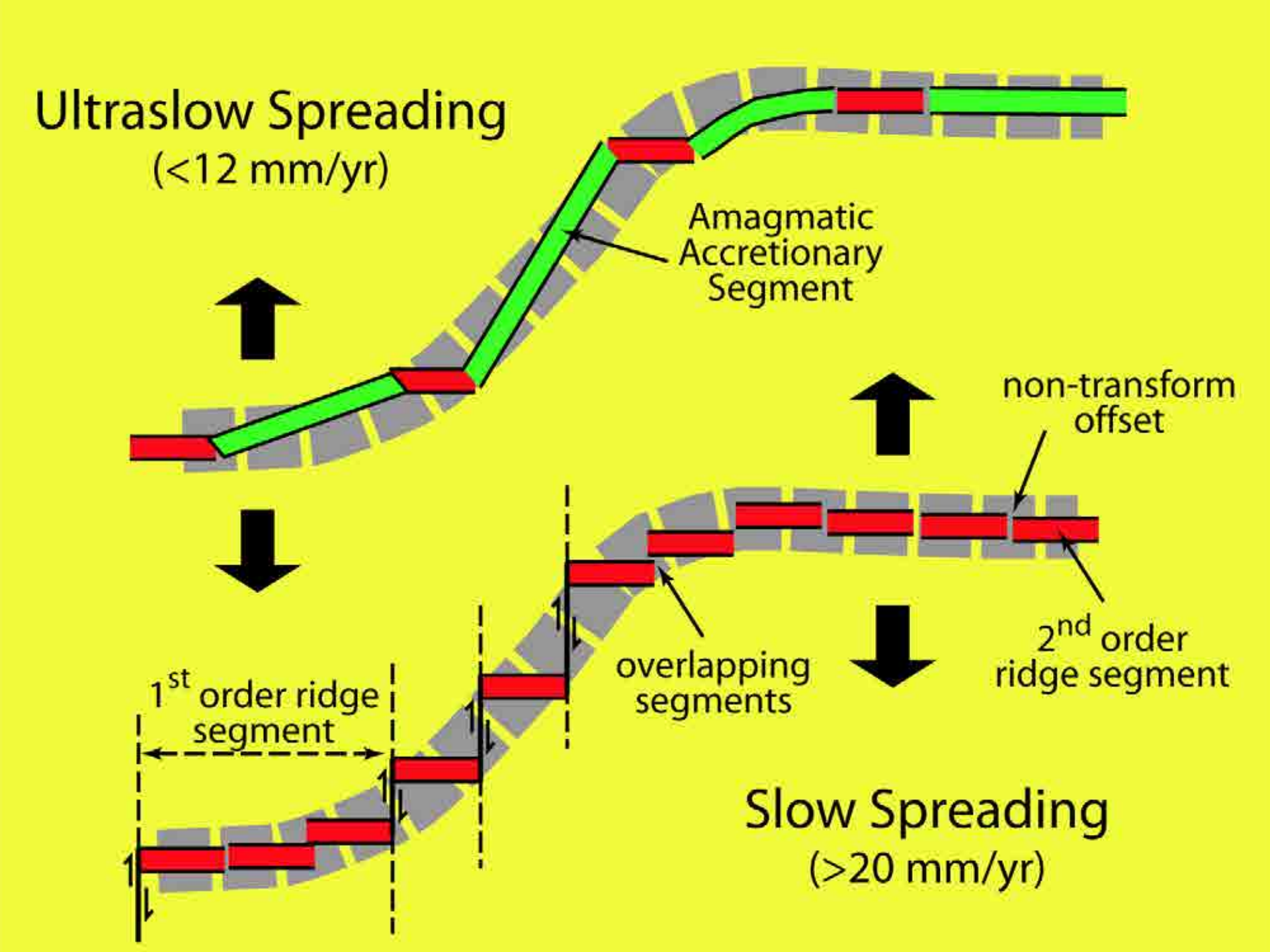
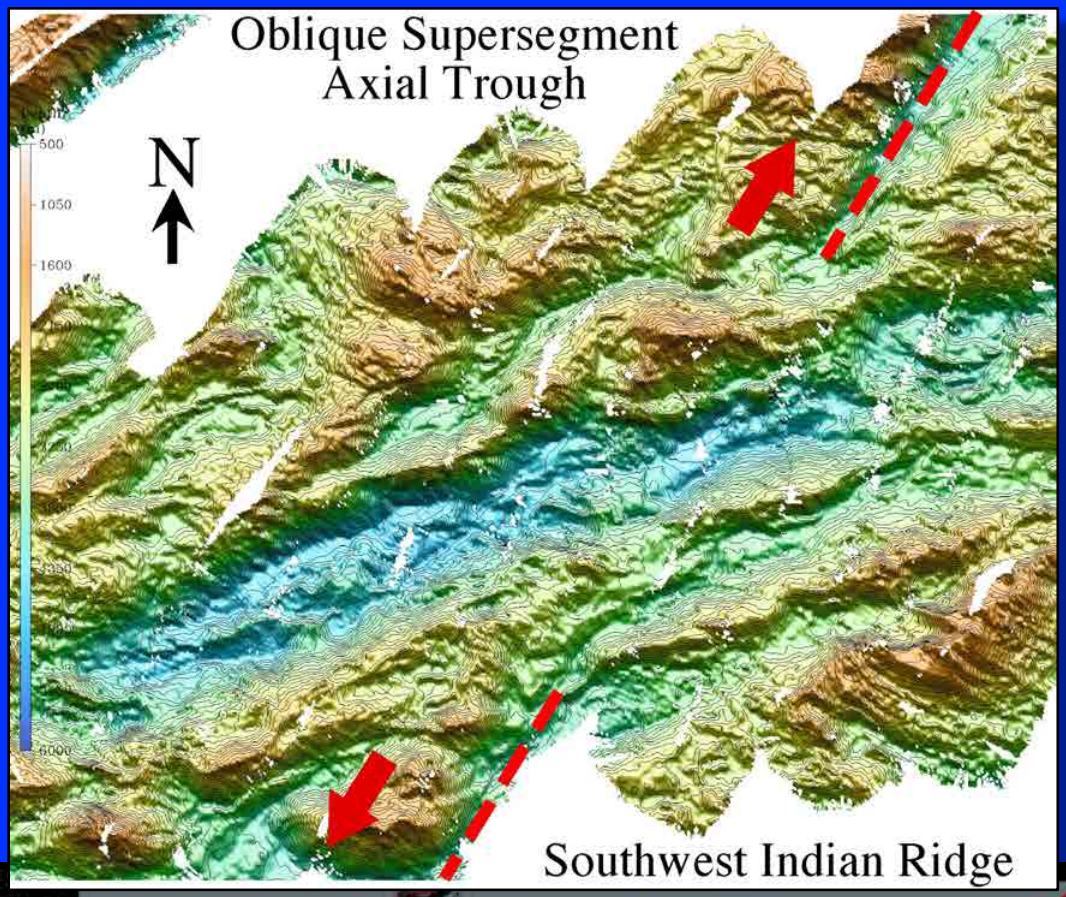
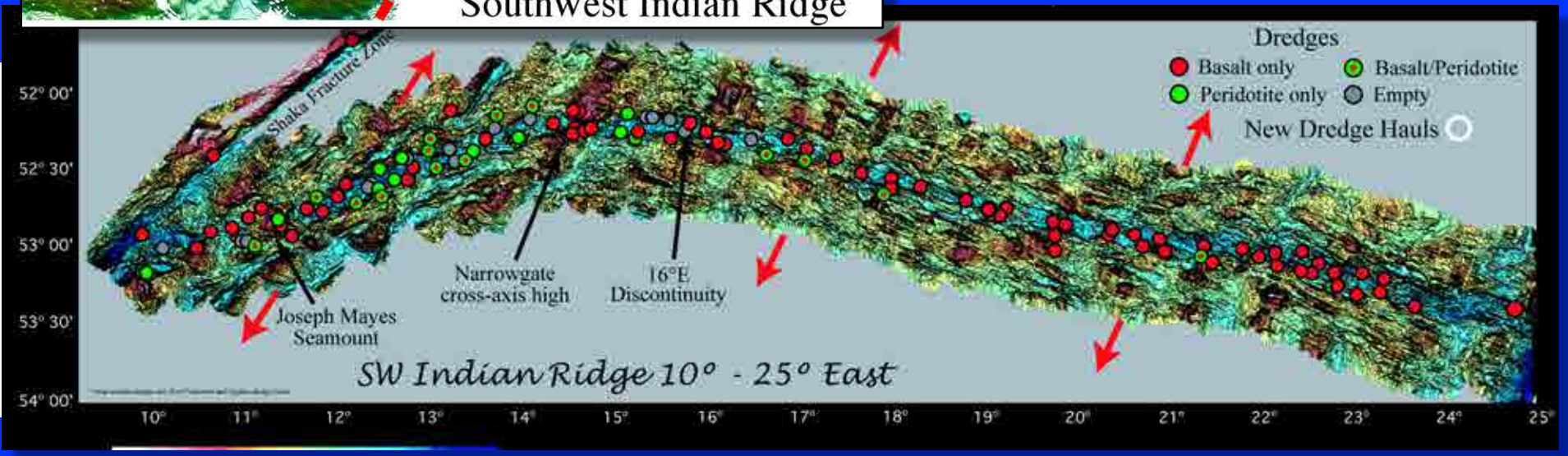
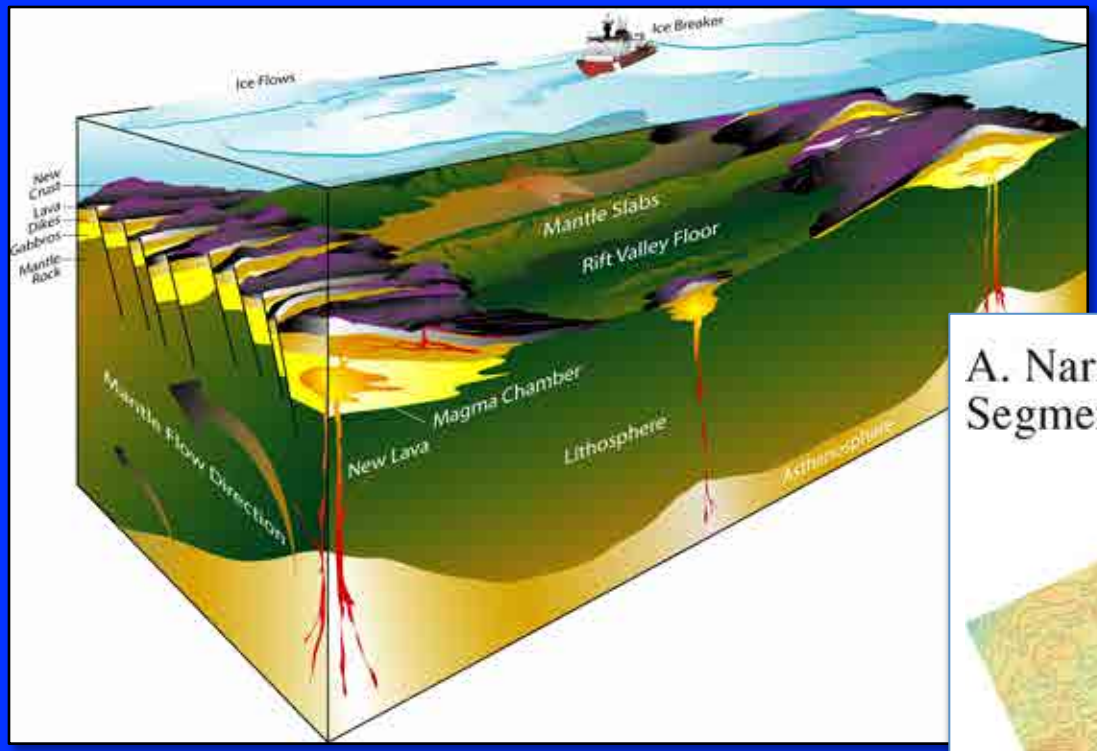

Ultraslow Spreading
(<12 mm/yr)
Amagmatic
Accretionary
Segment
non-transform
offset
2nd order
ridge segment
overlapping
segments
1st order ridge
segment
Slow Spreading
(>20 mm/yr)

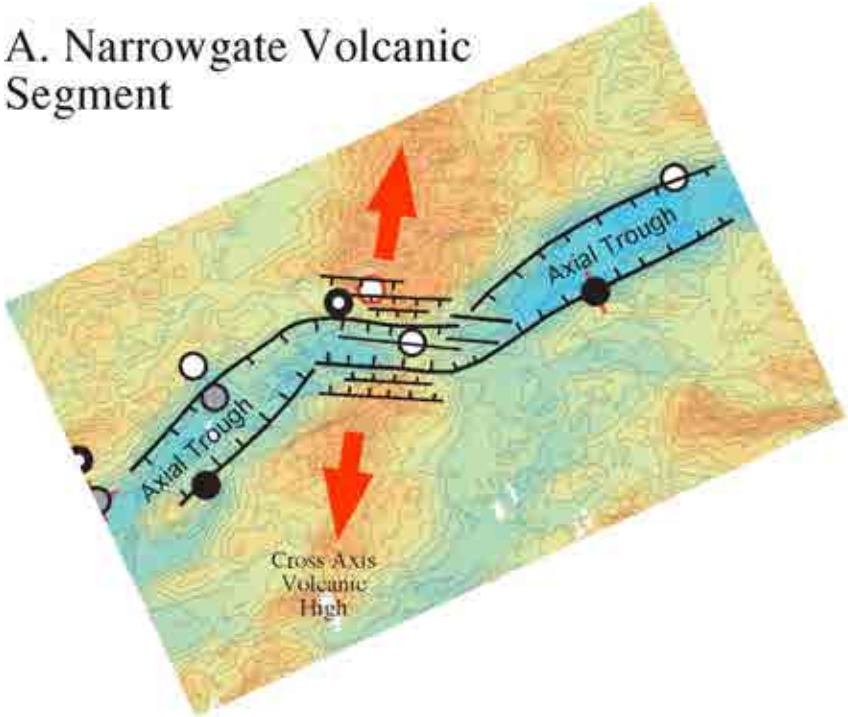
Ultraslow Spreading SW Indian Ridge



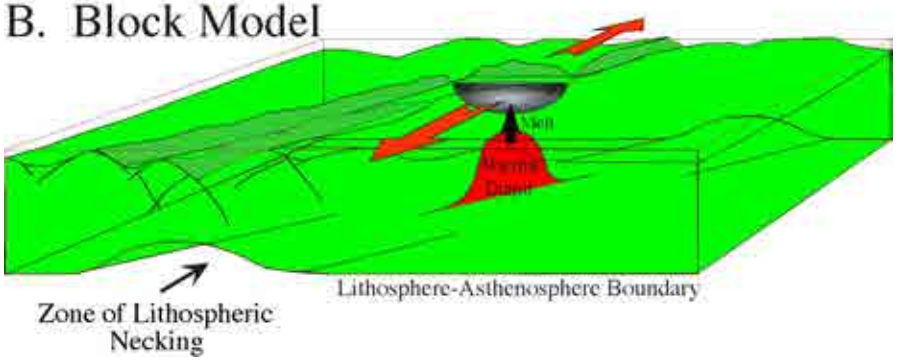




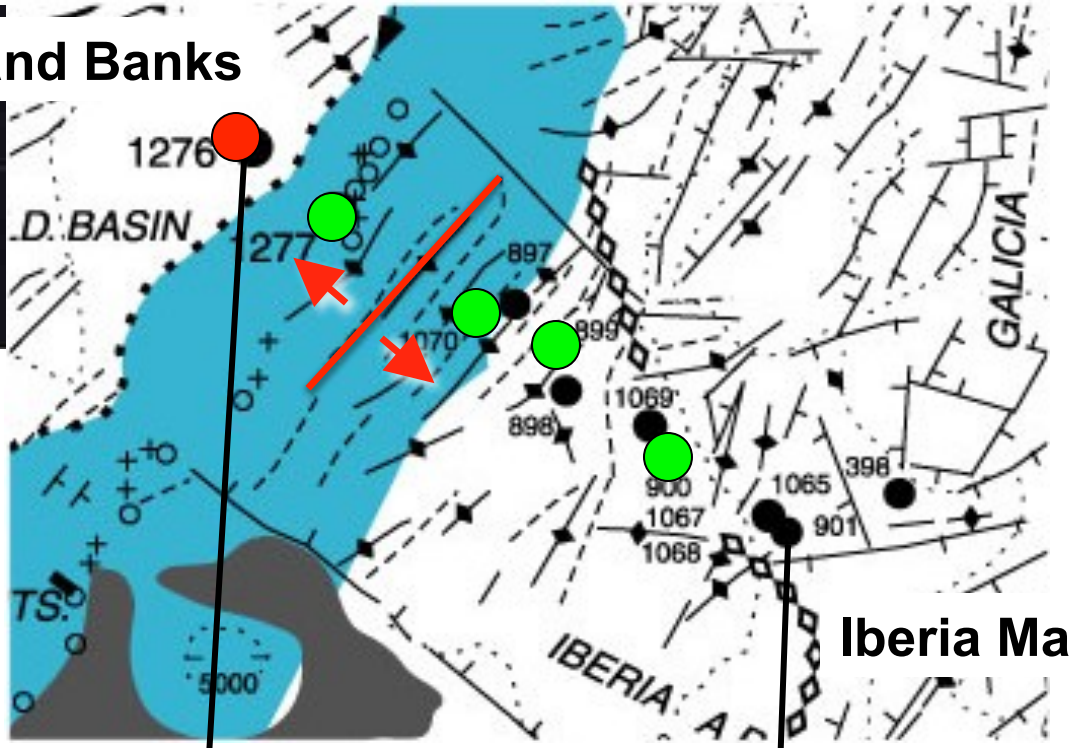
A. Narrowgate Volcanic Segment



B. Block Model



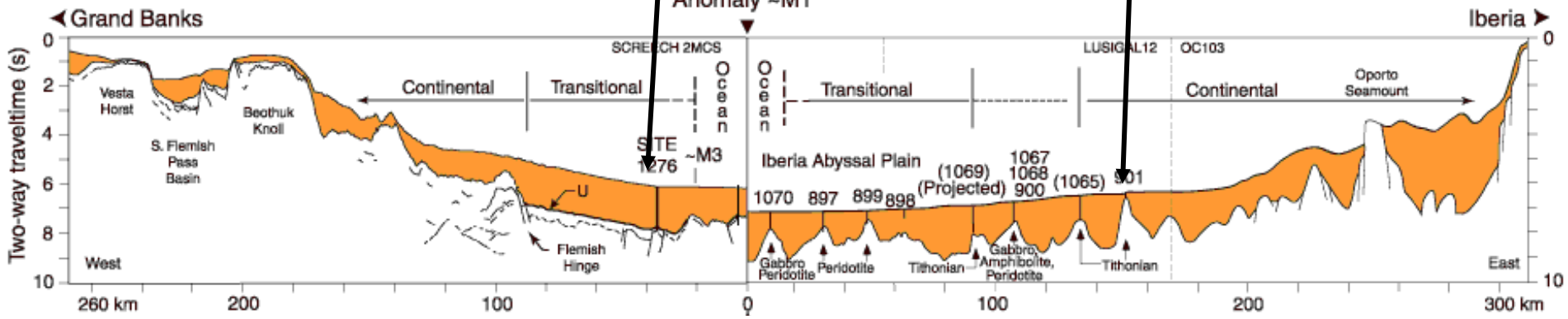
Grand Banks



Drilling Legs:
149, 173, 210

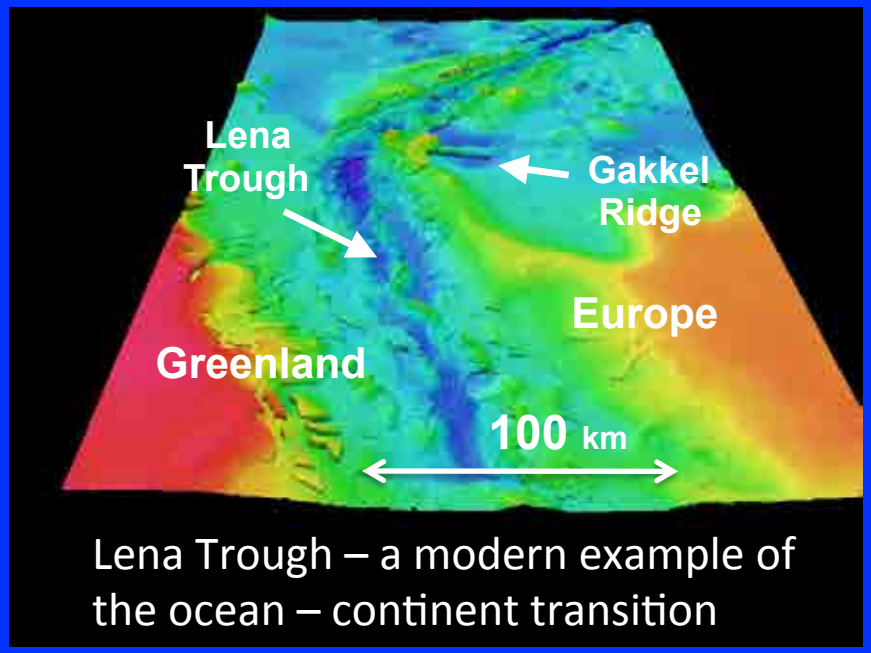
120 Ma,
Mid-Cretaceous

Iberia Margin



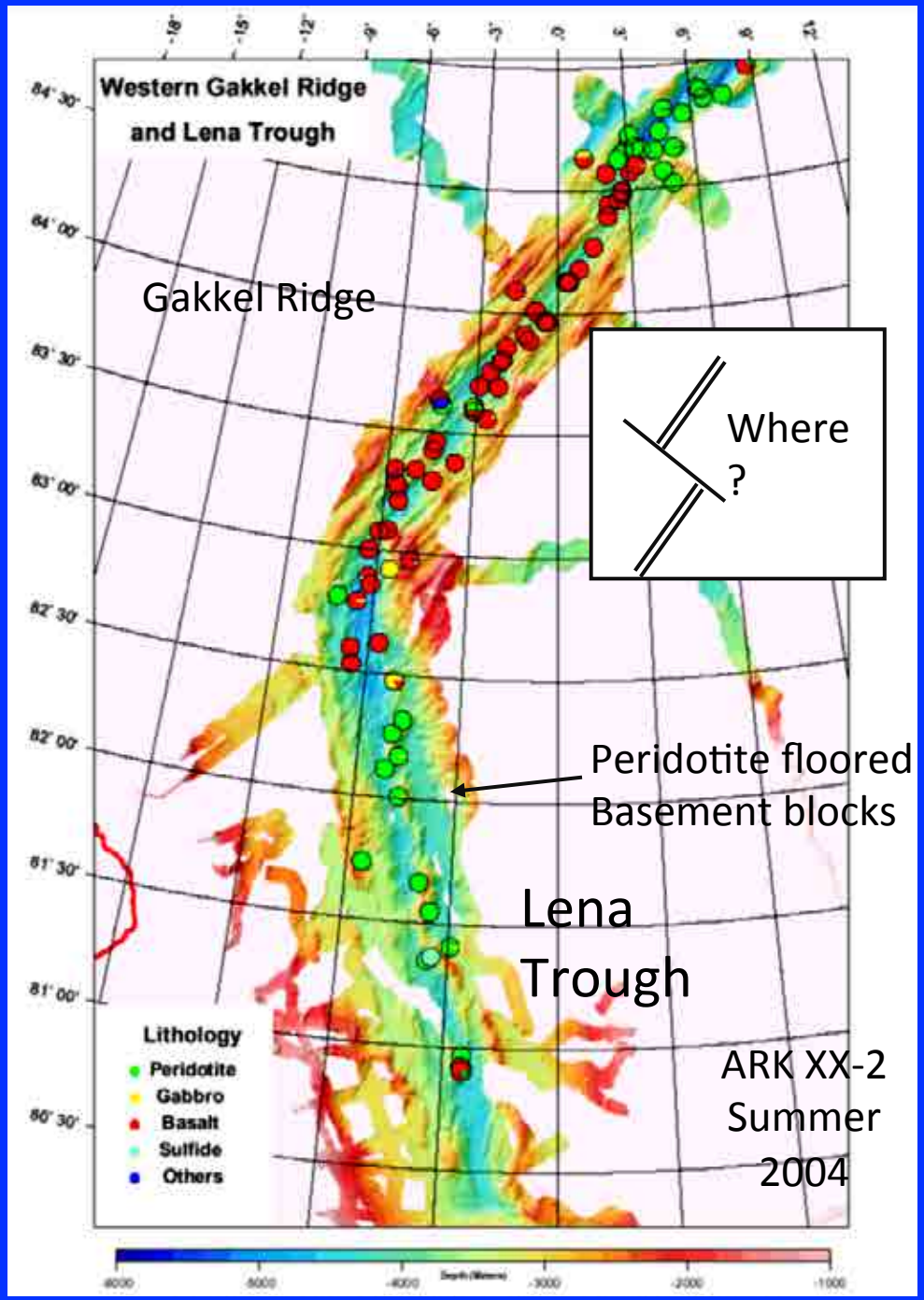
Gabbroic-Ultramafic!
"Amagmatic" extension

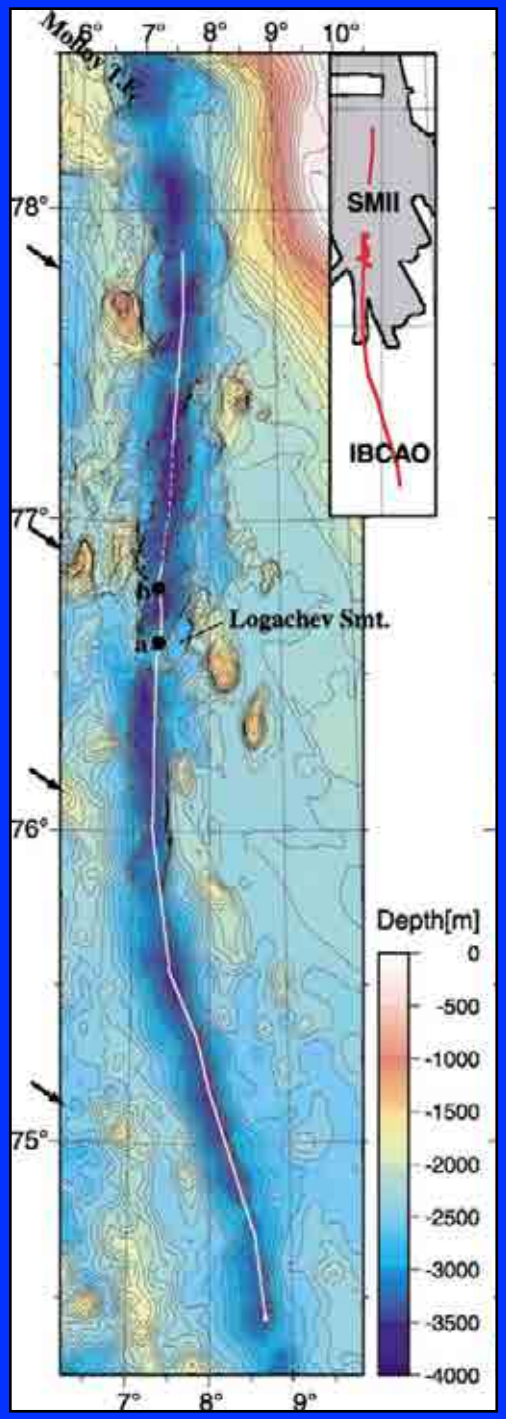
Grand Banks ➤ Iberia

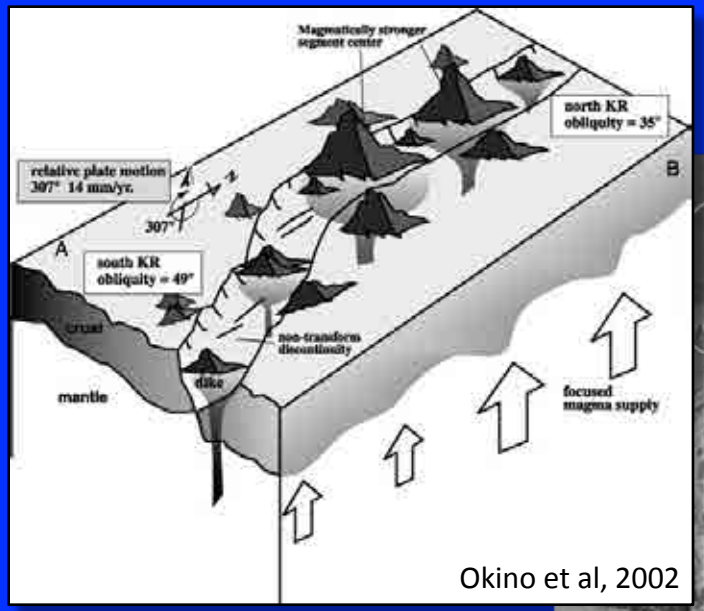


Lena Trough – a modern example of the ocean – continent transition

Amagmatic accretionary segments seen at ultra slow ridges spreading at an ESR <12 mm/yr are likely the characteristic plate boundary structure of non-volcanic rifted margins.

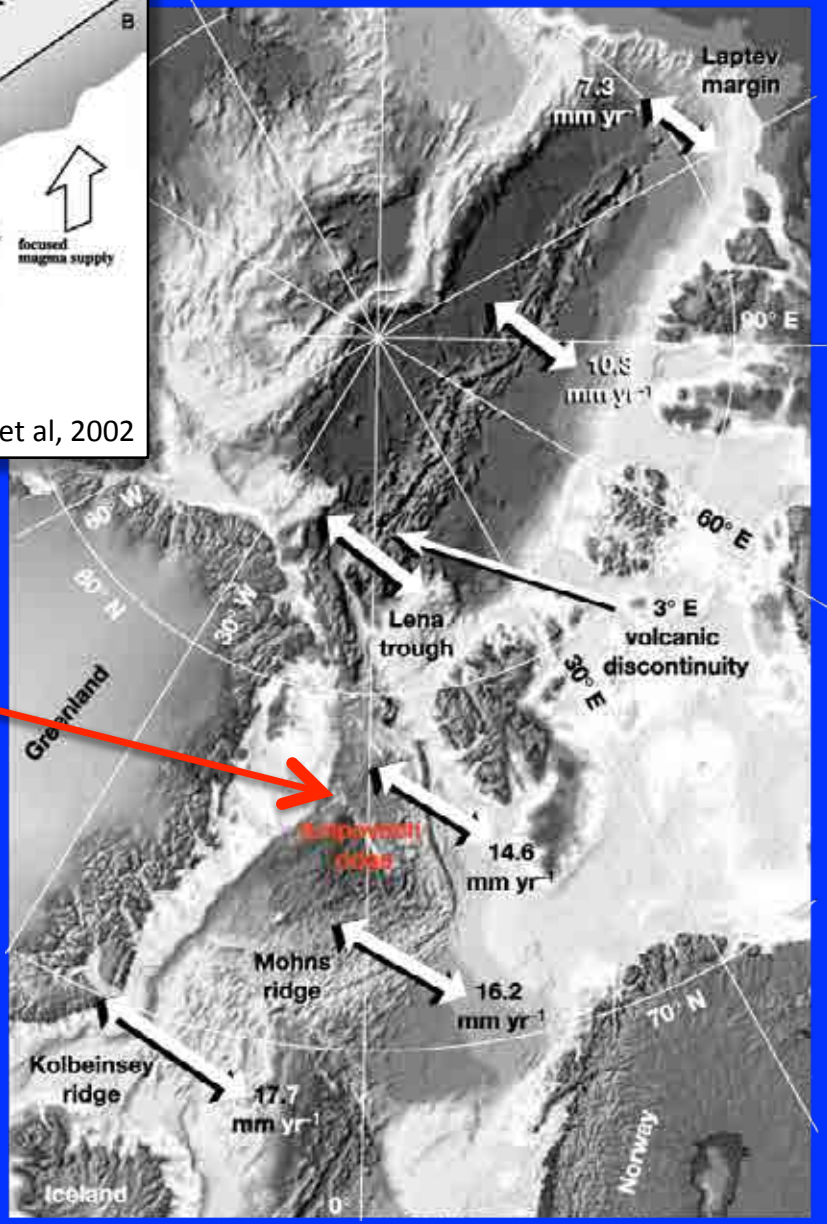


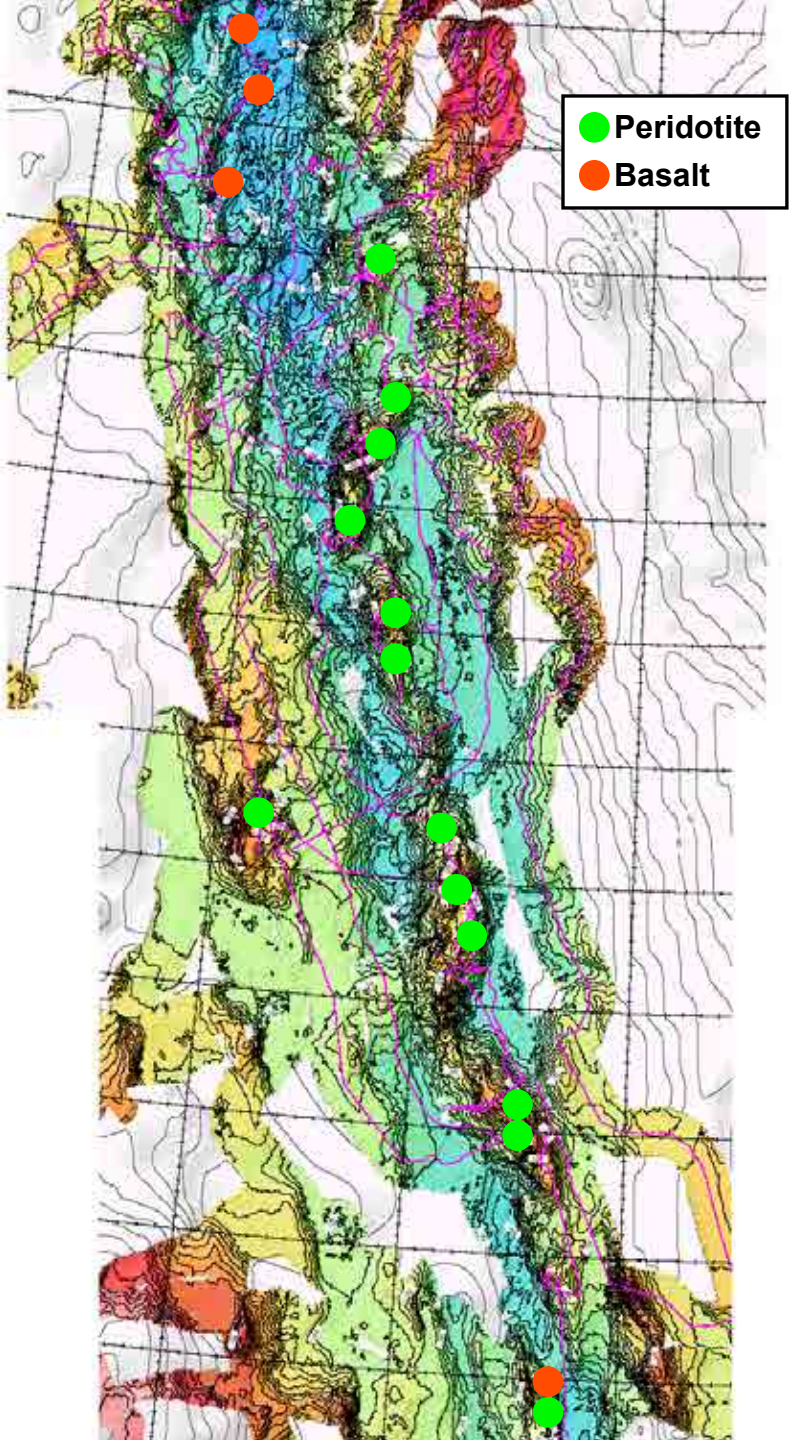




Okino et al, 2002

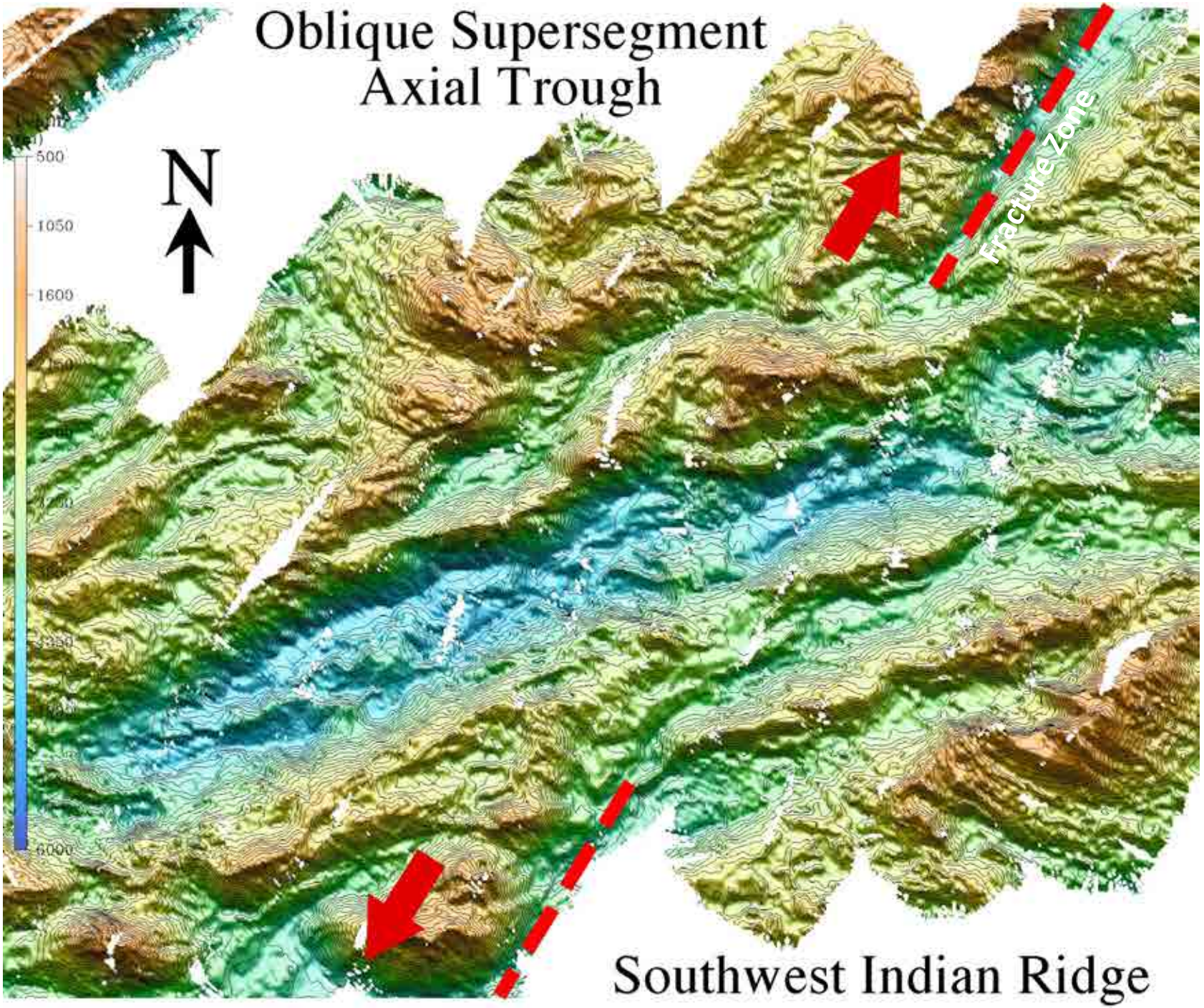
Knipovitch Ridge





"Amagmatic"!

- Mostly ultramafic outcrop
- Little or no volcanism
- Volcanism at segment ends, not center (!)
- Very fertile mantle compositions
- Melting very variable
- Melt production, stagnation, etc....


Oblique Supersegment
Axial Trough
N
500
1050
1600
6000
Fracture Zone
Southwest Indian Ridge