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Global reconstruction & database project

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Cyril Hochard
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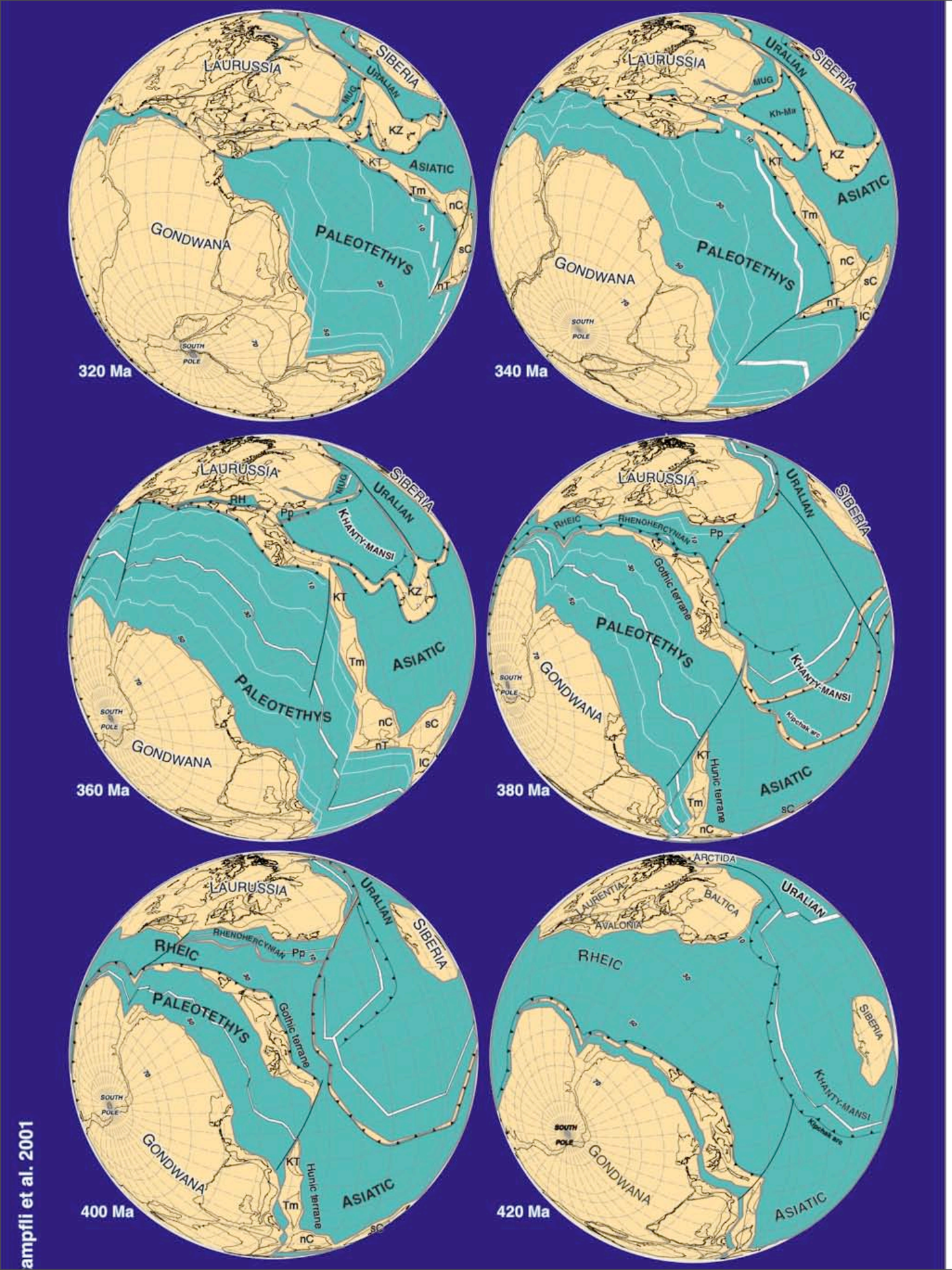
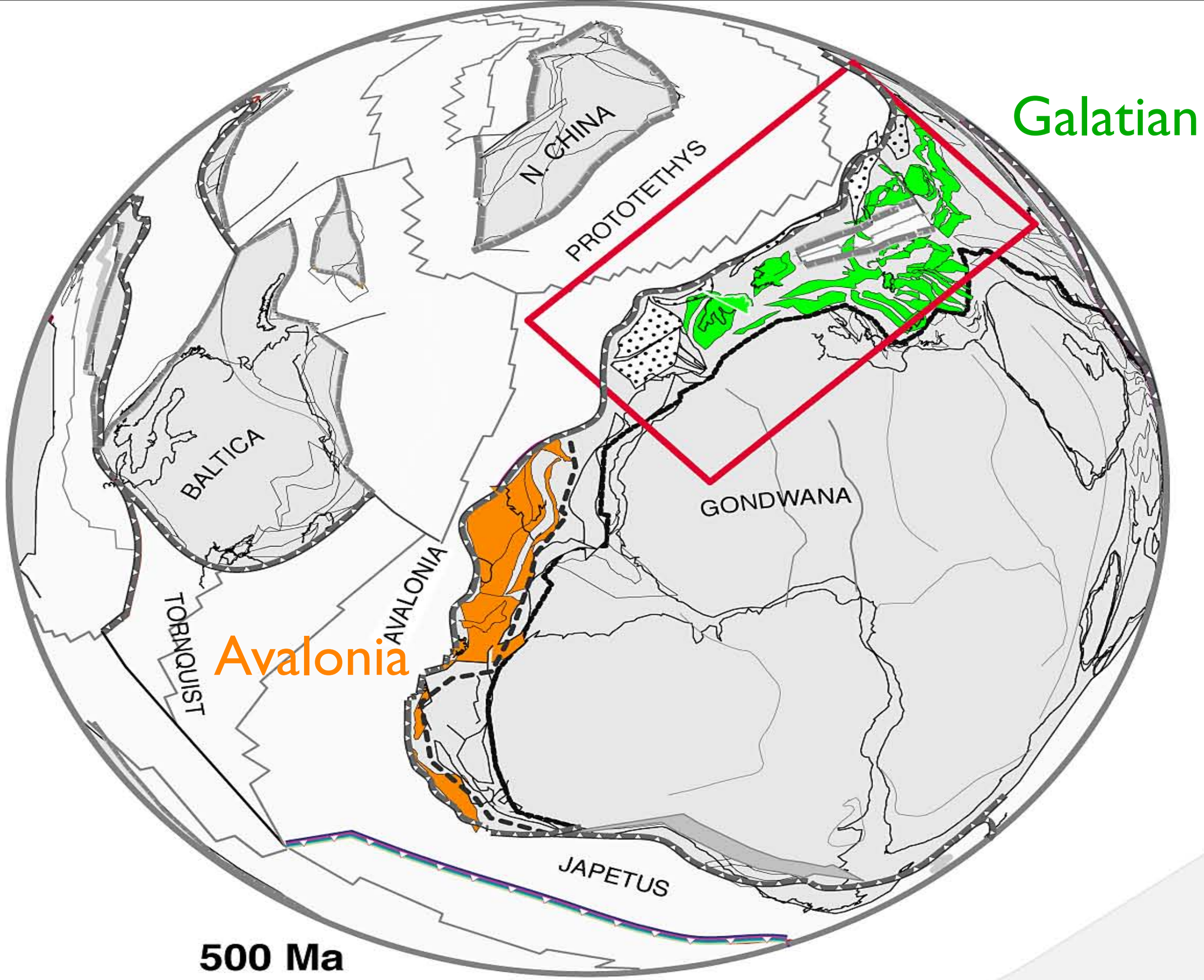


Variscan cycle

Eovariscan cycle

Stampfli et al. 2001

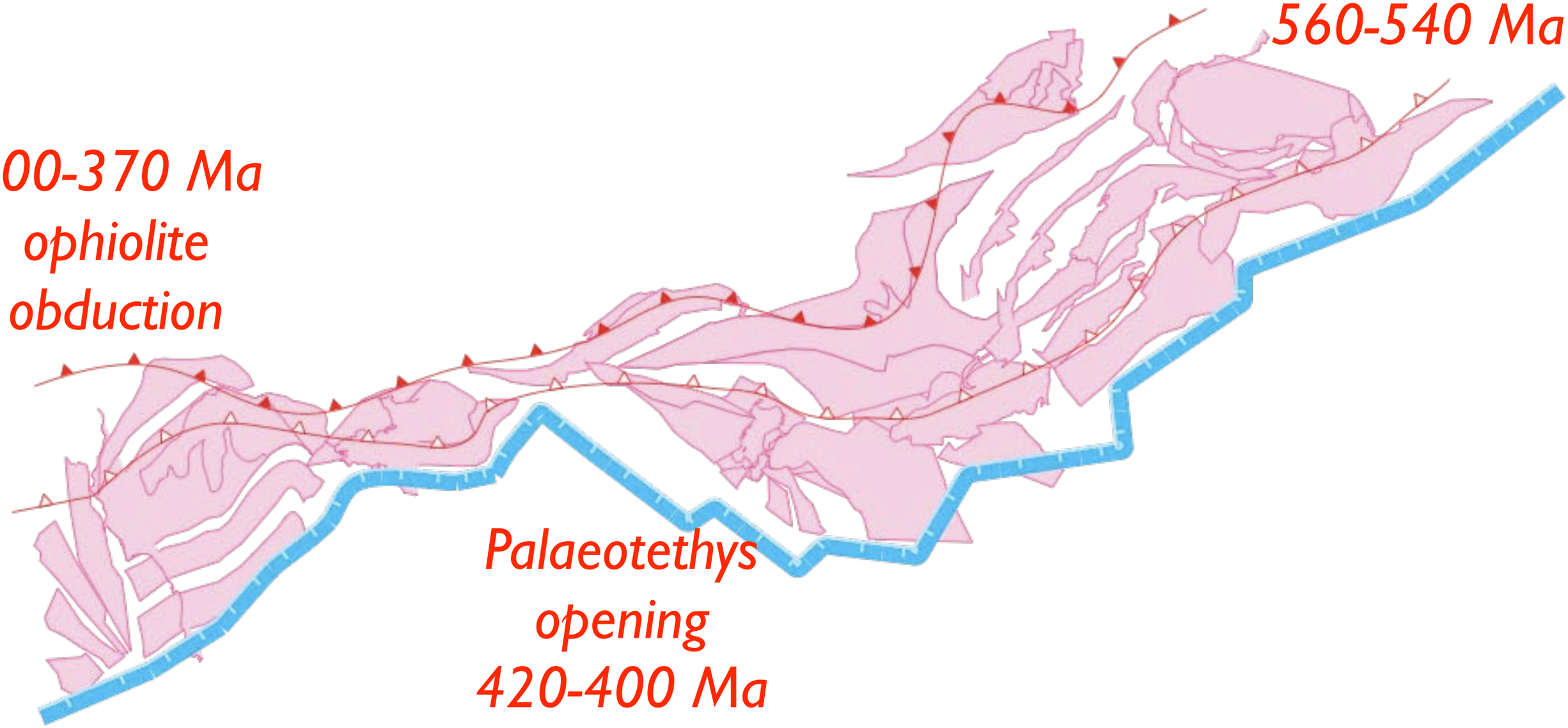

Galatian
N. CHINA
PROTOTETHYS
BALTICA
GONDWANA
AVALONIA
Avalonia
TORNQUIST
JAPETUS
500 Ma

palinspastic model for Galatian superterrane

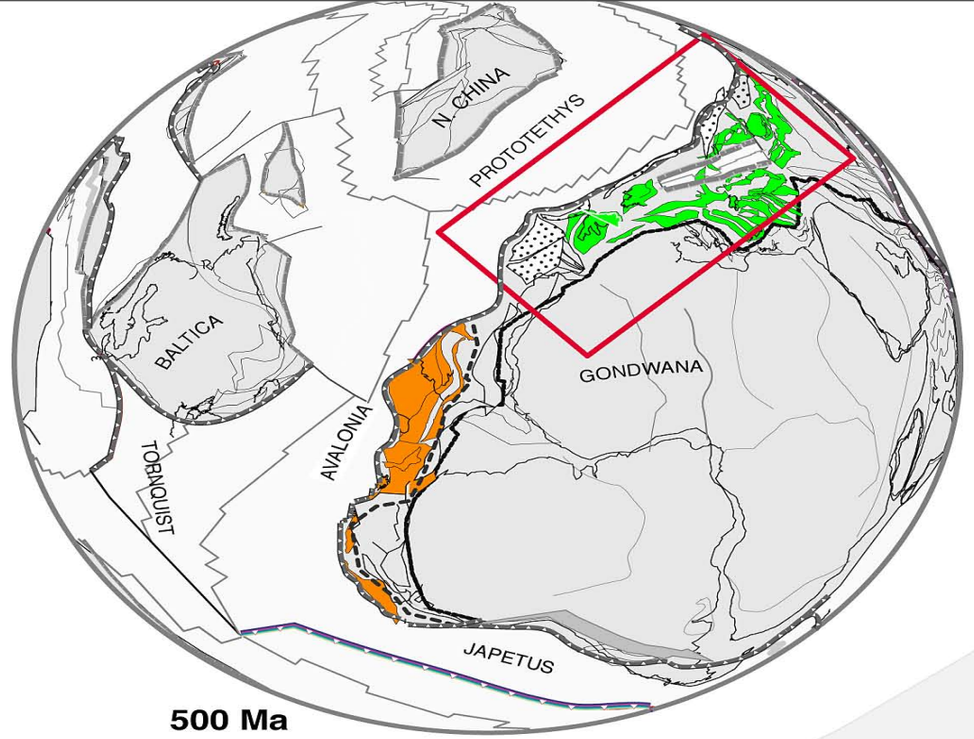
former disposition in Devonian time

Cadomian suture 560-540 Ma

400-370 Ma ophiolite obduction



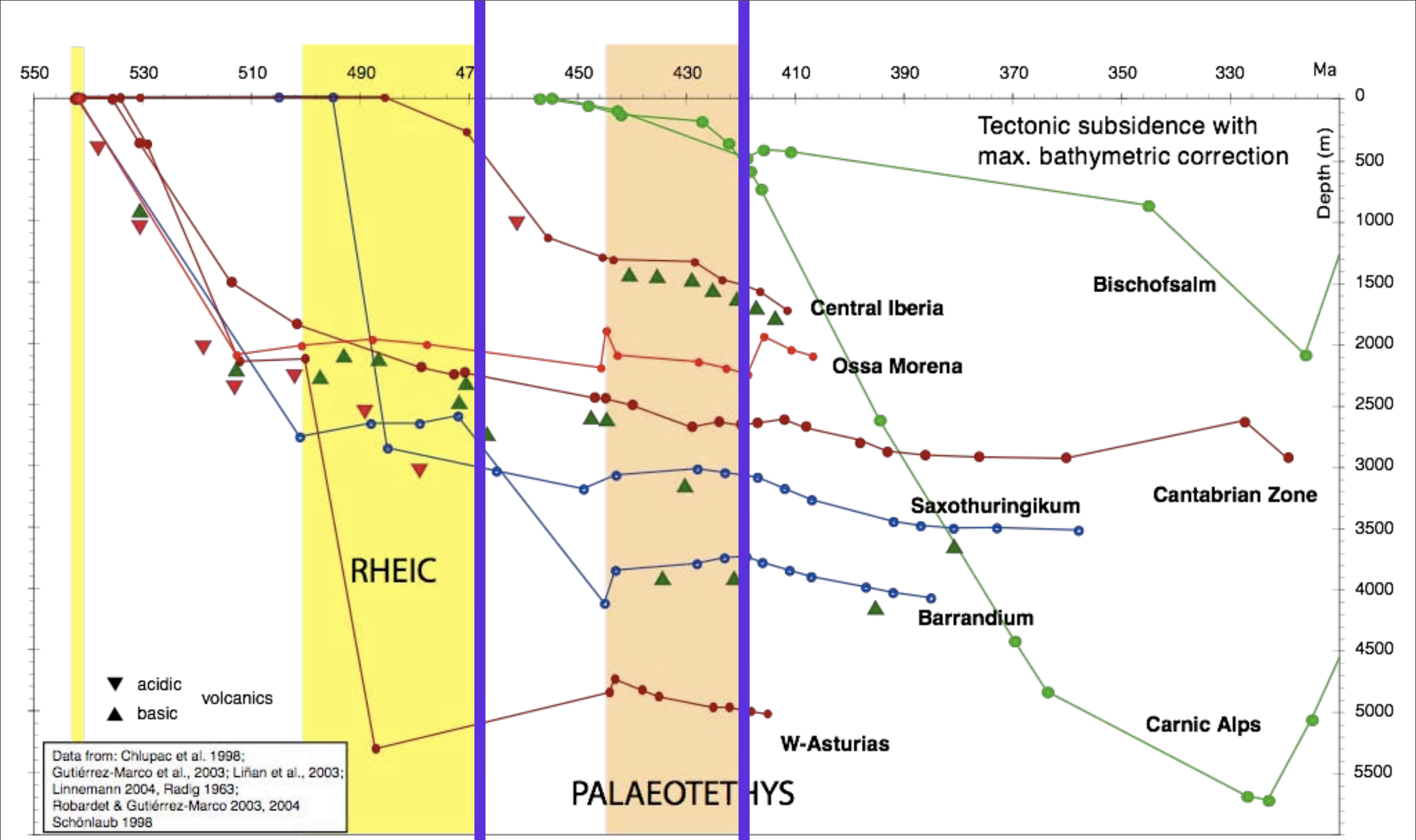
Palaeotethys opening 420-400 Ma



QL
Qi
B
SX
Chamrousse
Car
KuE
Arm
Pr
All
MC
VARISCAN
to Taurus basin
OM
Clb
Py
Aq
Ca
WAL
Tu
HUNIA
Ka
Ms
to Murzuk basin
Palaeotethys
420 Ma
to Rheic 470
GONDWANA
Antiatlas

Ka-Karakum
KuE-Kunlun East
Pr-Pamir_Jinsha
Qi-Qaidam
QL-Qilian
Tu-Turan

Future Asian Terranes
± 500 Ma basic rocks
520-530 Ma
470 Ma
500 Ma oceanic crust
active margin setting



Von Raumer & Stampfli in press

opening
E-Rheic

opening
PaleoTethys

VARISCAN MODEL

Cambrian arc

PROTOTETHYS

INITIATION OF SUBDUCTION

CHAMROUSSE

500 Ma

BACK-ARC SPREADING

CLOSURE OF BACK-ARC

CORDILLERA RIDGE SUBDUCTION

Ordovician

Ordovician
arc

CORDILLERA
COLLAPSE

shoulder
uplift

GONDWANA

HUNIA

470 Ma

BACK-ARC
SPREADING

former
Cambrian
arc

EASTERN RHEIC

former
Ordovician
arc HUNIA

N-CHINA

450 Ma

TERRANE
ACCRETION

ridge
failure

50 km

RIDGE
FAILURE

slab coupling –> underplating

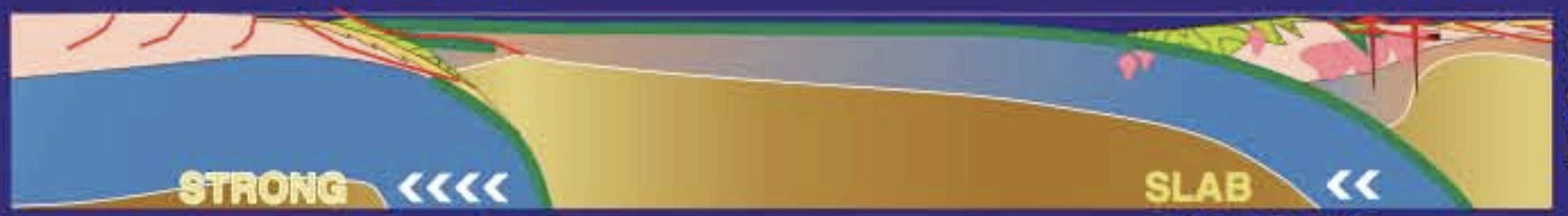
RIDGE JUMP

GONDWANA

obduction

rifted-arc

400 Ma



OBDUCTION ON PASSIVE MARGIN

exhumation
HP-LT

back-arc

380 Ma

SUBDUCTION REVERSAL

RIFTING

HANSEATIC

LAURUSSIA

BACK-ARC SPREADING PASSIVE MARGIN RIFTING

GONDWANA

GALATIAN

RHENOHERCYNIAN

DRIFTING RIBBON CONTINENT

PALEOTETHYS

COLLAGE

350 Ma

TERRANE COLLISION

CORDILLERA

340 Ma

SUBDUCTION REVERSAL & PROGRADATI

STRIKE-SLIP

330 Ma

RIDGE SUBDUCTION

STRIKE-SLIP

330 Ma

RIDGE SUBDUCTION

GONDWANA

LAURUSSIA

EXTENSION

320 Ma

TRANSTENSION
TRANSPRESSIO

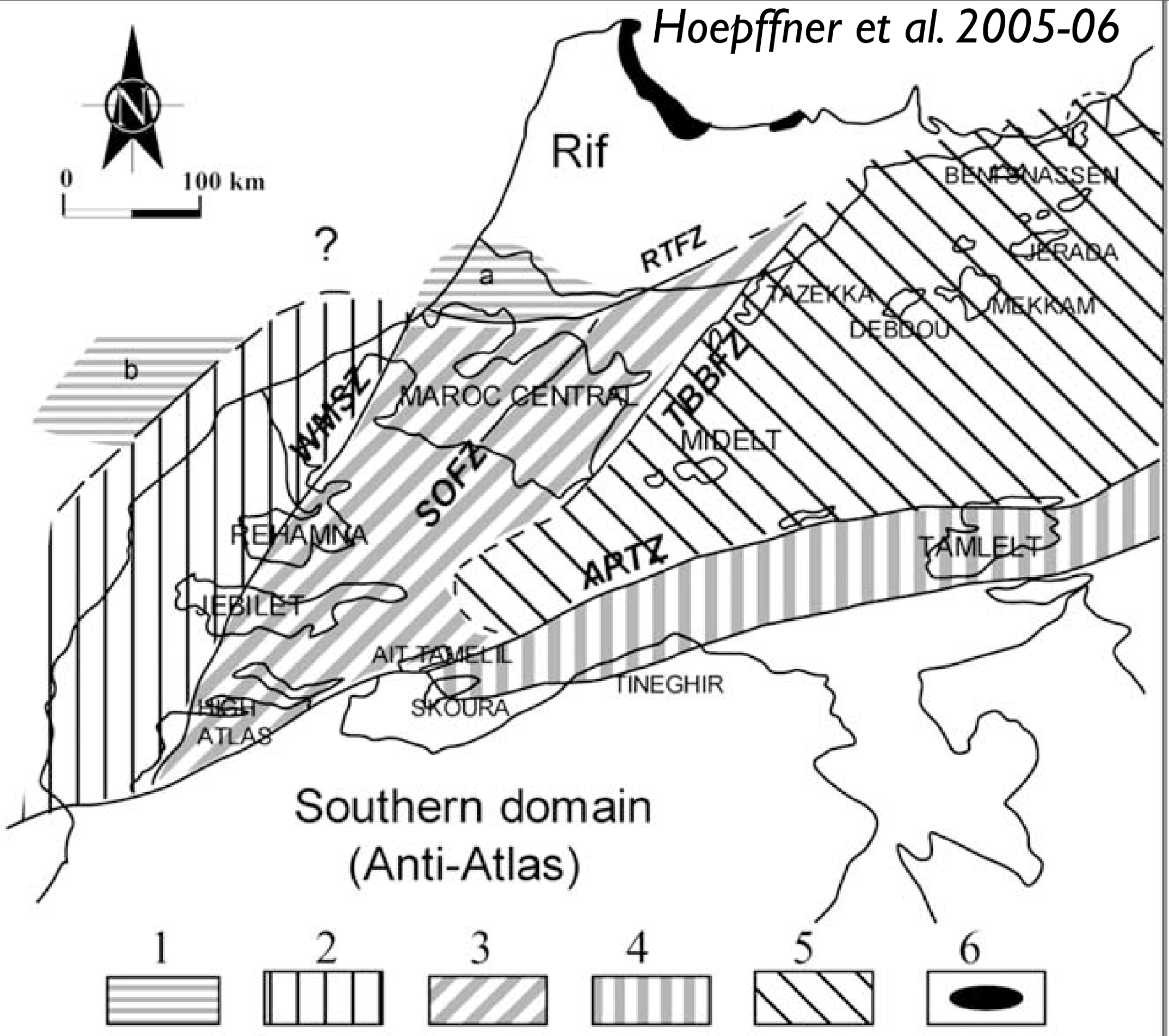
SLAB ROLL-BACK

OROGEN

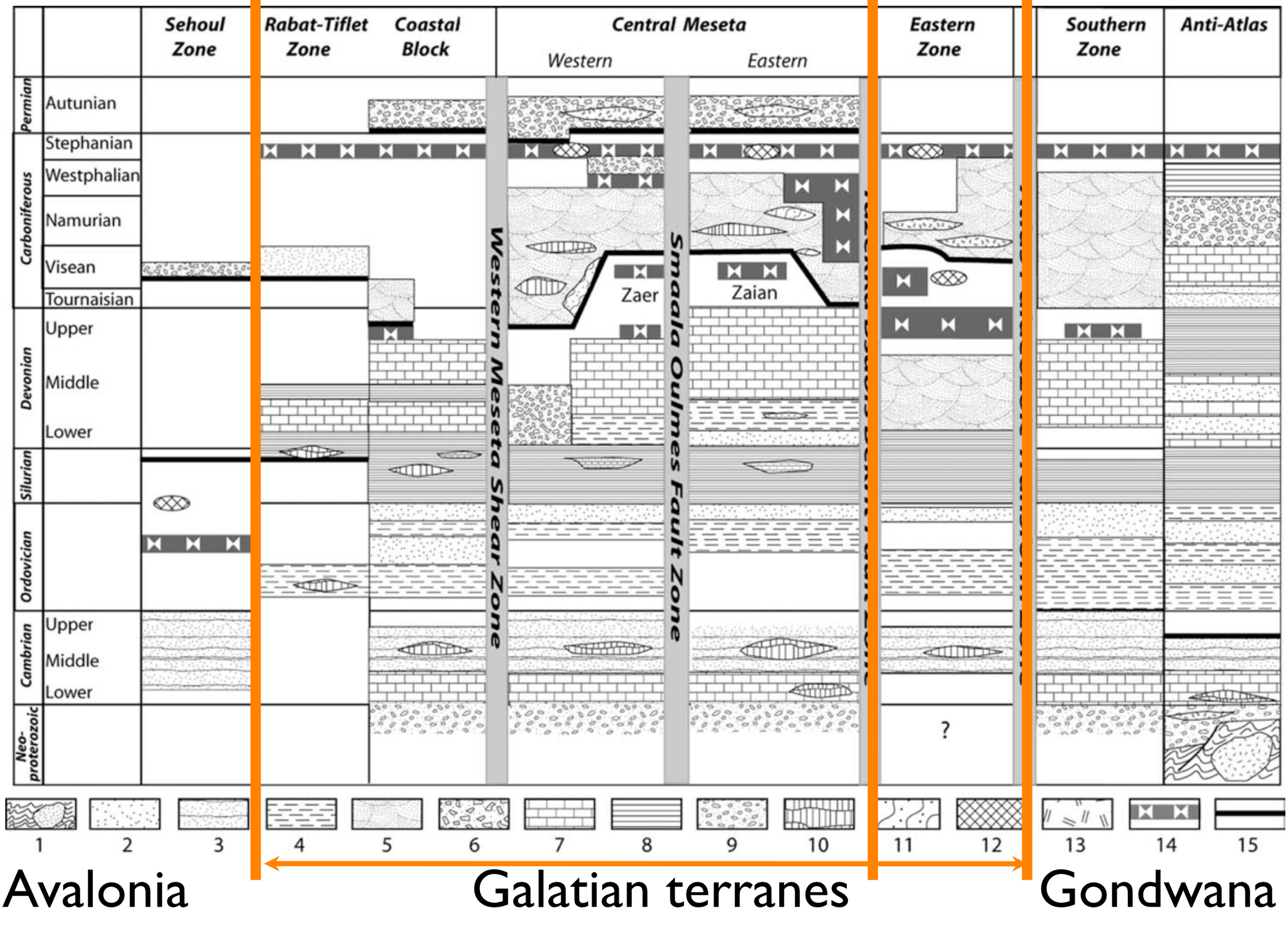
300 Ma

CONTINENT
CONTINENT
COLLISION

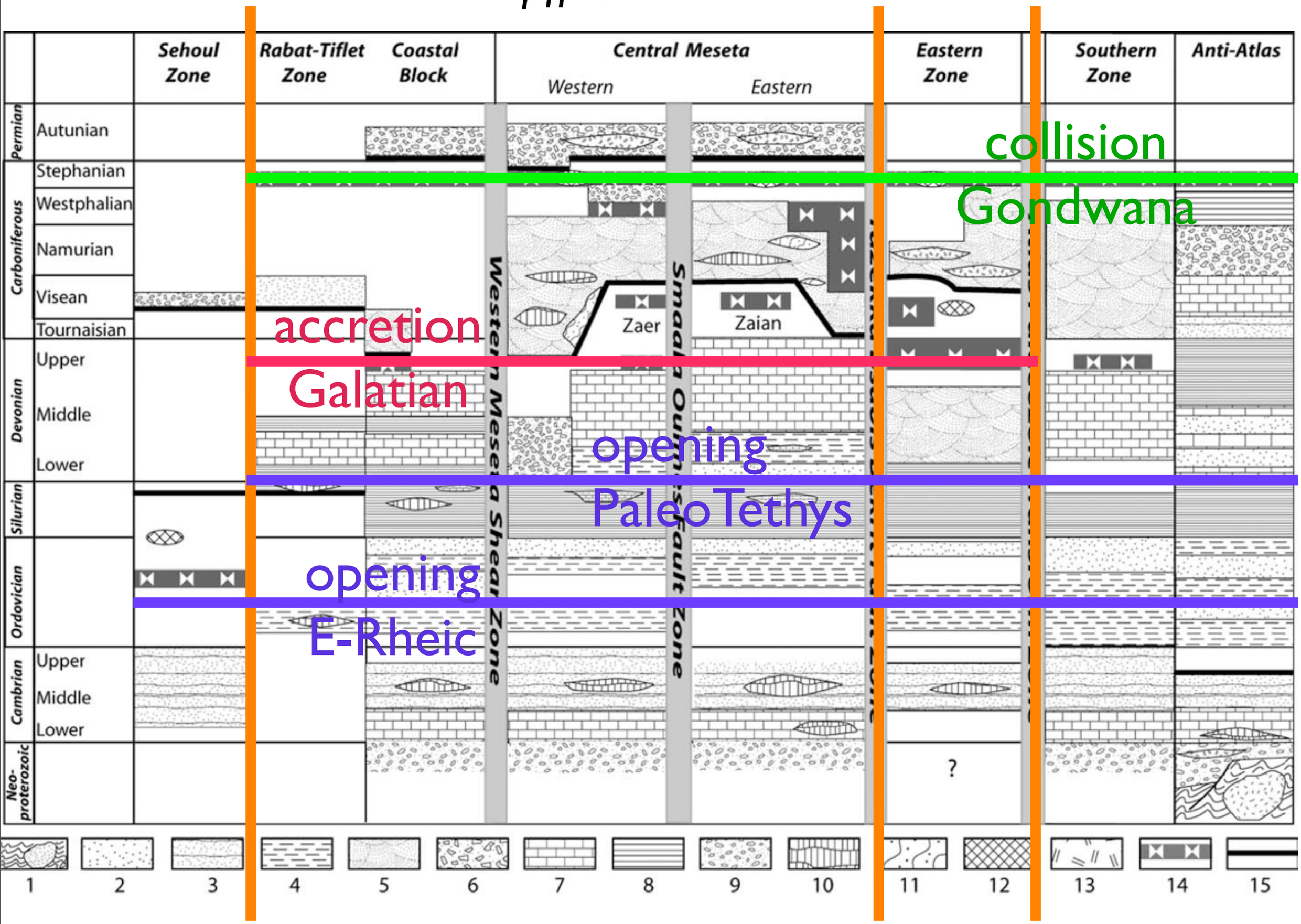
Hoepffner et al. 2005-06

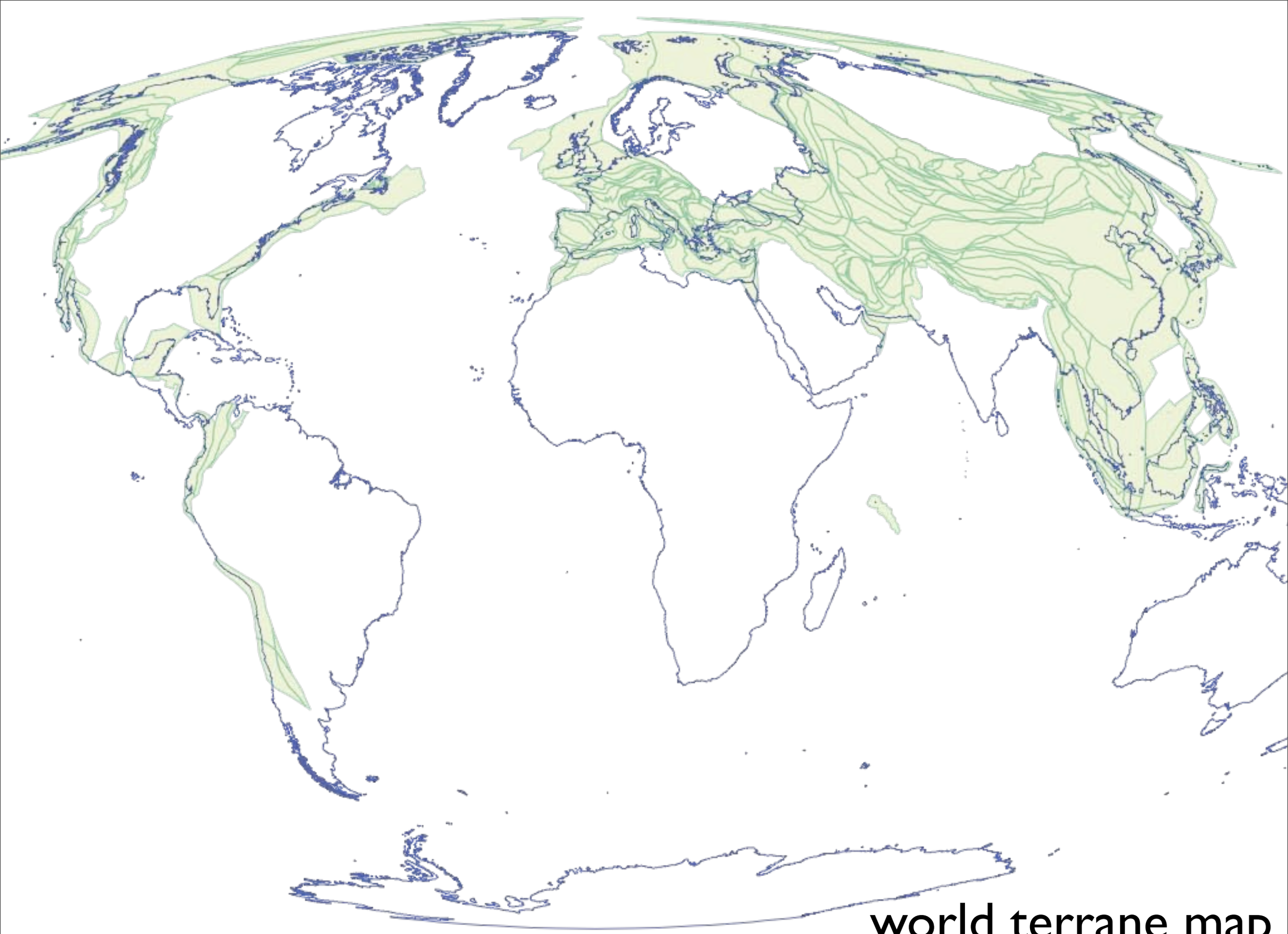


Hoepffner et al. 2005



Hoepffner et al. 2005



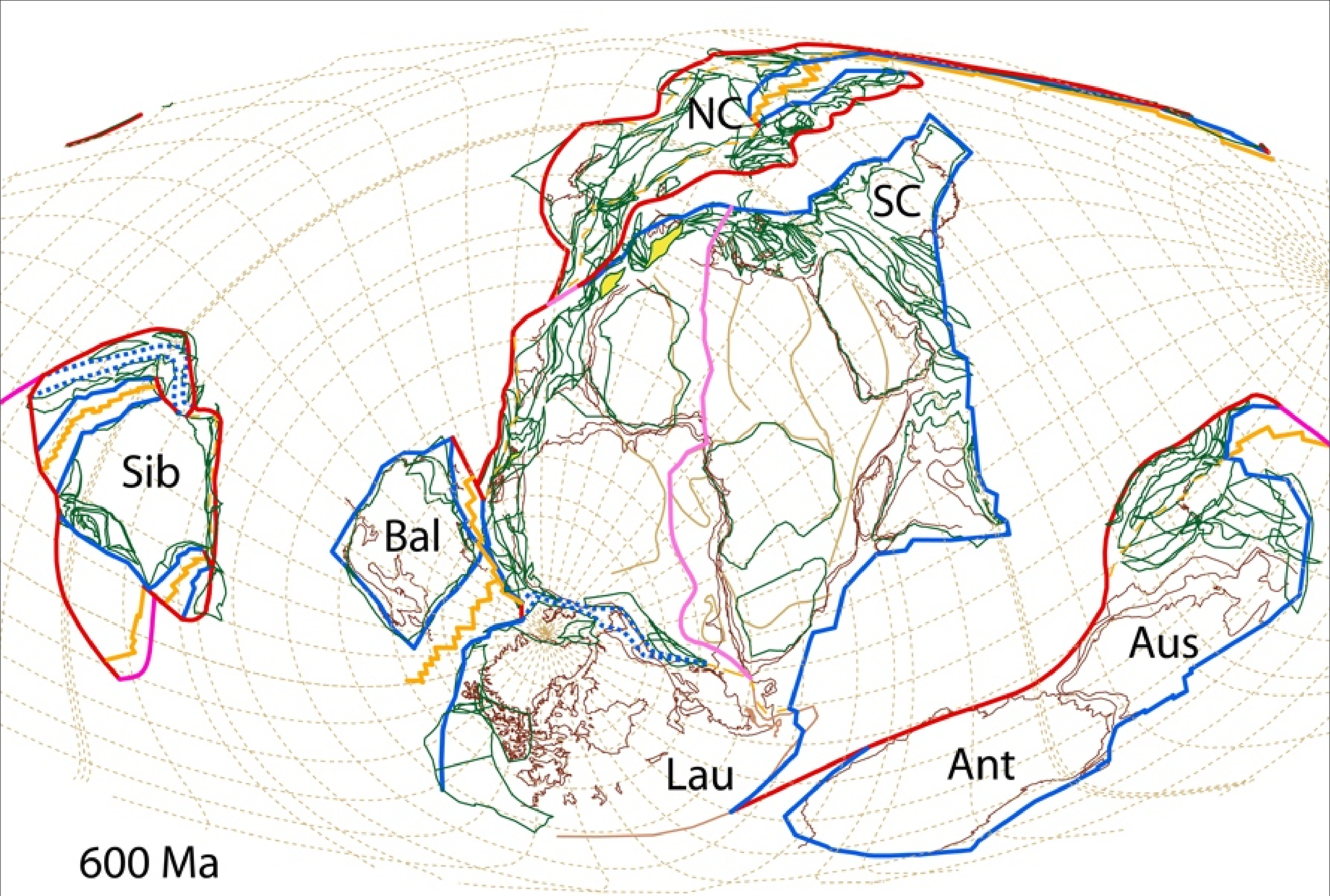


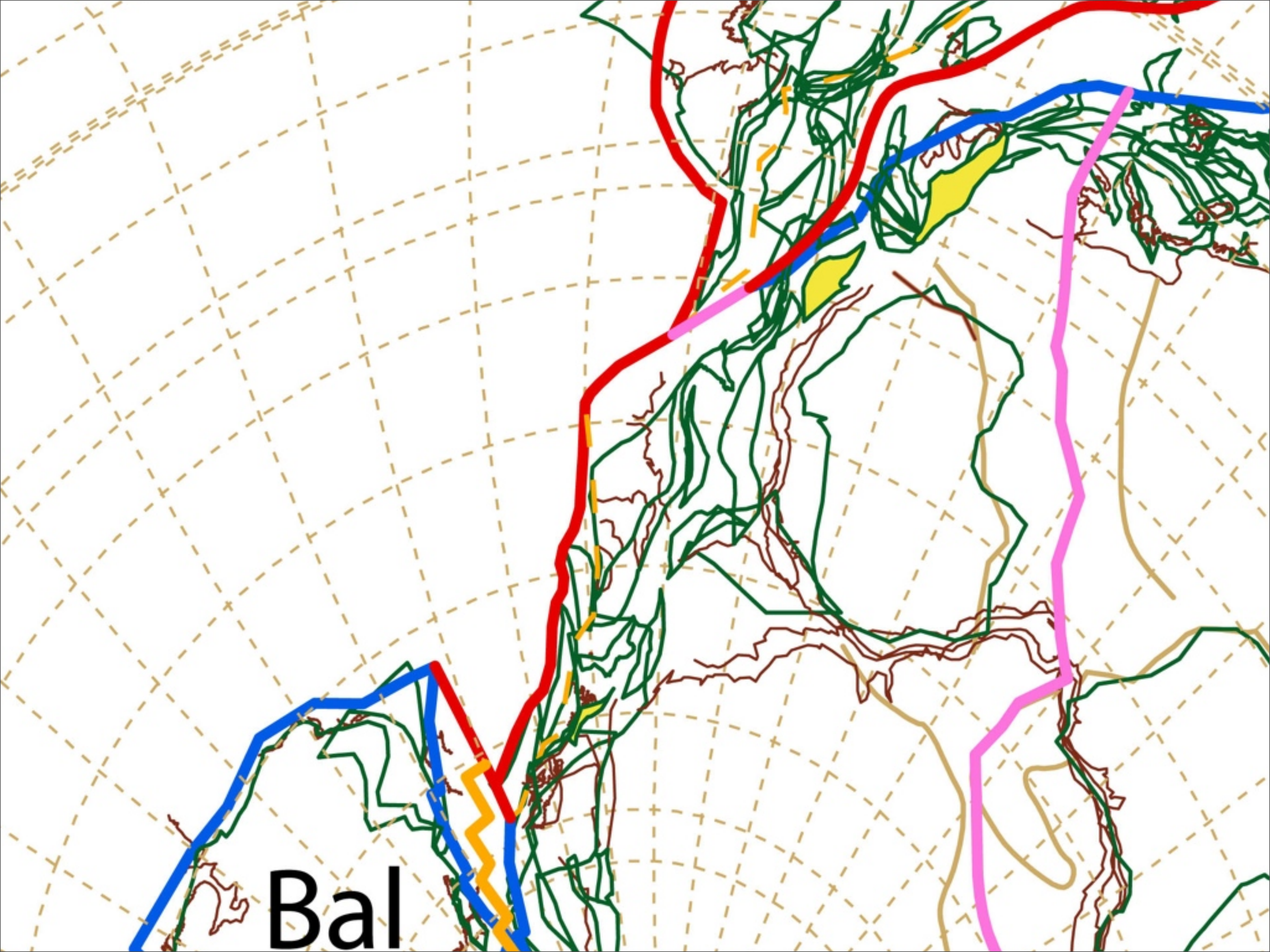
world terrane map

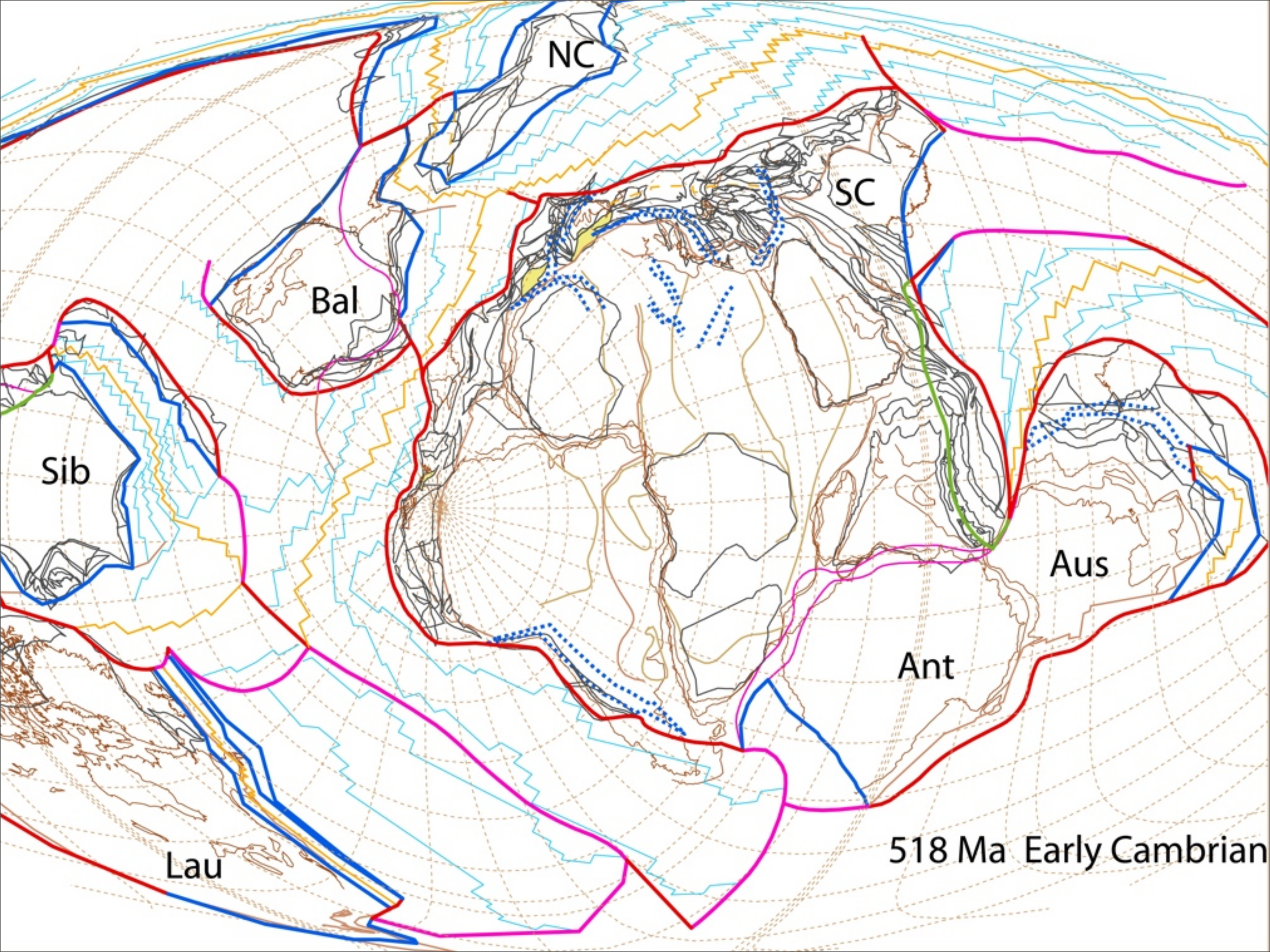
Avalonia

Rheno-
Hercynian

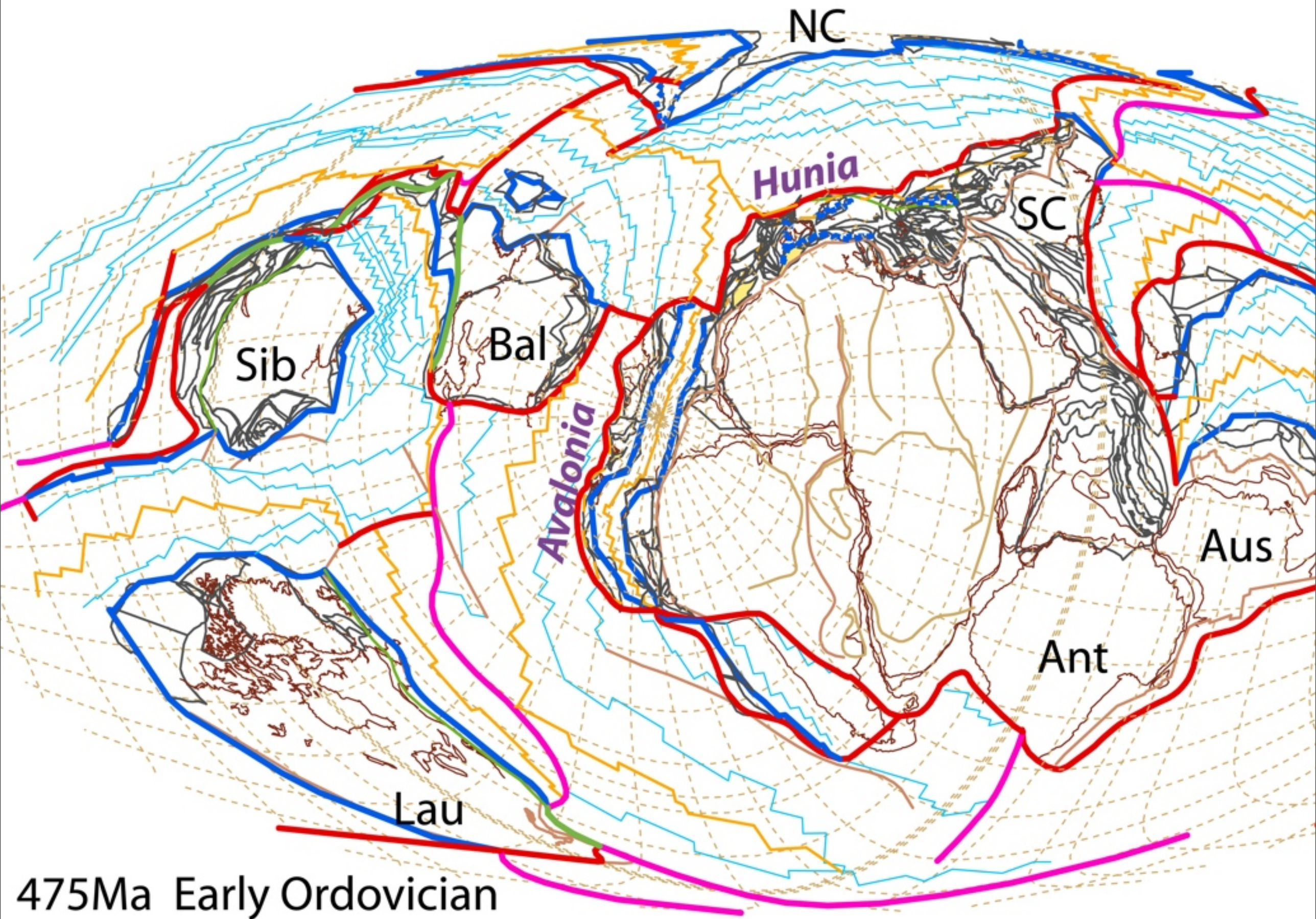
Galatian


NC
SC
Sib
Bal
Lau
Aus
Ant
600 Ma

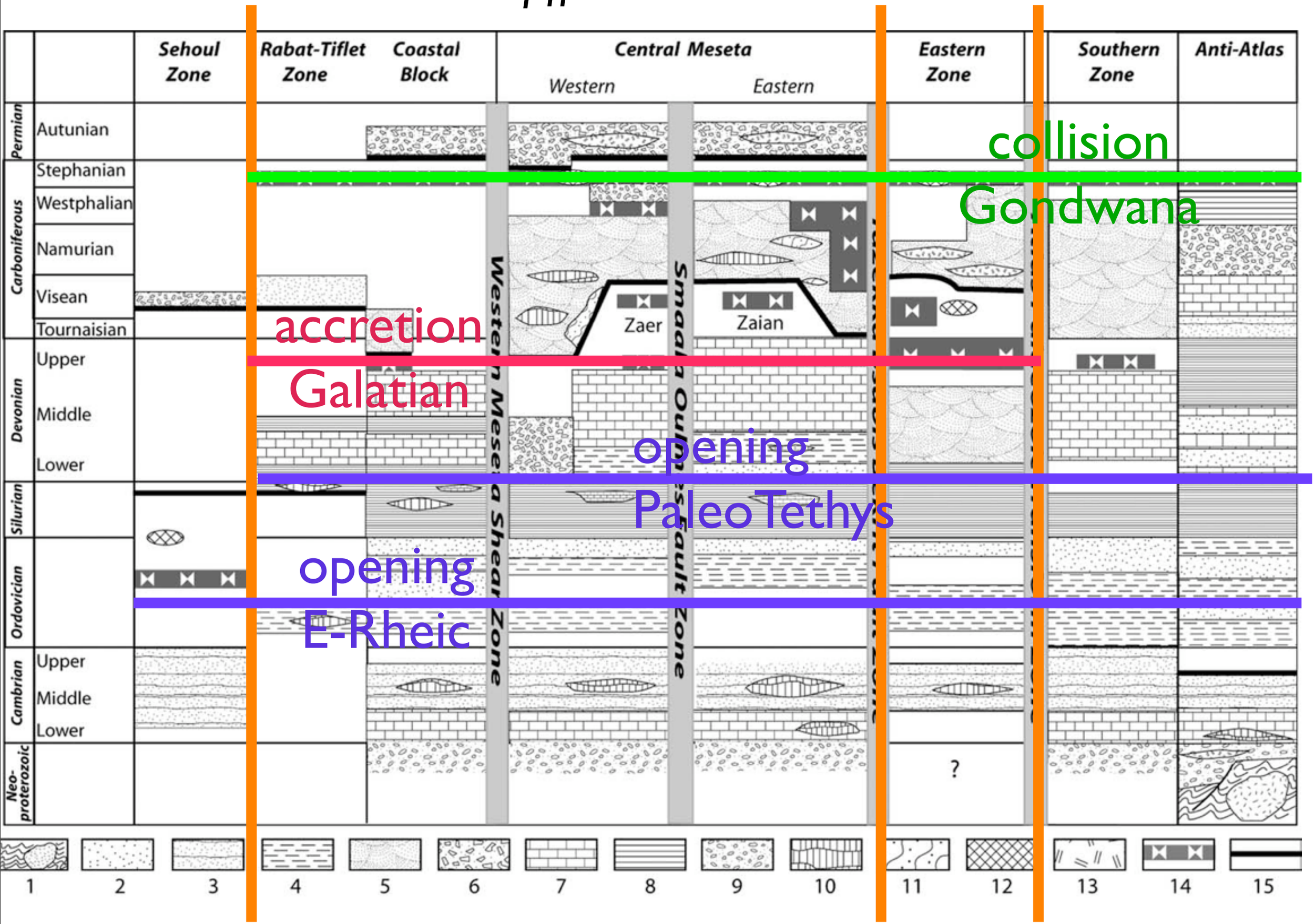

Bal


NC
SC
Bal
Sib
Aus
Ant
Lau
518 Ma Early Cambrian

Bal


NC
Hunia
SC
Sib
Bal
Avalonia
Aus
Ant
Lau
475Ma Early Ordovician

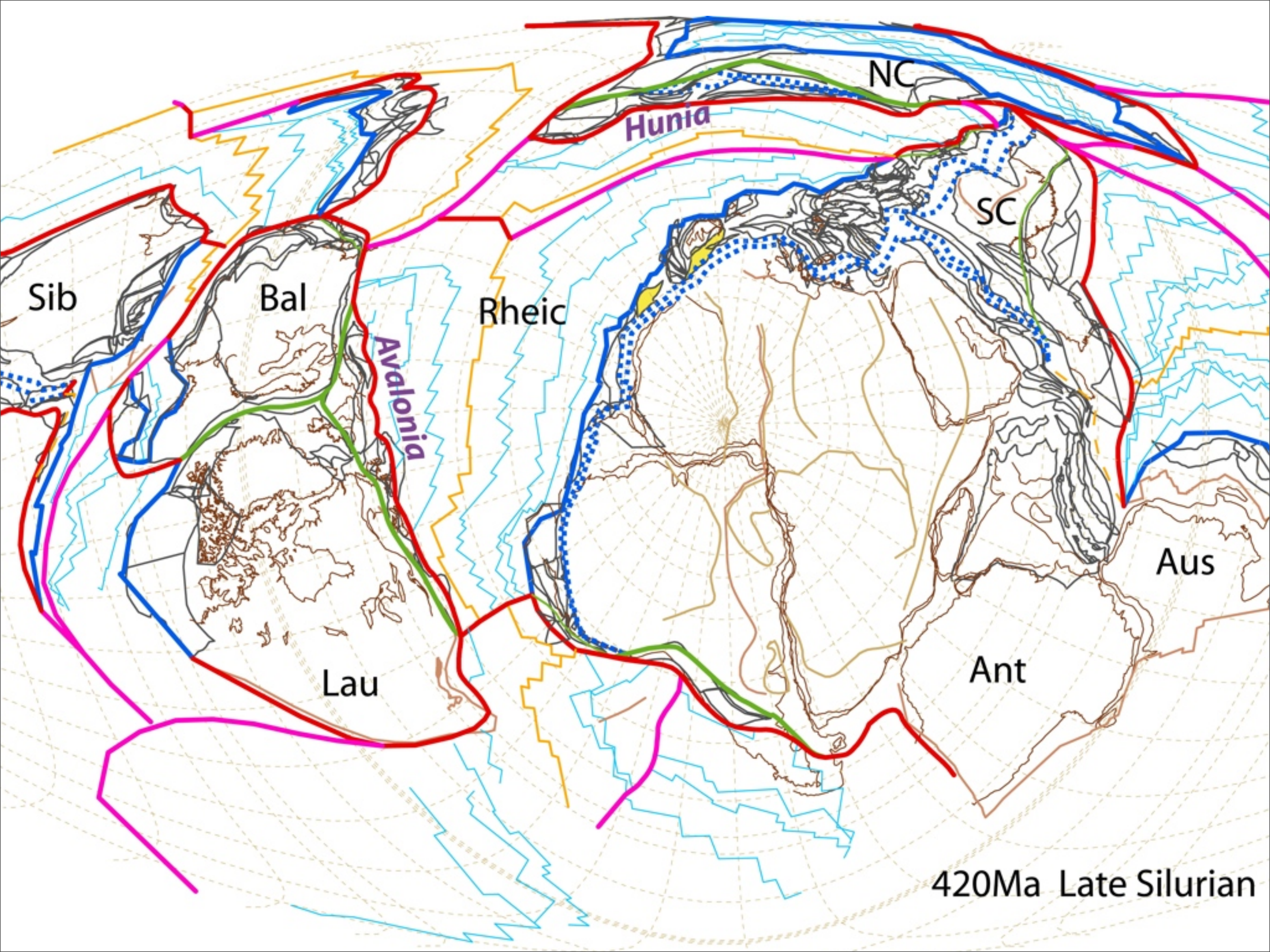
Hoepffner et al. 2005

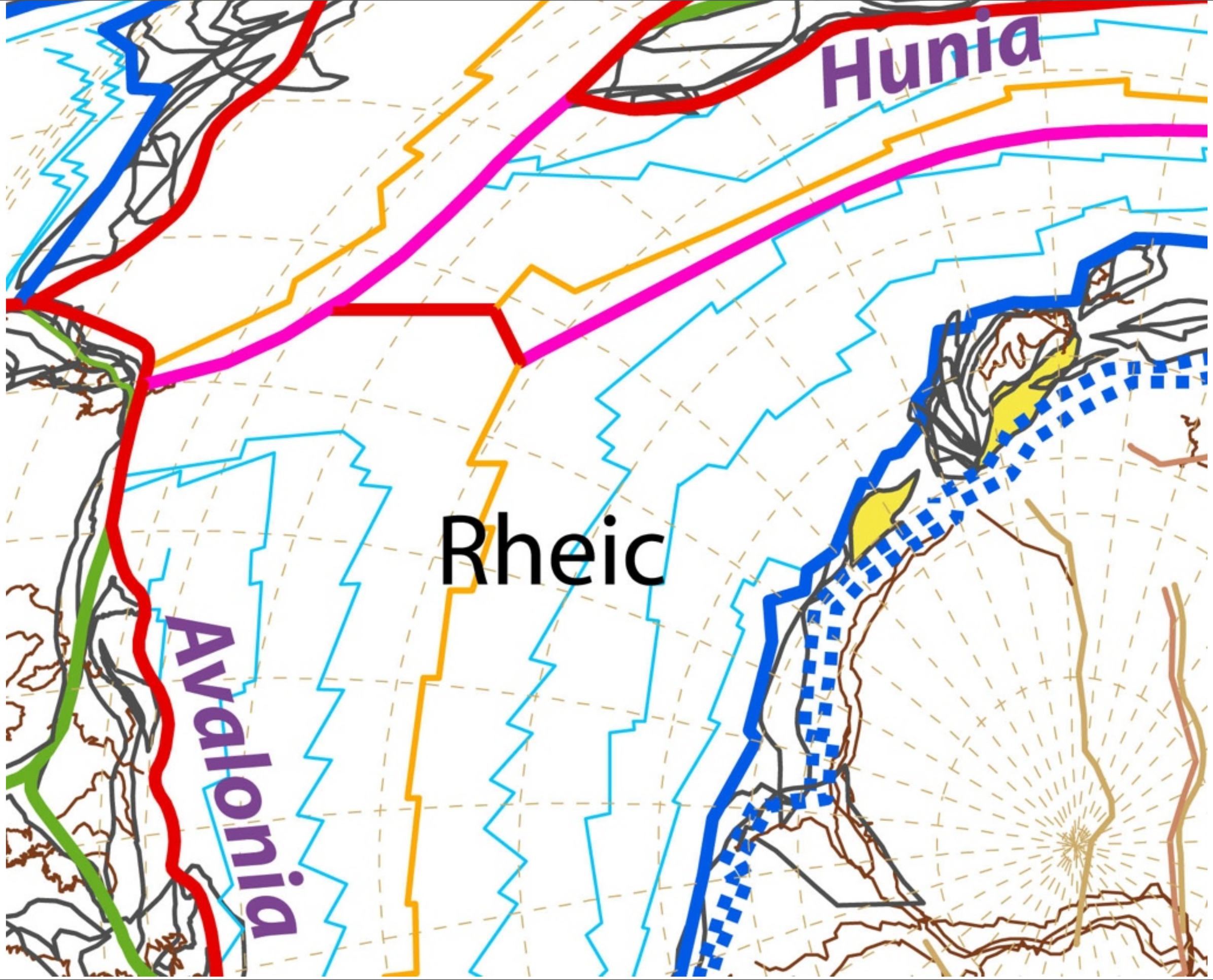


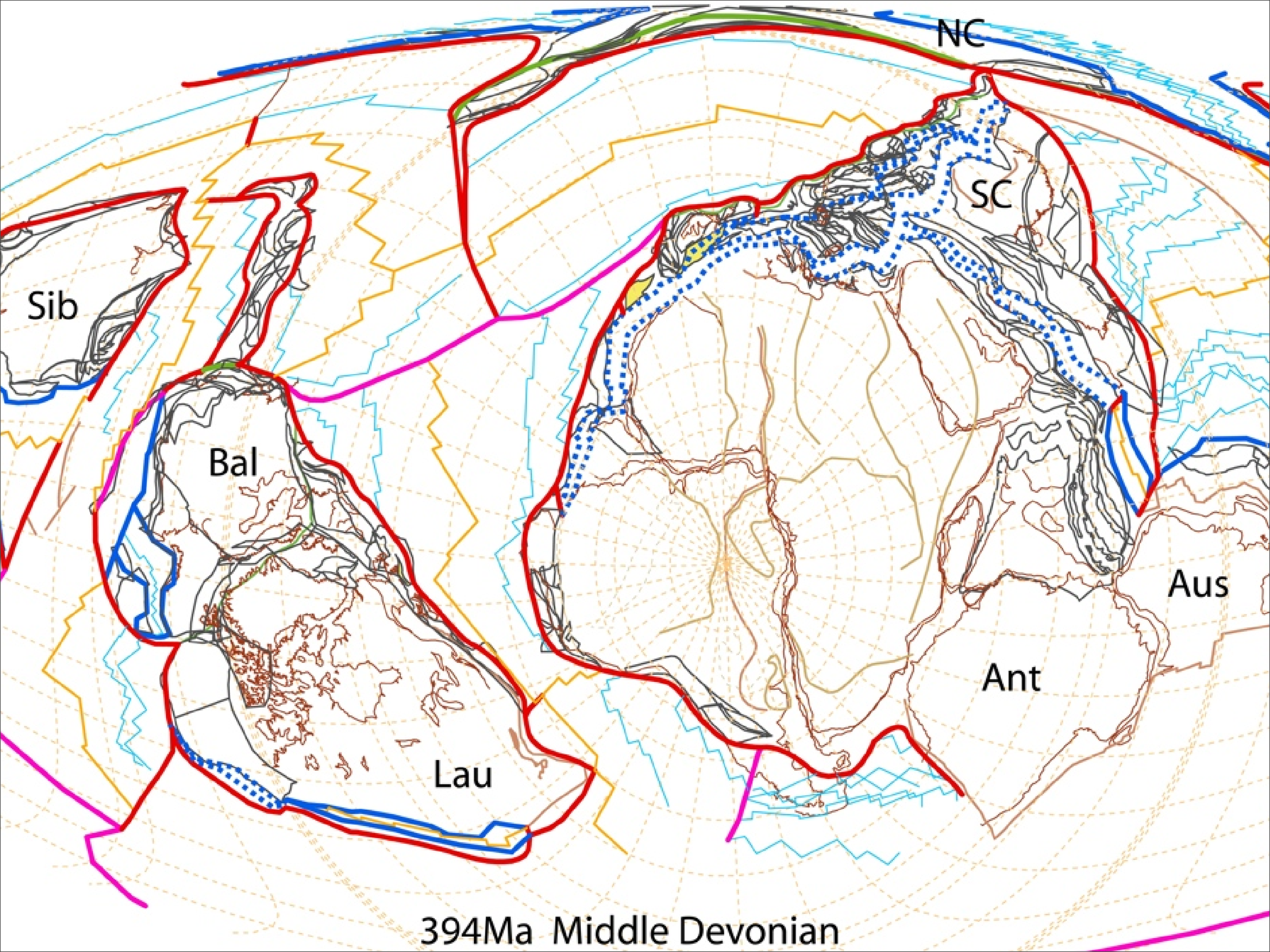
Hunia

Bal

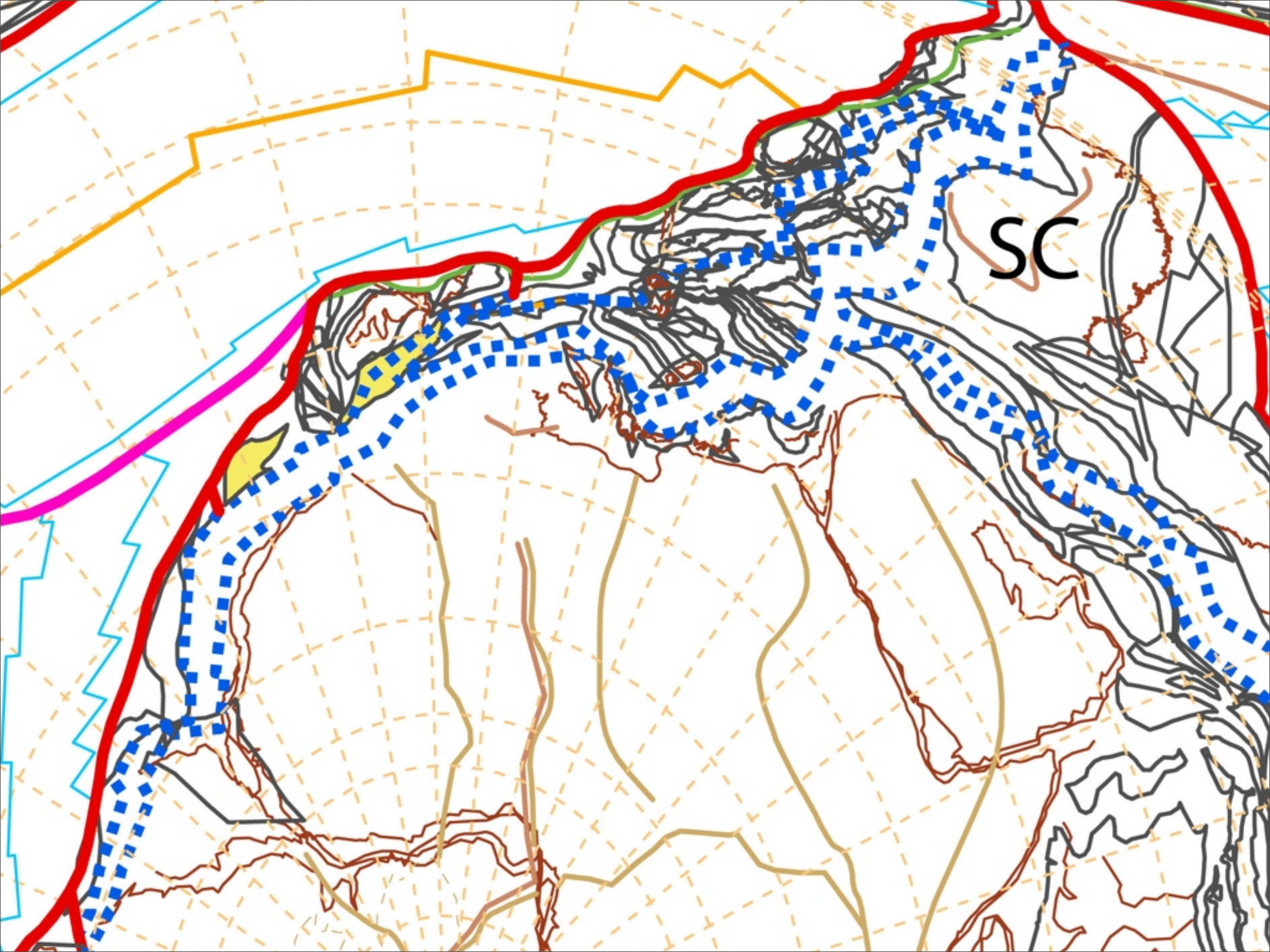
Avalonia


NC
Hunia
SC
Sib
Bal
Avalonia
Rheic
Aus
Lau
Ant
420Ma Late Silurian

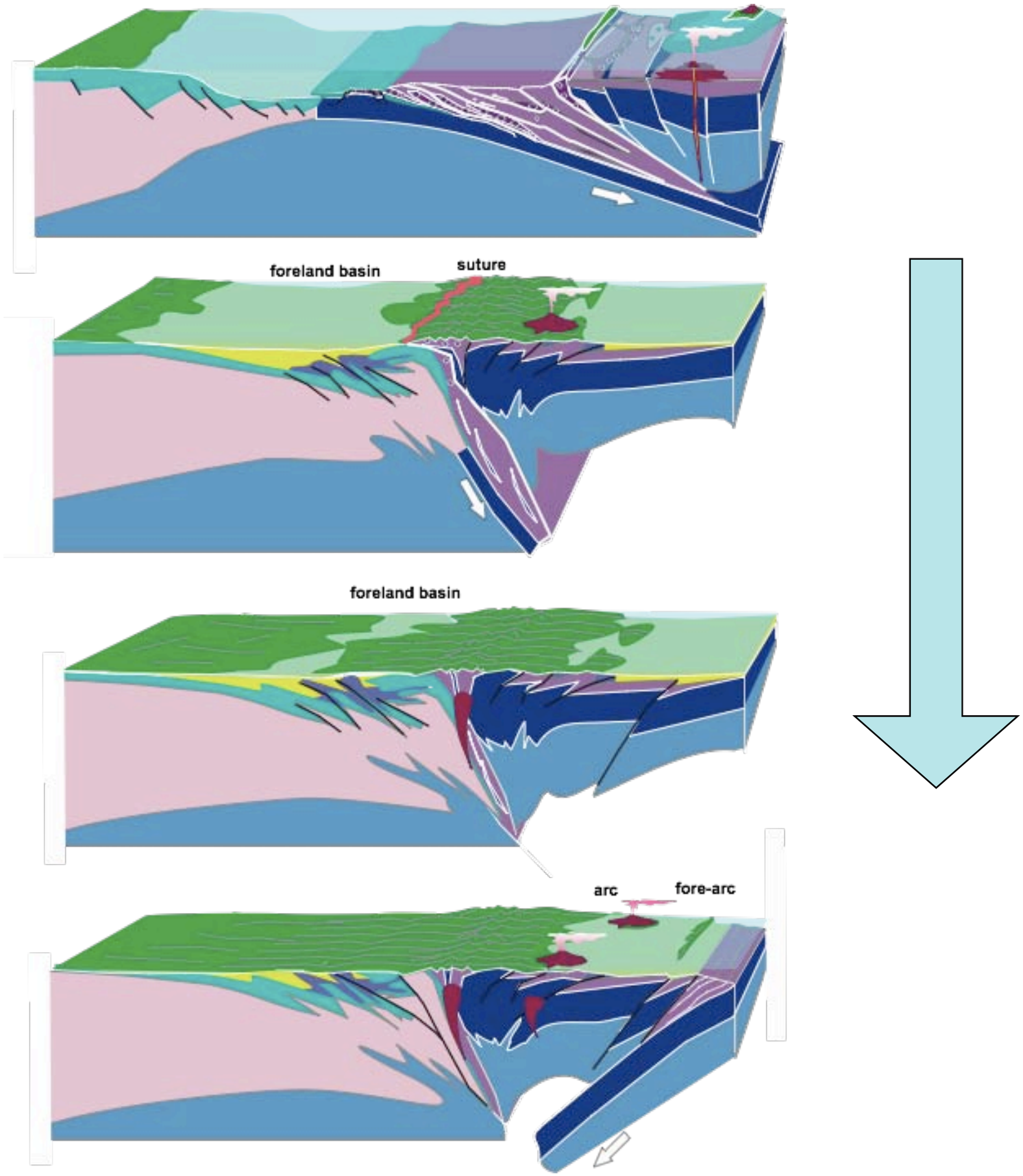

Hunia
Rheic
Avalonia

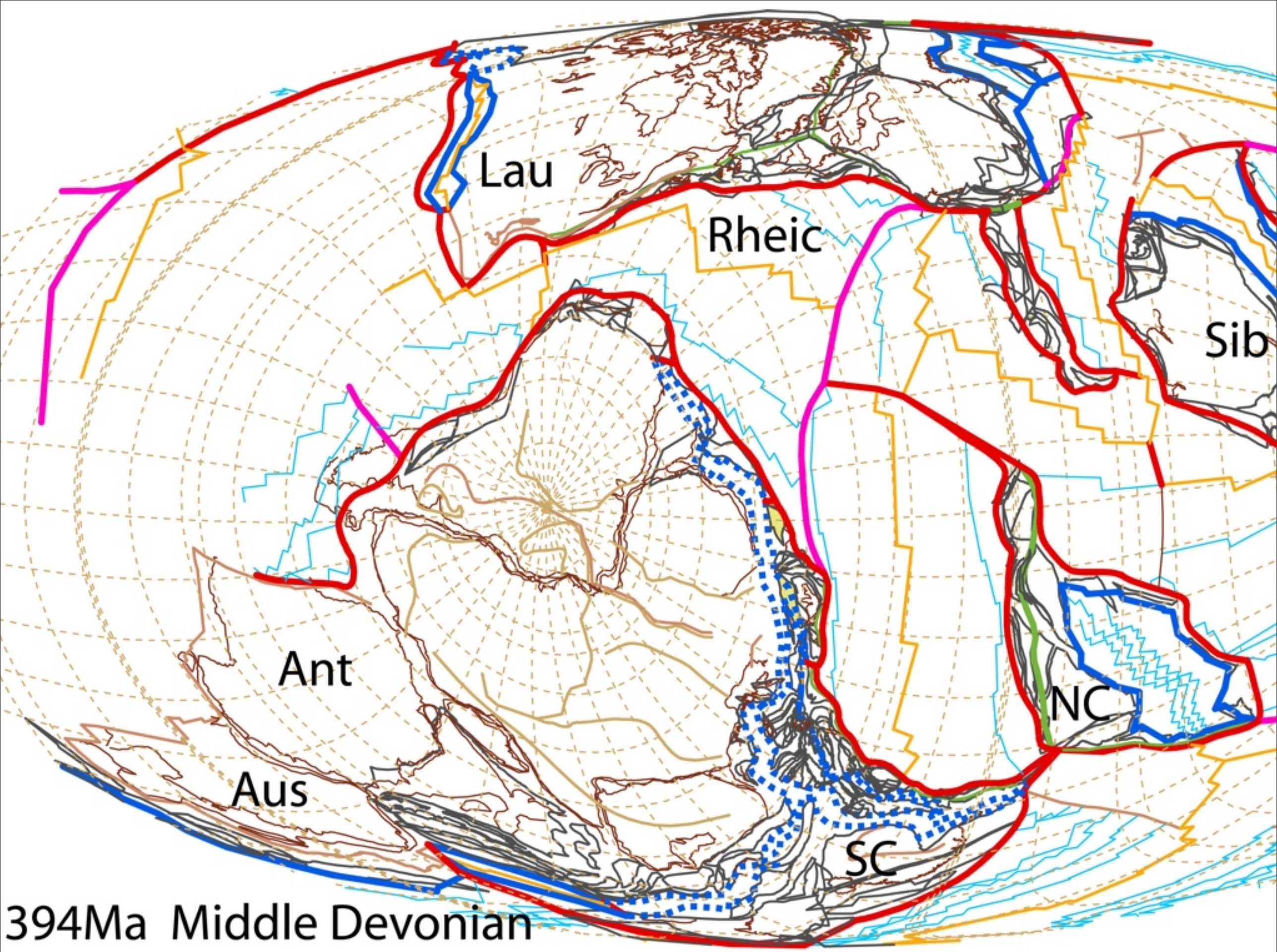


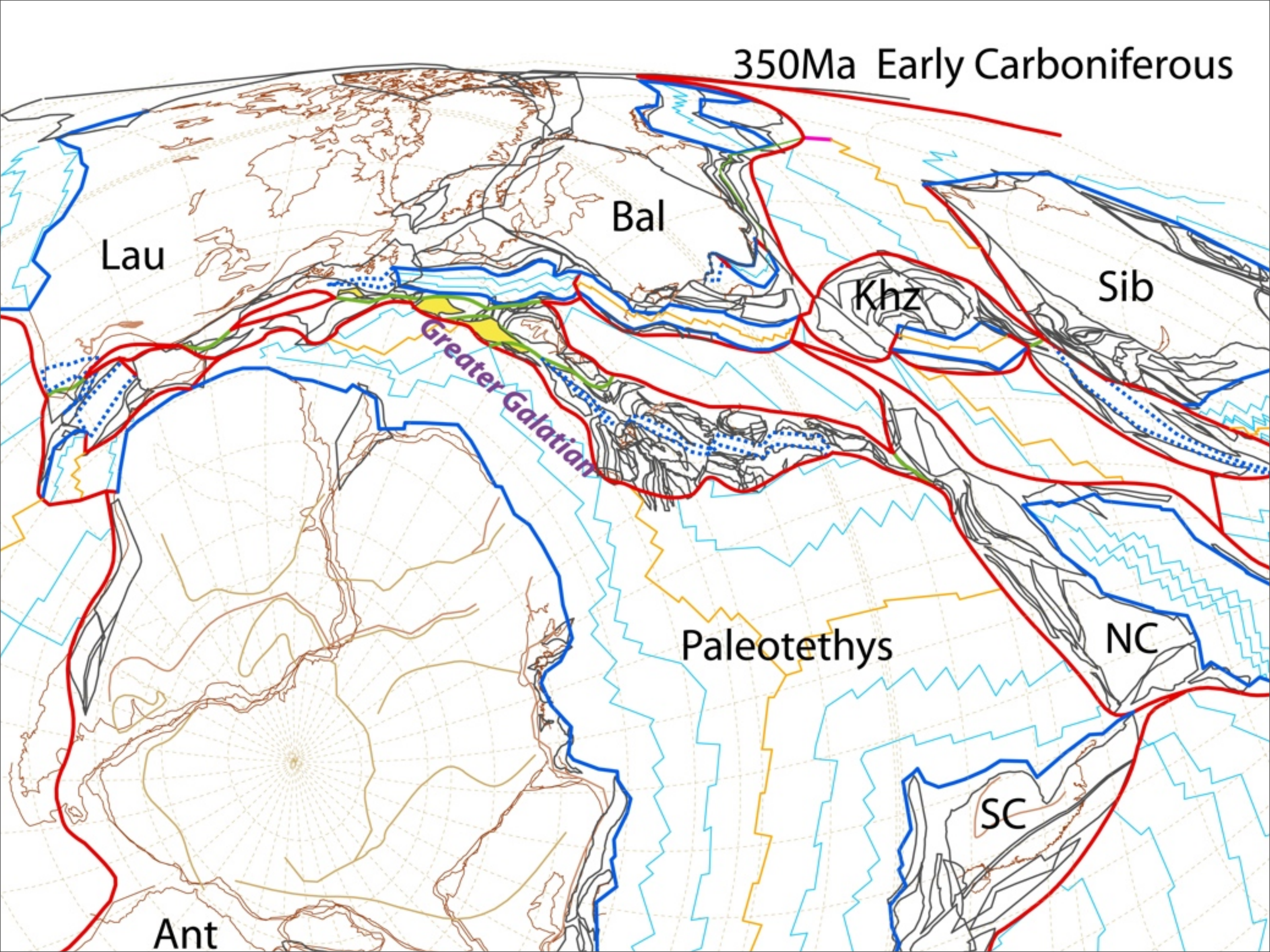
394Ma Middle Devonian

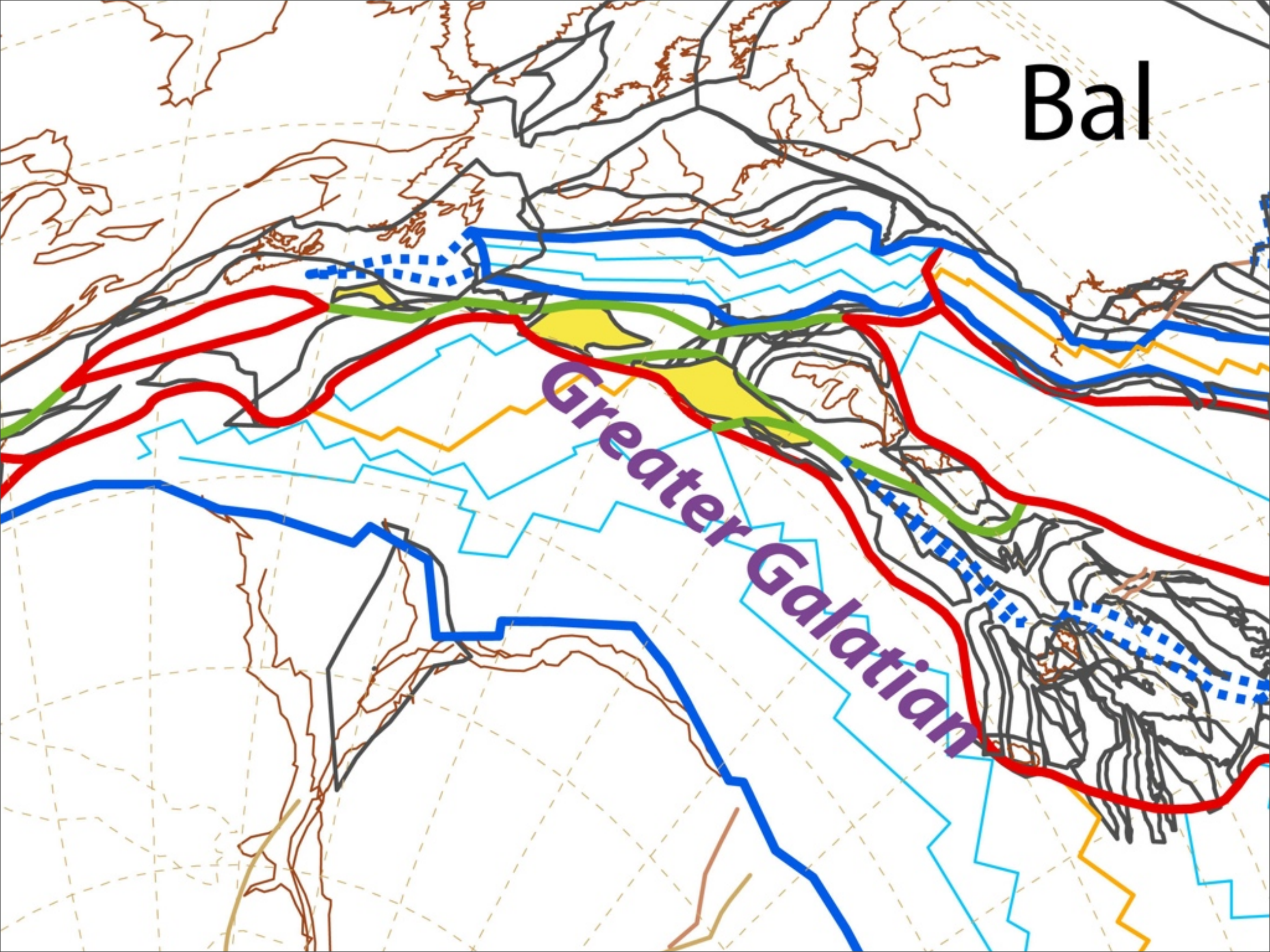

SC

Taiwan scenario

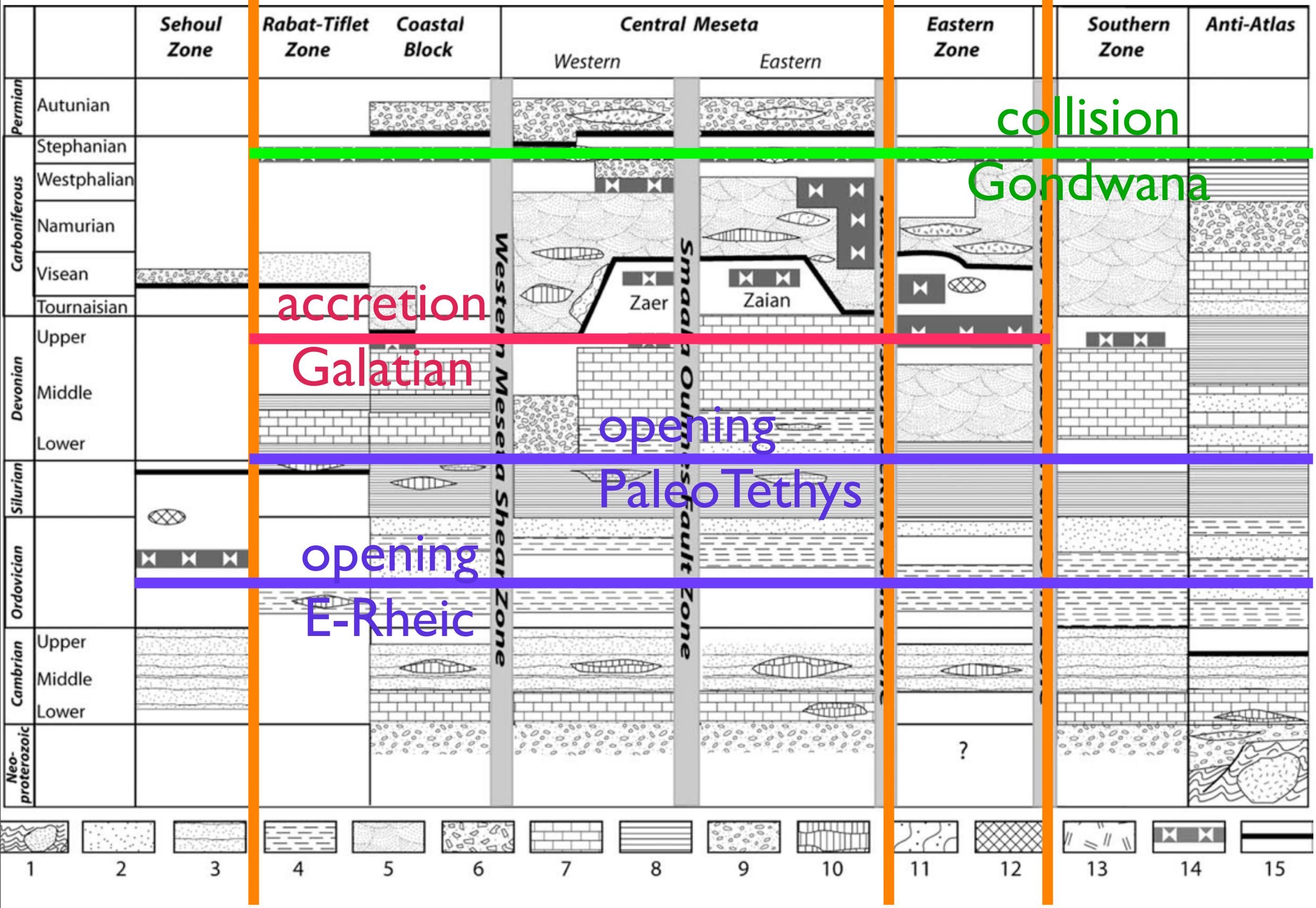



Lau
Rheic
Sib
Ant
Aus
NC
SC
394Ma Middle Devonian


350Ma Early Carboniferous
Lau
Bal
Khz
Sib
Greater Galatian
Paleotethys
NC
SC
Ant


Bal
Greater Galatian

Hoepffner et al. 2005



316Ma LateCarboniferous

Lau

Bal

Sib

Khz

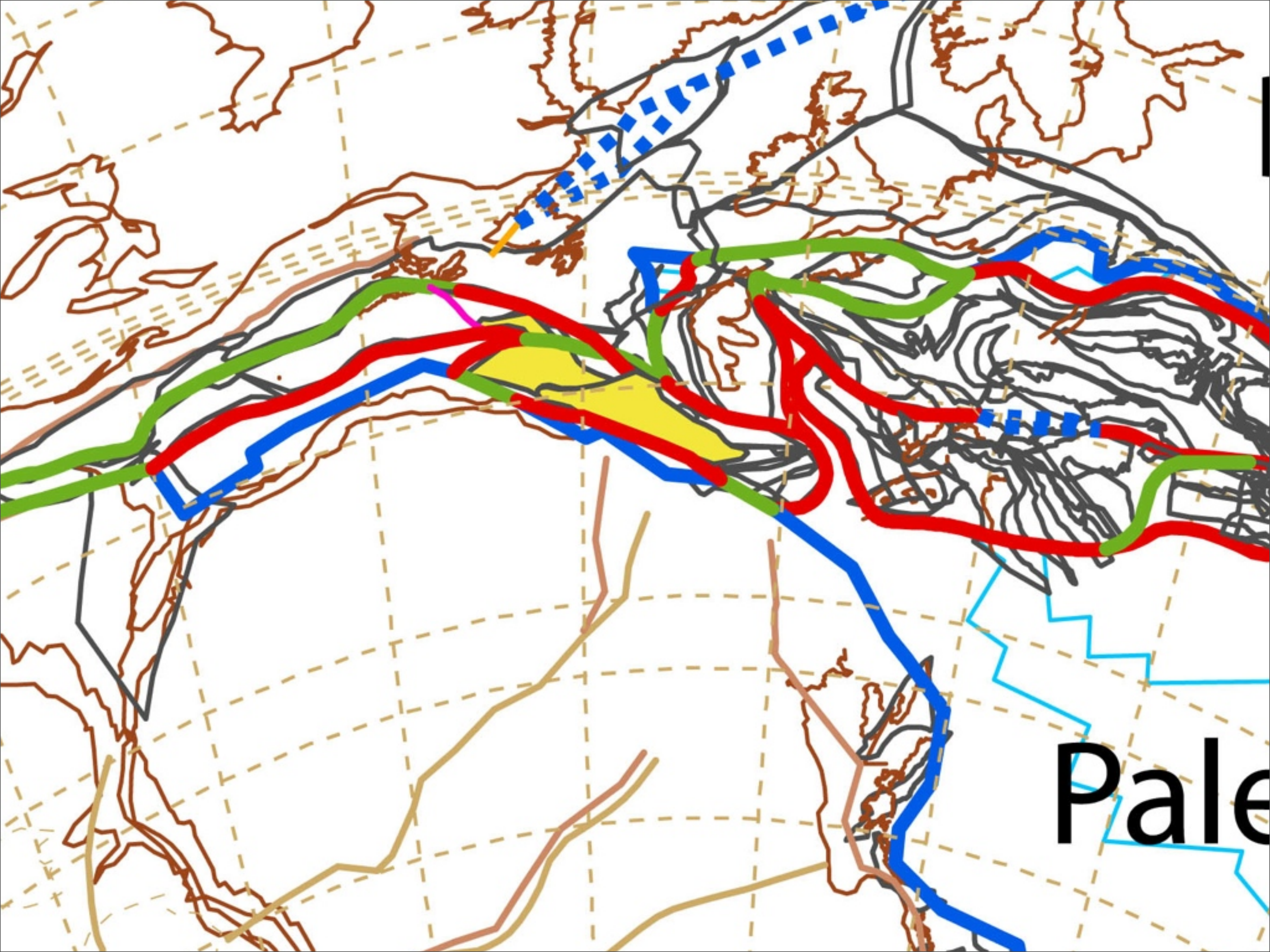
Paleotethys

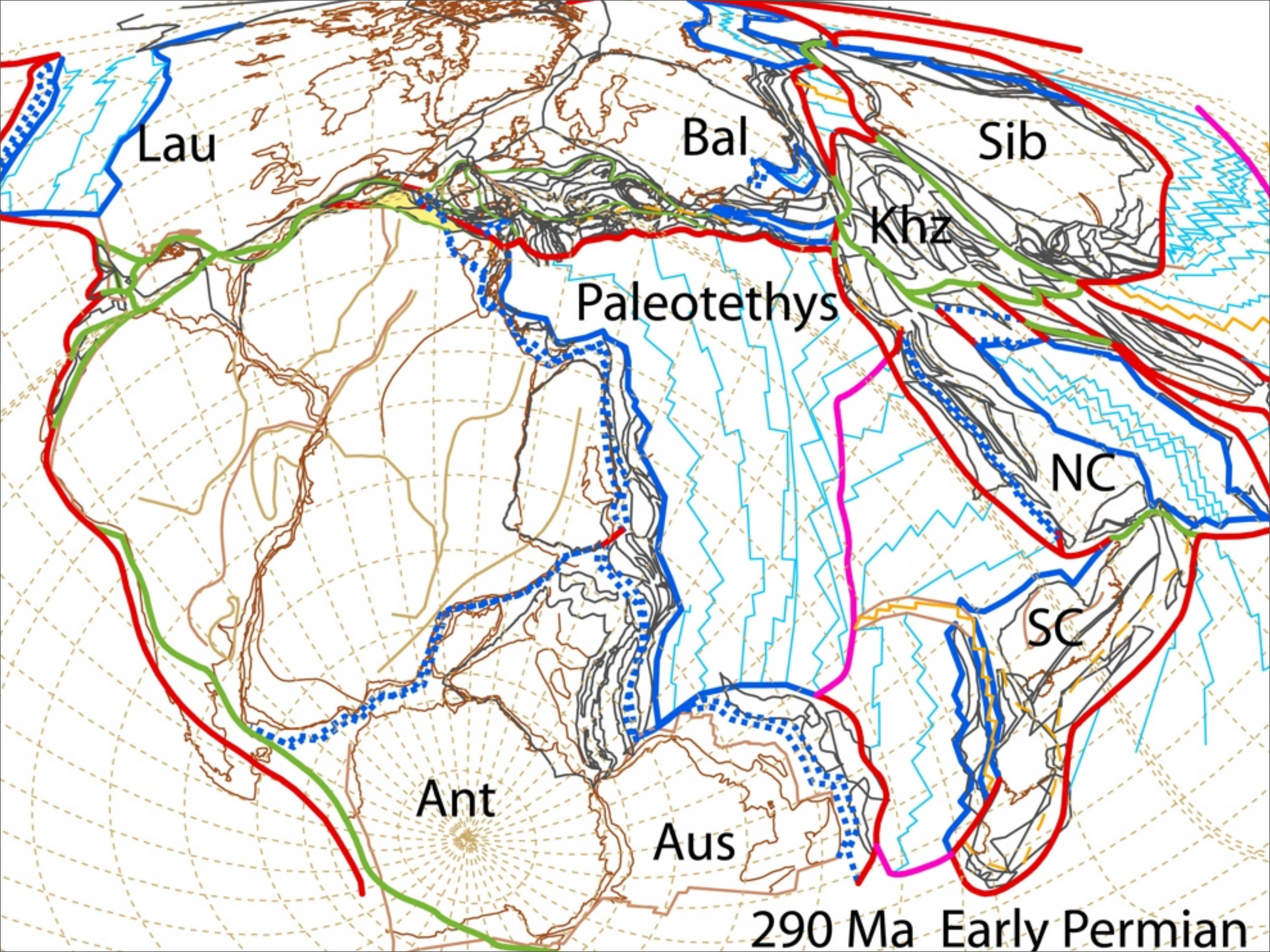
NC

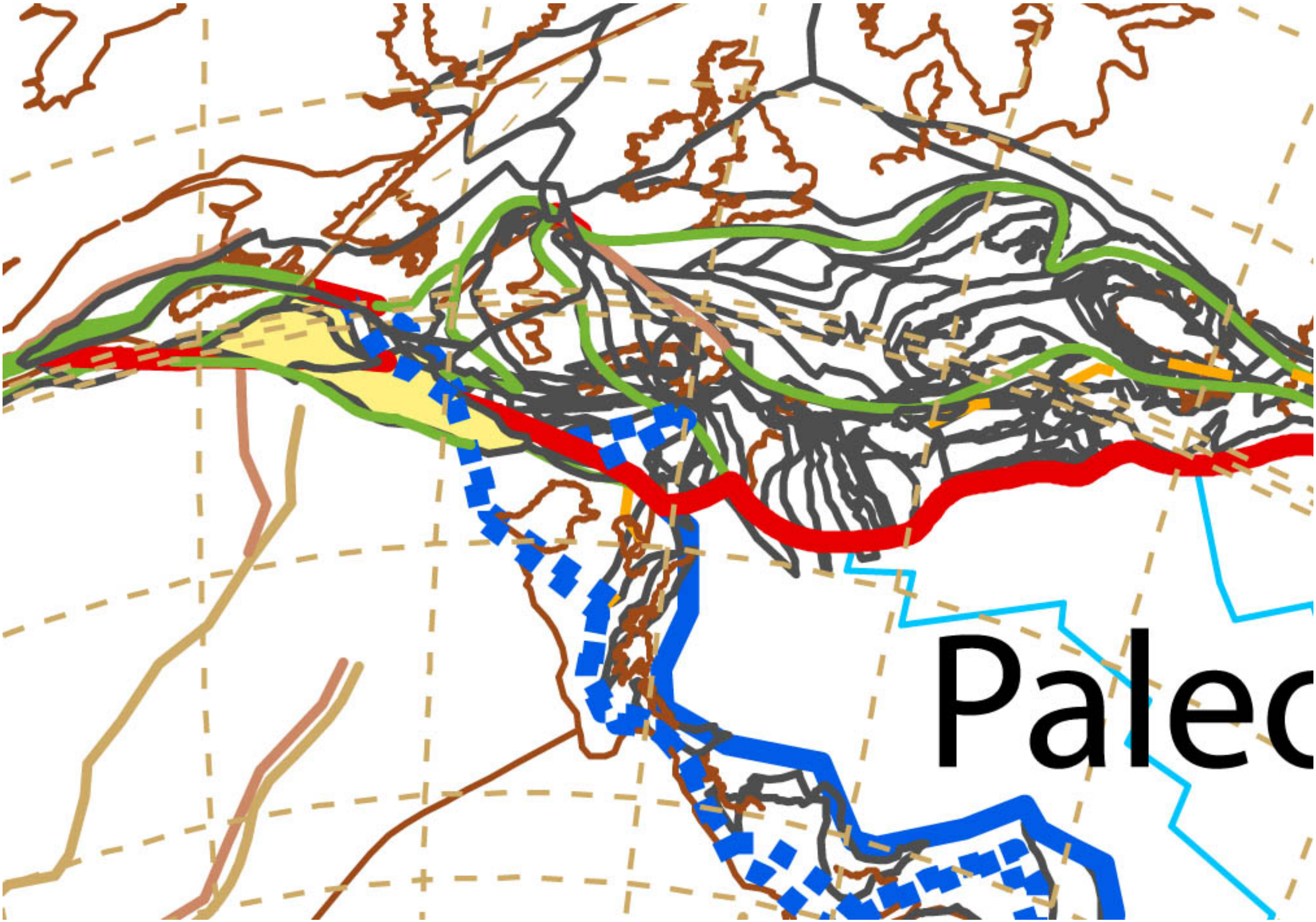
SC

Ant

Aus


Pale


Lau
Bal
Sib
Khz
Paleotethys
NC
SC
Ant
Aus
290 Ma Early Permian


Paleo

Hoepffner et al. 2005