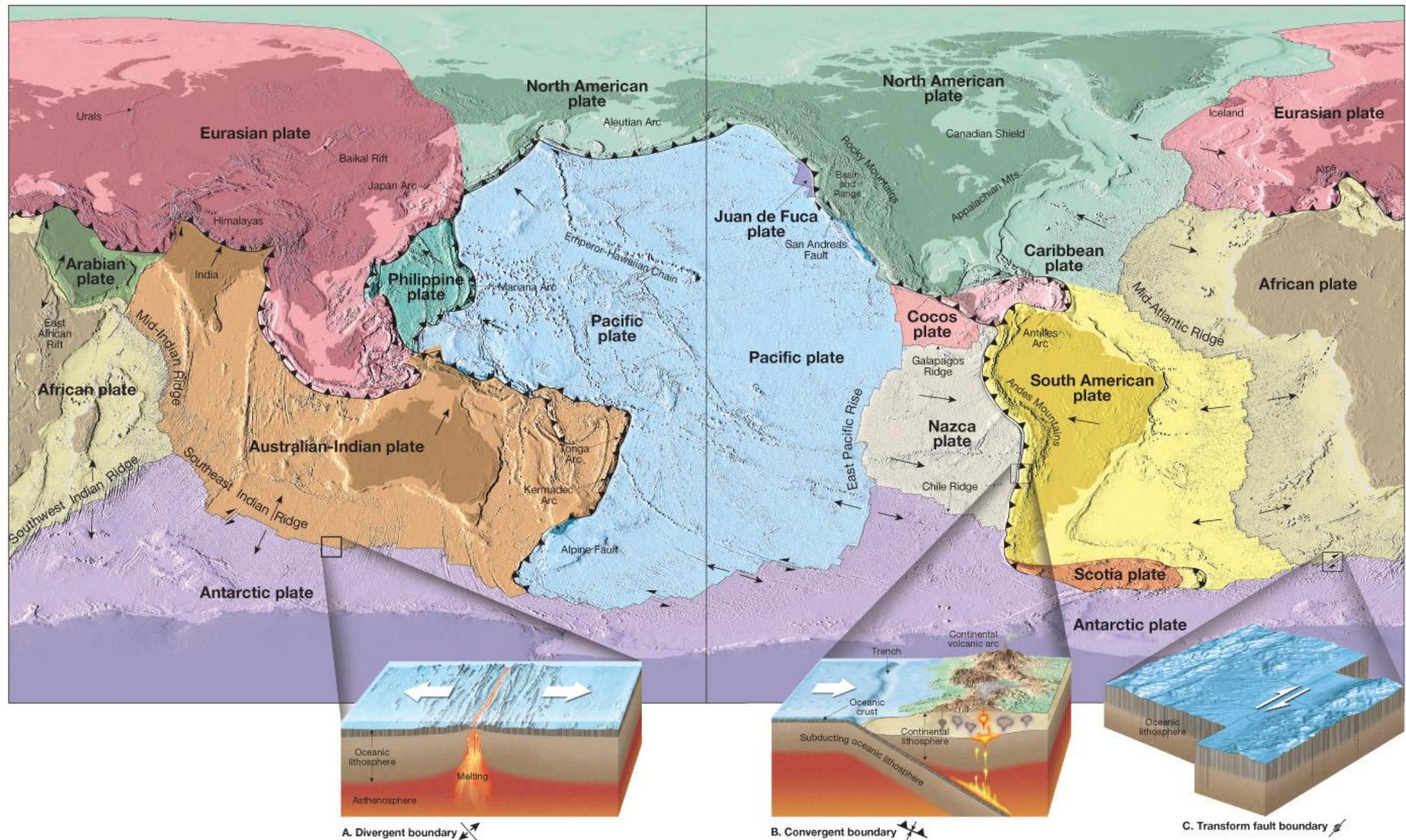


GY4051 Earth Science and Society

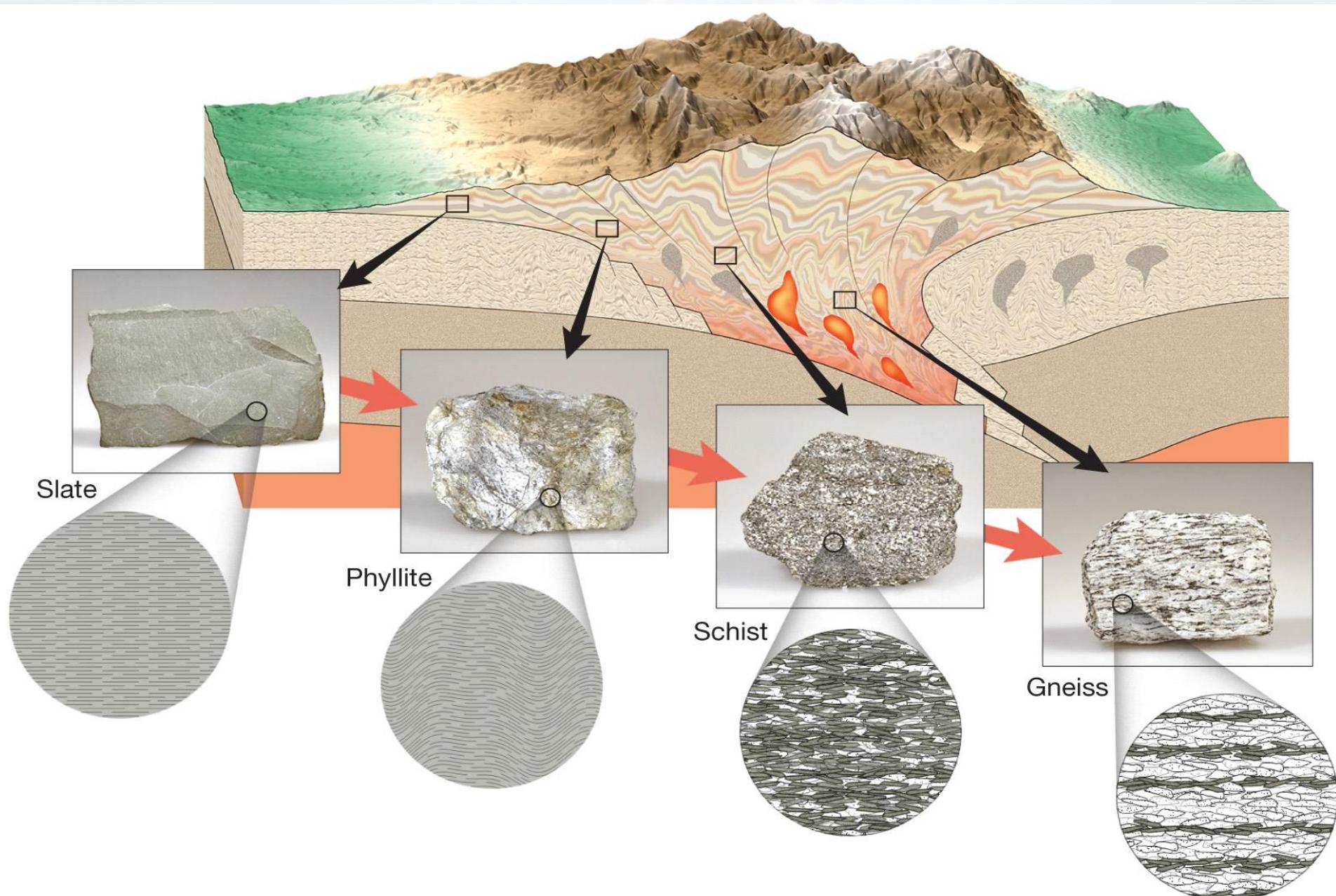
Laurentia, Avalonia, and the Iapetus Ocean















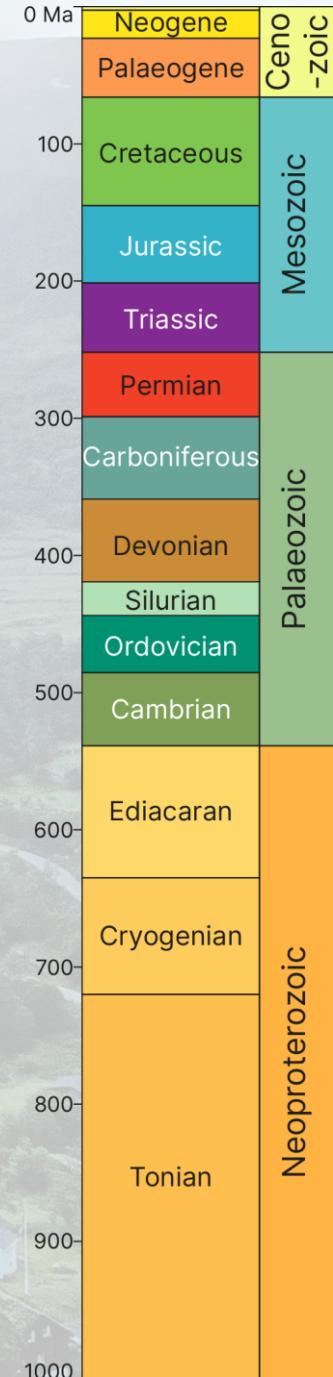
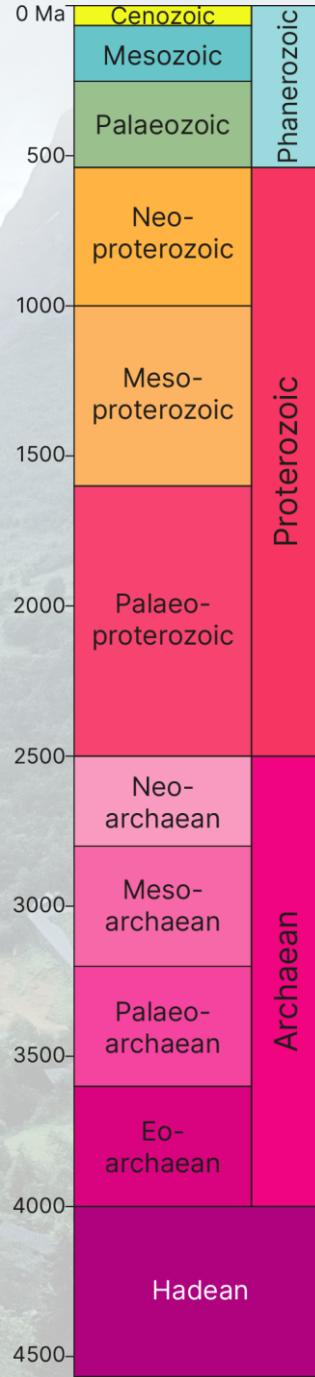
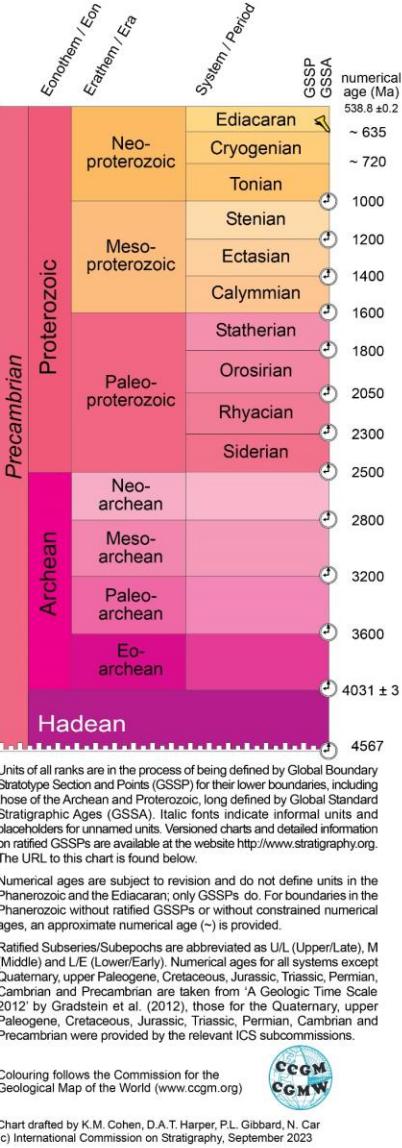
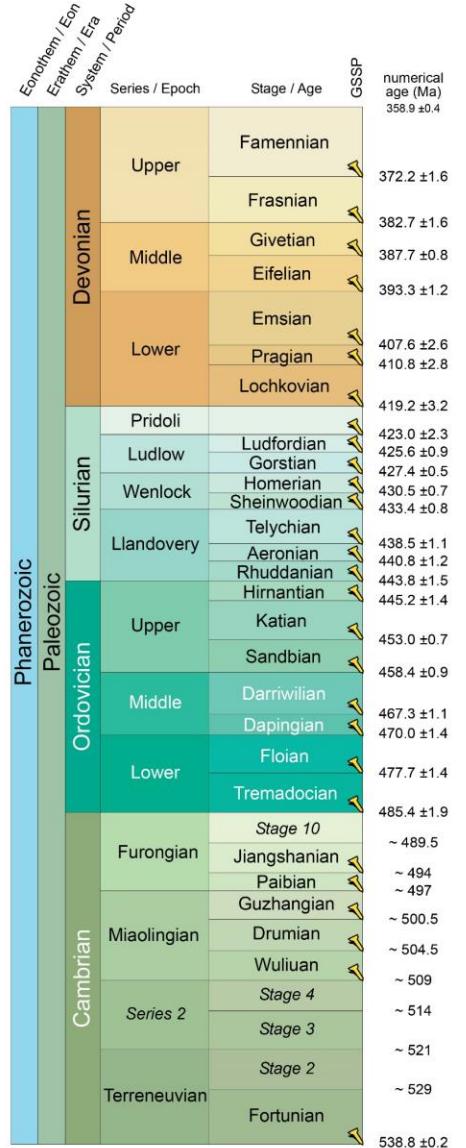
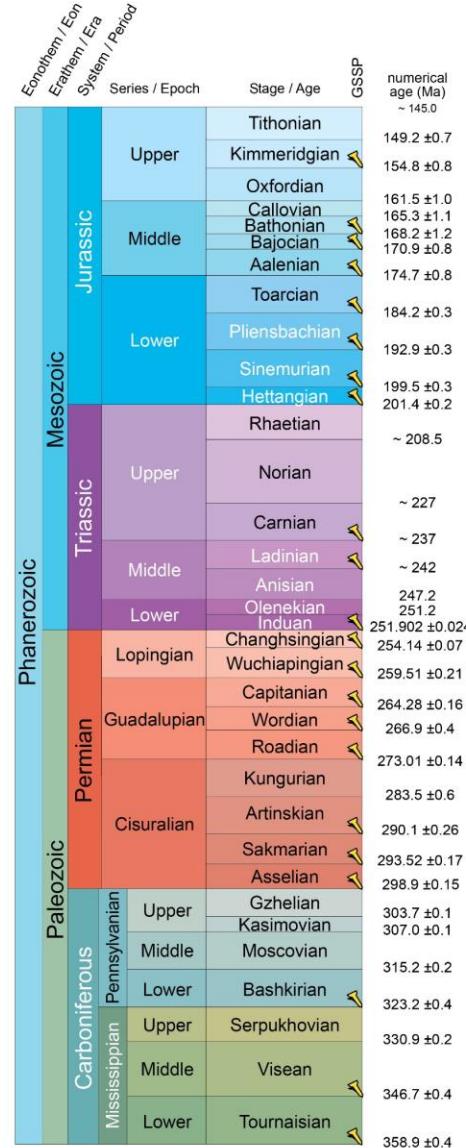
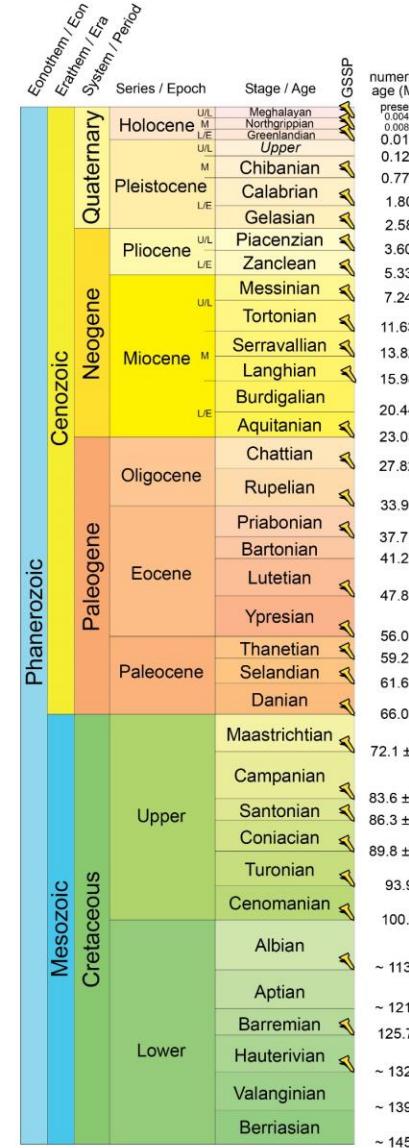


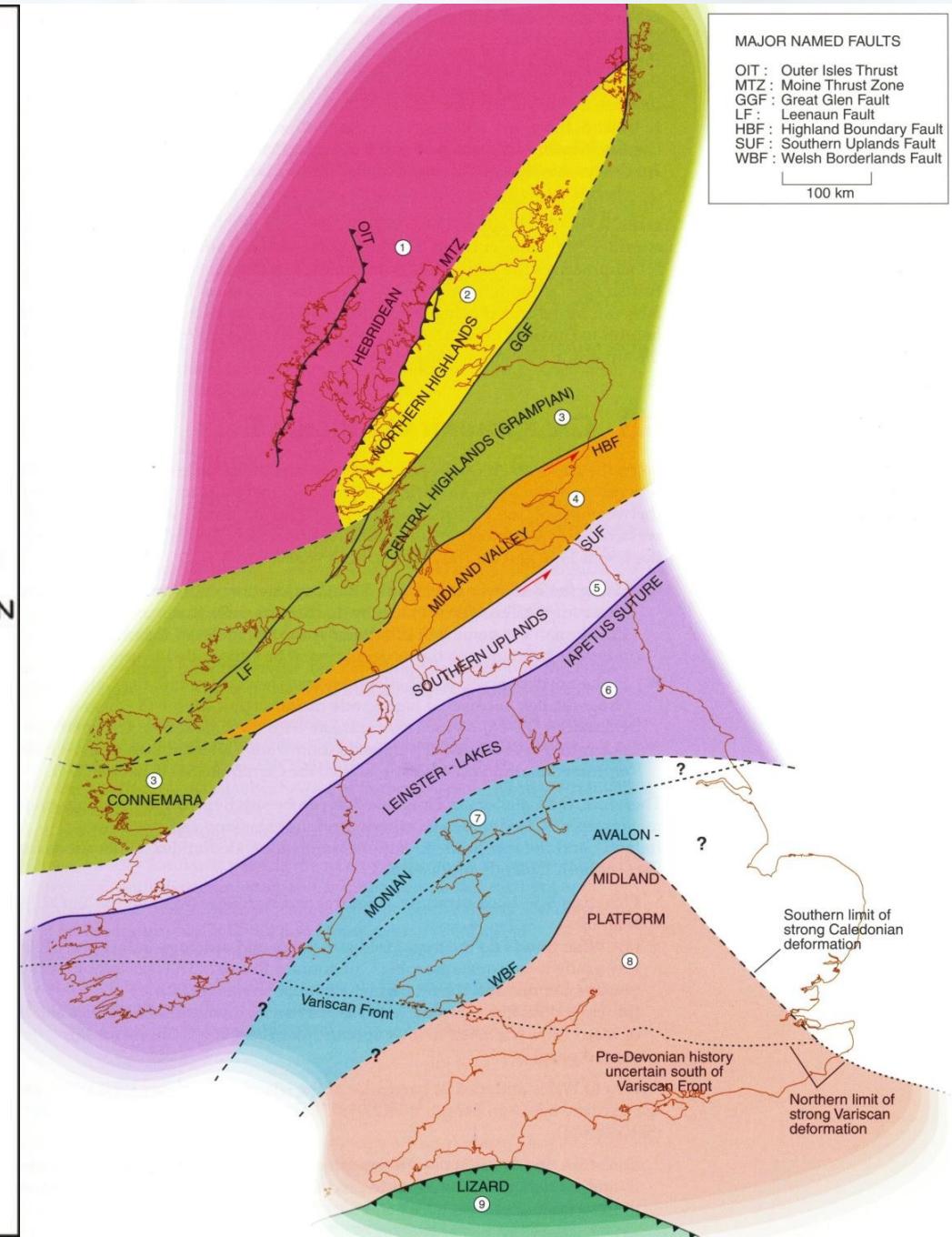
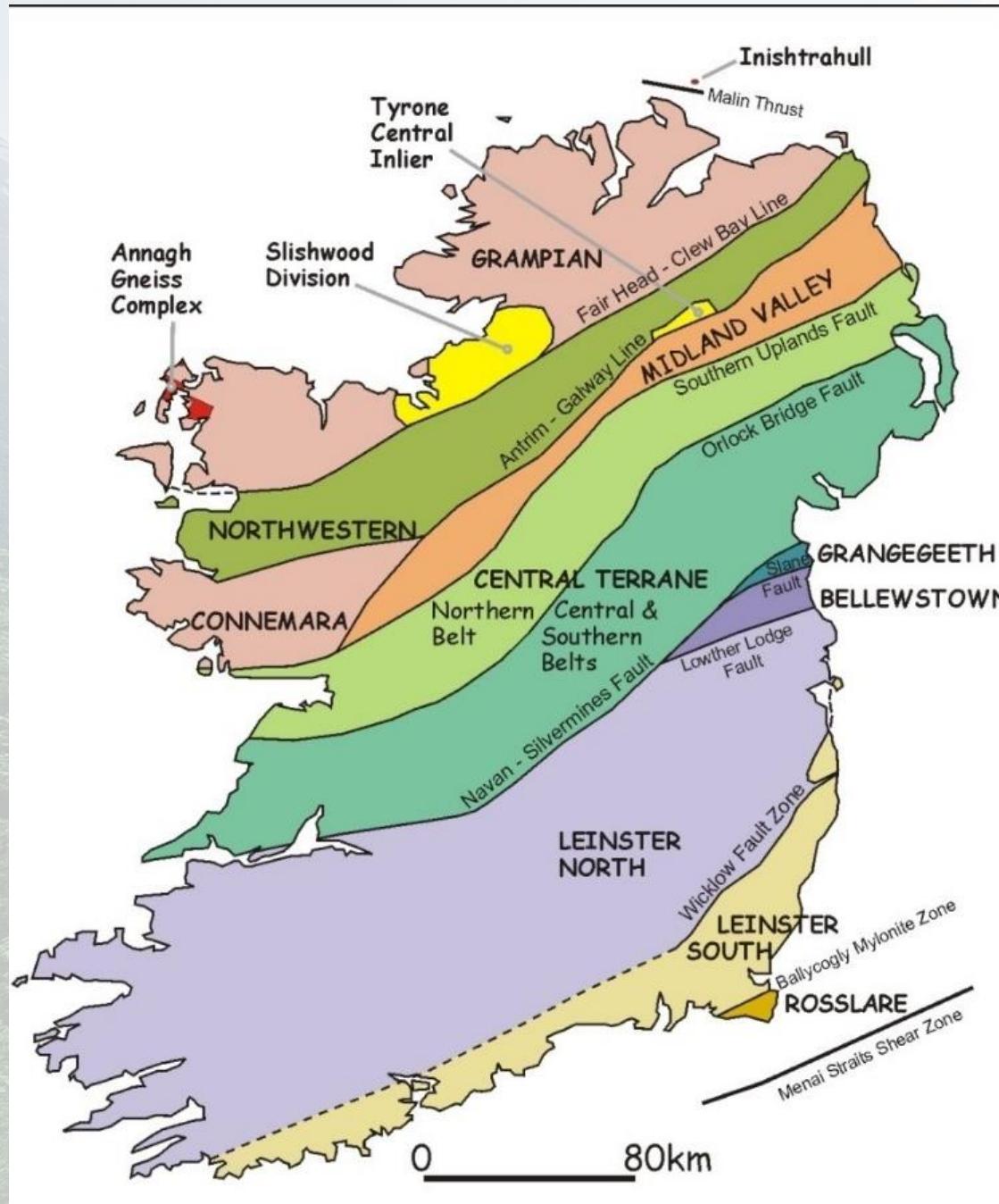
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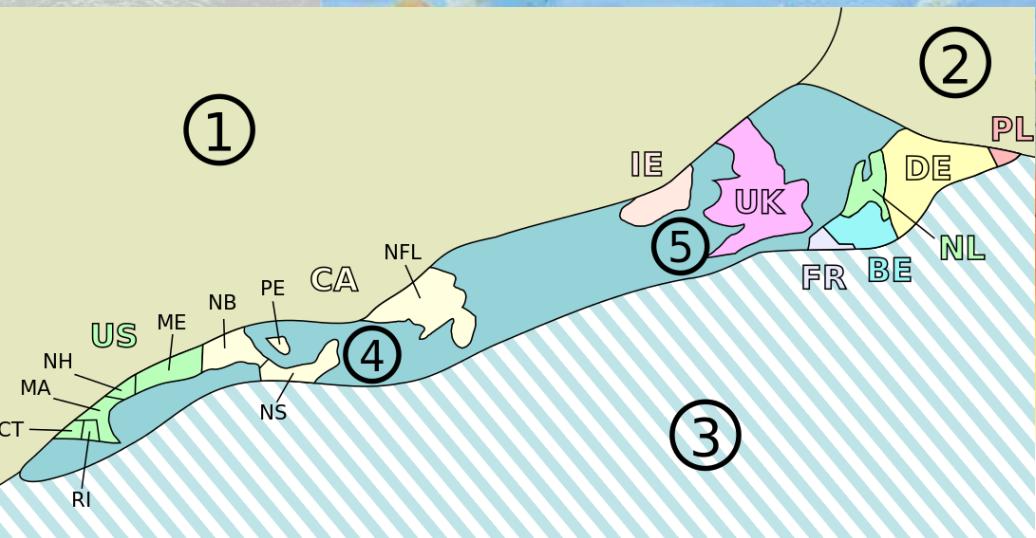
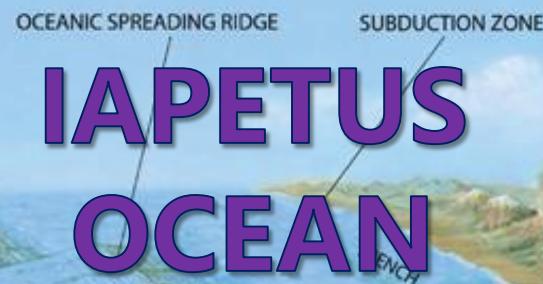
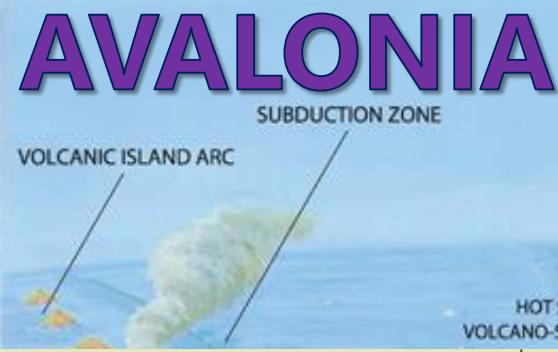
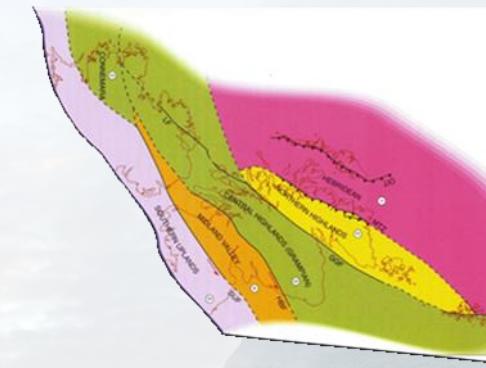
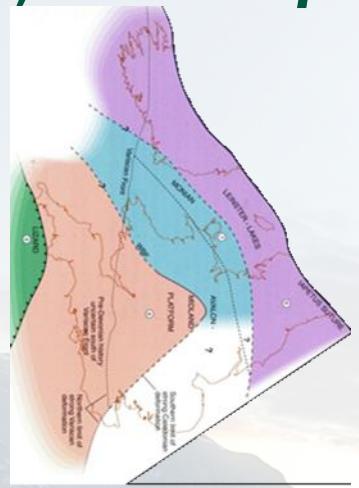
www.stratigraphy.org

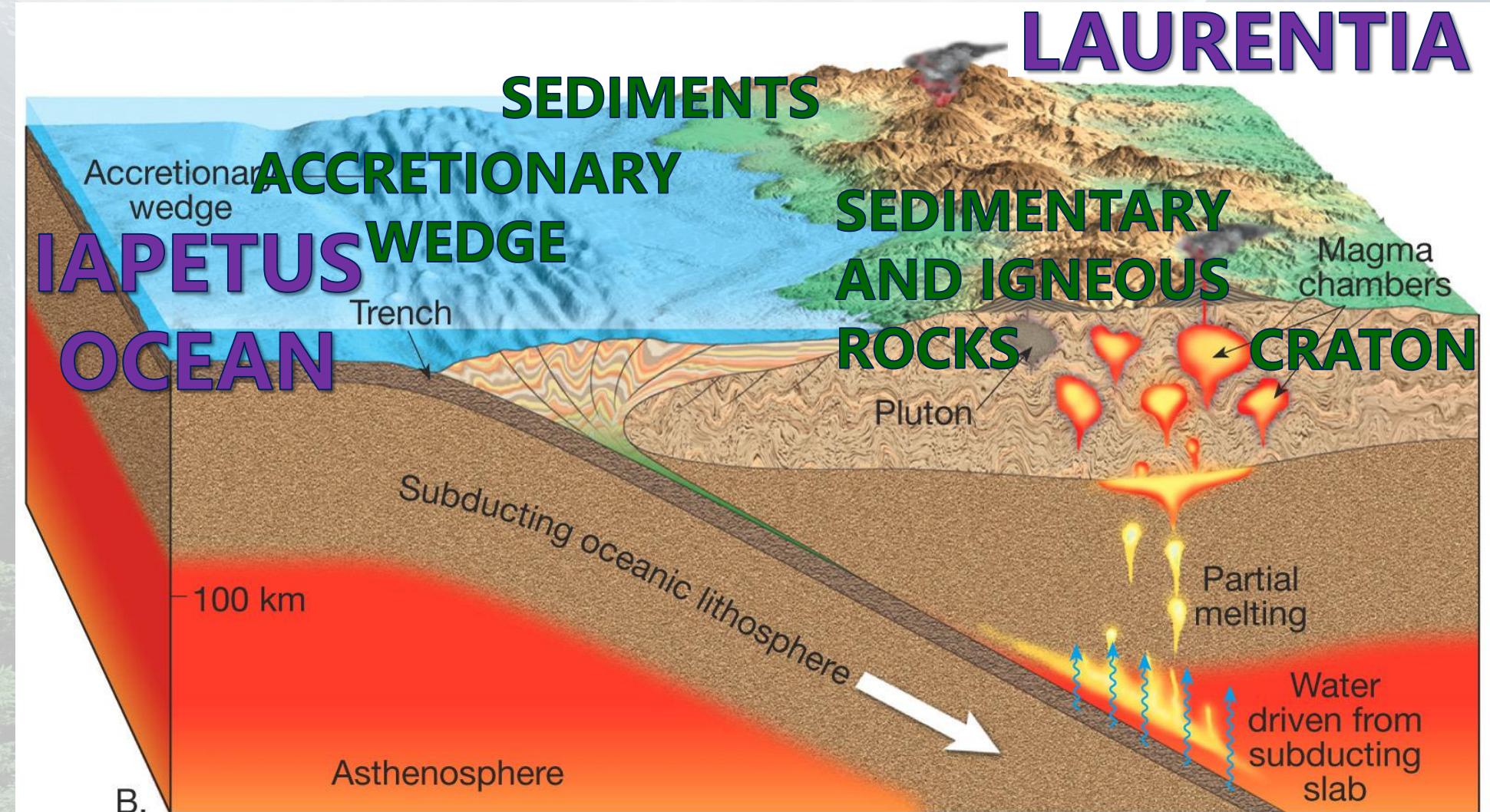
International Commission on Stratigraphy

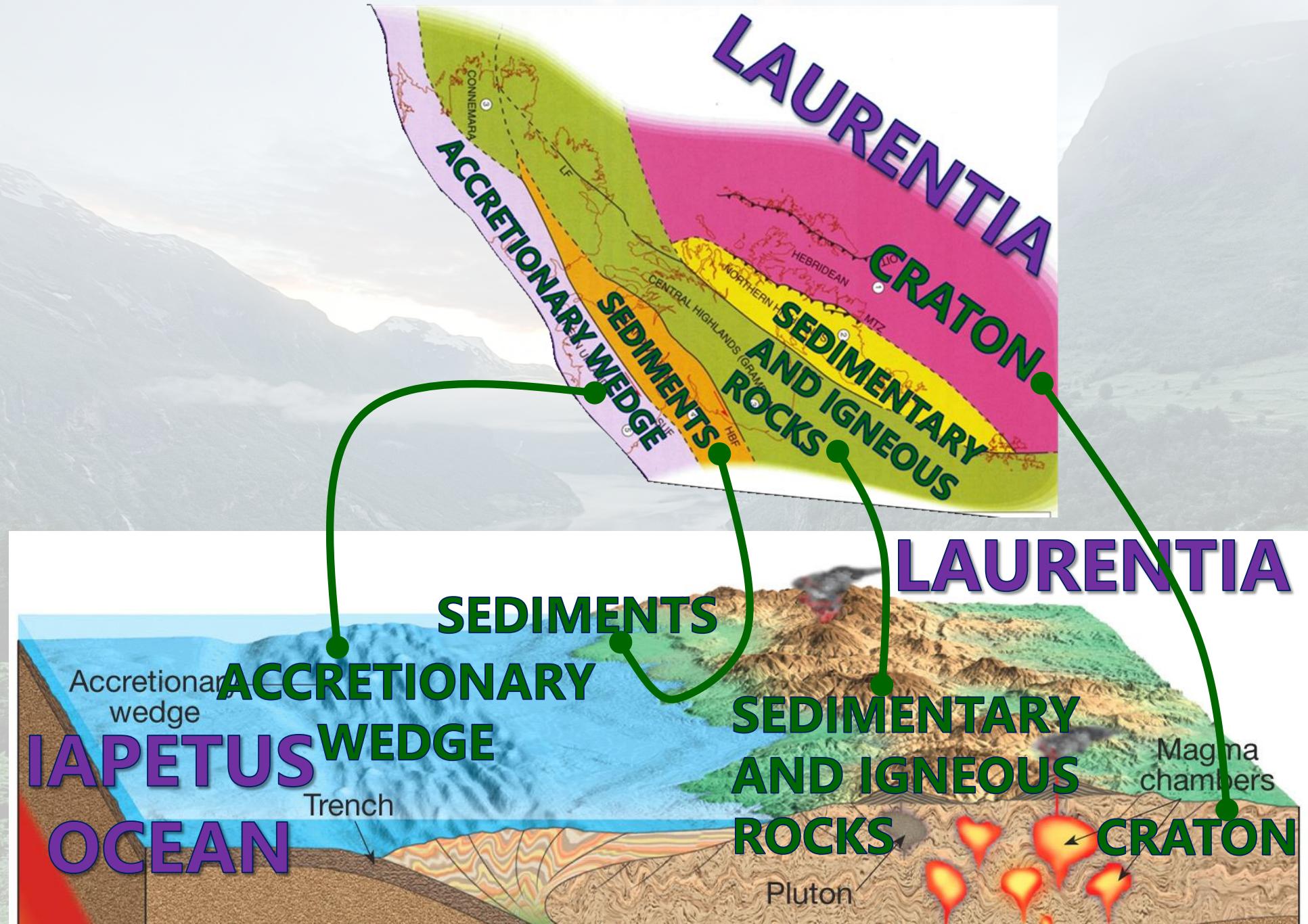
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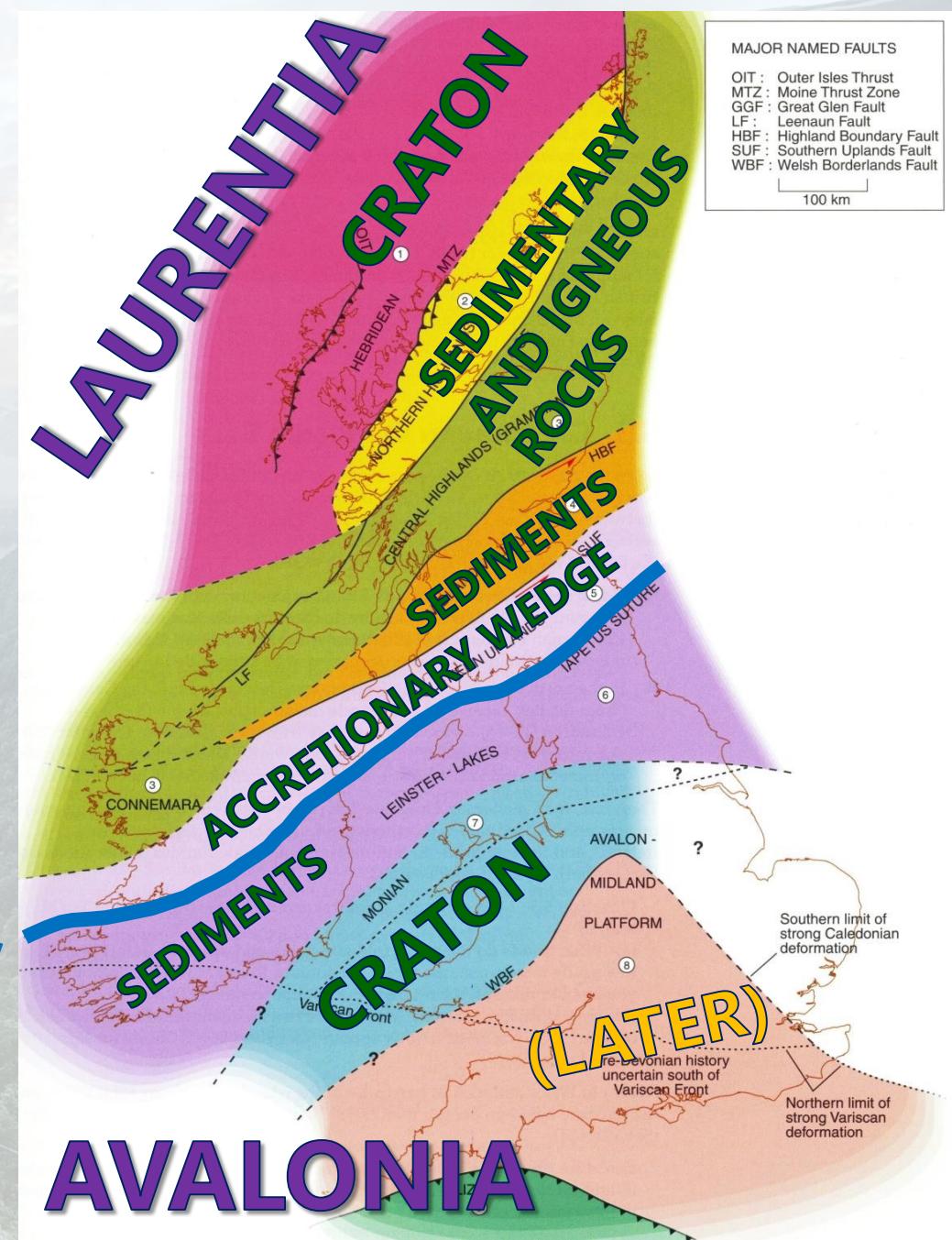
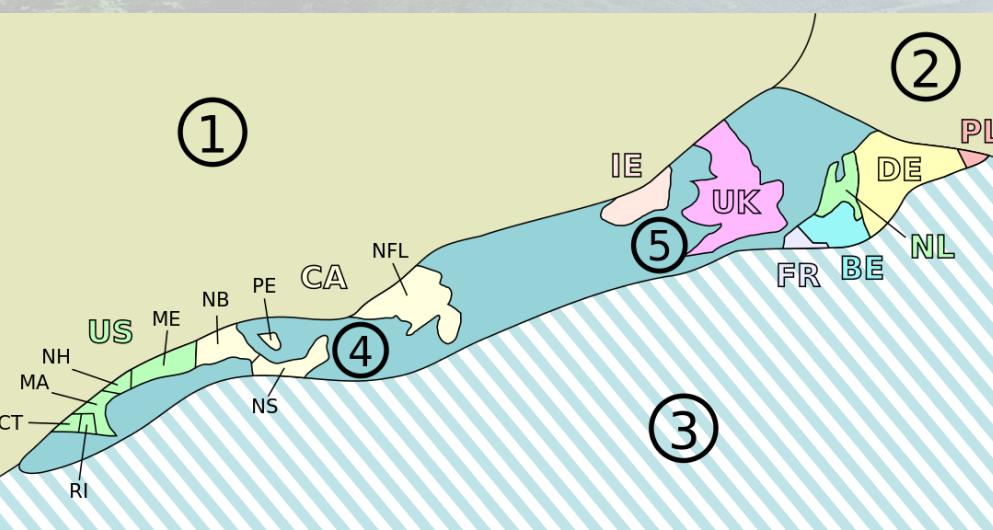
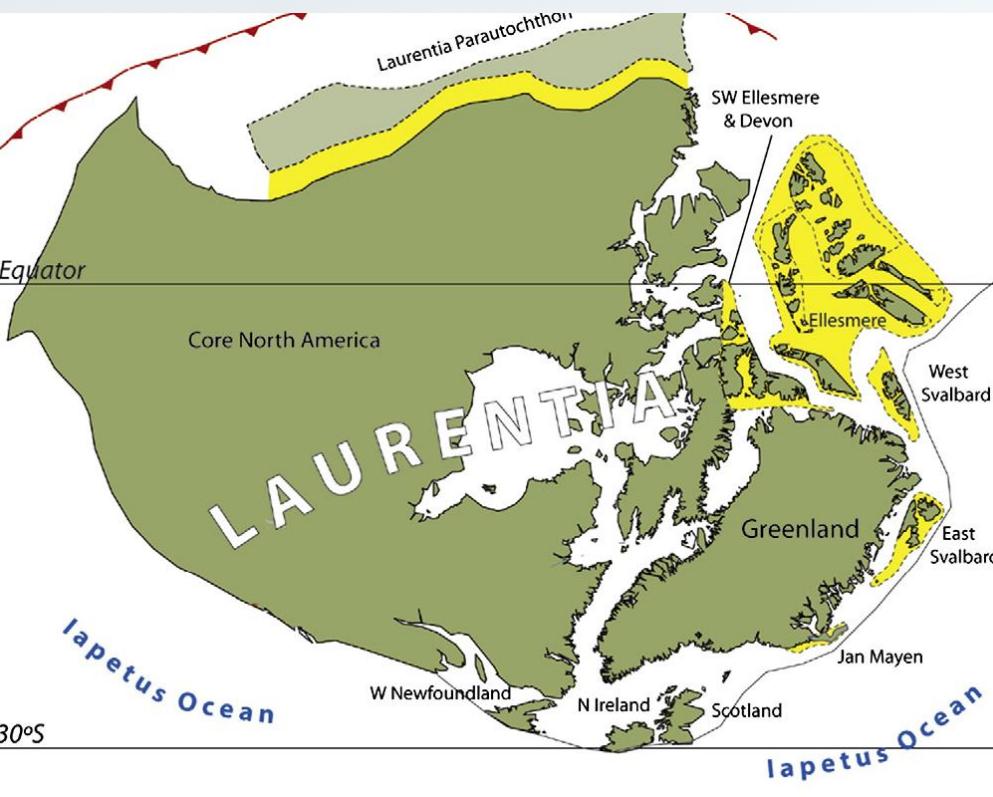






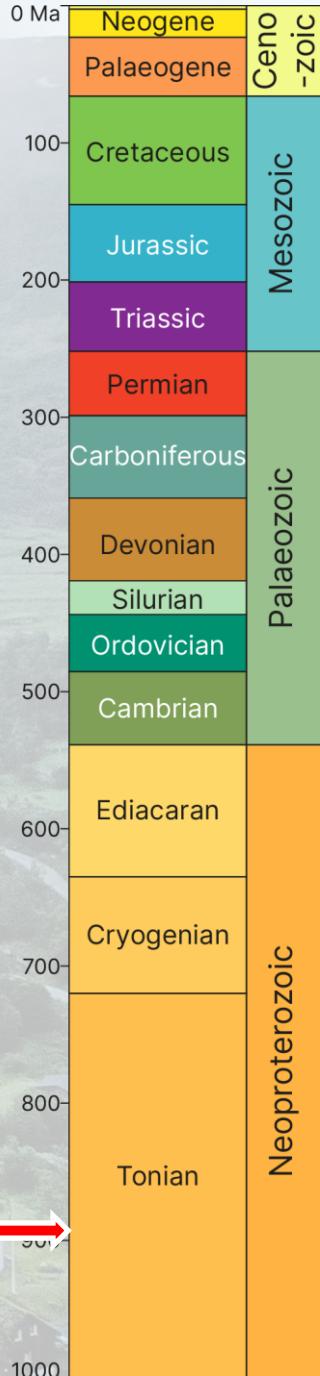


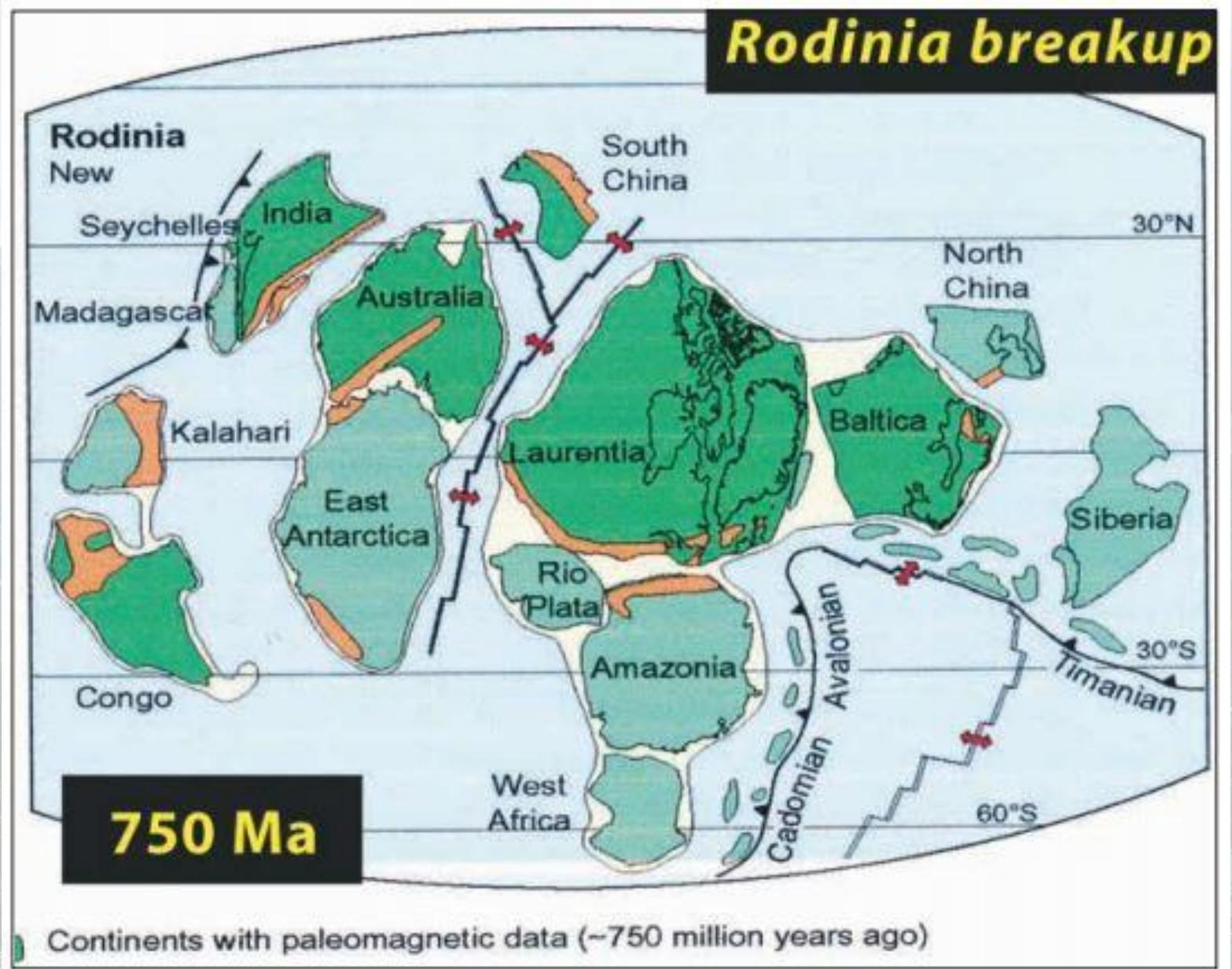




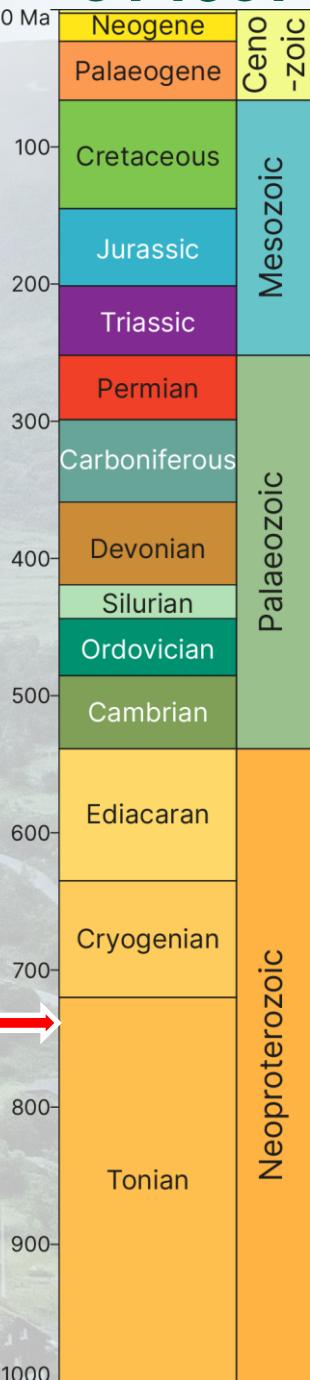


Rodinia
~900 Ma



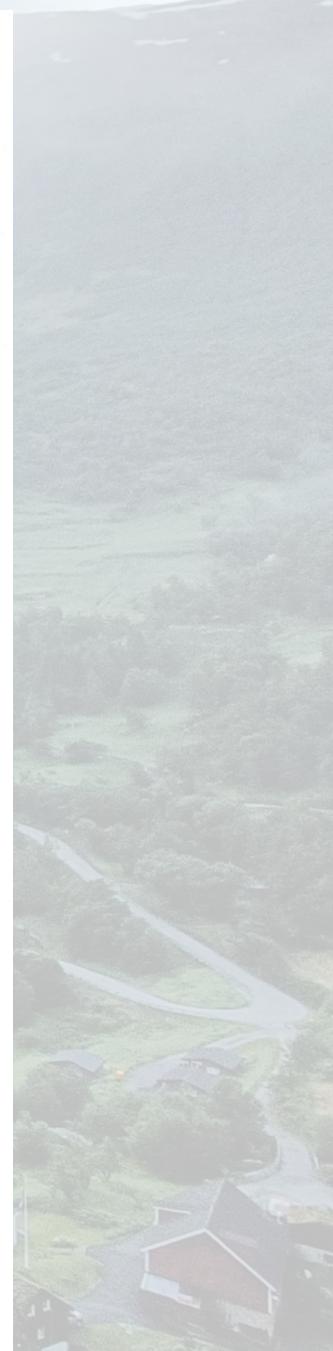
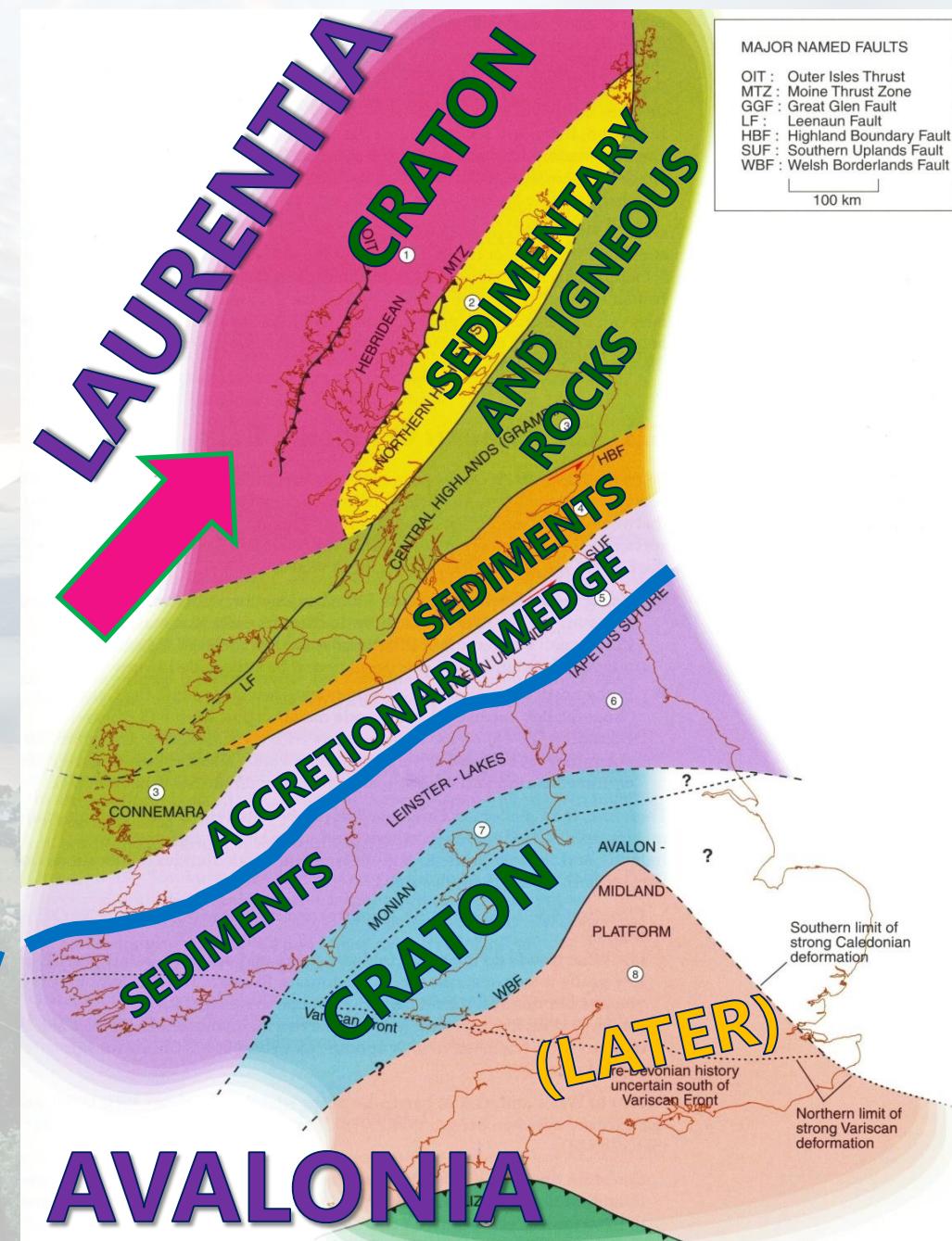


Breakup and dispersal of the Rodinia supercontinent (Torsvik, 2004). Source: snowballearth.org



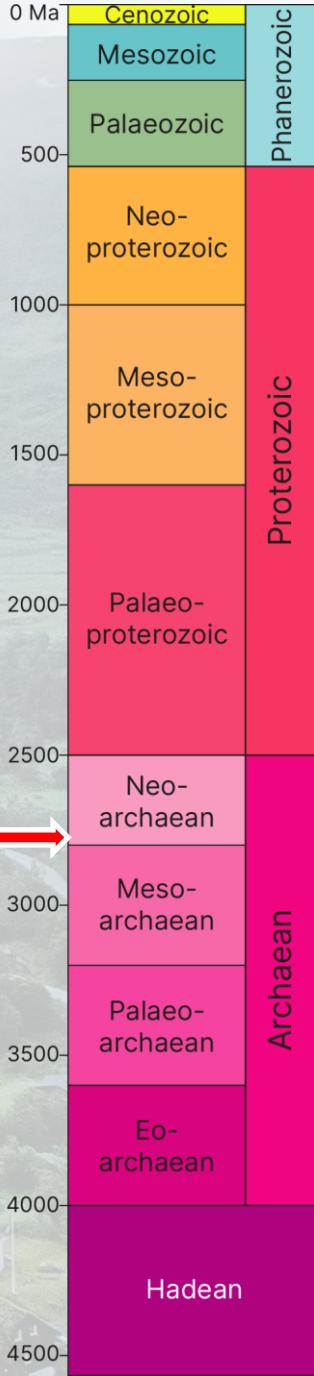
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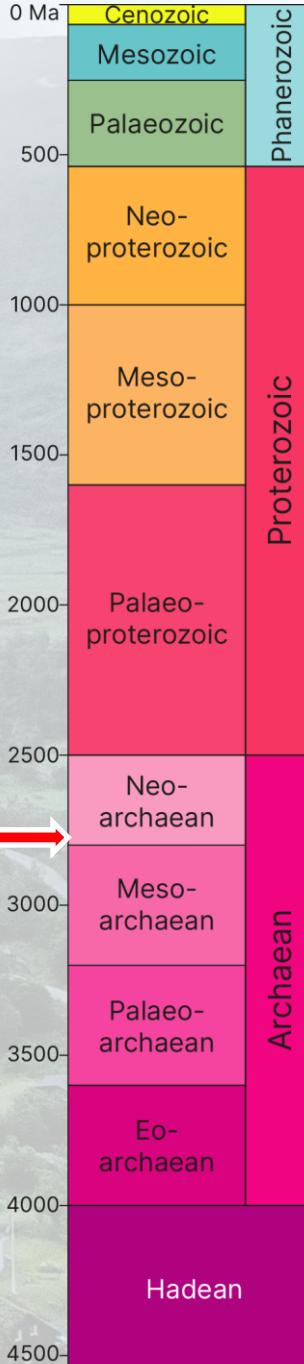
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian Craton

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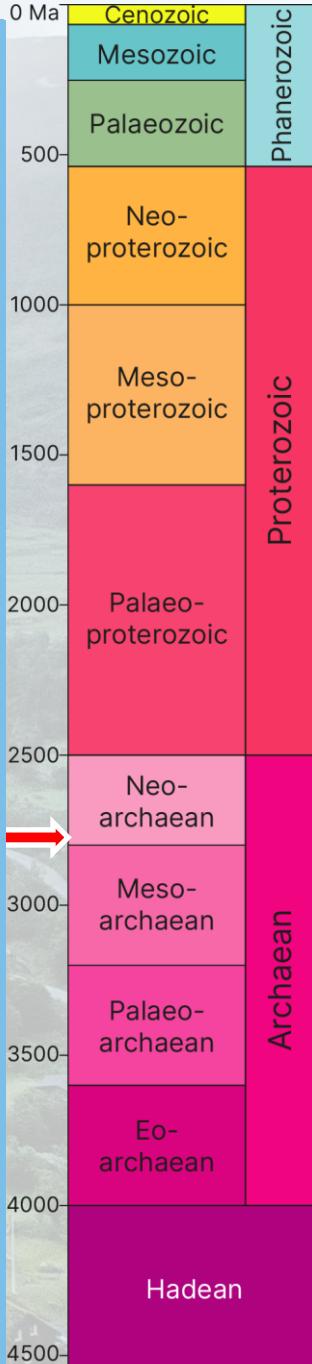
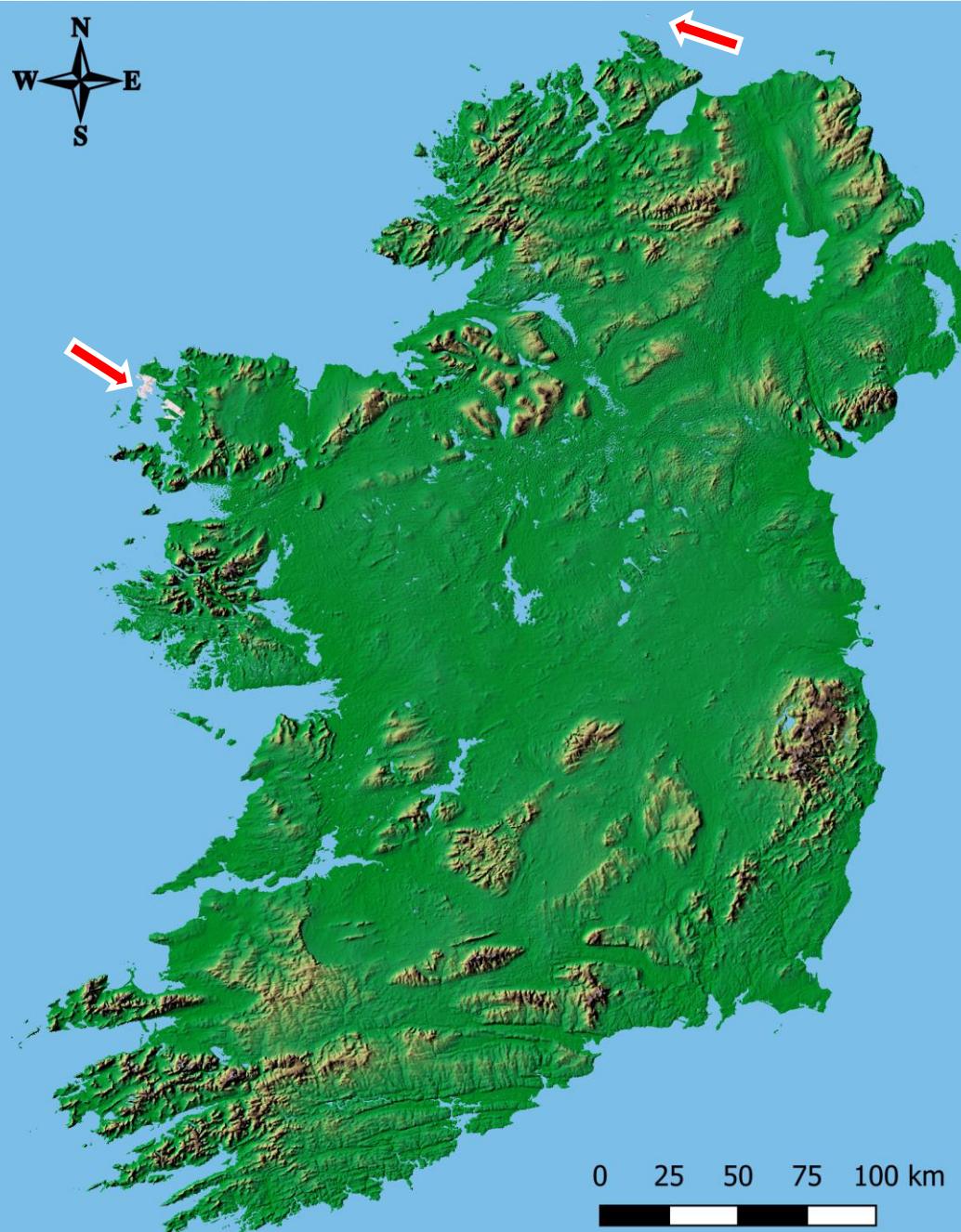
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian Craton

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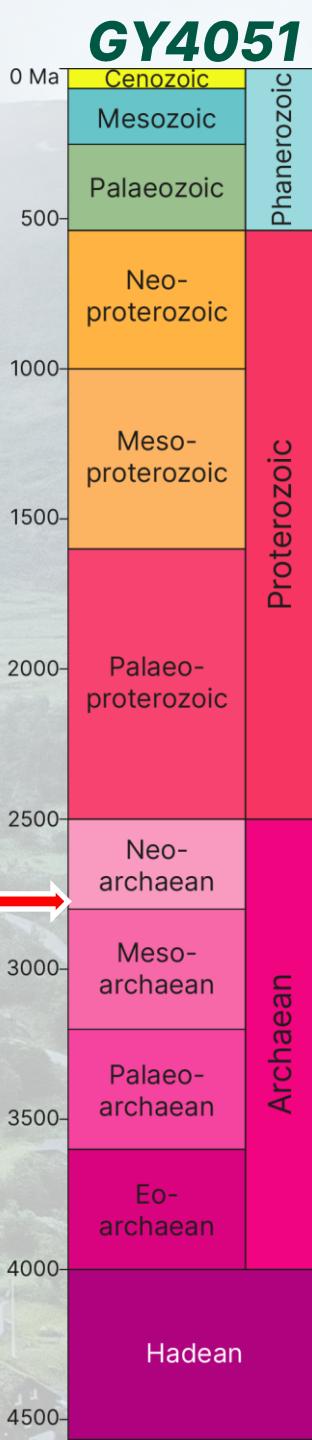


Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian Craton

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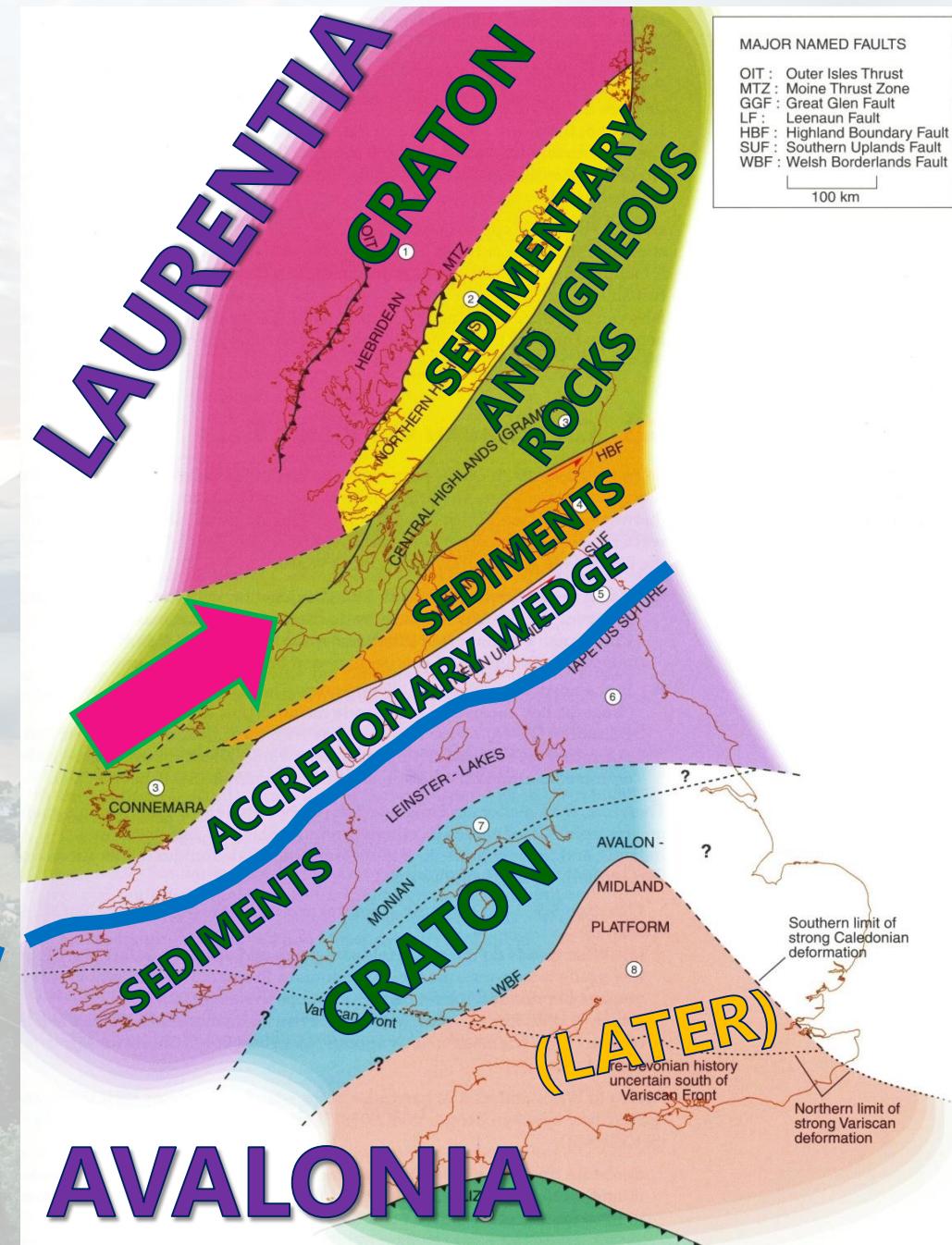
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian Craton



NORTHERN & CENTRAL HIGHLANDS

(Moine and Grampian)

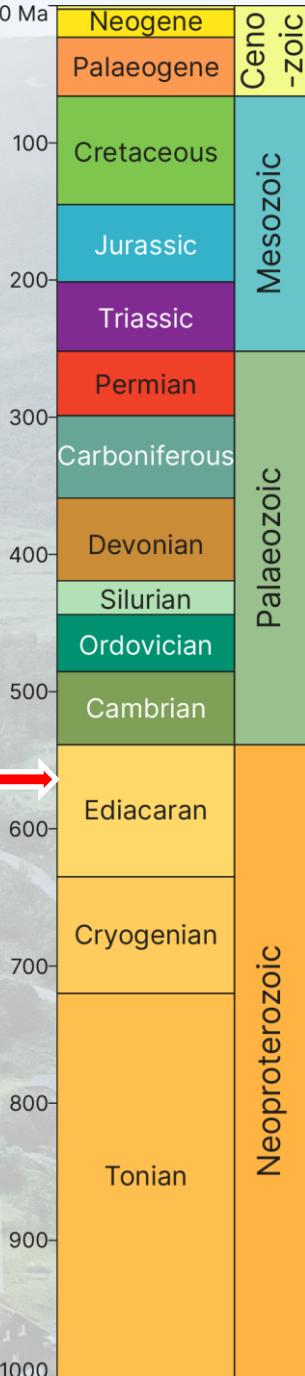
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Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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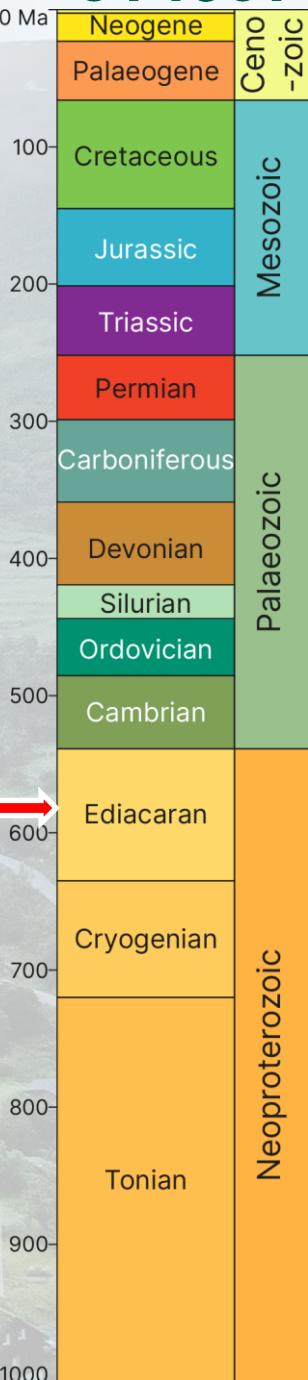
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Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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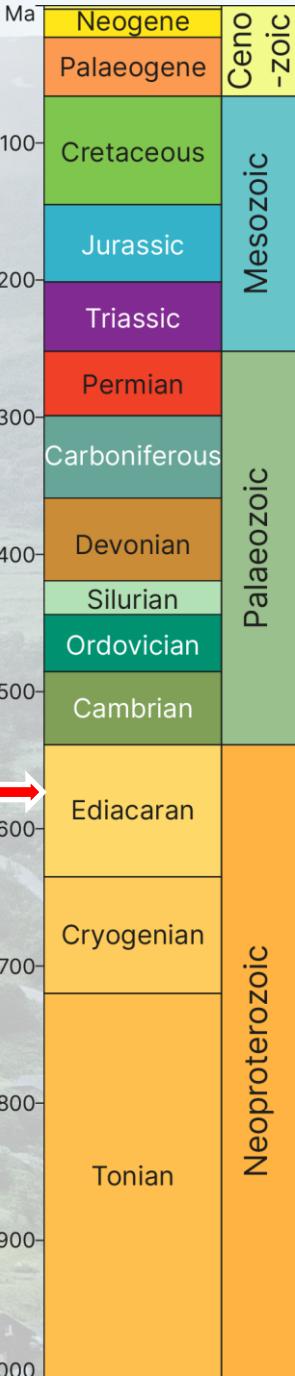
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Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

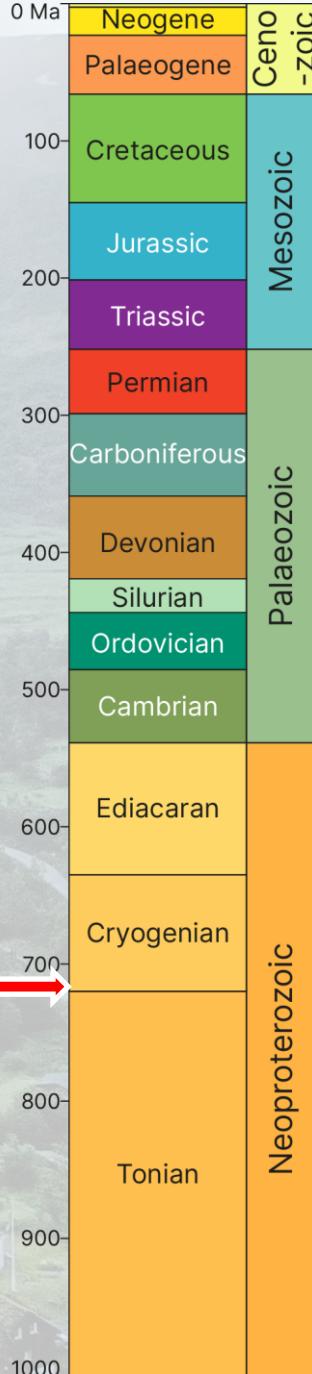
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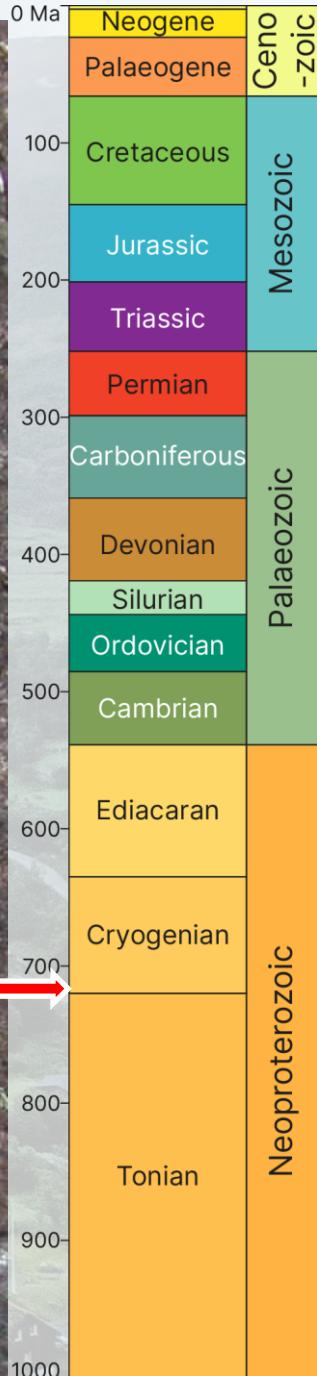
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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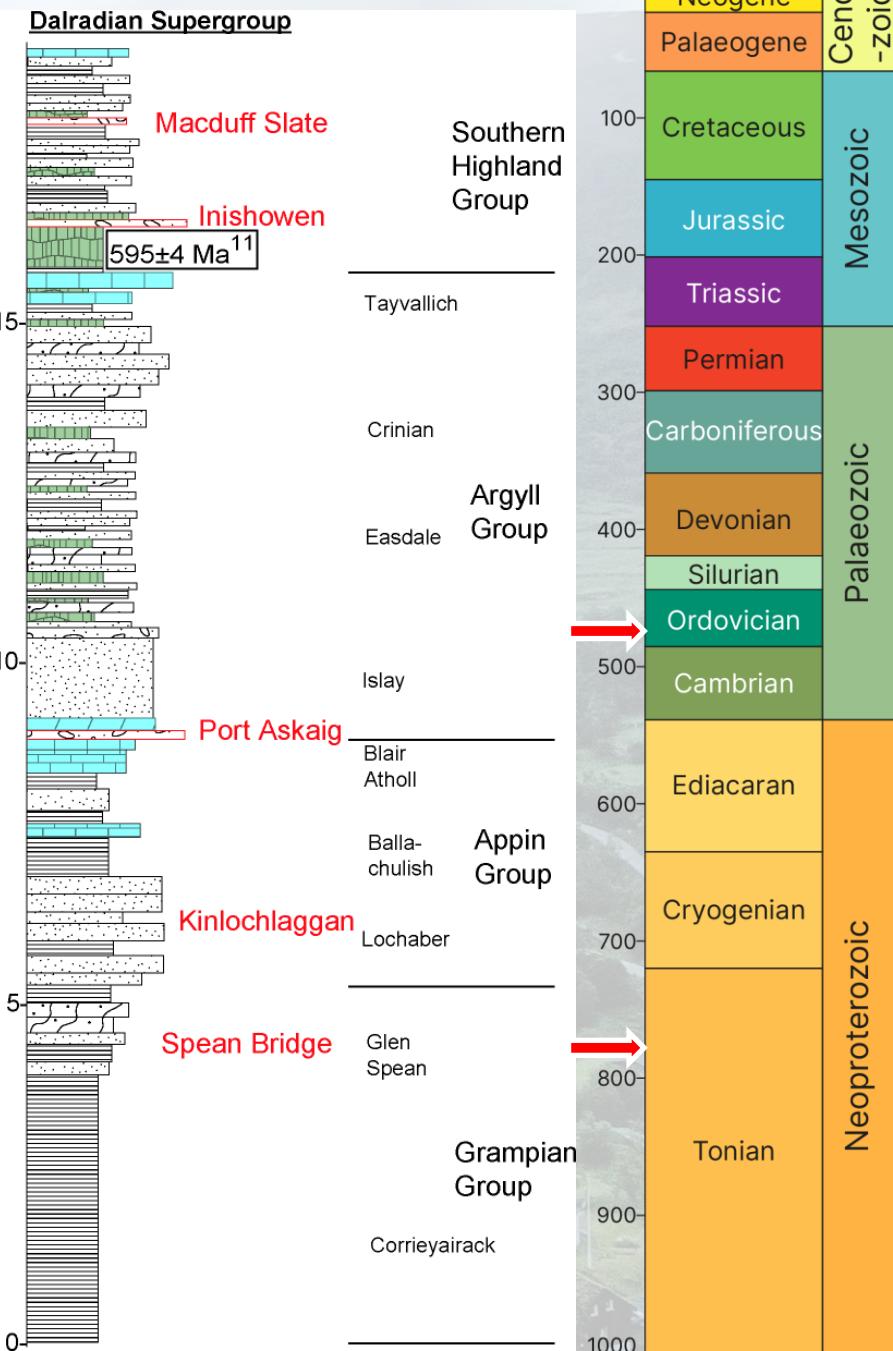
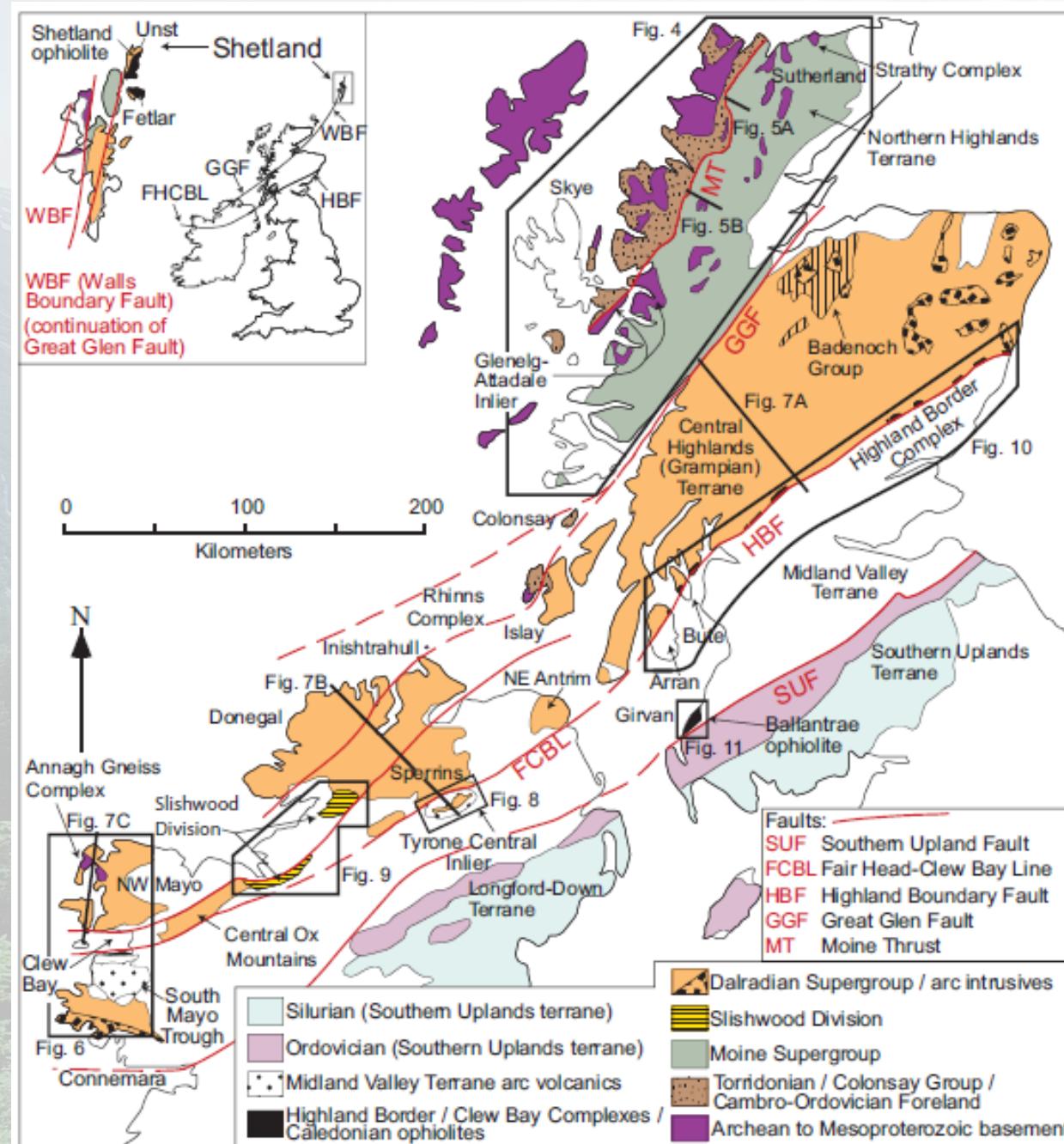


Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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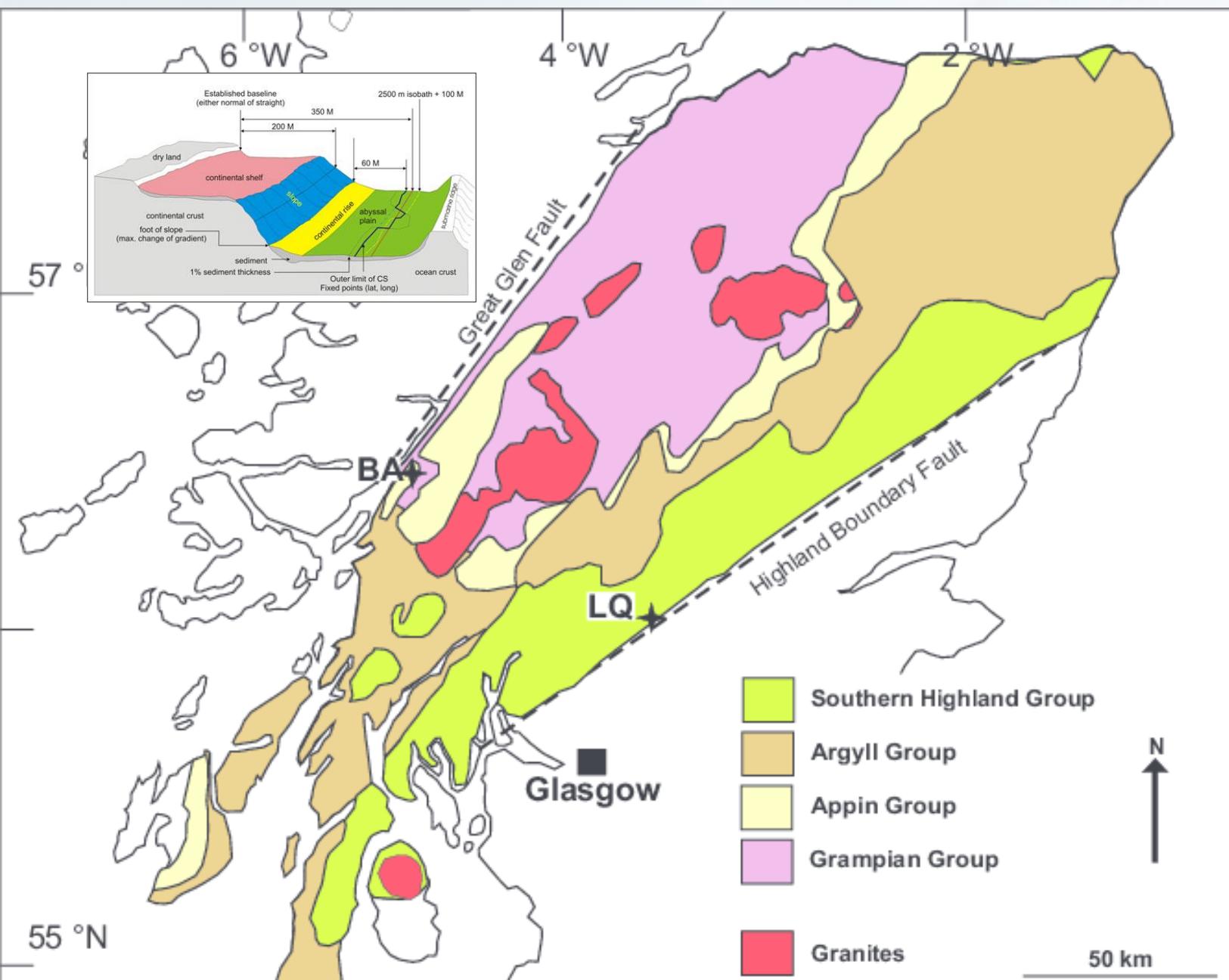


Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

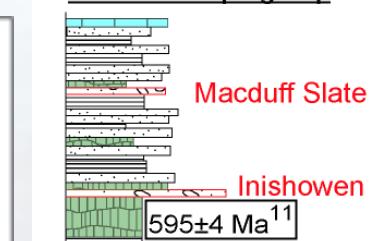


Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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Dalradian Supergroup



Southern Highland Group

Tayvallich

Crinian

Argyll Group

Easdale

Islay

Port Askaig

Blair Atholl

Balla-chulish

Appin Group

Kinlochlaggan

Lochaber

Spean Bridge

Glen Spean

Grampian Group

Corrieyairack

0 Ma

Neogene

Palaeogene

Ceno-zoic

100

Cretaceous

200

Jurassic

300

Triassic

400

Permian

500

Carboniferous

600

Devonian

700

Silurian

800

Ordovician

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Cambrian

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Ediacaran

Palaeozoic

500

Cryogenian

700

Tonian

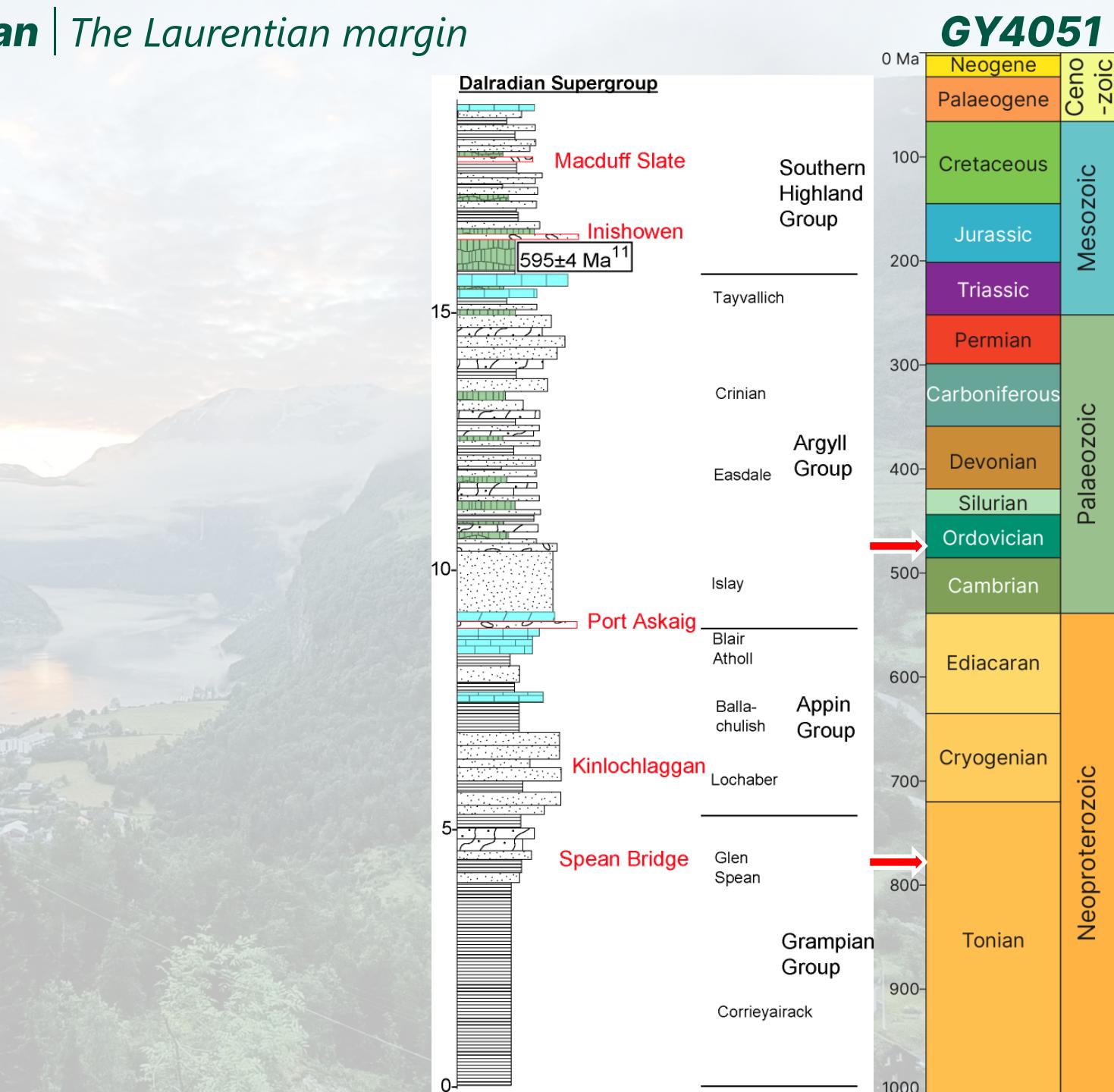
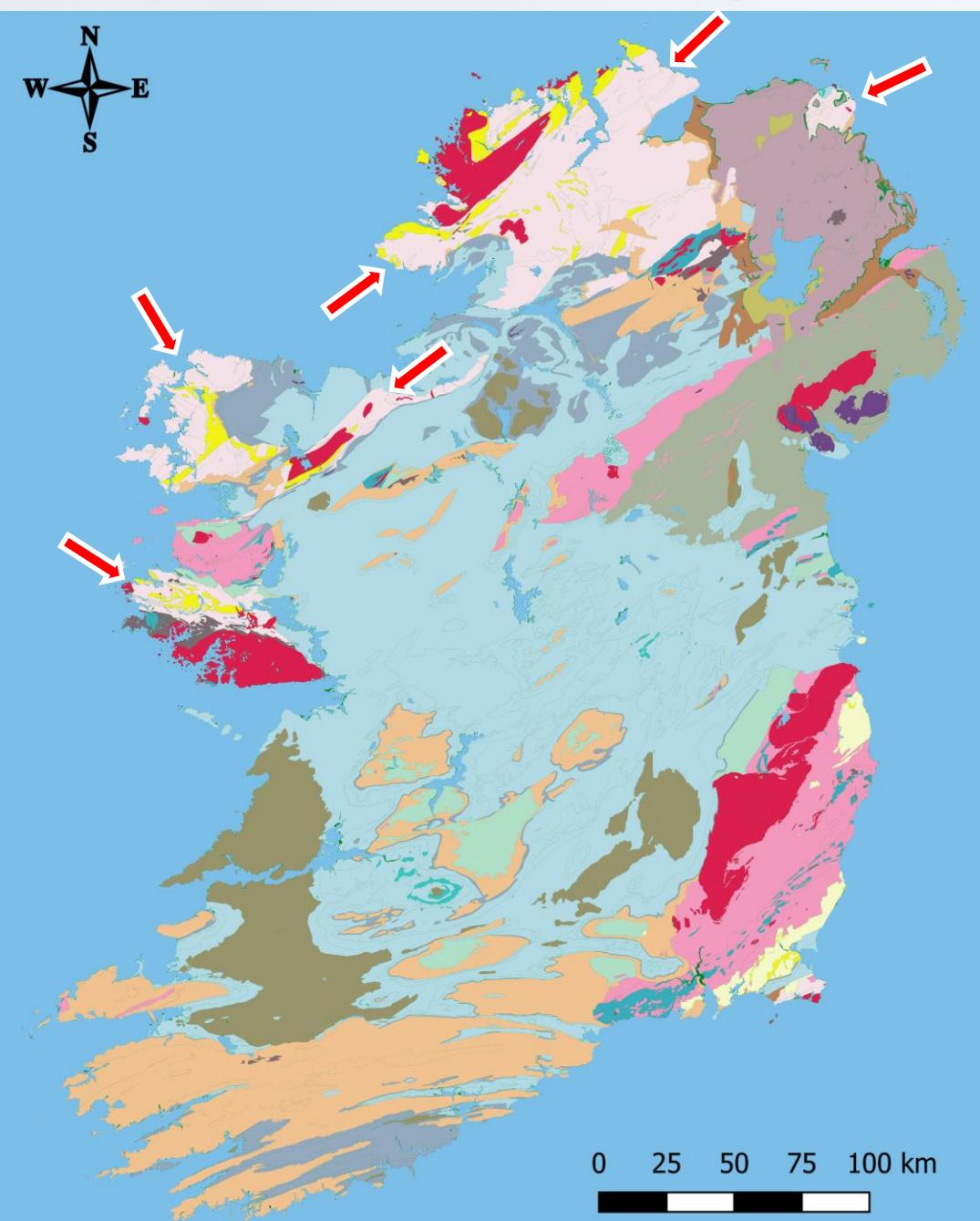
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Neoproterozoic

1000

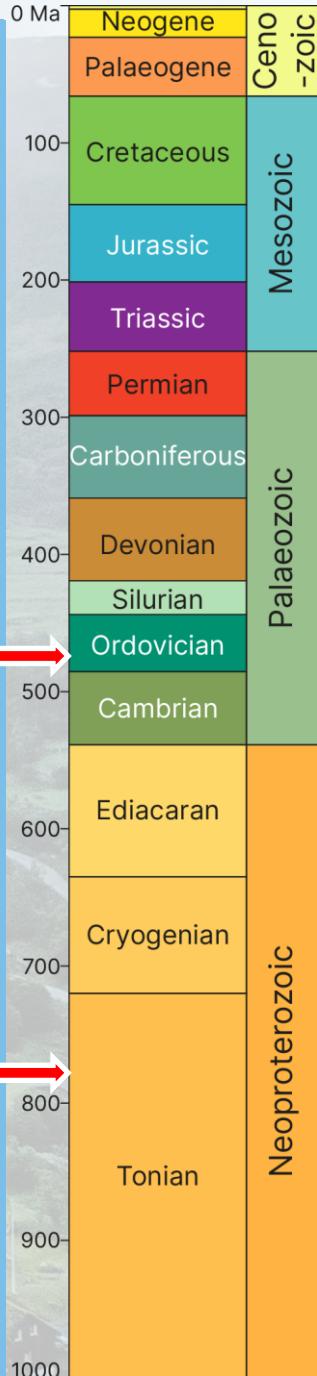
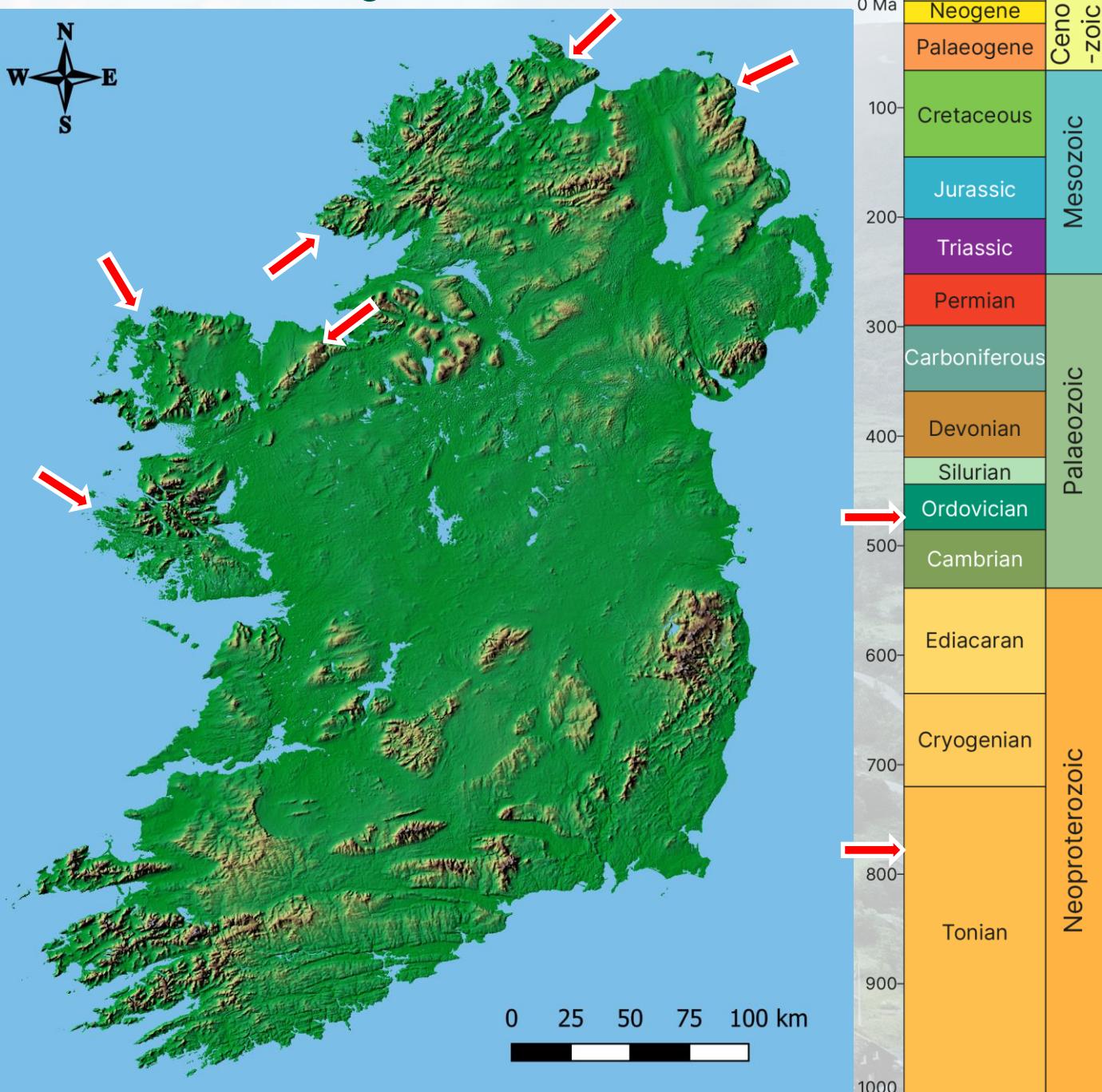
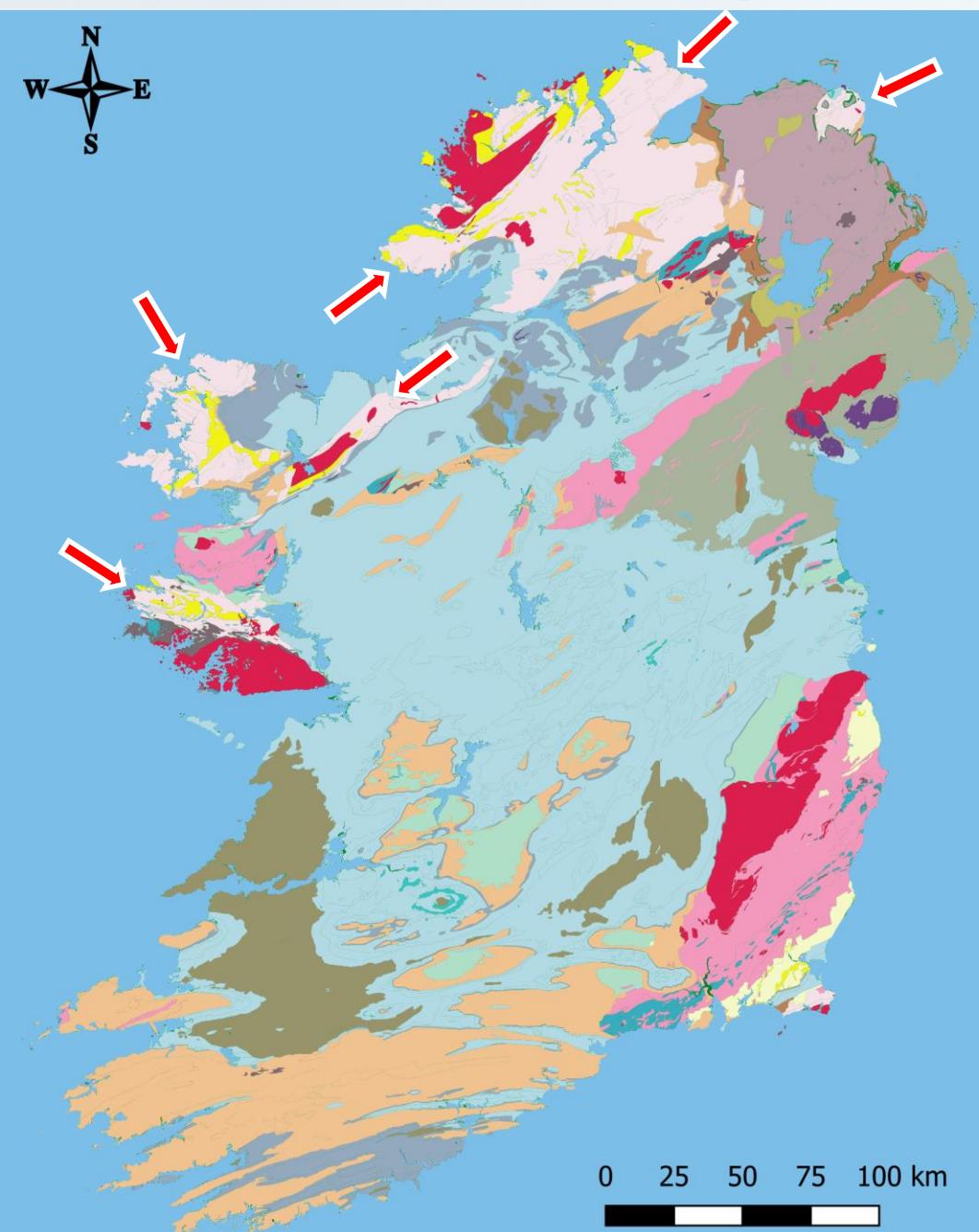
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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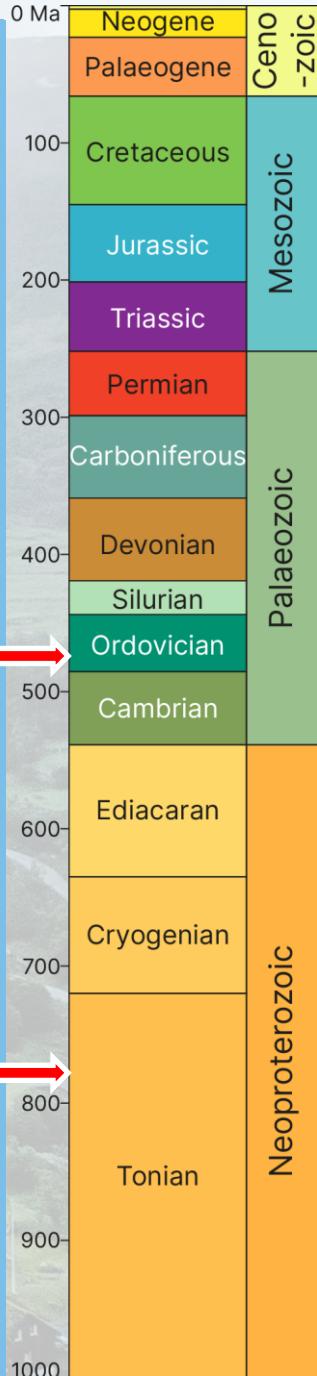
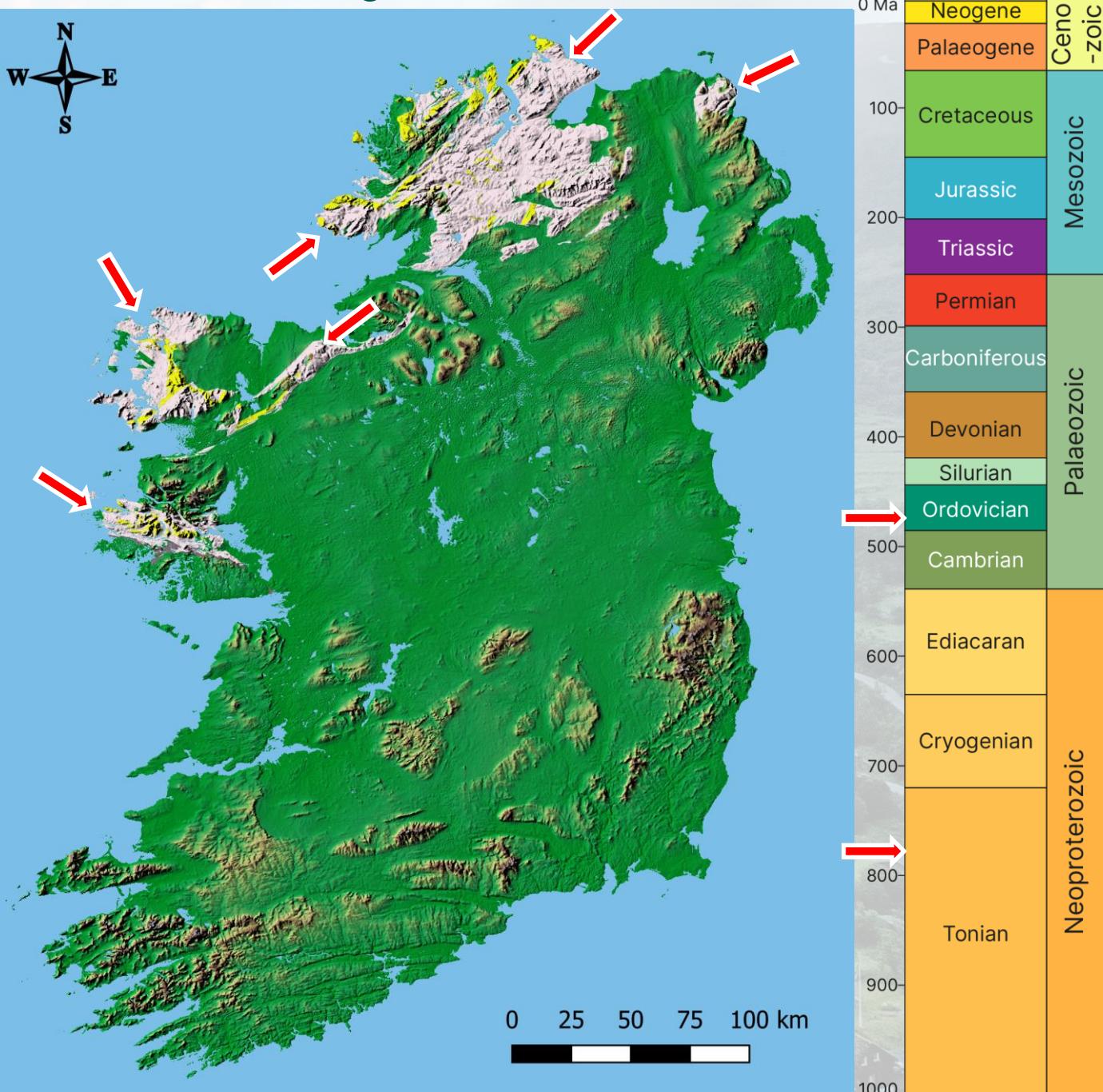
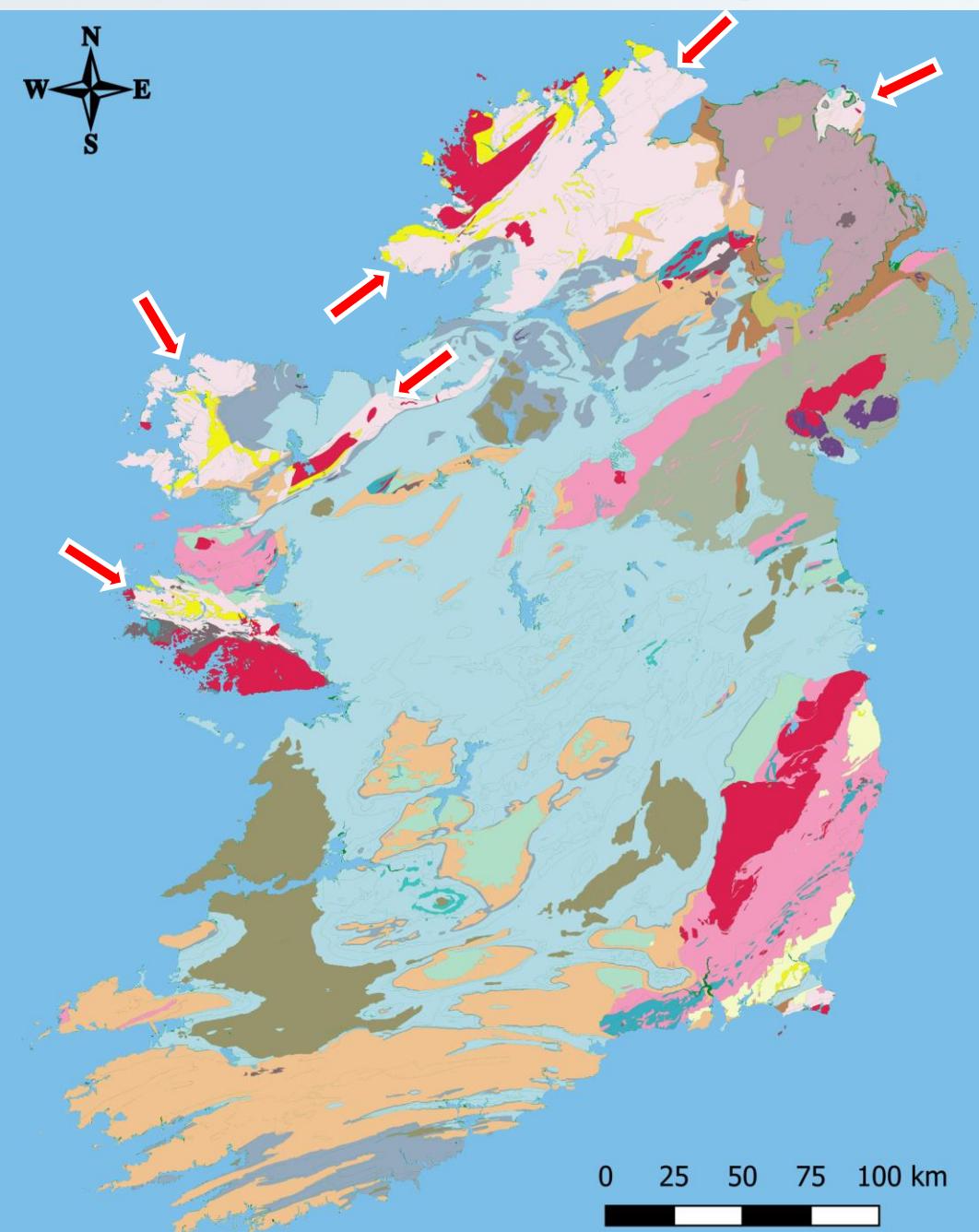
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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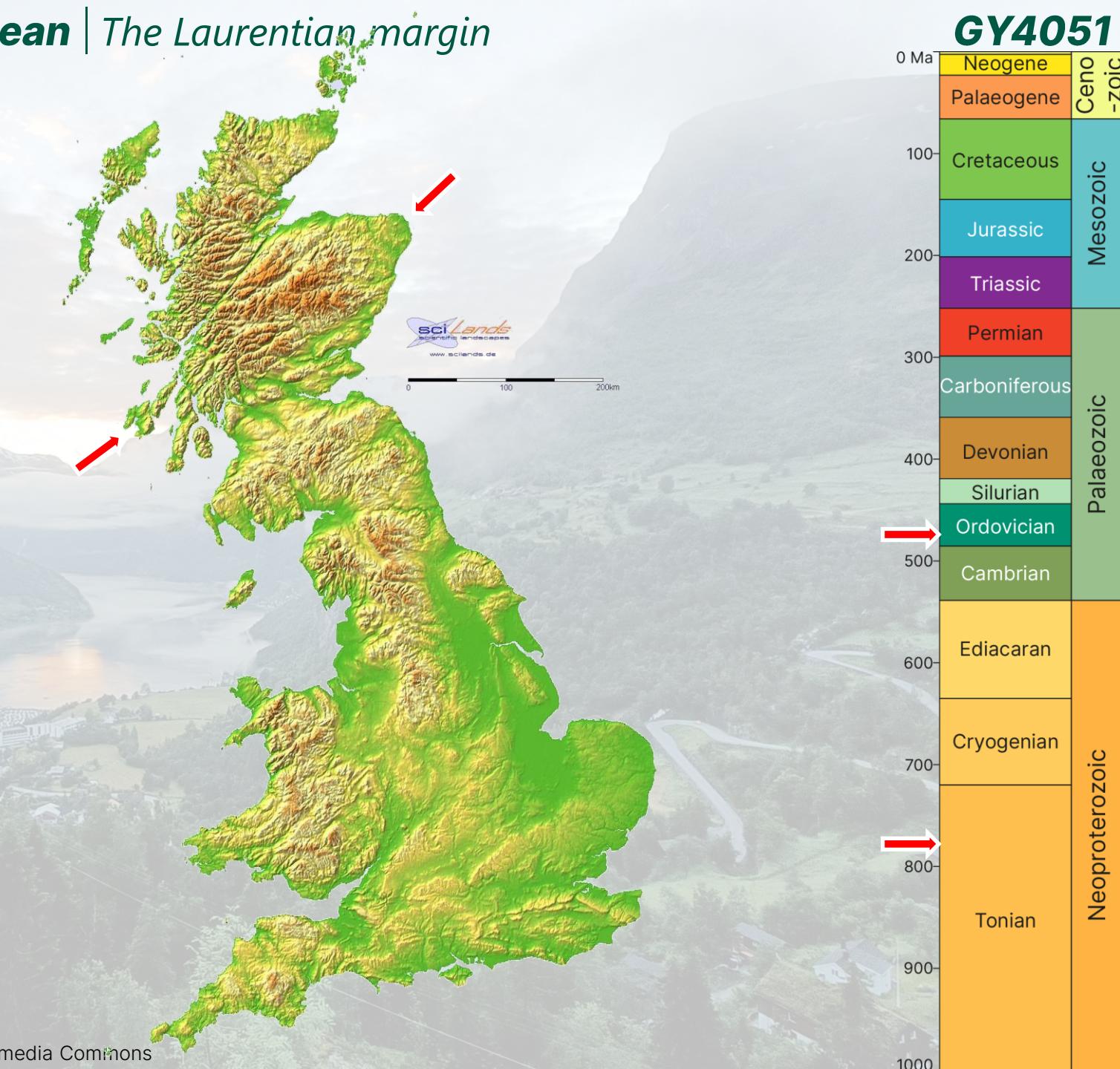
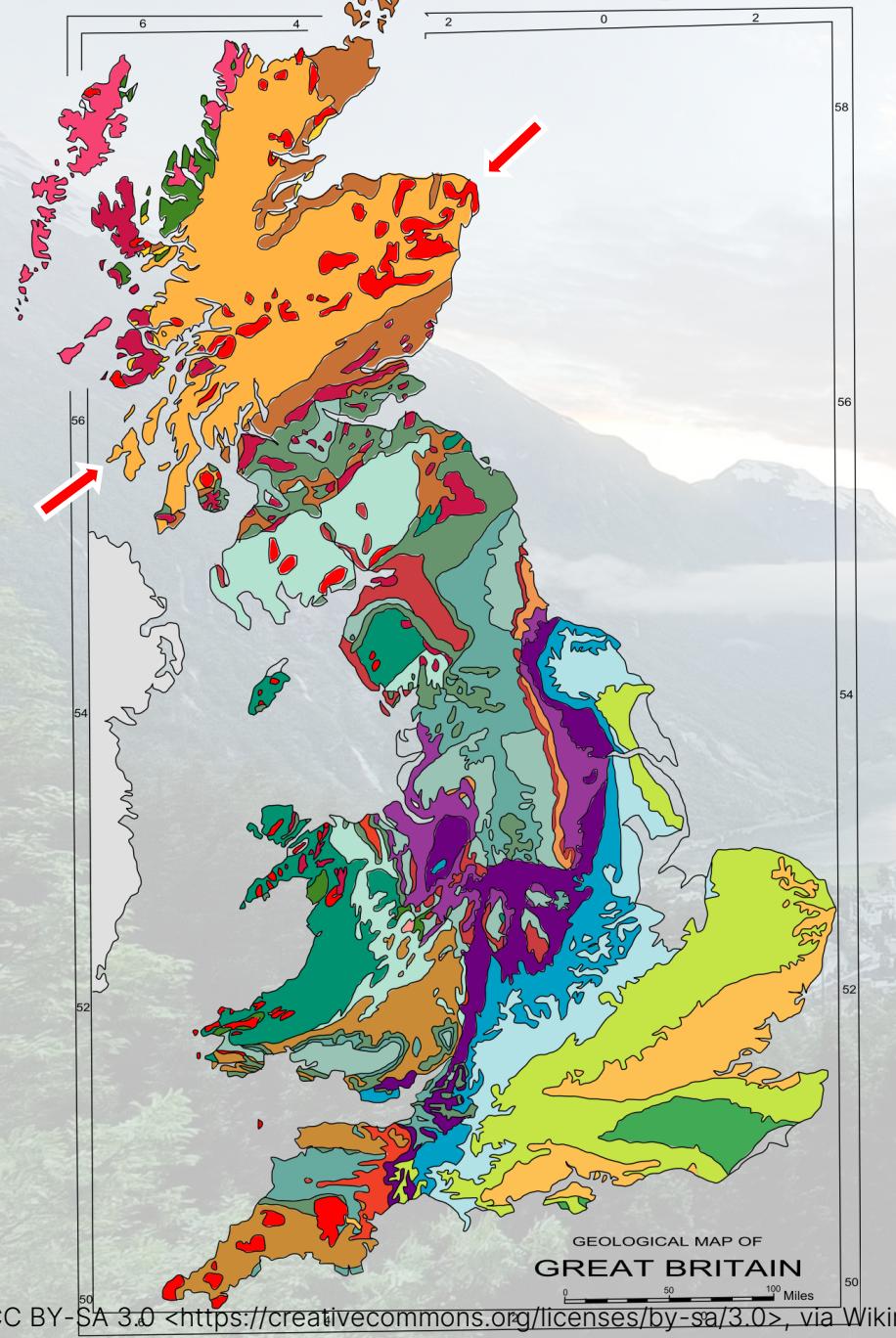
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

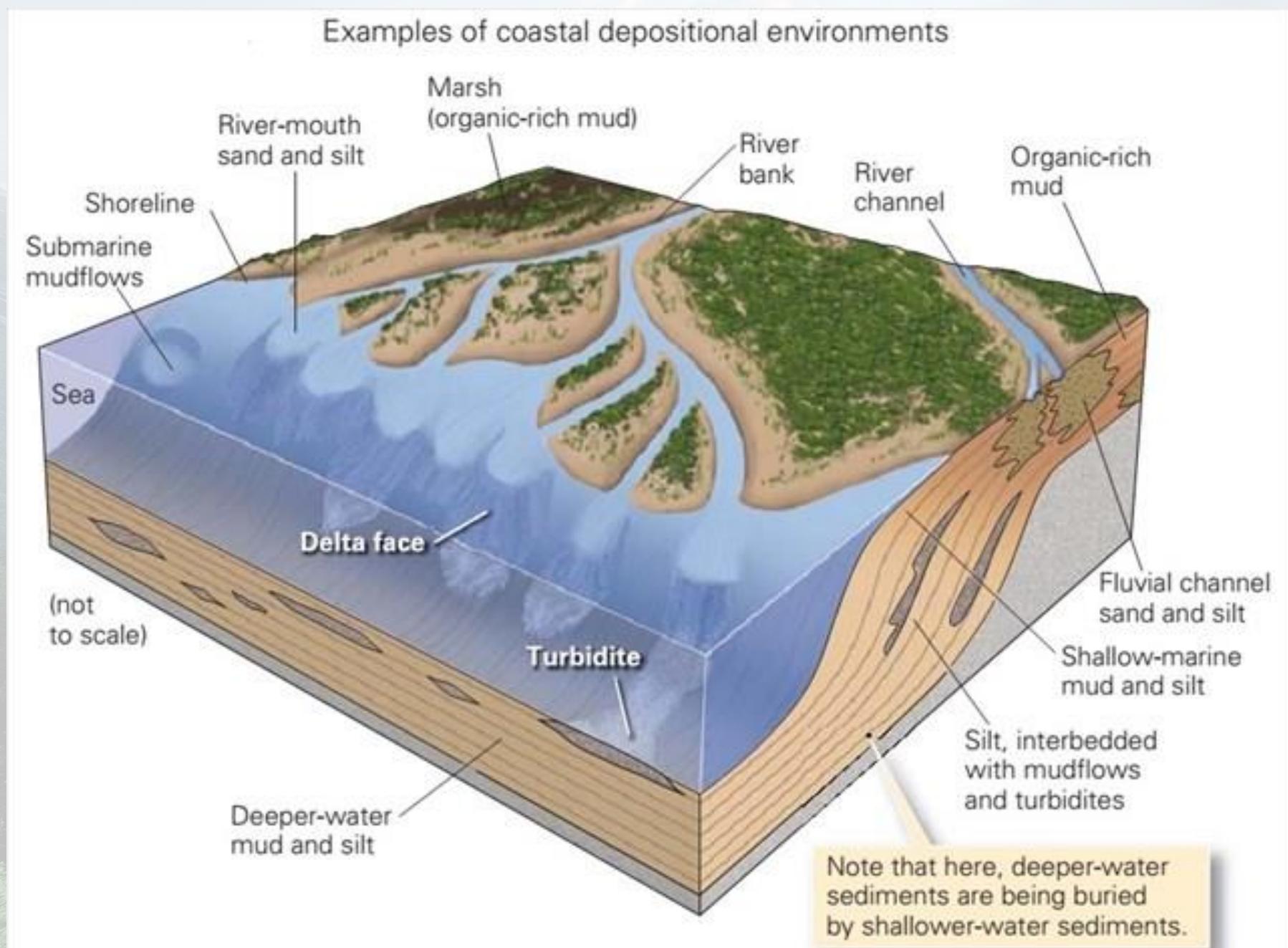
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Laurentia, Avalonia and the Iapetus Ocean | The Laurentian margin

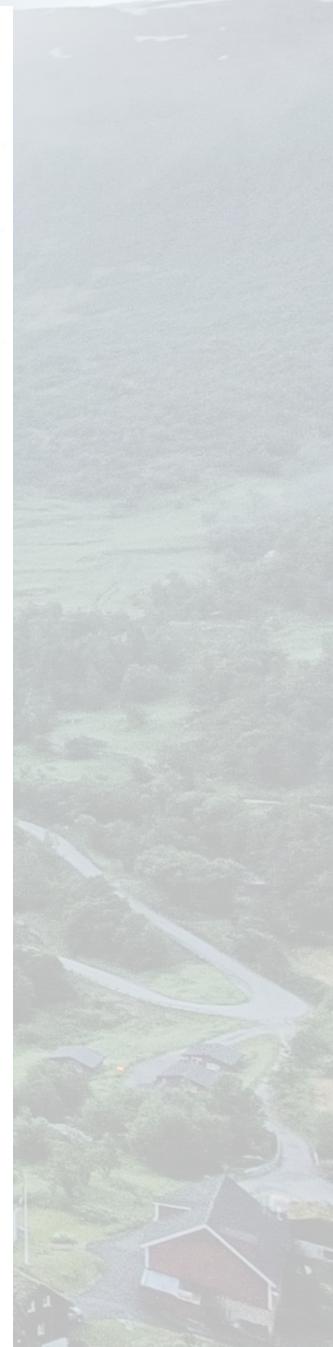
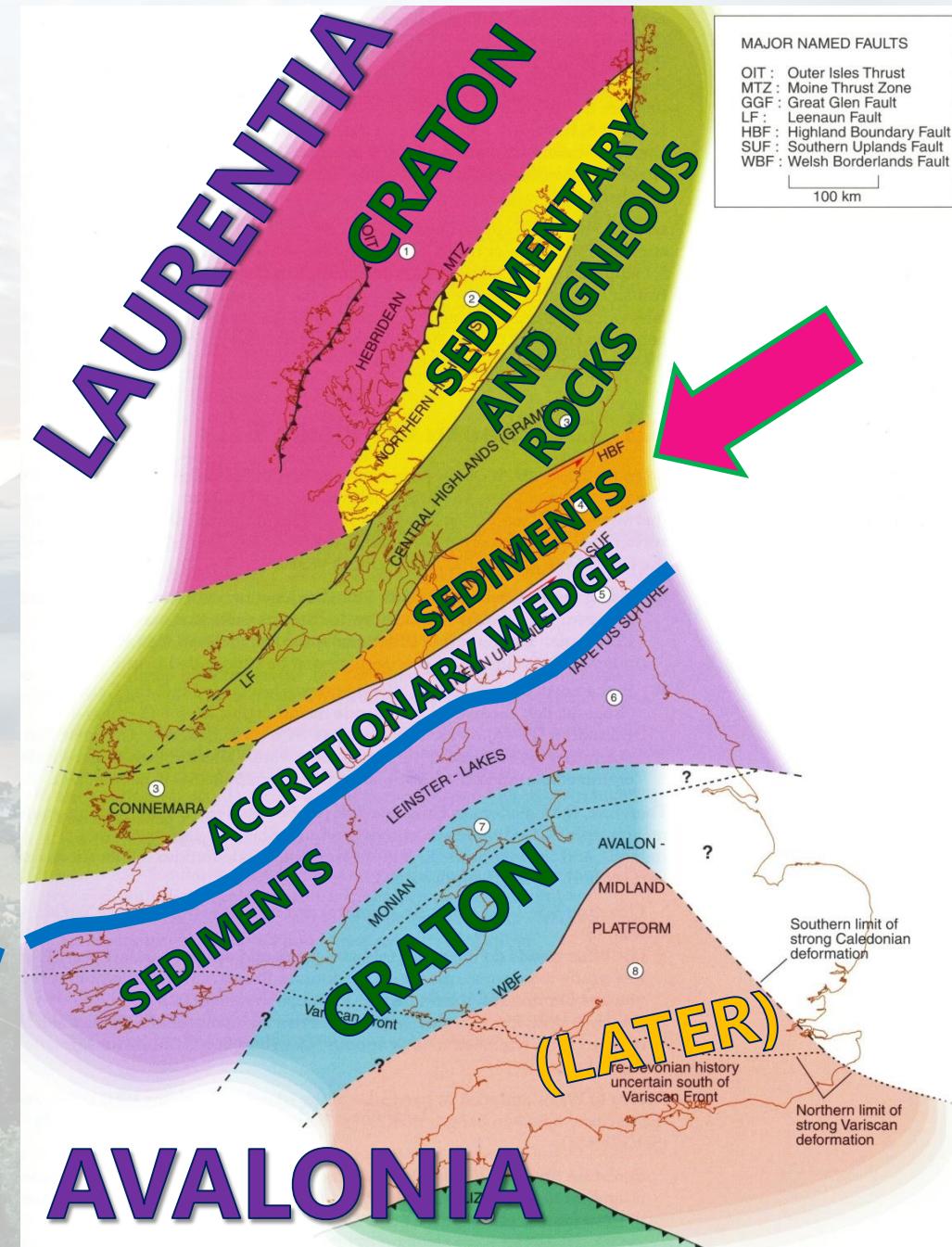
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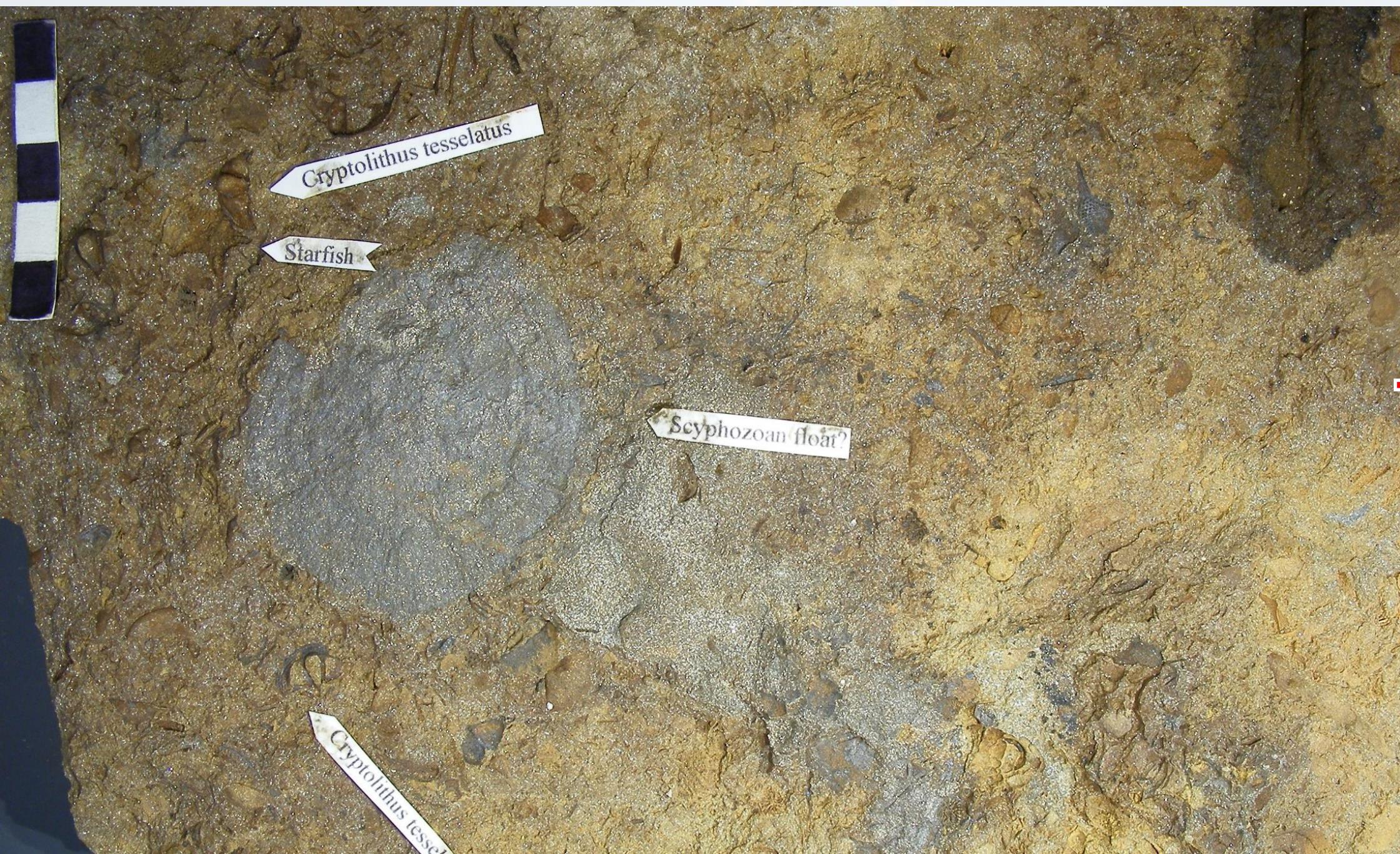
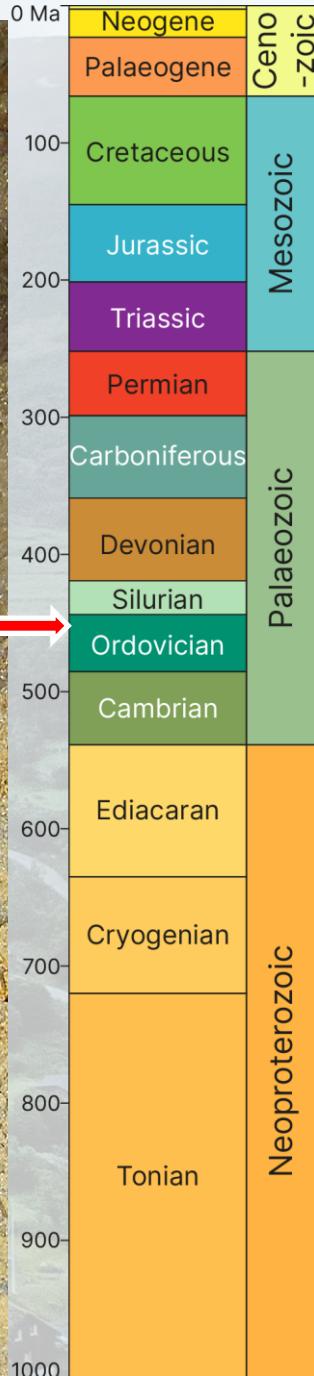
MIDLAND VALLEY

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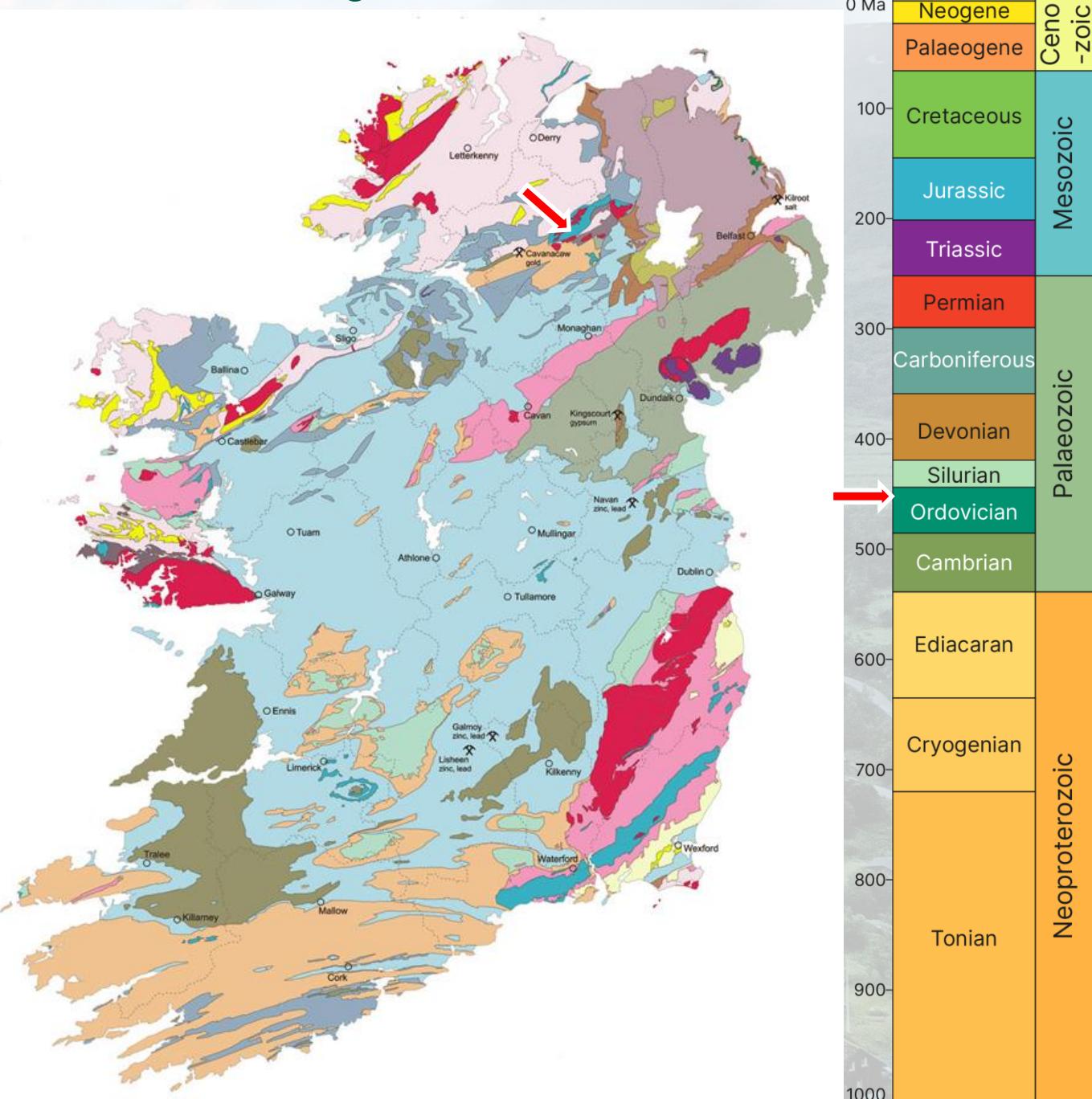
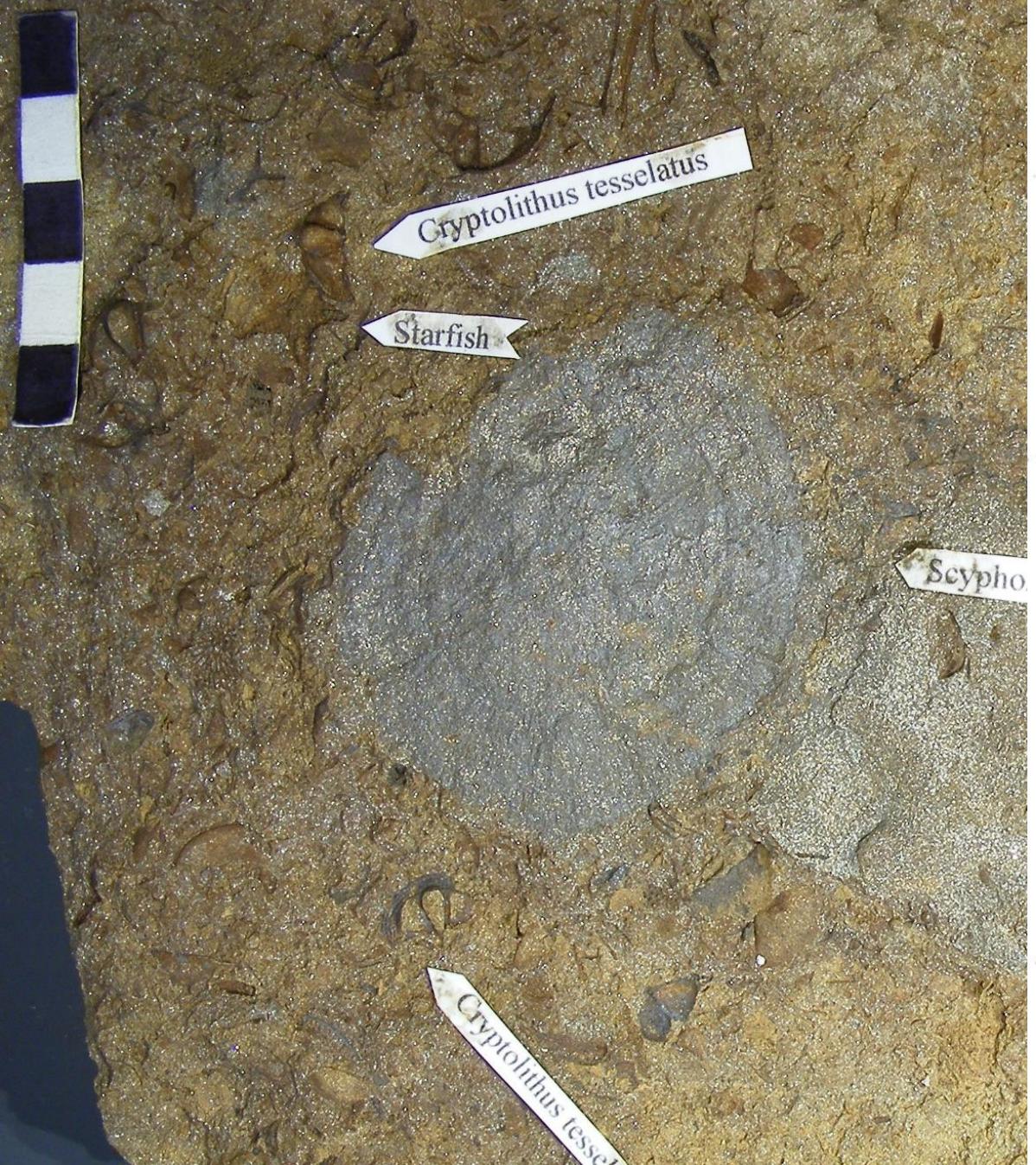
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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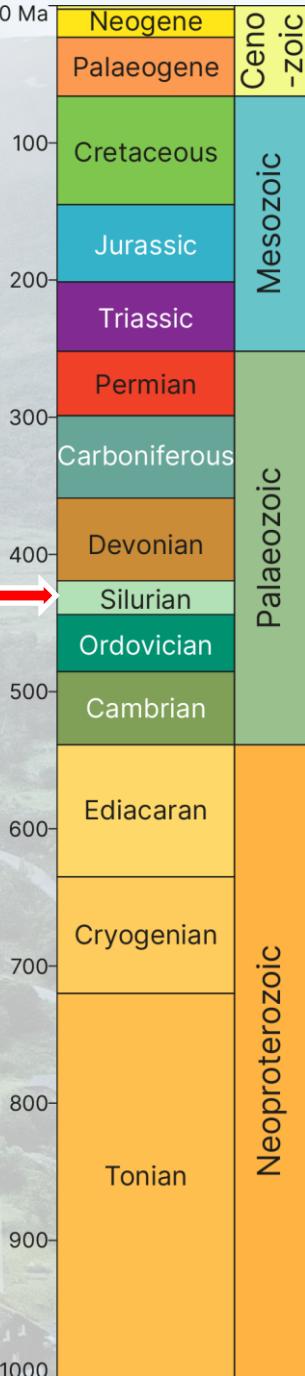
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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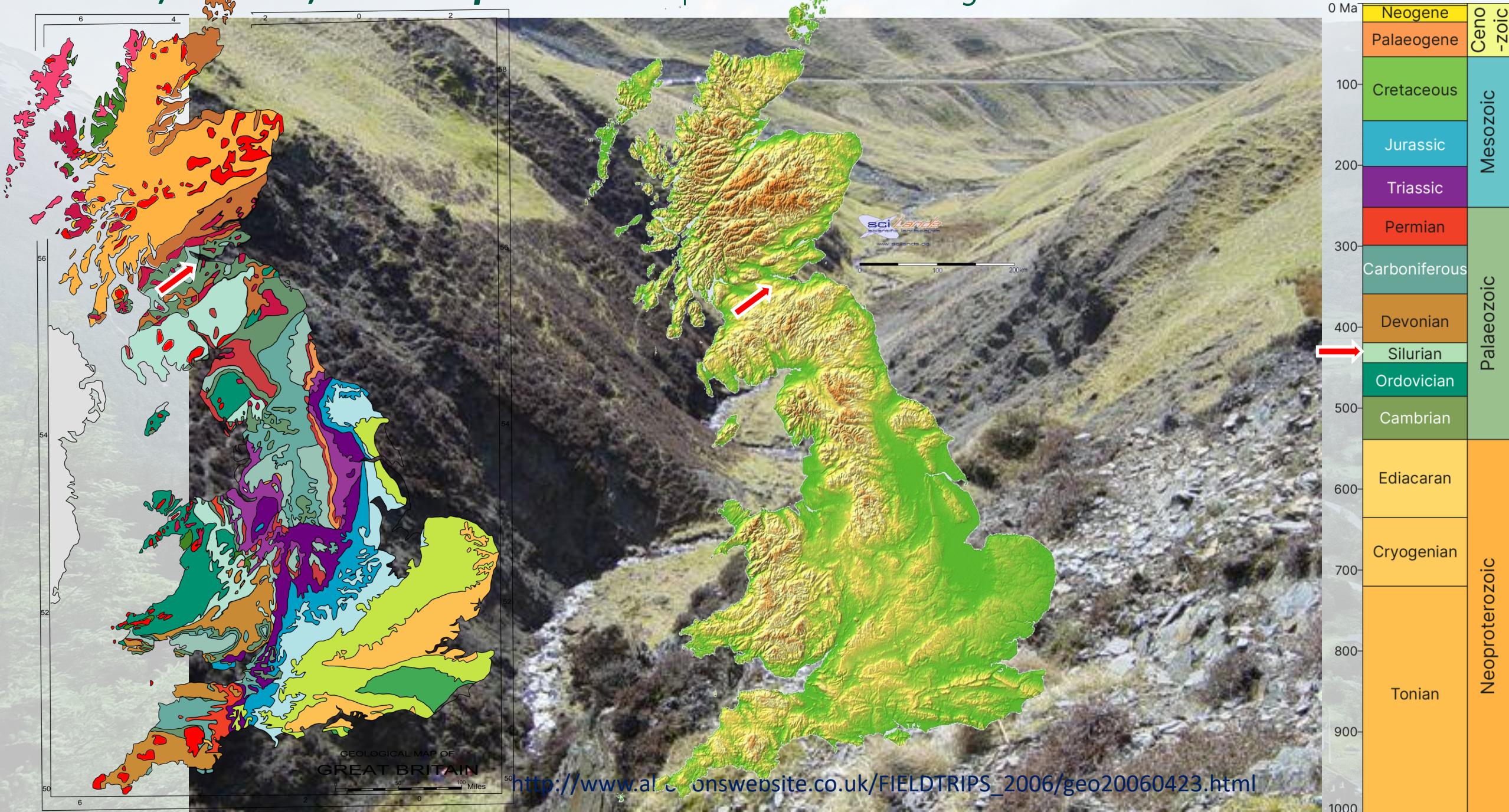
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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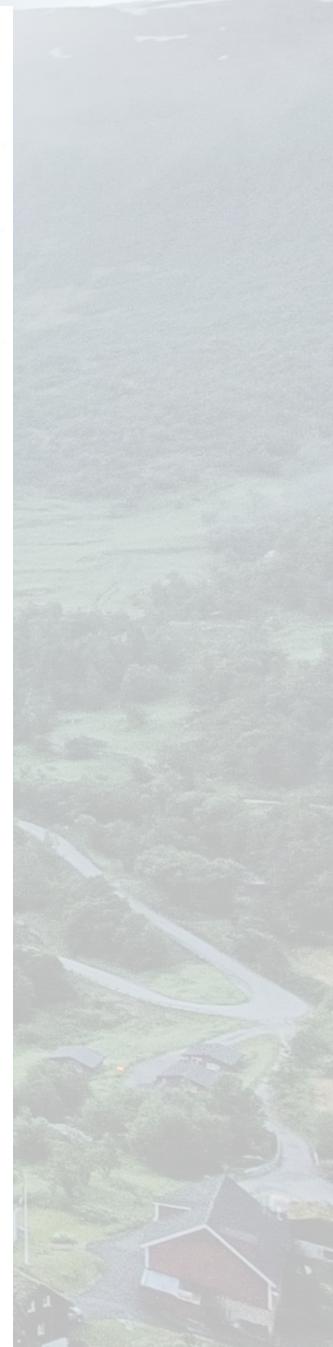
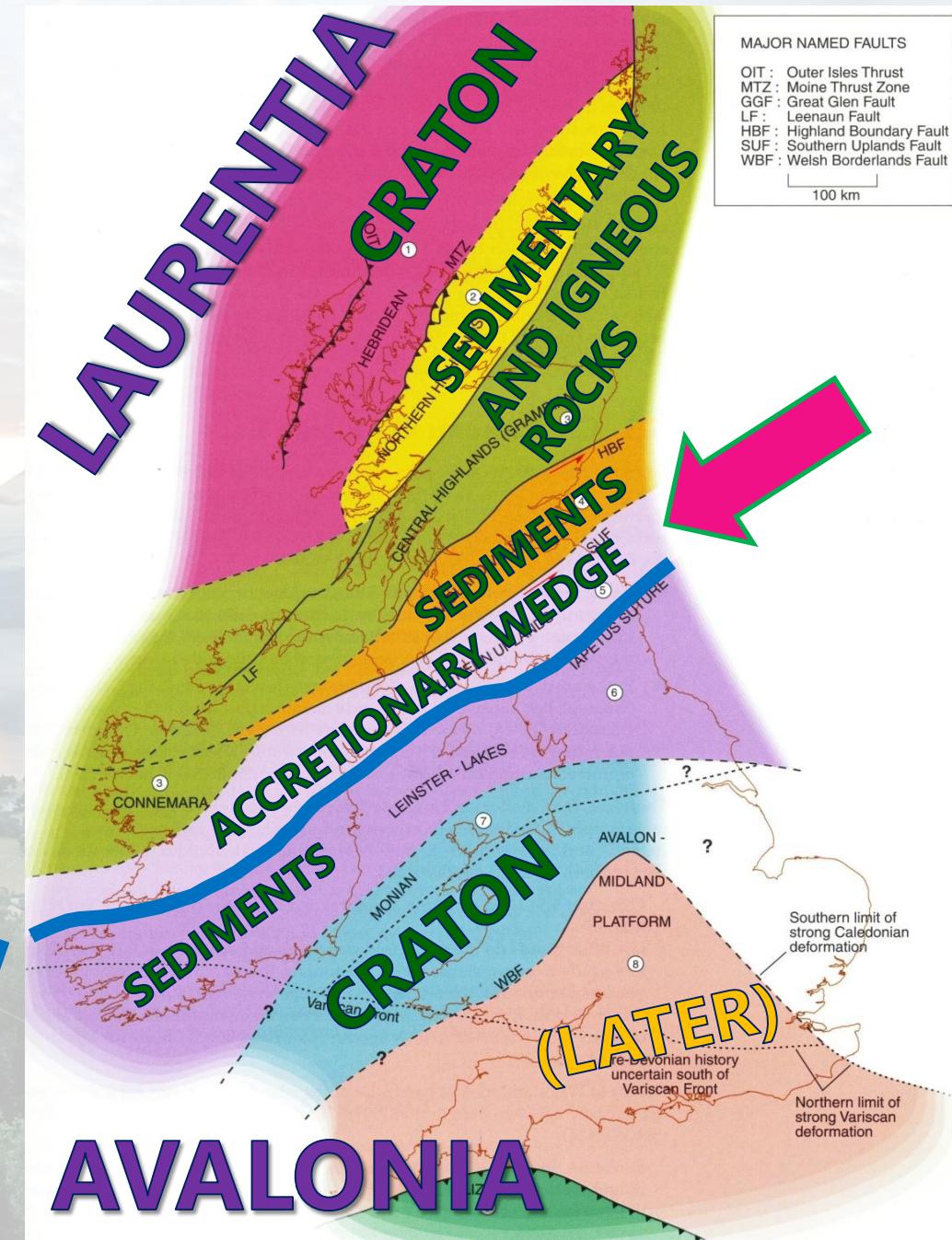
Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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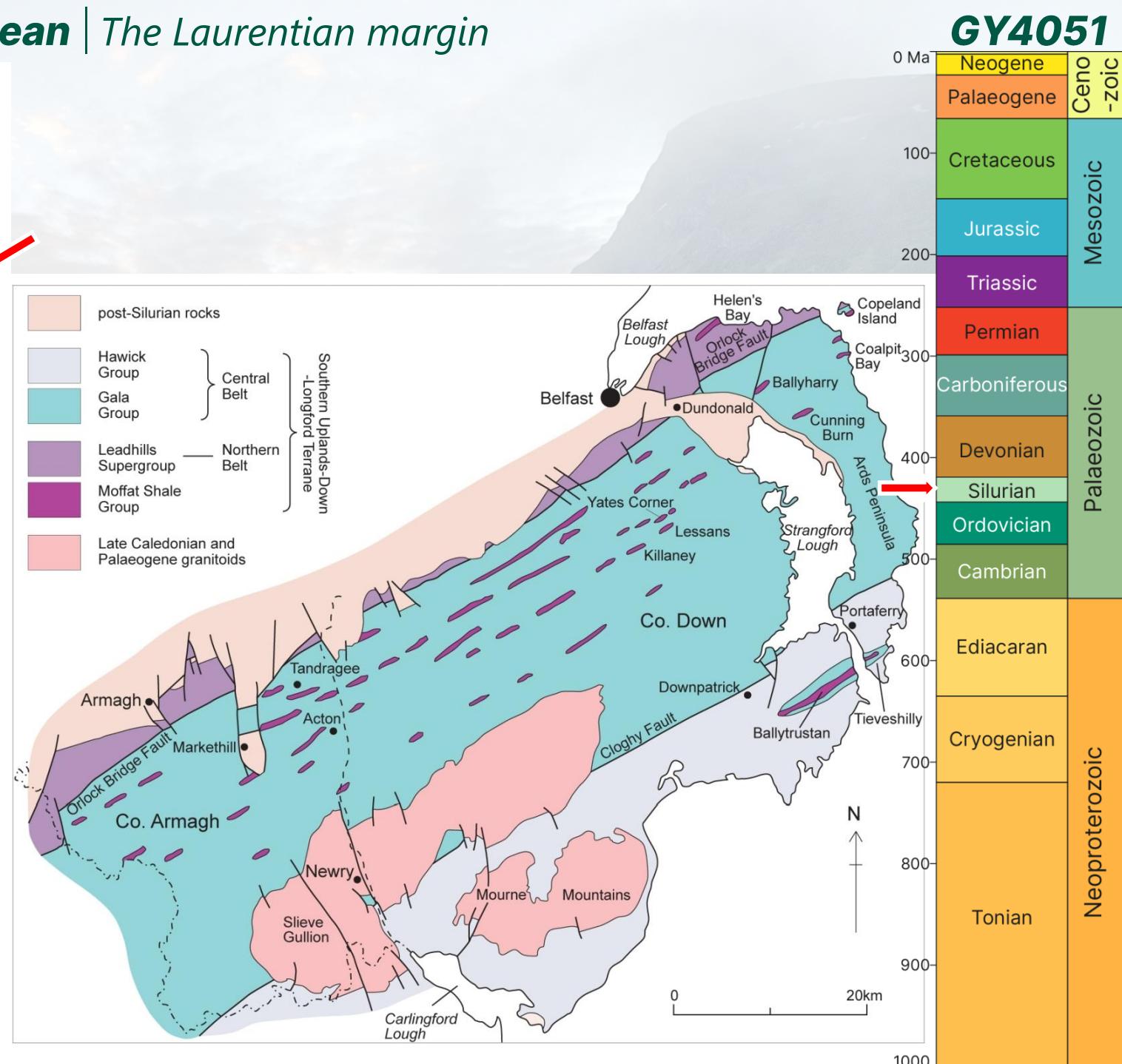
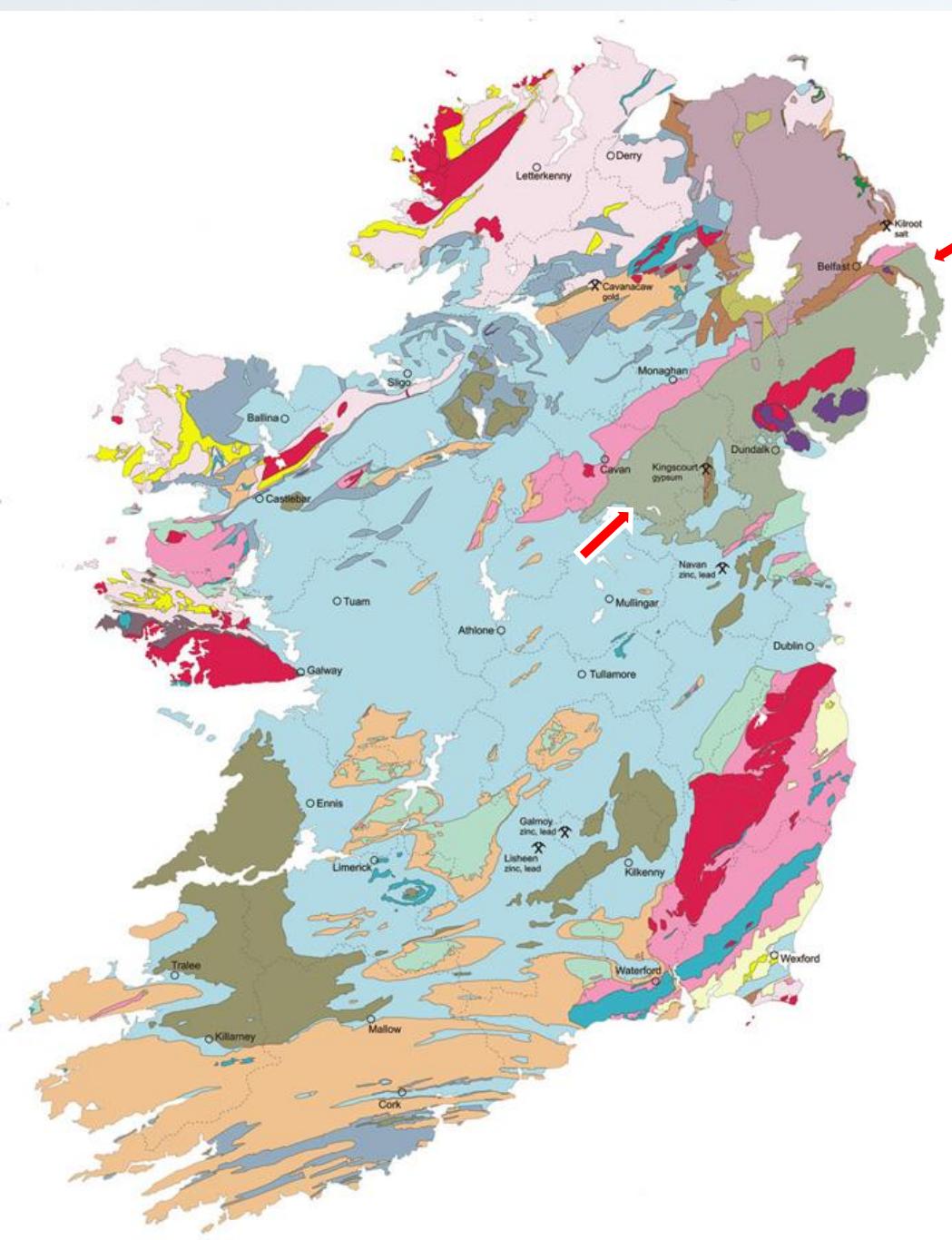
SOUTHERN UPLANDS/ LONGFORD- DOWN

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Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian margin

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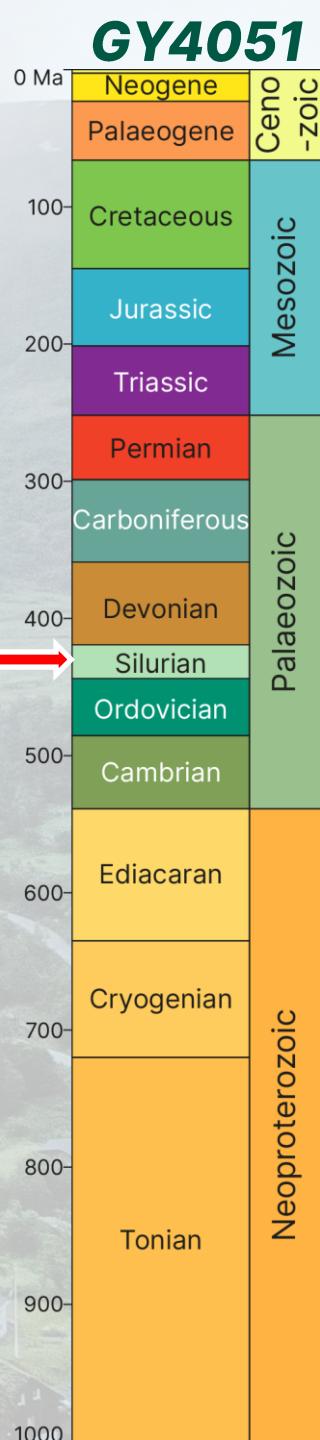
	0 Ma	Neogene	Palaeogene	Ceno-zoic
	100			
	200			
	300			
	400			
	500			
	600			
	700			
	800			
	900			
	1000			

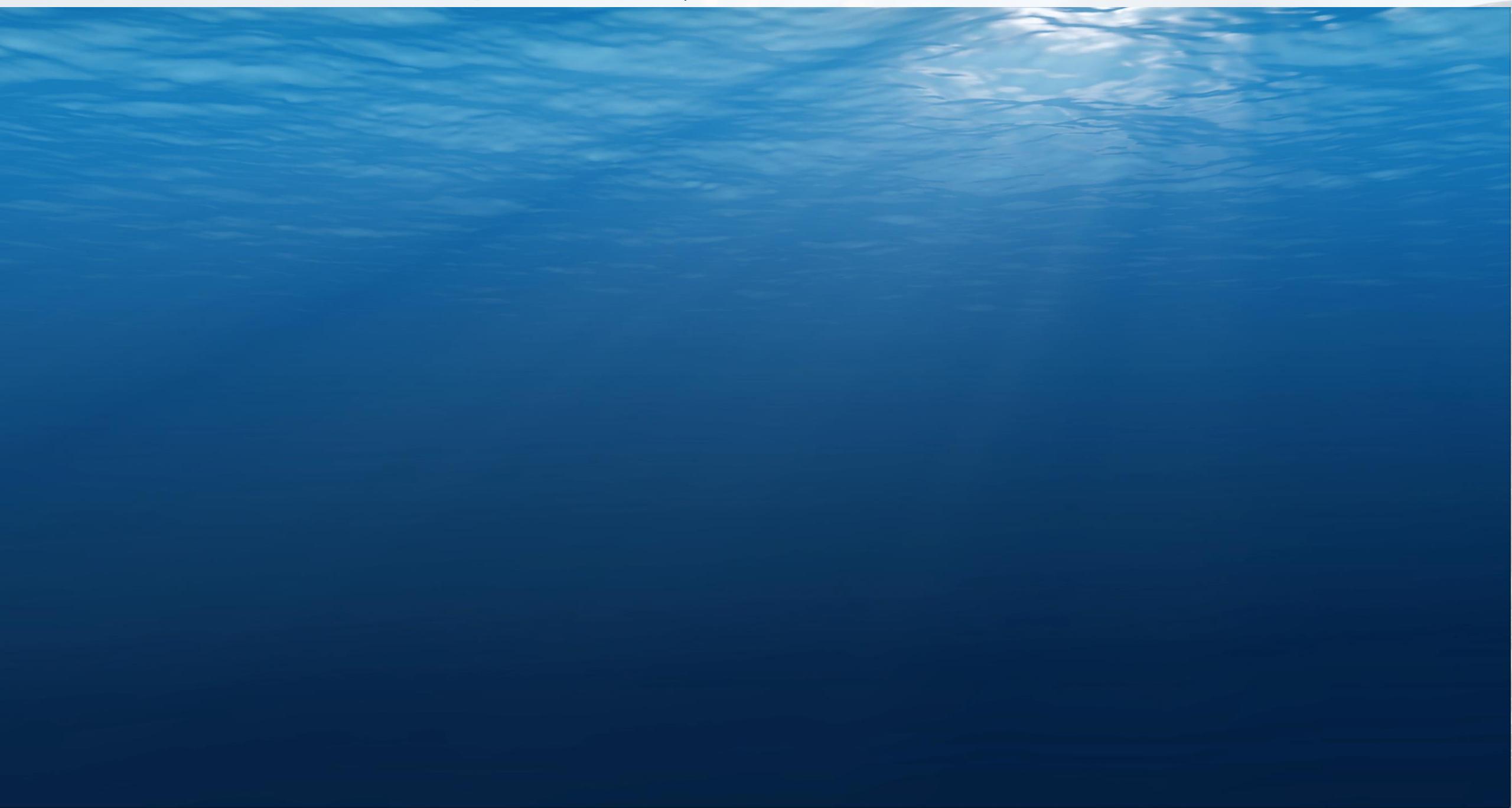
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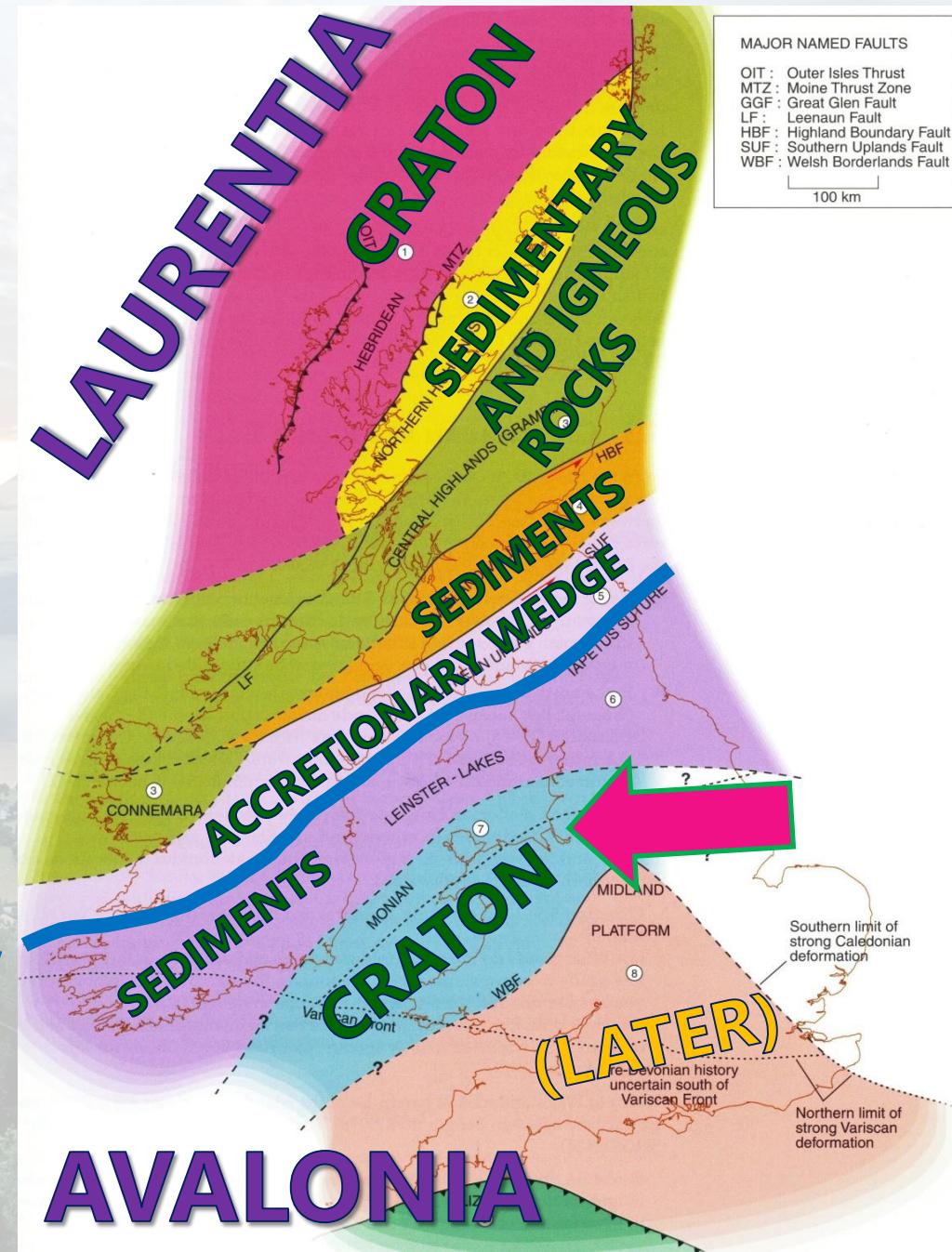
Mesozoic

Ceno-zoic

Laurentia, Avalonia, and the Iapetus Ocean | The Laurentian Margin

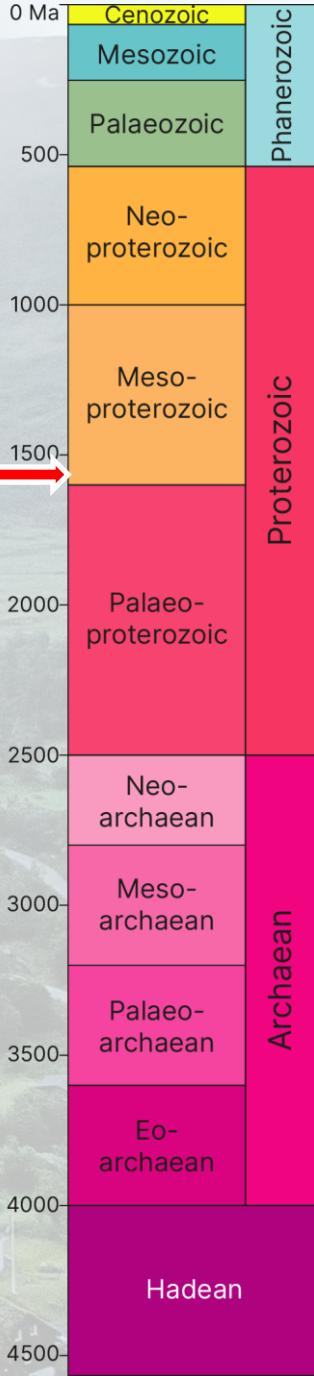






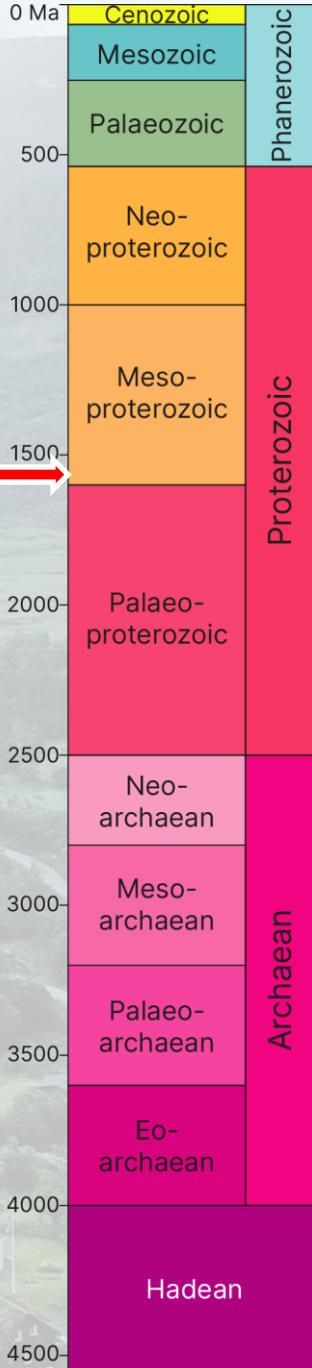
Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Craton

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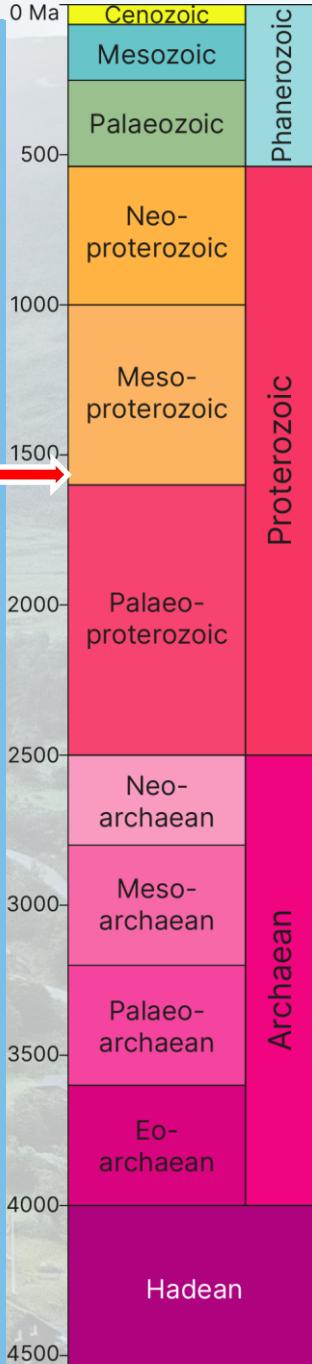
Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Craton

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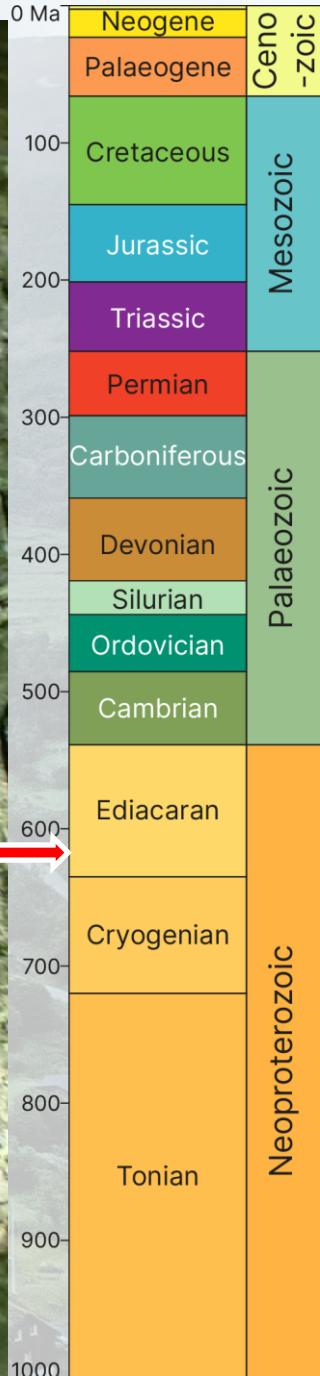
Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Craton

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Laurentia, Avalonia, and the Iapetus Ocean | Subduction Zone in Wales

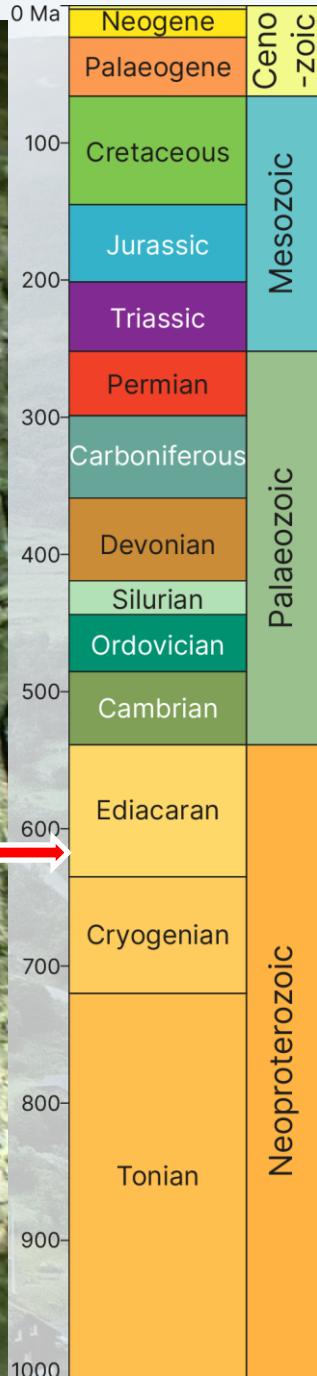
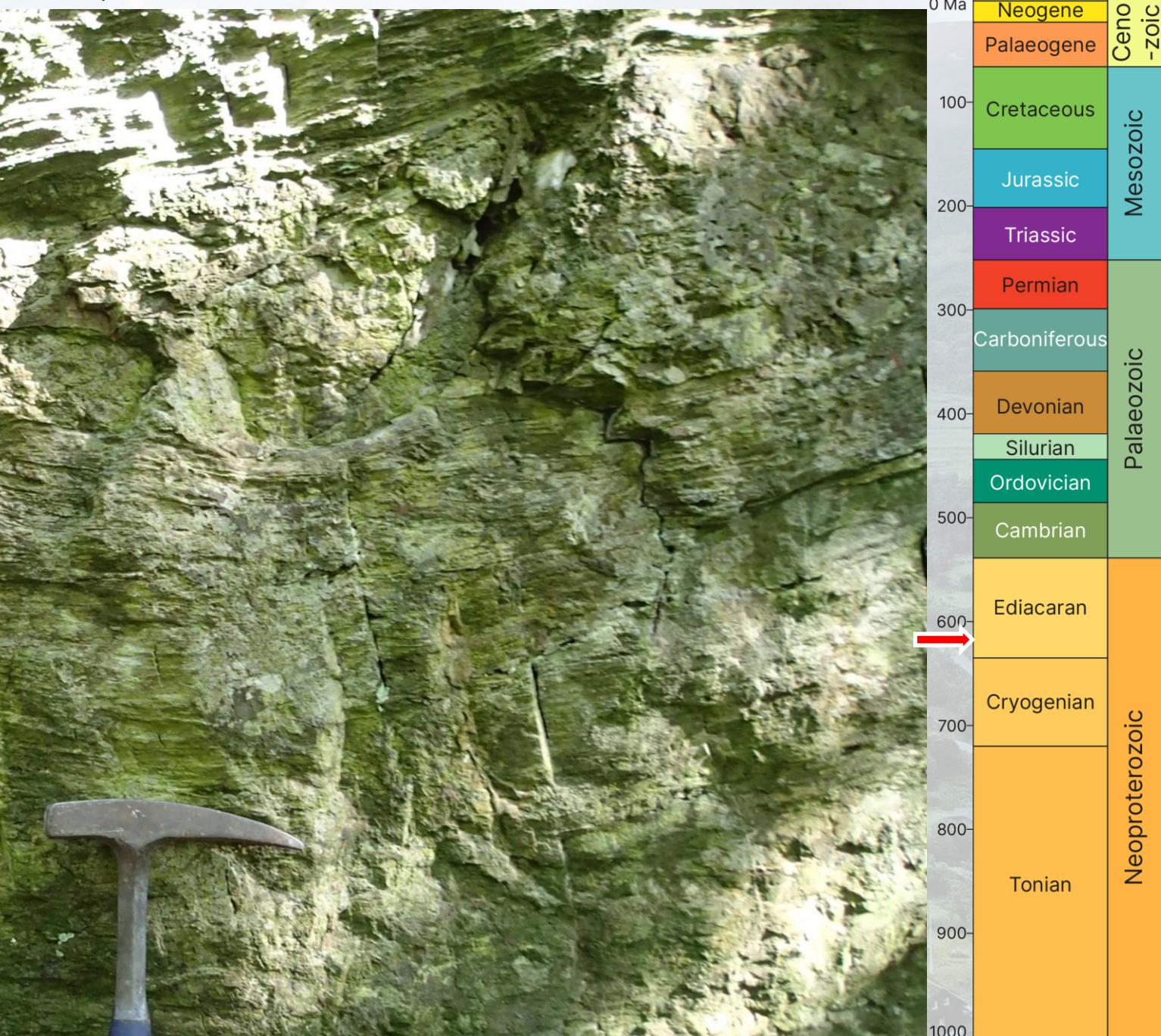
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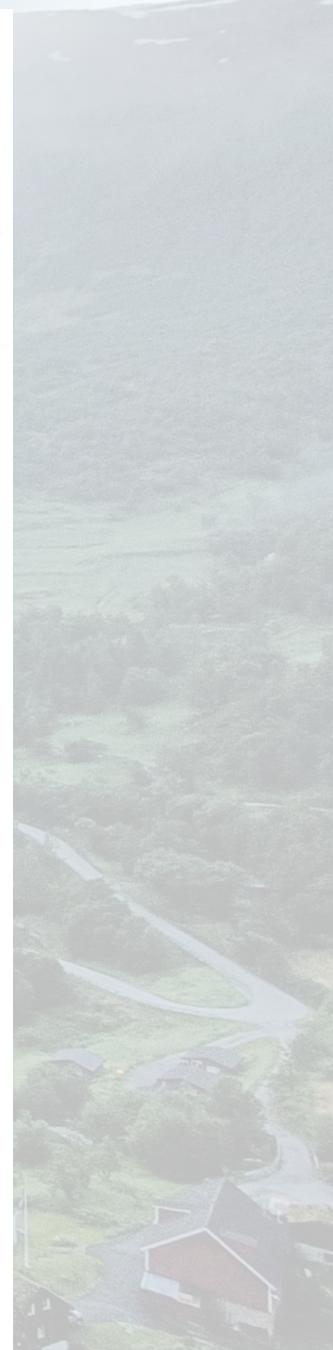
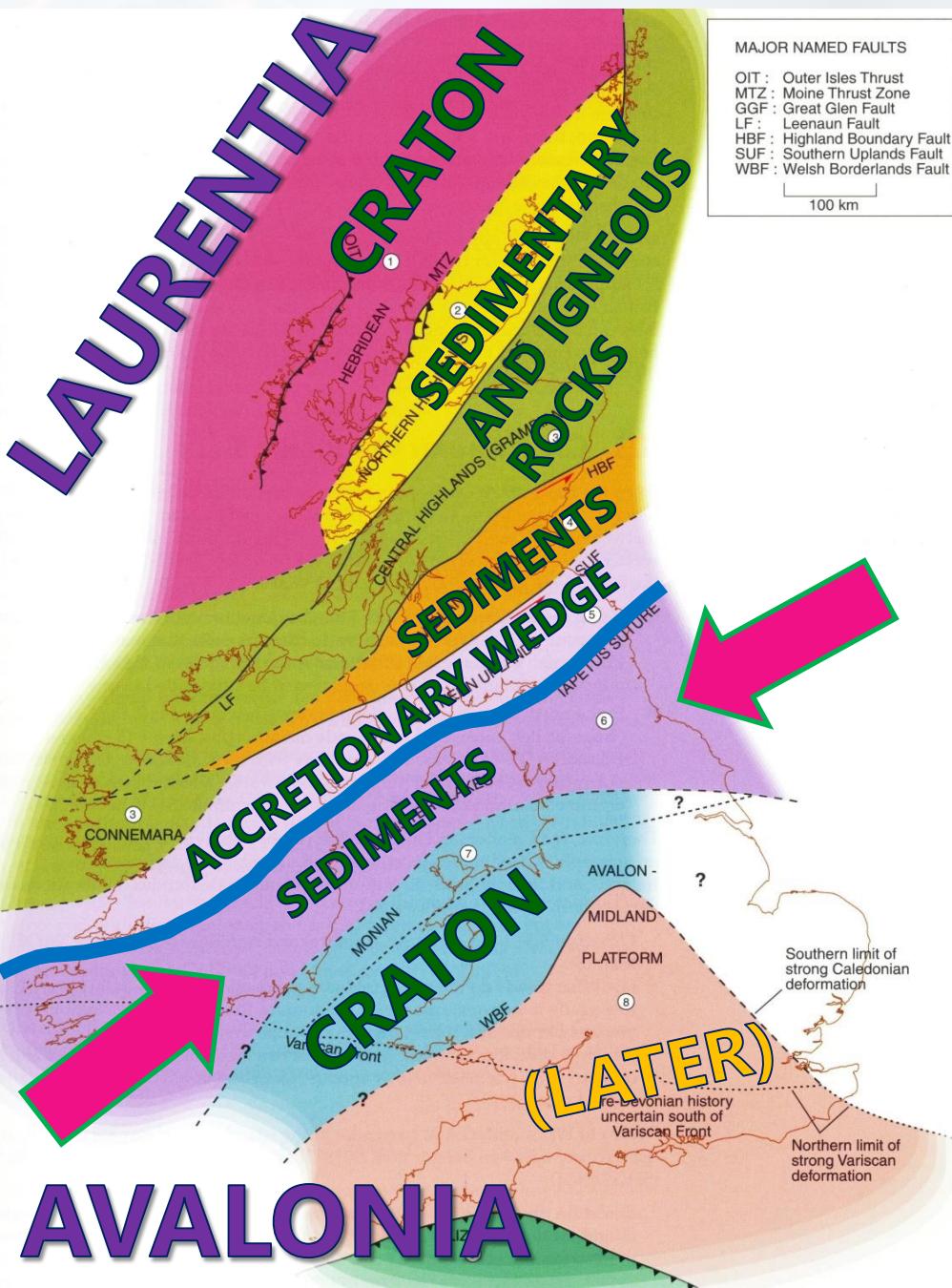
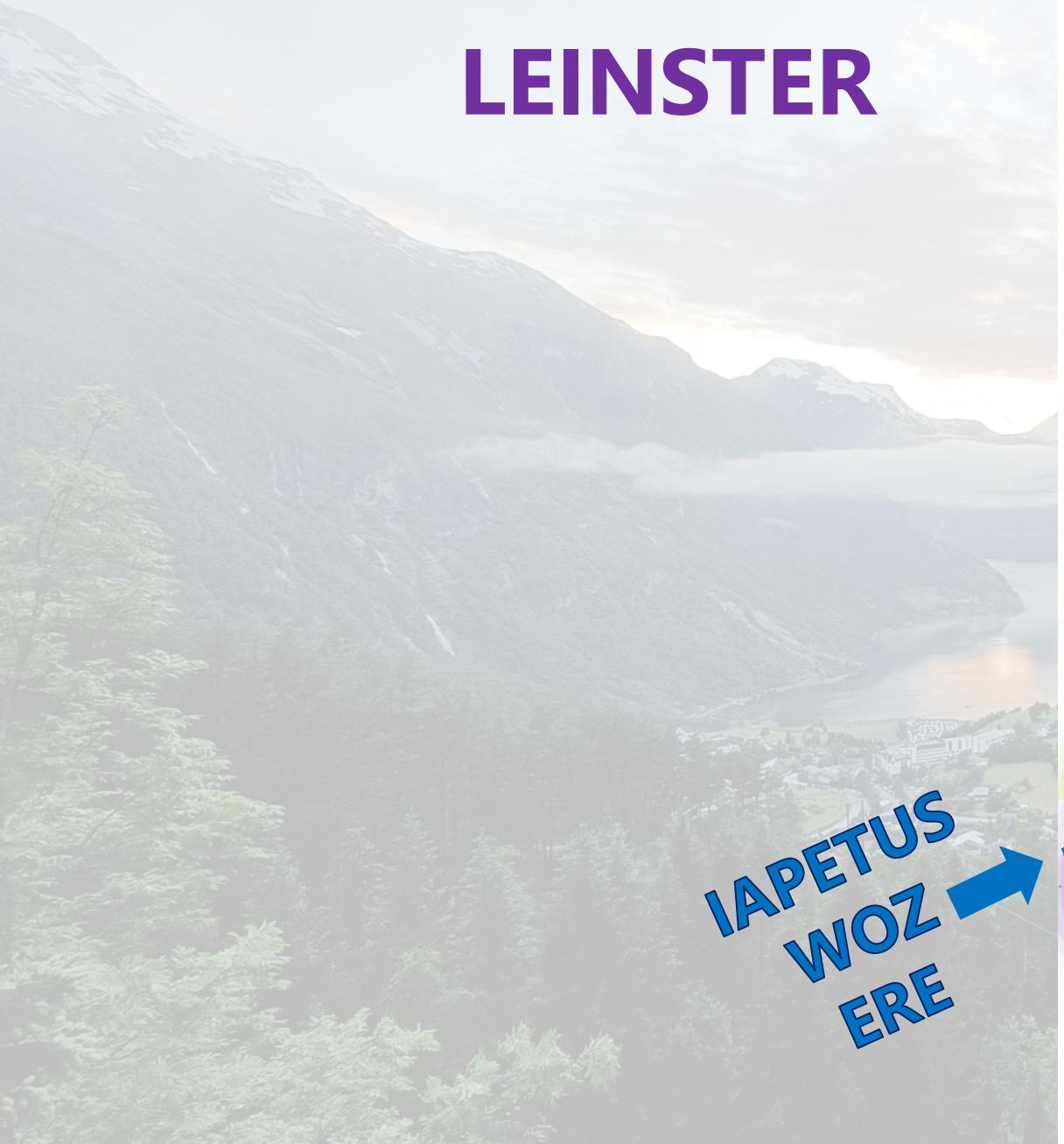


Laurentia, Avalonia and the Iapetus Ocean | Subduction Zone in Wales

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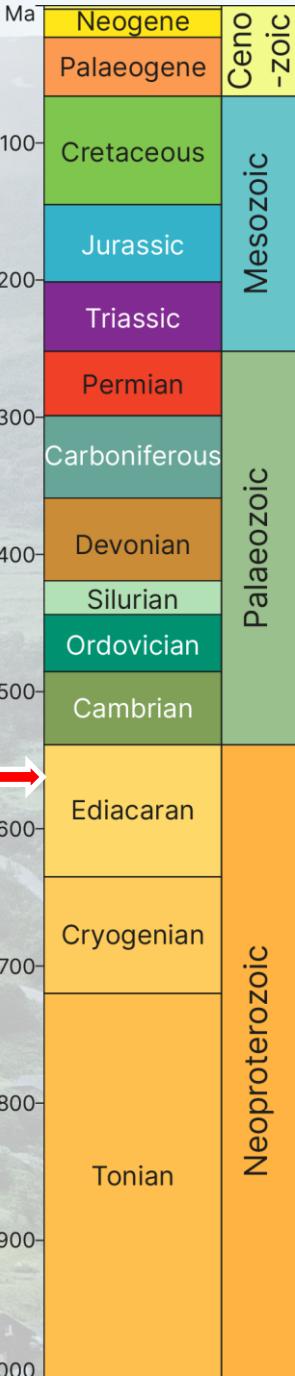
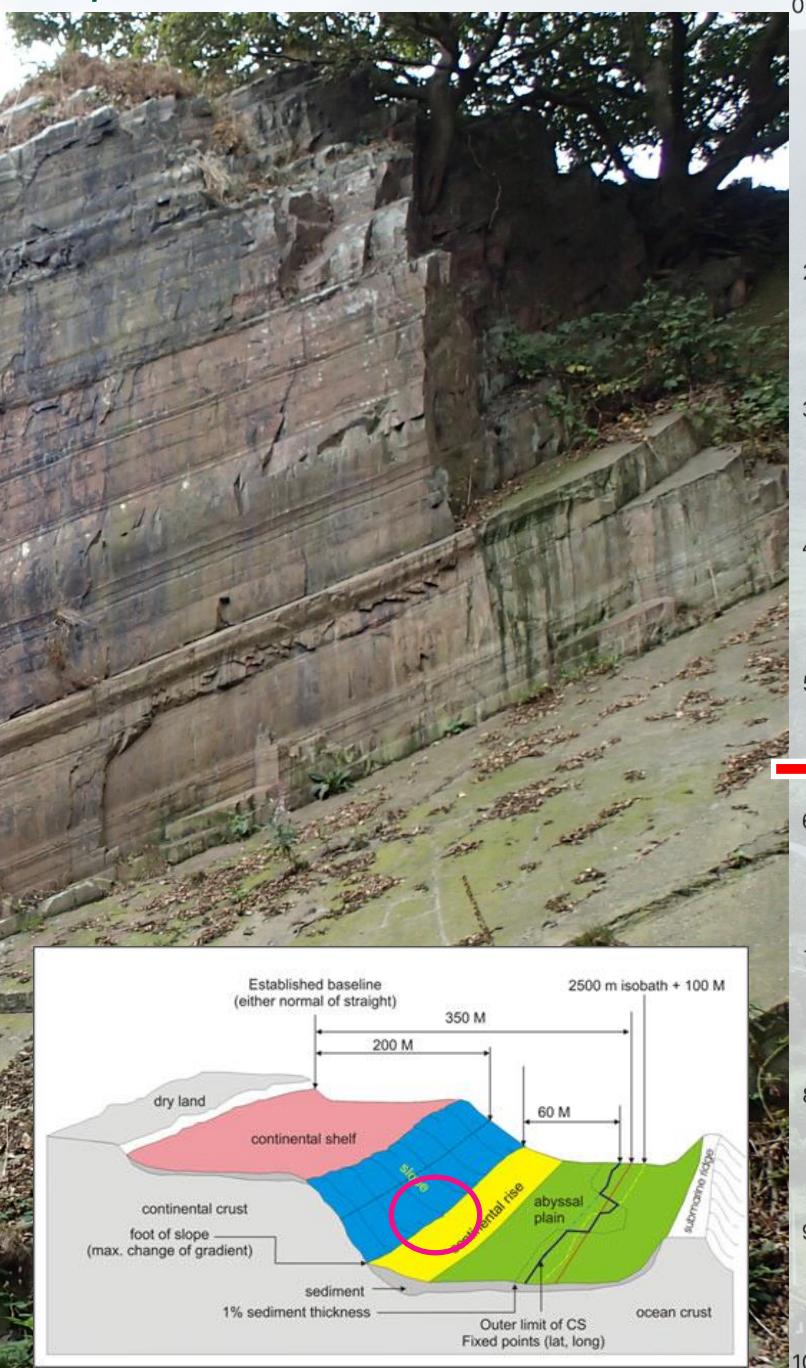
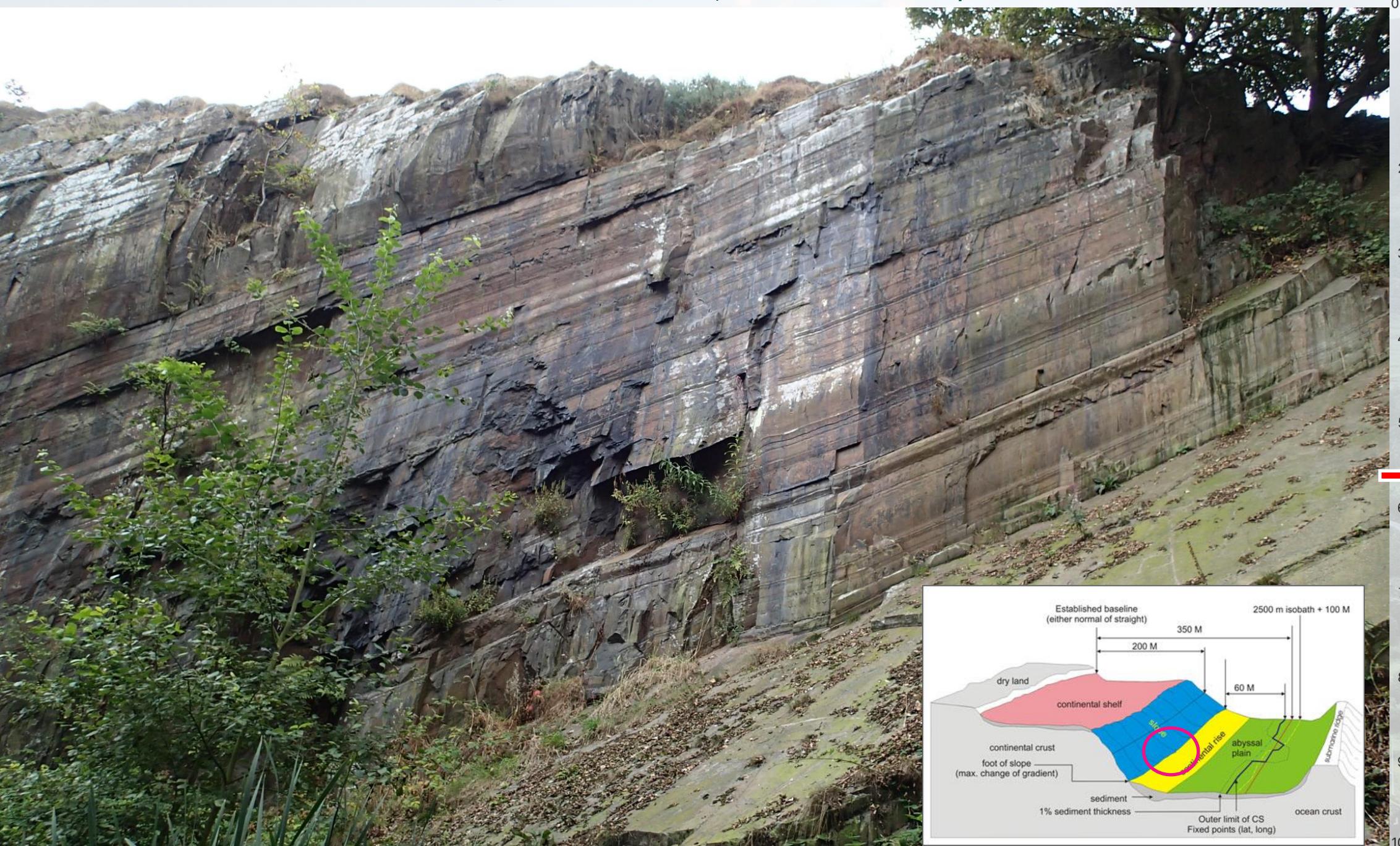
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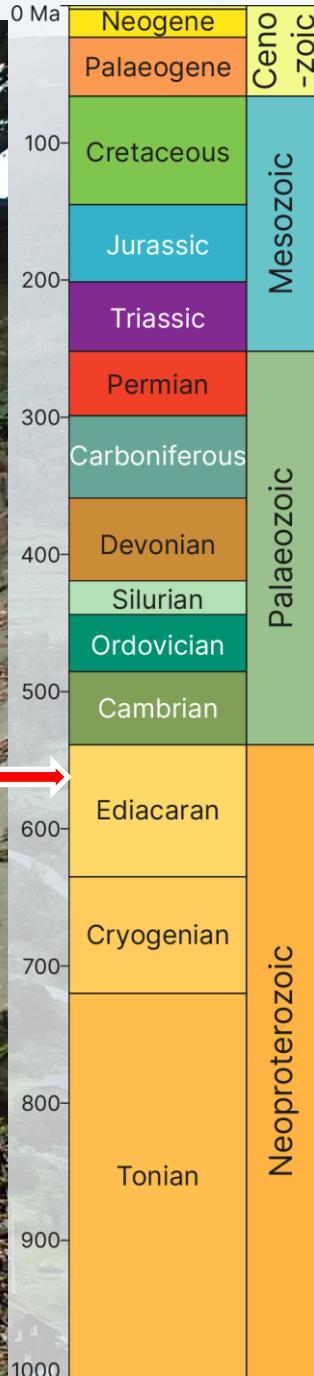
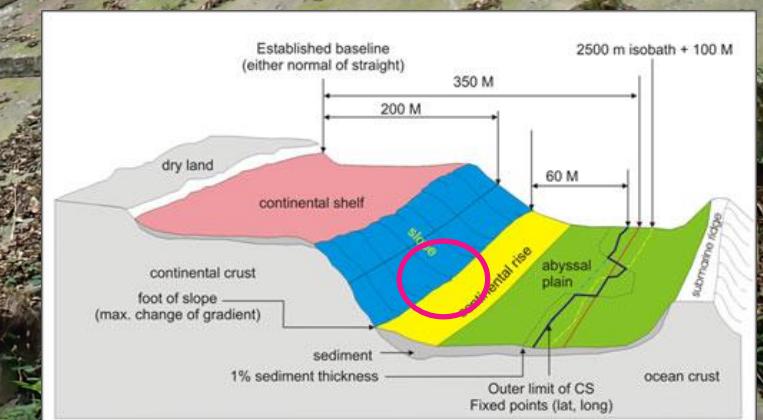
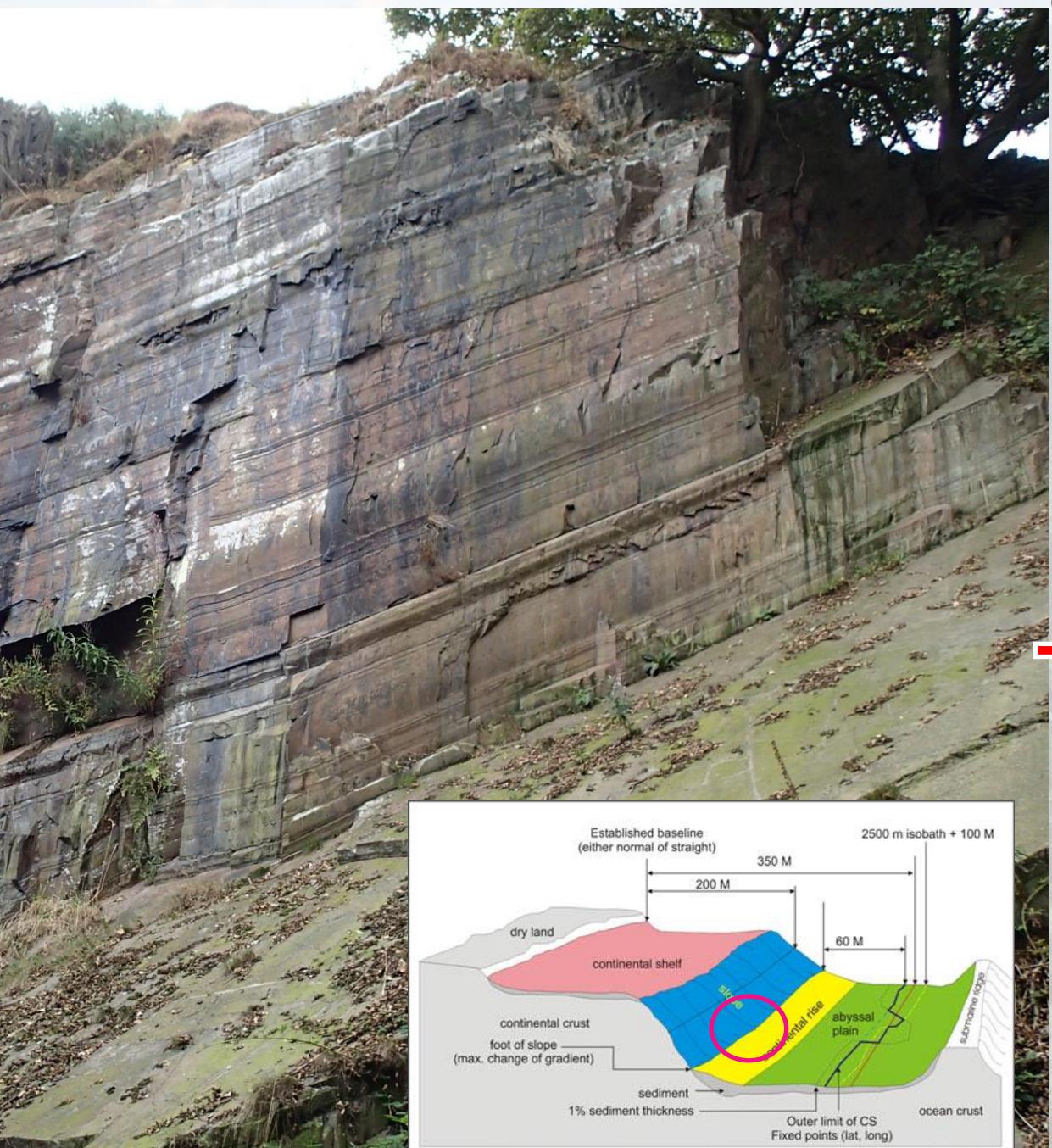
Laurentia, Avalonia, and the Iapetus Ocean | Ediacaran – Deep Marine

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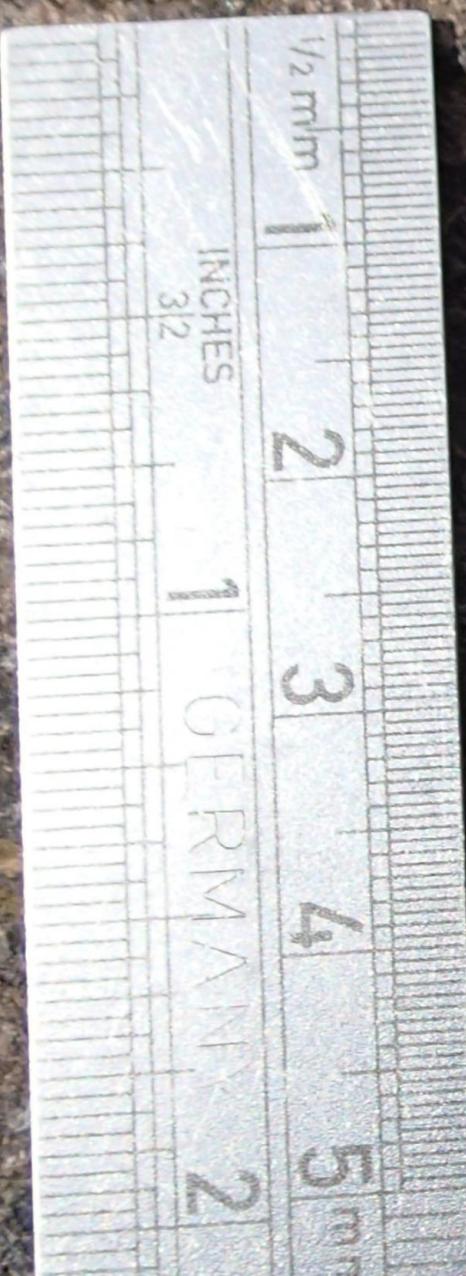
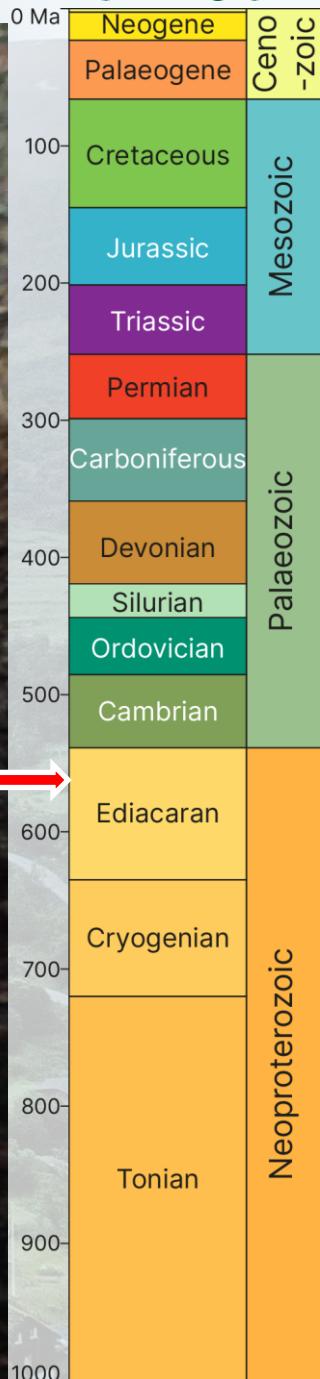
Laurentia, Avalonia and the Iapetus Ocean | Ediacaran – Deep Marine

GY4051

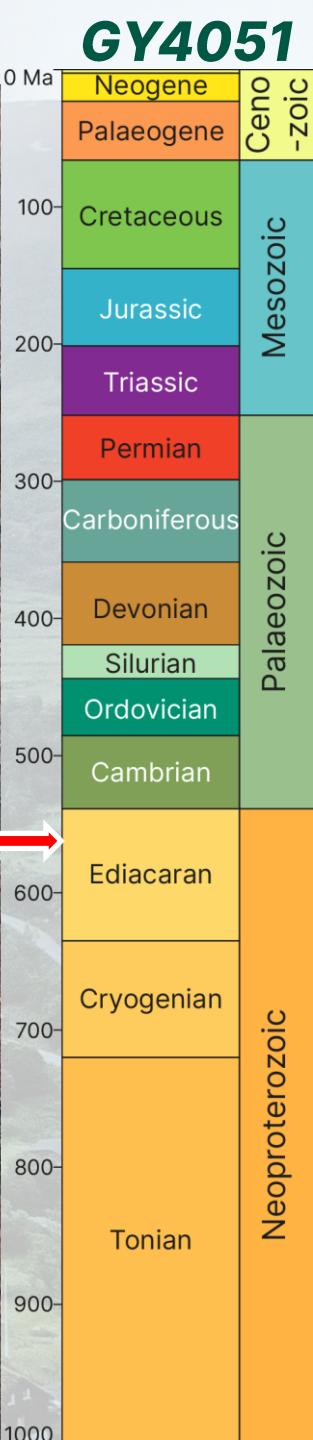


Laurentia, Avalonia, and the Iapetus Ocean | Ediacaran – Deep Marine

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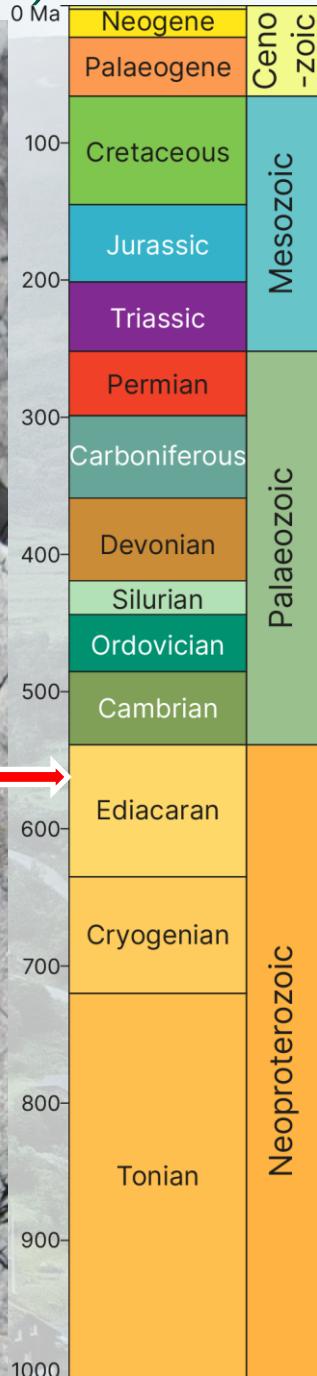


Laurentia, Avalonia, and the Iapetus Ocean | Ediacaran – Deep Marine



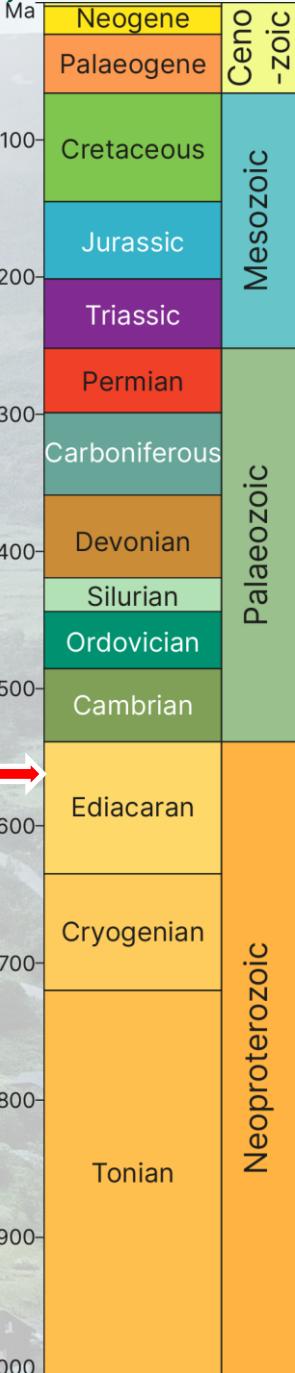
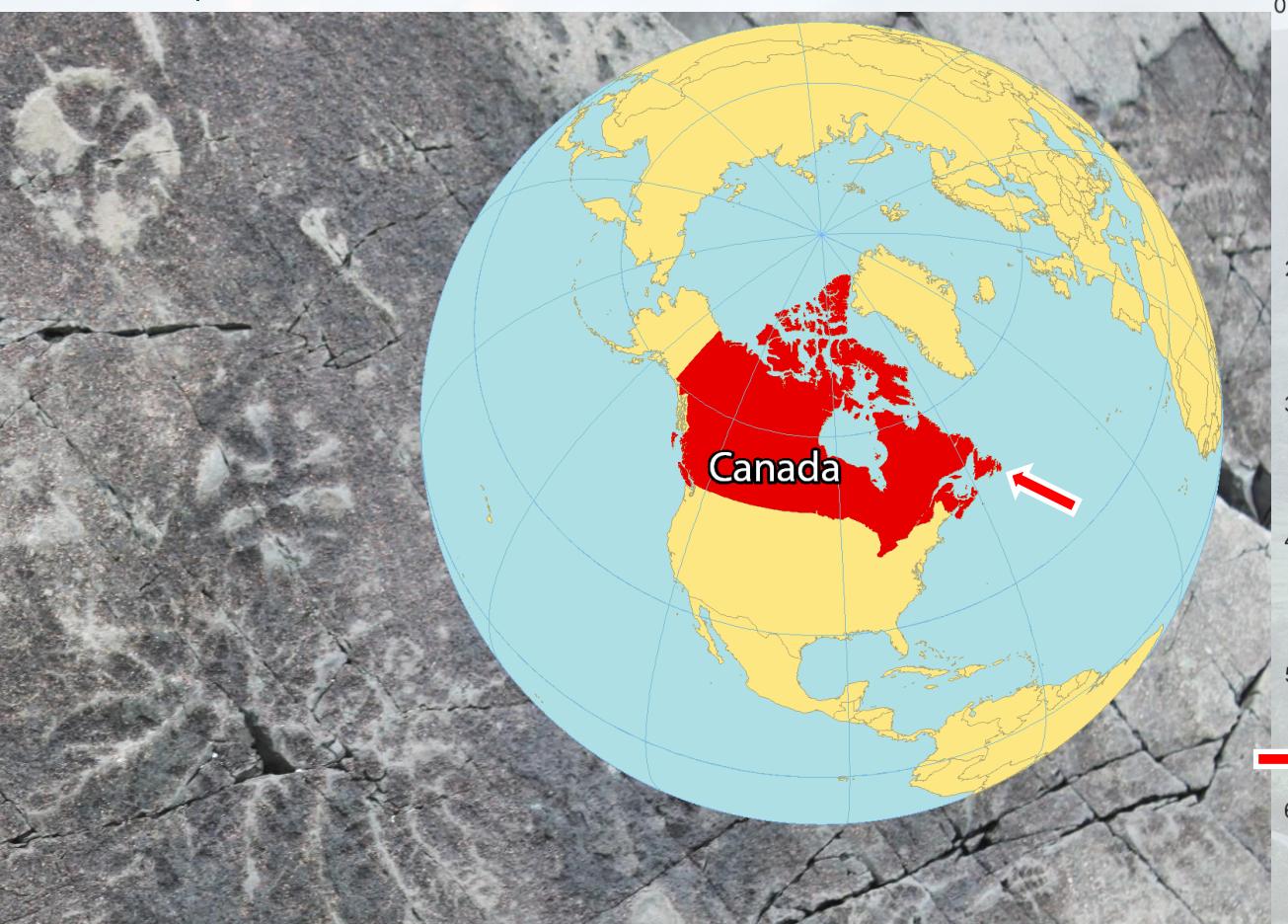
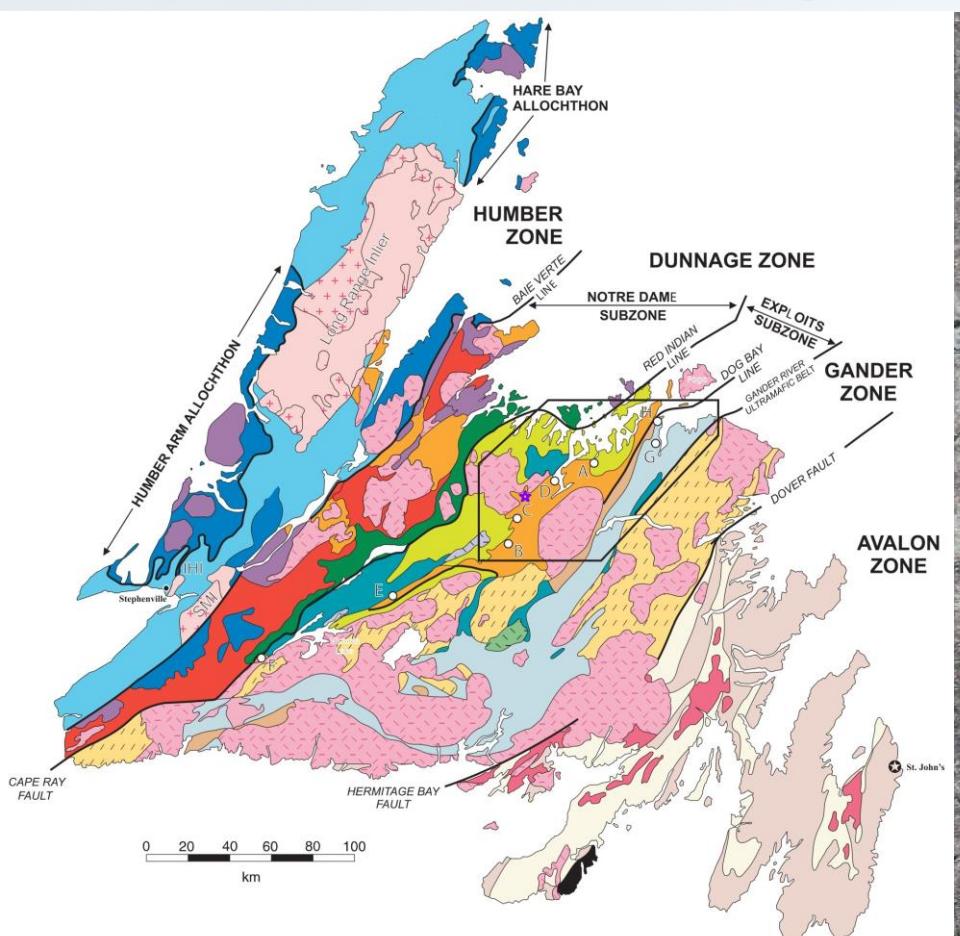
Laurentia, Avalonia, and the Iapetus Ocean | (Across the ocean – Ediacaran of Newfoundland)

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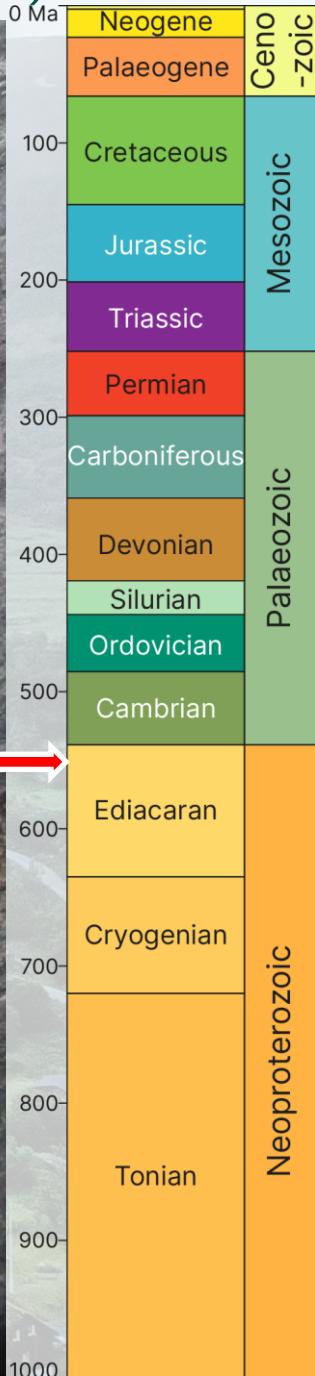


Laurentia, Avalonia, and the Iapetus Ocean | (Across the ocean – Ediacaran of Newfoundland)

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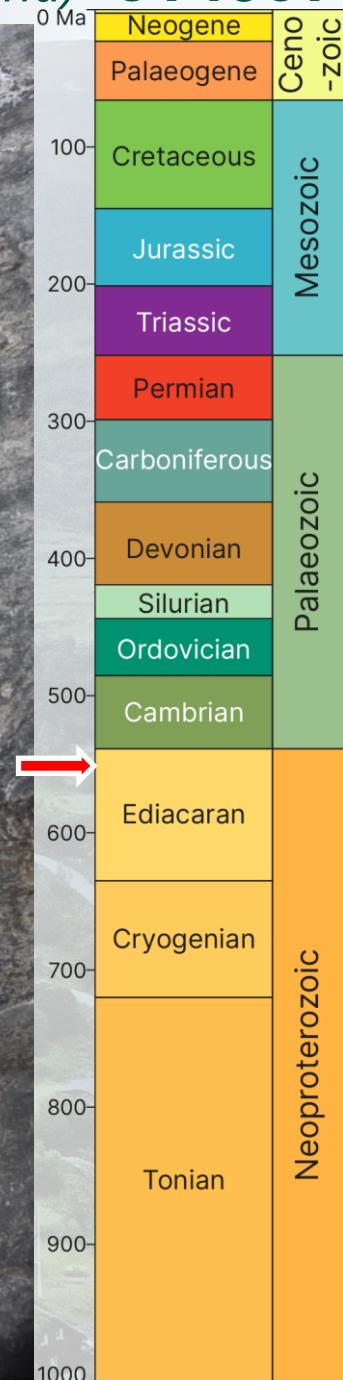
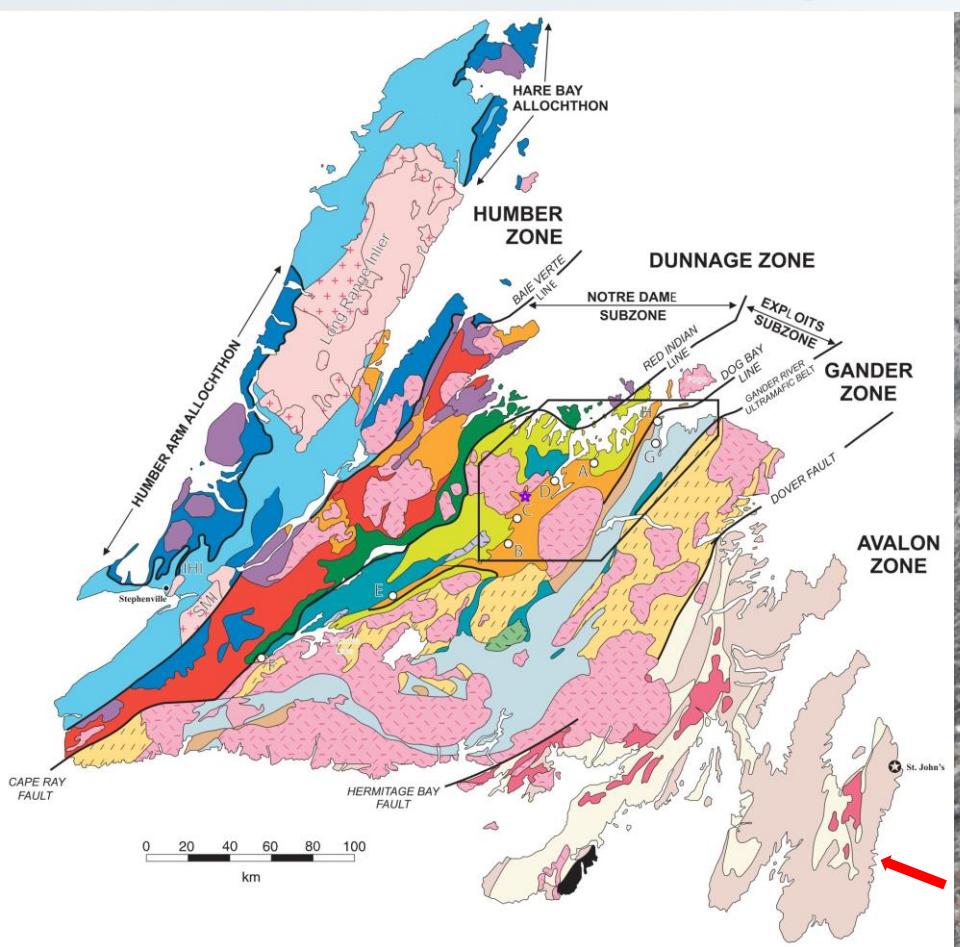


Laurentia, Avalonia, and the Iapetus Ocean | (Across the ocean – Ediacaran of Newfoundland) GY4051

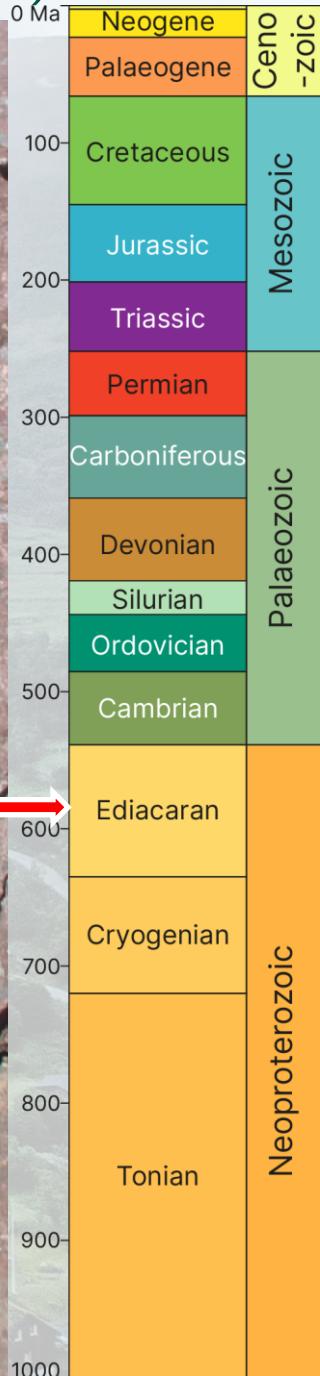


Laurentia, Avalonia, and the Iapetus Ocean | (Across the ocean – Ediacaran of Newfoundland)

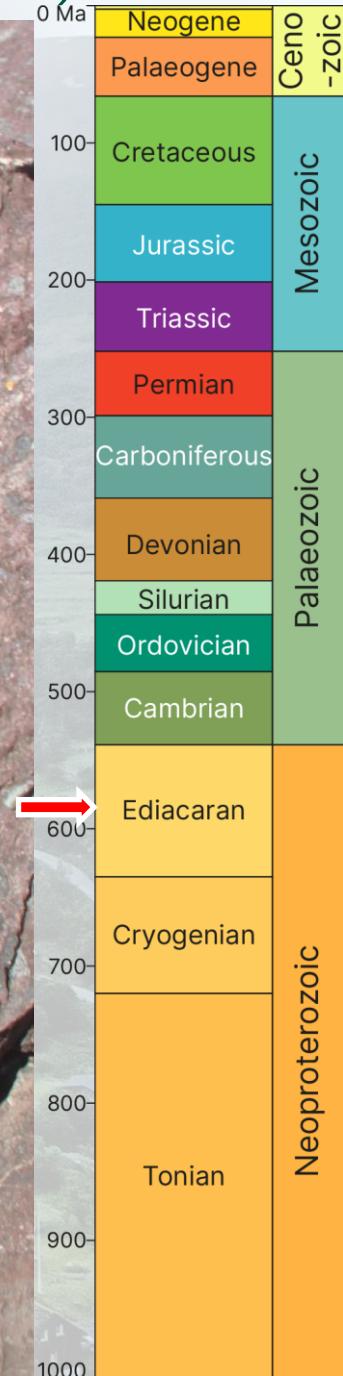
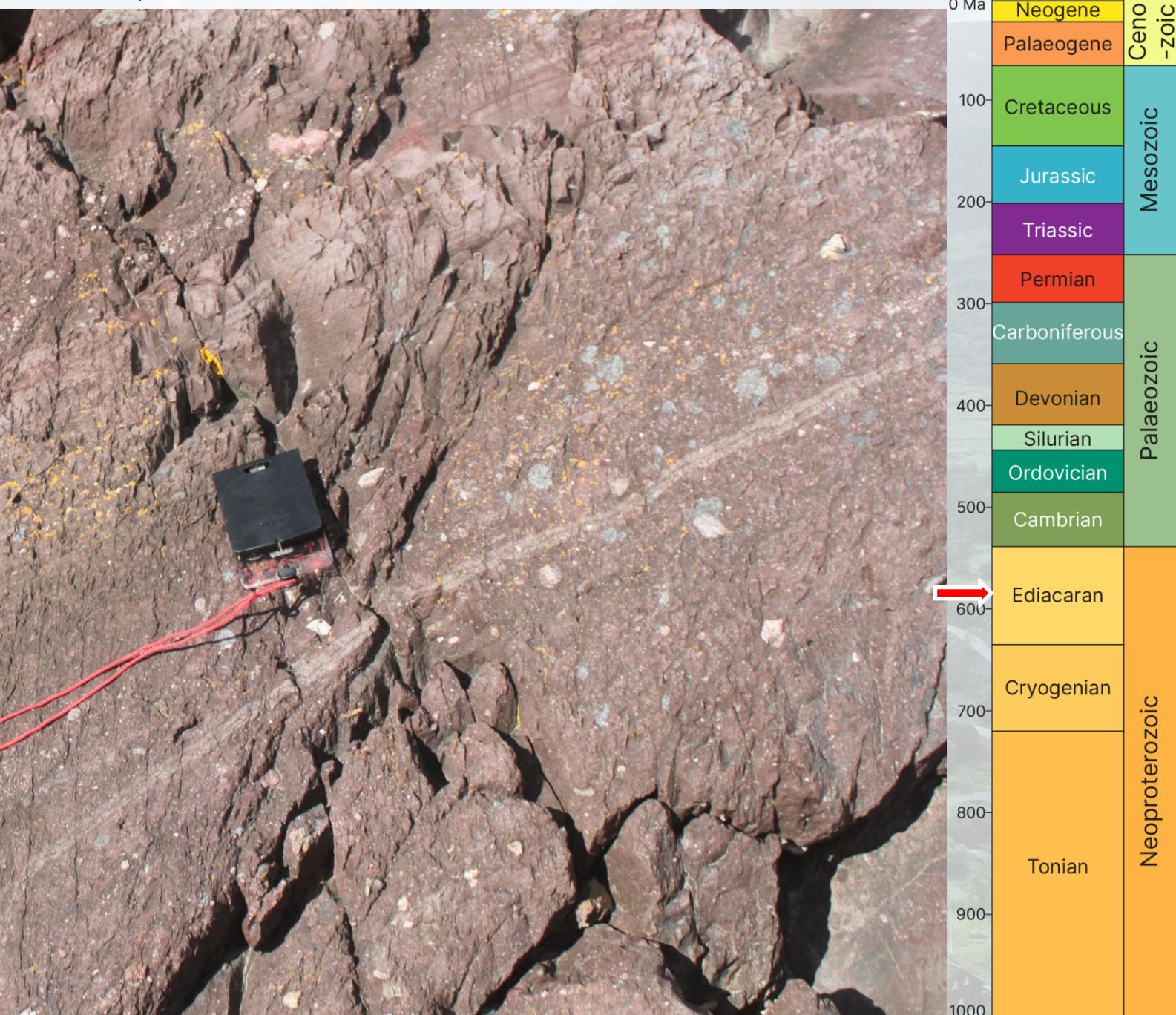
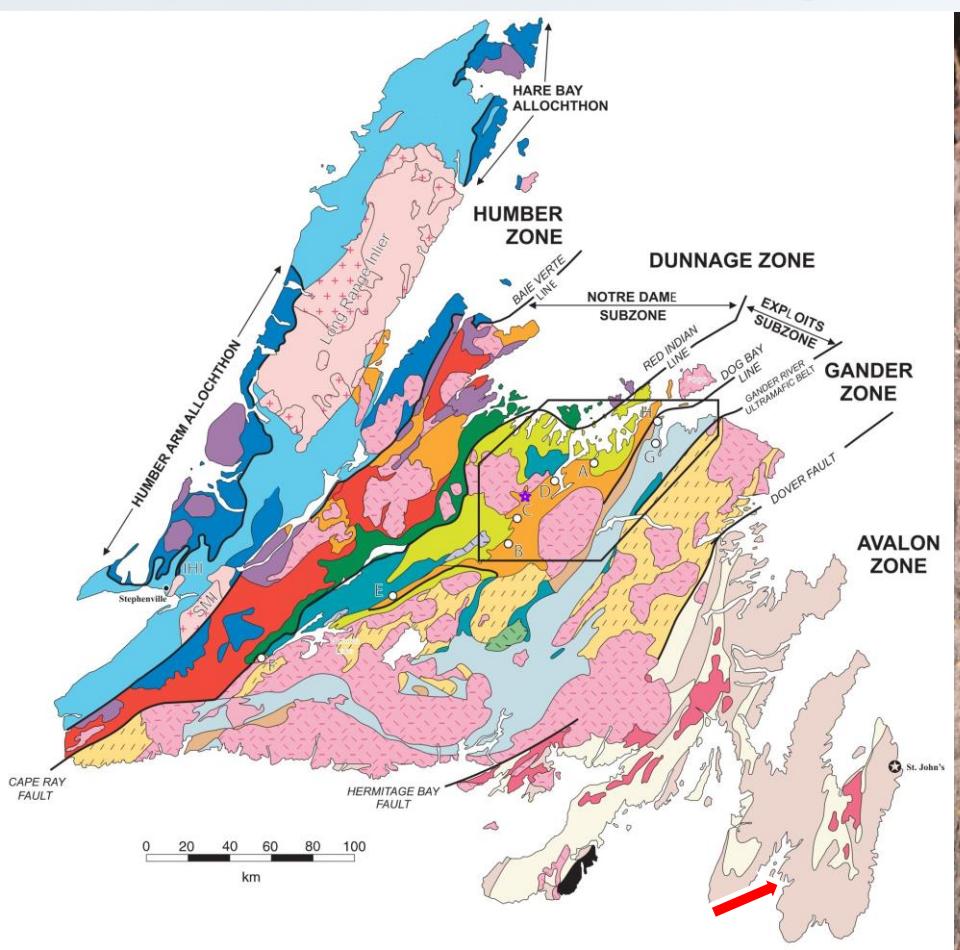
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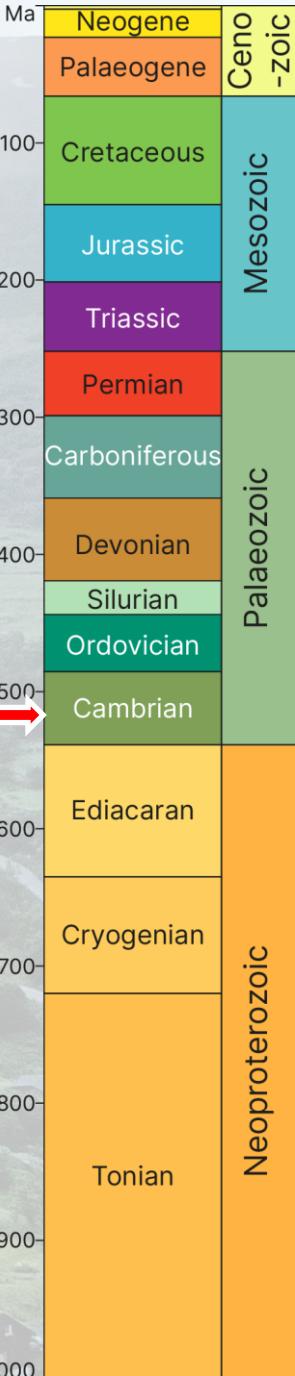
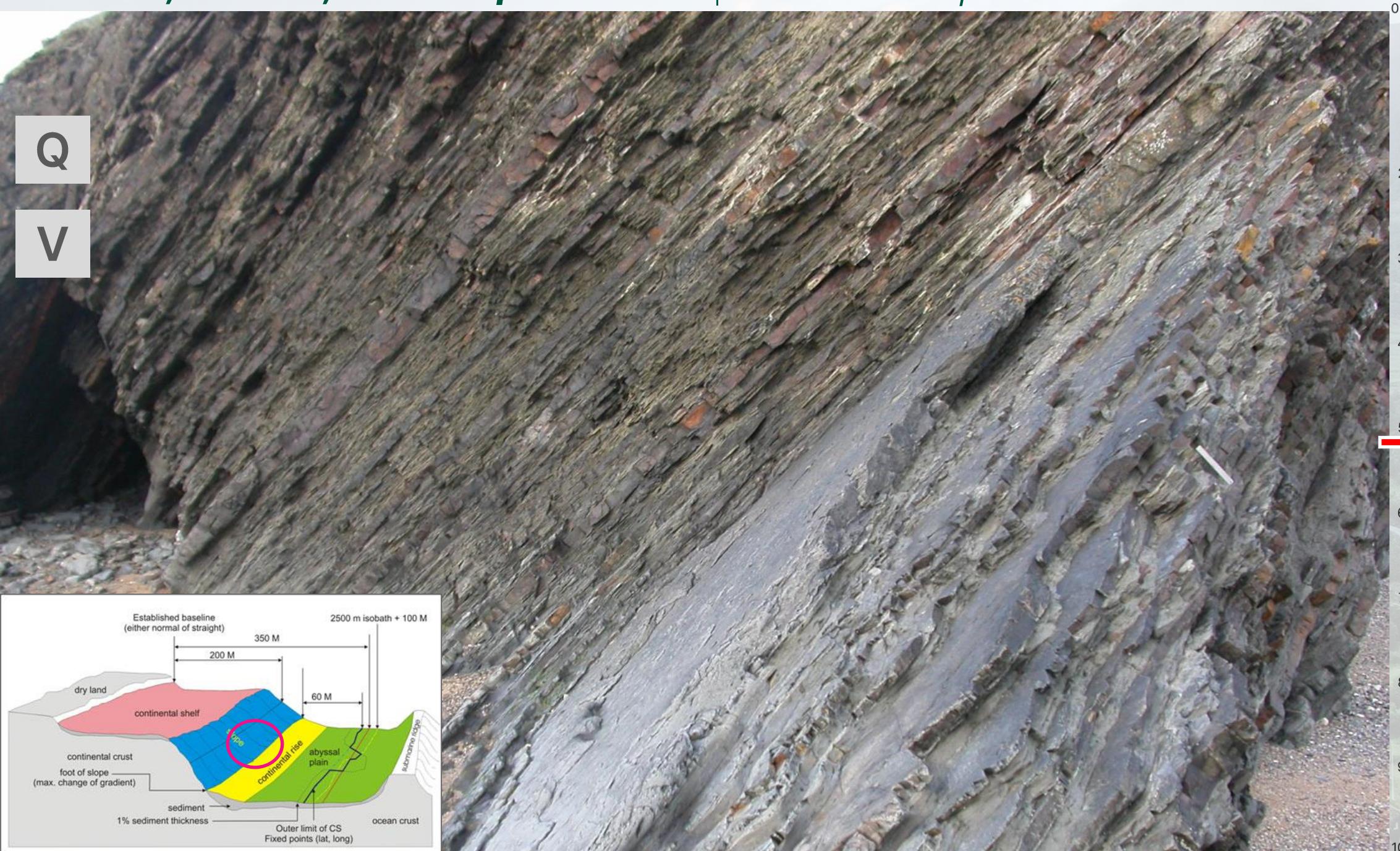


Laurentia, Avalonia, and the Iapetus Ocean | (Across the ocean – Ediacaran of Newfoundland) GY4051



Laurentia, Avalonia, and the Iapetus Ocean | Cambrian – Deep Marine

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Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Margin

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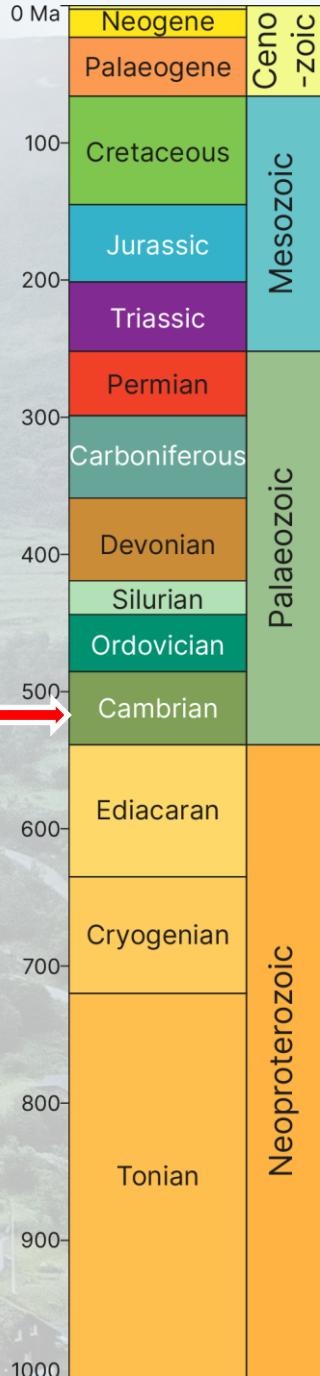
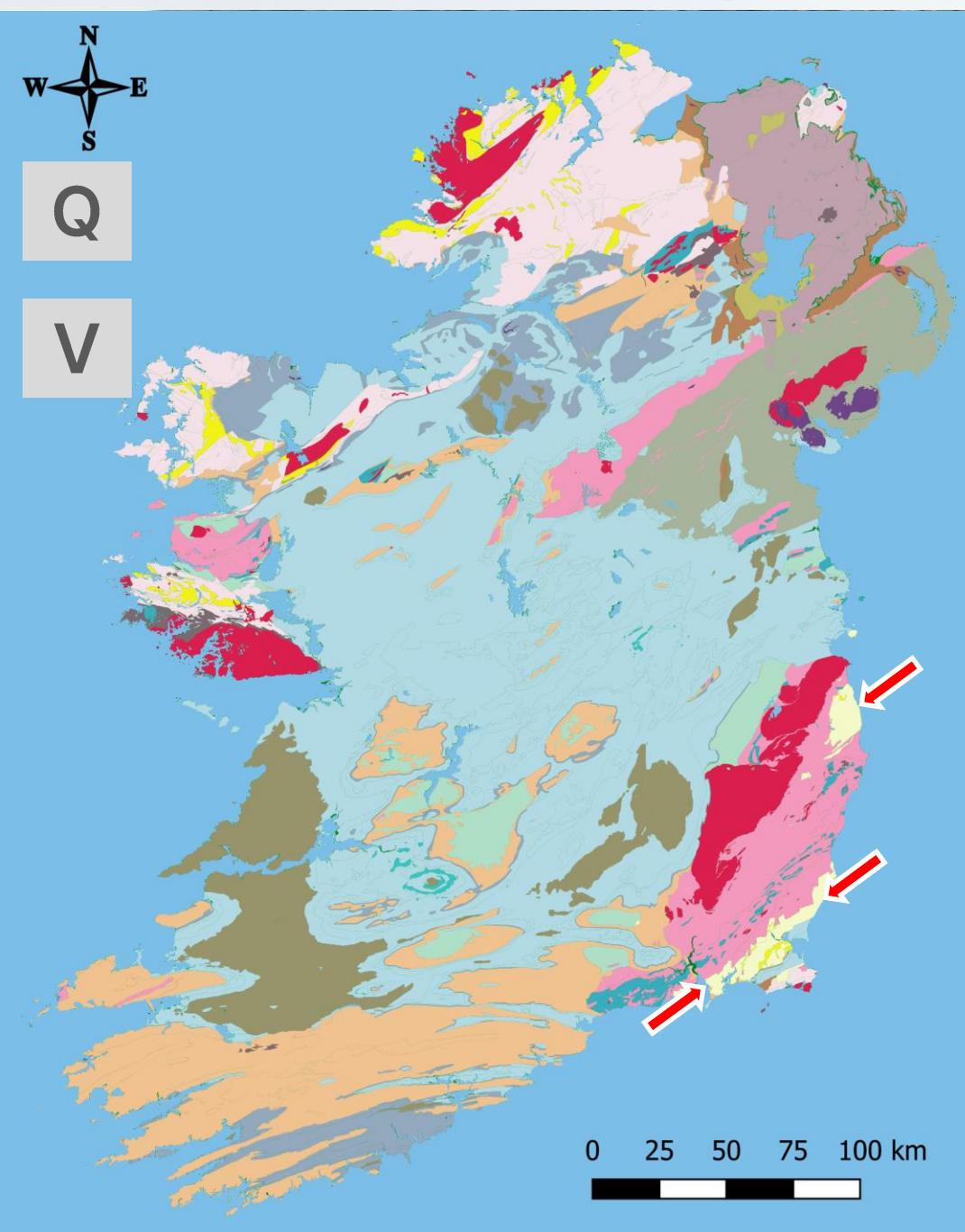
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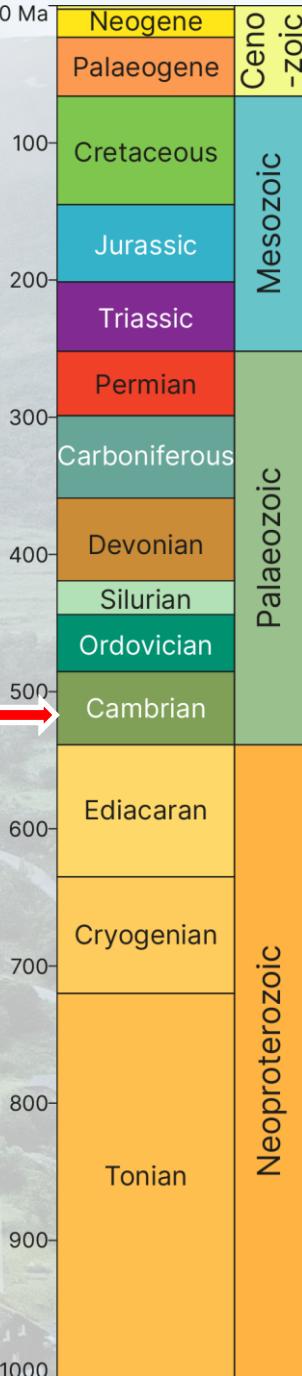
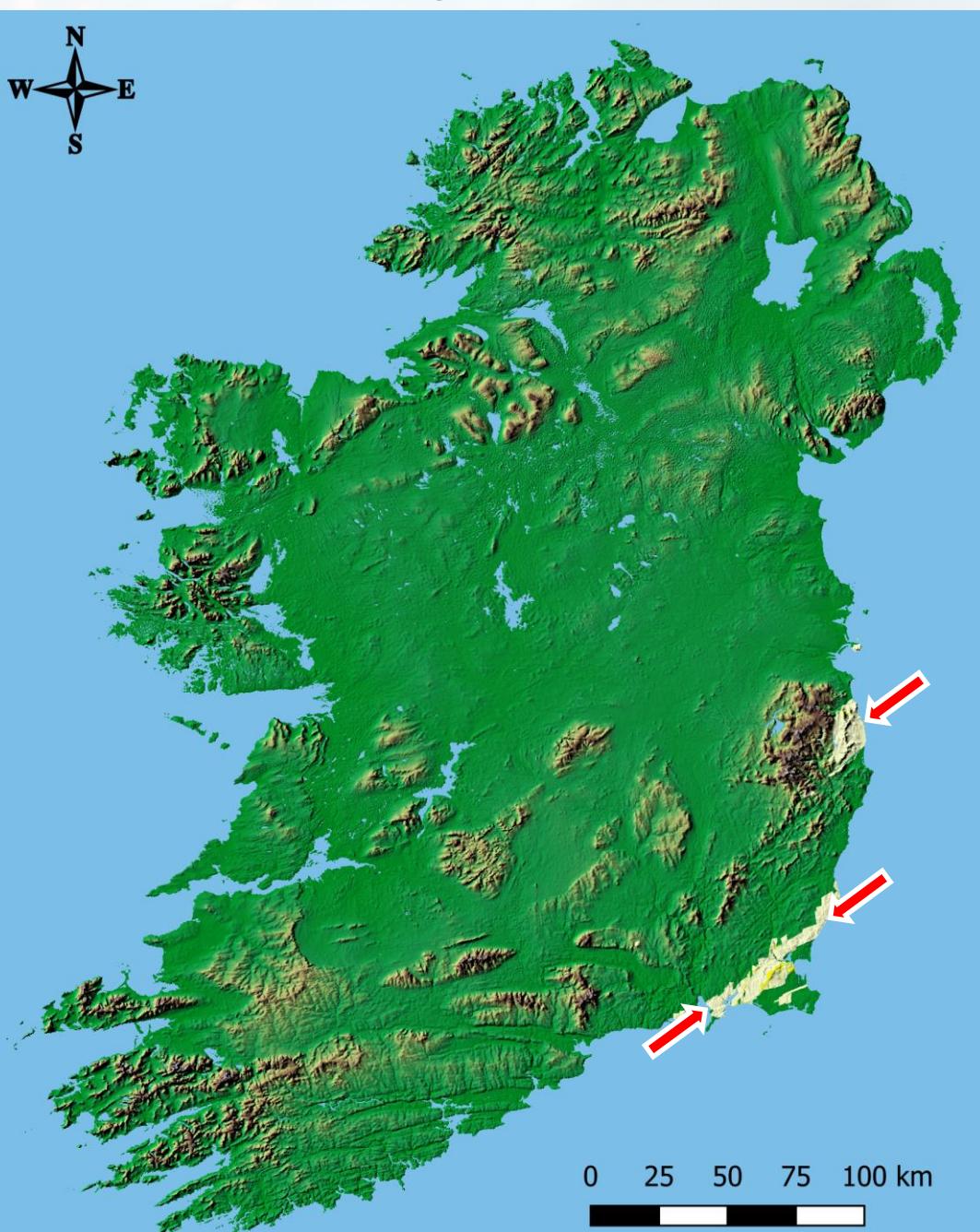
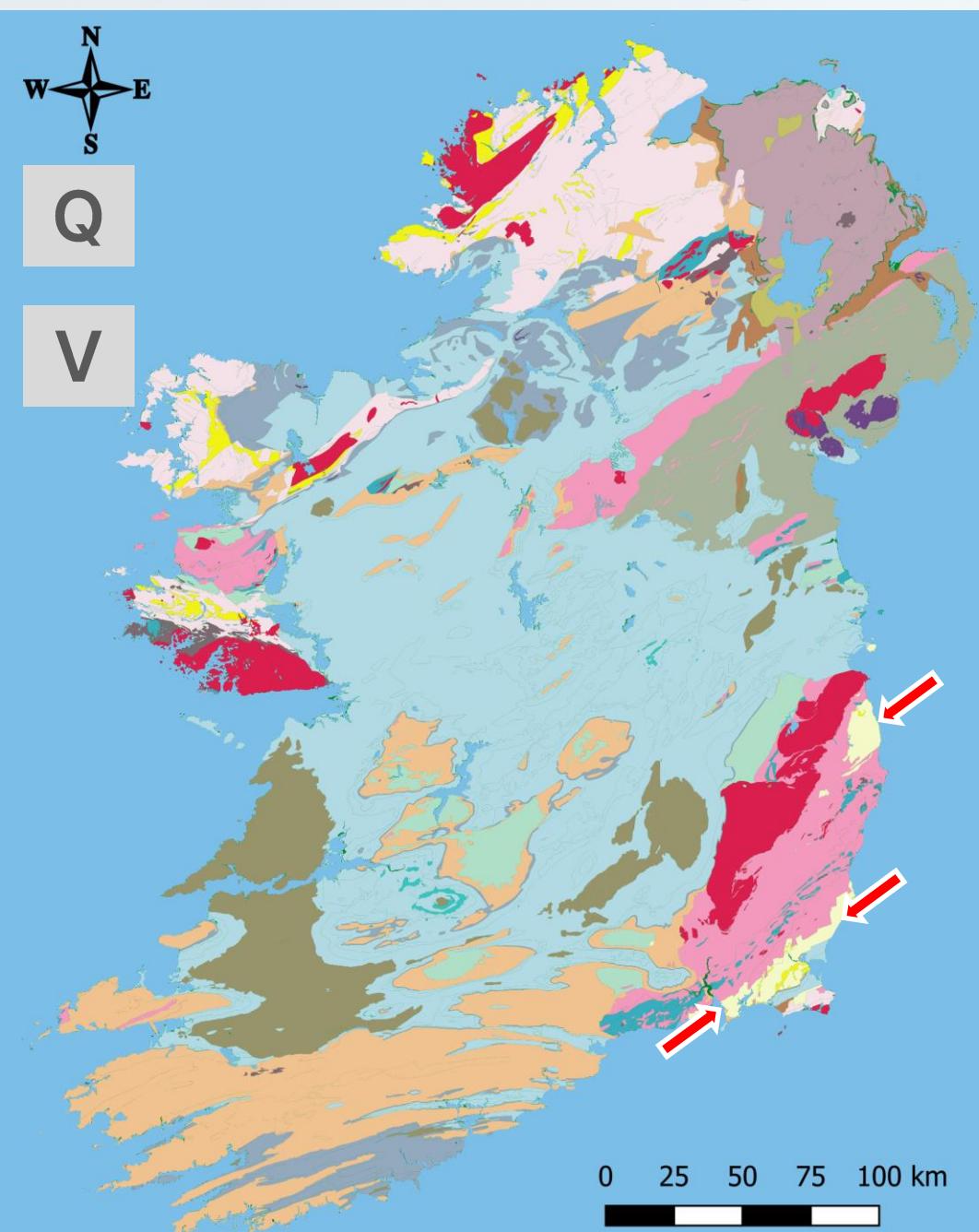
Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Margin

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Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Margin

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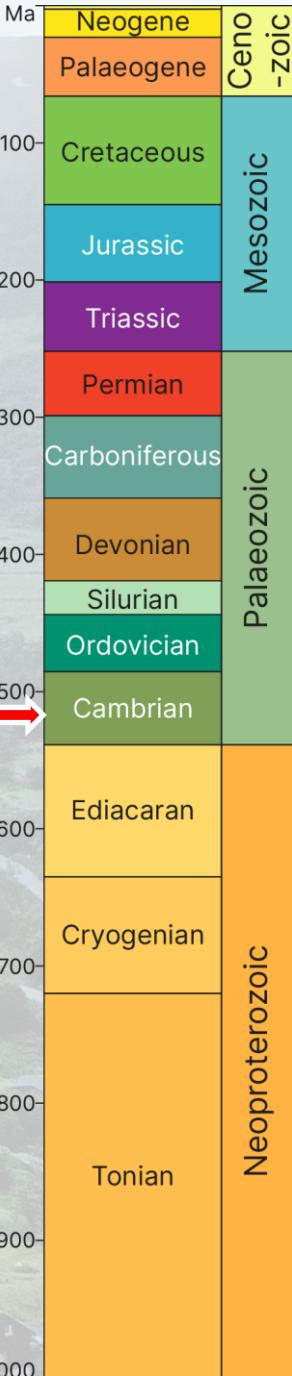
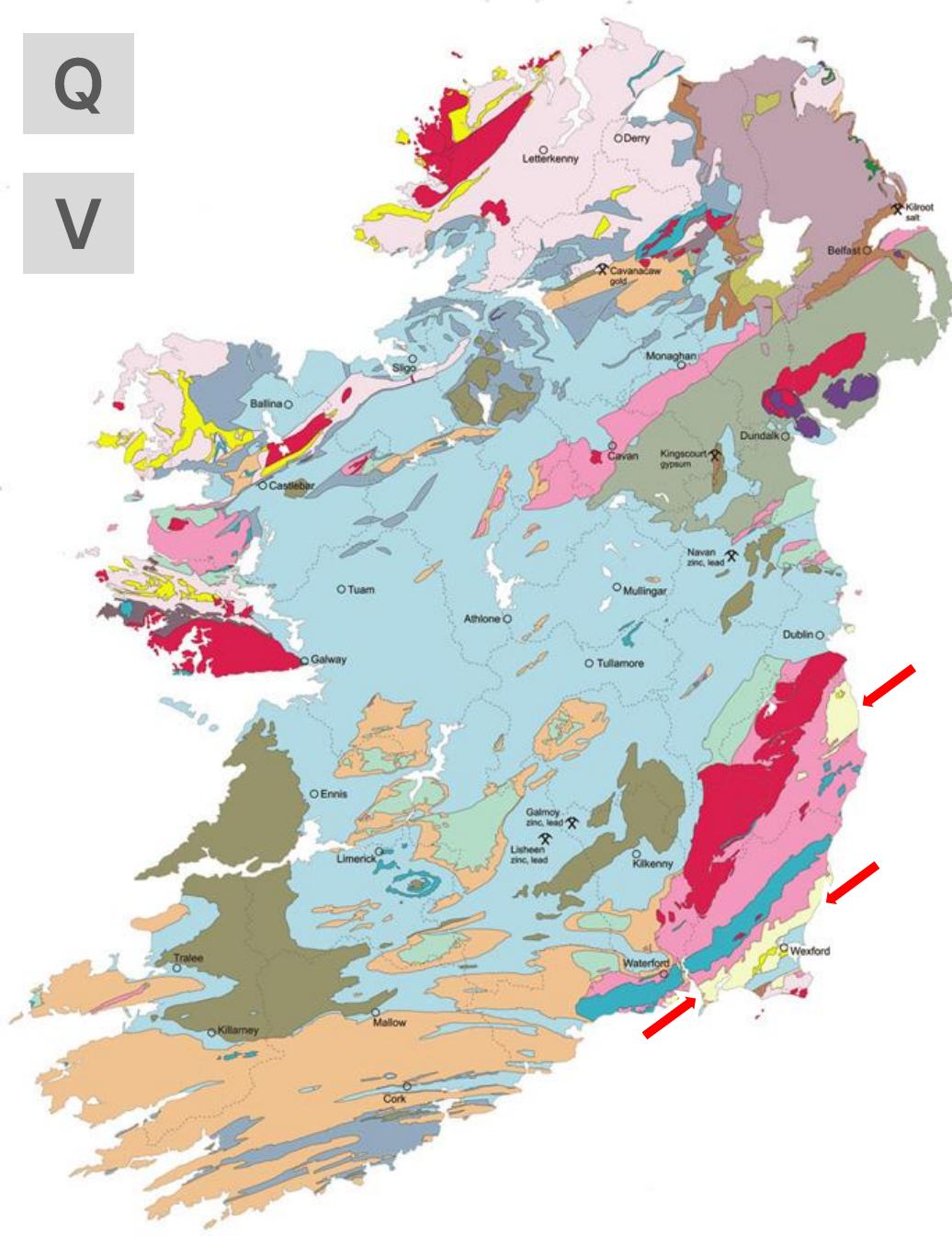


Laurentia, Avalonia, and the Iapetus Ocean | Cambrian – Deep Marine

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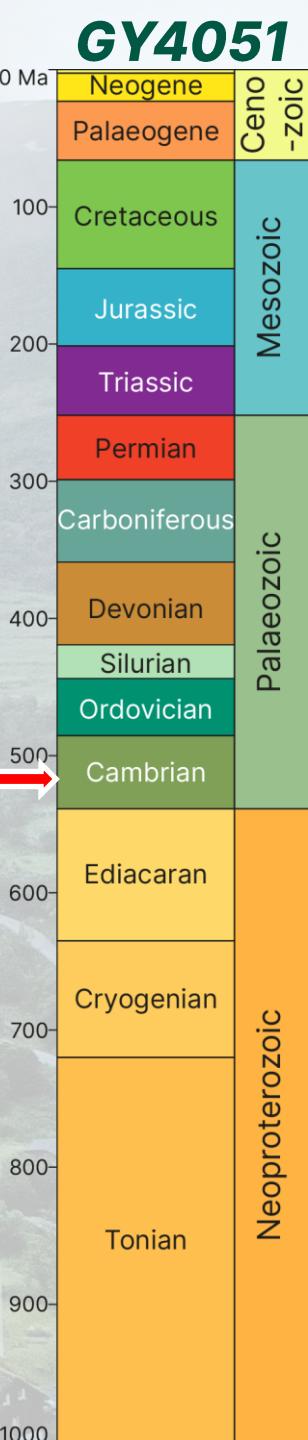
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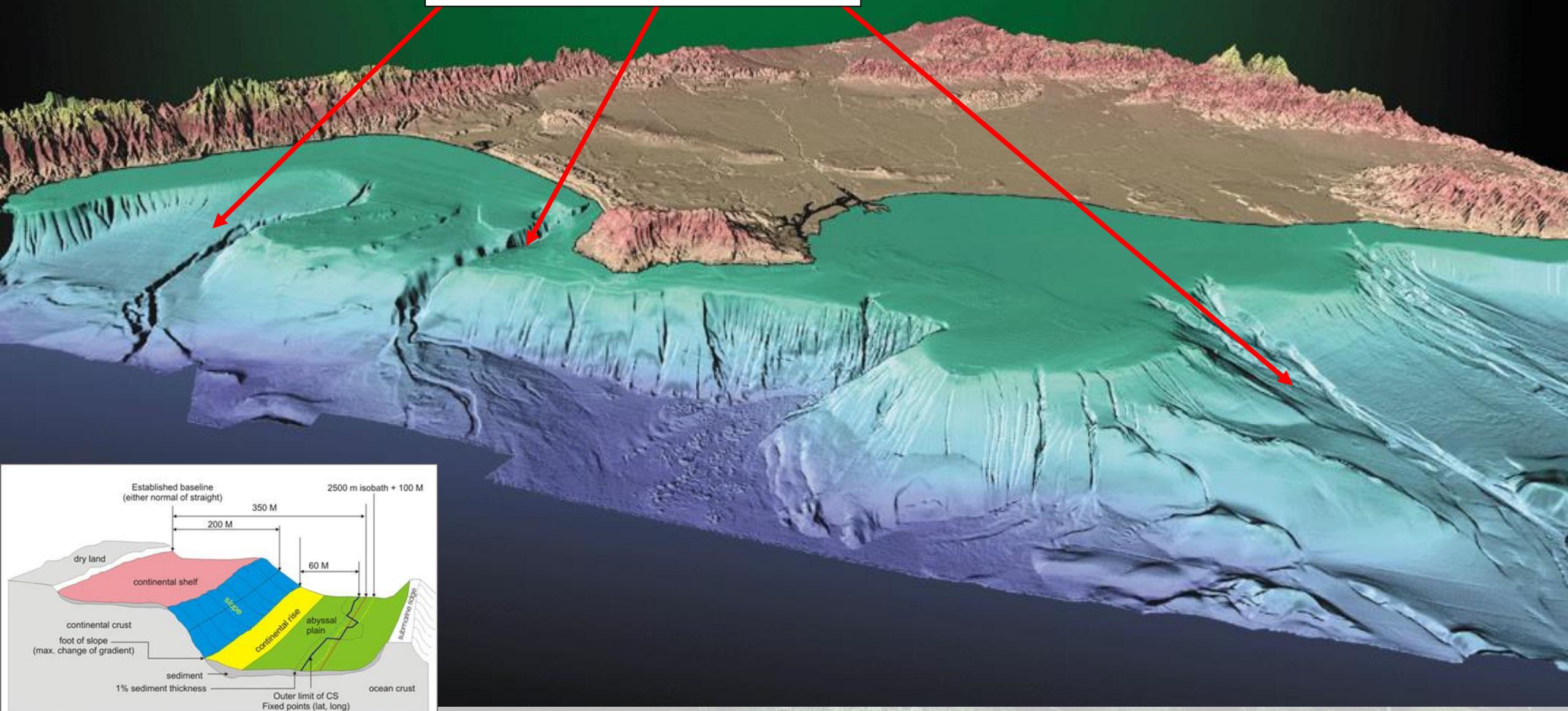


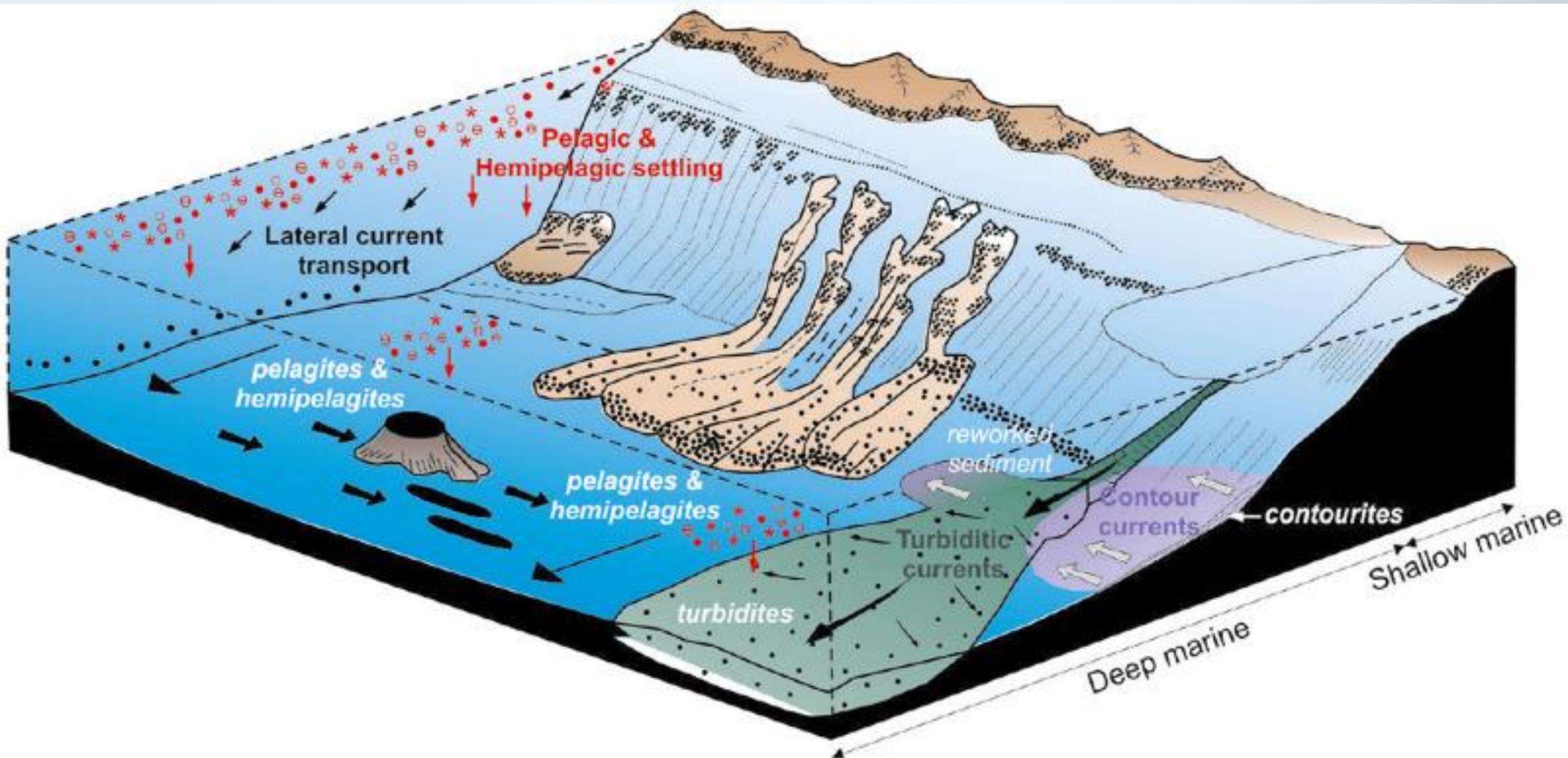
Laurentia, Avalonia, and the Iapetus Ocean | Cambrian – Deep Marine

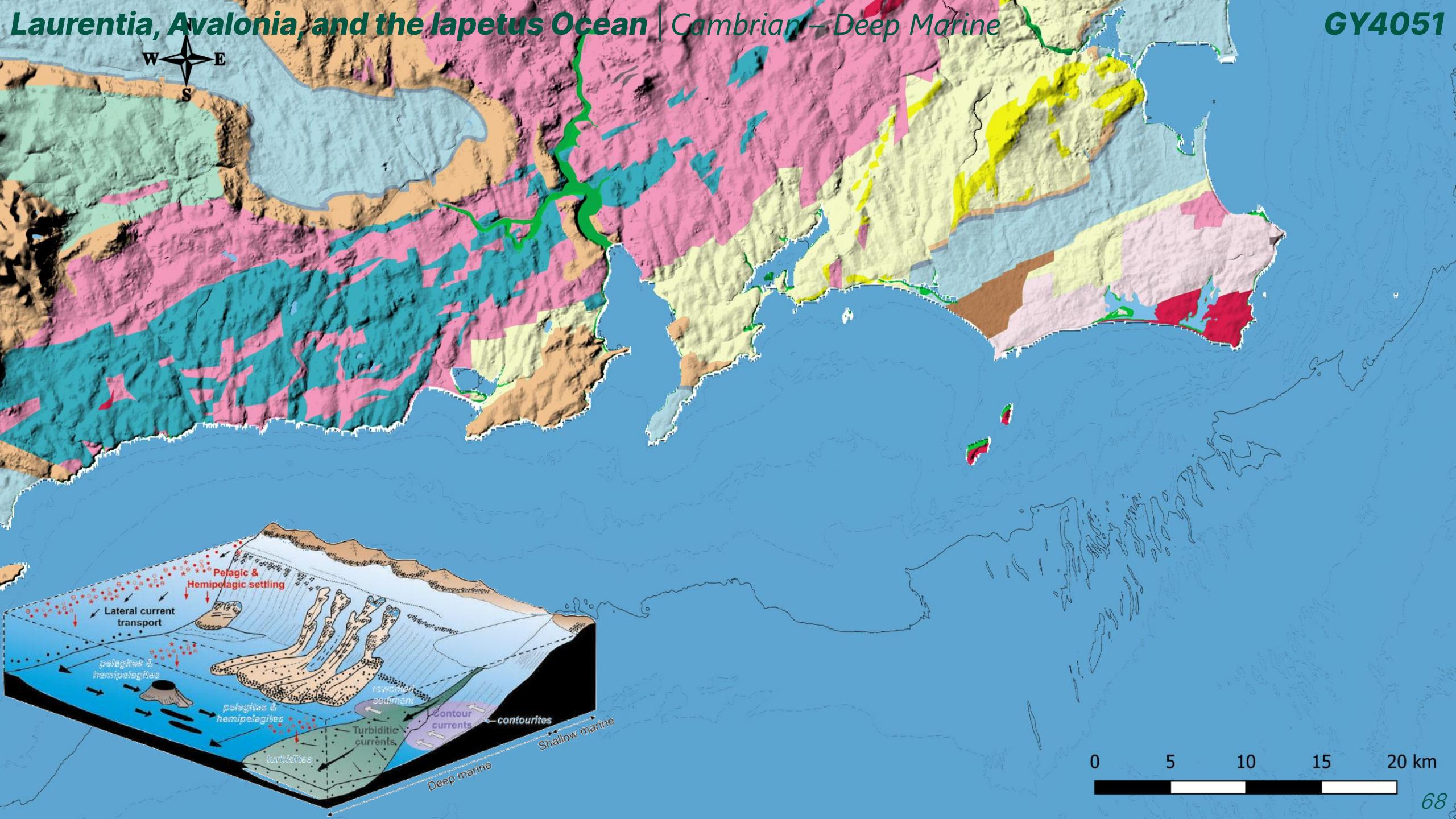
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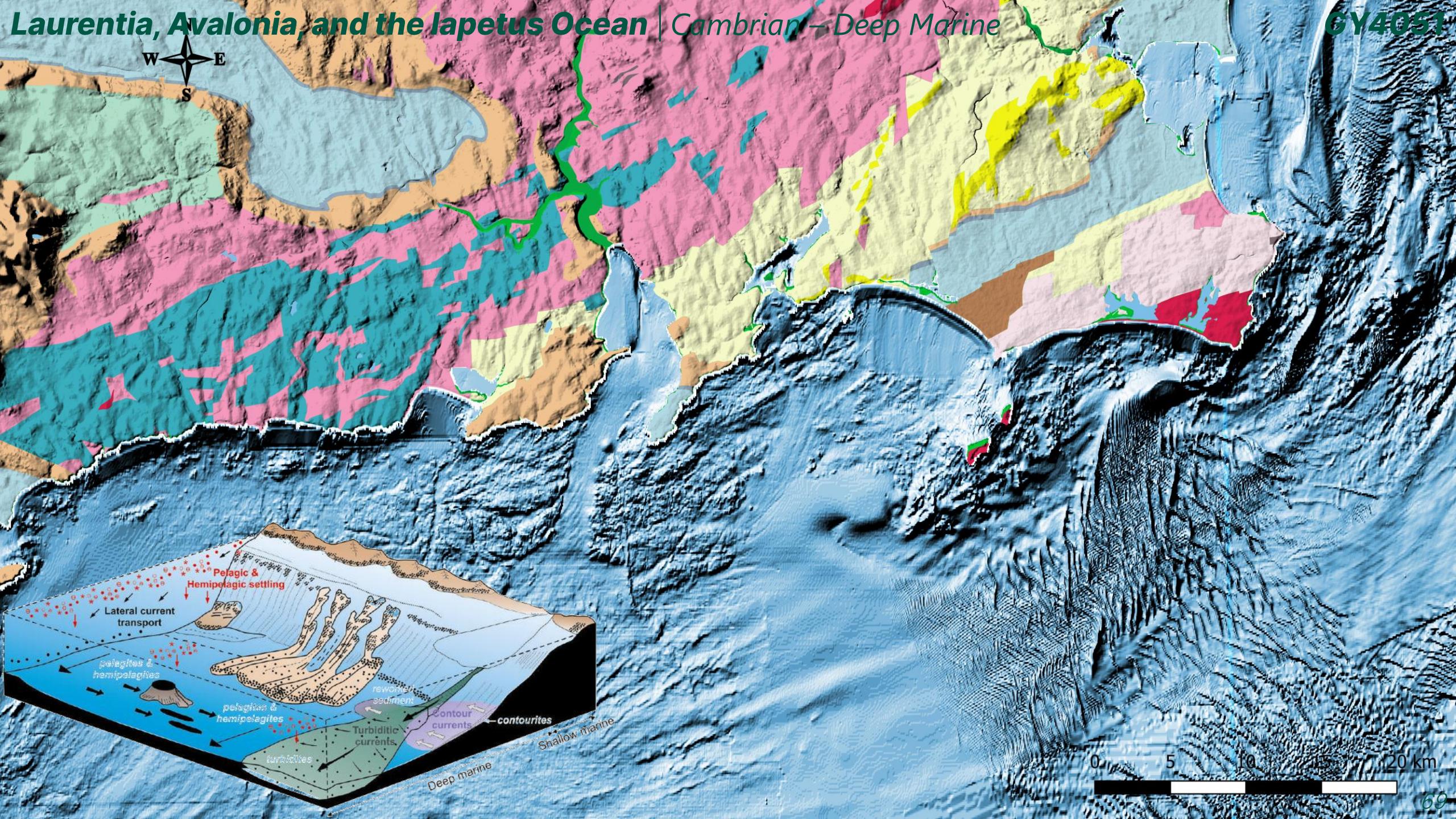


Turbidity currents



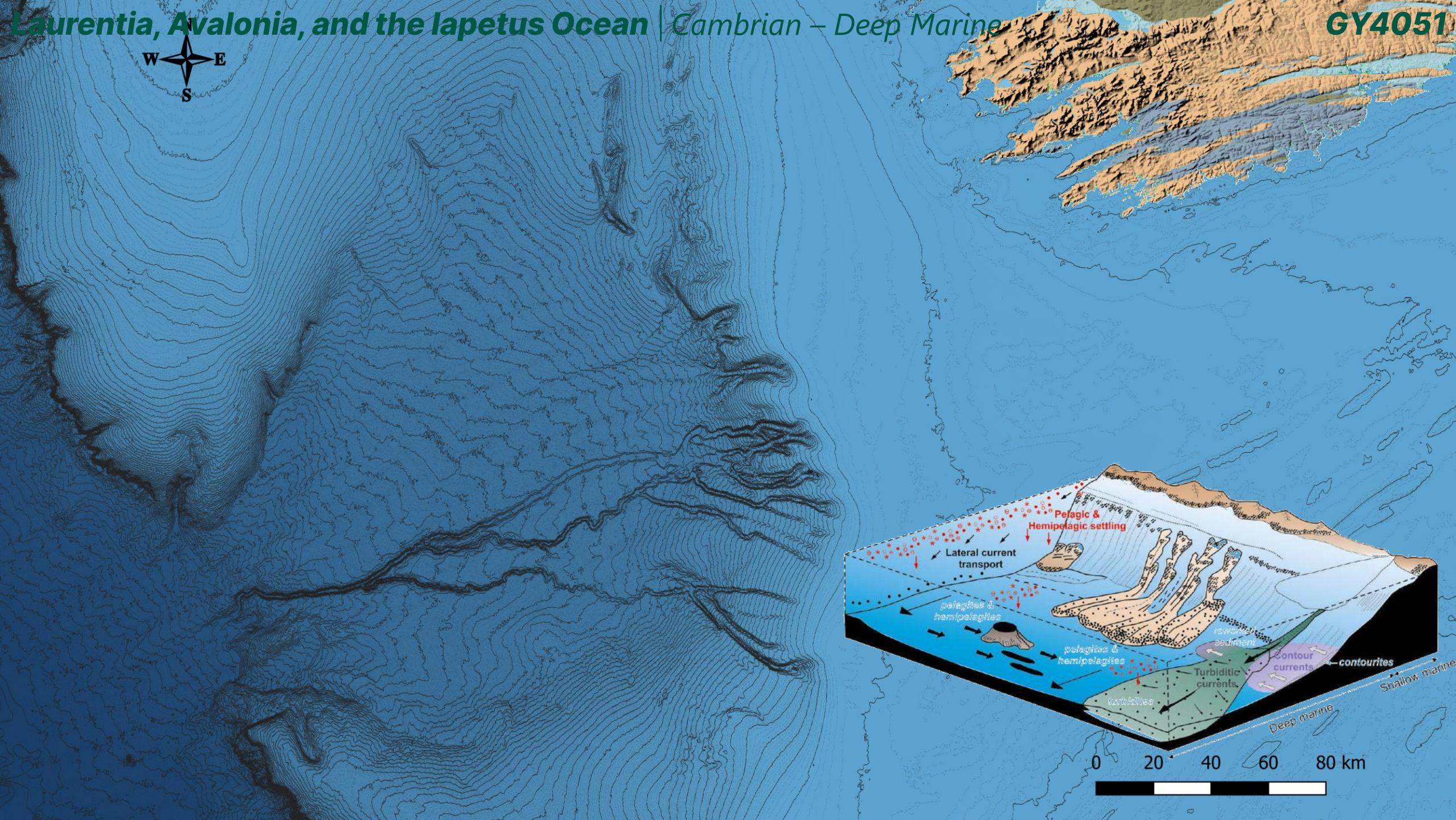


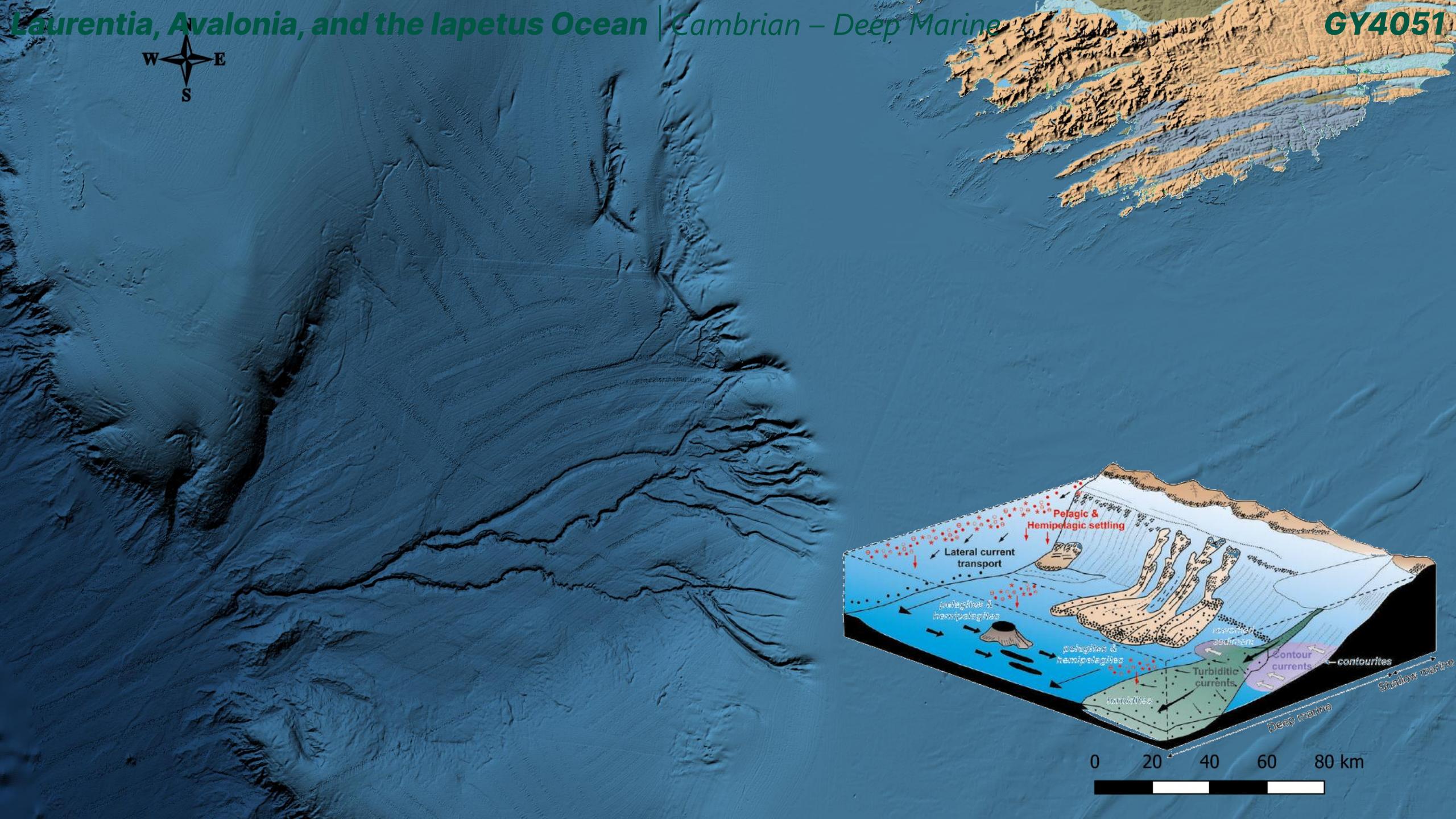




Laurentia, Avalonia, and the Iapetus Ocean | Cambrian – Deep Marine

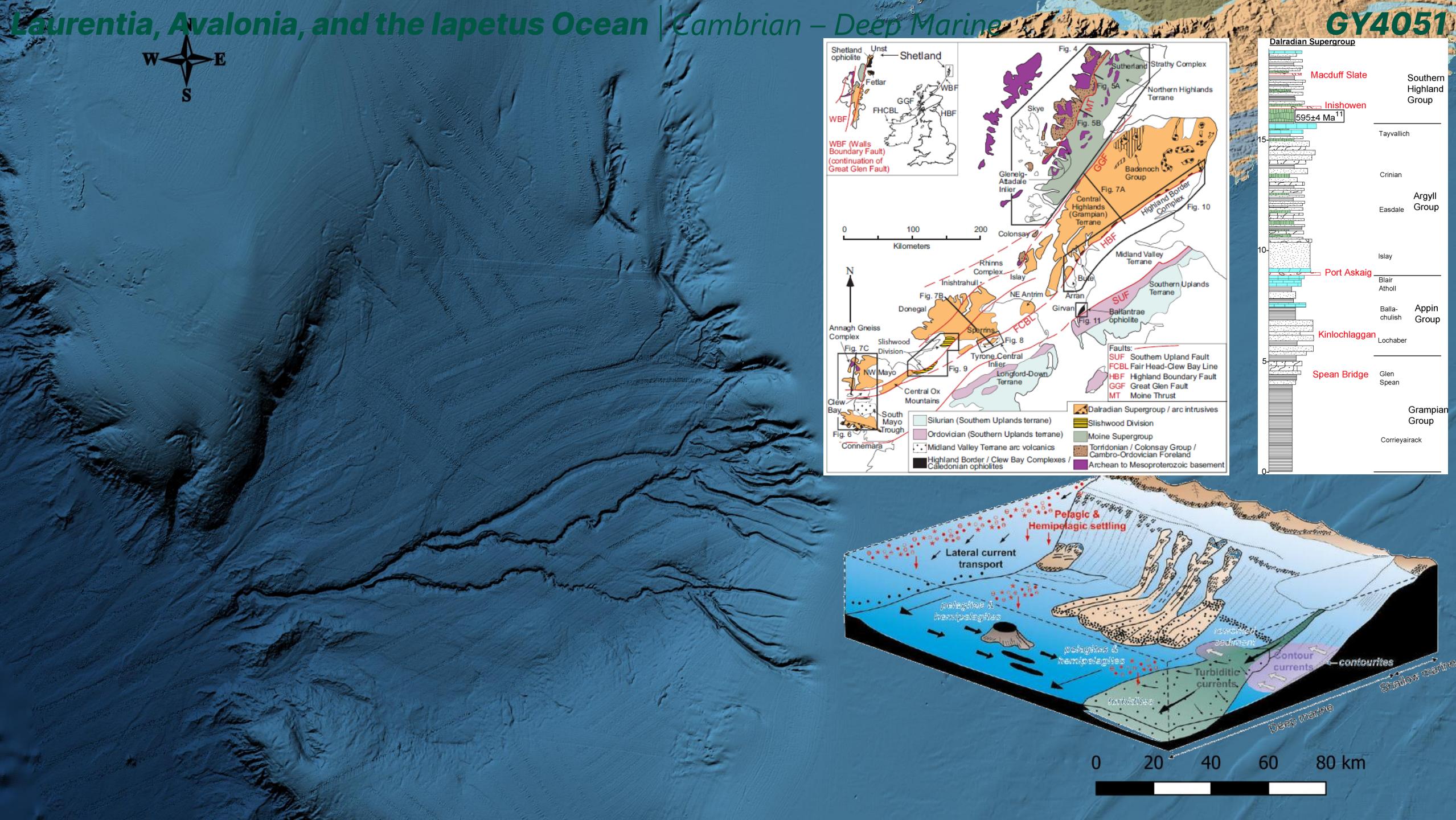
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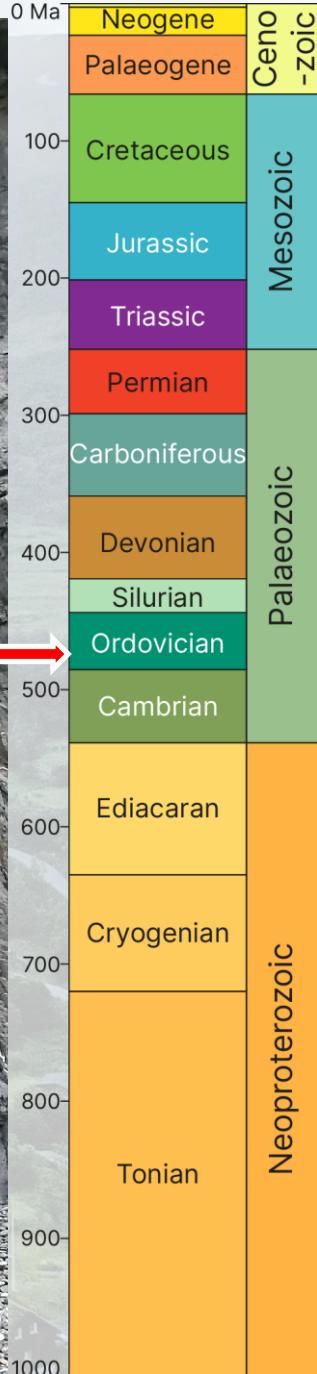
Laurentia, Avalonia, and the Iapetus Ocean | Cambrian – Deep Marine

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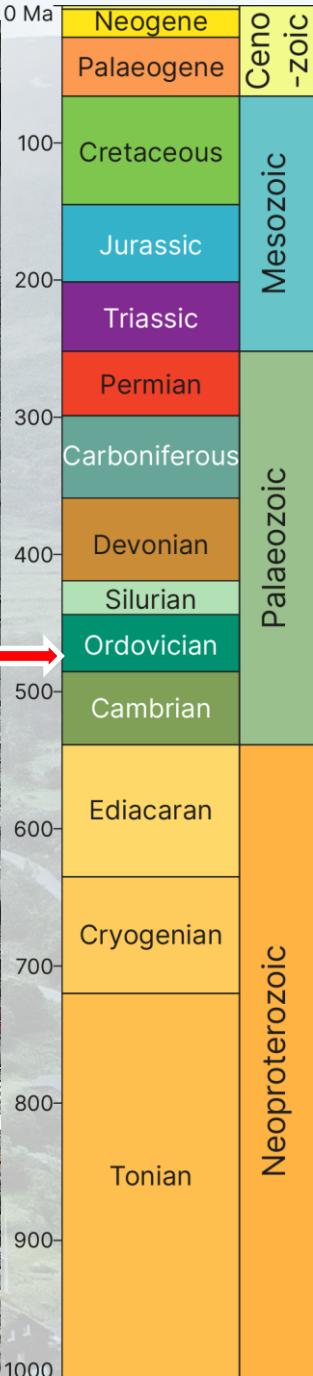
Laurentia, Avalonia, and the Iapetus Ocean | Ordovician – Subduction volcanism

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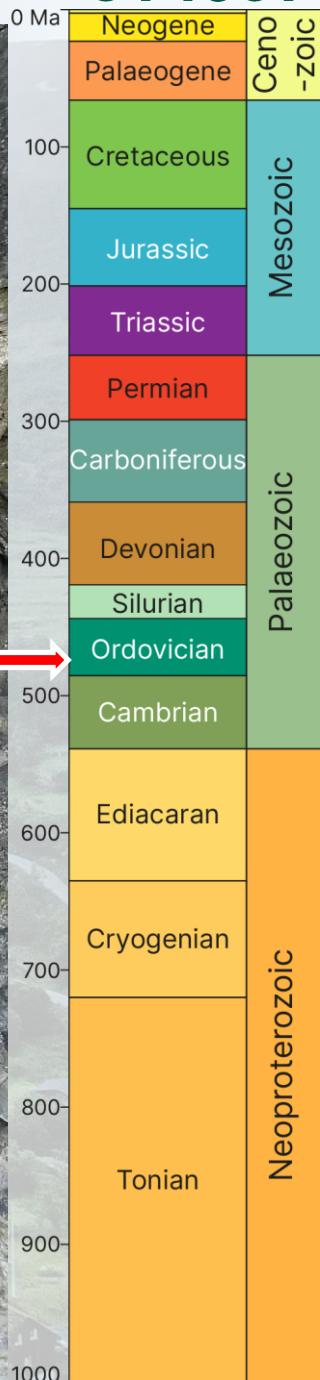
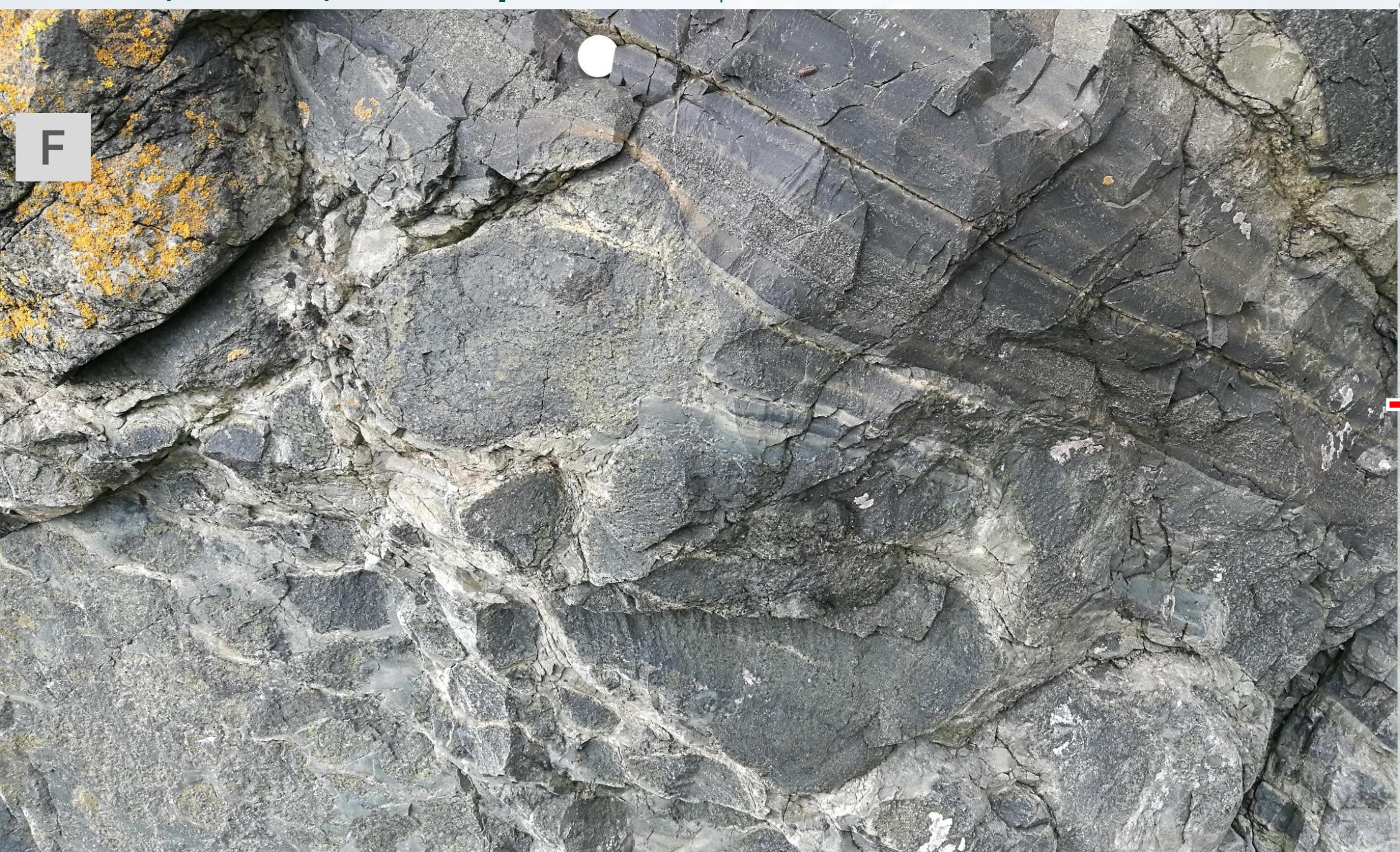
Laurentia, Avalonia, and the Iapetus Ocean | Ordovician – Subduction volcanism

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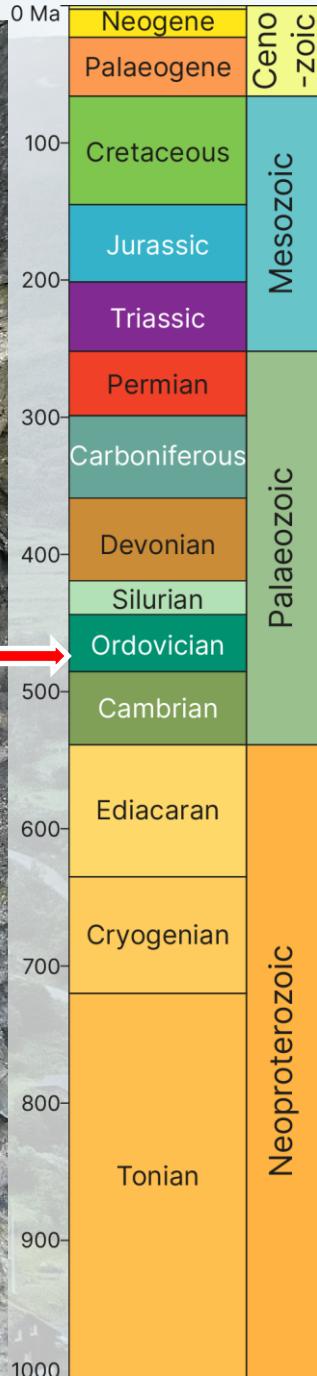
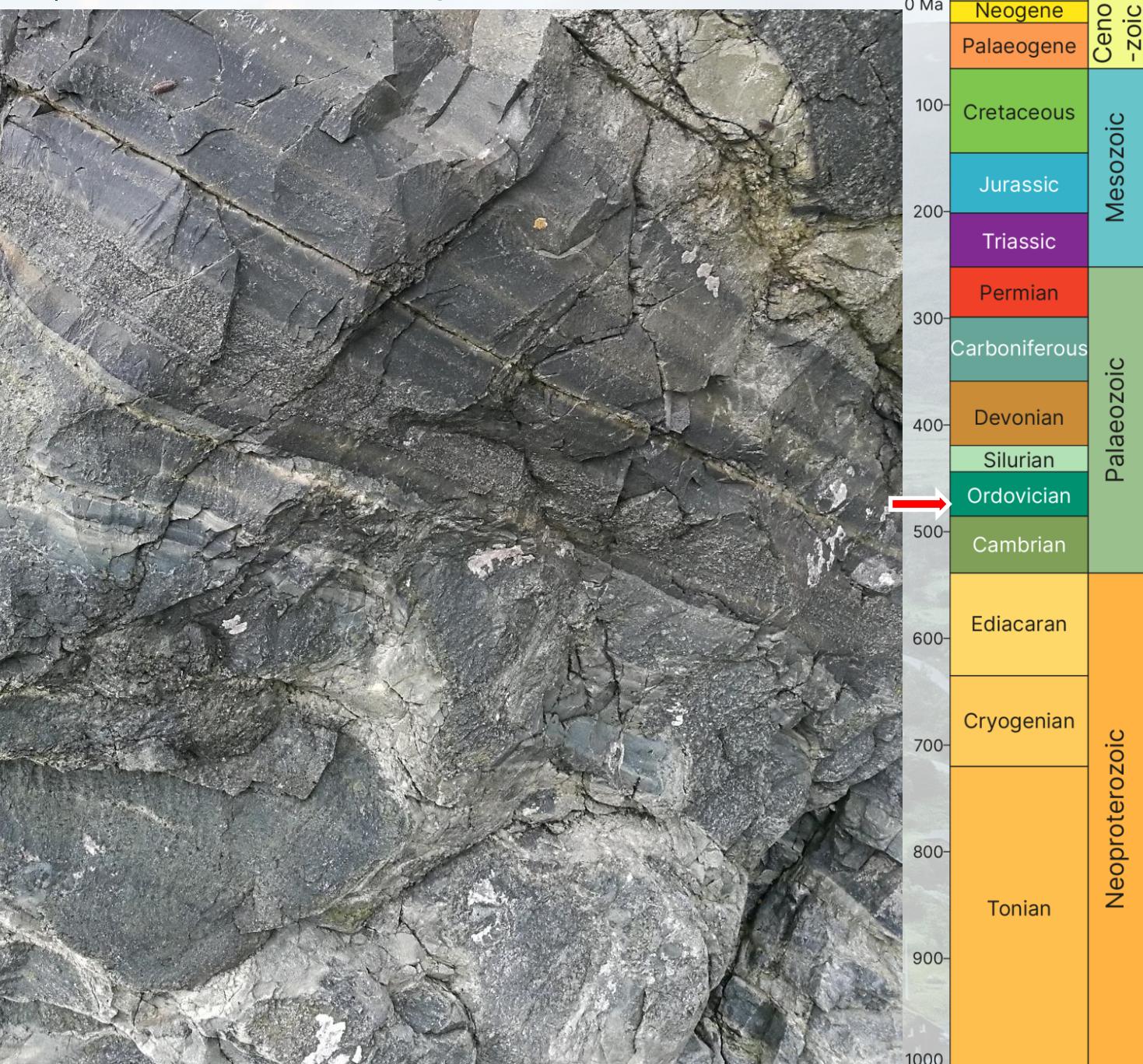
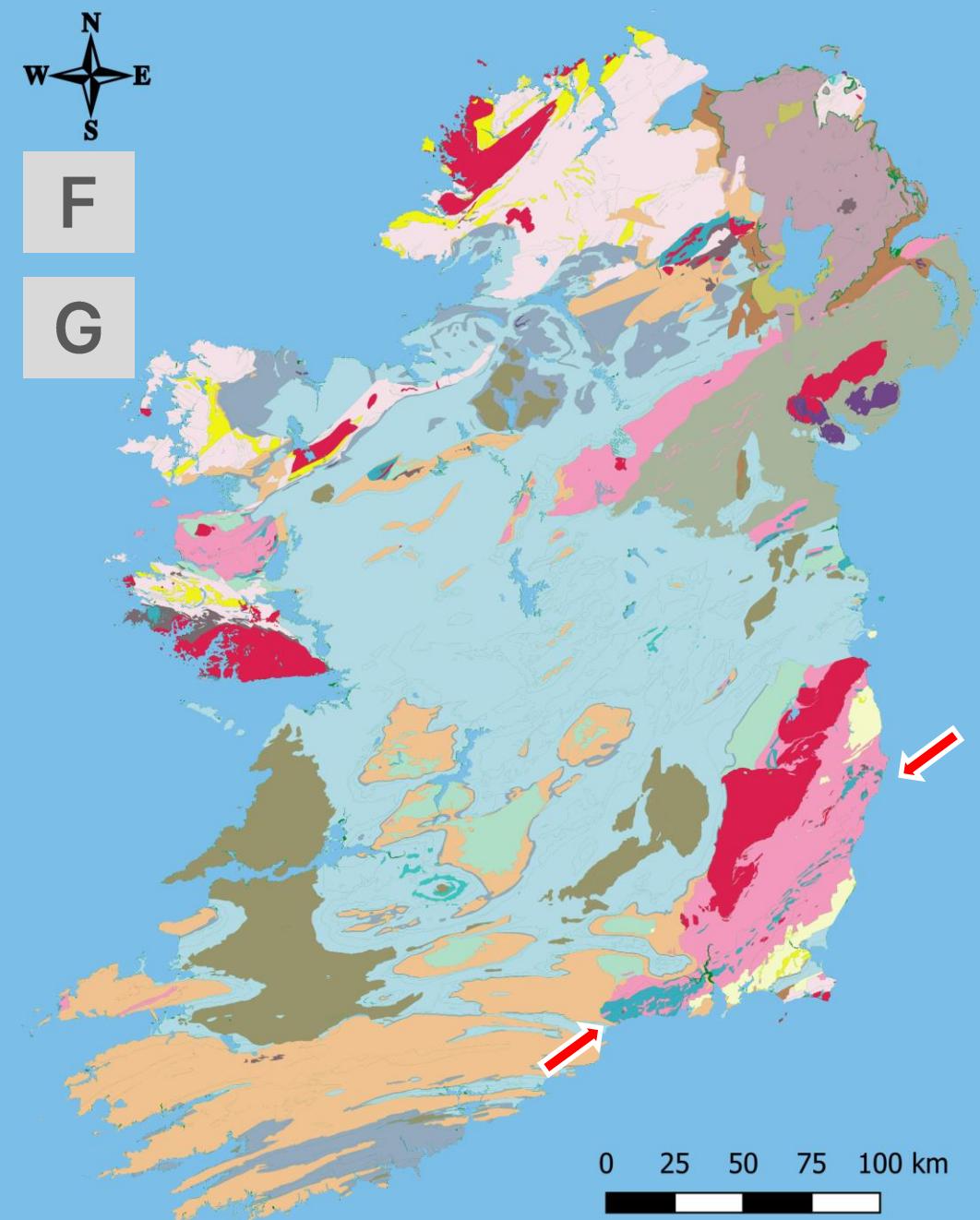
Laurentia, Avalonia, and the Iapetus Ocean | Ordovician – Subduction volcanism

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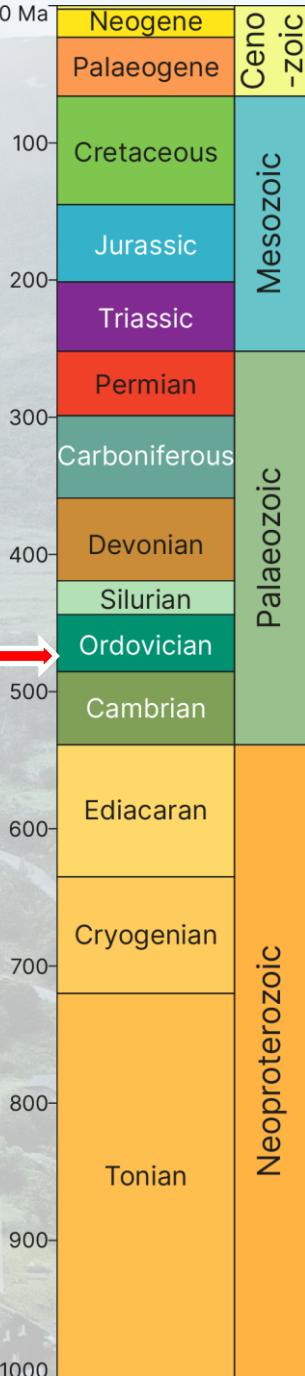
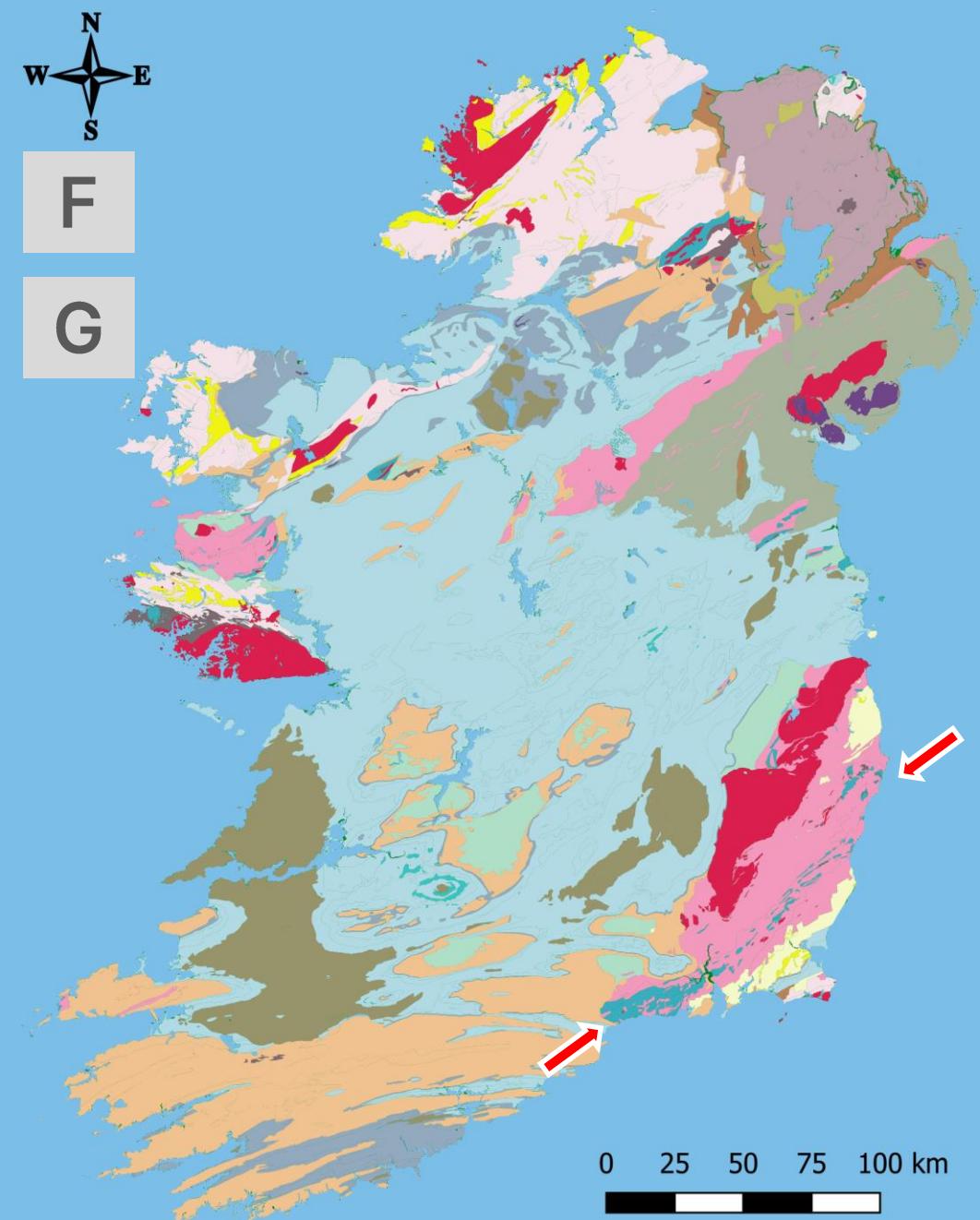
Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Margin

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Laurentia, Avalonia, and the Iapetus Ocean | The Avalonian Margin

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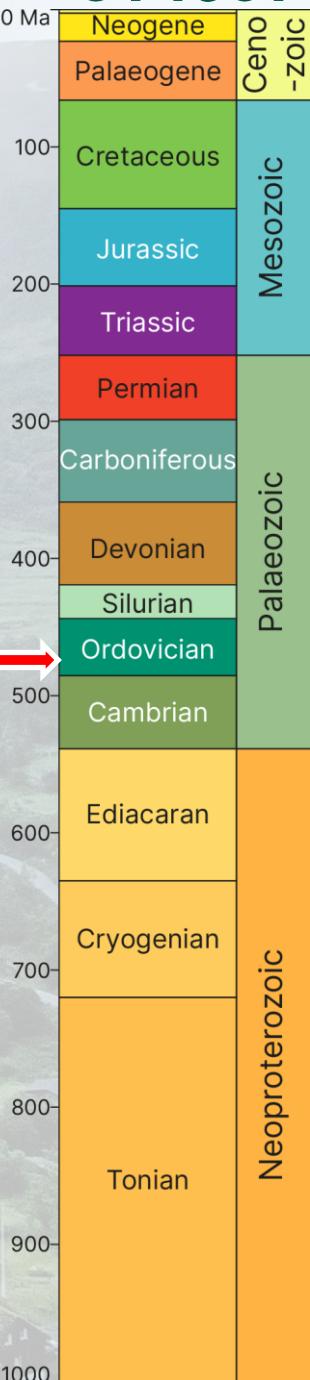


Laurentia, Avalonia, and the Iapetus Ocean | Ordovician – Subduction volcanism

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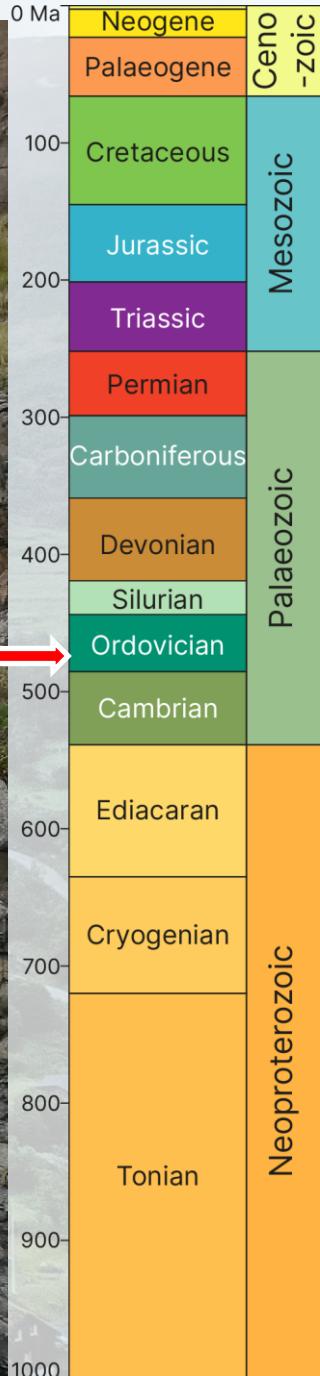


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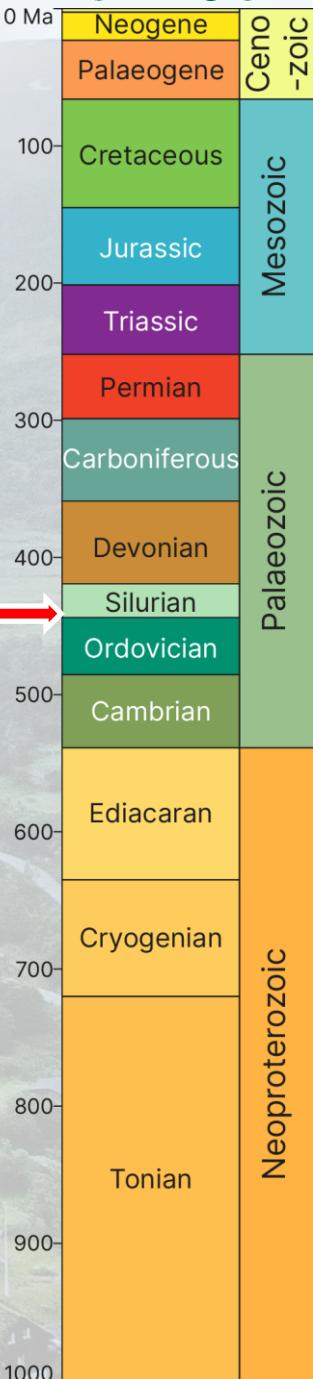


Laurentia, Avalonia, and the Iapetus Ocean | Ordovician – Subduction volcanism

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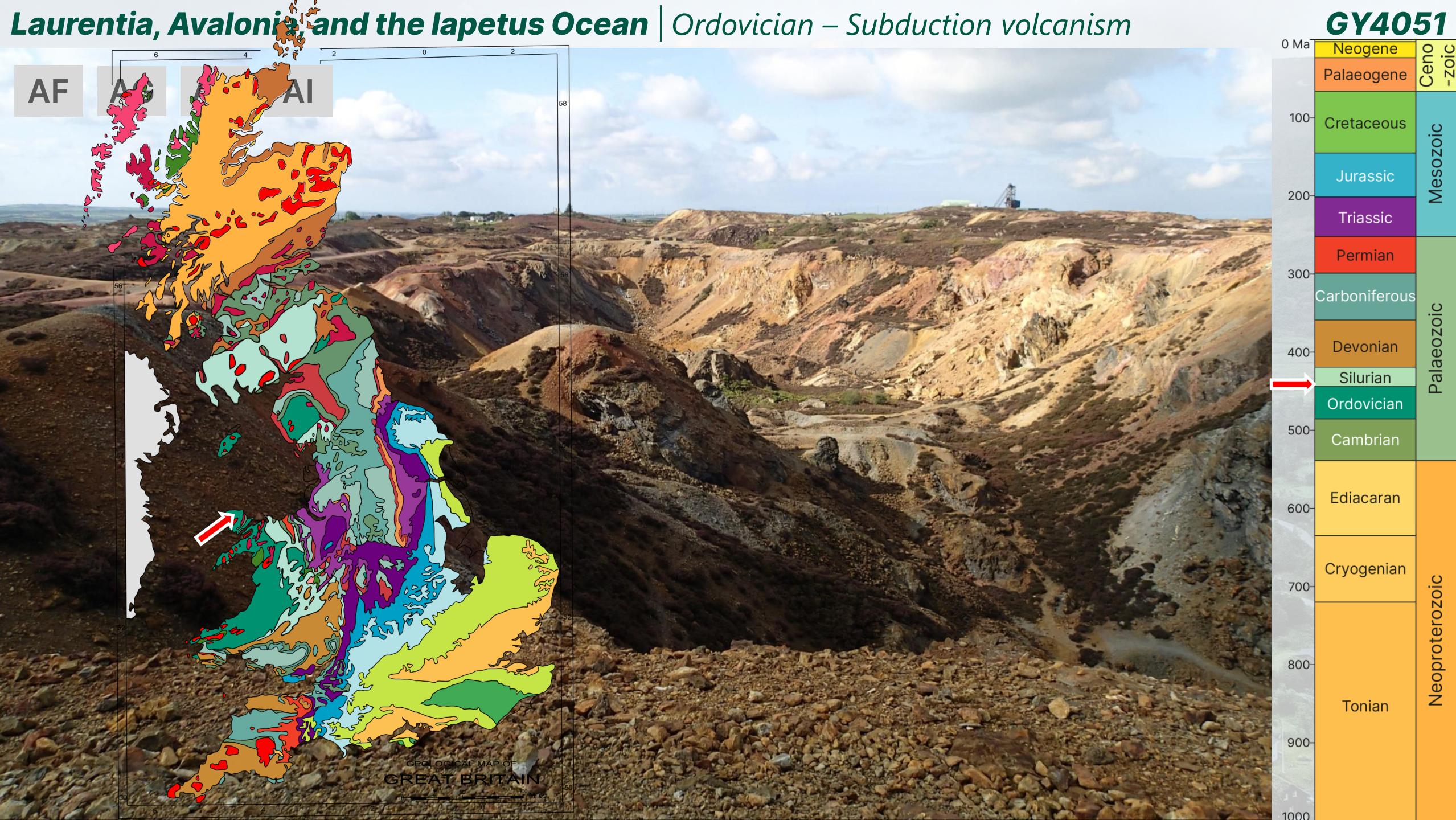


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Laurentia, Avalonia and the Iapetus Ocean | Ordovician – Subduction volcanism

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Laurentia, Avalonia, and the Iapetus Ocean | Ordovician in Wales

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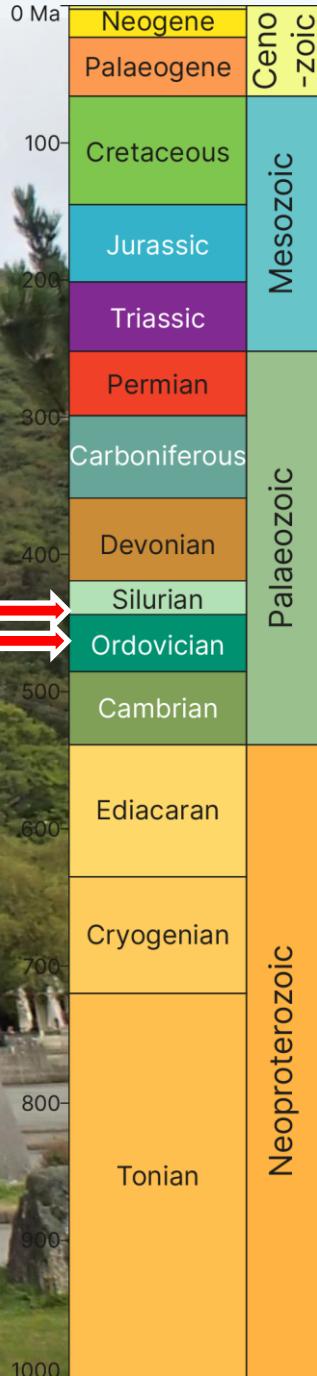
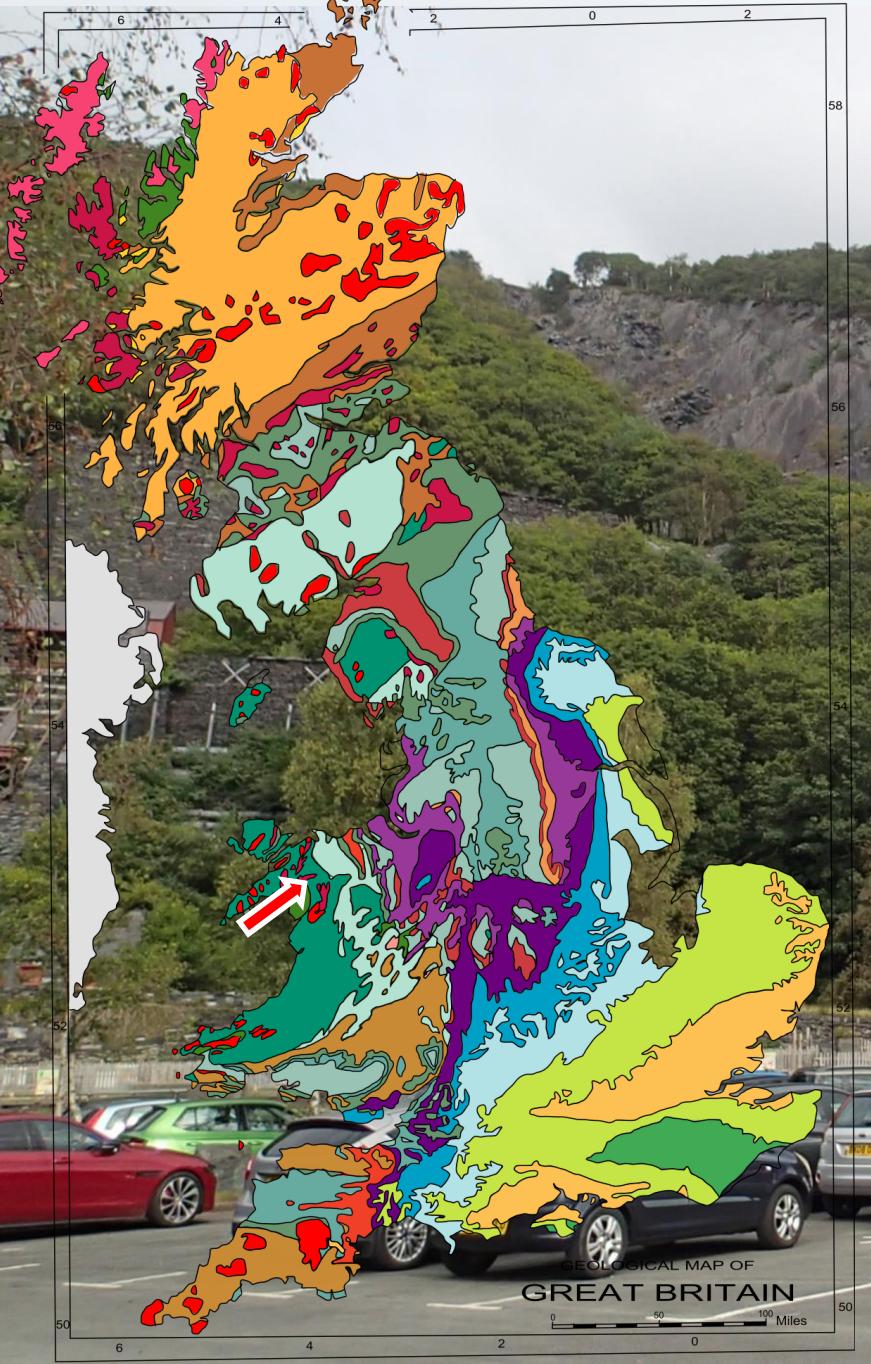
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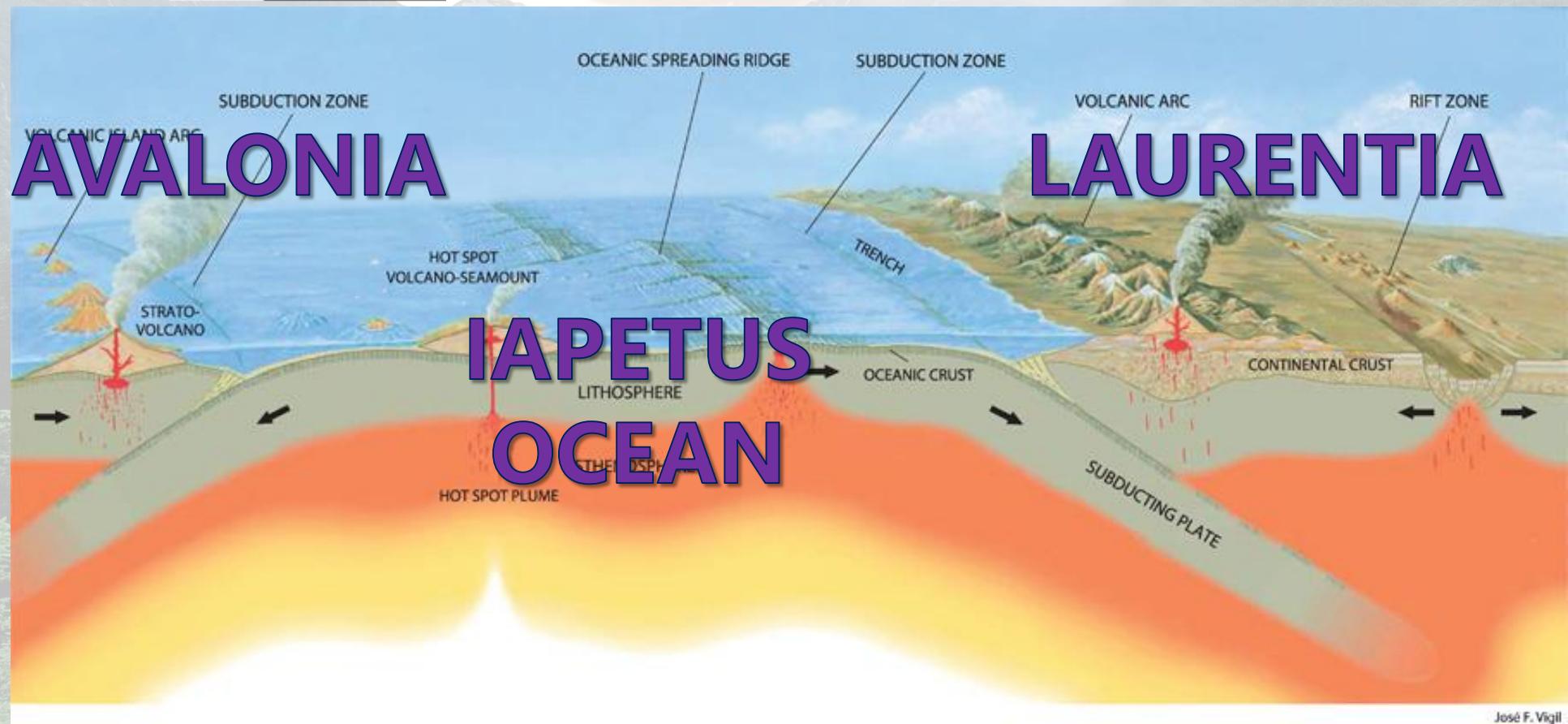


Laurentia, Avalonia and the Iapetus Ocean | Ordovician in Wales

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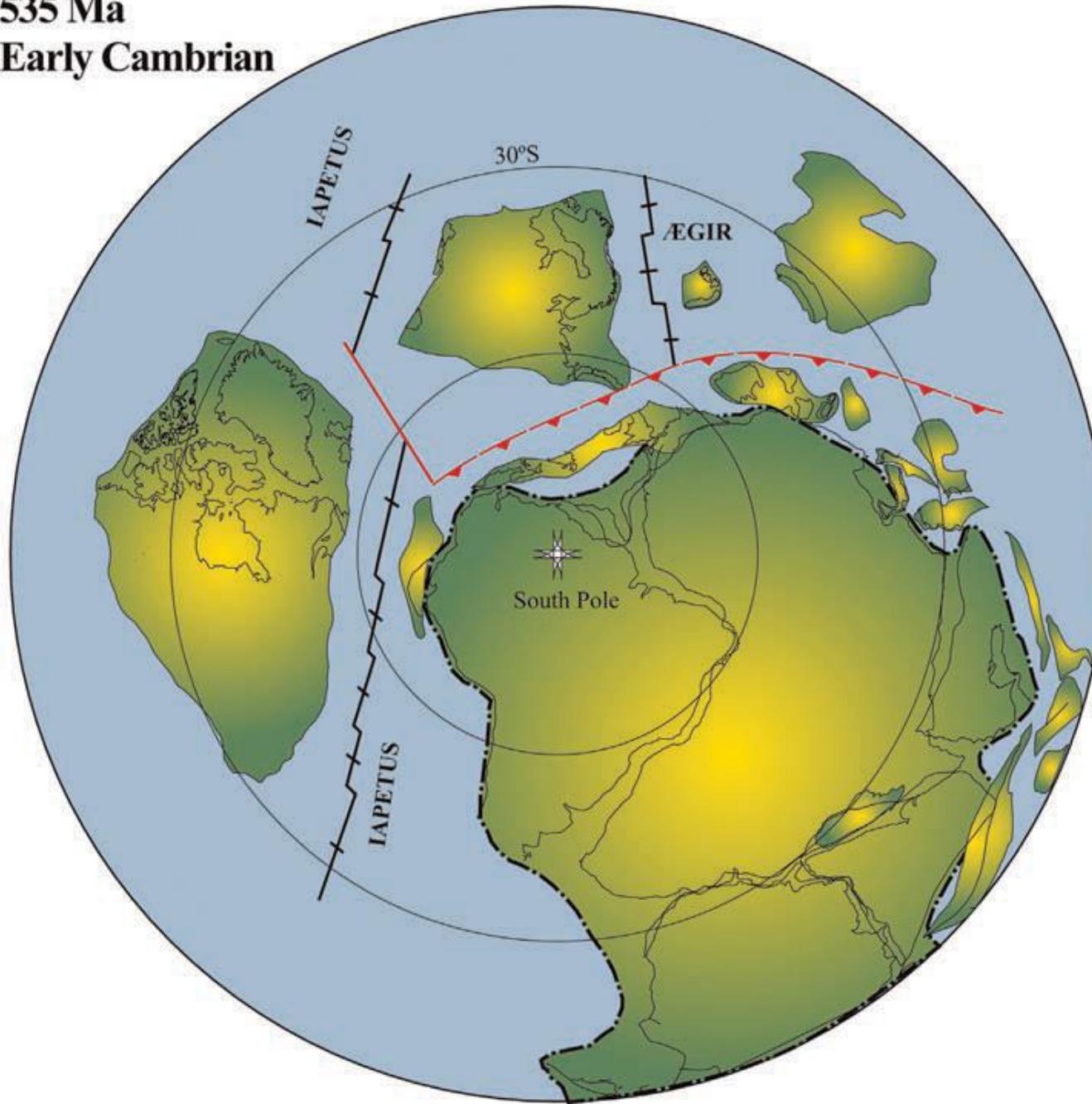




Laurentia, Avalonia, and the Iapetus Ocean | Early Cambrian

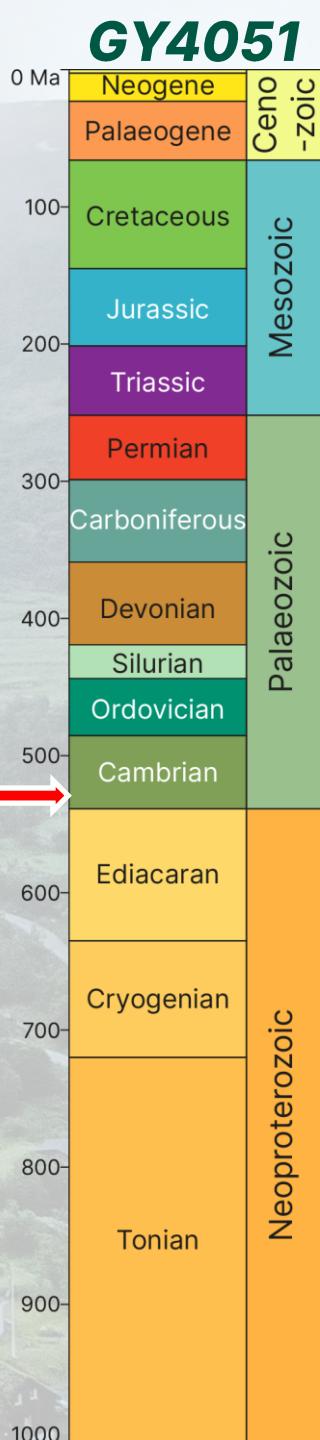
535 Ma

Early Cambrian



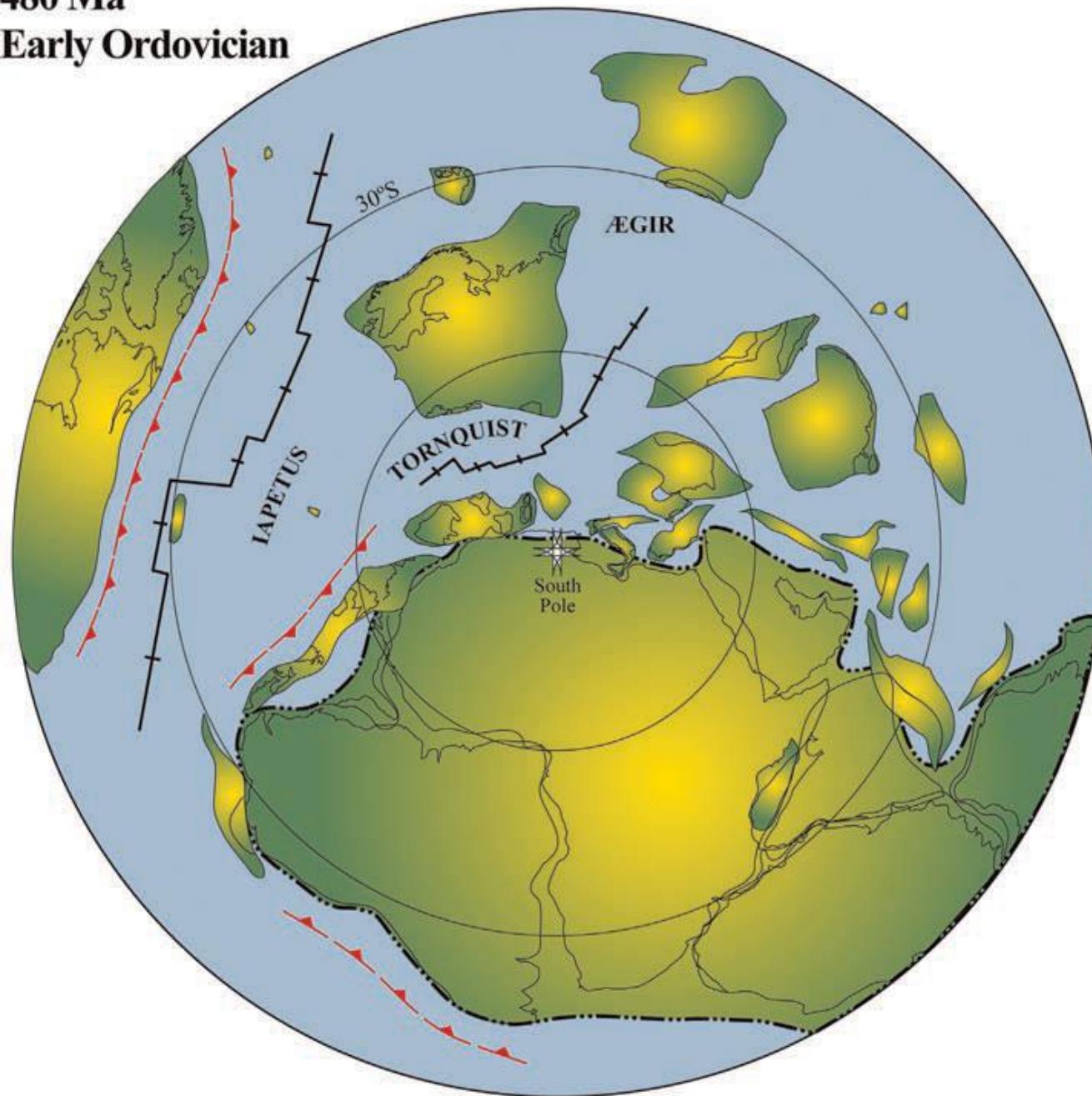
Rifting of Rodinia

- Iapetus Ocean opening
- Northern Britain and Ireland part of Laurentia
- Southern Britain and Ireland still part of Gondwana



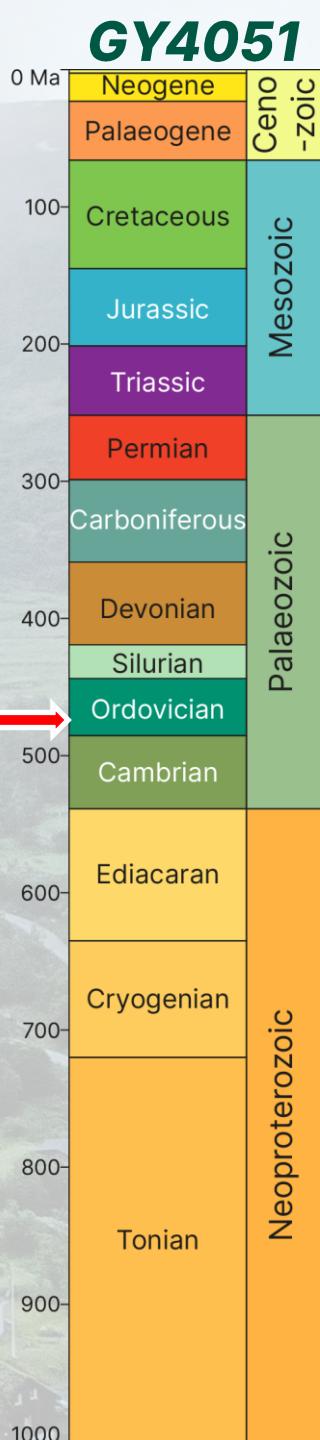
480 Ma

Early Ordovician



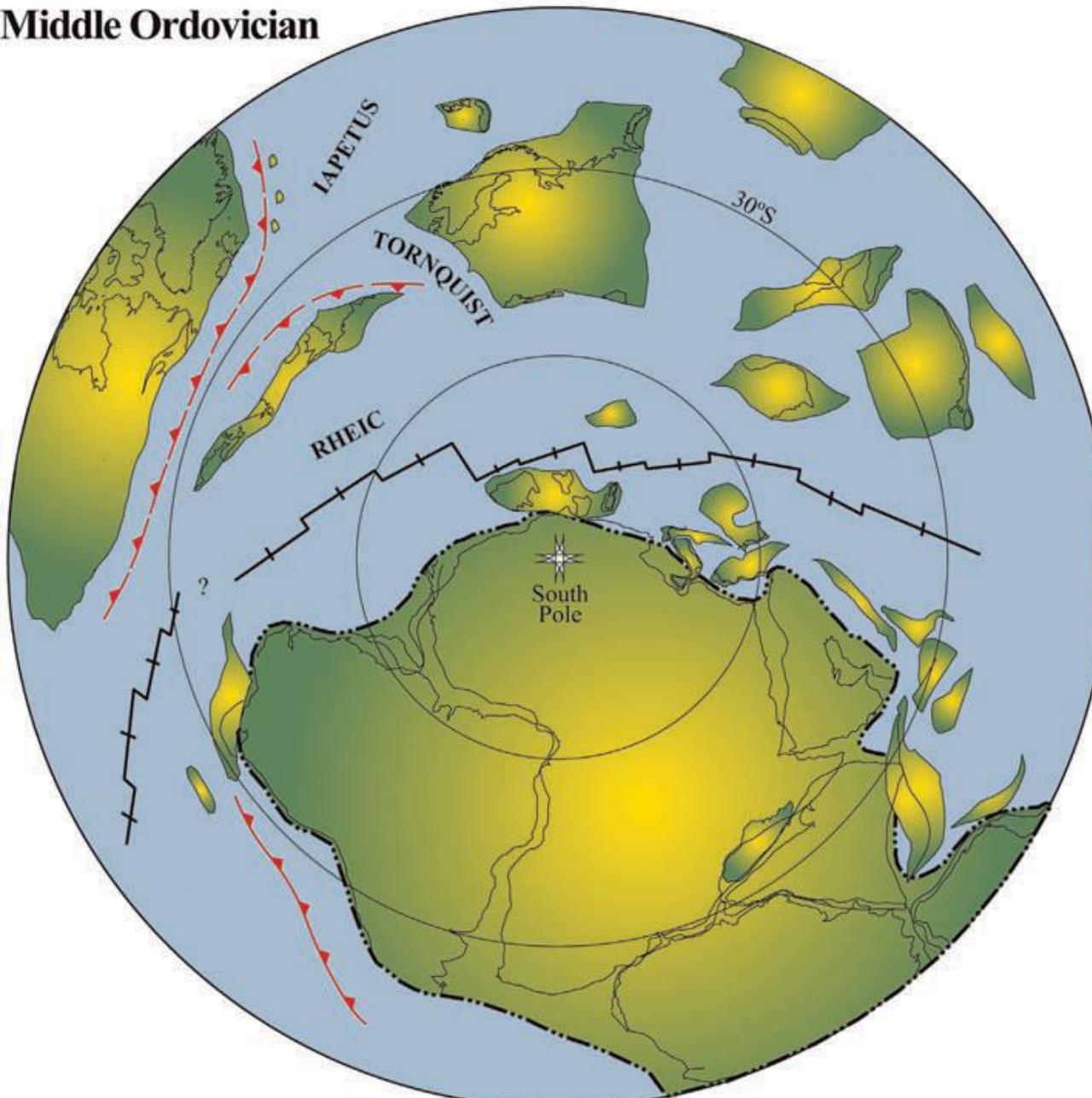
Iapetus Ocean starts to close

- Southern Britain and Ireland starts to rift from Gondwana
- Becomes microcontinent of Avalonia



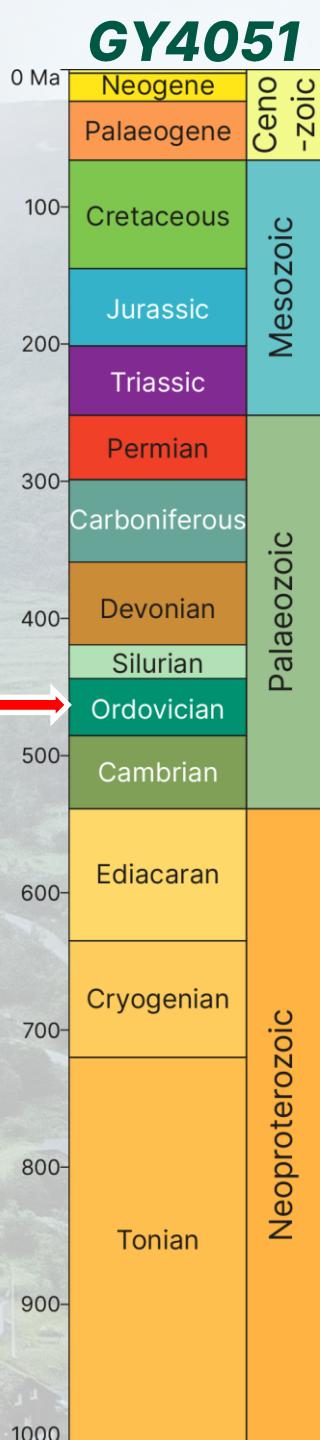
460 Ma

Middle Ordovician



Iapetus Ocean continues to close

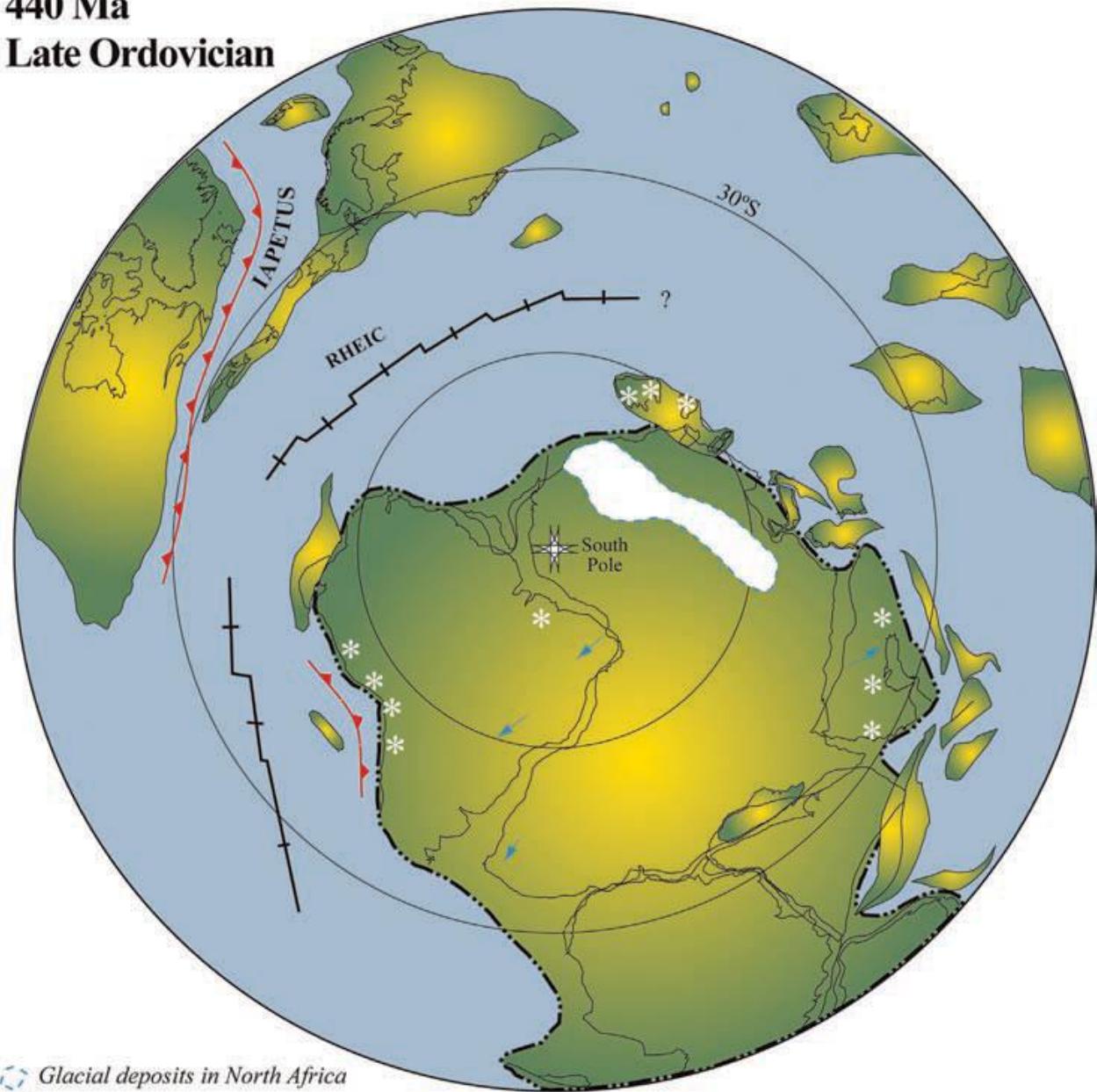
- Rheic Ocean opening between Avalonia and Gondwana
- Avalonia moving north towards Laurentia as Iapetus narrows



Laurentia, Avalonia, and the Iapetus Ocean | Late Ordovician

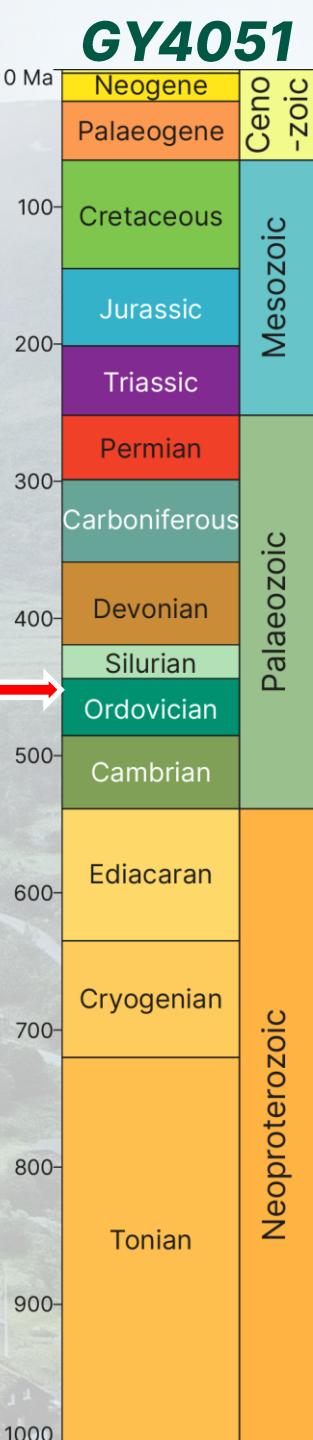
440 Ma

Late Ordovician



Iapetus Ocean nears the end

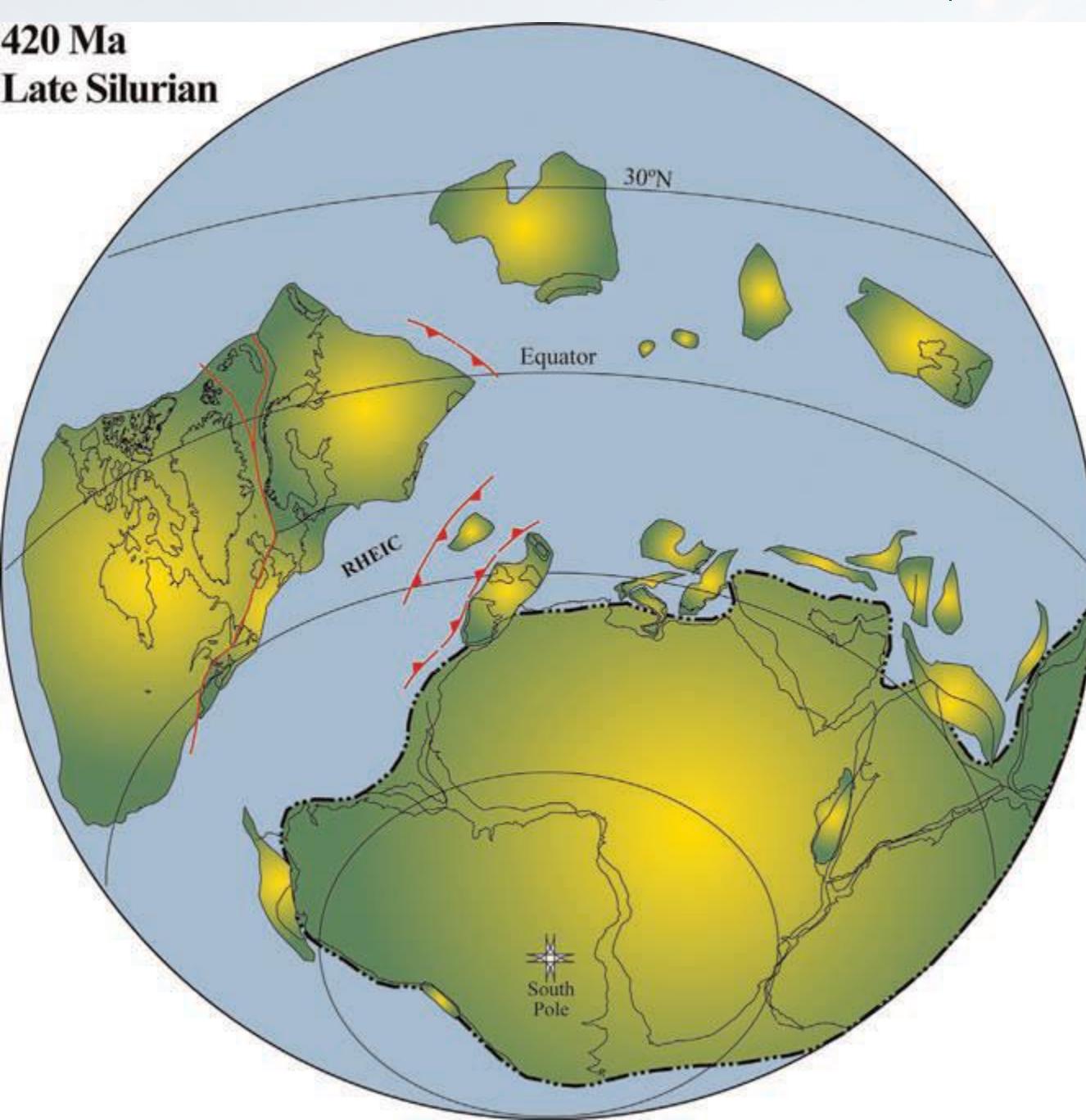
- Two halves of Britain and Ireland very close
- Baltica starts to collide with Eastern Avalonia
- Rheic Ocean widening



Laurentia, Avalonia, and the Iapetus Ocean | Late Silurian

420 Ma

Late Silurian



Iapetus Ocean is gone

- Avalonia has collided with Laurentia and Baltica in the Caledonian Orogeny
- Continent of Laurussia
- Britain and Ireland joined, separated from Gondwana by the Rheic Ocean

