Core
Recovery
Depth (mbsf)
Paleomagnetics
Brunhes–Matuyama (0.73 Ma)
Jaramillo (0.98–0.91 Ma)
Olduvai (1.88–1.66 Ma)
Matuyama–Gauss (2.48 Ma)
Caliper (FMS)
0 (Inches) 45
Gamma ray (SGR)
40 (API) 110
Bulk density (RHOB)
1.2 (g/cm^3) 1.7
Resistivity (SFLU)
0.35 (Ohm-m) 0.9
● Core data
Pipe
Openhole

Orientation
0 60 120 180 240 300 360

Formation Microscanner (FMS) images

(Dark=Conductive)

- Sediments are diatomaceous ooze with variable terrigenous content. Plio-Pleistocene sedimentation rate = 120 m/m.y.
- Cycles (~4-5 m = ~40 kyr) apparent in the gamma ray, bulk density, and resistivity logs reflect variations in the relative percentages of terrigenous and biogenic sediment content.
- These cycles are also apparent on the FMS images. Lighter intervals reflect the more resistive clay-rich layers.

- The FMS tool uses 16 electrodes on each of 4 orthogonal pads to produce detailed (2.5 mm resolution) resistivity images of the borehole wall.

- Core studies and the FMS images have demonstrated that there are smaller scale (~ 1m) sedimentary cycles superimposed on the 4-5 m cycles.
- A typical cycle characterized by an organic-carbon-rich, laminated diatomaceous ooze unit which grades upward into a bioturbated, clay-rich diatom ooze.
- The ~1m dark-light cycles on the FMS images reflect the transition from the laminated diatom-rich unit (dark=conductive=higher porosity) to the bioturbated clay-rich unit.
- The origin of these cycles is unknown, but may be related to episodes of enhanced productivity and/or basin anoxia.

Hole 798B
Core 10H
Section 7
Section depth (cm)
$CaCO_3$ (%) 0 5 10 15
Opal (%) 0 20 40 60
C_{org} (%) 2 3 4 5 6
Quartz (arbitrary units) 0 20 40 60 80
Porosity (%) 65 70 75 80
• Bioturbated, clay-rich diatomaceous ooze
• Laminated, C_{org}-rich diatomaceous ooze
CYCLE
~80 cm

Unpublished core data provided by: R. Dunbar, P. Holler, K. Follmi, and R. Stein.

- The Spectral Gamma Ray (SGR) log was converted to a time-series using paleomagnetic data.
- This time-series was compared and correlated to the Site 607 oxygen isotopic record of continental ice volume variations.
- The general correspondence between the two records suggests that variations in the supply of terrigenous sediment to the Oki Ridge may have been climatically-modulated.

Site 607 $\delta^{18}O$ (‰) (→)

Data from Ruddiman et al. (1989) and Raymo et al. (1989)

Glacial ← → Interglacial

5.0 4.0 3.0

Jaramillo
Olduvai
Matuyama–Gauss
Age (Ma)
Paleomagnetics
Increasing terrigenous content
80 60 40
Hole 798B Gamma ray (–)