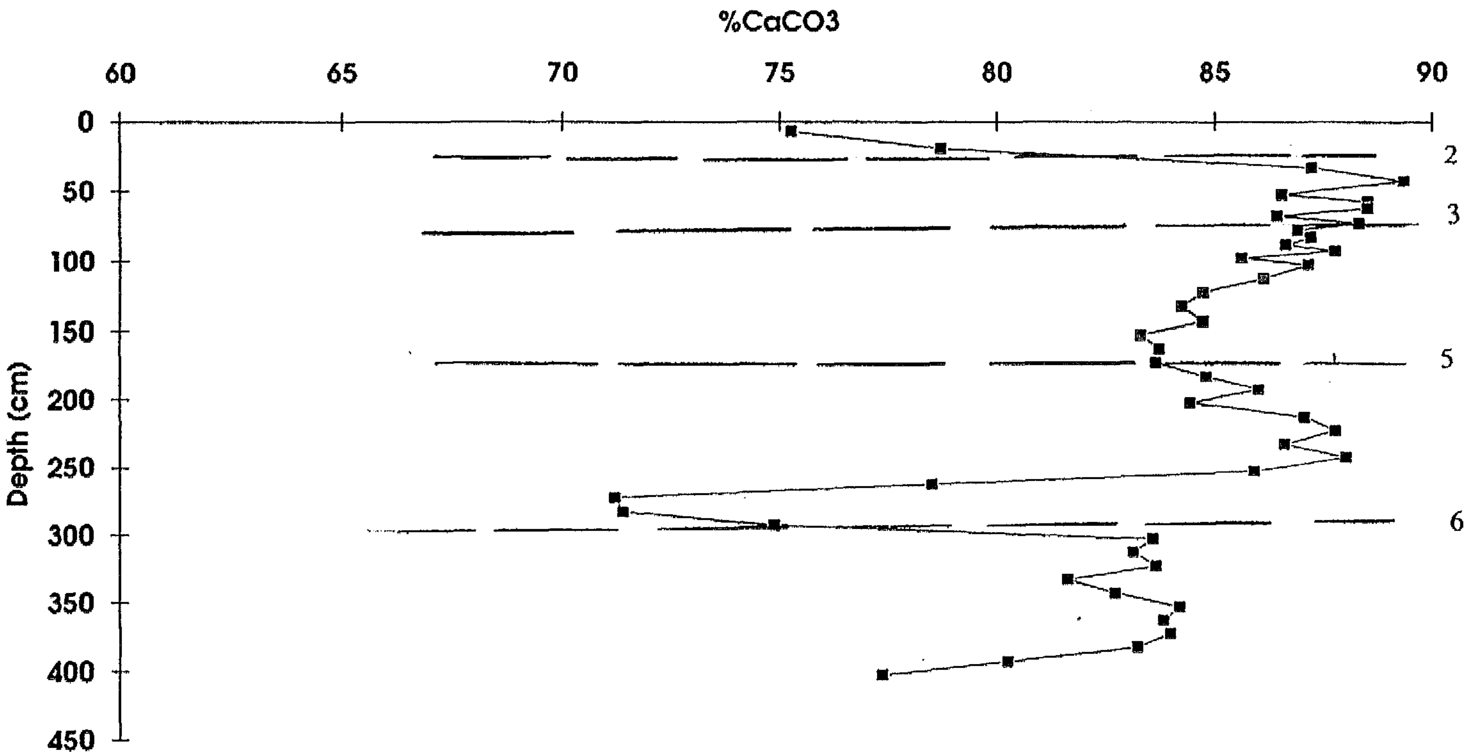
**Appendix A: Data plots from the West Australian Continental Margin.**

**Figure 1** Data plots of $\delta^{18}O$ ,percent calcium carbonate and magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$) for core 53GC04 from the Exmouth Plateau.



δO18
0
-0.5
-1
-1.5
-2
-2.5
0
50
100
150
200
250
300
350
400
450
2
3
5
6
53GC04


%CaCO3
60
65
70
75
80
85
90
Depth (cm)
0
50
100
150
200
250
300
350
400
450
2
3
5
6

53GC04

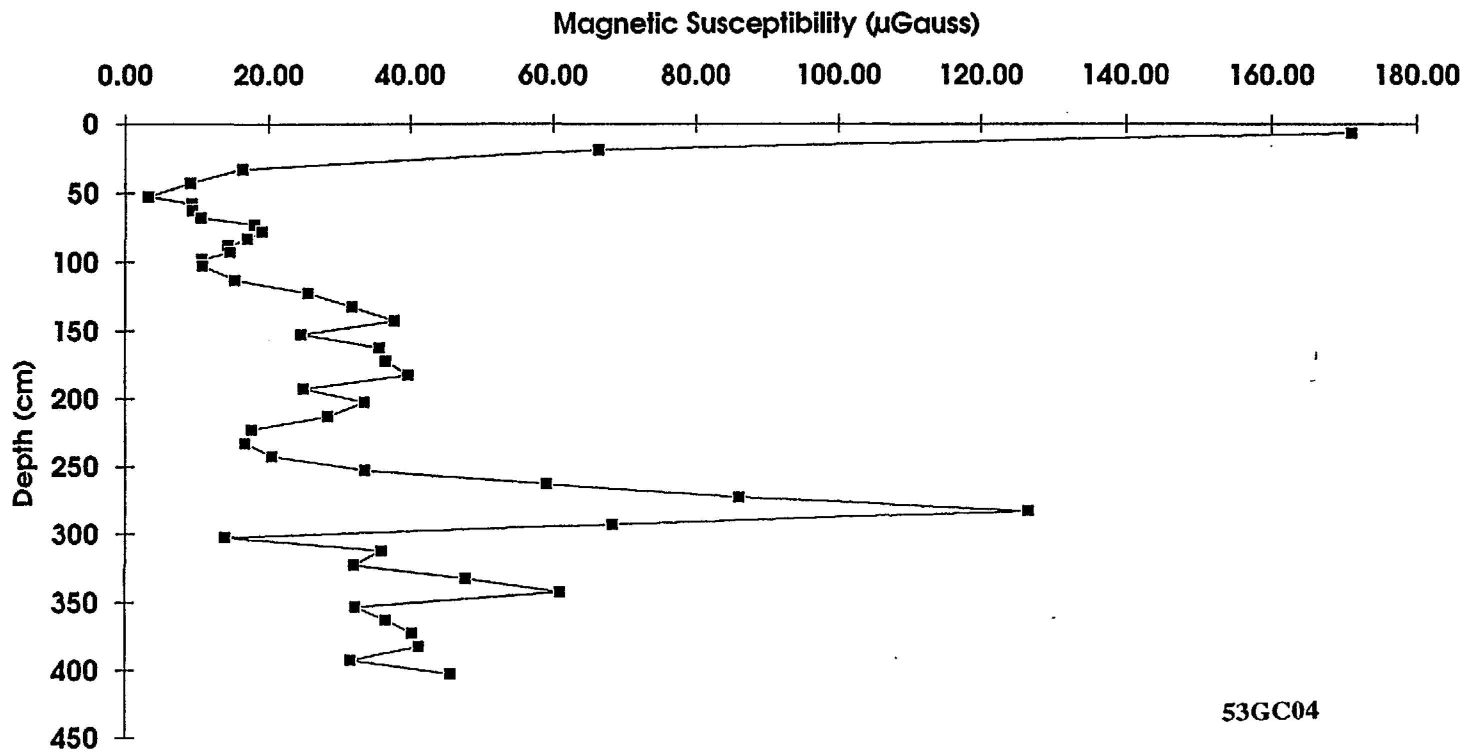
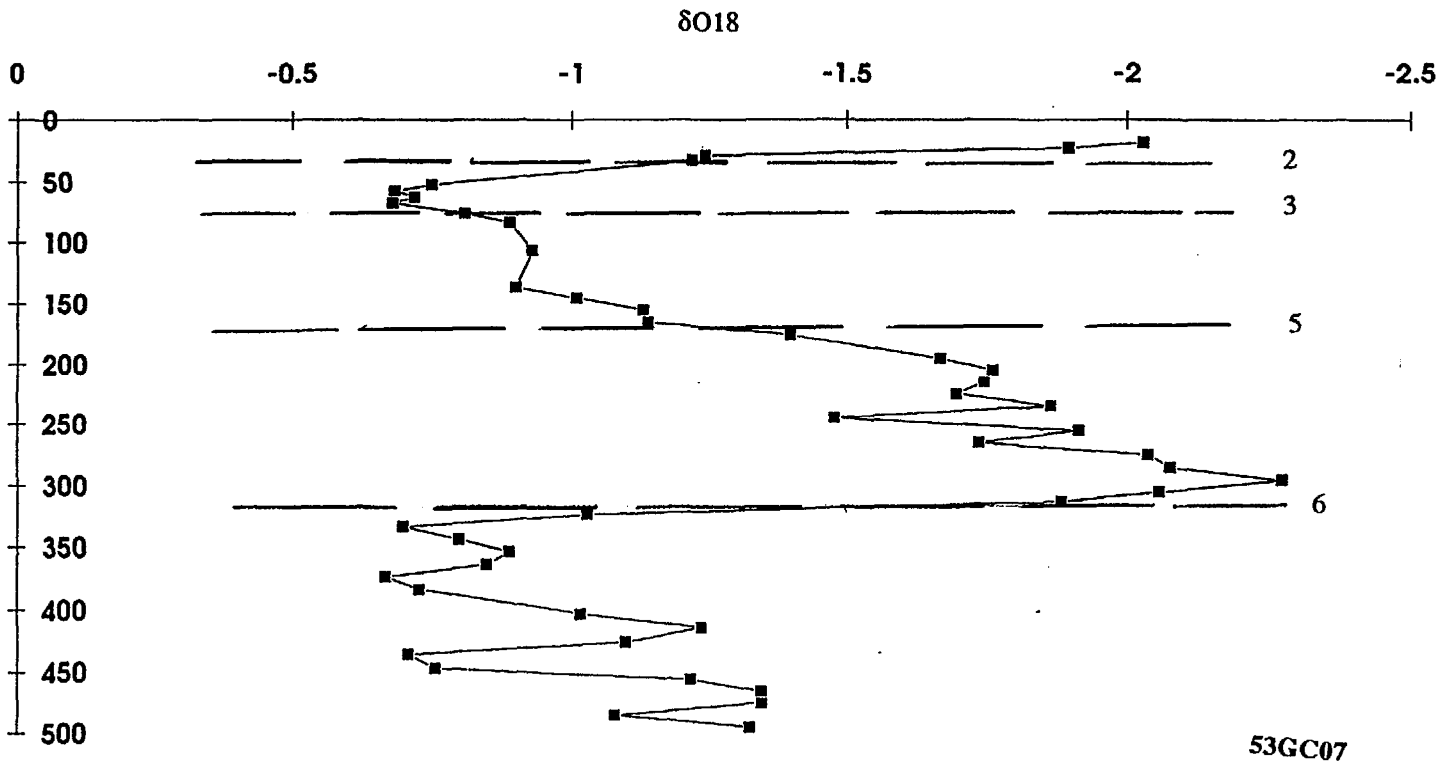
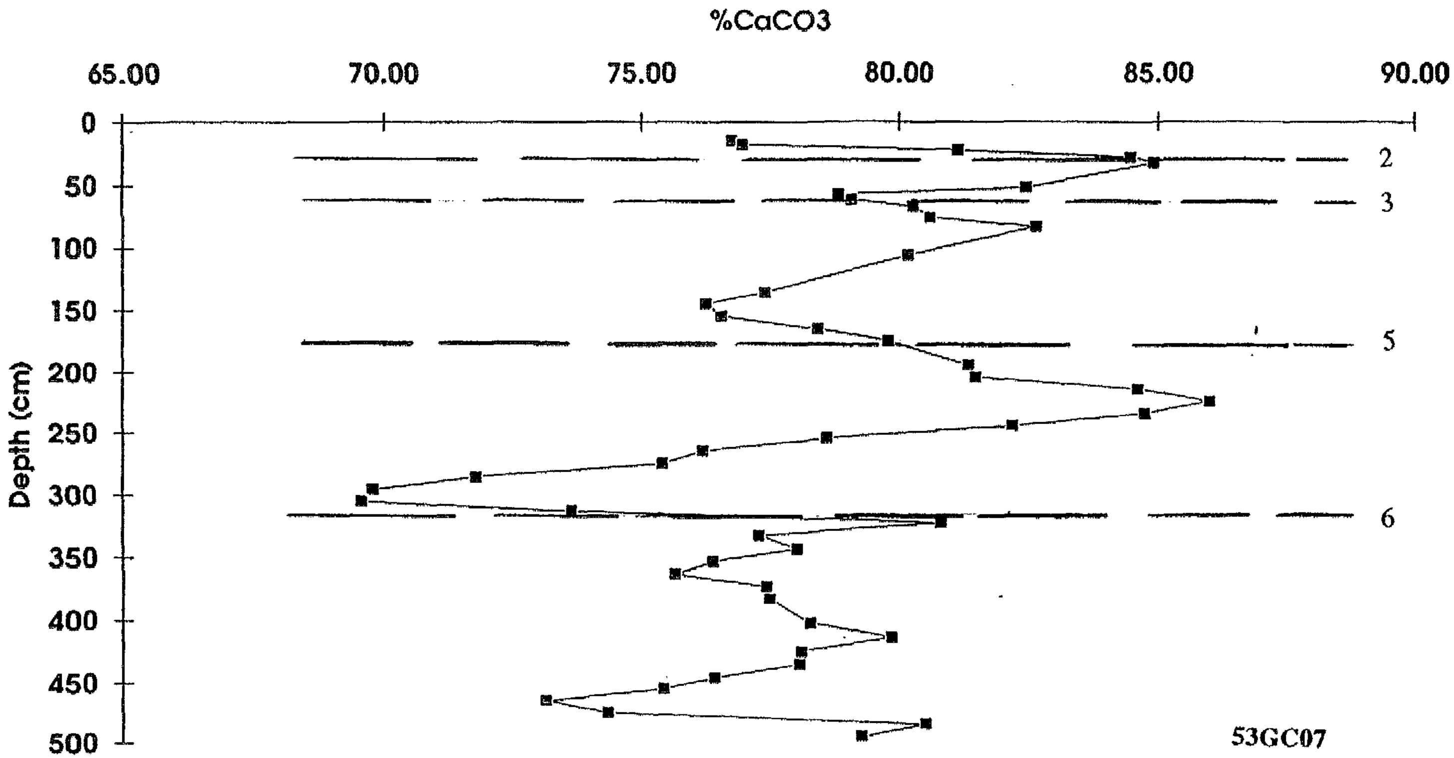
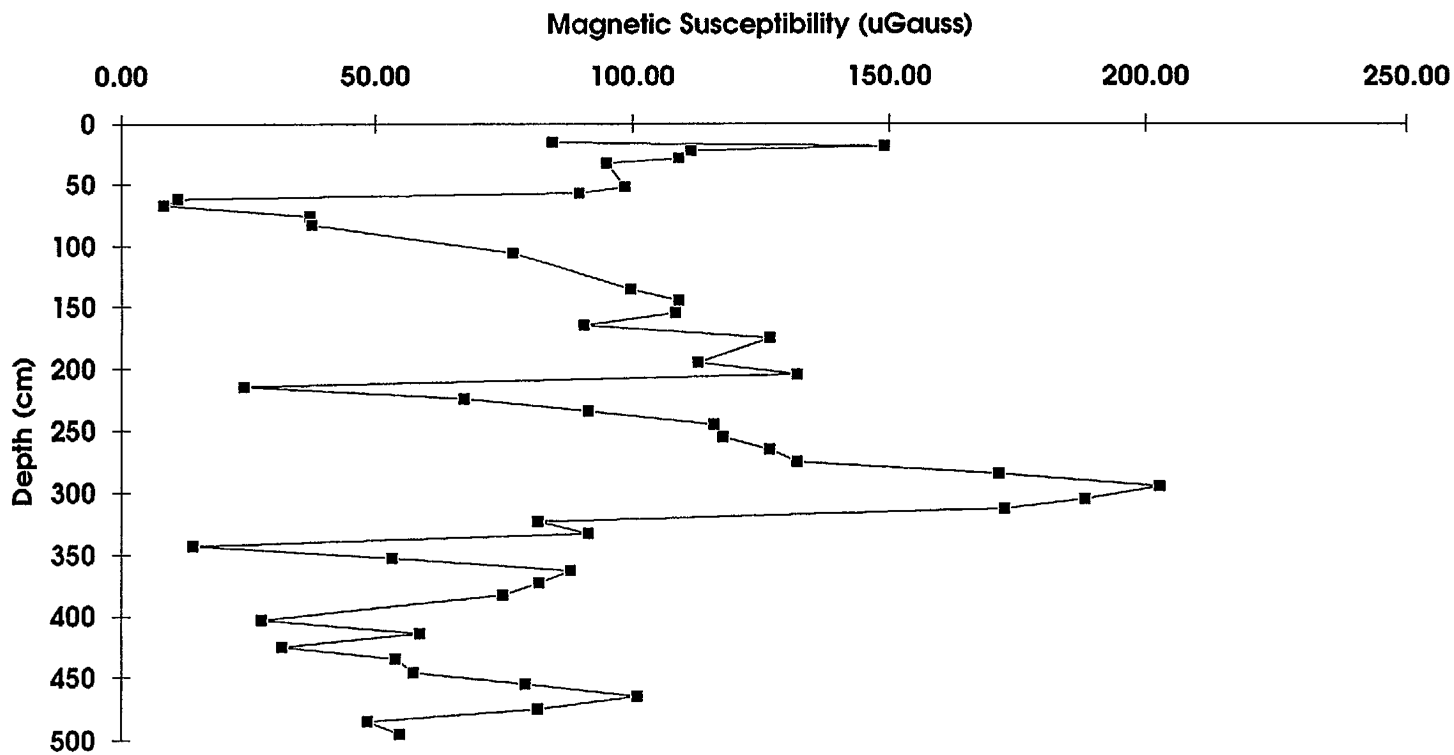

Magnetic Susceptibility (µGauss)
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
Depth (cm)
0
50
100
150
200
250
300
350
400
450
53GC04

**Figure 2** Data plots of $\delta^{18}O$, percent calcium carbonate, magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$), $Al_2O_3$ (wt%) and $SiO_2$ (wt%) for core 53GC07 from the Exmouth Plateau.

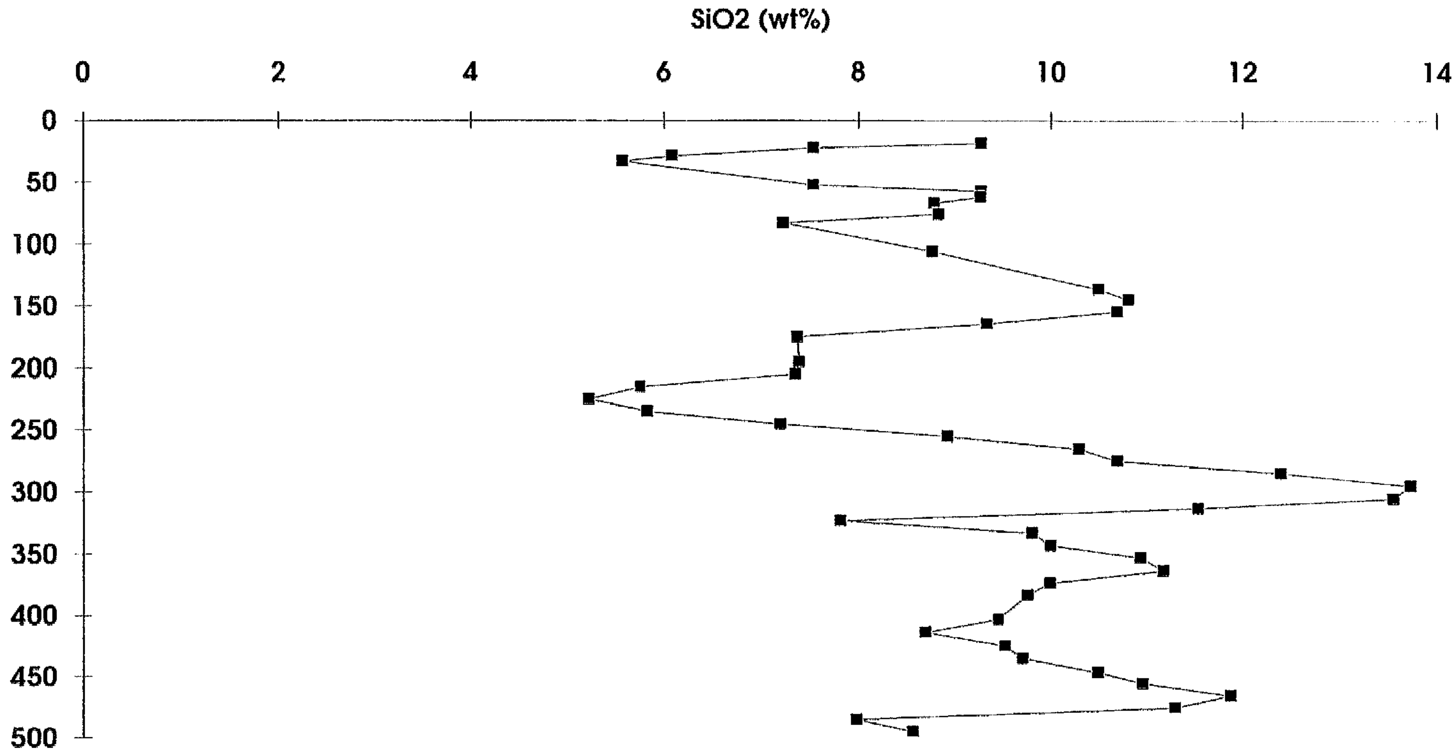

δO18
0
-0.5
-1
-1.5
-2
-2.5
0
50
100
150
200
250
300
350
400
450
500
2
3
5
6
53GC07


%CaCO3
65.00
70.00
75.00
80.00
85.00
90.00
Depth (cm)
0
50
100
150
200
250
300
350
400
450
500
2
3
5
6
53GC07

A7



Magnetic Susceptibility (uGauss)
0.00
50.00
100.00
150.00
200.00
250.00
Depth (cm)
0
50
100
150
200
250
300
350
400
450
500


SiO2 (wt%)
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
400
450
500

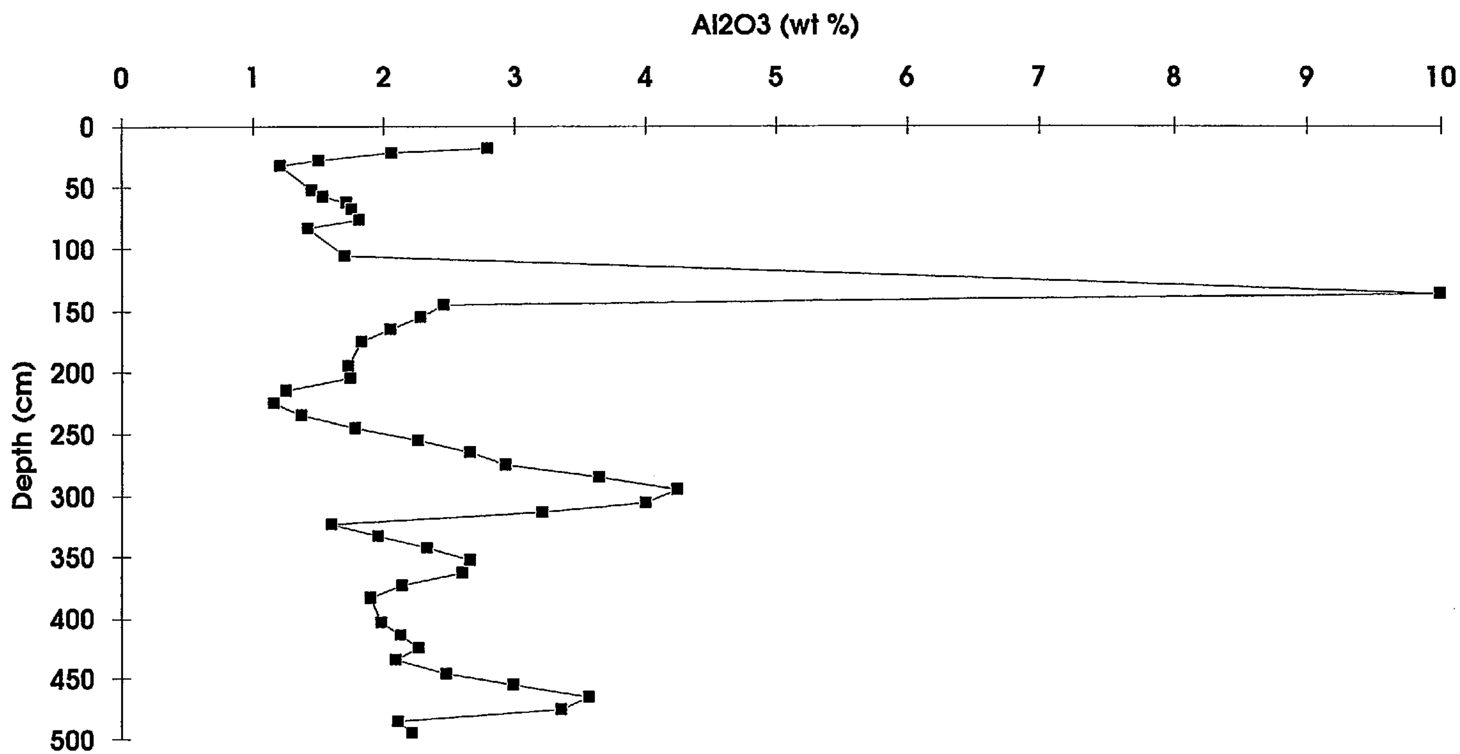
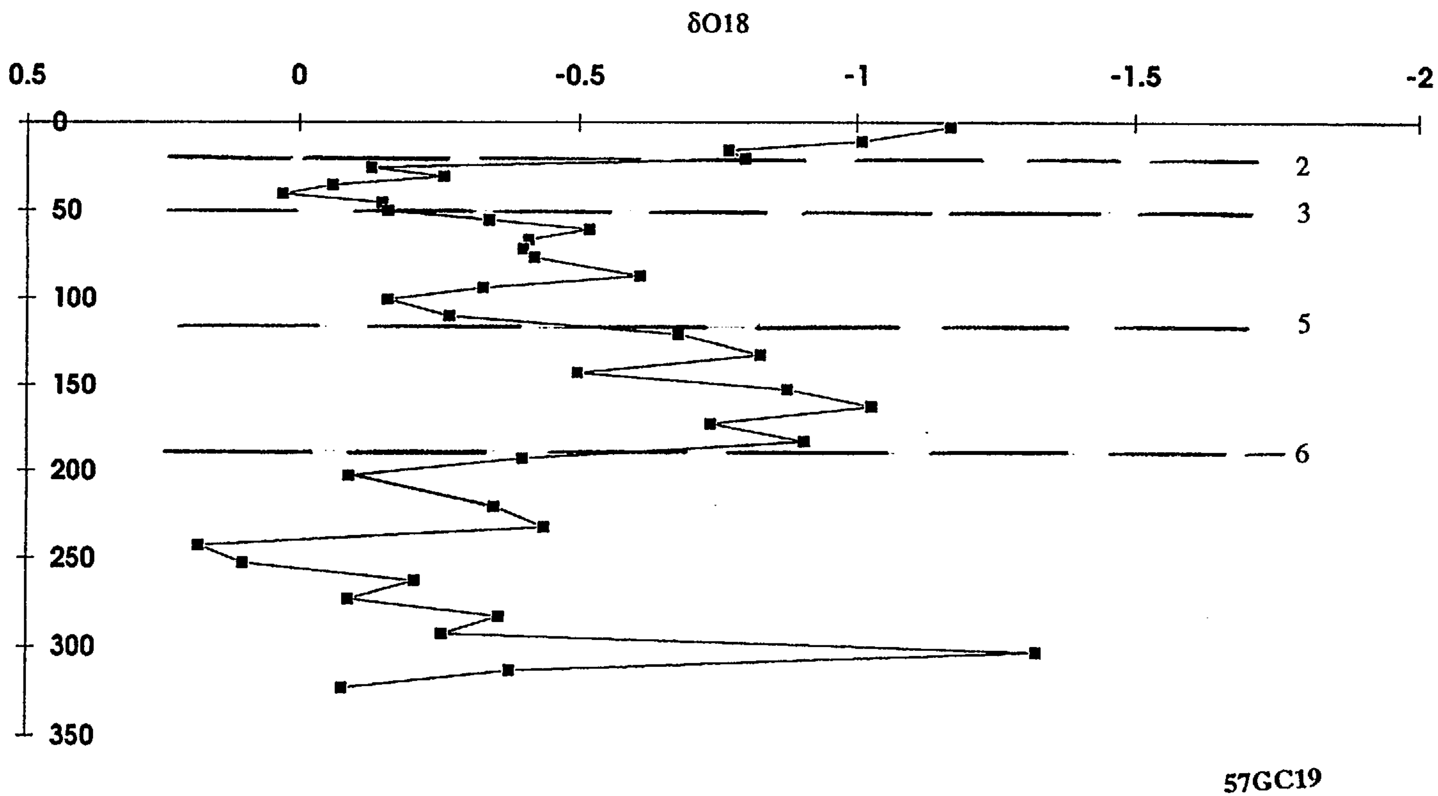
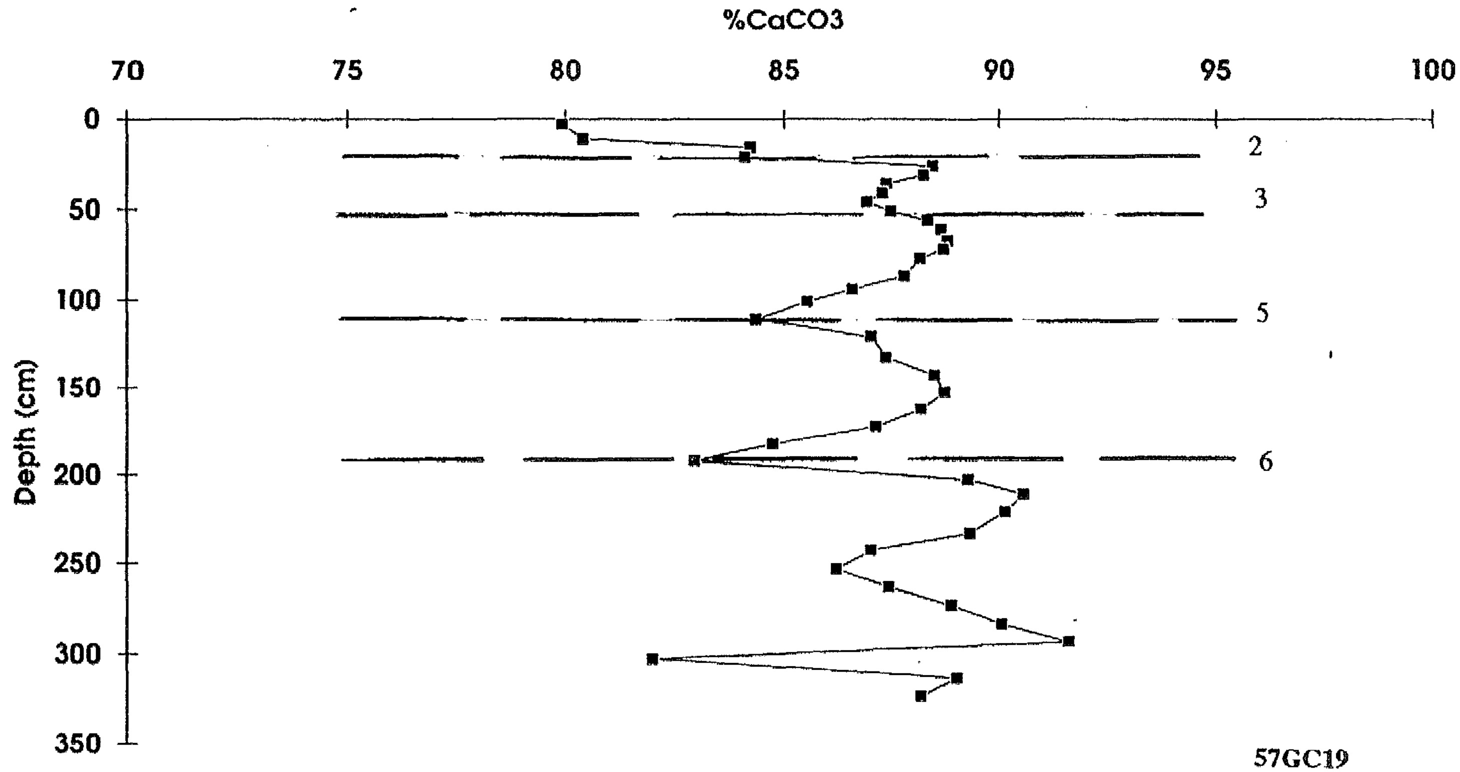
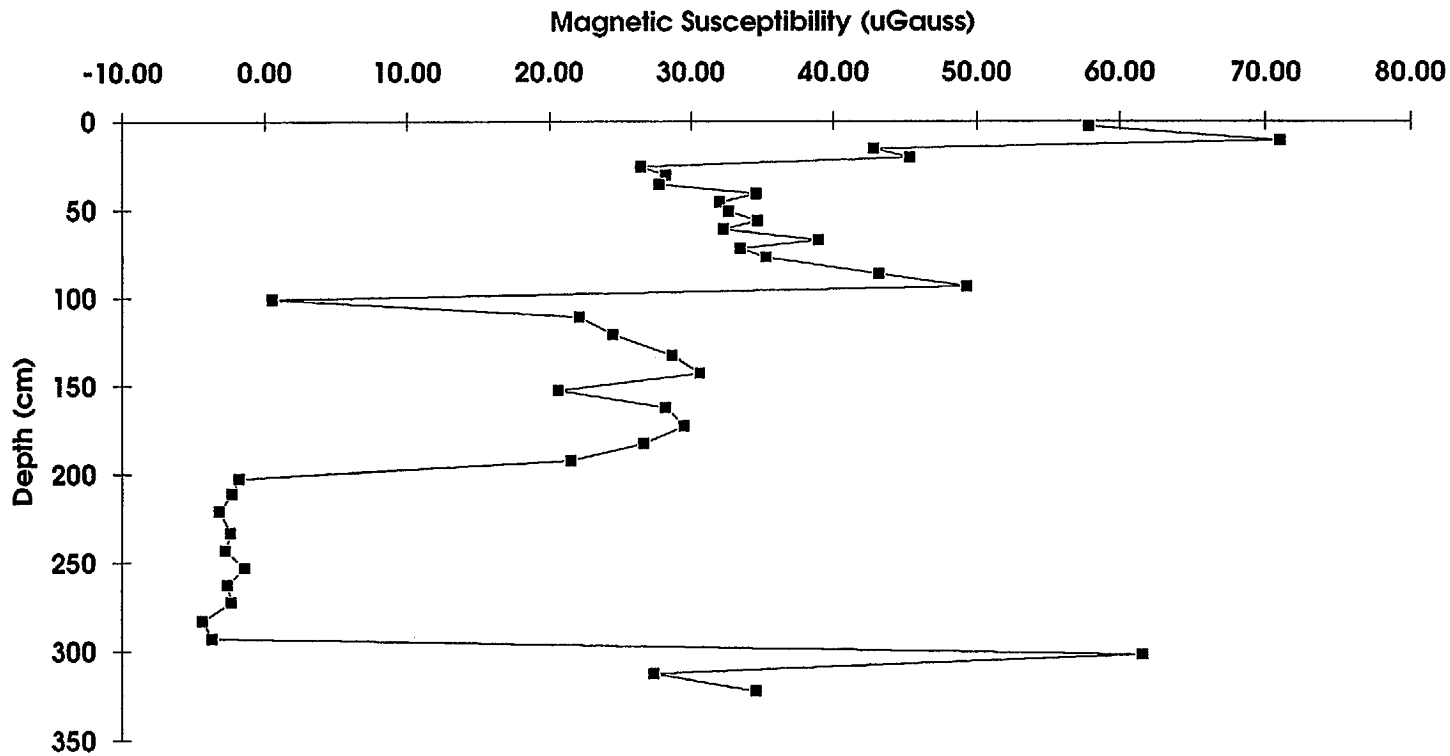
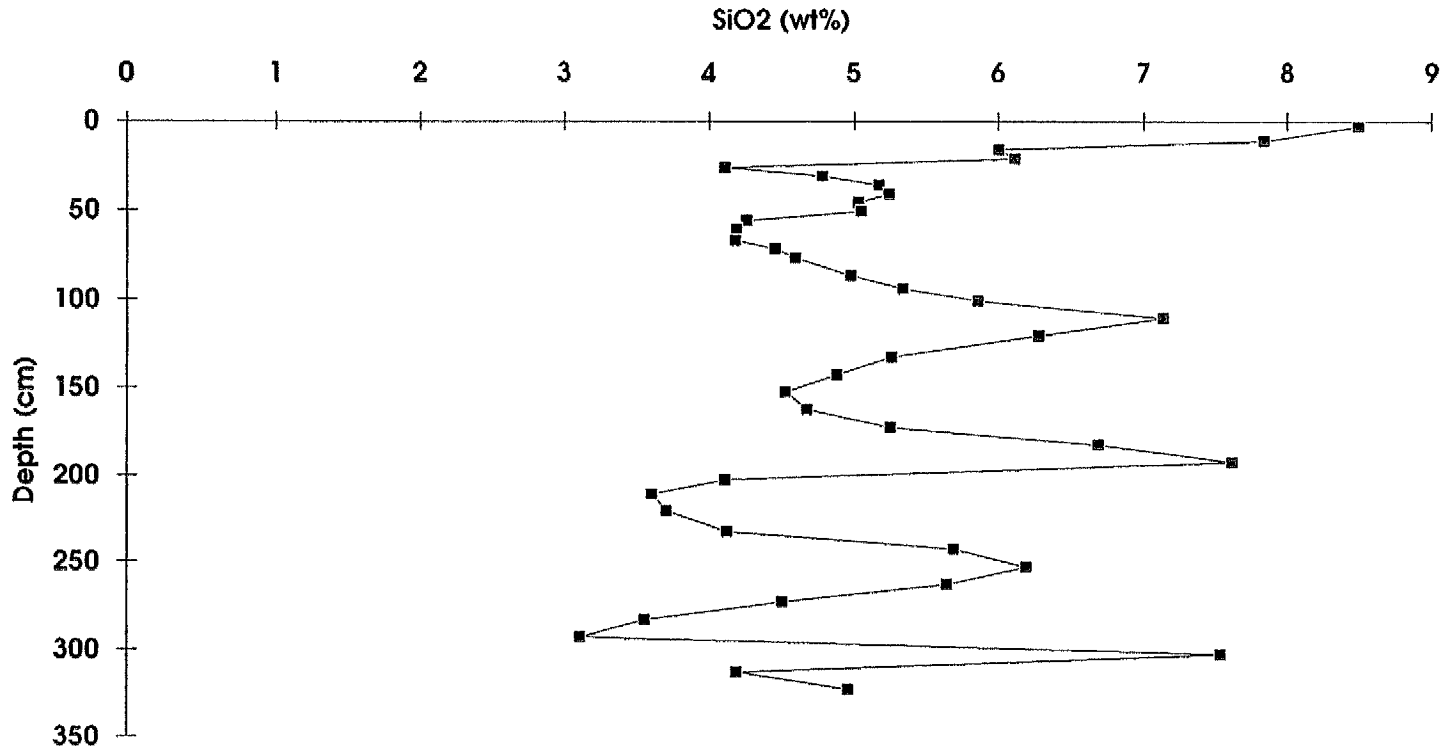

Al2O3 (wt %)
0
1
2
3
4
5
6
7
8
9
10
Depth (cm)
0
50
100
150
200
250
300
350
400
450
500

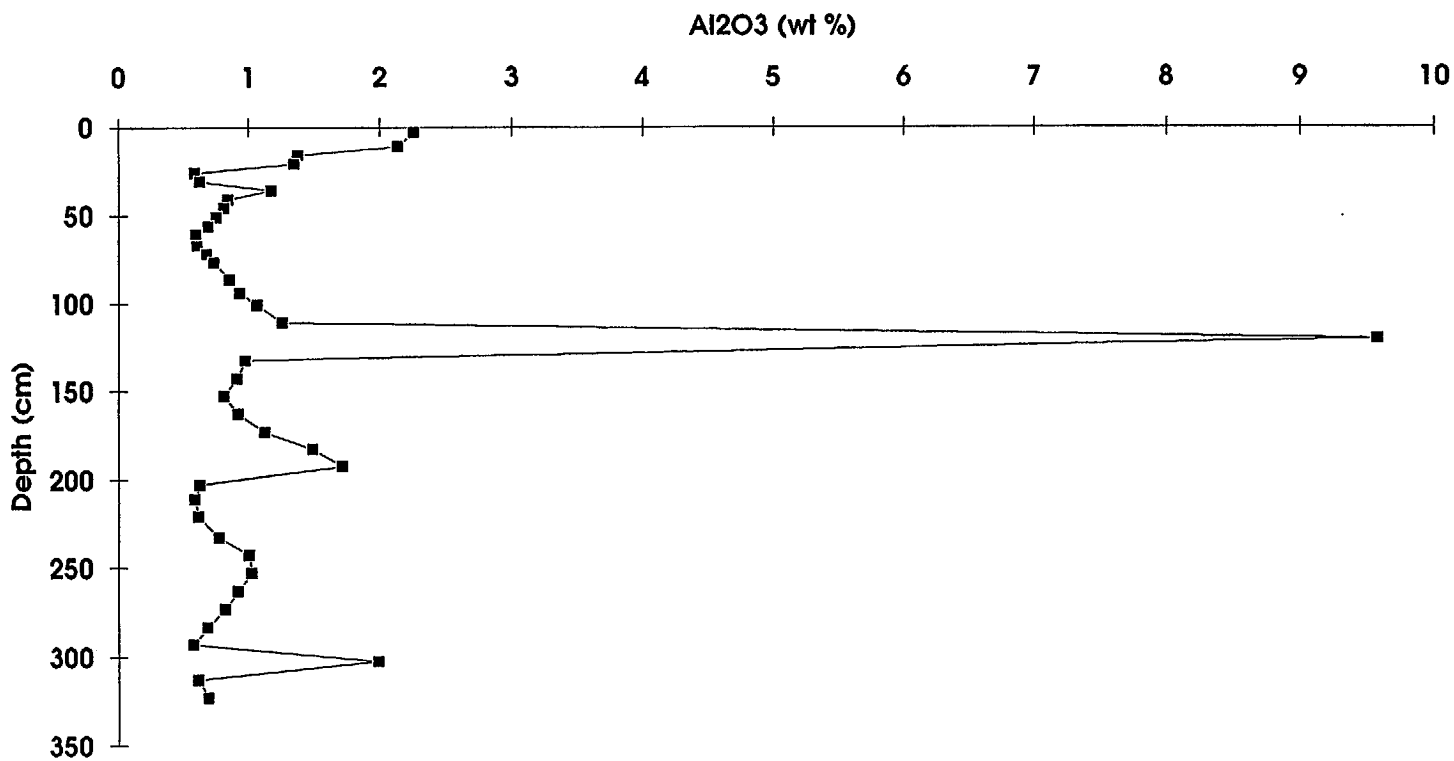
**Figure 3** Data plots of $\delta^{18}O$, percent calcium carbonate, magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$), $Al_2O_3$ (wt%) and $SiO_2$ (wt%) for core 57GC19 from the Carnarvon Terrace.


δO18
0.5
0
-0.5
-1
-1.5
-2
0
50
100
150
200
250
300
350
2
3
5
6
57GC19


%CaCO3
70
75
80
85
90
95
100
0
50
100
150
200
250
300
350
Depth (cm)
2
3
5
6
57GC19

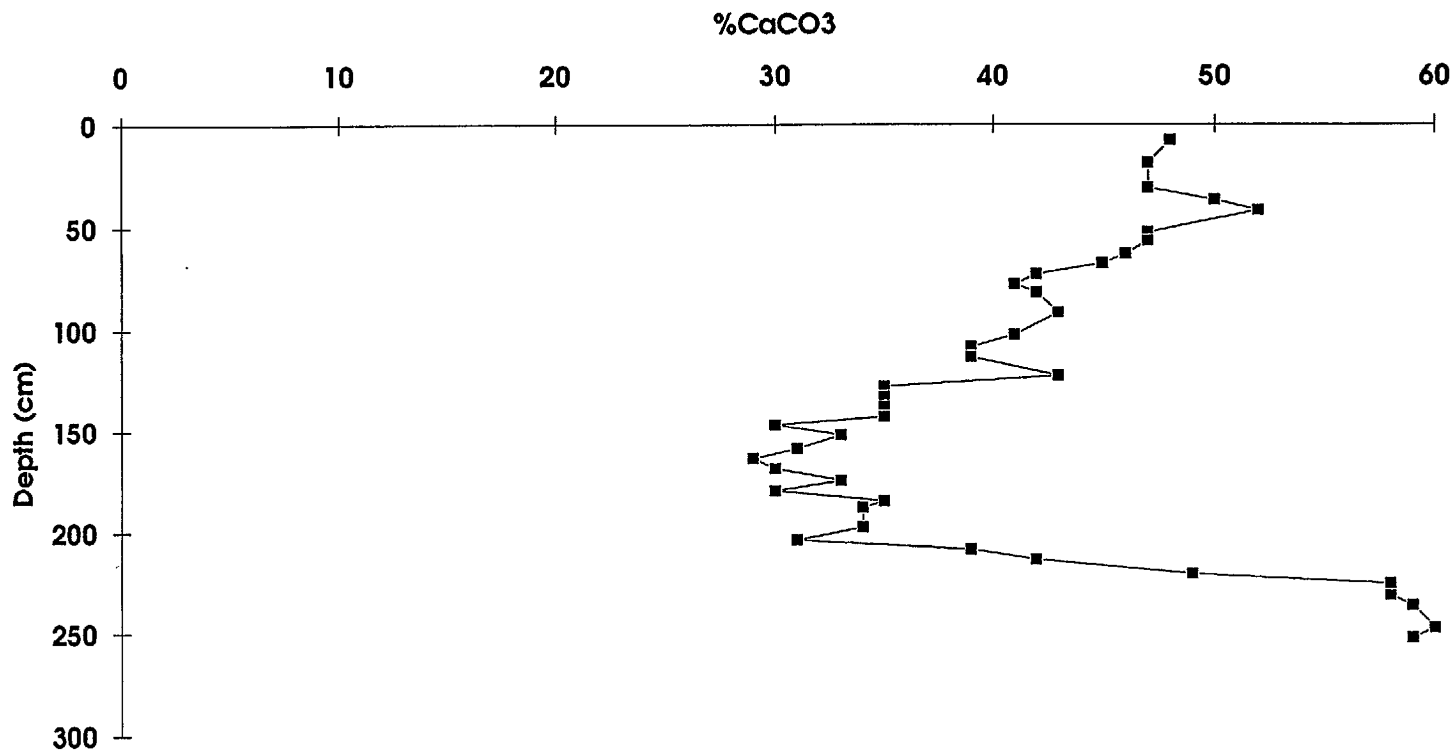

Magnetic Susceptibility (uGauss)
-10.00
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
Depth (cm)
0
50
100
150
200
250
300
350


SiO2 (wt%)
0 1 2 3 4 5 6 7 8 9
Depth (cm)
0 50 100 150 200 250 300 350


Al2O3 (wt %)
0
1
2
3
4
5
6
7
8
9
10
Depth (cm)
0
50
100
150
200
250
300
350

## Appendix B Data plots from the East Australian Continental Margin

**Figure 1** Data plots of percent calcium carbonate and magnetic susceptibility ($\mu$Gauss oe$^{-1}$.cm$^{3}$) for core 71GC007 from offshore Evans Head NSW.




71GC007

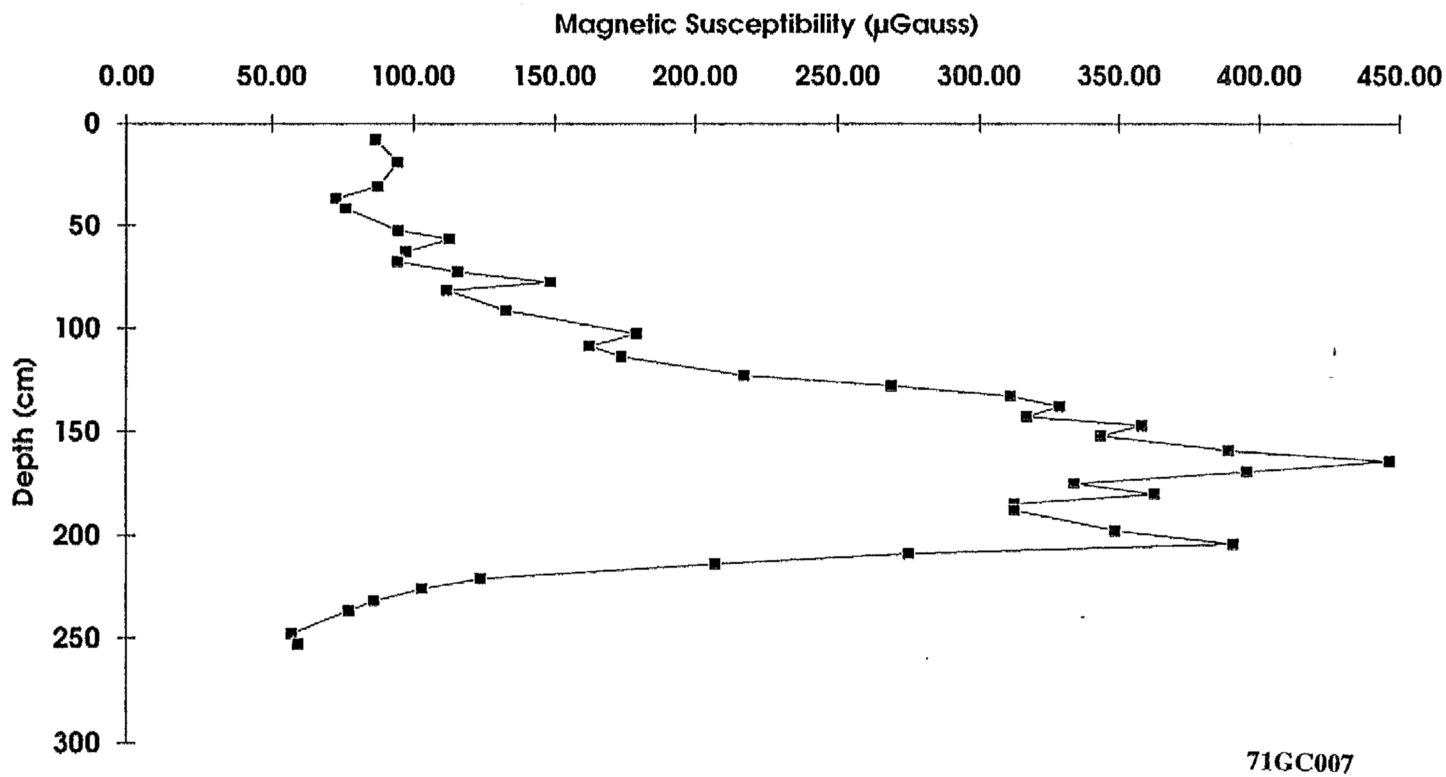
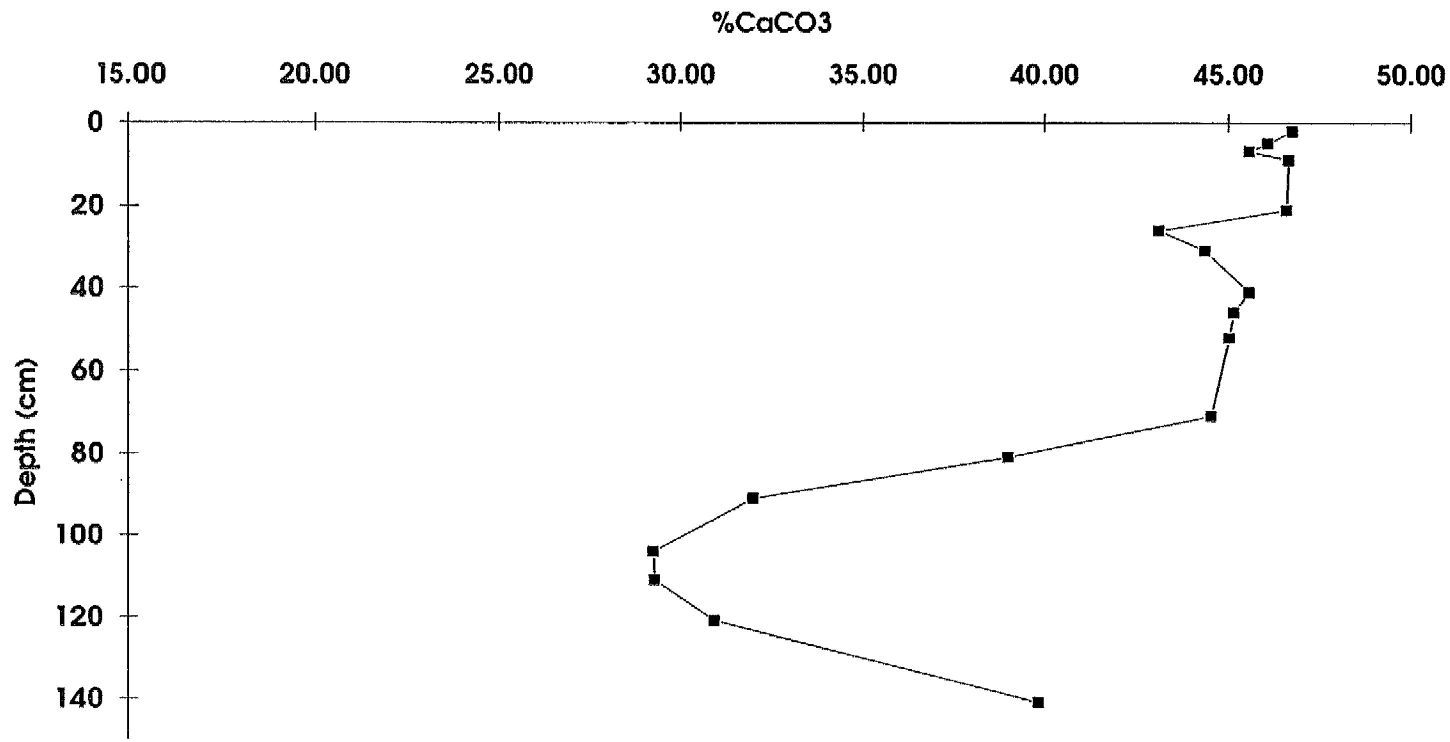
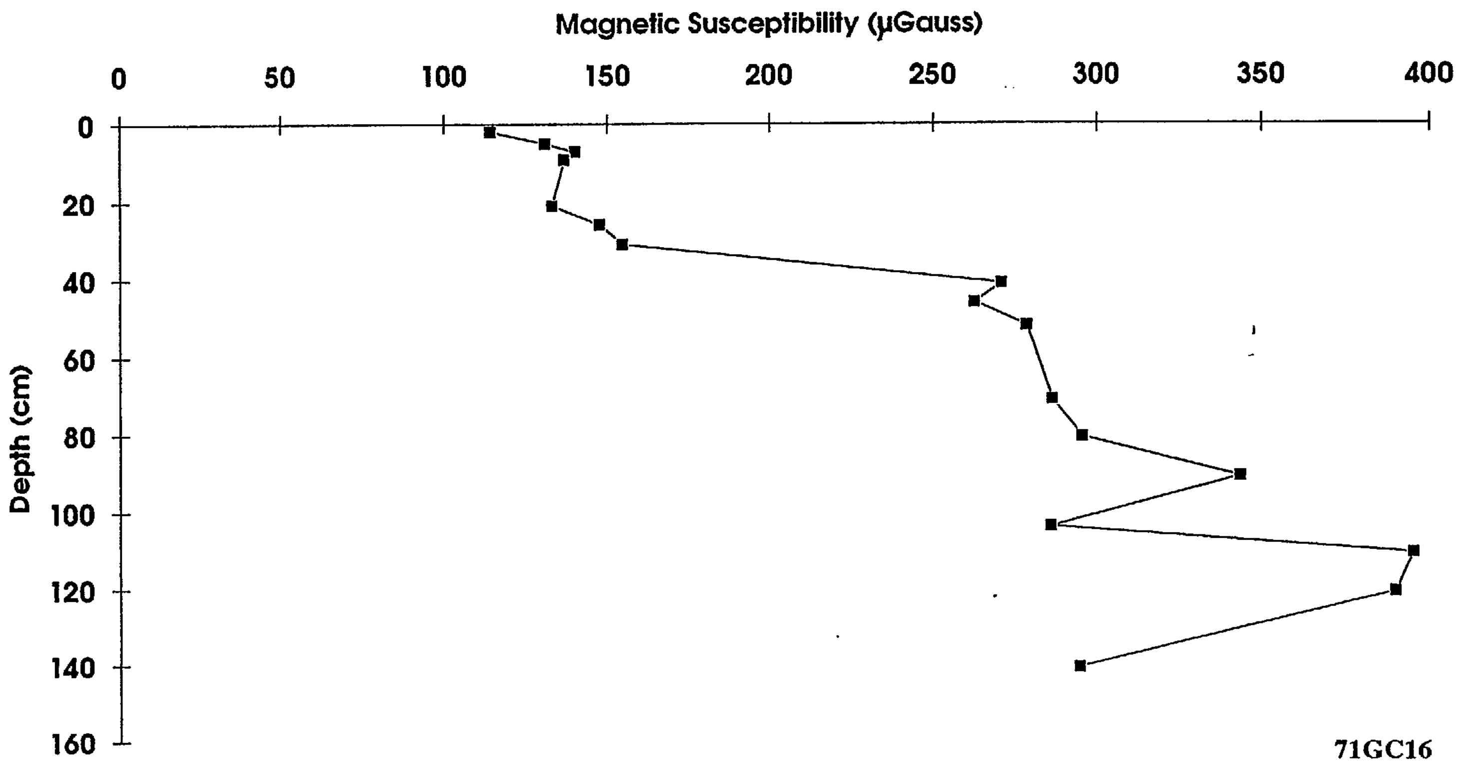
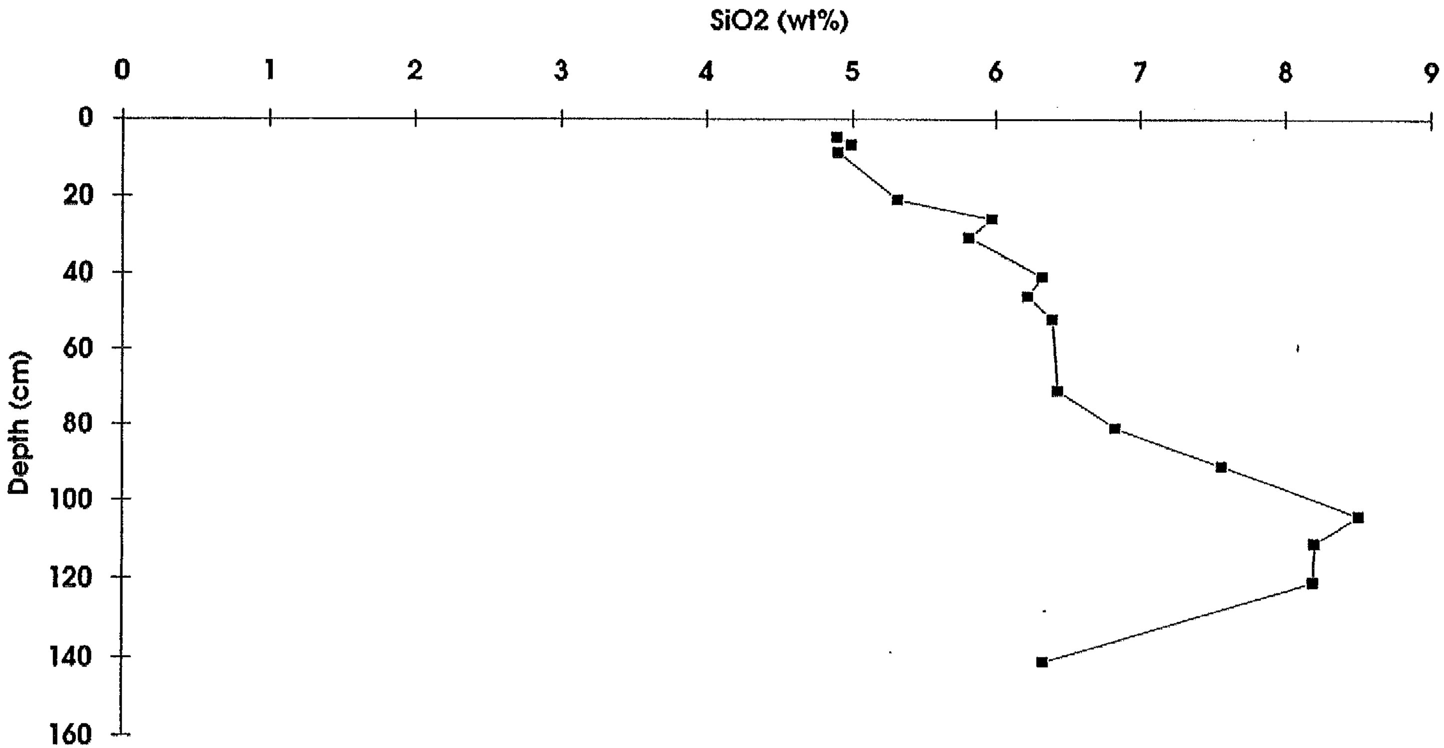

Magnetic Susceptibility (µGauss)
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
Depth (cm)
0
50
100
150
200
250
300
71GC007

**Figure 2** Data plots of percent calcium carbonate, magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$), $SiO_2$ (wt%) and $Al_2O_3$ (wt%) for core 71GC16 from offshore Evans Head NSW.


%CaCO3
15.00
20.00
25.00
30.00
35.00
40.00
45.00
50.00
Depth (cm)
0
20
40
60
80
100
120
140

71GC16


Magnetic Susceptibility (µGauss)
0
50
100
150
200
250
300
350
400
Depth (cm)
0
20
40
60
80
100
120
140
160
71GC16




71GC16

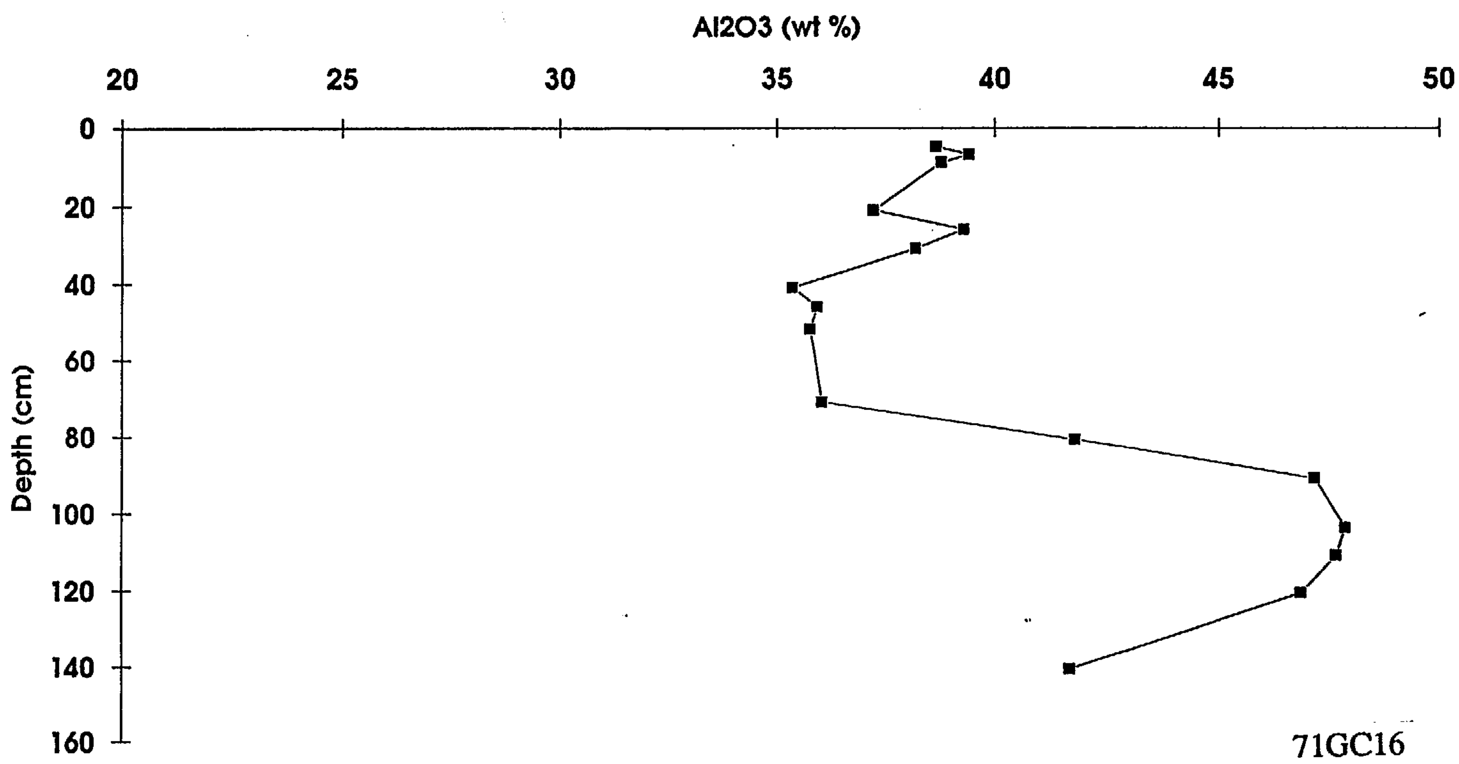
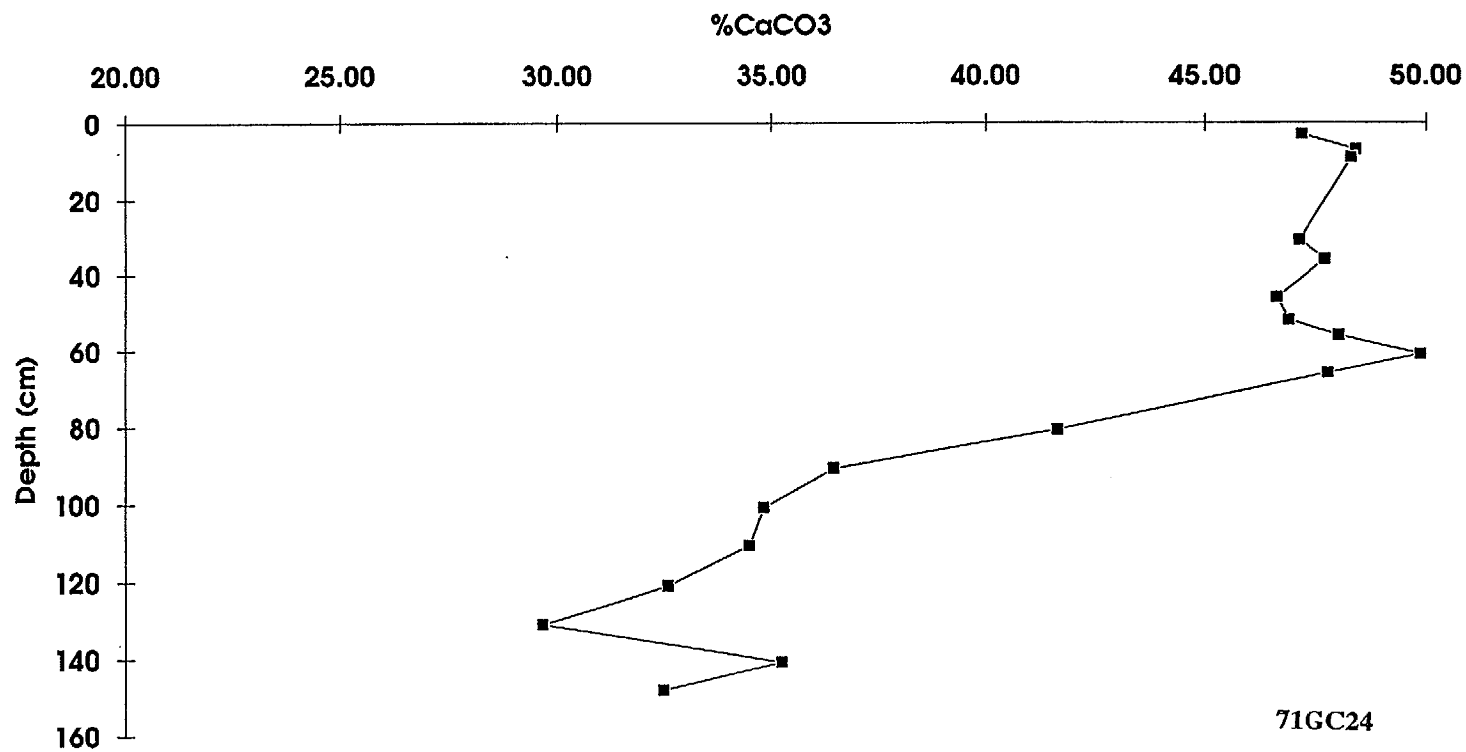
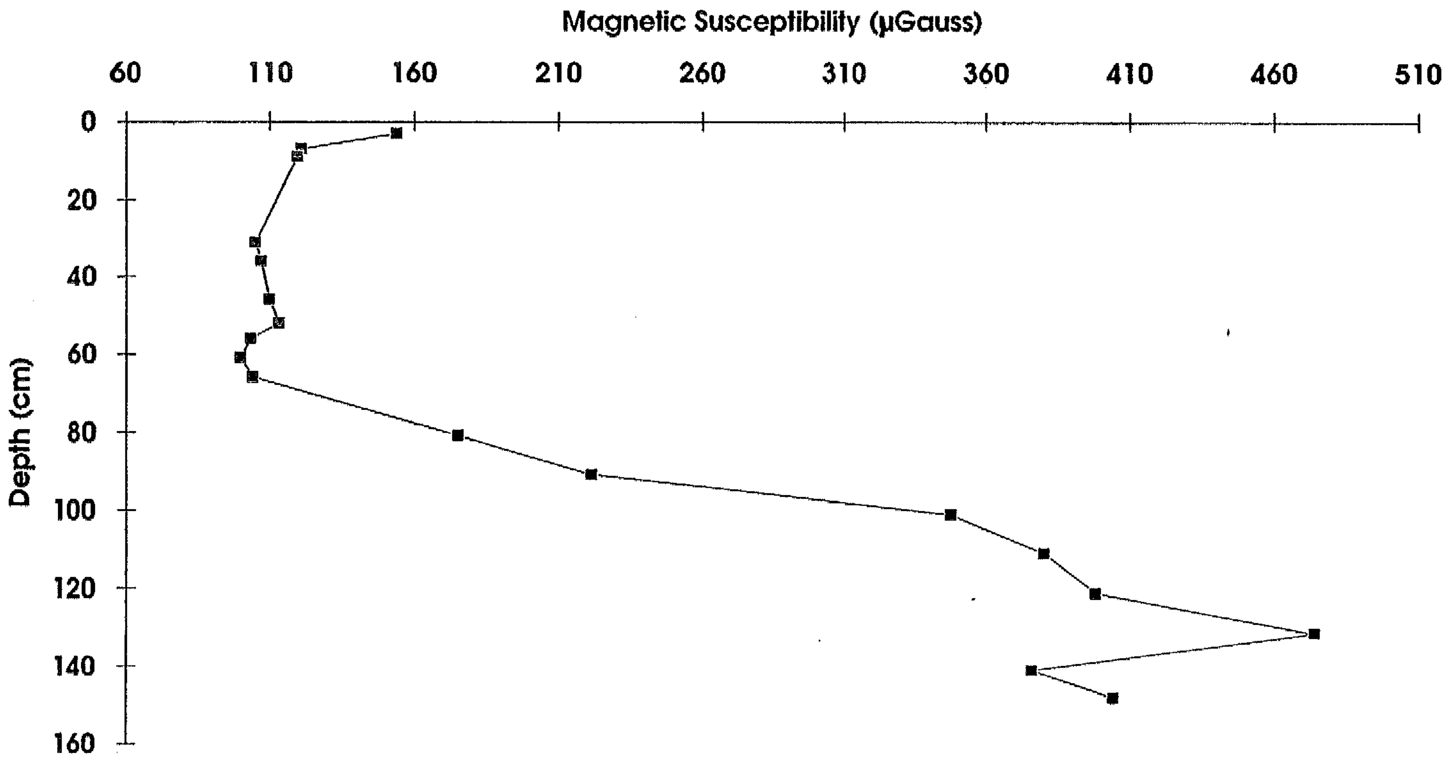
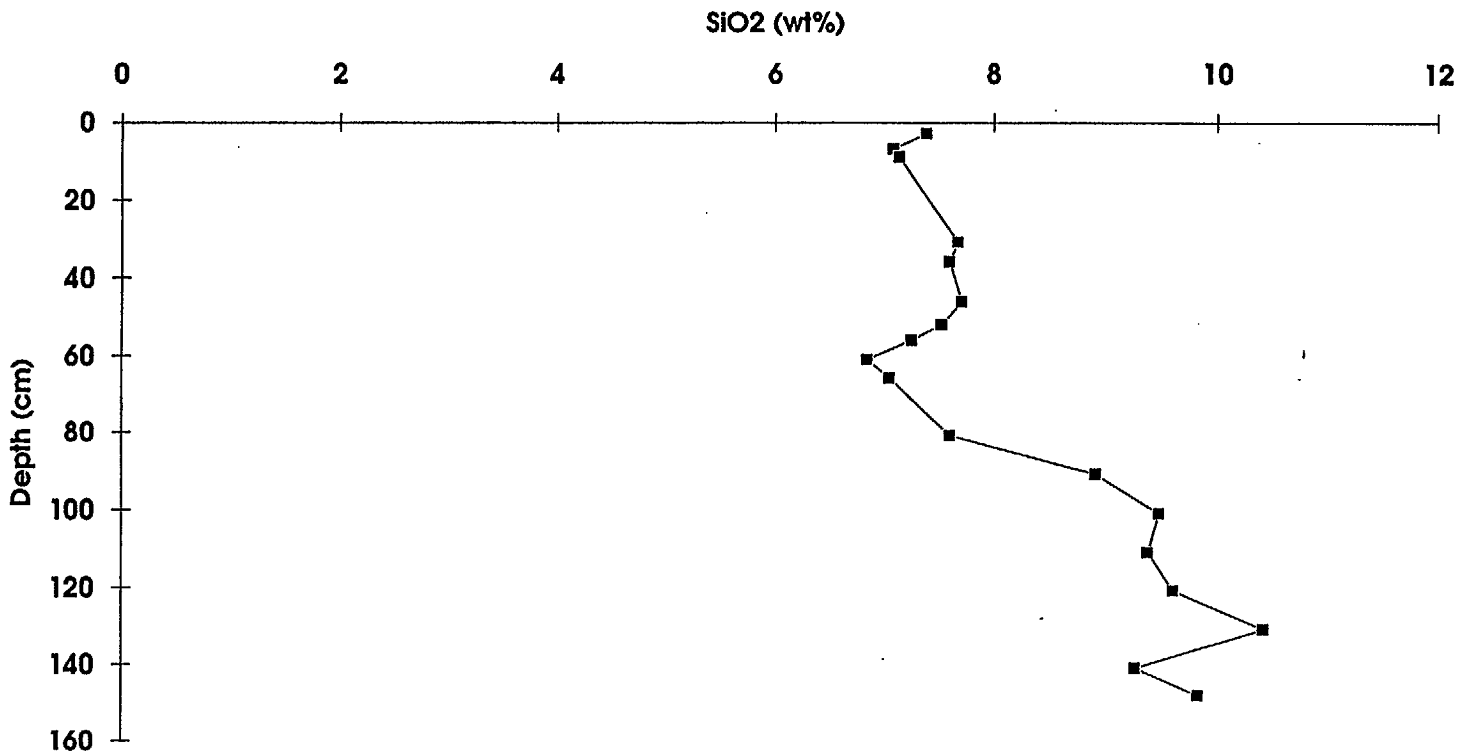

Al2O3 (wt %)
20
25
30
35
40
45
50
0
20
40
60
80
100
120
140
160
Depth (cm)
71GC16

**Figure 3** Data plots of percent calcium carbonate, magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$), $SiO_2$ (wt%) and $Al_2O_3$ (wt%) for core 71GC24 offshore Evans Head NSW.


%CaCO3
20.00
25.00
30.00
35.00
40.00
45.00
50.00
Depth (cm)
0
20
40
60
80
100
120
140
160
71GC24


Magnetic Susceptibility (µGauss)
60
110
160
210
260
310
360
410
460
510
Depth (cm)
0
20
40
60
80
100
120
140
160

71GC24




71GC24

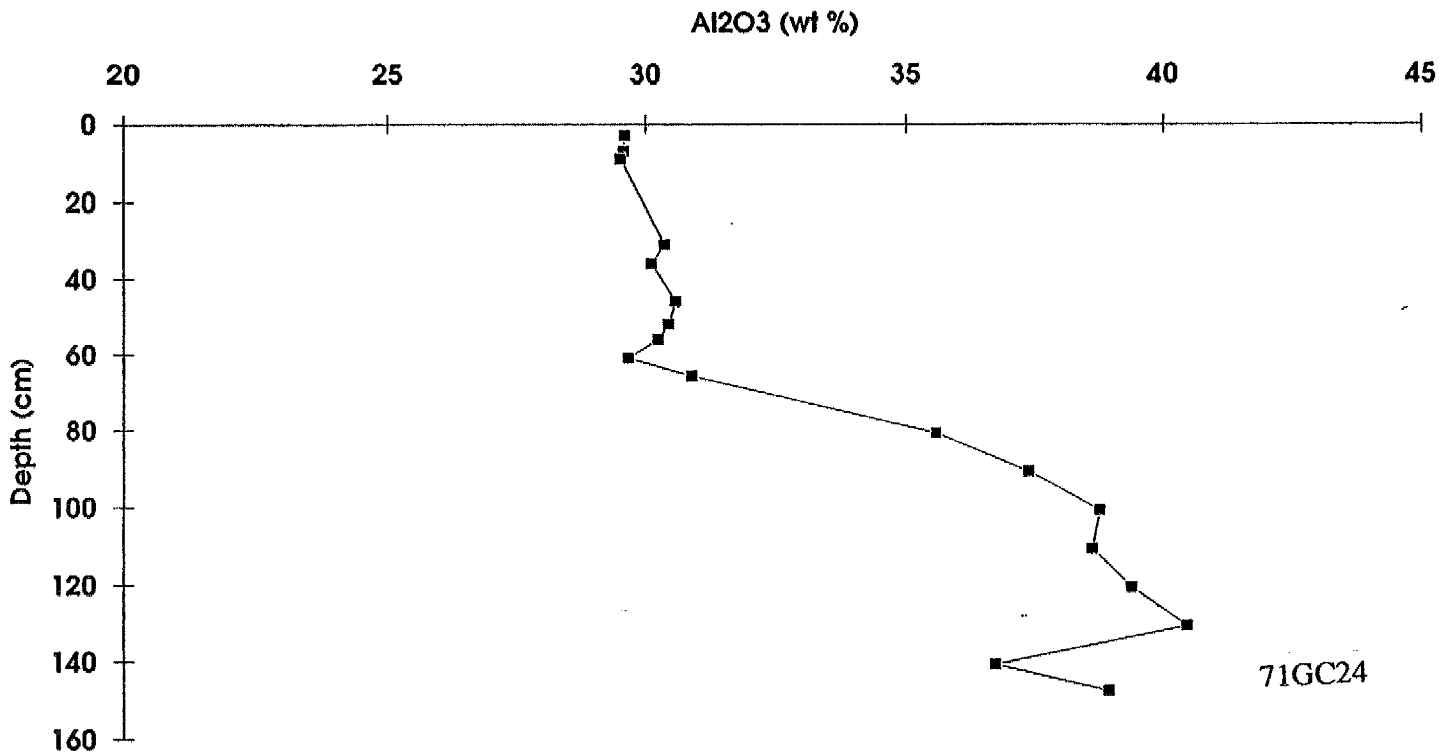
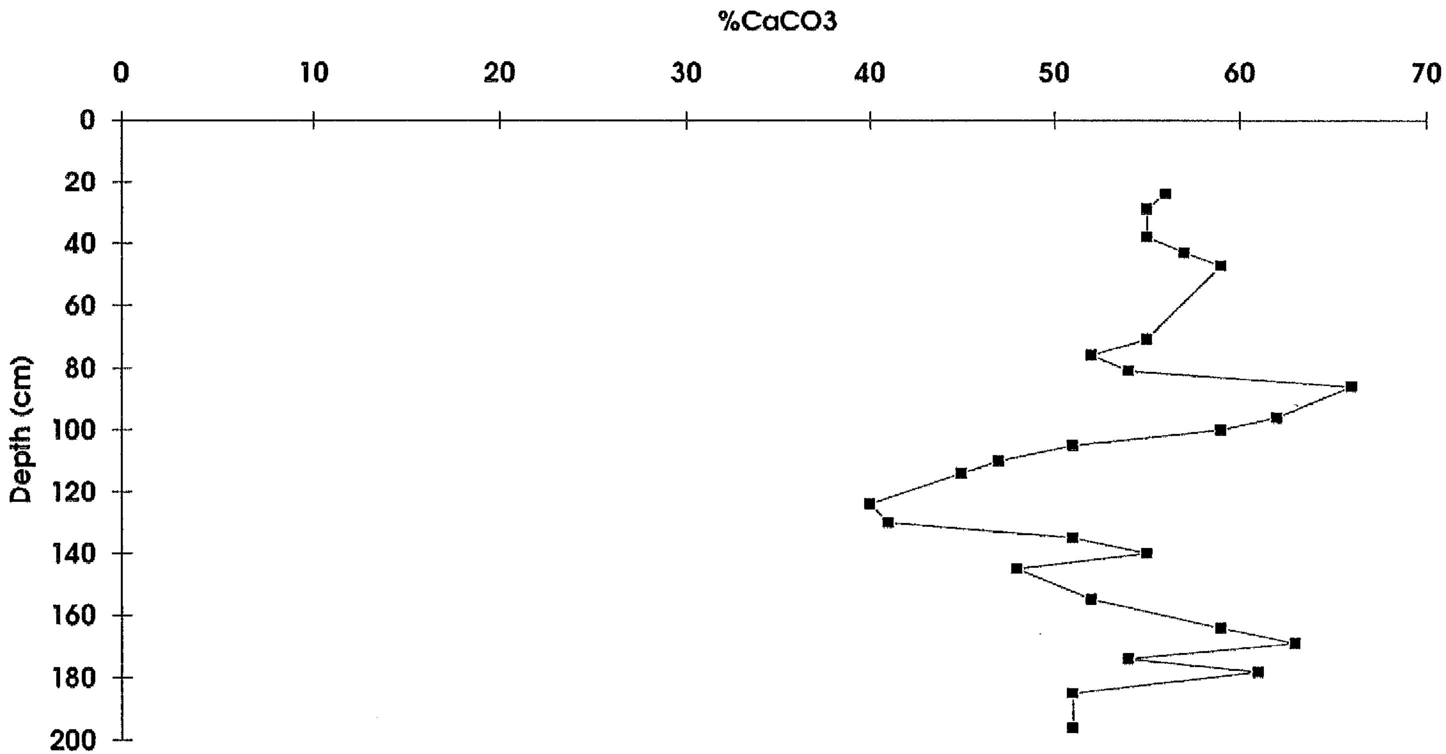
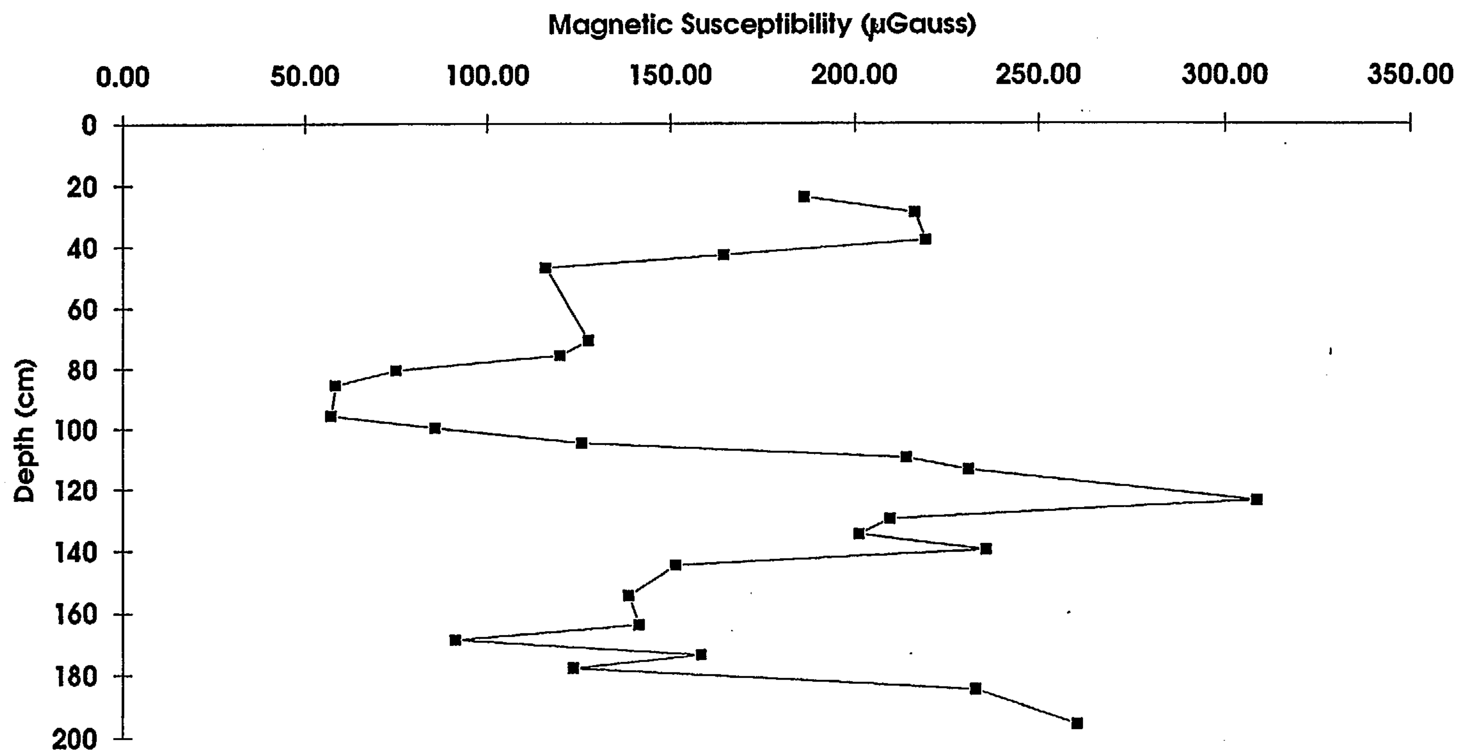

Al2O3 (wt %)
20
25
30
35
40
45
0
20
40
60
80
100
120
140
160
Depth (cm)
71GC24

**Figure 4** Data plots of percent calcium carbonate and magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^{3}$) for core 71GC026, offshore Evans Head NSW.

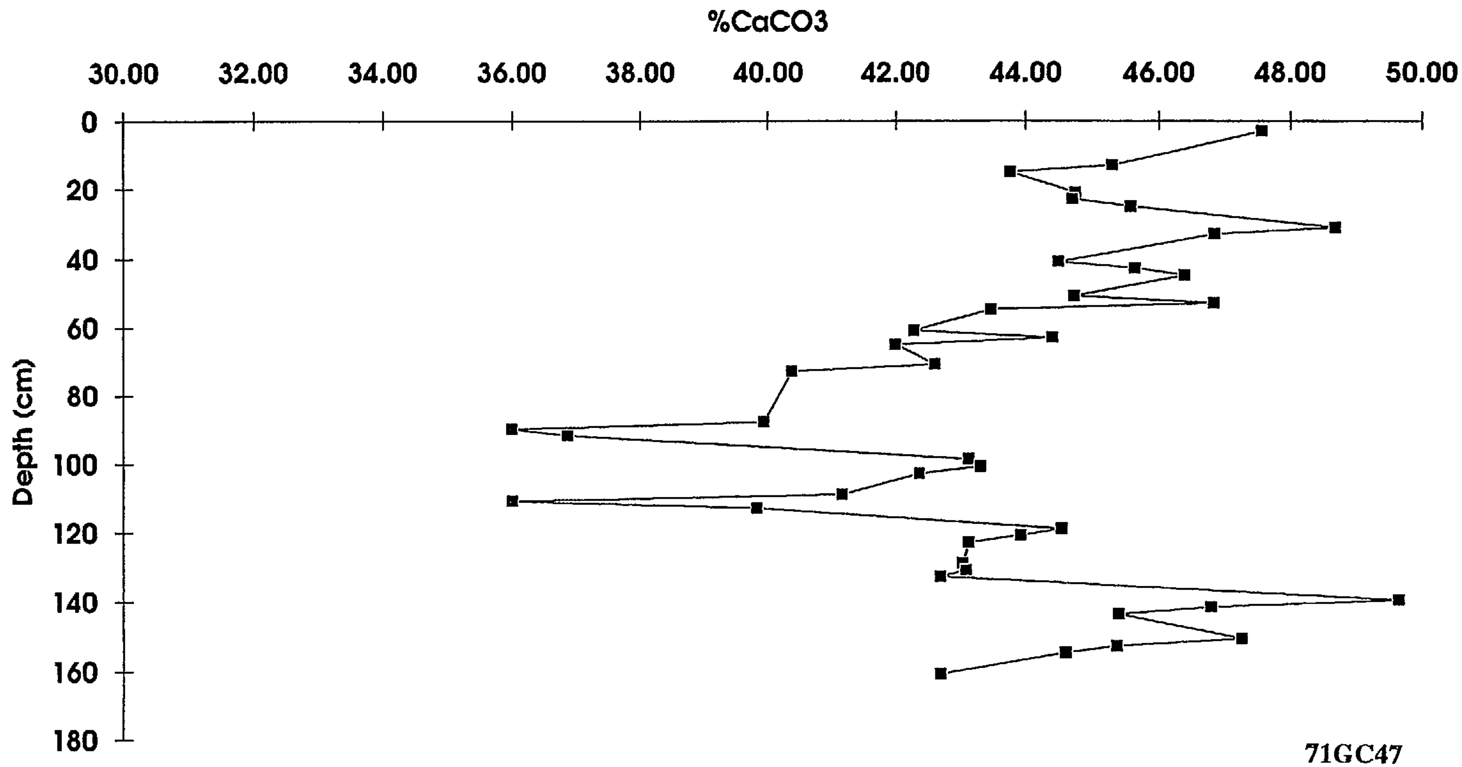

%CaCO3
0
10
20
30
40
50
60
70
Depth (cm)
0
20
40
60
80
100
120
140
160
180
200

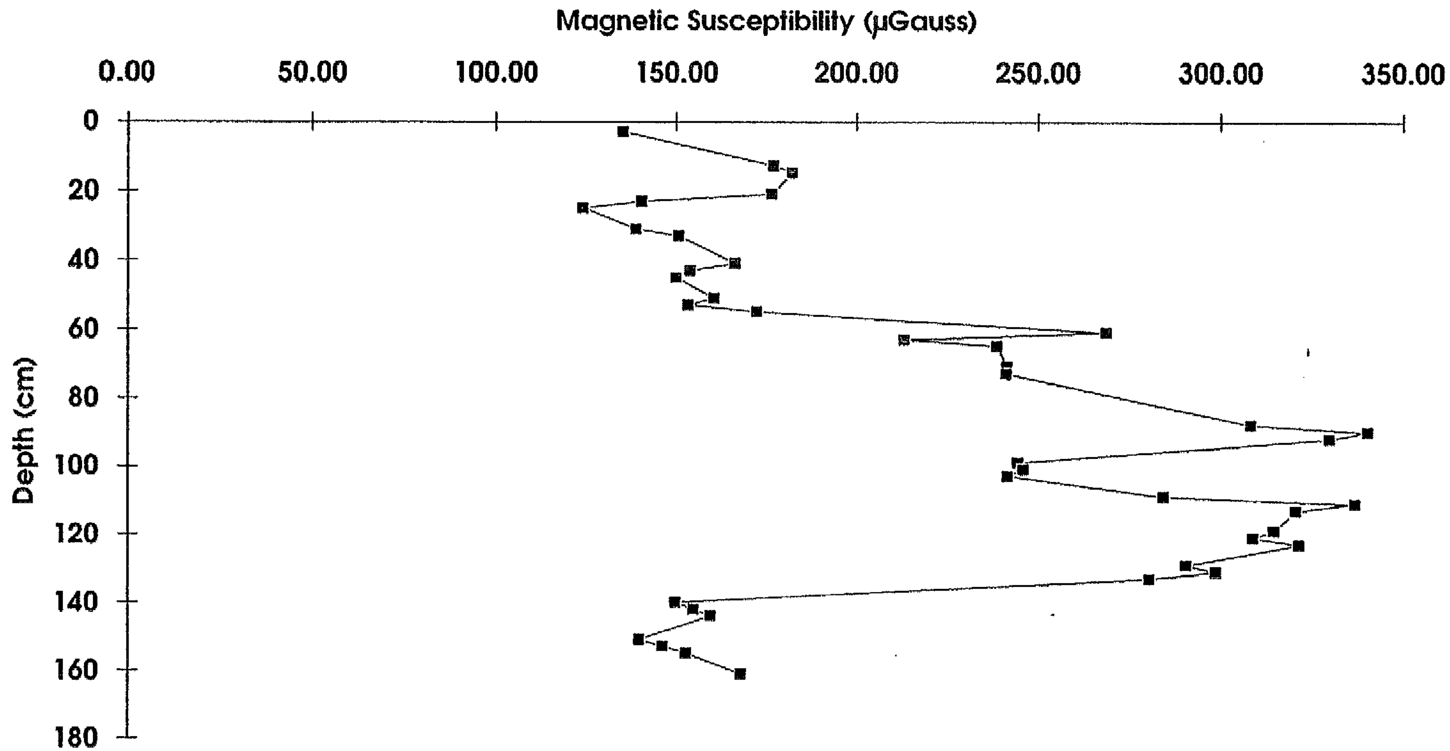
71GC026


Magnetic Susceptibility (µGauss)
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
Depth (cm)
0
20
40
60
80
100
120
140
160
180
200

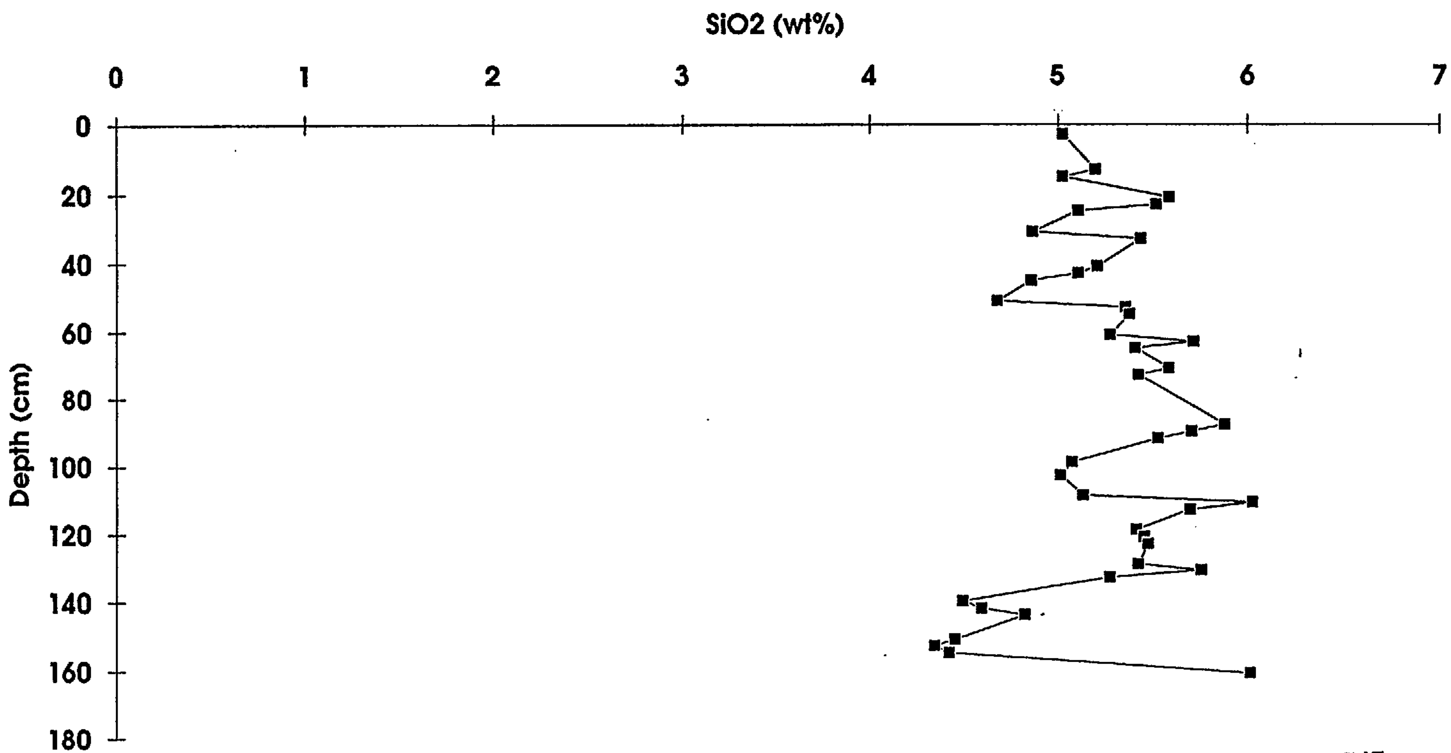
71GC026

**Figure 5** Data plots of percent calcium carbonate, magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$), $SiO_2$ (wt%) and $Al_2O_3$ (wt%) for core 71GC47, offshore Evans Head NSW.

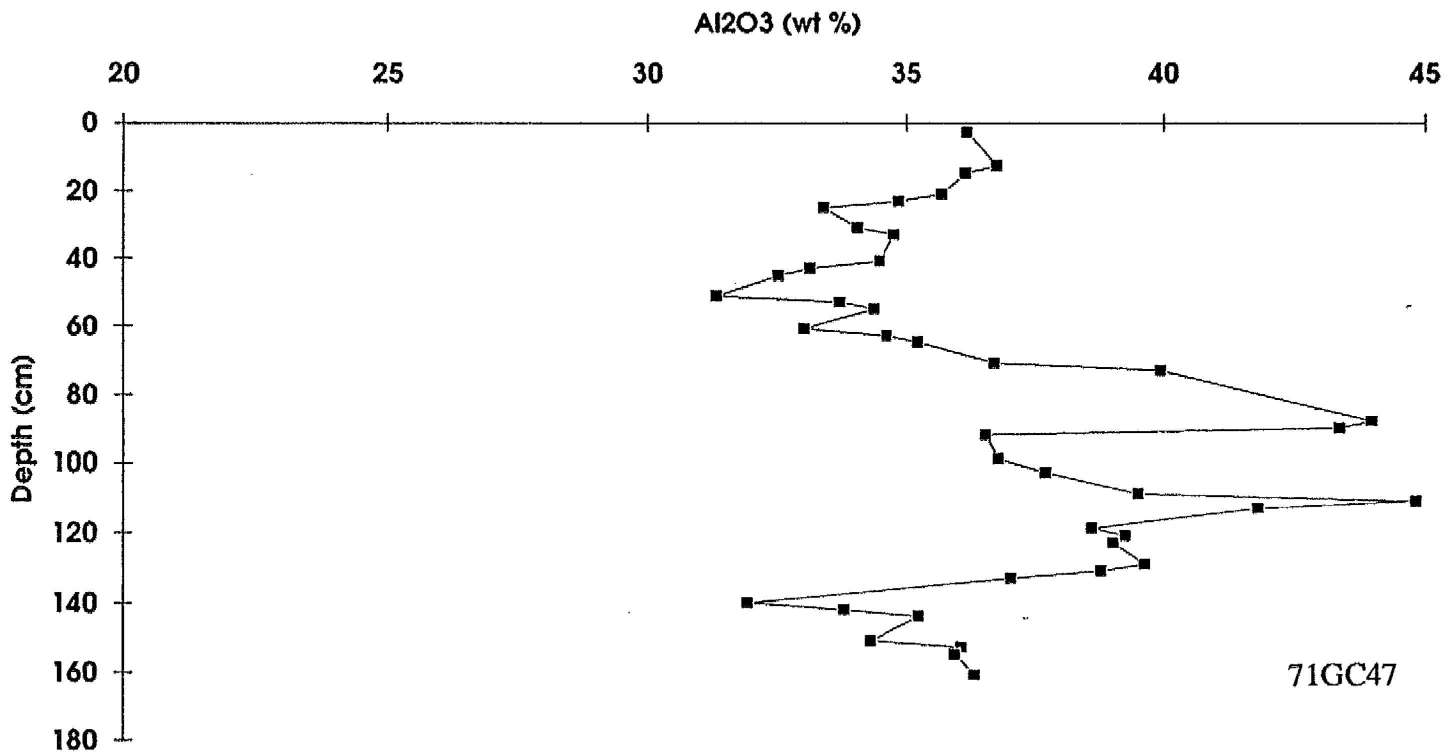

%CaCO3
30.00
32.00
34.00
36.00
38.00
40.00
42.00
44.00
46.00
48.00
50.00
Depth (cm)
0
20
40
60
80
100
120
140
160
180
71GC47


Magnetic Susceptibility (µGauss)
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
Depth (cm)
0
20
40
60
80
100
120
140
160
180

71GC47

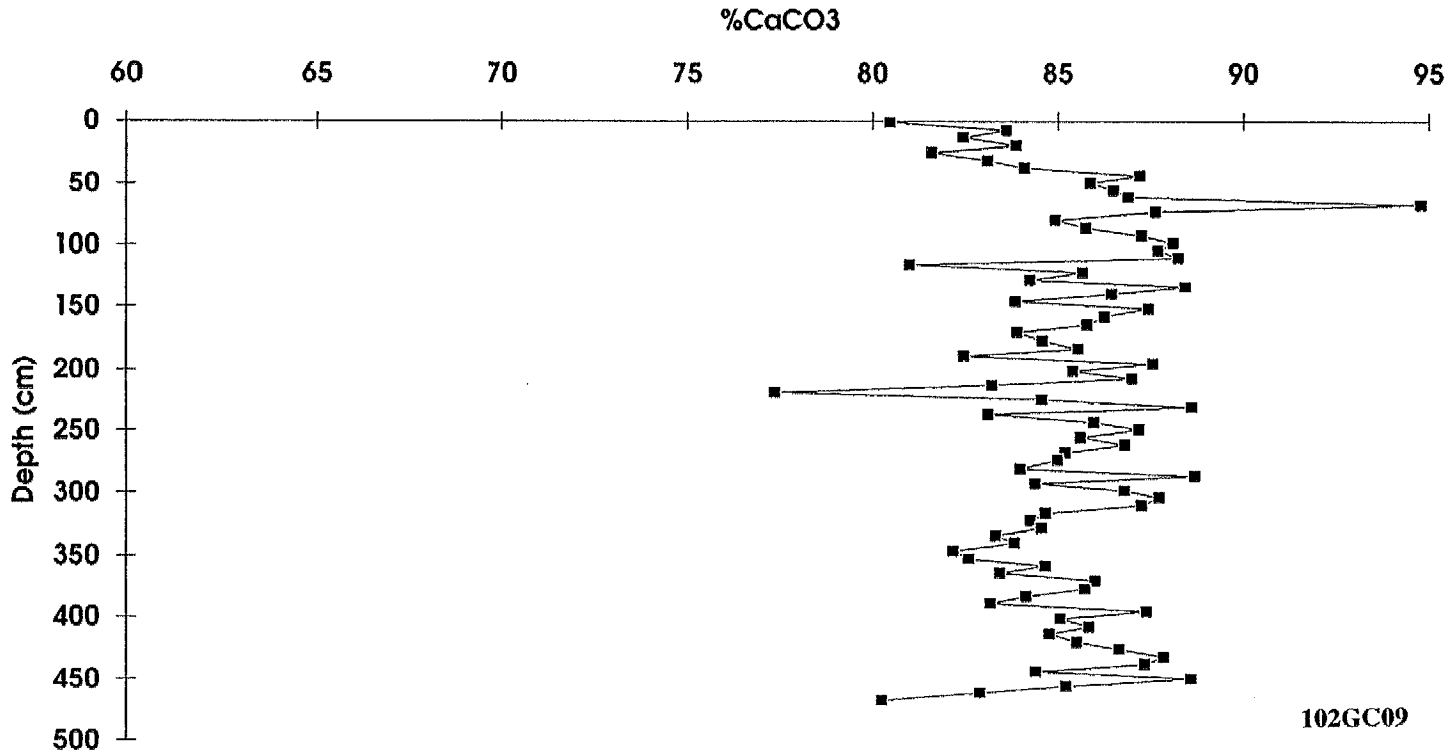



71GC47


Al2O3 (wt %)
20
25
30
35
40
45
0
20
40
60
80
100
120
140
160
180
Depth (cm)
71GC47

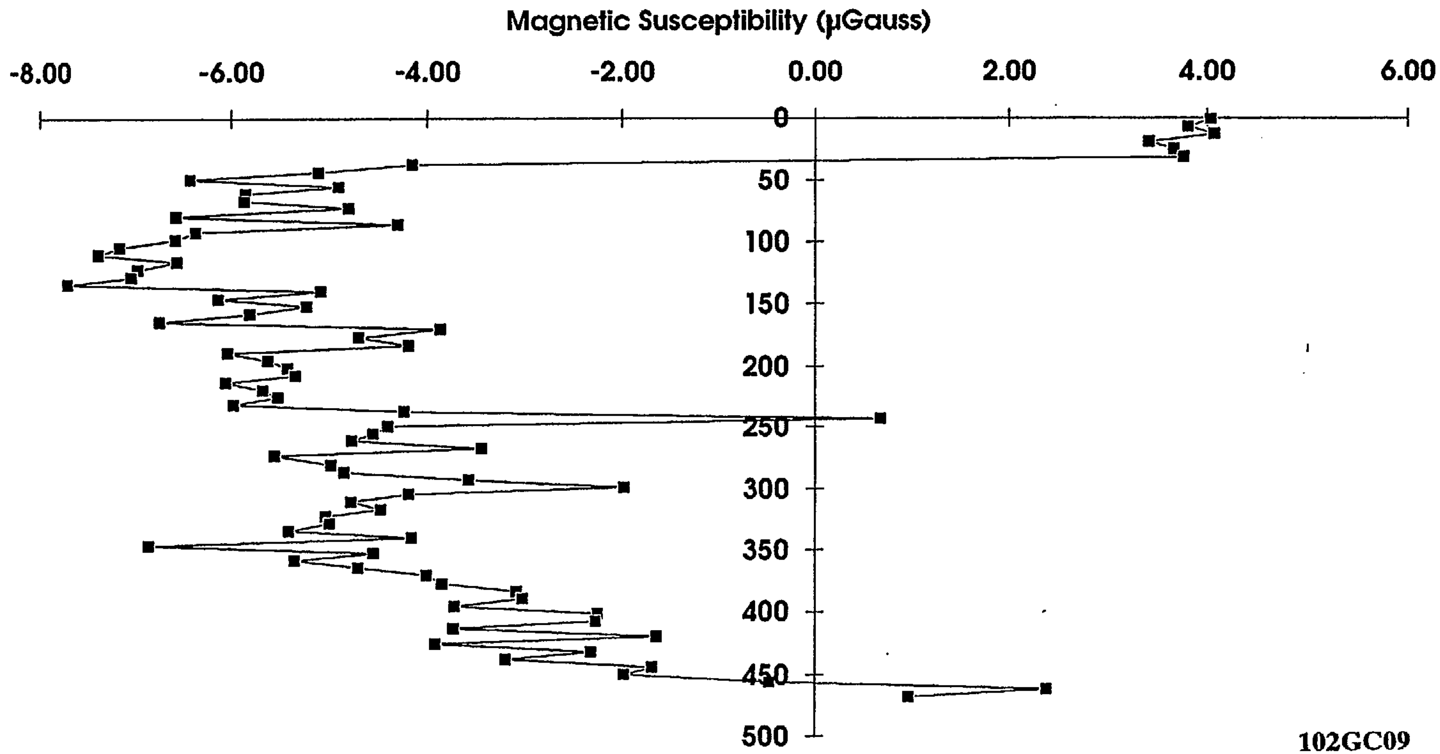
## Appendix C Data plots from the South Australian Continental Margin

**Figure 1** Data plots of percent calcium carbonate and magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^3$) for core 102GC09 from the Eyre Terrace.


%CaCO3
60
65
70
75
80
85
90
95
Depth (cm)
0
50
100
150
200
250
300
350
400
450
500
102GC09



C2

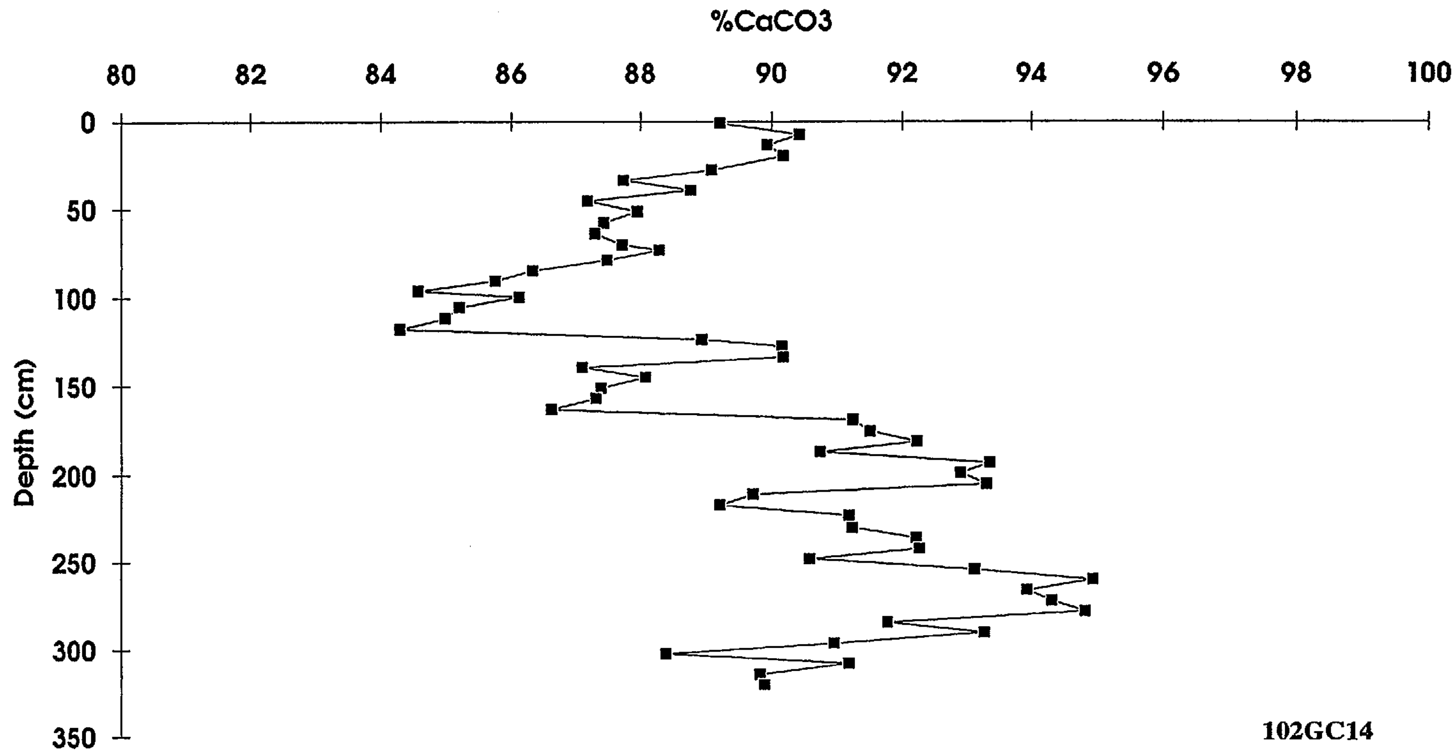


Magnetic Susceptibility (μGauss)
-8.00
-6.00
-4.00
-2.00
0.00
2.00
4.00
6.00
0
50
100
150
200
250
300
350
400
450
500
102GC09




C3

**Figure 2** Data plots of percent calcium carbonate and magnetic susceptibility (µGauss $oe^{-1}.cm^{3}$) for core 102GC14, from the west Ceduna Terrace.


%CaCO3
80
82
84
86
88
90
92
94
96
98
100
Depth (cm)
0
50
100
150
200
250
300
350
102GC14

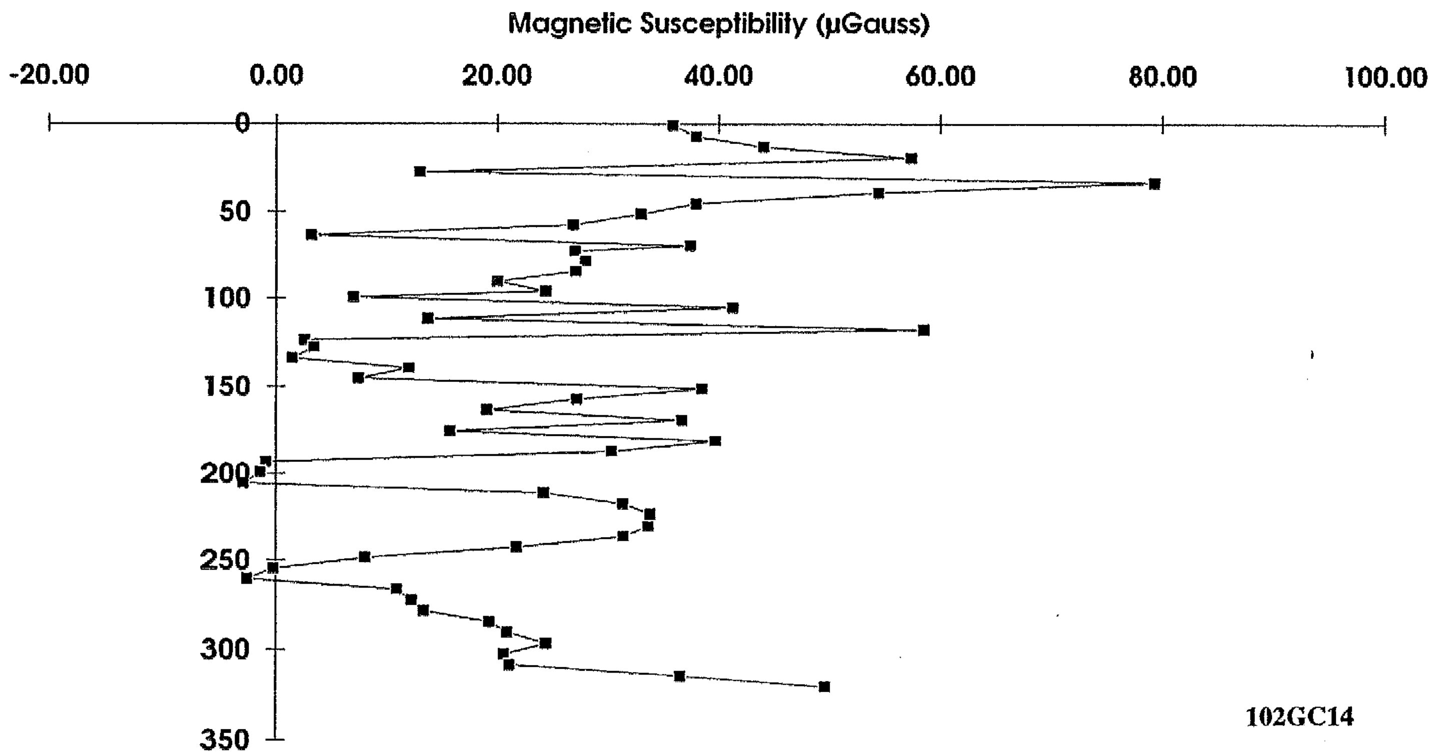
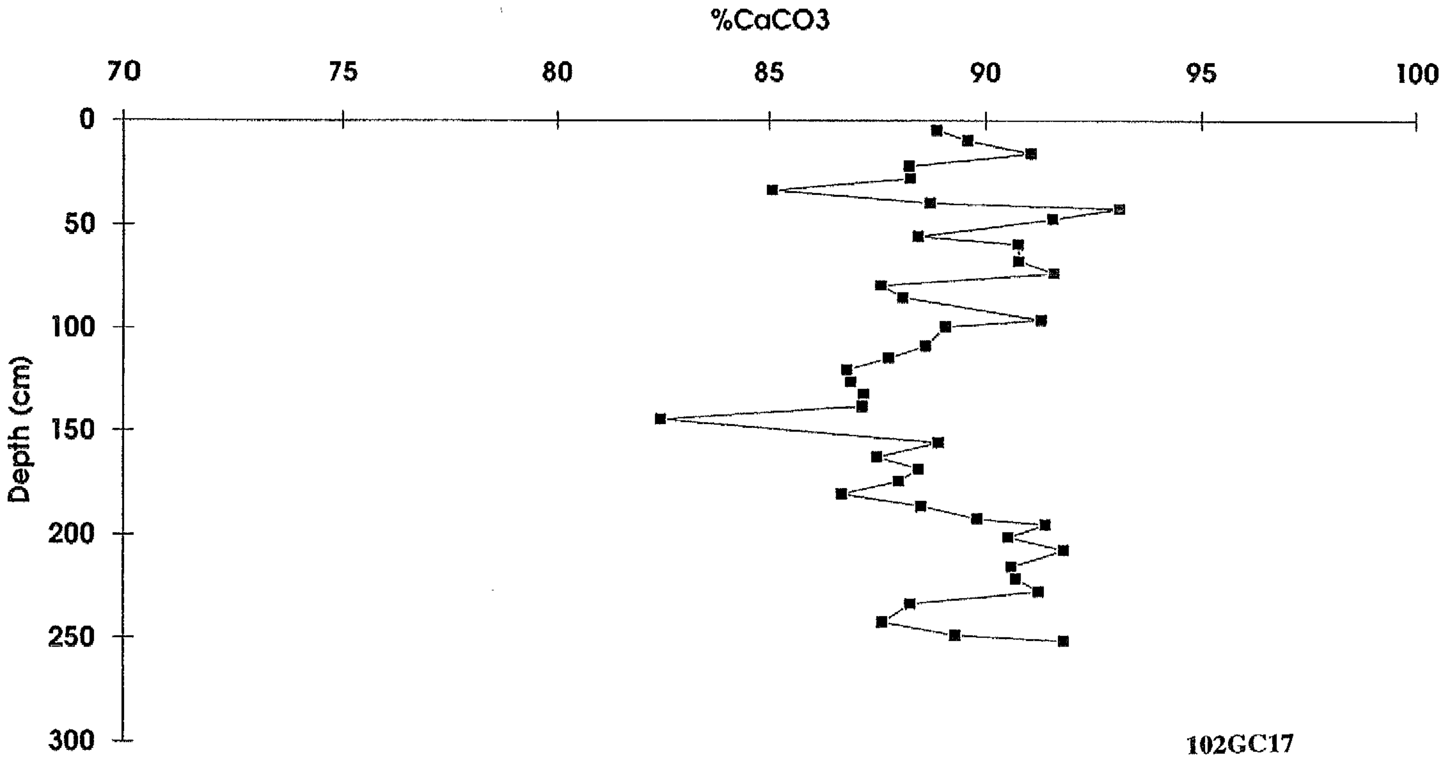
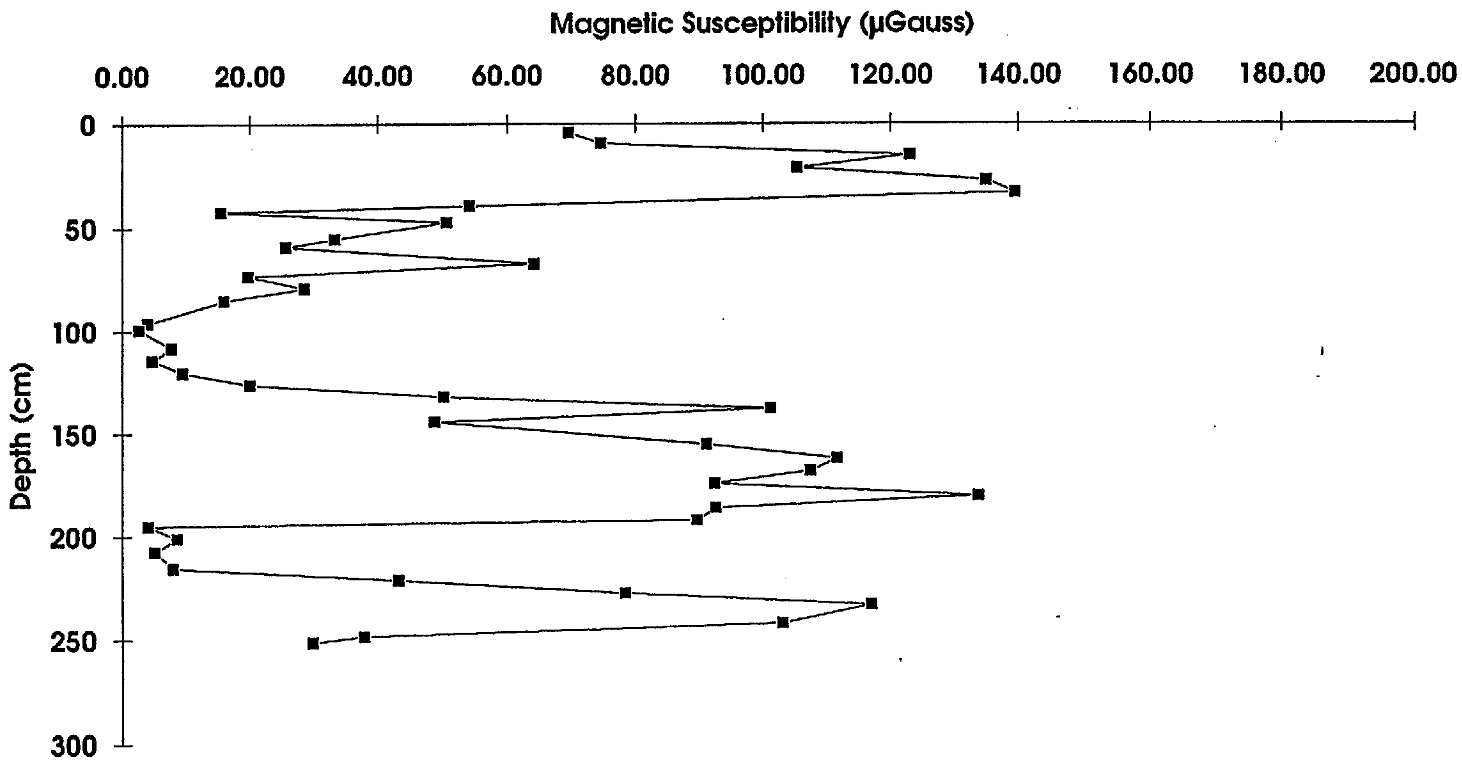

Magnetic Susceptibility (µGauss)
-20.00
0.00
20.00
40.00
60.00
80.00
100.00
0
50
100
150
200
250
300
350
102GC14

**Figure 3** Data plots of percent calcium carbonate and magnetic susceptibility ($\mu$Gauss $oe^{-1}.cm^{3}$) for core 102GC17, from the west Ceduna Terrace.


%CaCO3
70
75
80
85
90
95
100
0
50
100
150
200
250
300
Depth (cm)
102GC17


Magnetic Susceptibility (µGauss)
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
Depth (cm)
0
50
100
150
200
250
300

102GC17