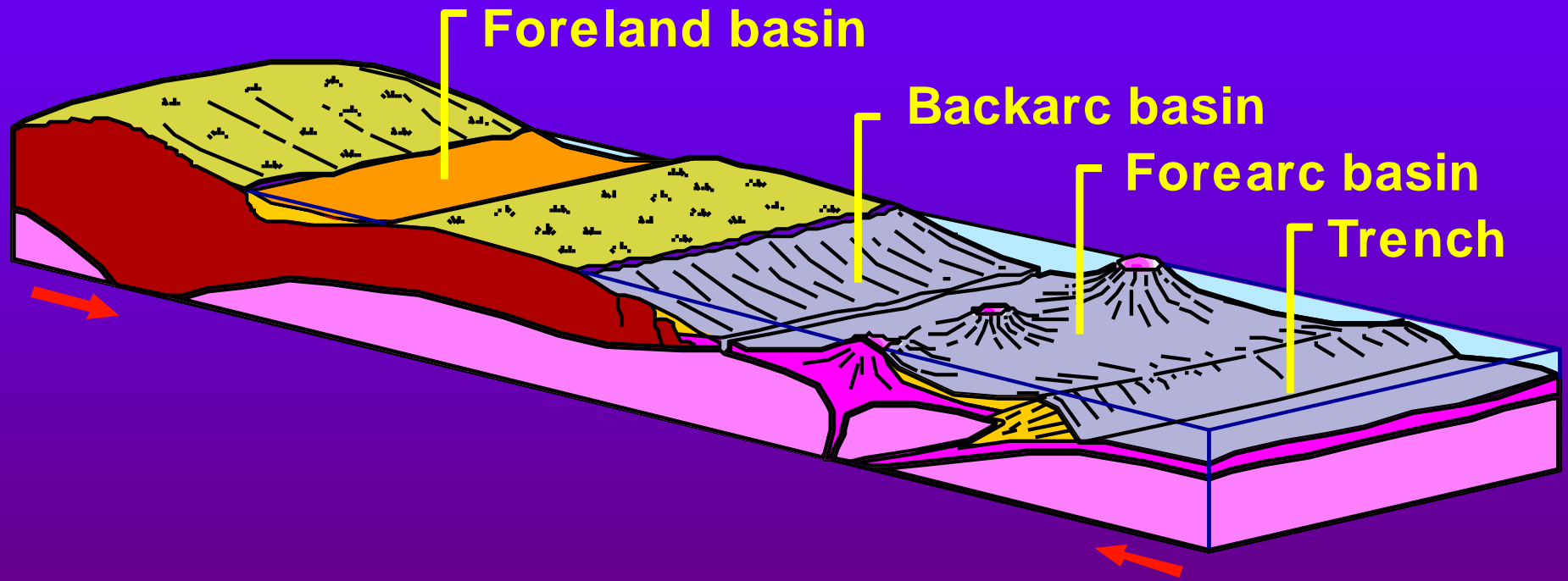
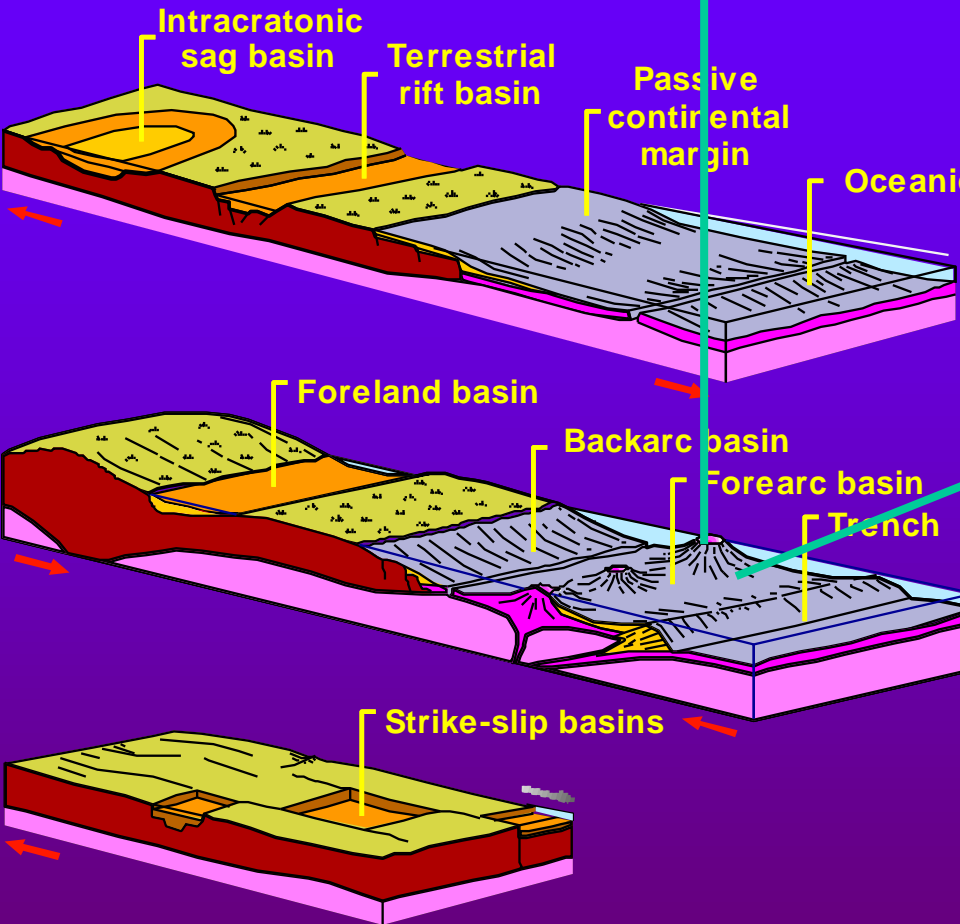


FOREARC BASINS

Tectonic setting of sedimentary basins

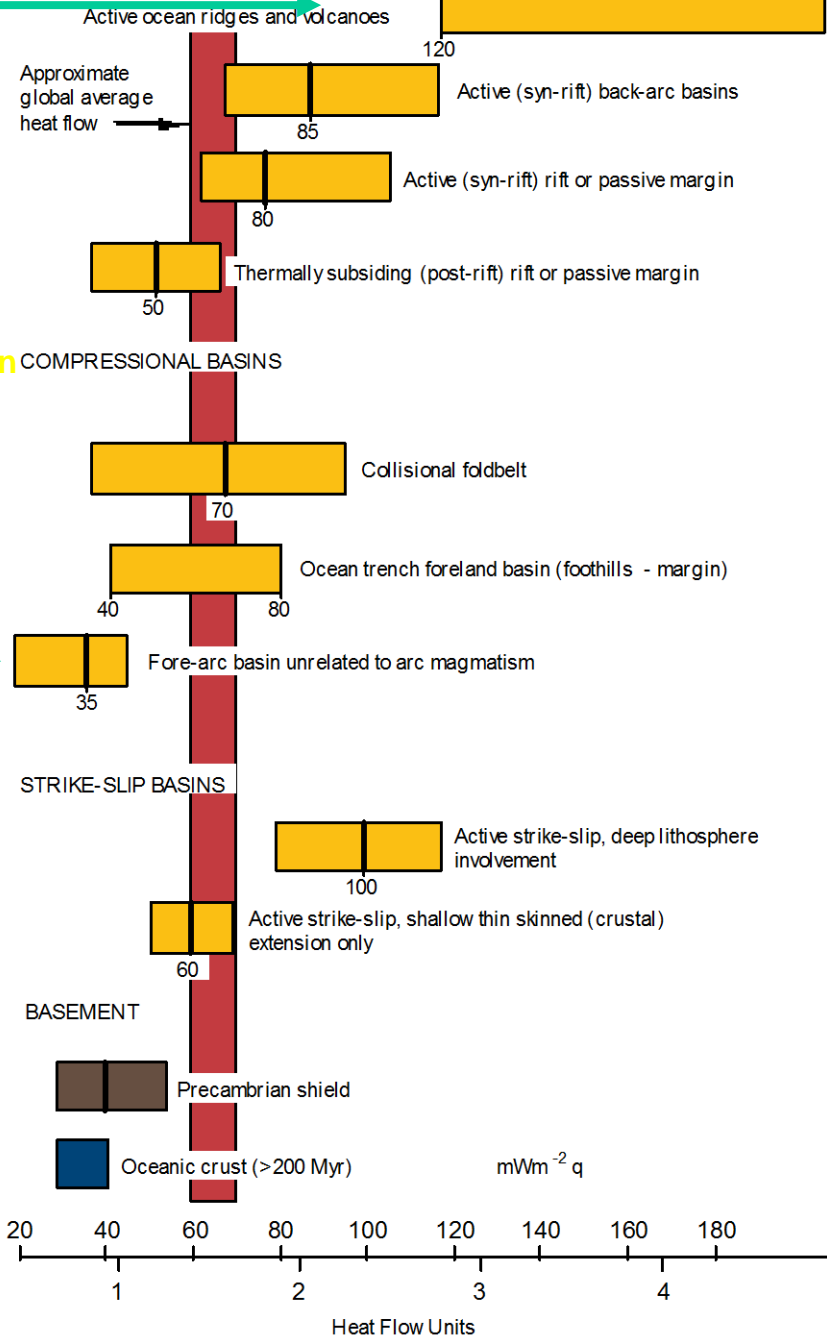


Basin Heat flow

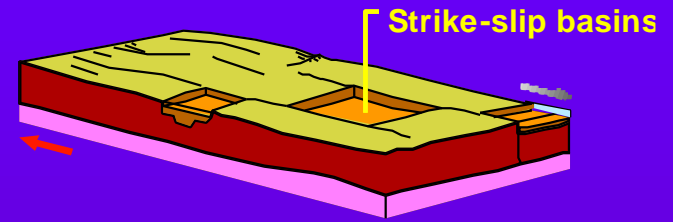
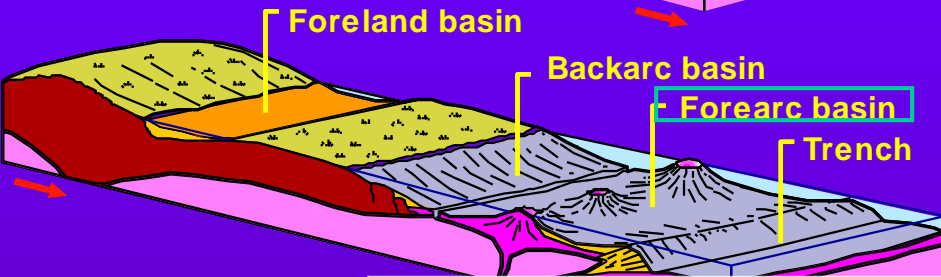
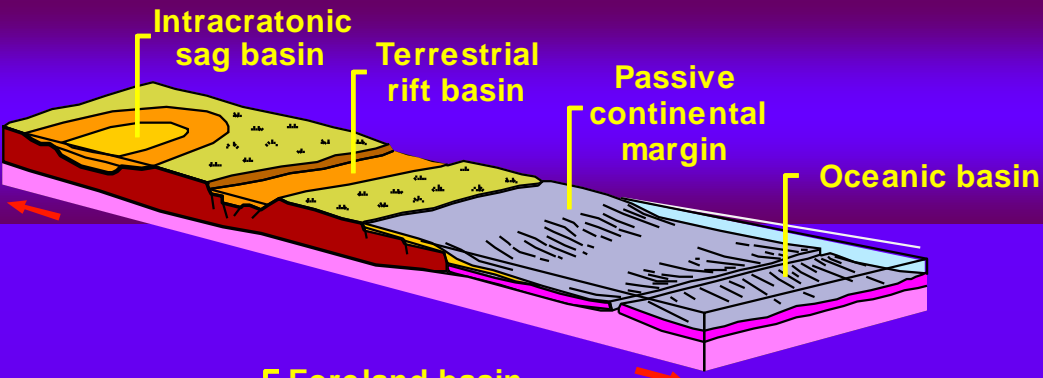


Forearc basins

EXTENSIONAL BASINS



Basin preservation potential



Medium

High

Lifespan of sediment accumulation in Ma

1000
100
10
0

Low

Active ocean basins
Oceanic islands, aseismic ridges/plateaux
Remnant ocean basins
Backarc basins
Trench-slope basins
Piggyback basins
Trenches
Transpressional basins

Dormant ocean basins
Successor basins
Forearc basins
Intra-arc basins
Retroarc foreland basins
Foreland intermontane basins
Intracontinental wrench basins
Peripheral foreland basins
Transensional basins
Transrotational basins

Aulacogens
Intracratonic basins
Continental platform
Continental rises and terraces
Continental embankments
Proto-oceanic rift troughs
Terrestrial rift valleys
Impactogens

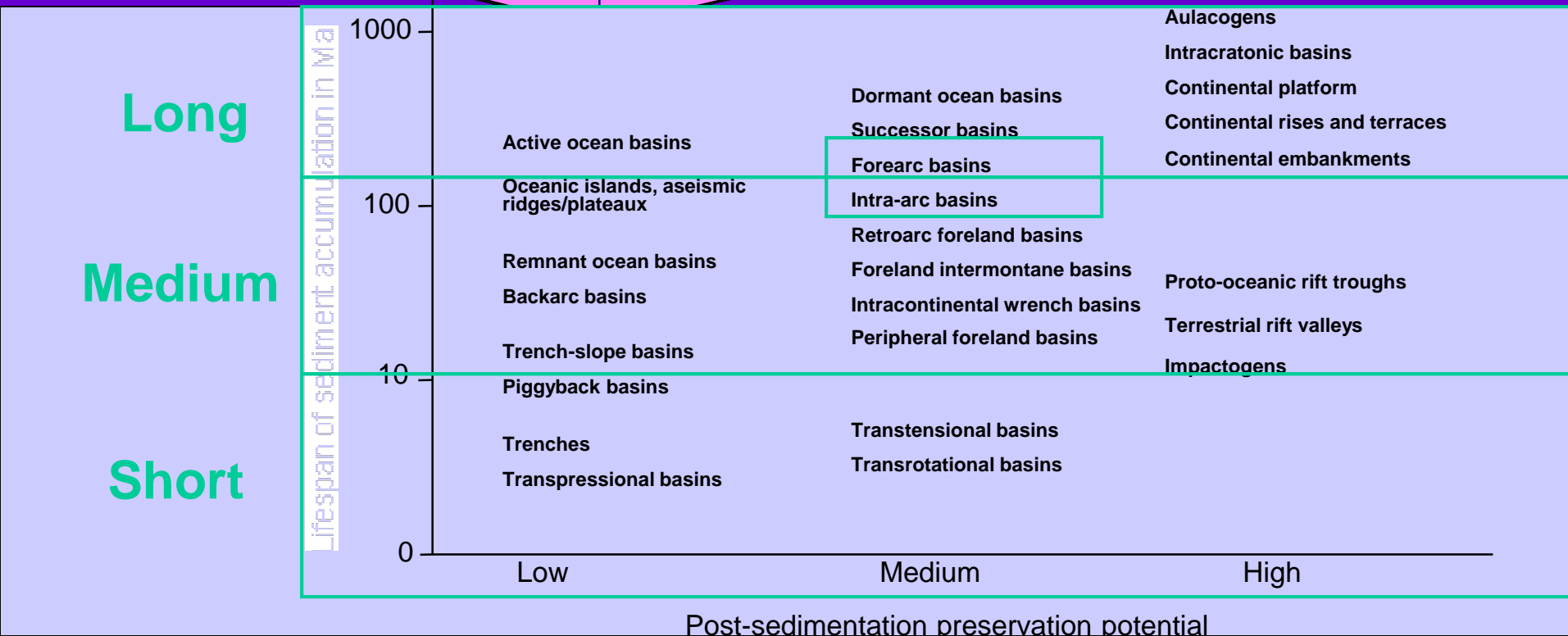
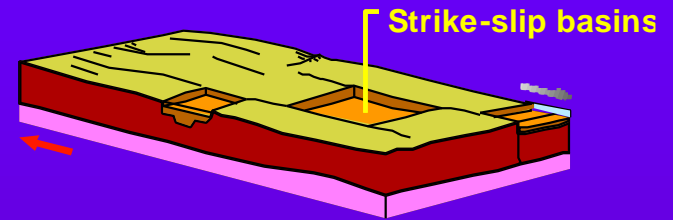
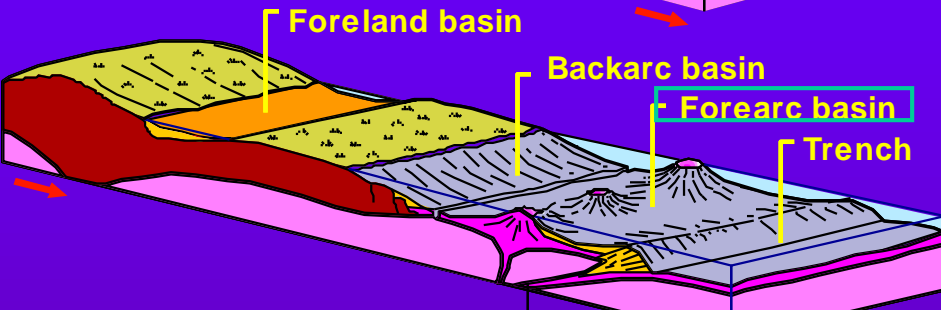
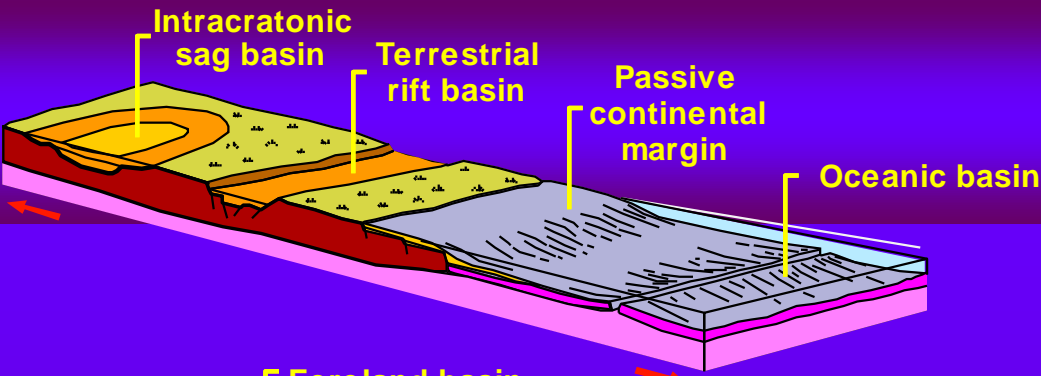
Low

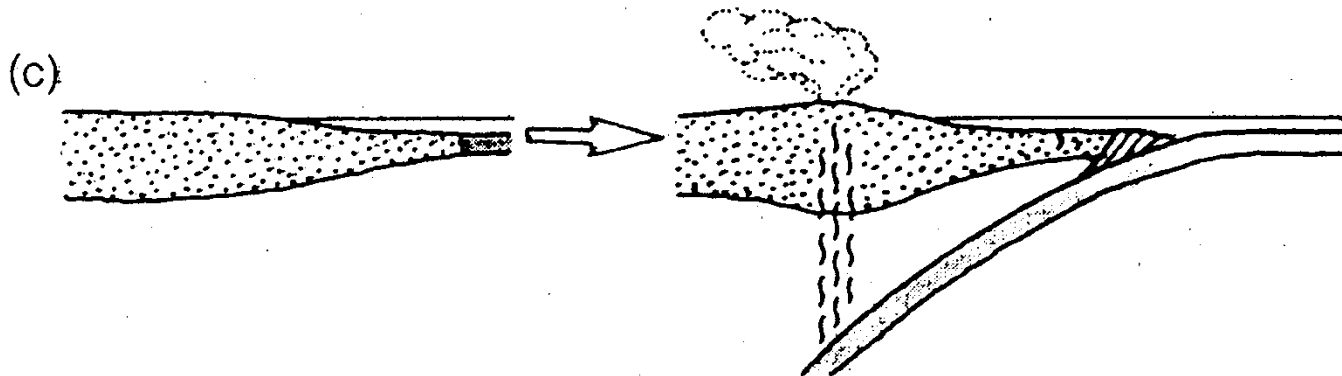
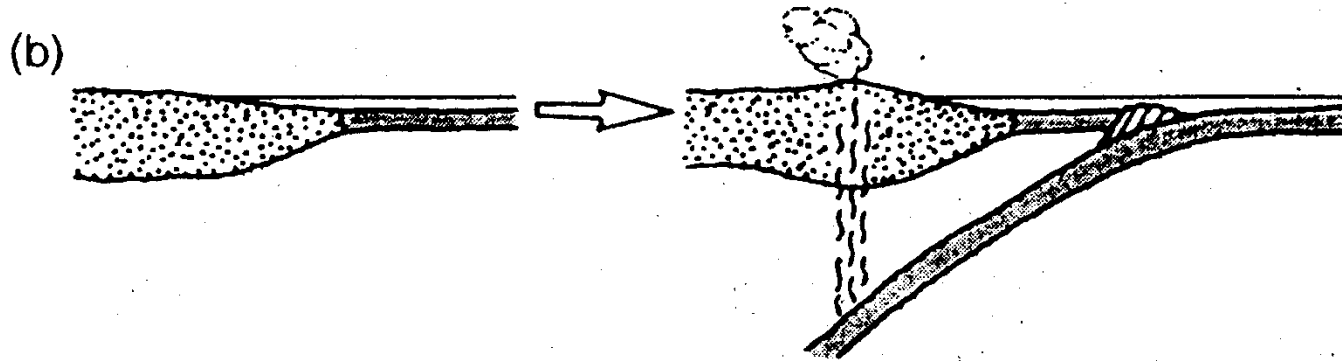
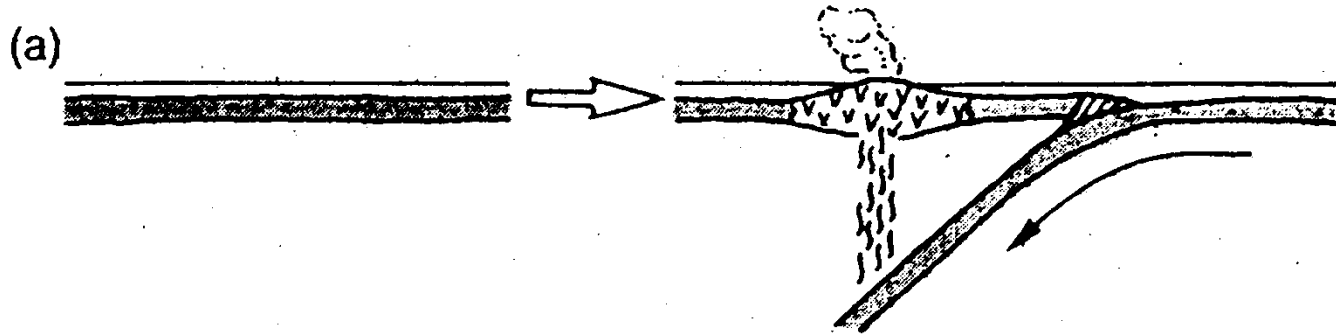
Medium

High

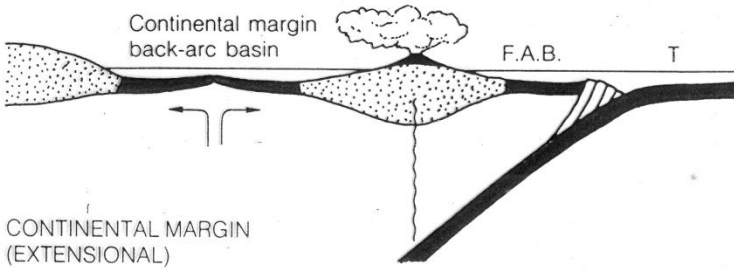
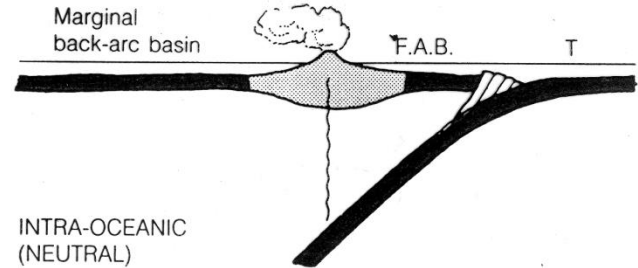
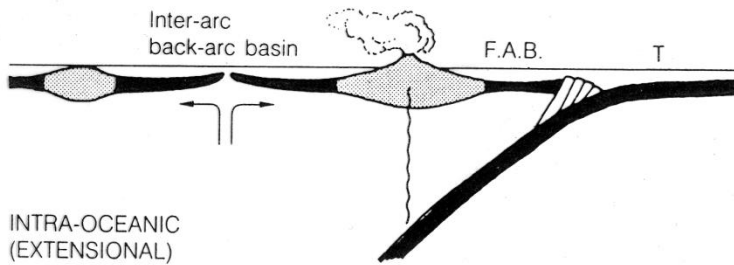
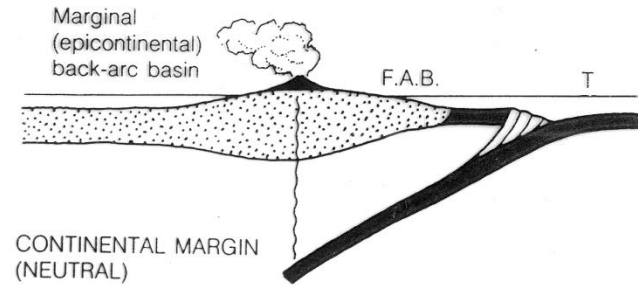
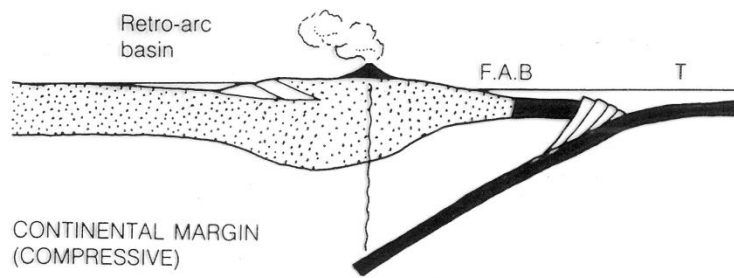
Post-sedimentation preservation potential

Basin lifespan





Types of arc-trench system



KEY

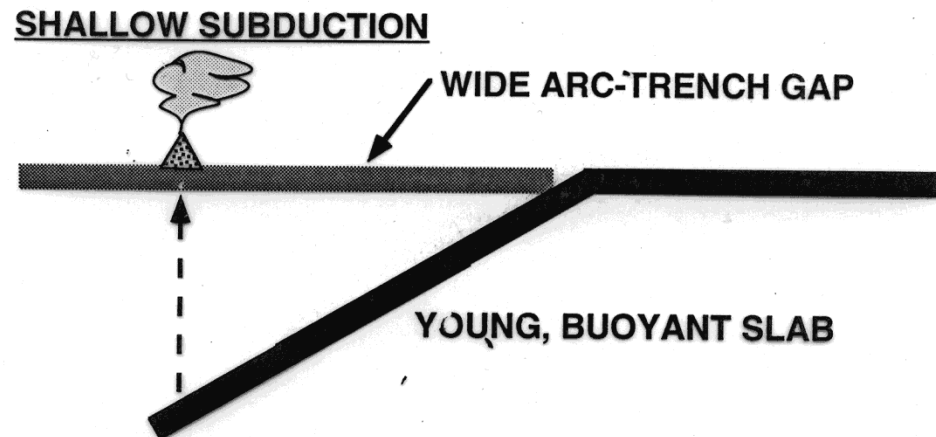
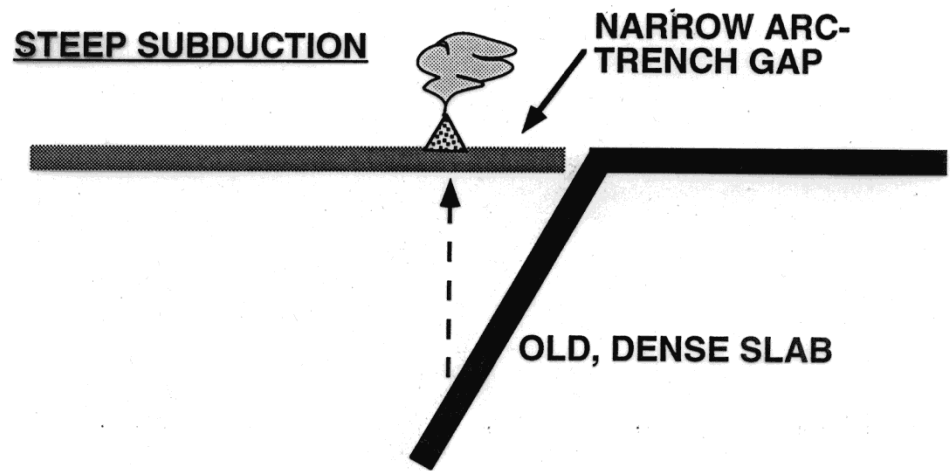
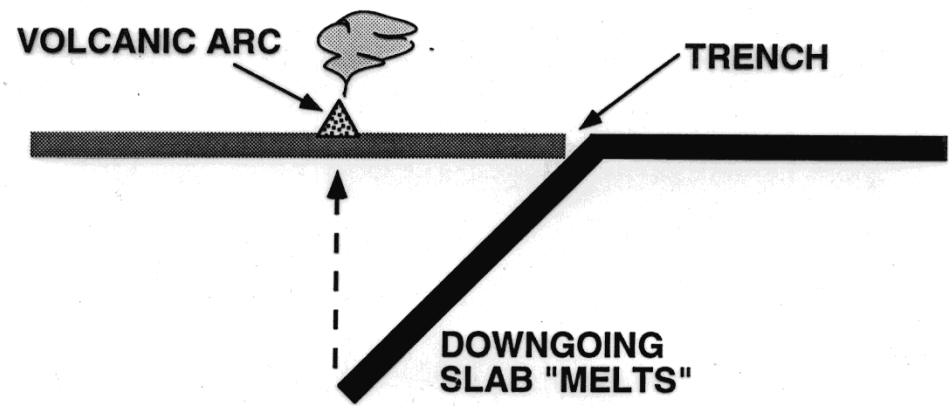
T = Trench

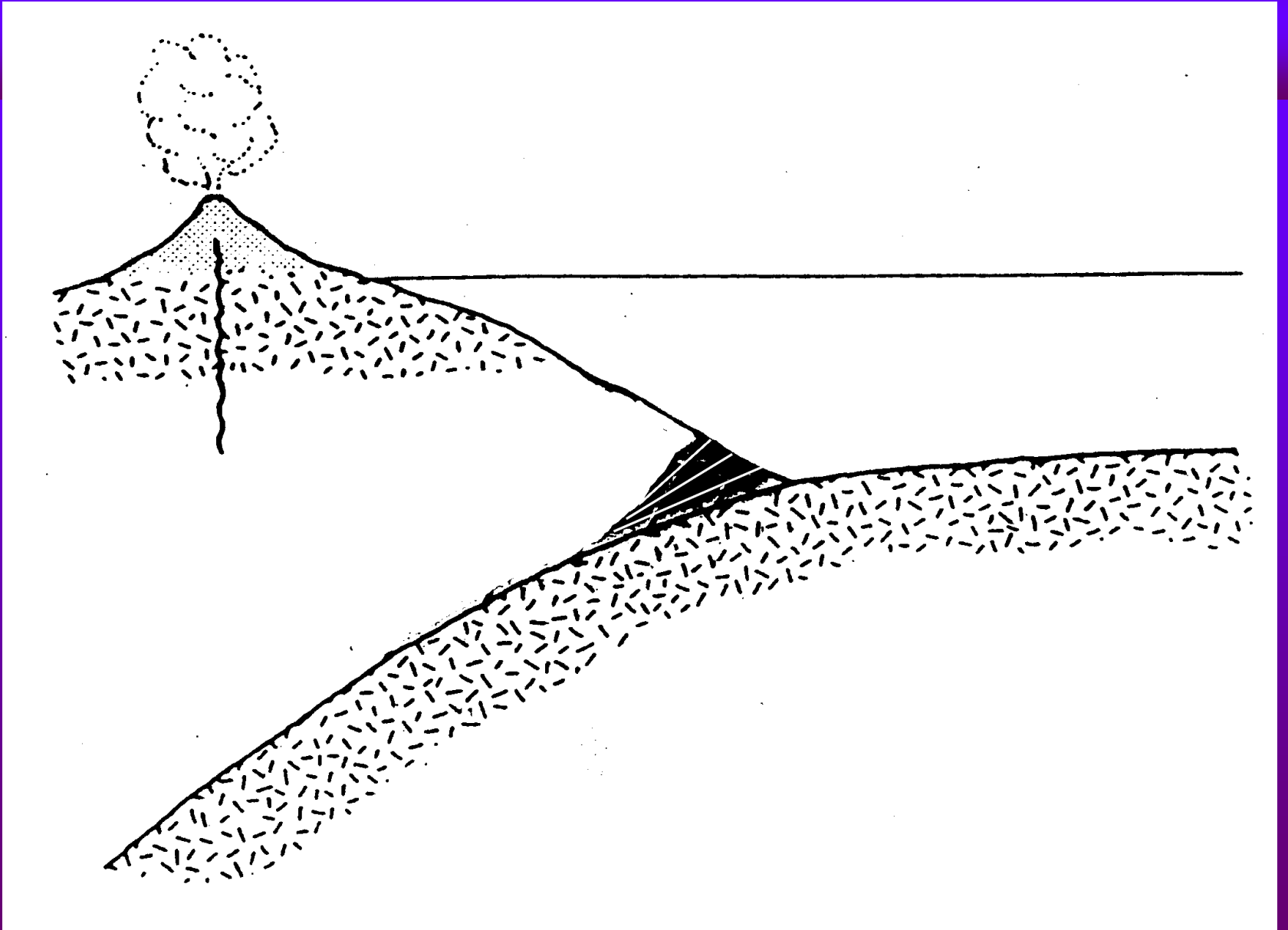
F.A.B. = Fore-arc basin

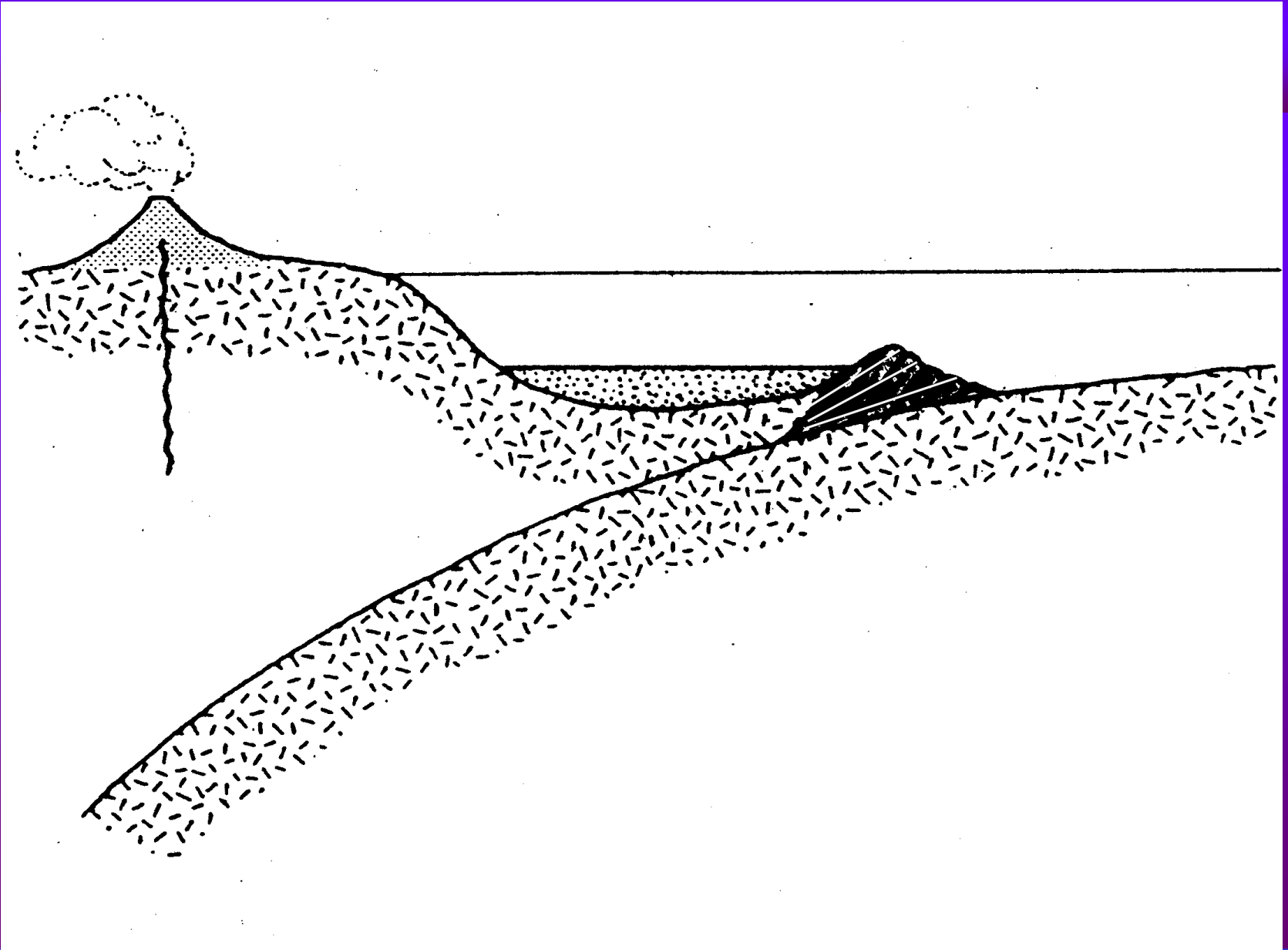
 Oceanic lithosphere

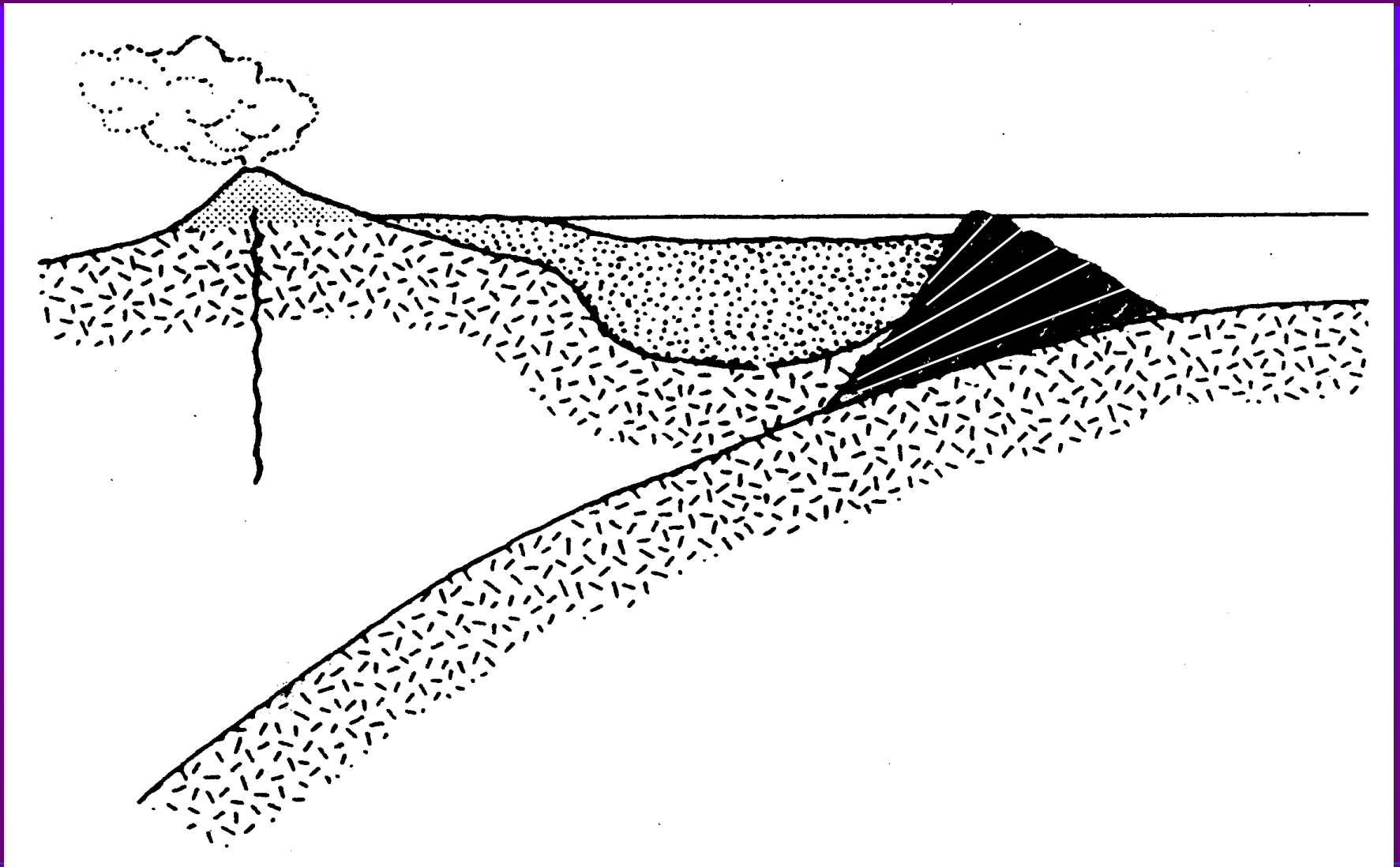
 Continental lithosphere

 Volcanic arc

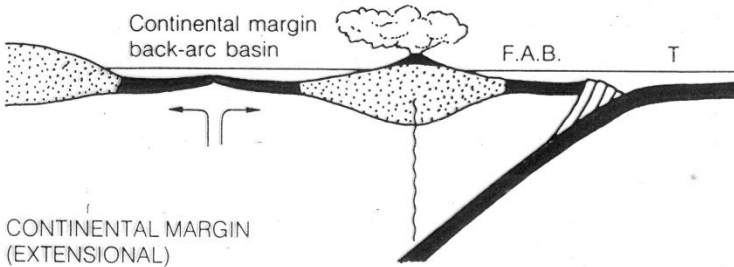
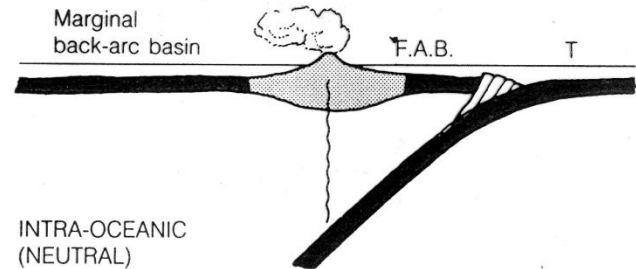
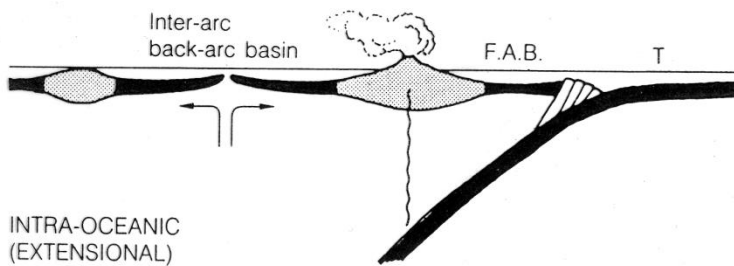
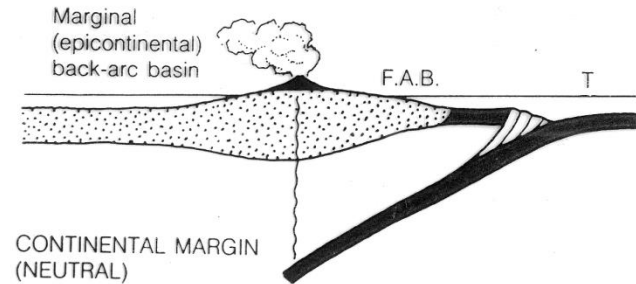
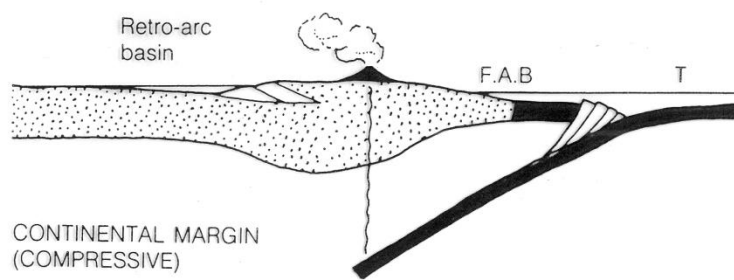








Types of arc-trench system



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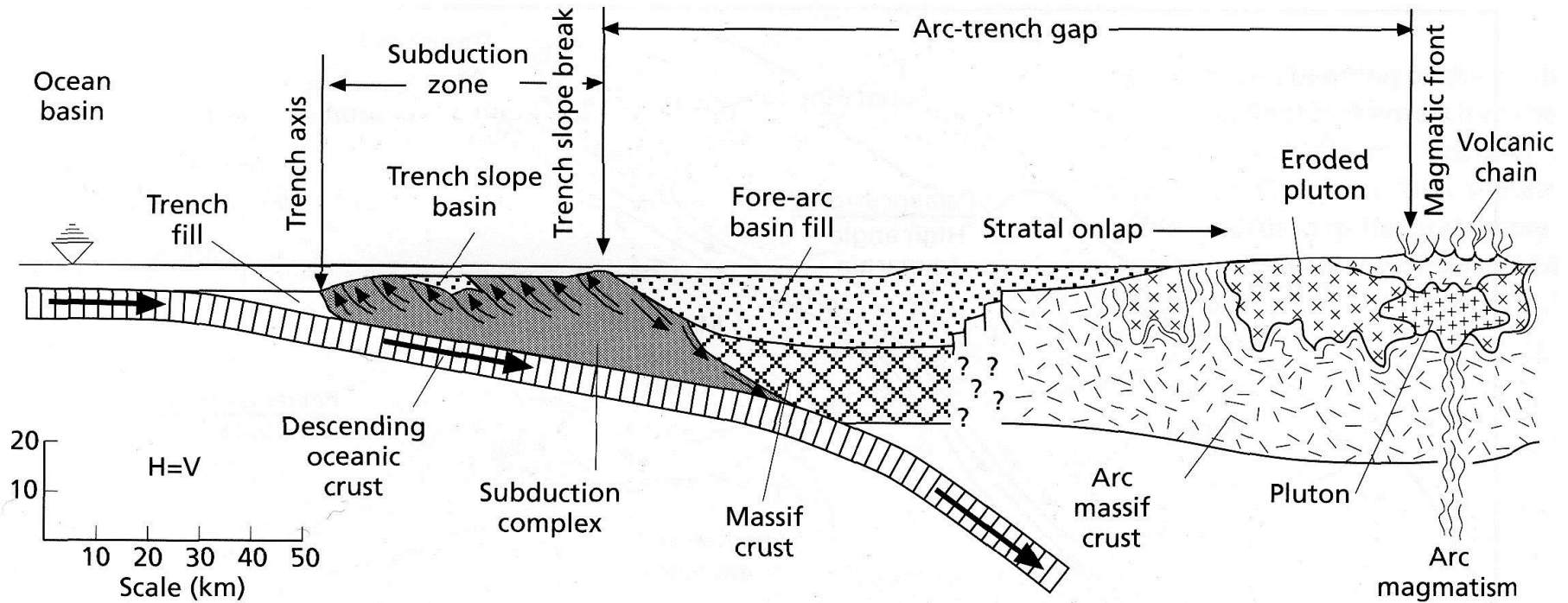
T = Trench

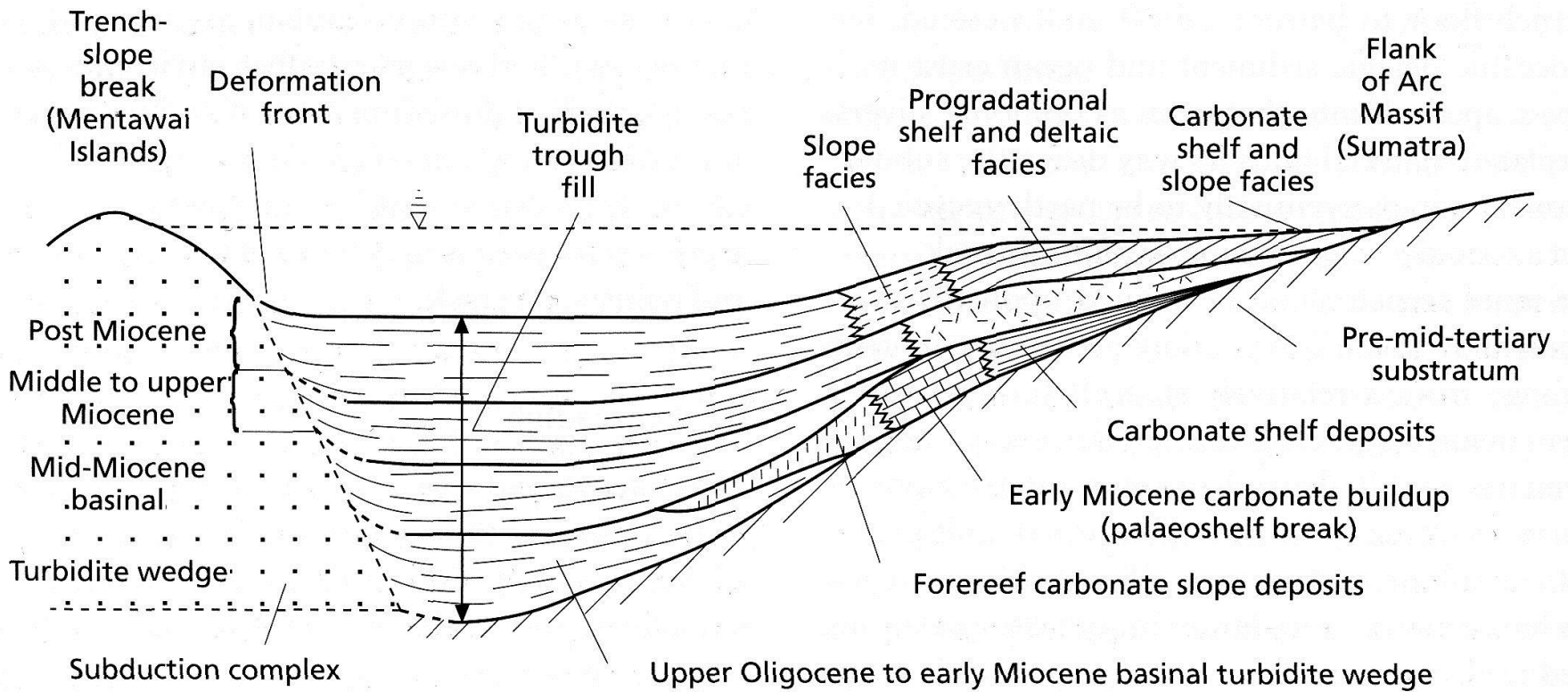
F.A.B. = Fore-arc basin

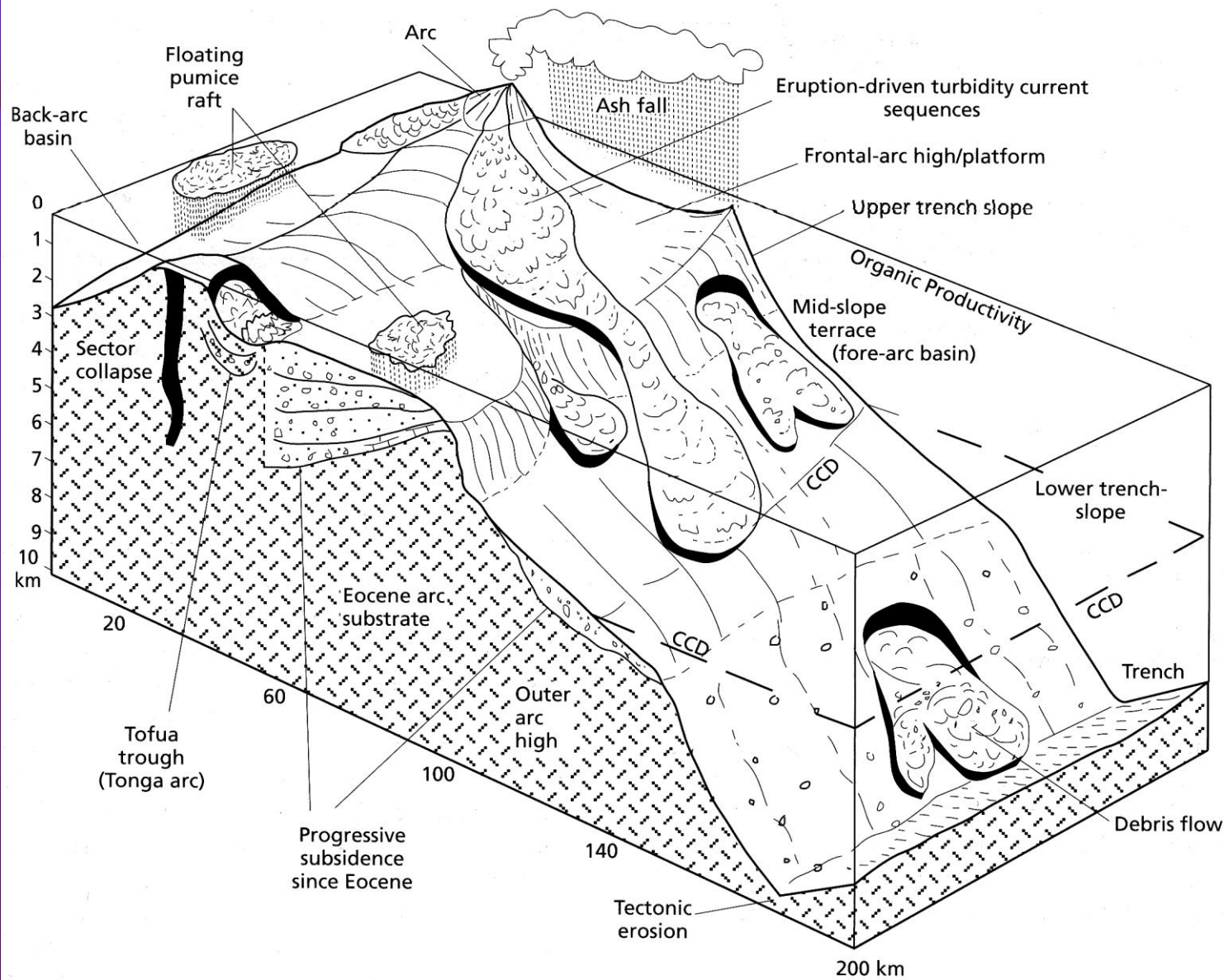
 Oceanic lithosphere

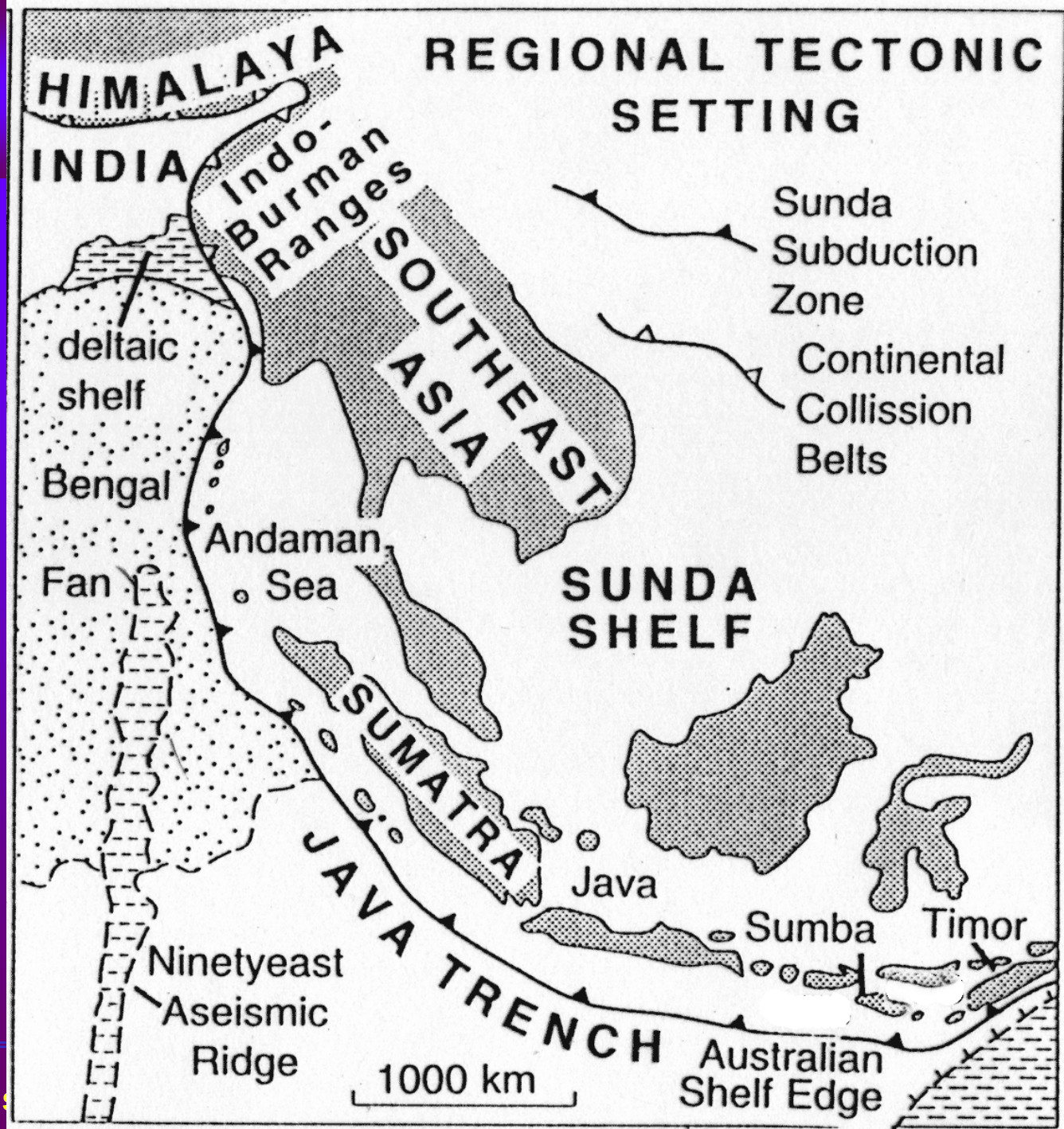
 Continental lithosphere

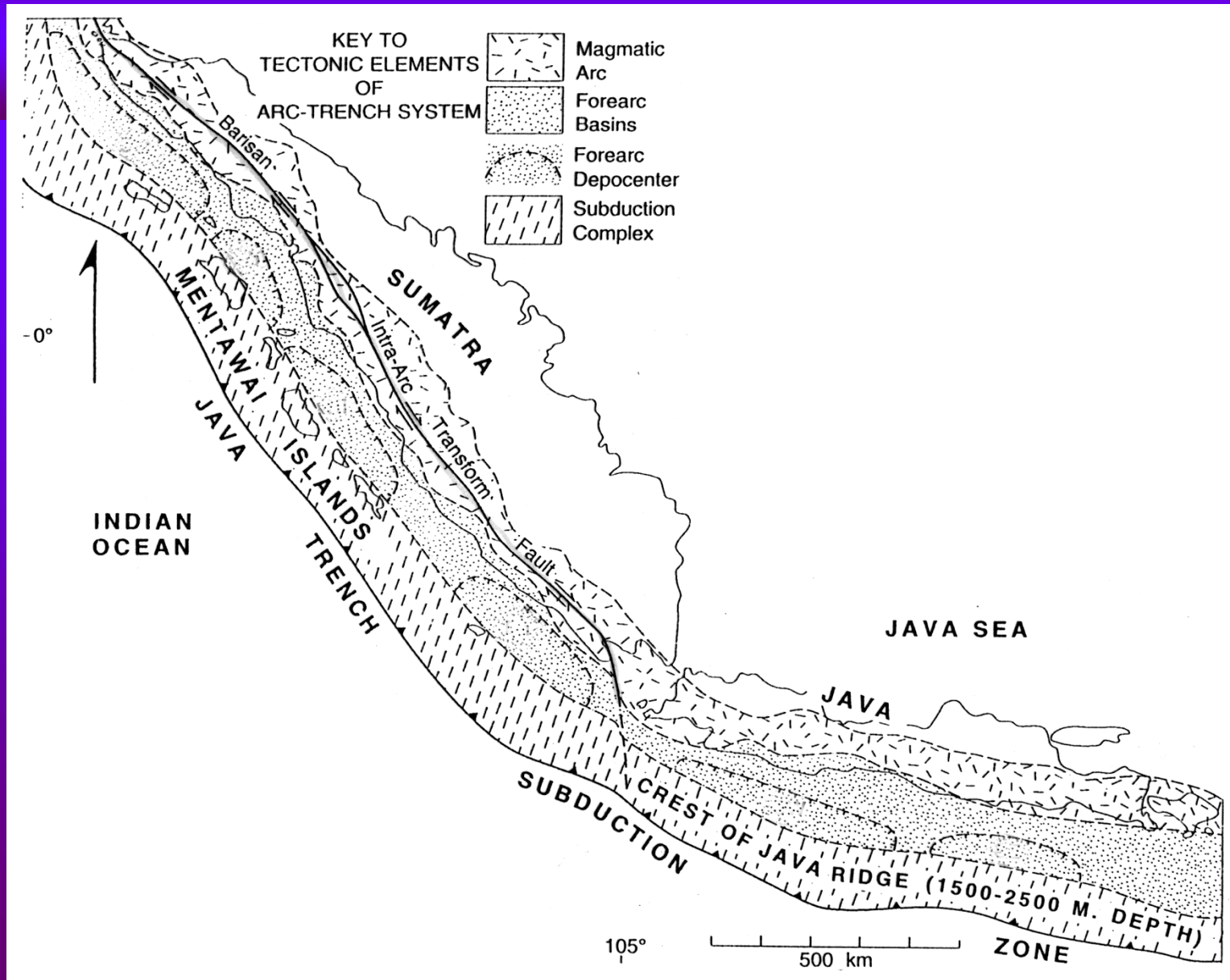
 Volcanic arc

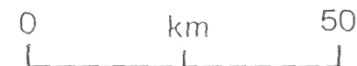
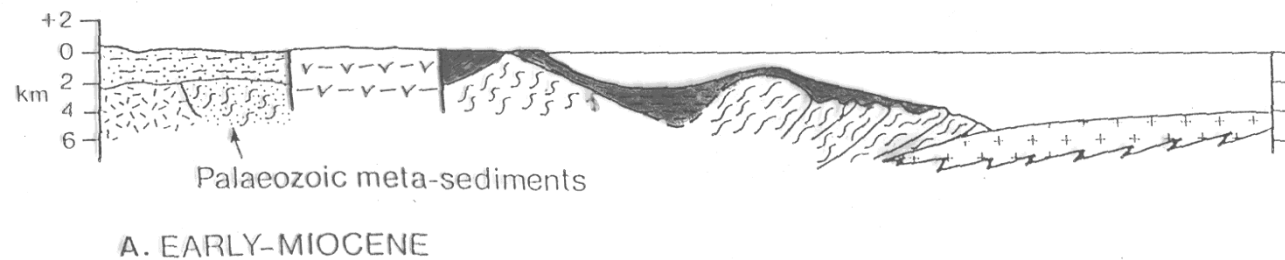
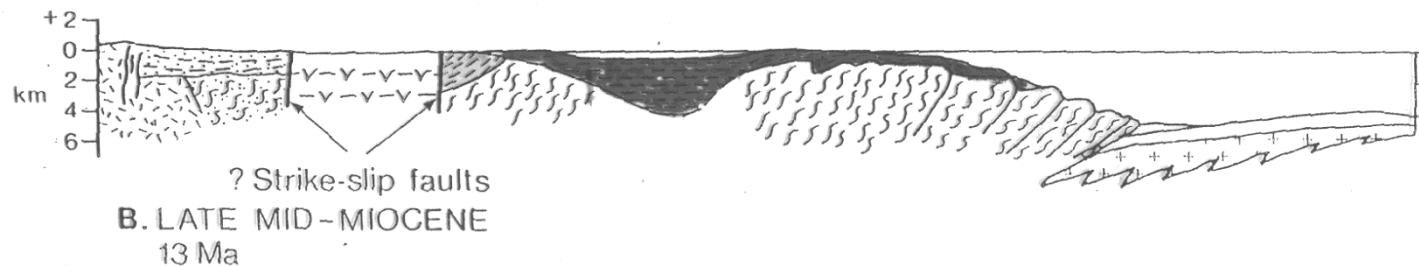
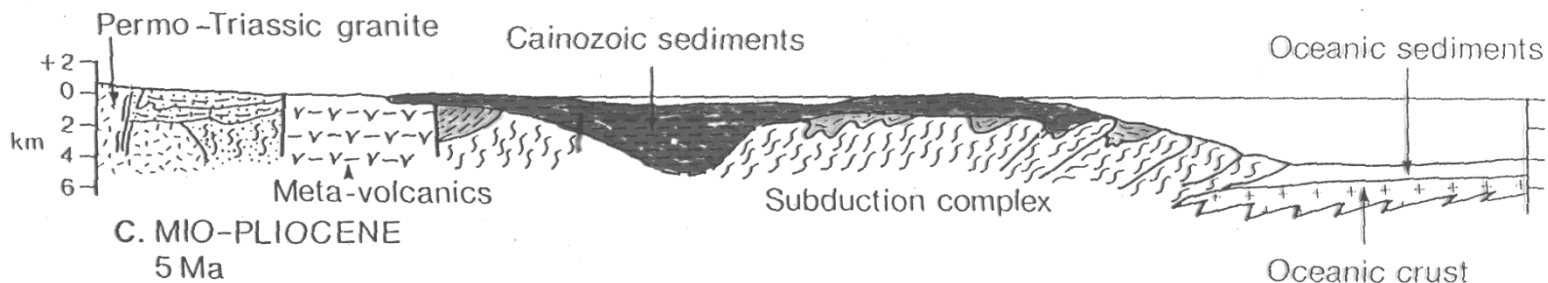
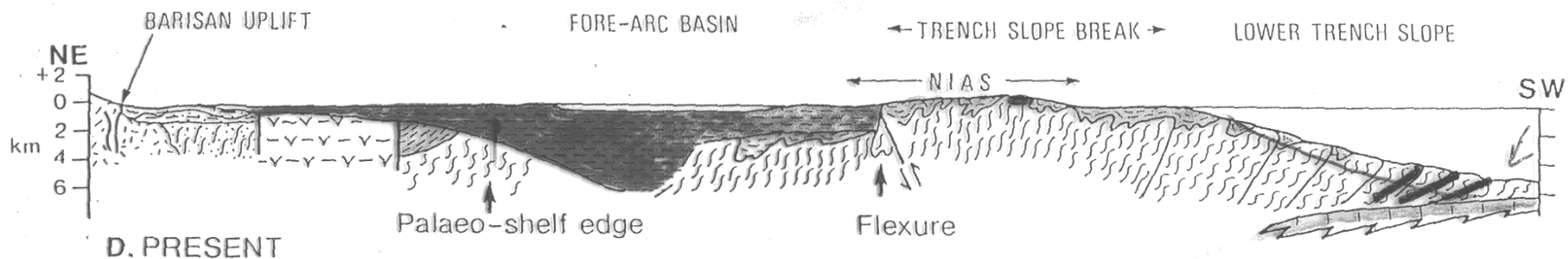


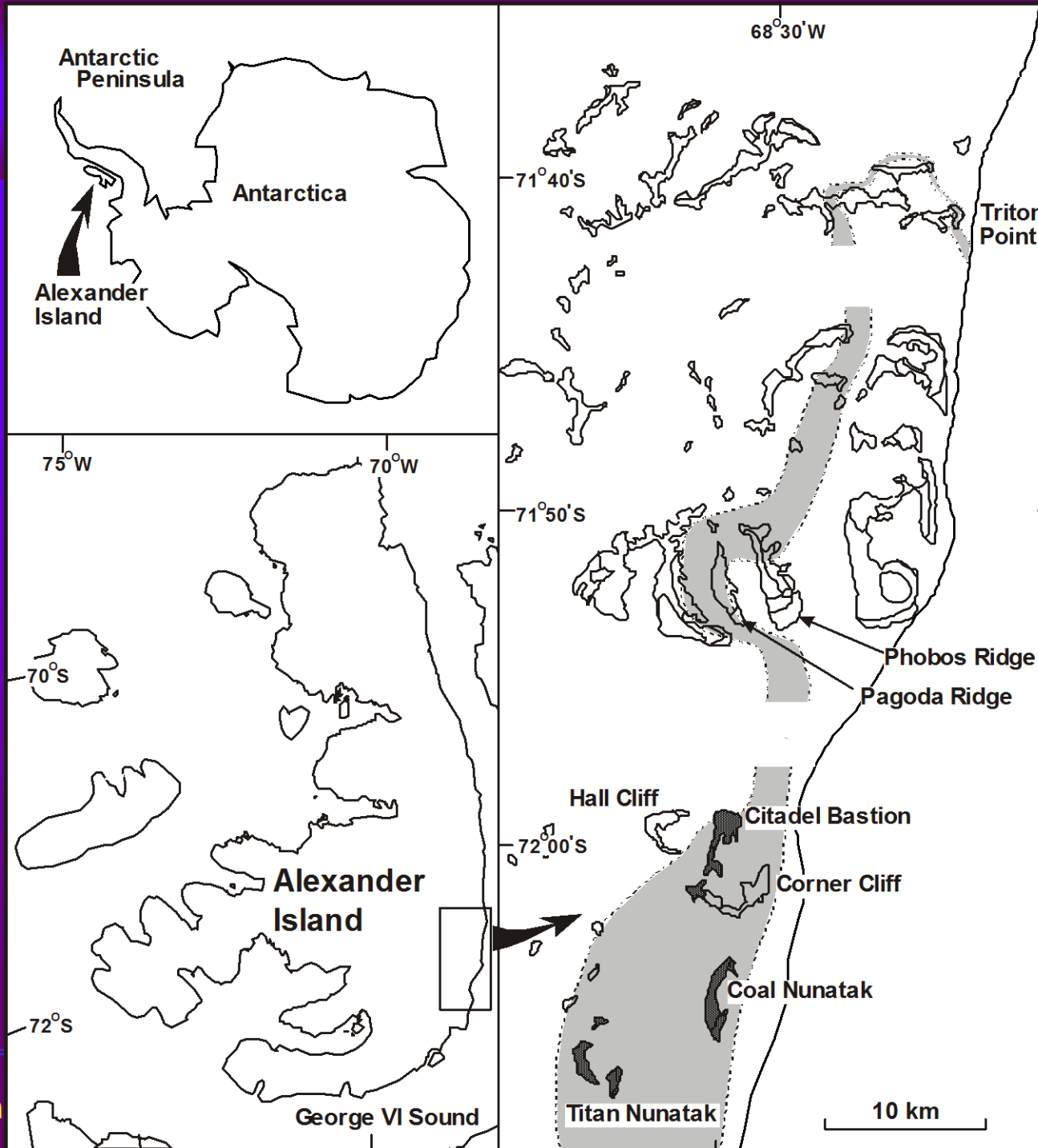




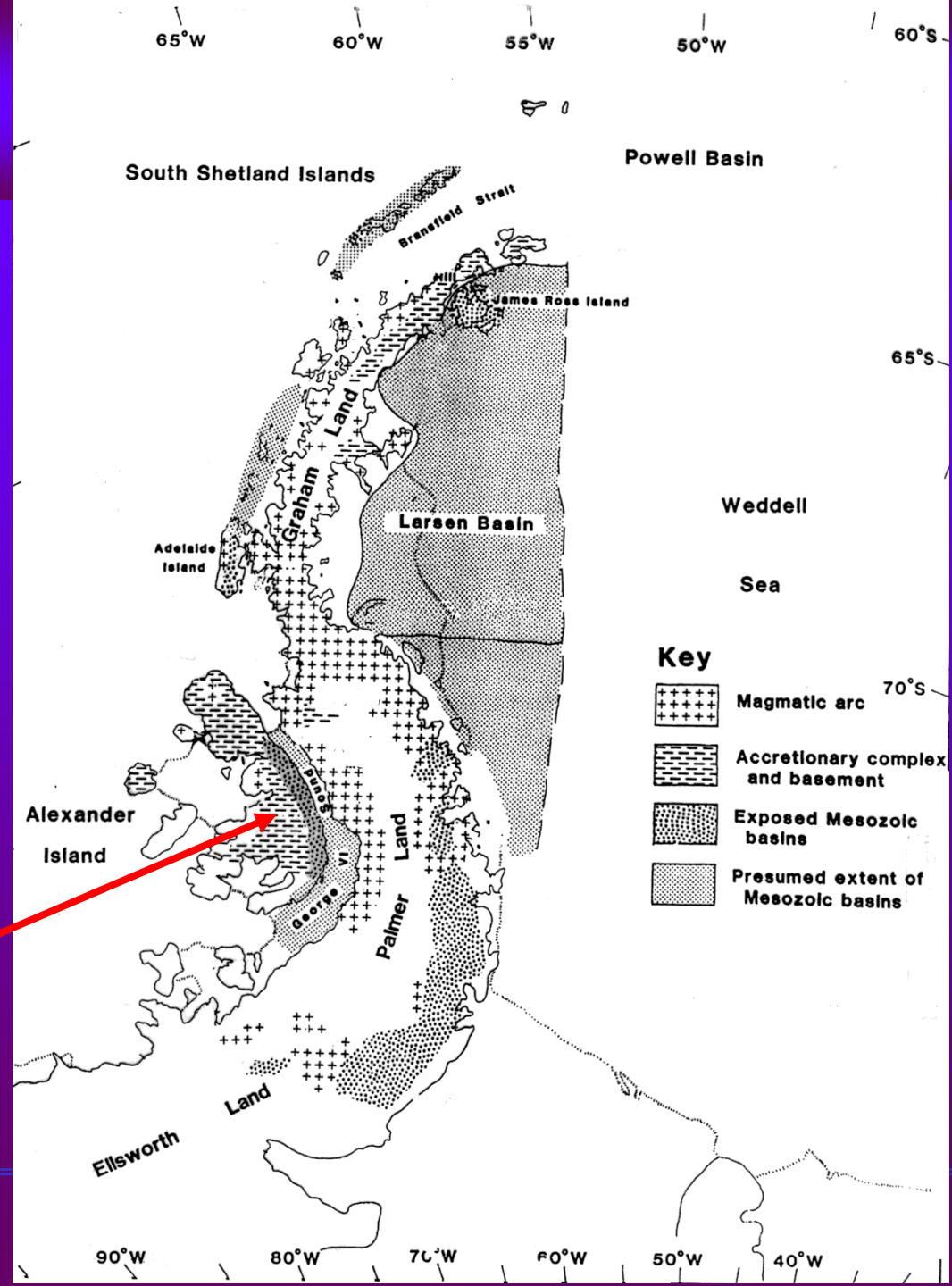








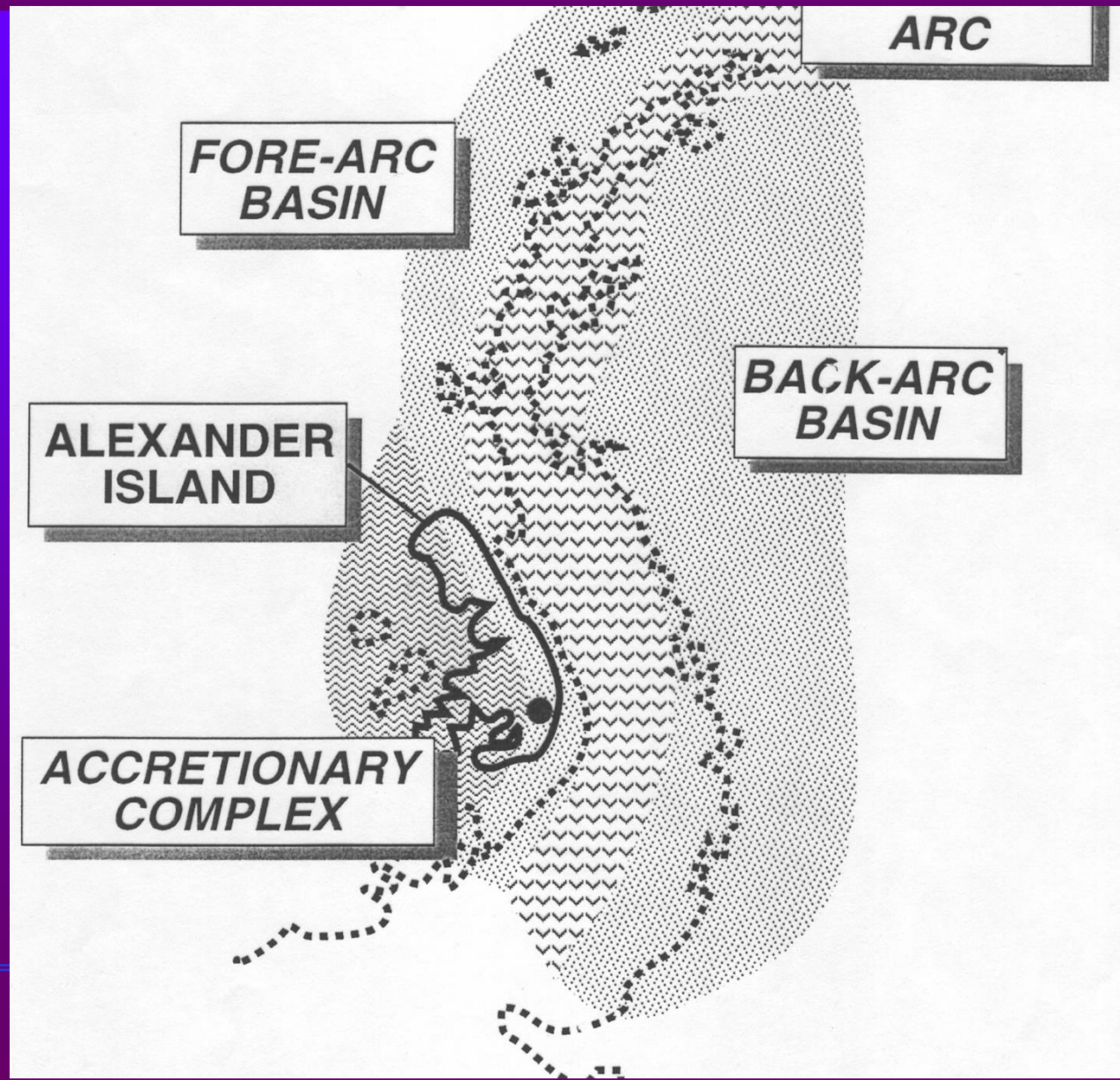
Antarctic Peninsula




Alexander Island

Forearc basins

Antarctic Peninsula: Mesozoic tectonic setting



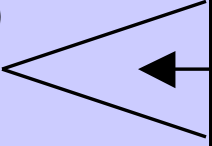
Alexander Island Stratigraphy

Age	Formation	Member	Environment
Albian	Neptune Glacier (2200 m)	Mars Glacier (>900 m)  Triton Point (>900 m) Deimos Ridge (800-1050 m)	Nearshore / paralic Fluvial Nearshore/paralic
Aptian-Albian	Pluto Glacier (1400 m)		Tidal shallow shelf
Valangian-Barremian	Spartan Glacier (1000m)		Outer shelf to slope
Thithonian-Berriasian	Himalia Ridge (2200 m)		Submarine fan channel complex
Kimmeridgian	Ablation Point (440m)		Slope collapse slump units





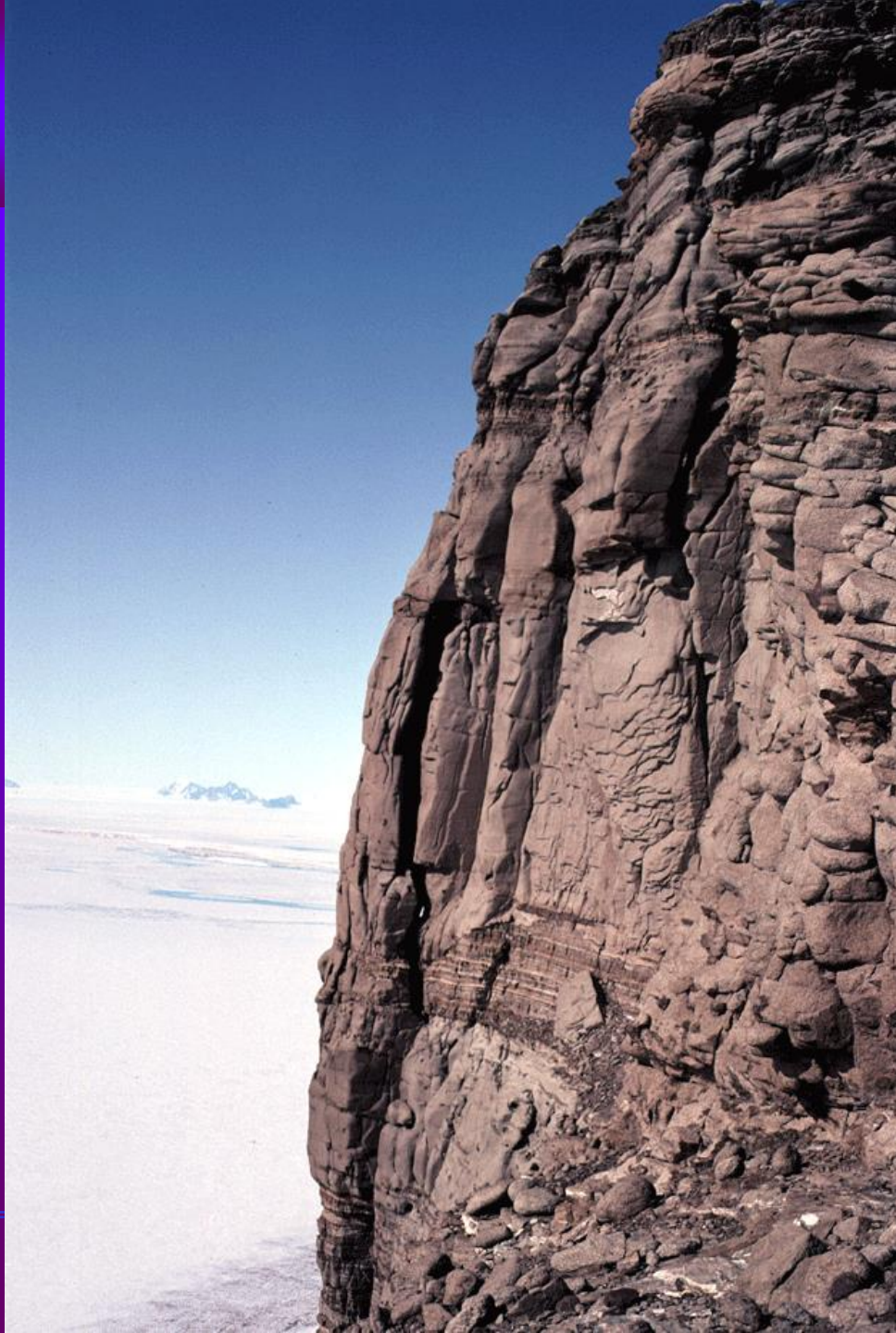
Alexander Island Stratigraphy

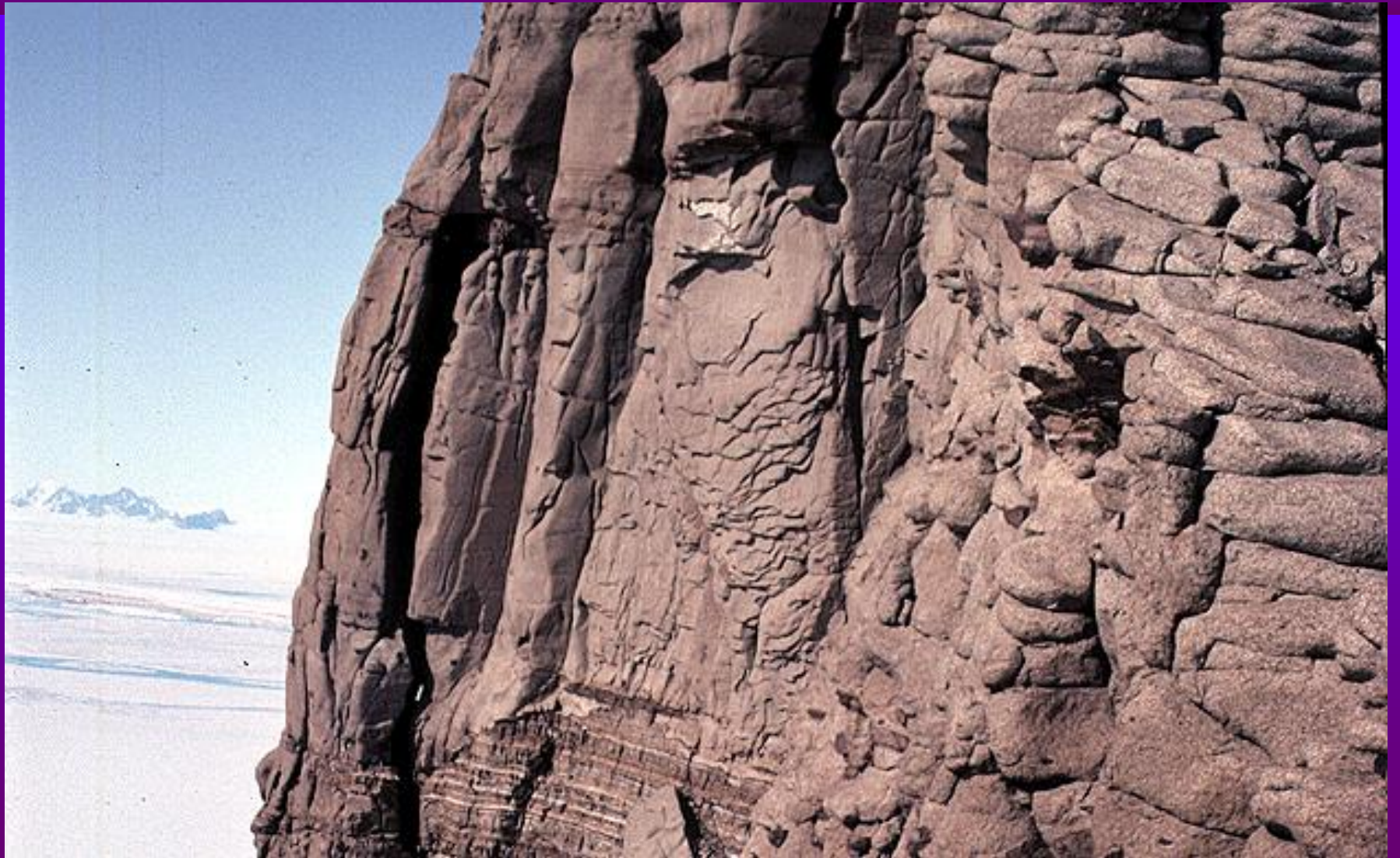
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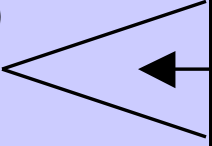






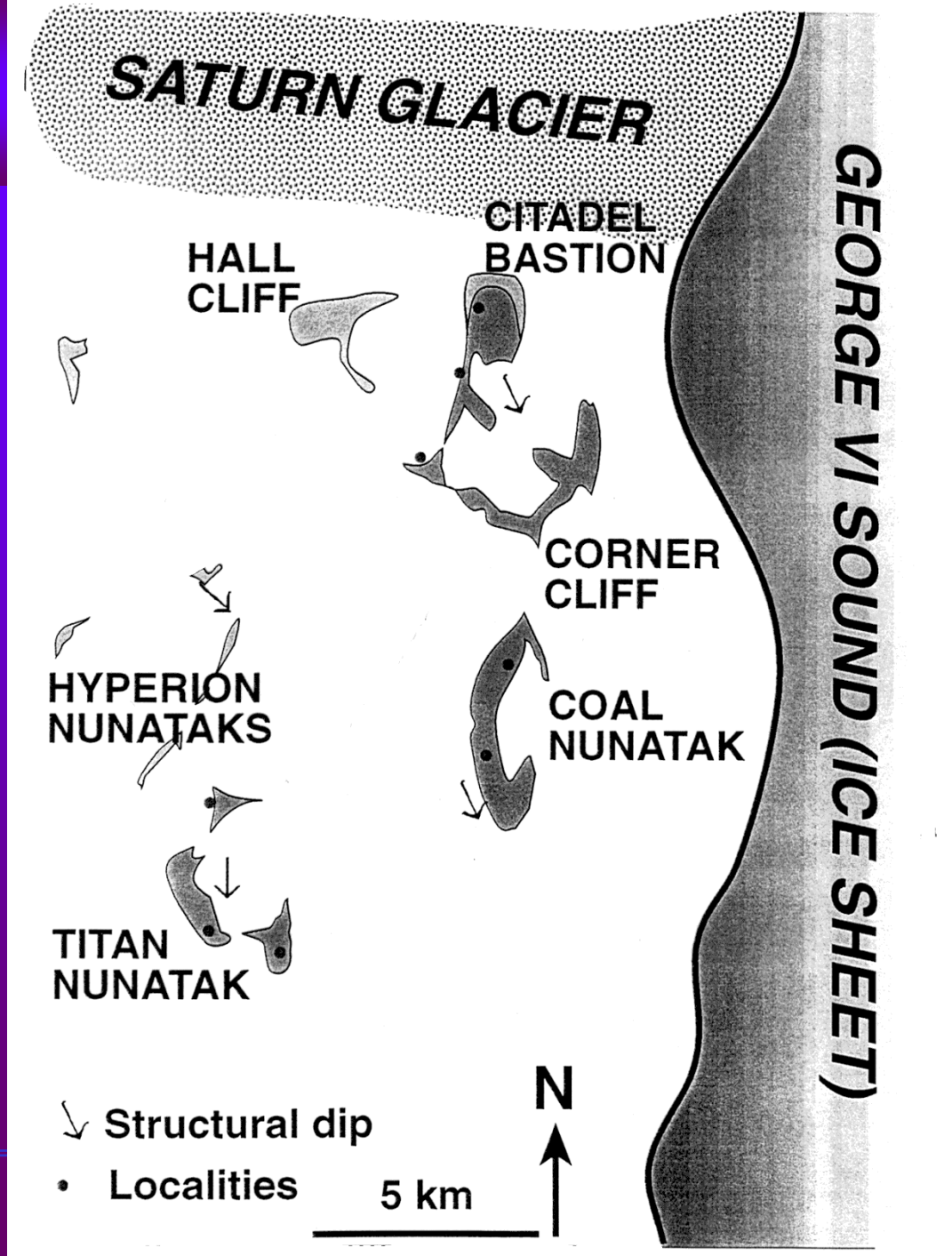


Alexander Island Stratigraphy

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Kimmeridgian	Ablation Point (440m)		Slope collapse slump units

Alexander Island

Southern Nunataks











Forearc basins



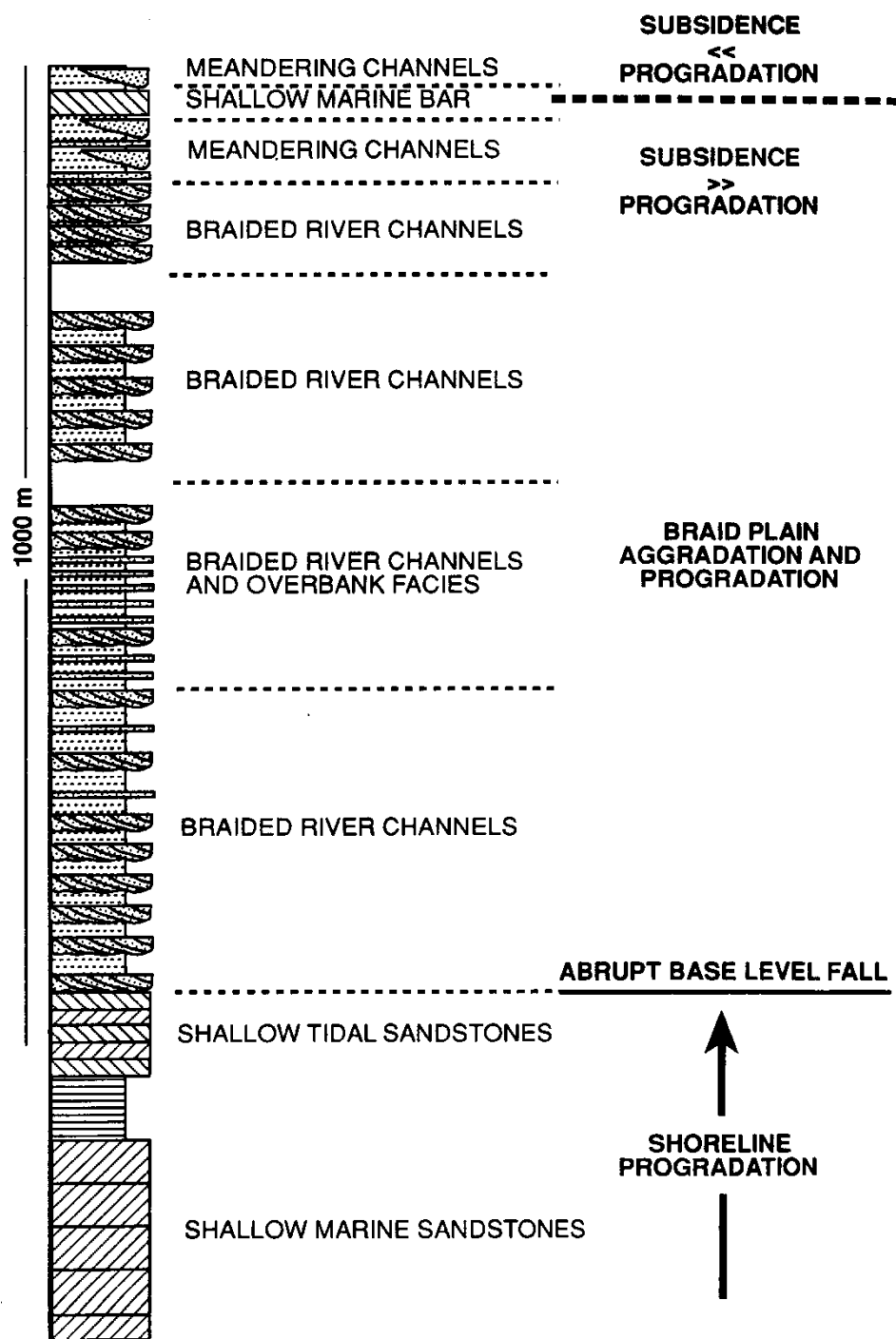








Triton Point Fm

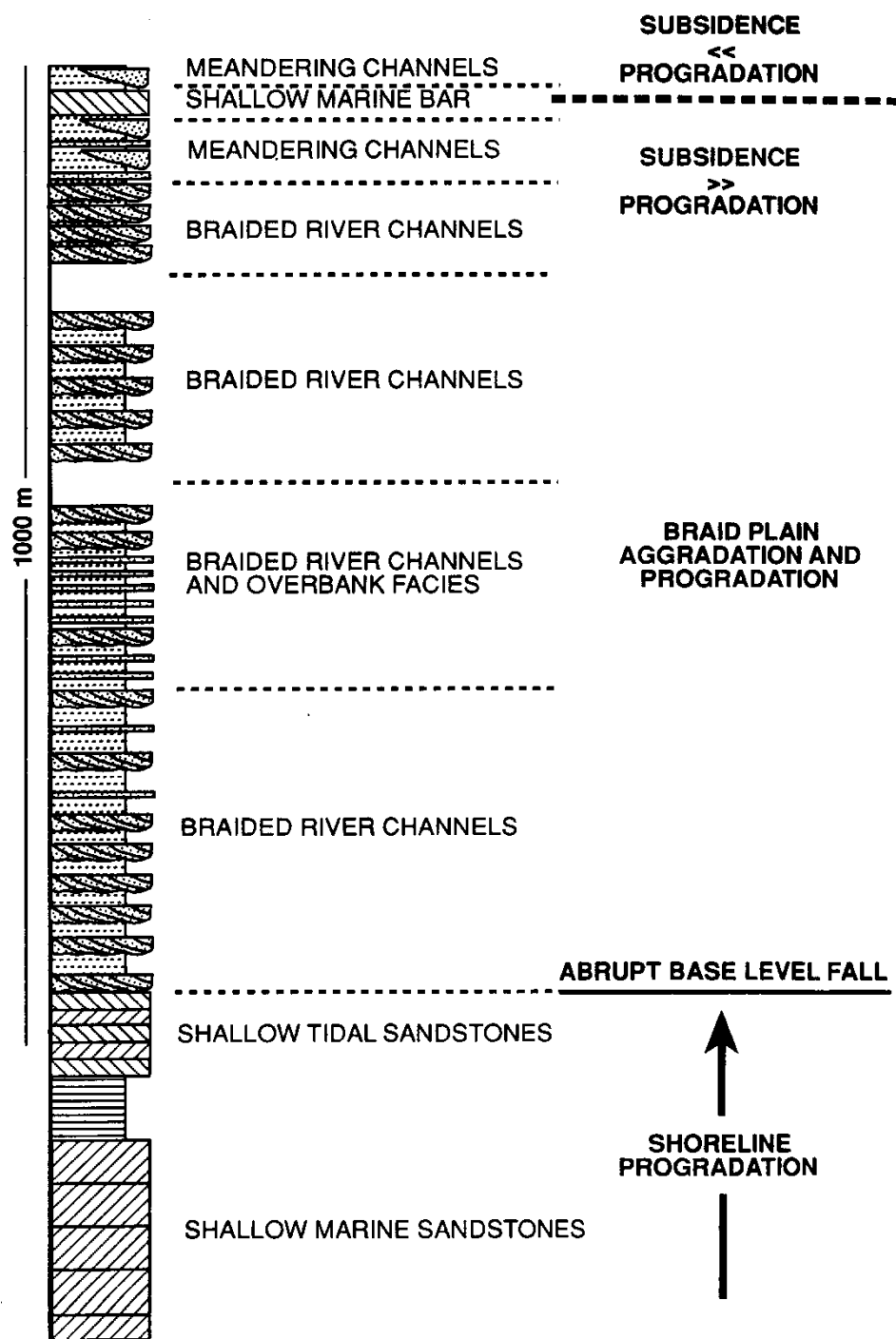




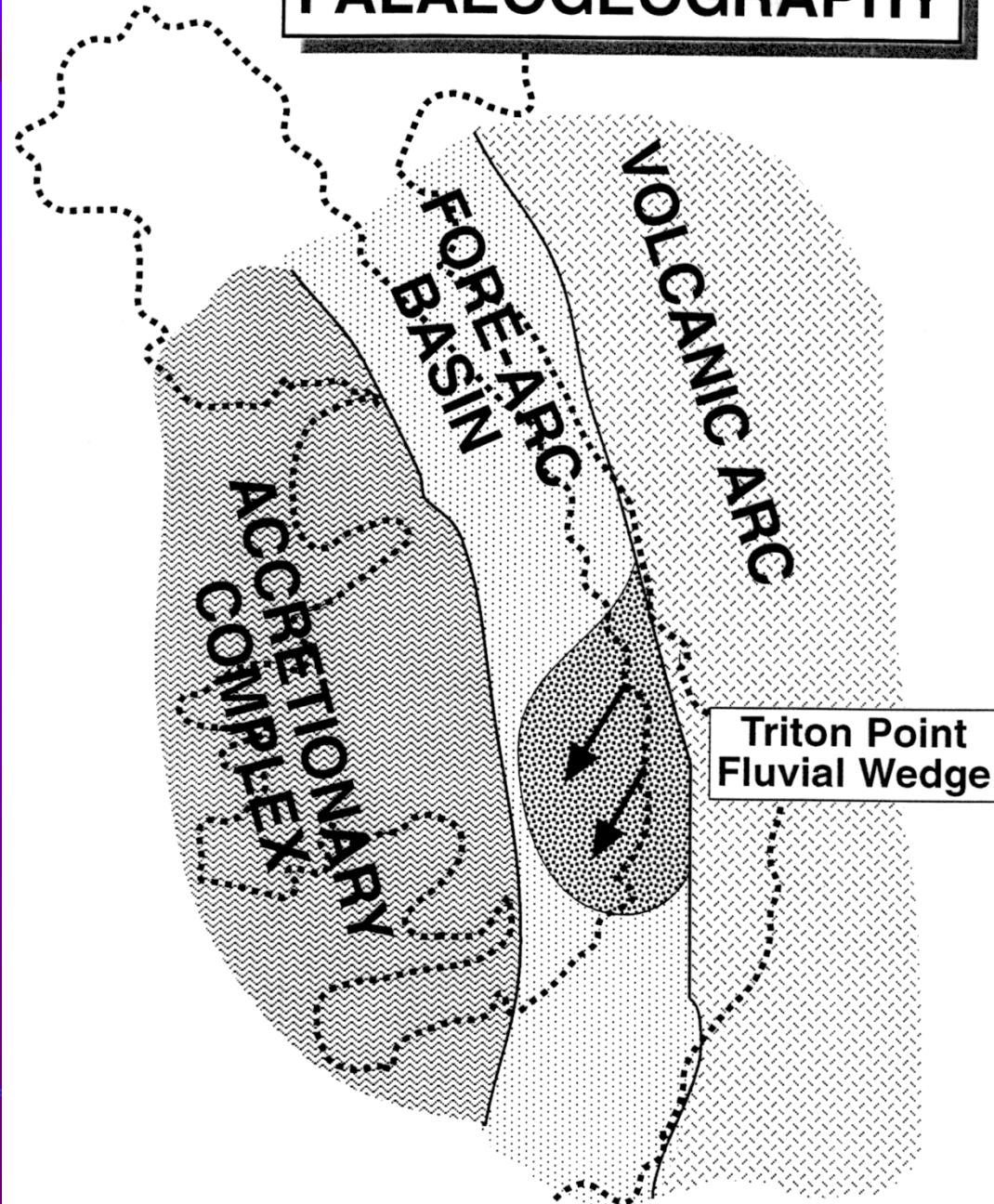




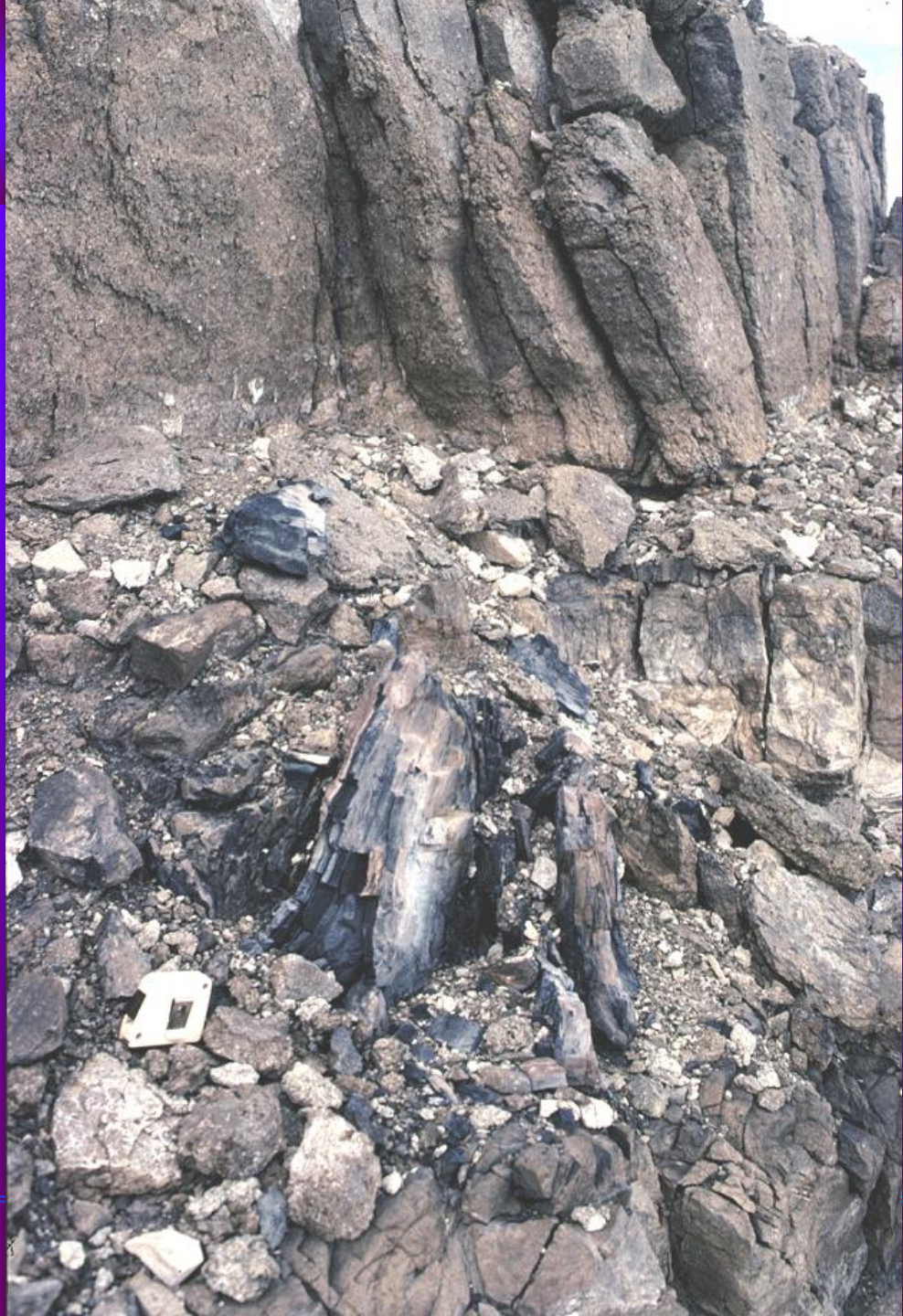
Triton Point Fm



LATE ALBIAN PALAEOGEOGRAPHY













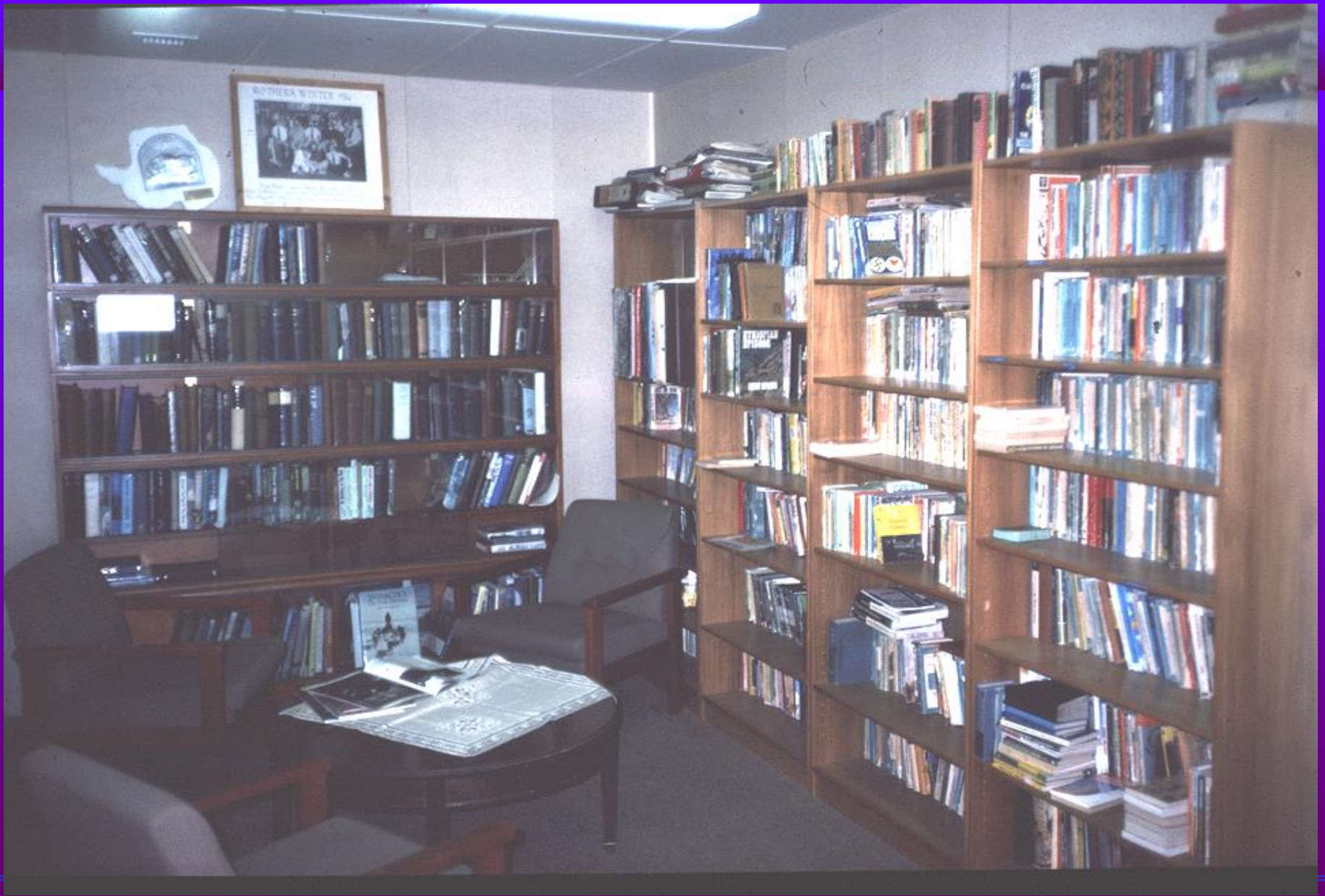














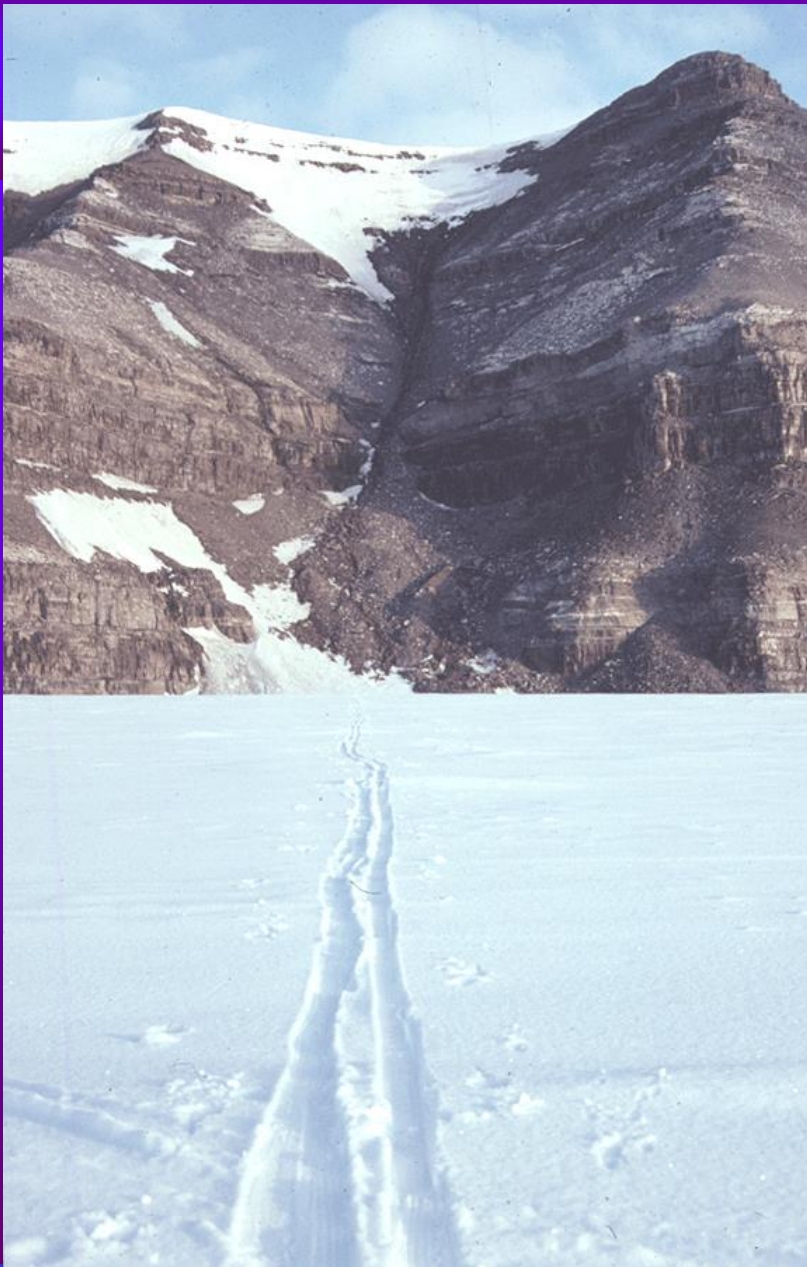
















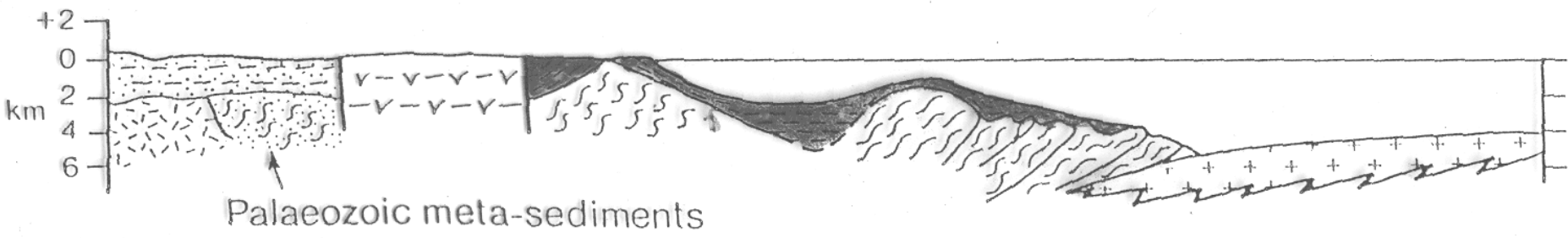




Alexander Island

Stratigraphy

AGE	STAGE		GROUP	FORMATION	MEMBER / BED	
Early Cretaceous	Albian	Late	Fossil Bluff	Neptune Glacier 2200m	Mars Glacier >900m	
					0-600m Triton Point	
						Delmos Ridge 800-1050m
					Pluto Glacier 1400m	0-370m Rhea Corner
	Aptian					0-15m Callisto Cliffs
	Barremlan				Spartan Glacier 1000m	
	Hauterivian					
Valanginian						
	Berriasian			Himalia Ridge 2200m	70-90m Jupiter Glacier	
Late Jurassic	Tithonian					
				Ablation Point	440m	



Palaeozoic meta-sediments

A. EARLY-MIOCENE

