DJGeoscience

Plate Tectonics of Australia and Surrounds

Last Updated July 2023 by Dariusz Jablonski

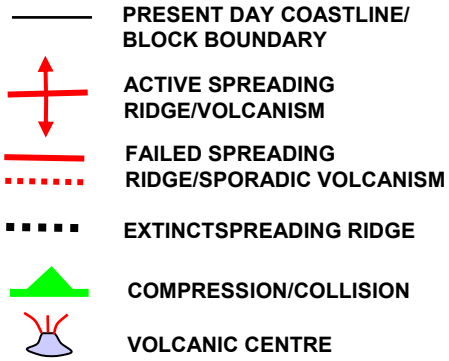
DJGeoscience

LEGEND

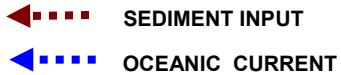
ABBREVIATIONS

A - ARKARINGA BASIN
SA - SOUTH AMERICA
AP - ASHMORE PLATFORM
B - BOWEN BASIN
BB - BONAPARTE BASIN
BR - BROWSE BASIN
B-D - BARROW-DAMPIER FAILED RIFT
BH - BIRD'S HEAD (IRIAN JAYA)
C - CANNING BASIN
CE - COOPER-EROMANGA BASIN
CS - CENTRAL SULAWESI
CR - CARNARVON BASIN
CT - CENTRAL RANGES (IRIAN JAYA)
D - DENMAN BASIN
EAR - EAST ANTARCTIC RIFT
G - GOULBURN GRABEN
GD - GODAVARI BASIN (INDIA)
GLHR – GREATER LORD HOWE RISE
GR - GREECE
H-V - HEYWOOD-VULCAN FAILED RIFT
L - LAMU BASIN (KENYA)
LC - LESSER CAUCASUS
LR - LAMBERT RIFT (ANTARCTICA)
M - MALITA FAILED RIFT
MG - MADAGASCAR
MR - MAHANADI RIFT
MZ - MOZAMBIQUE
NP - NORTHERN PERTH BASIN
P - PERTH BASIN
PM - PATERNOSTER-MERATUS
PG - PANAGARH AREA (INDIA)
PNG - PAPUA NEW GUINEA
PT - PETREL SUB-BASIN
R - ROEBUCK BASIN
S - SYDNEY BASIN
SH - SAHUL PLATFORM
SK - SIKULEH (WESTERN SUMMATRA)
SP - SOUTHERN PERTH BASIN
T - TIMOR
WB - WEST BURMA
WS - WEST SULAWESI

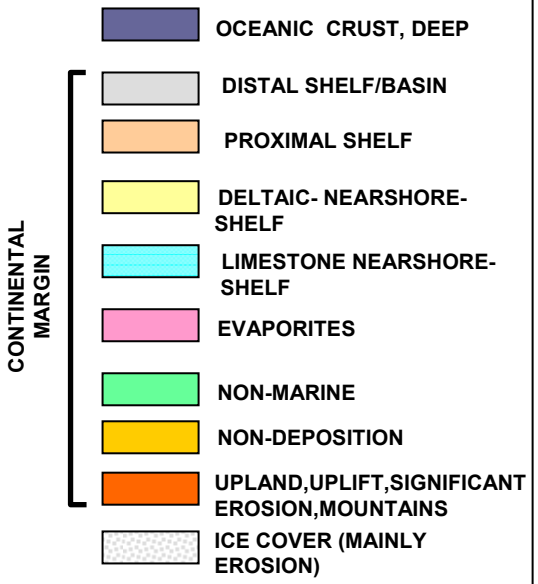
PLATE/BLOCK BOUNDARIES



OTHER



ENVIRONMENTS



NOTE:
PALAEOGEOGRAPHIC MAPS ILLUSTRATE MAXIMUM LITHOFACIES DISTRIBUTION DEPOSITED DURING INDICATED TIME SLICE (PRESERVED PRESENT DAY DISTRIBUTION NOT SHOWN)

NOTE:
Not All figures are referenced

DJGeoscience

Triassic

(251M-205S)

Africa & GNWS (Western Australia)

DJGeoscience

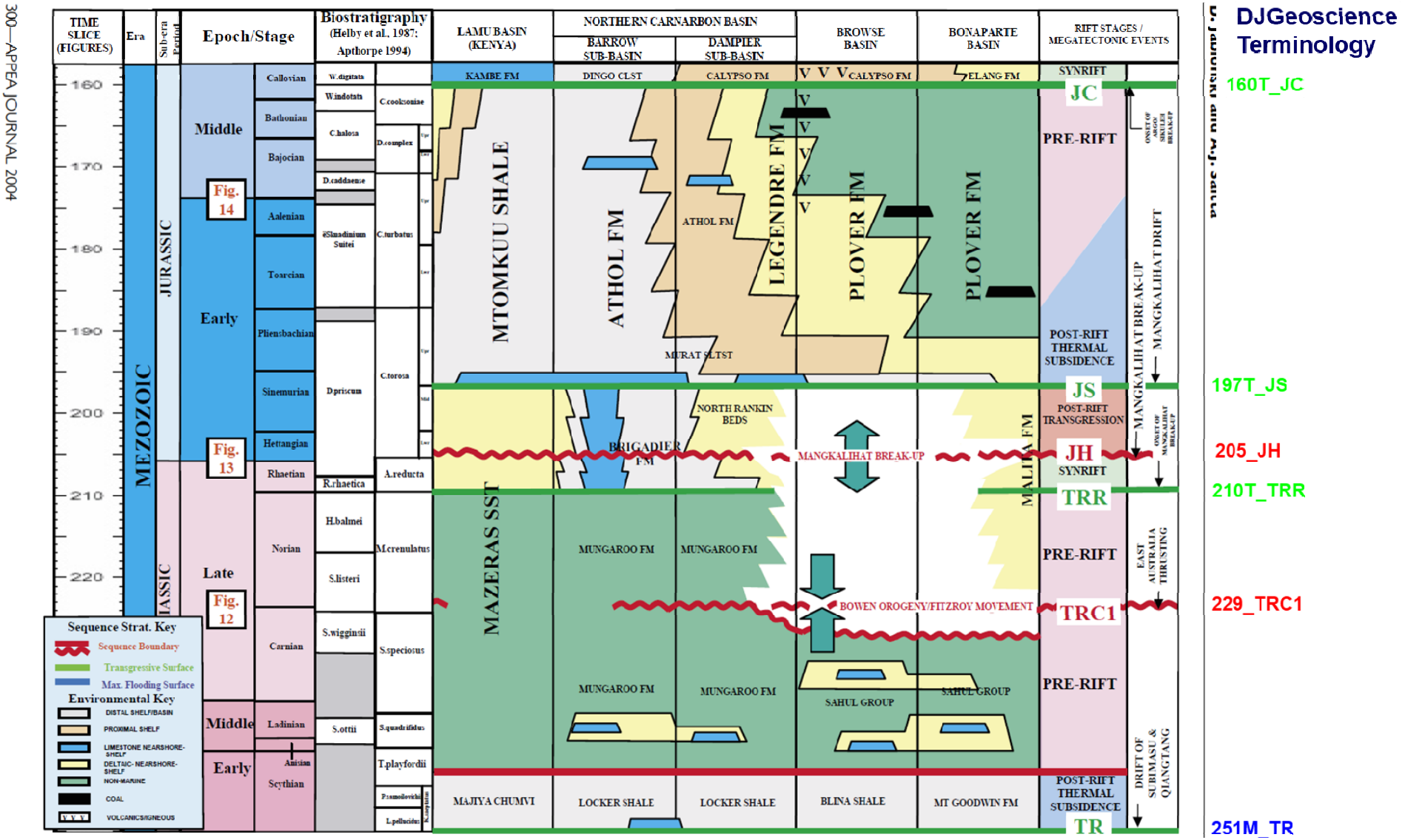


Figure 4b. Generalised Triassic to Middle Jurassic stratigraphy of middle palaeolatitude Gondwana Basins.

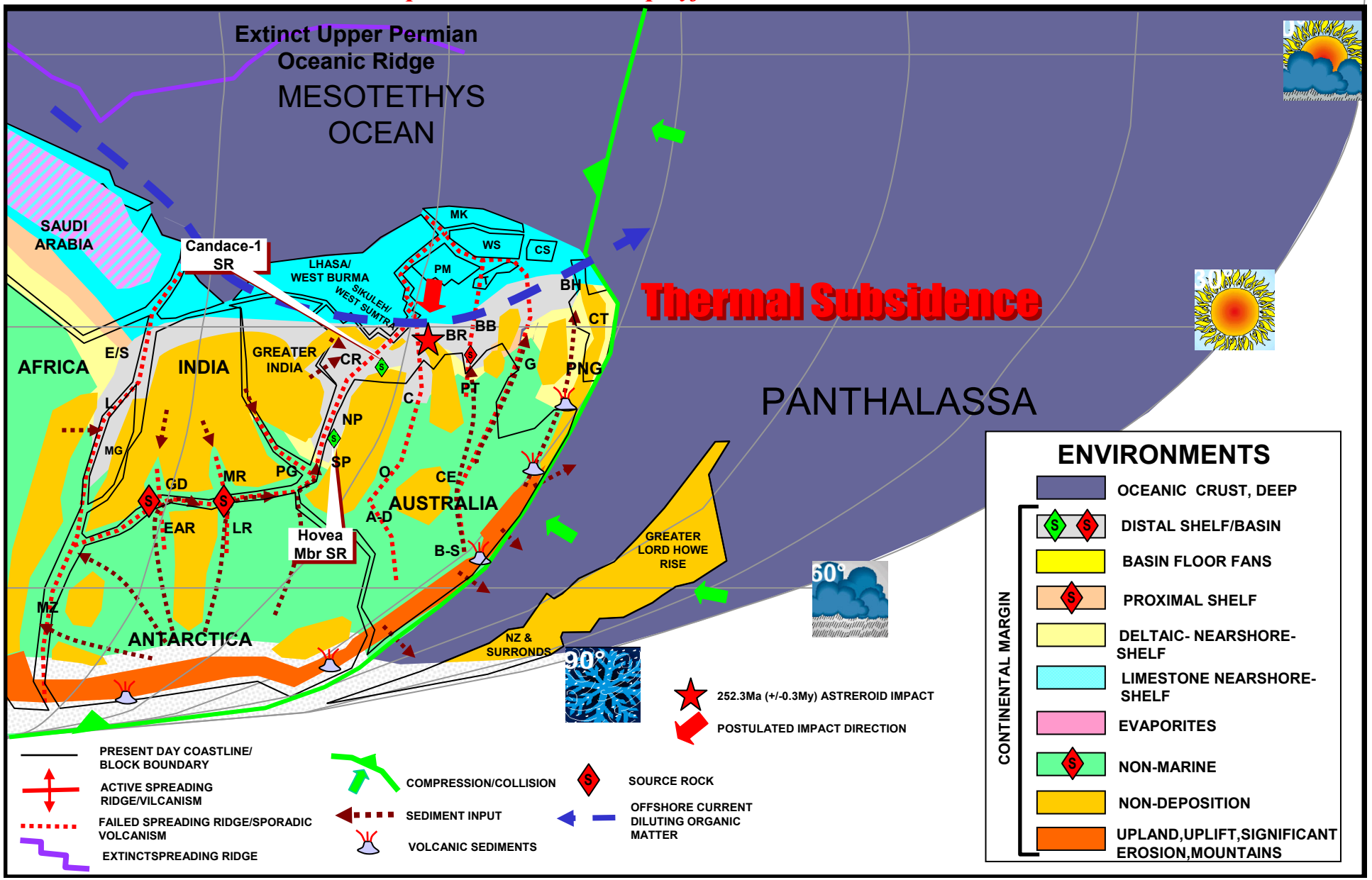
Permian to Lower Cretaceous plate tectonics and its impact on the tectono-stratigraphic development of the Western Australian margin

251-246.5My Lower Triassic Plate Reconstruction

DJGeoscience

Drift of Sibumasu & Qiangtang – Post-rift thermal subsidence phase (TR-246.5S)

L.pellucidus to lower *T.playfordii* Zones

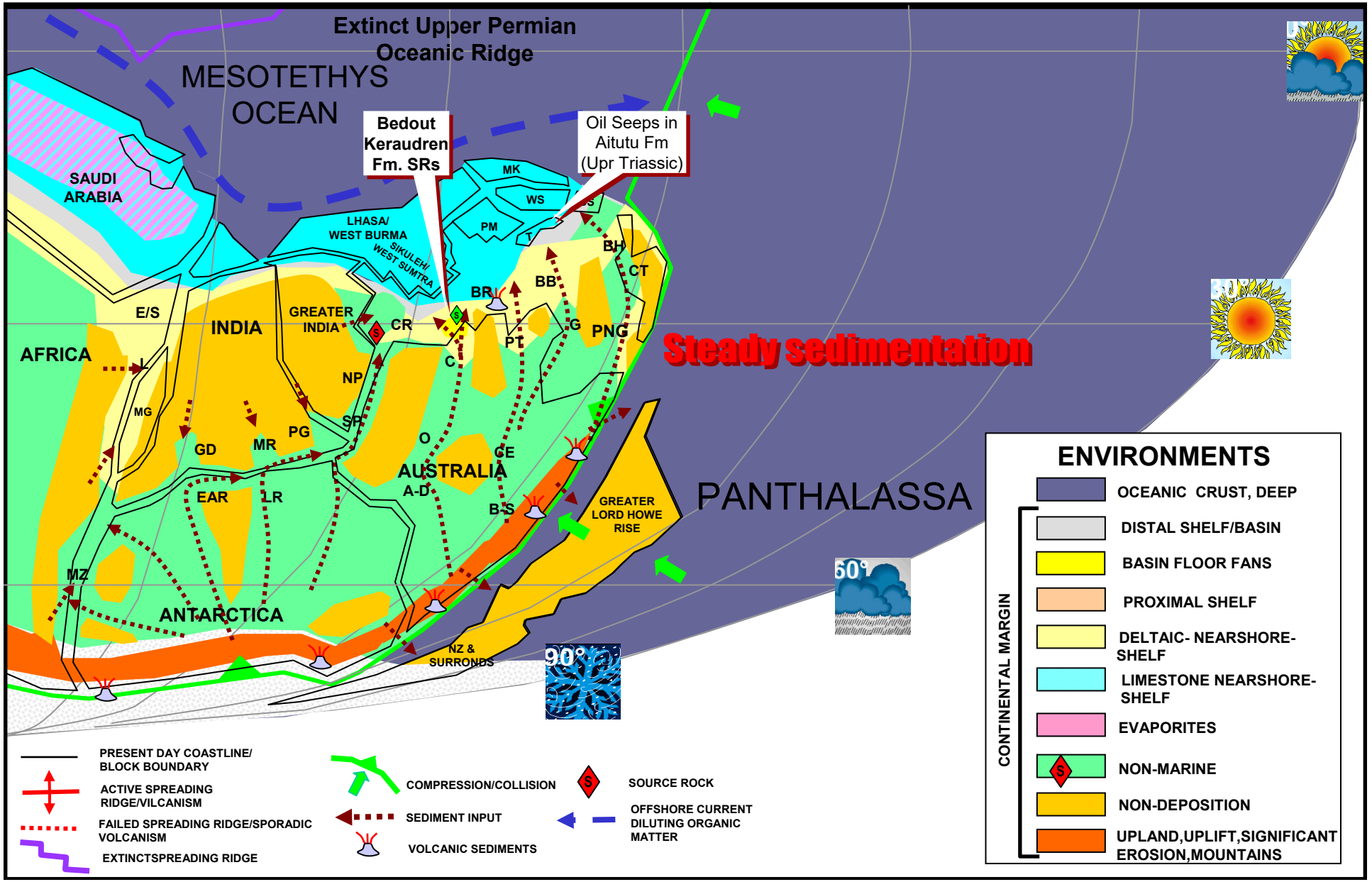


246.5-229My Middle to Upper Triassic Plate Reconstruction

DJGeoscience

Pre-rift phase (246.5S-229S_TRC1)

Upper *T.playfordii* to *S.speciosus* Zones

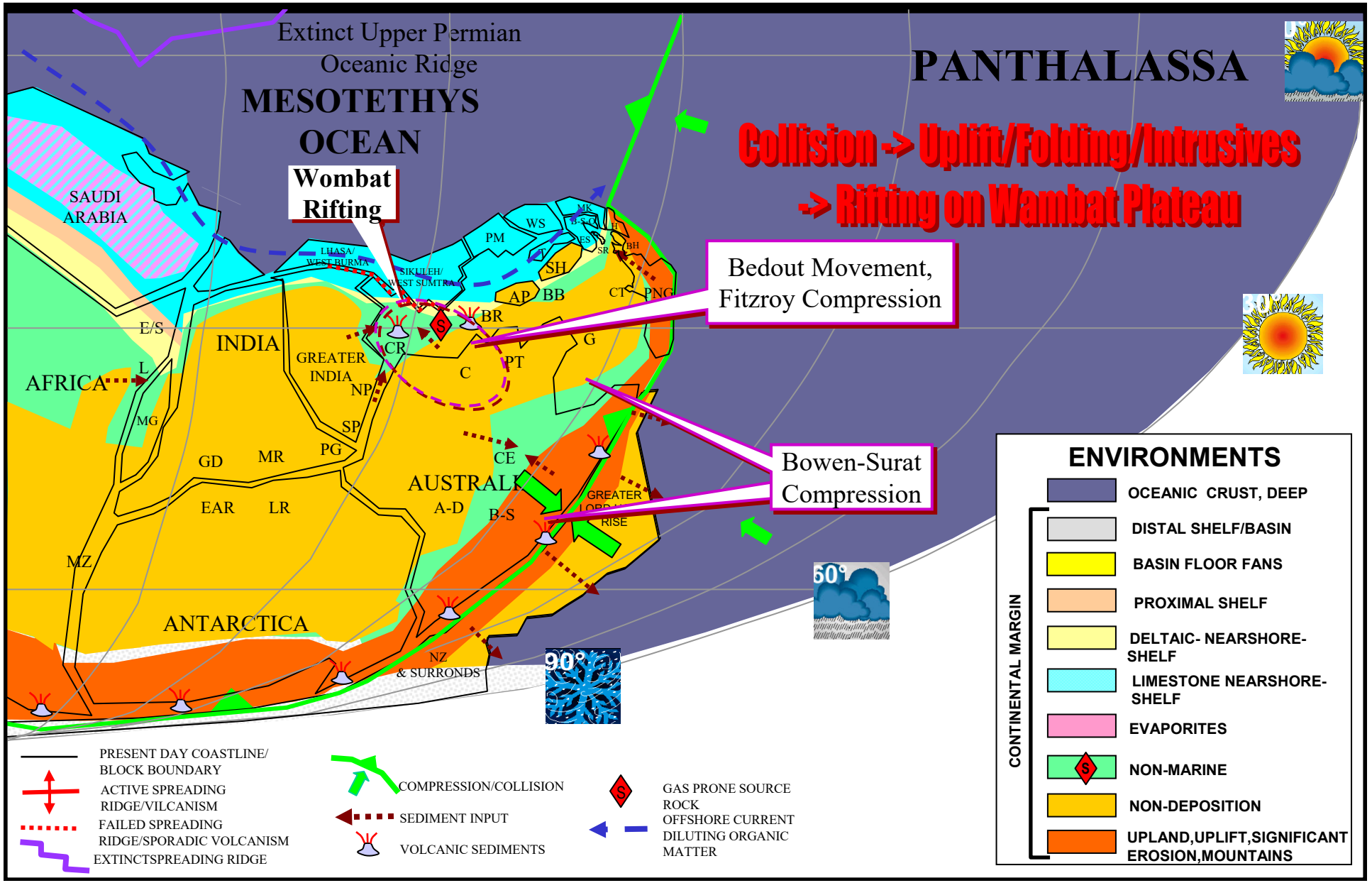


229My Carnian Plate Reconstruction

DJGeoscience

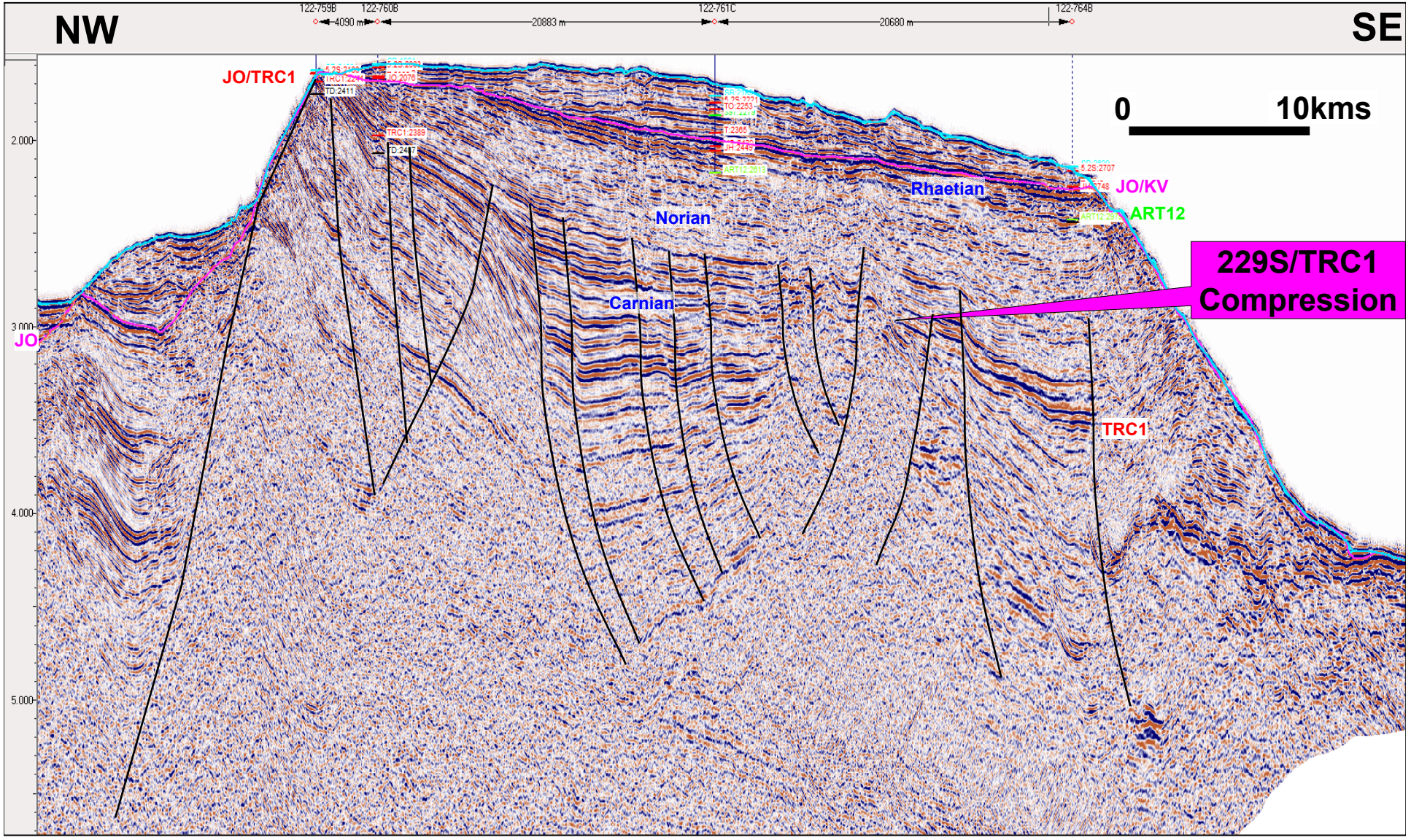
Fitzroy Compression/Bowen-Surat Compression (229S_TRC1 unconformity)

Uppermost S.speciosus Zone



Deep Water – Carnarvon Basin ODP Wells & Seismic

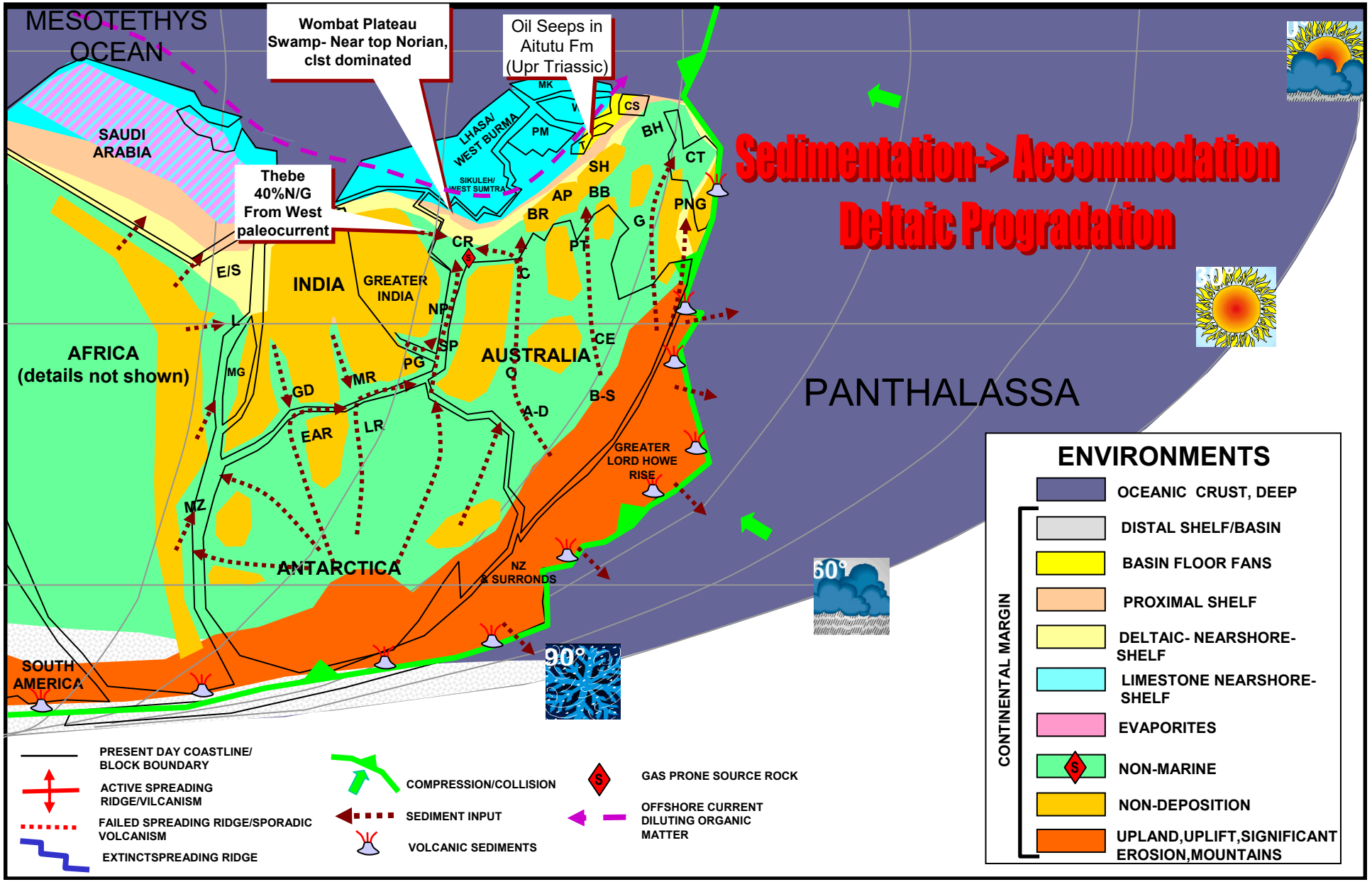
DJGeoscience



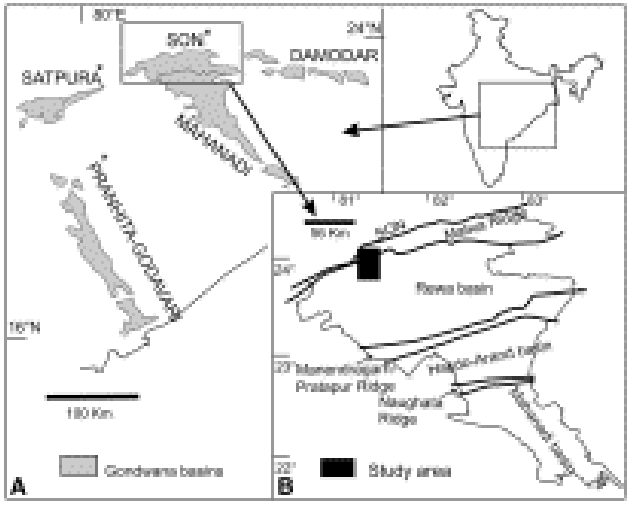
229-210Ma Norian Plate Reconstruction

DJGeoscience

Pre-rift phase (TRC1 - TRR) *M.crenulatus* Zone



Age		Basins	Pranhita-Godavari	Satpura	Rewa	Damodar
Jurassic 199.6±1.5				Bagra	Parsora	
		Middle 175.6±2.0	Kota*			
		Lower				
Triassic	Upper 228±2.0	Rhaetian 203.6±2.0	Dharmaram			
		Norian 216.5±2.0	Maleri*	Upper		
		Carnian		Lower	Tiki	
	Middle 245±1.5	Ladinian 237±2.0	Bhimaram		Karki	
		Anisian	Yerrapalli*			
				Denwa*		
	Lower 251±0.4	Olenekian	Kamthi	Pachmarhi	Pali	Panchet*
		Induan				
Permian	Upper		Kundaram*	Bijori	← Raniganj →	
				Motur	← Barren Measures →	
	Lower		← Barakar →			
			← Talchir →			

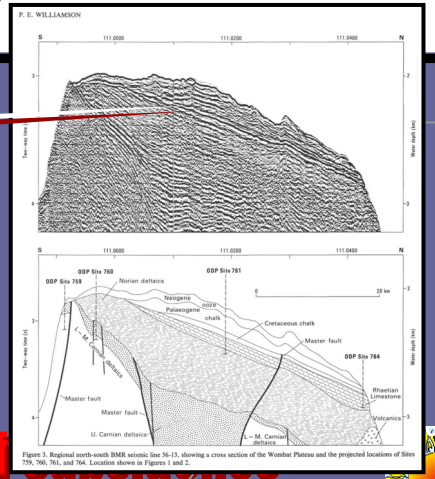


209-205My Rhaetian plate reconstruction

DJGeoscience

Onset of Mangkalihat break-up–Synrift phase (TRR-JH)

A.reducta Zone



MESOTETHYS OCEAN

PANTHALASSA

Oman Reefs

Wombat Platform Lmst

SAUDI ARABIA

LHASA/ WEST BURMA

SIKULEH/ WEST SUMBA

GREATER INDIA

INDIA

AFRICA (details not shown)

AUSTRALIA

GREATER LORD HOWE RISE

NZ & SURRONDS

ANTARCTICA

SOUTH AMERICA

MK

WS

CS

BH

PM

AP

SH

CT

BR

BP

PNG

G

CR

PT

C

NP

SP

CE

Q

PG

MG

GD

MR

B-S

A-D

EAR

CR

MZ

E/S

Onset of subduction

60°

90°

PRESENT DAY COASTLINE/ BLOCK BOUNDARY

ACTIVE SPREADING RIDGE/VILCANISM

FAILED SPREADING RIDGE/SPORADIC VOLCANISM

EXTINCTSPREADING RIDGE

COMPRESSION/COLLISION

SEDIMENT INPUT

VOLCANIC SEDIMENTS

REEFS

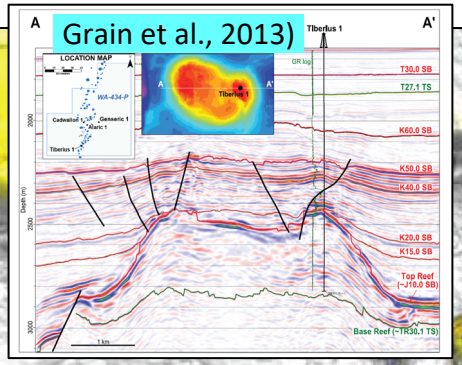
GAS PRONE SOURCE ROCK

OFFSHORE CURRENT DILUTING ORGANIC MATTER

ENVIRONMENTS

CONTINENTAL MARGIN

- OCEANIC CRUST, DEEP
- DISTAL SHELF/BASIN
- PROXIMAL SHELF
- DELTAIC- NEARSHORE-SHELF
- LIMESTONE NEARSHORE-SHELF
- EVAPORITES
- NON-MARINE
- NON-DEPOSITION
- UPLAND,UPLIFT,SIGNIFICANT EROSION,MOUNTAINS

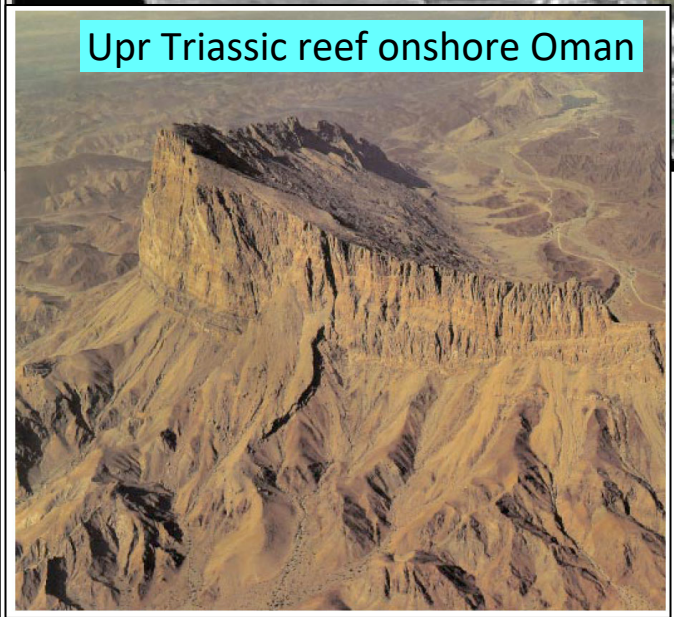


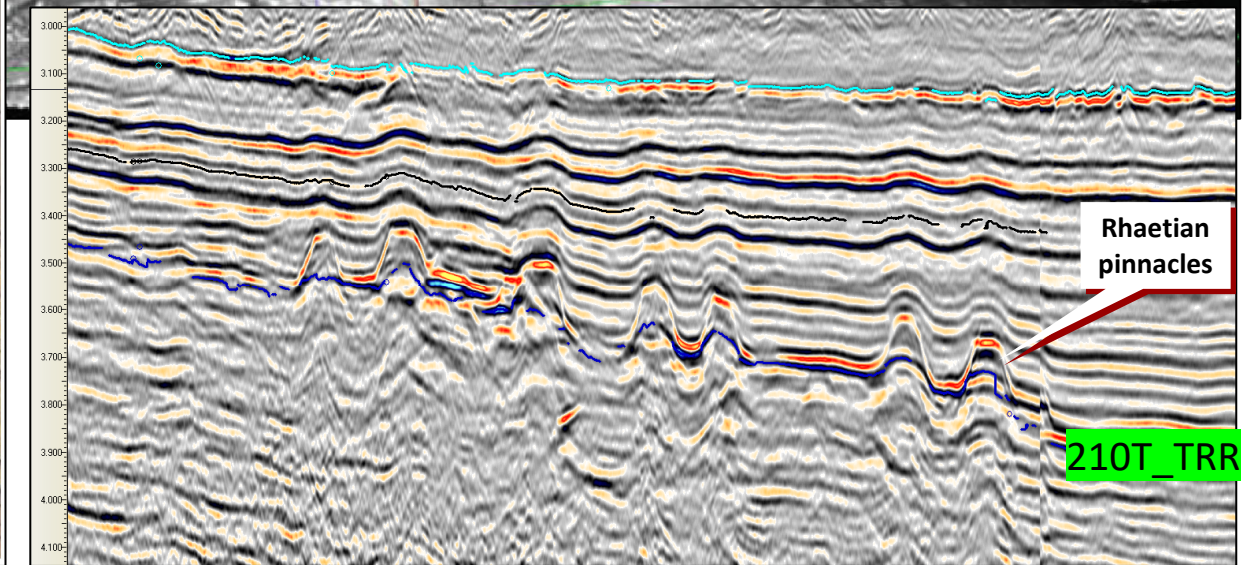
3D representation of Triassic structure

Alaric

Tiberius

Upr Triassic reef onshore Oman





DJGeoscience

Jurassic

(205S-145M)

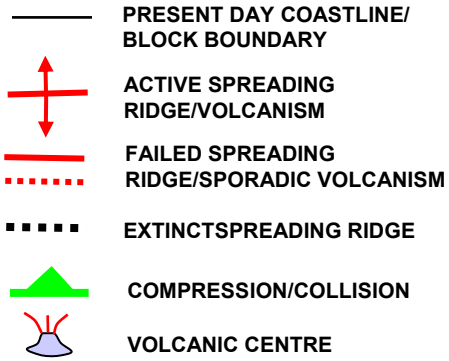
DJGeoscience

LEGEND

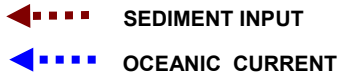
ABBREVIATIONS

A - ARKARINGA BASIN
SA - SOUTH AMERICA
AP - ASHMORE PLATFORM
B - BOWEN BASIN
BB - BONAPARTE BASIN
BR - BROWSE BASIN
B-D - BARROW-DAMPIER FAILED RIFT
BH - BIRD'S HEAD (IRIAN JAYA)
C - CANNING BASIN
CE - COOPER-EROMANGA BASIN
CS - CENTRAL SULAWESI
CR - CARNARVON BASIN
CT - CENTRAL RANGES (IRIAN JAYA)
D - DENMAN BASIN
EAR - EAST ANTARCTIC RIFT
G - GOULBURN GRABEN
GD - GODAVARI BASIN (INDIA)
GLHR – GREATER LORD HOWE RISE
GR - GREECE
H-V - HEYWOOD-VULCAN FAILED RIFT
L - LAMU BASIN (KENYA)
LC - LESSER CAUCASUS
LR - LAMBERT RIFT (ANTARCTICA)
M - MALITA FAILED RIFT
MG - MADAGASCAR
MR - MAHANADI RIFT
MZ - MOZAMBIQUE
NP - NORTHERN PERTH BASIN
P - PERTH BASIN
PM - PATERNOSTER-MERATUS
PG - PANAGARH AREA (INDIA)
PNG - PAPUA NEW GUINEA
PT - PETREL SUB-BASIN
R - ROEBUCK BASIN
S - SYDNEY BASIN
SH - SAHUL PLATFORM
SK - SIKULEH (WESTERN SUMMATRA)
SP - SOUTHERN PERTH BASIN
T - TIMOR
WB - WEST BURMA
WS - WEST SULAWESI

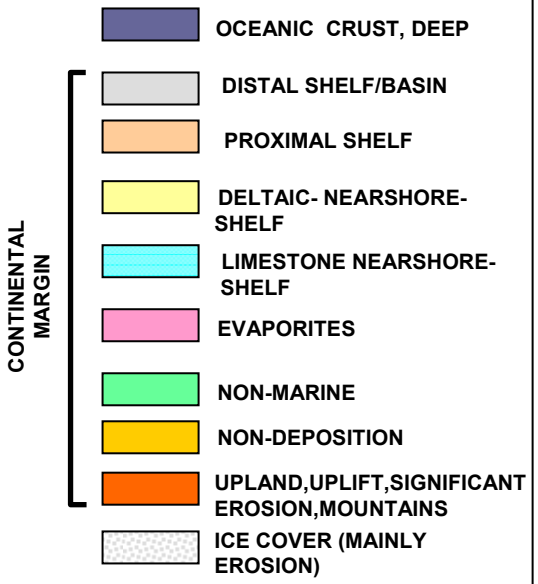
PLATE/BLOCK BOUNDARIES



OTHER



ENVIRONMENTS



NOTE:
PALAEOGEOGRAPHIC MAPS ILLUSTRATE MAXIMUM LITHOFACIES DISTRIBUTION DEPOSITED DURING INDICATED TIME SLICE (PRESERVED PRESENT DAY DISTRIBUTION NOT SHOWN)

NOTE:
Not All figures are referenced

Africa & GNWS (Western Australia)

DJGeoscience

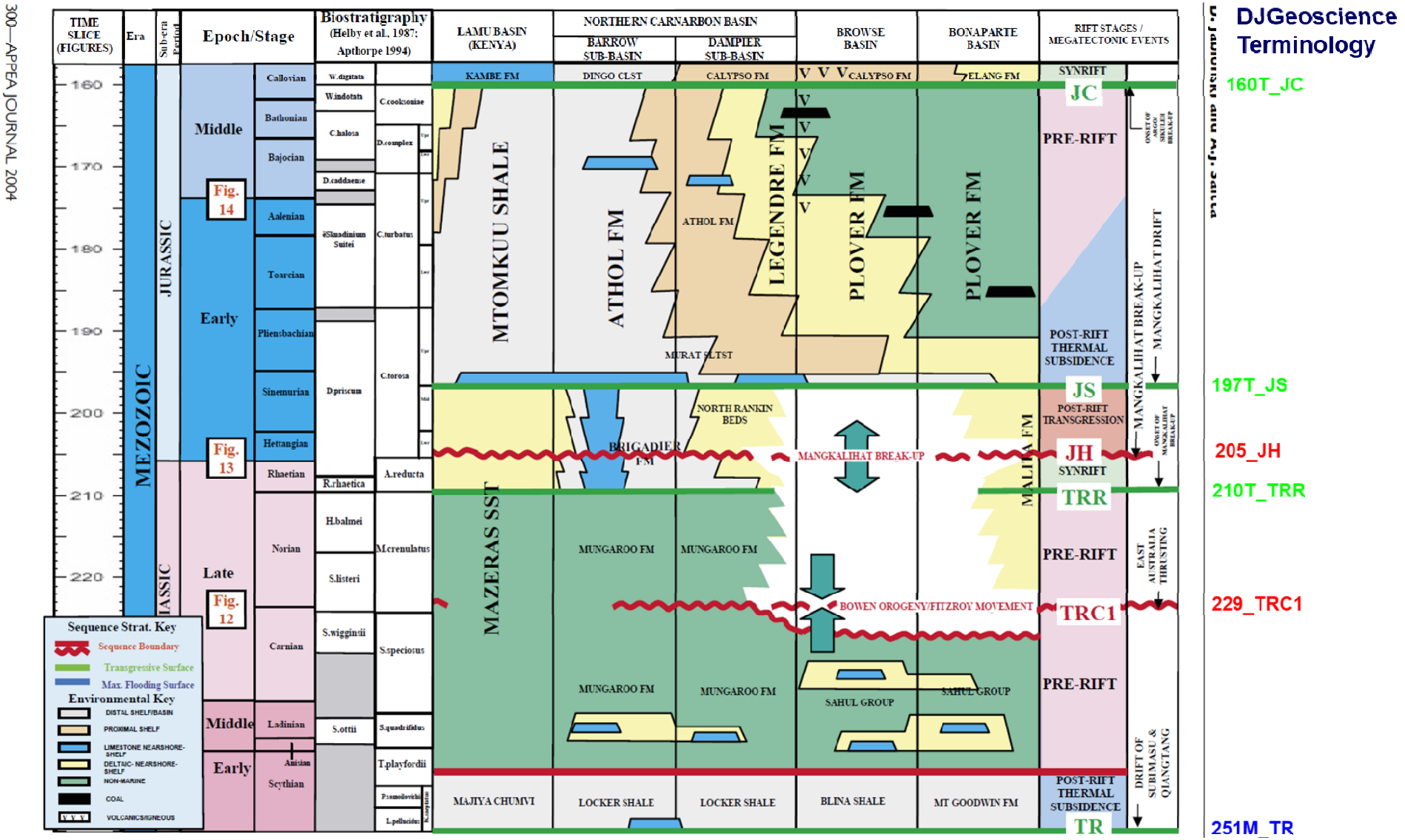


Figure 4b. Generalised Triassic to Middle Jurassic stratigraphy of middle palaeolatitude Gondwana Basins.

Permian to Lower Cretaceous plate tectonics and its impact on the tectono-stratigraphic development of the Western Australian margin

Western Australia

DJGeoscience

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/292814306

Permian to Lower Cretaceous plate tectonics and its impact on the tectono-stratigraphic development of the Western Australian margin

Article in The APPEA Journal · January 2004

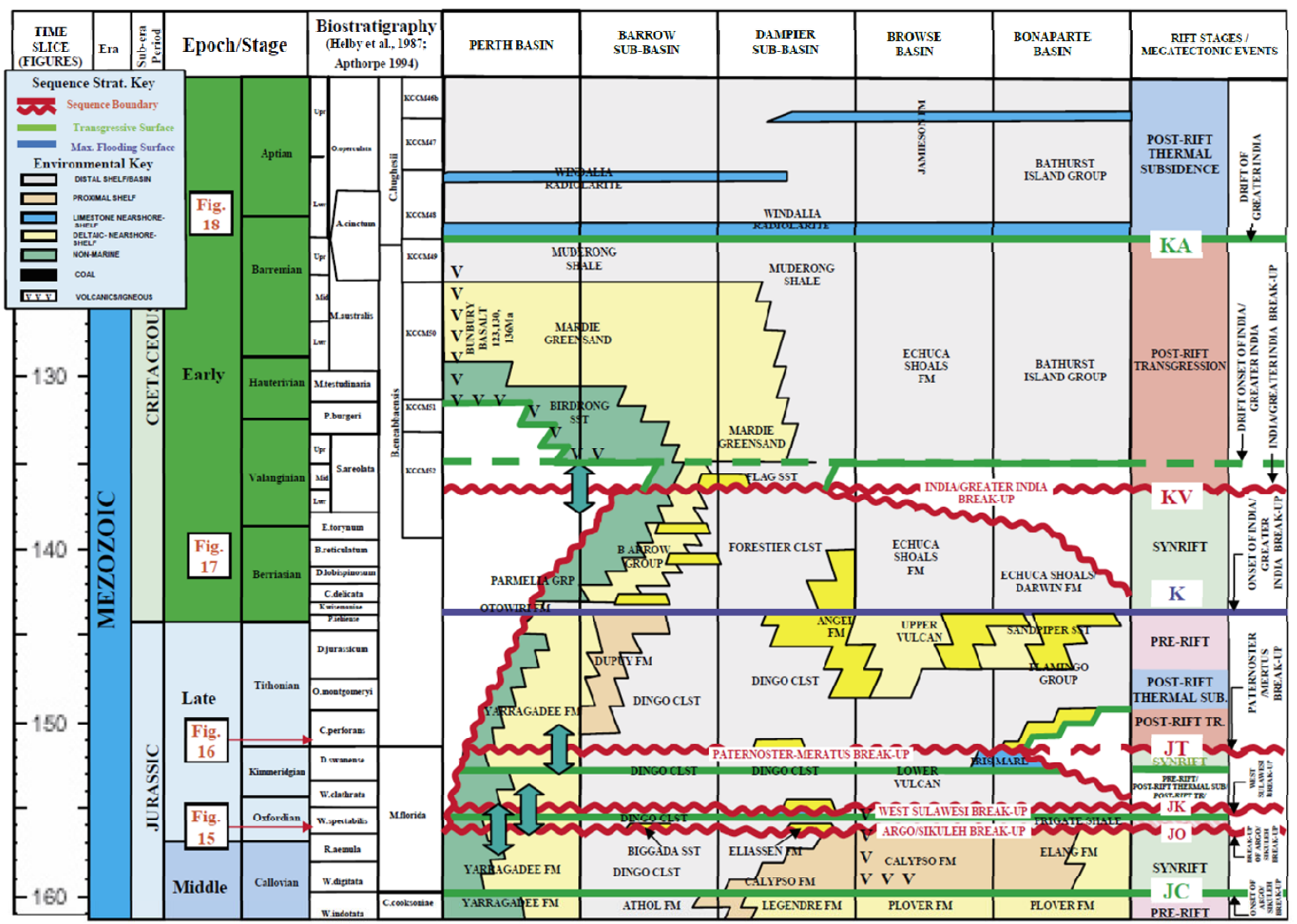


Figure 5. Generalised Callovian to Albian stratigraphy of Perth Basin and Westralian Superbasin.

D. Jablonski and A.J. Saitta

DJGeoscience Terminology

123T_KA

138T_SAT7

139S_KV

145M_K

151S_JT

154S_JK

157S_JO

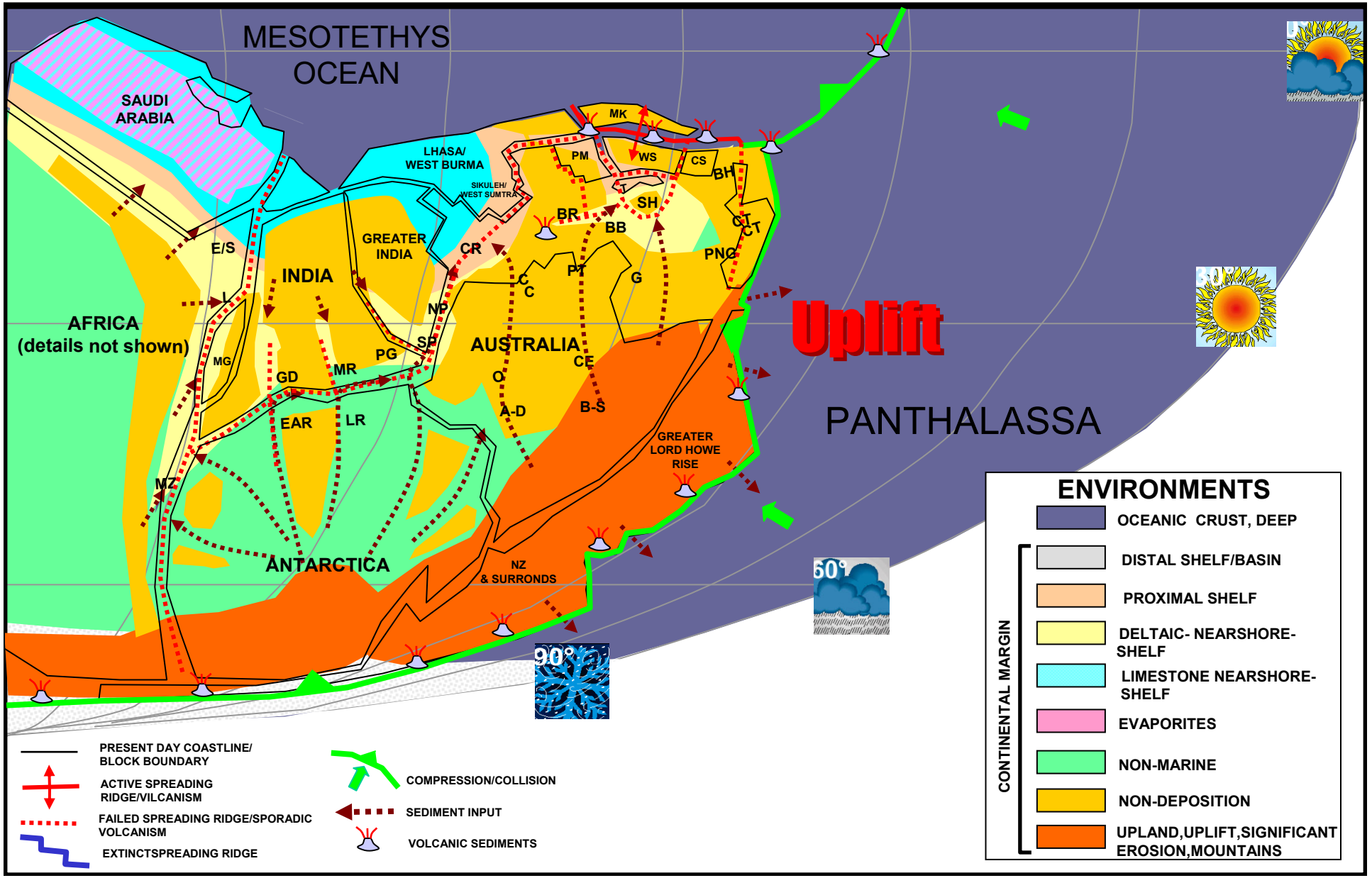
160T_JC

205My Base Jurassic Plate Reconstruction

DJGeoscience

Mangkalihat break-up– Break-up phase (205S_JH)

Lower *C.torosa* Zone

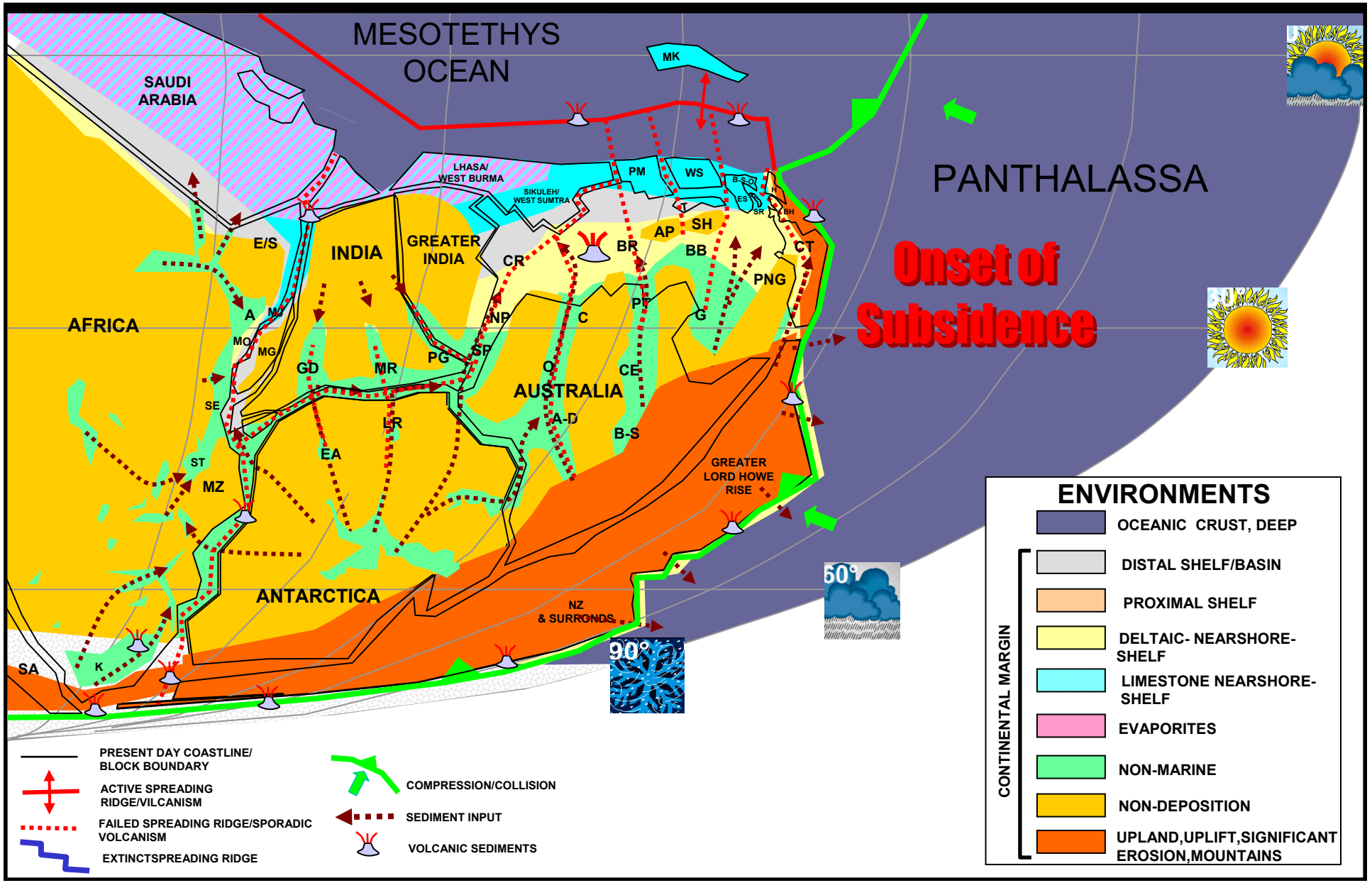


205-197My Hettangian Plate Reconstruction

Drift of Mangkalihat – Post-rift transgression phase (205S_JH to 197TJS)

Middle to upper *C.torosa* Zone

DJGeoscience

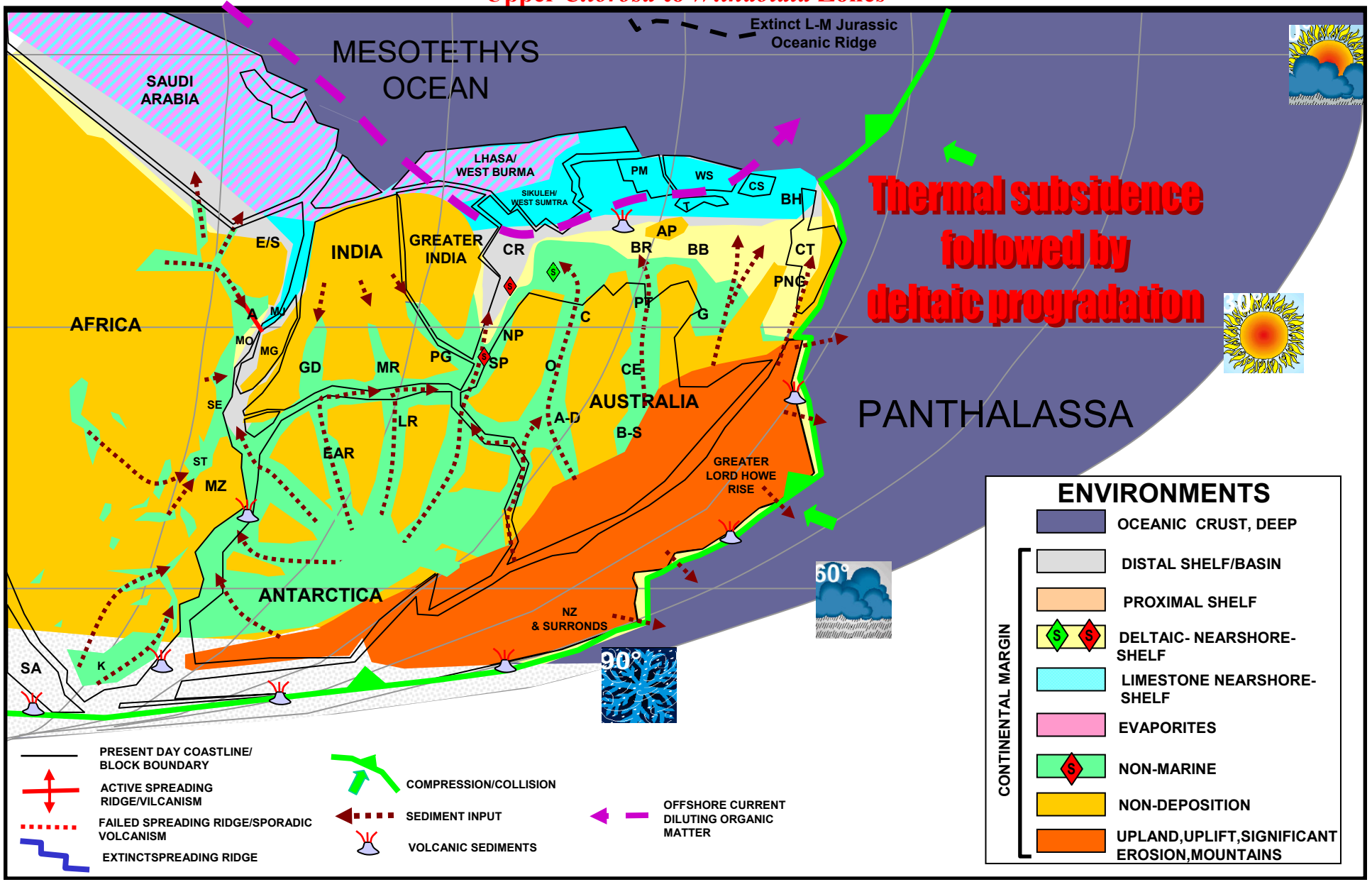


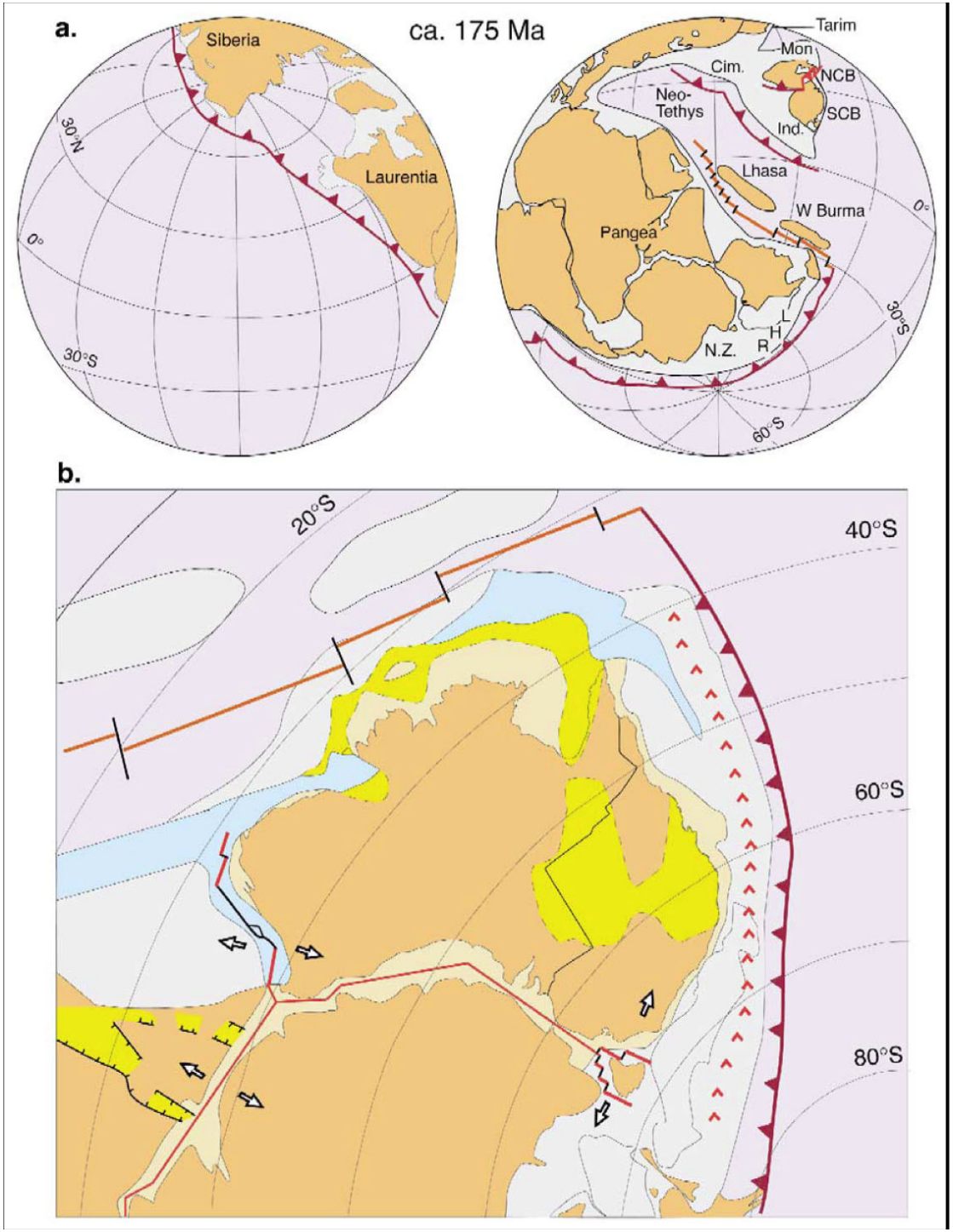
197-160My Lower to Middle Jurassic Plate Reconstruction

DJGeoscience

Thermal subsidence phase followed by pre-rift phase (197T_JS to 160T_JC)

Upper *C.torosa* to *W.indotata* Zones

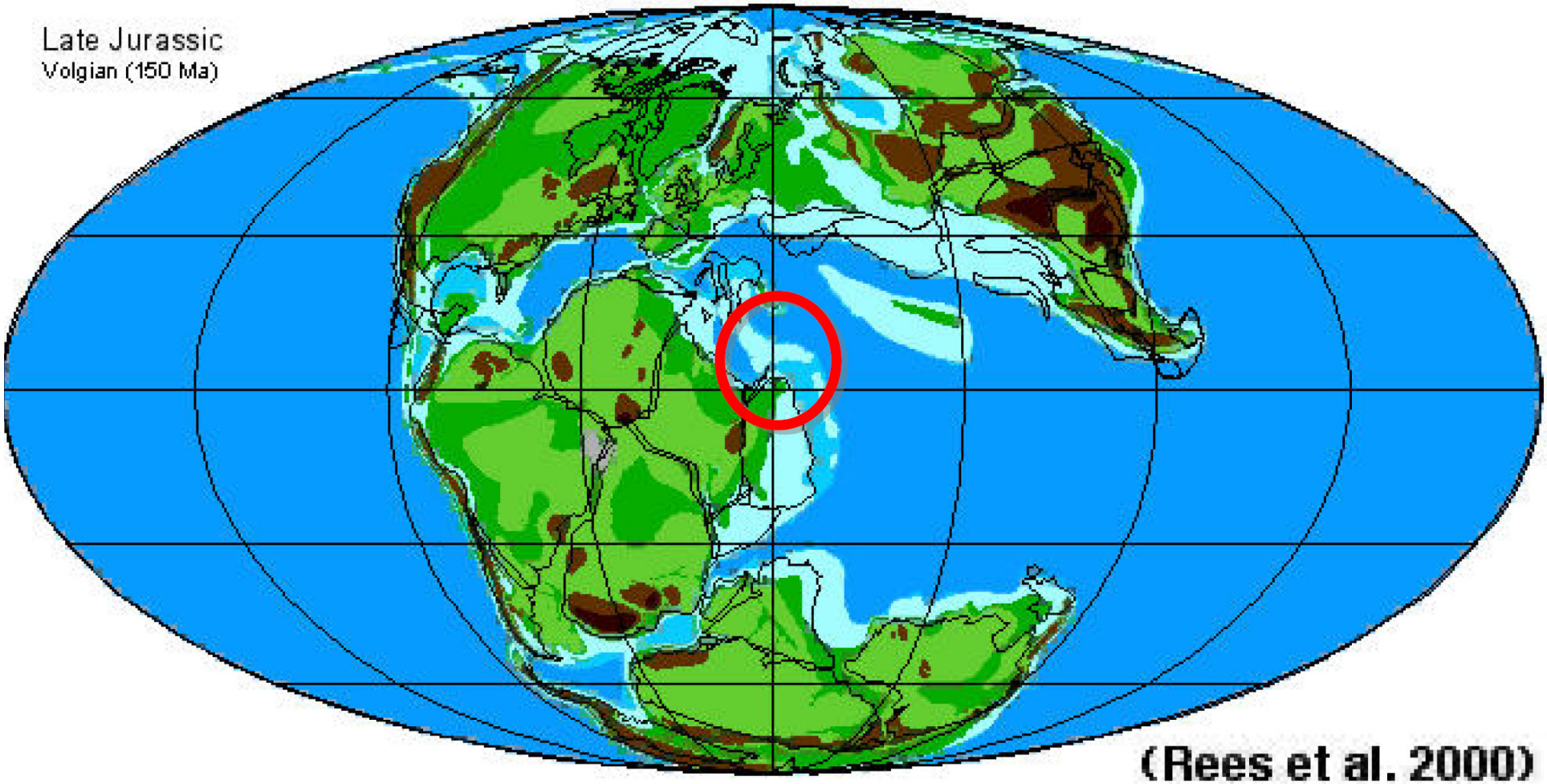




DJGeoscience

Middle Jurassic Plate Reconstruction

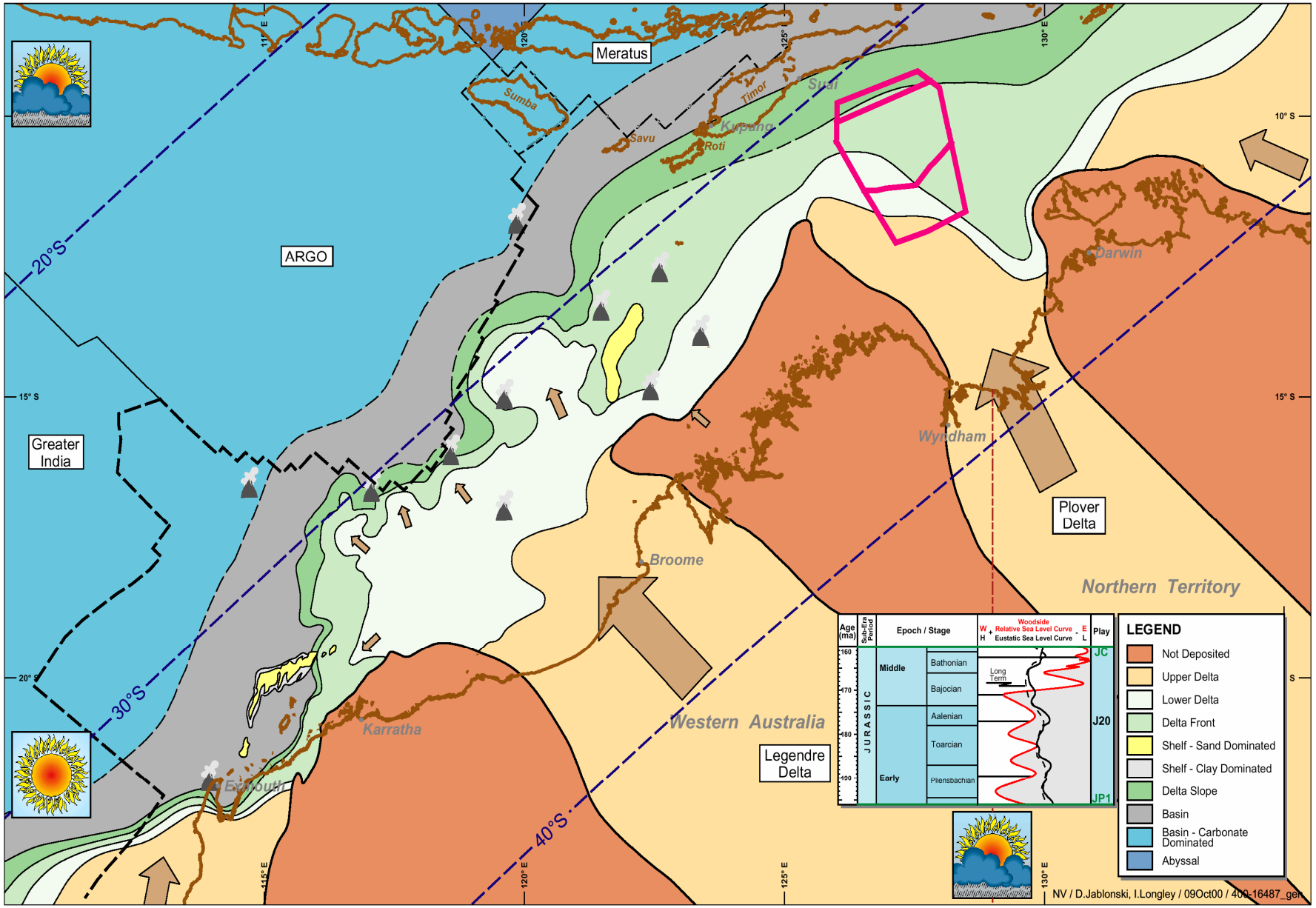
Example of Barred Basin Mesozoic - Arabian Gulf



wide shadow from adjacent continents

Lower to Middle Jurassic Palaeogeography

DJGeoscience

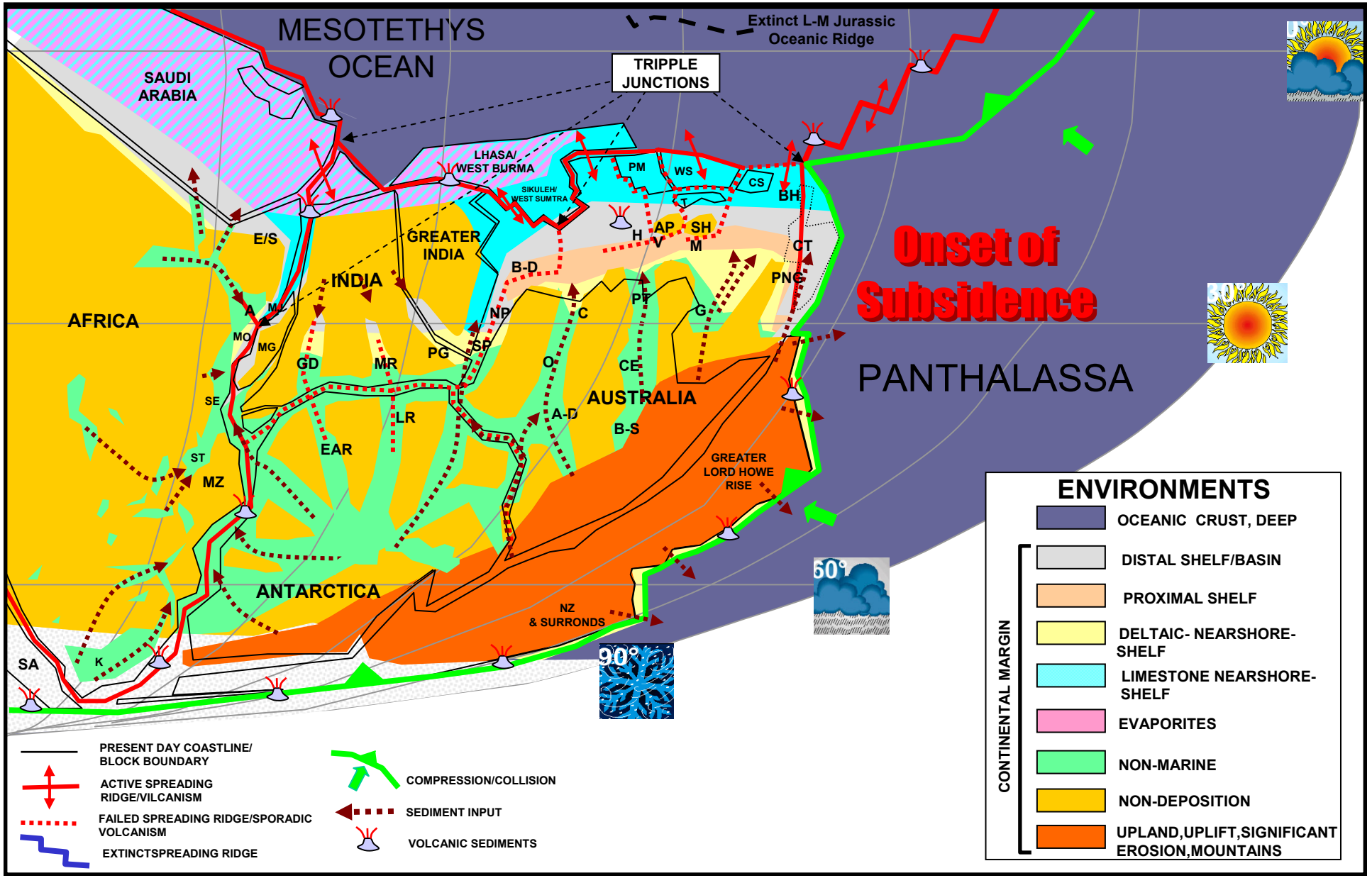


160-157My Callovian Plate Reconstruction

Onset of Argo-West Burma/Sikuleh break-up – Synrift phase (160T_JC to 157S_JO)

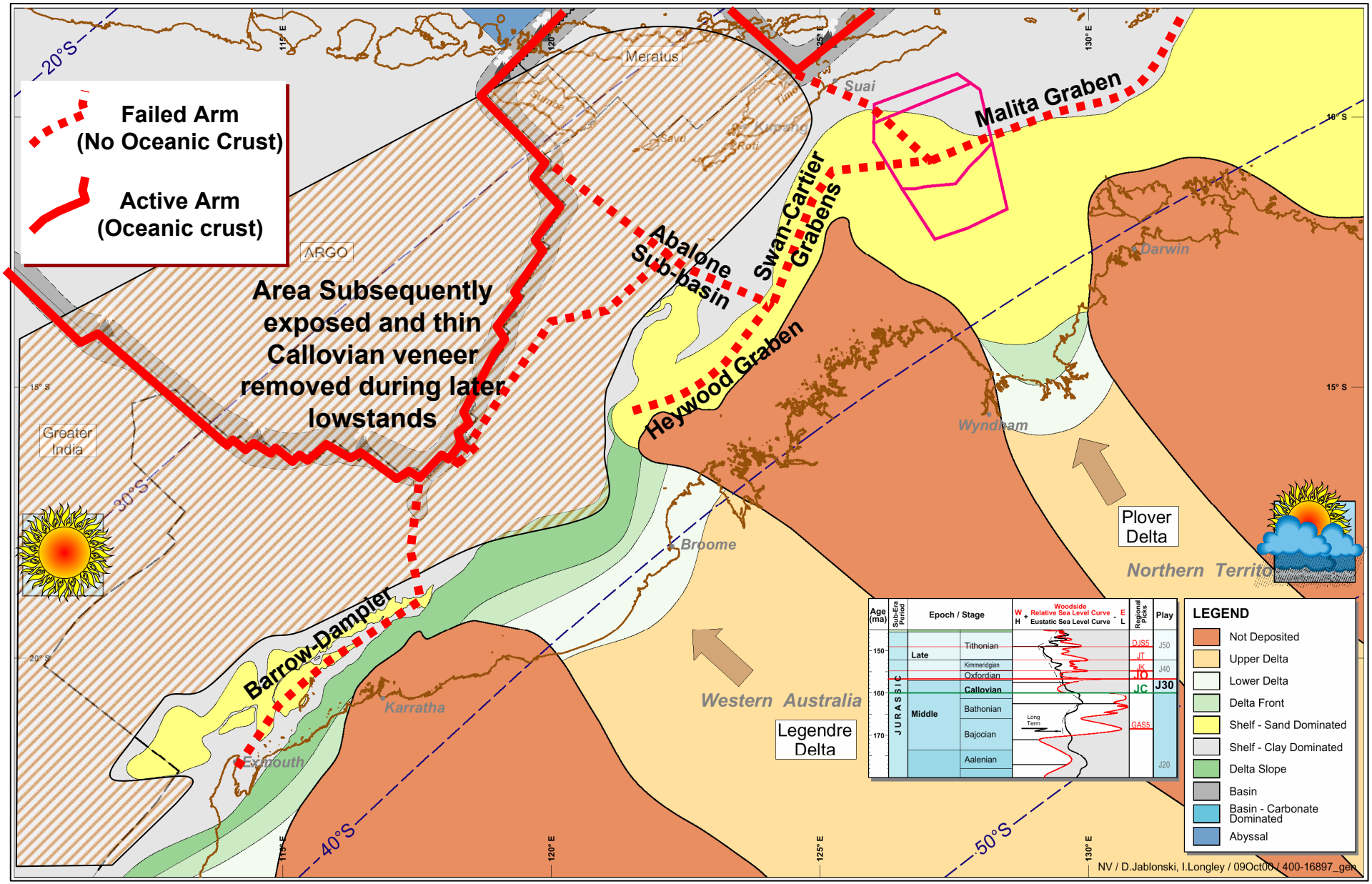
W.digitata to *R.aemula* Zones

JDGeoscience



160My Callovian Paleogeography

DJGeoscience



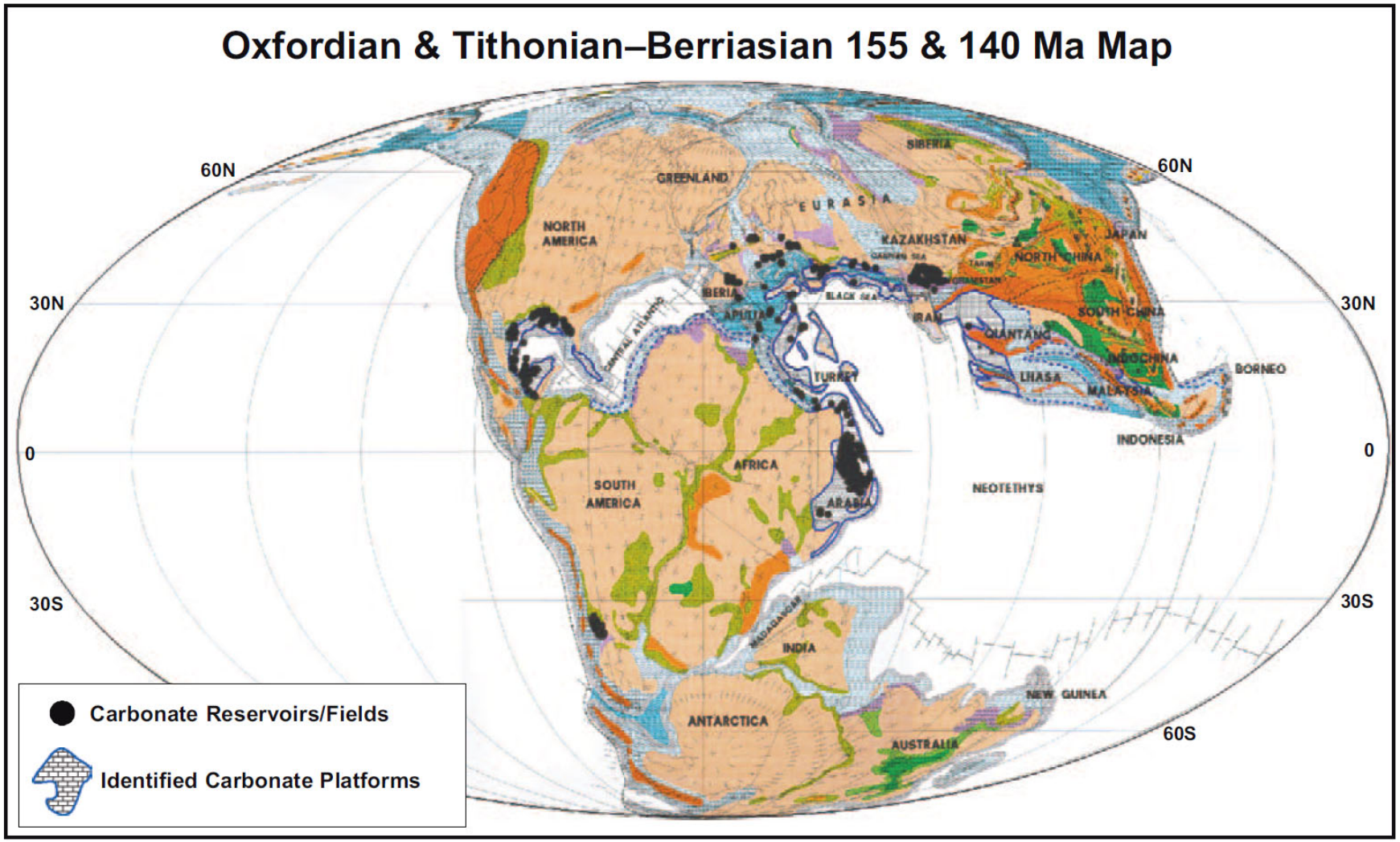
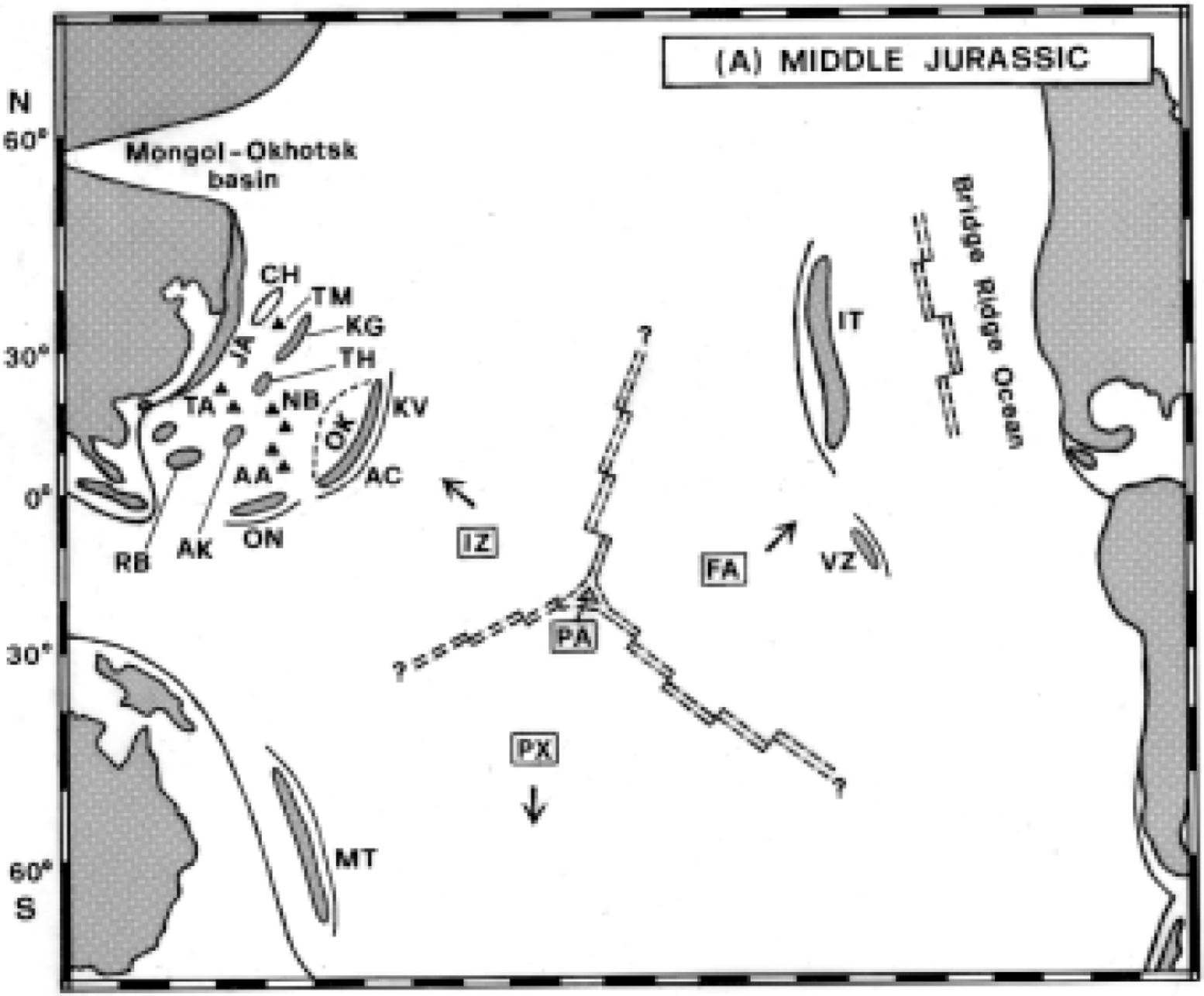


FIG. 6.—Example of a "*Carbonate Analogs Through Time (CATT)* Map". This is the combined map for the Late Jurassic to Early Cretaceous time interval (Oxfordian—155 Ma and Tithonian to Berriasian—140 Ma map). Note at this time there are four significant clusters of carbonate fields: (1) Arabian basin in the Middle East at the paleo-equator at the western edge of the Neotethys–Panthalassic "super-ocean"; (2) coastal basins around the Gulf of Mexico, US and Mexico between 15° N and 25° N latitude in the newly formed Gulf and adjacent to the Central Atlantic; (3) Kopeh Dagh basin of Turkmenistan at 32° to 35° N latitude sheltered behind the Iranian continental block along the northern edge of the Neotethys Ocean; and (4) Neuquén basin, southern Argentina, at 33° to 35° S latitude along the southeastern edge of the Panthalassic Ocean. Other solitary and small groups of fields are scattered among the complex tectonic settings of the northwest Neotethys Ocean. Other carbonate platforms are outlined within the Neotethys ocean, and note that some of the platforms lack discovered carbonate fields. All 29 *CATT* maps are presented in Appendix 2 and are on the enclosed CD.

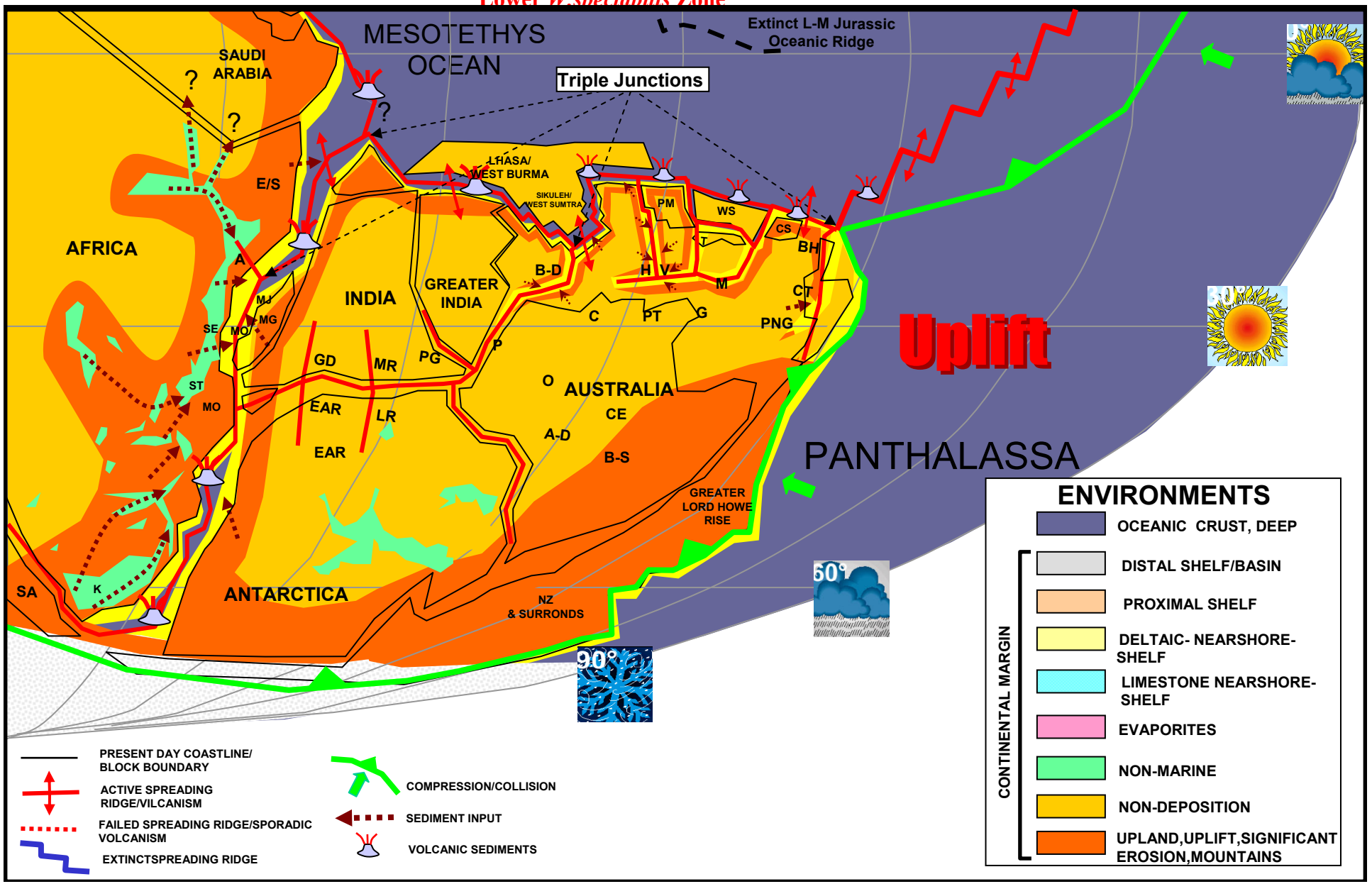

(A) MIDDLE JURASSIC
N
60°
30°
0°
30°
60°
S
Mongol - Okhotsk basin
CH
TM
KG
TH
JA
TA
NB
KV
Ok
AA
AC
RB
AK
ON
IZ
PA
PX
FA
VZ
IT
Ridge
Ridge
Ocean
MT
?
?
?

157My Lower Oxfordian Plate Reconstruction

DJGeoscience

Break-up of Argo-West Burma/Sikuleh (157S_JO)

Lower *W.spectabilis* Zone



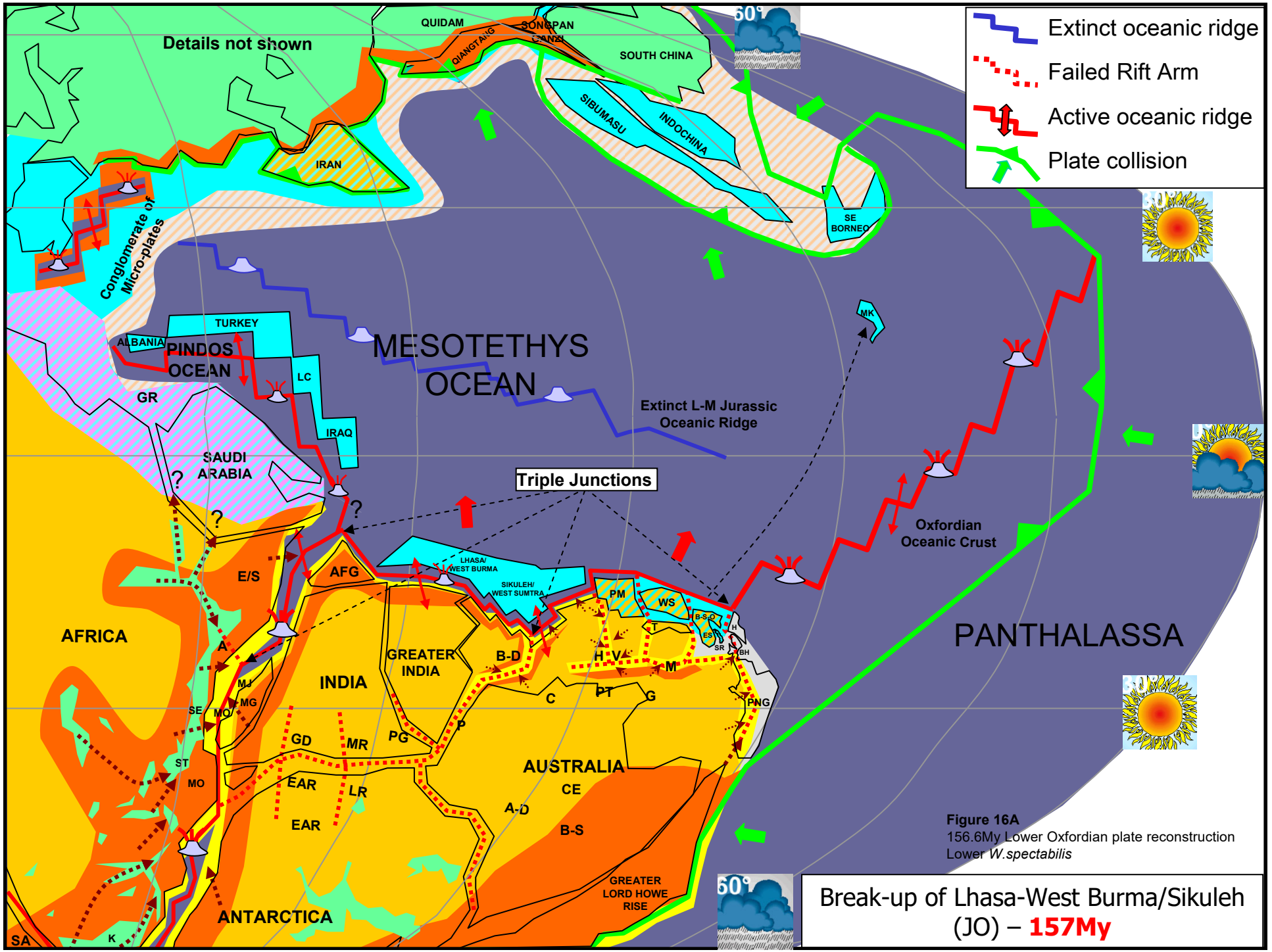
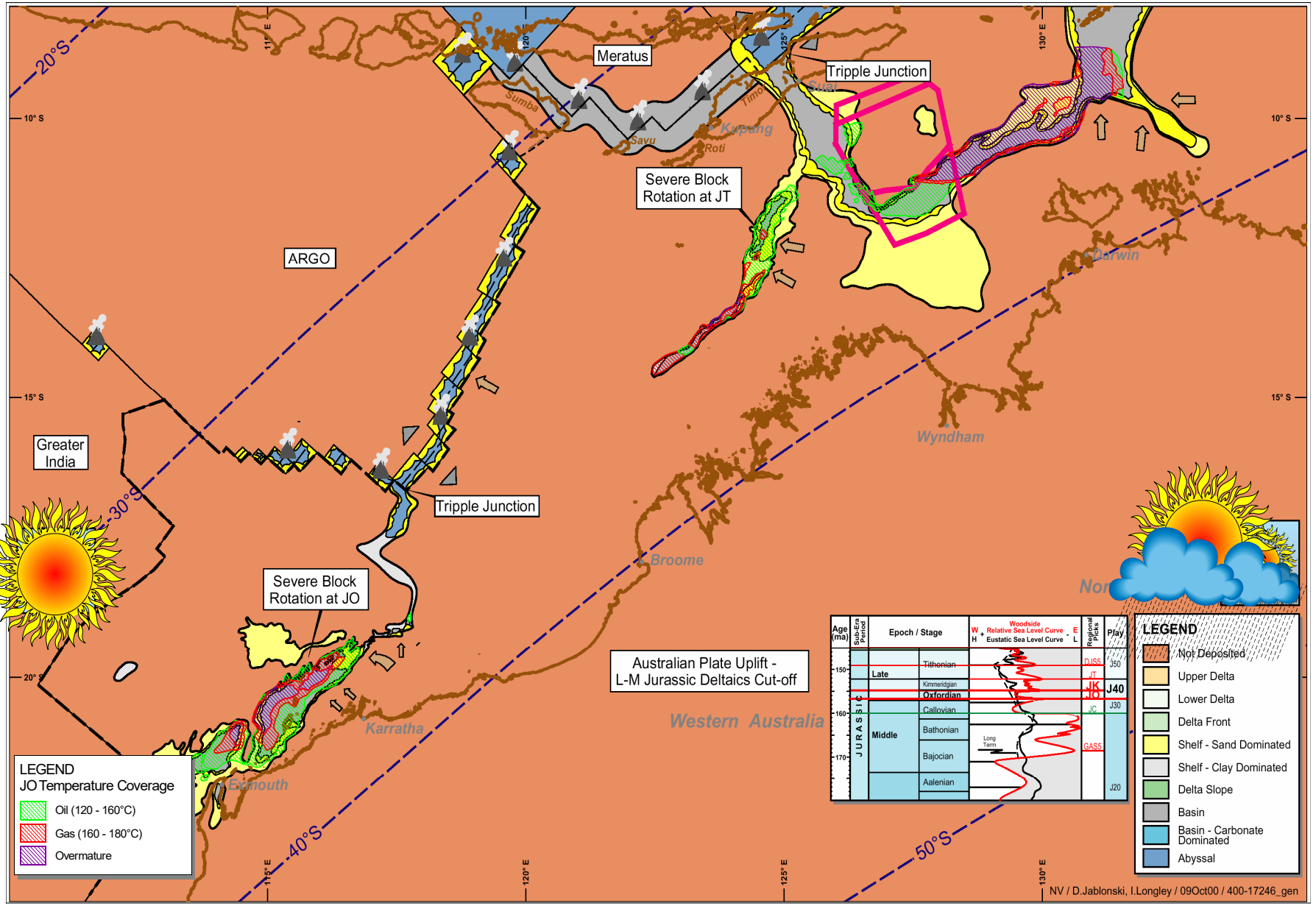


Figure 16A
156.6My Lower Oxfordian plate reconstruction
Lower *W.spectabilis*

Break-up of Lhasa-West Burma/Sikuleh (JO) – **157My**

Oxfordian Palaeogeography - JO (157my)

DJGeoscience



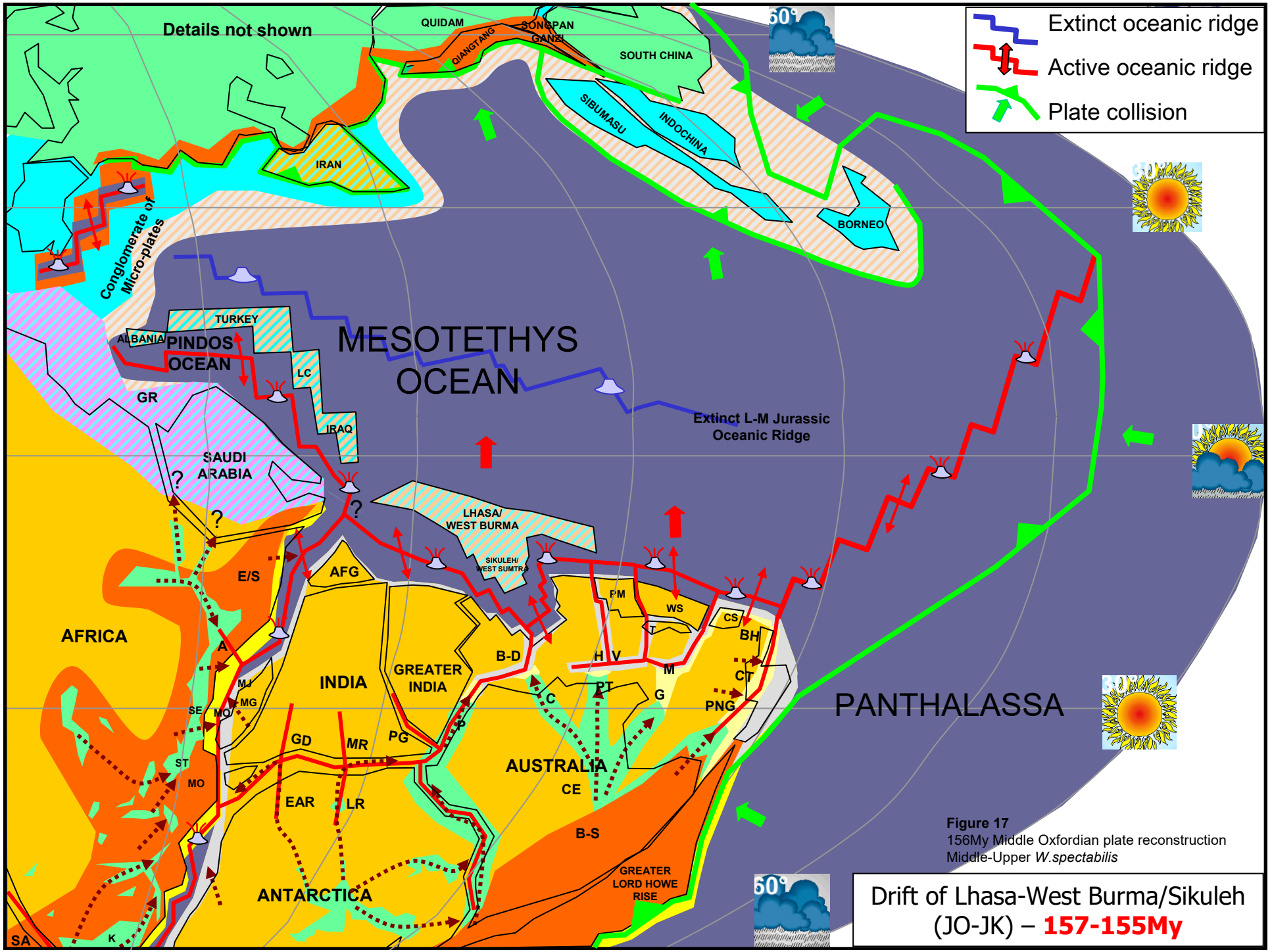
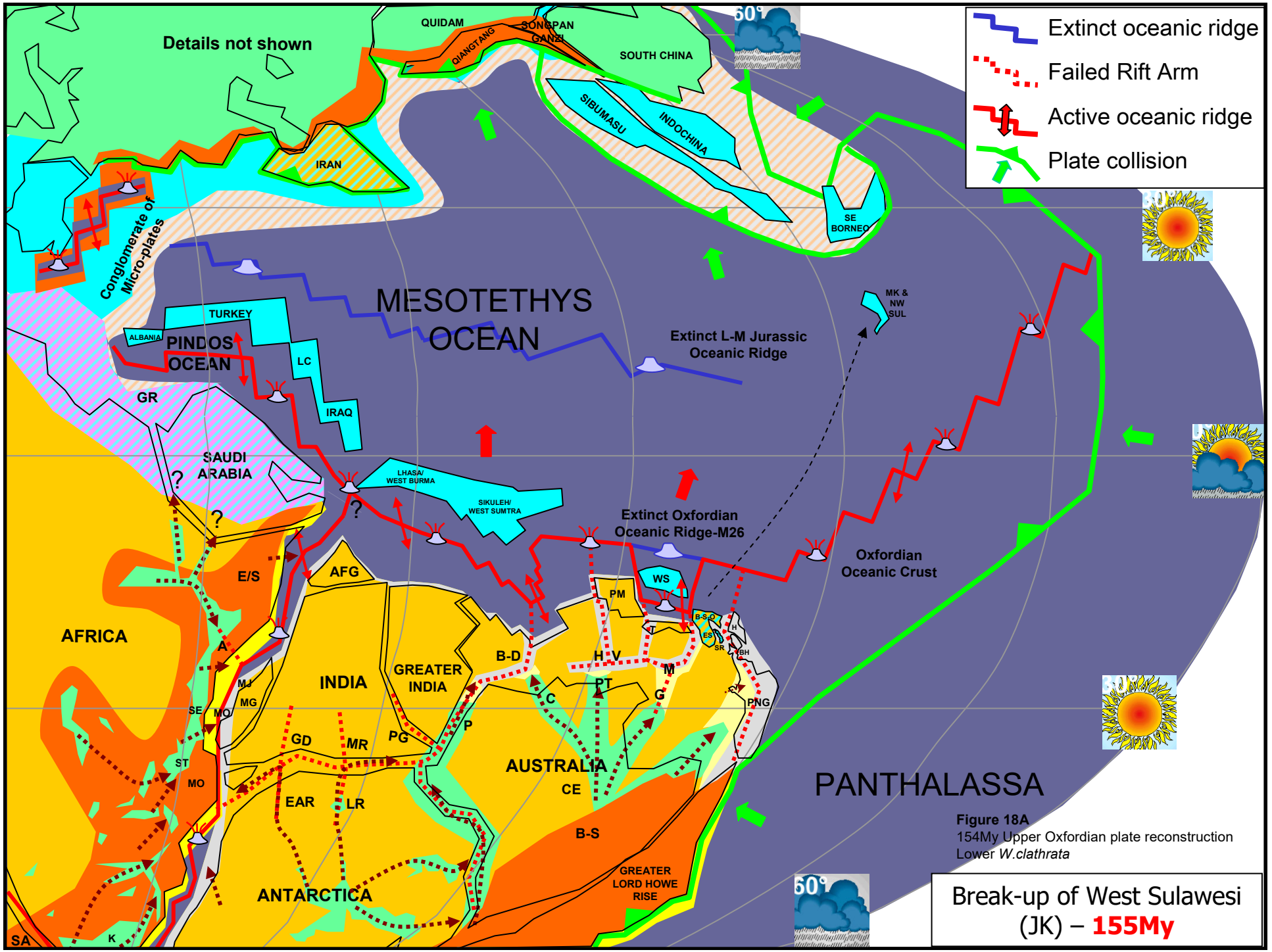


Figure 17
156My Middle Oxfordian plate reconstruction
Middle-Upper *W.spectabilis*

Drift of Lhasa-West Burma/Sikuleh (JO-JK) – **157-155My**


Extinct oceanic ridge
Failed Rift Arm
Active oceanic ridge
Plate collision
Details not shown
QUIDAM
QIANGTANG
SONGPAN GANZI
SOUTH CHINA
SIBUMASU
INDOCHINA
IRAN
SE BORNEO
Conglomerate of Micro-plates
MESOTETHYS OCEAN
TURKEY
ALBANIA
PINDOS OCEAN
LC
IRAQ
GR
SAUDI ARABIA
LHASA/ WEST BURMA
SIKULEH/ WEST SUMTRA
Extinct L-M Jurassic Oceanic Ridge
MK & NW SUL
Extinct Oxfordian Oceanic Ridge-M26
Oxfordian Oceanic Crust
AFRICA
E/S
AFG
WS
PM
INDIA
GREATER INDIA
B-D
H
V
M
PT
G
C
P
PNG
MJ
MG
SE
MO
GD
MR
PG
ST
EAR
LR
AUSTRALIA
CE
B-S
GREATER LORD HOWE RISE
ANTARCTICA
PANTHALASSA
SA
K
60°
Figure 18A
154My Upper Oxfordian plate reconstruction
Lower W.clathrata
Break-up of West Sulawesi (JK) – 155My

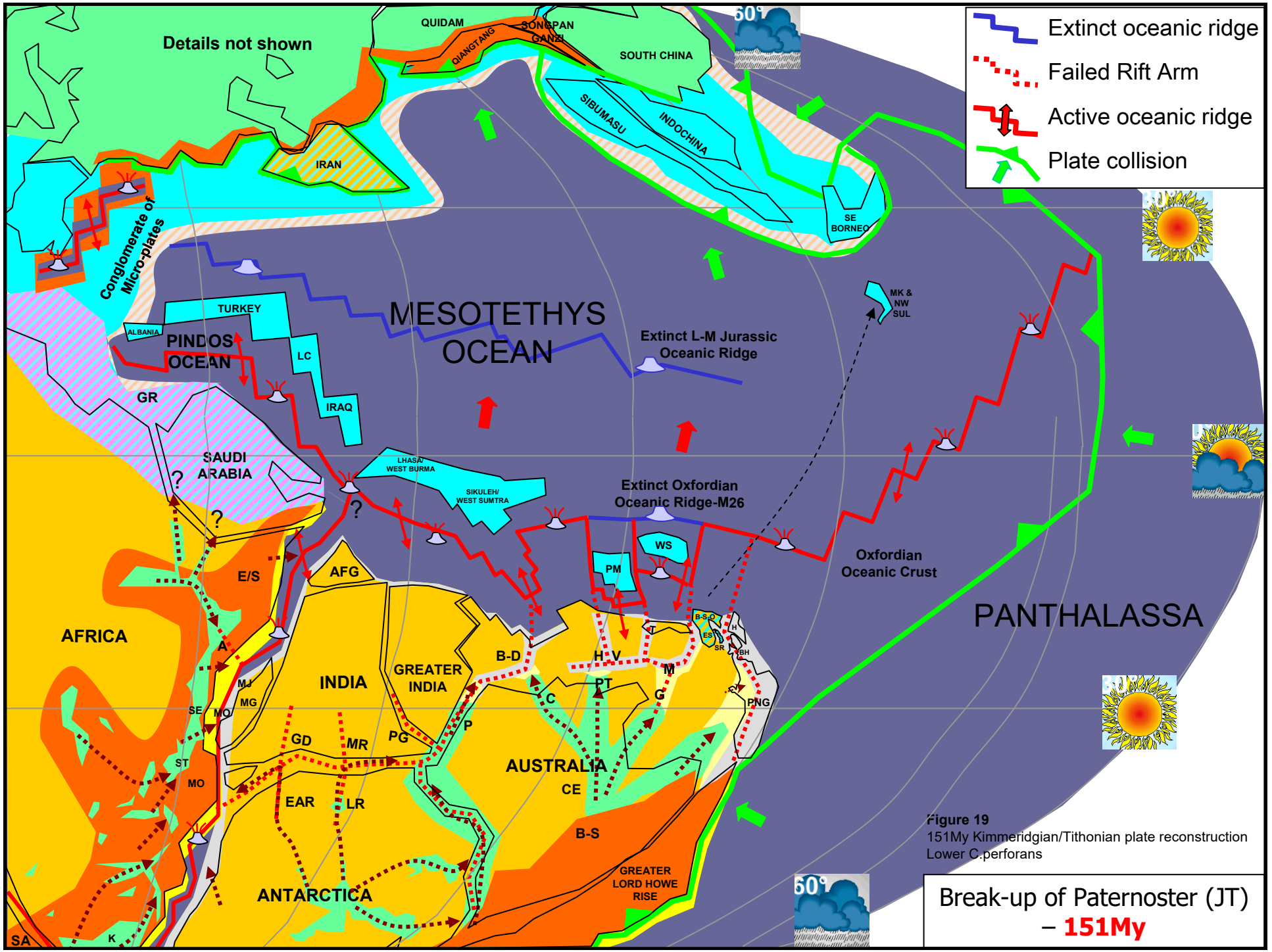
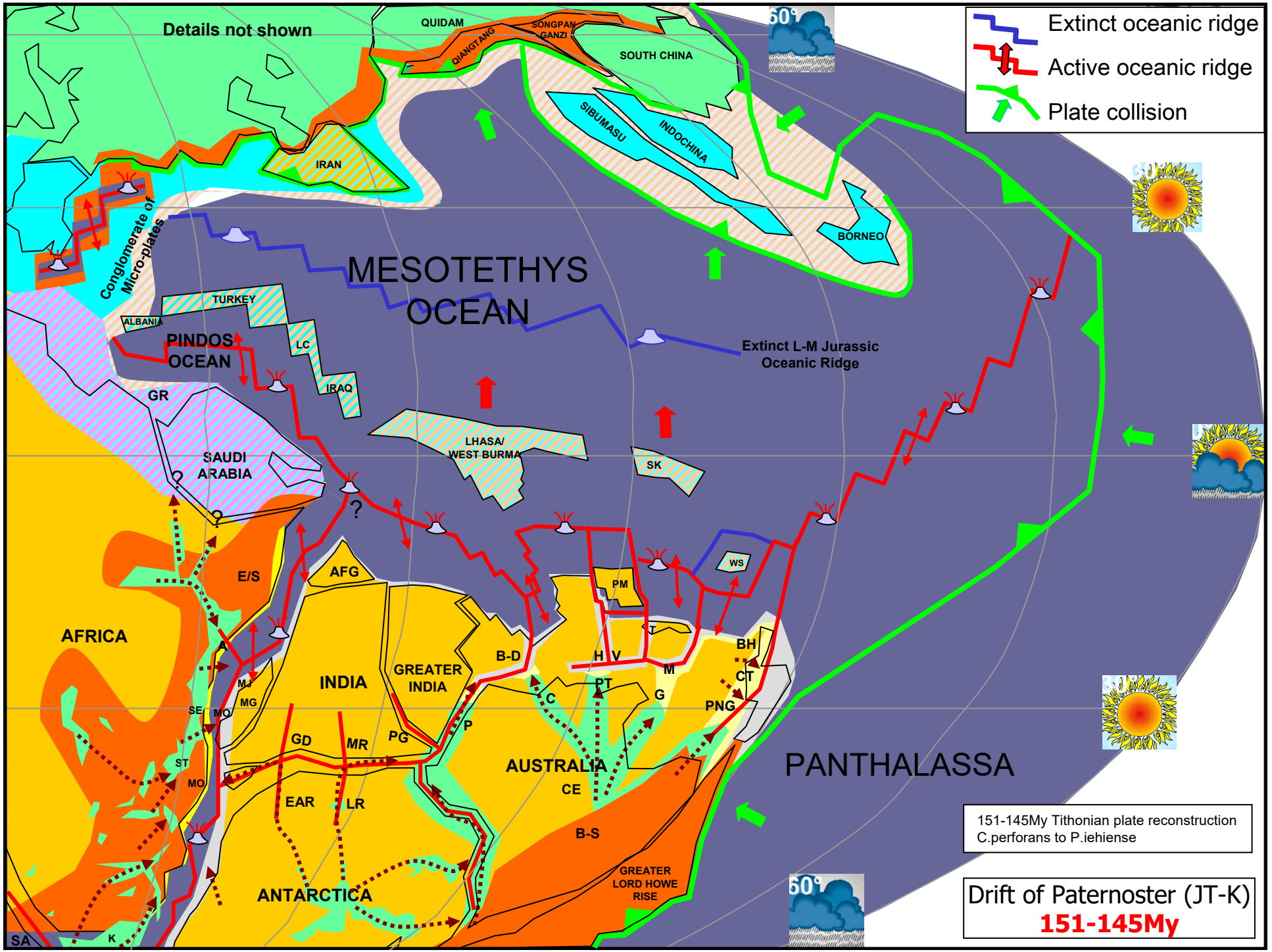


Figure 19
151My Kimmeridgian/Tithonian plate reconstruction
Lower C.perforans

Break-up of Paternoster (JT) – 151My


Details not shown
QUIDAM
QIANGTANG
SONGPAN GANZI
SOUTH CHINA
SIBUMASU
INDOCHINA
BORNEO
IRAN
Conglomerate of Micro-plates
MESOTETHYS OCEAN
TURKEY
ALBANIA
PINDOS OCEAN
LC
IRAQ
GR
SAUDI ARABIA
LHASA/ WEST BURMA
SK
Extinct L-M Jurassic Oceanic Ridge
AFRICA
E/S
AFG
INDIA
GREATER INDIA
B-D
PM
WS
H
V
T
M
BH
CT
PNG
G
PT
C
P
PG
MR
GD
MJ
MG
SE
MO
ST
EAR
LR
AUSTRALIA
CE
B-S
GREATER LORD HOWE RISE
PANTHALASSA
ANTARCTICA
SA
K
Extinct oceanic ridge
Active oceanic ridge
Plate collision
151-145My Tithonian plate reconstruction
C.perforans to P.iehiense
Drift of Paternoster (JT-K)
151-145My

DJGeoscience

Cretaceous

(145M to 65S)

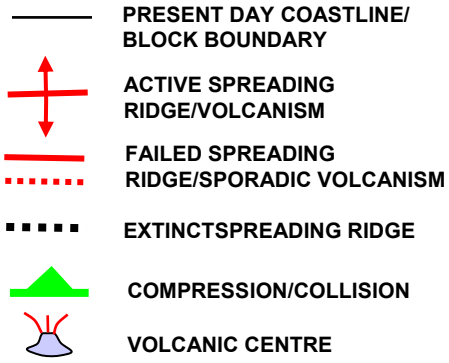
DJGeoscience

LEGEND

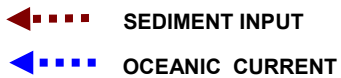
ABBREVIATIONS

A - ARKARINGA BASIN
SA - SOUTH AMERICA
AP - ASHMORE PLATFORM
B - BOWEN BASIN
BB - BONAPARTE BASIN
BR - BROWSE BASIN
B-D - BARROW-DAMPIER FAILED RIFT
BH - BIRD'S HEAD (IRIAN JAYA)
C - CANNING BASIN
CE - COOPER-EROMANGA BASIN
CS - CENTRAL SULAWESI
CR - CARNARVON BASIN
CT - CENTRAL RANGES (IRIAN JAYA)
D - DENMAN BASIN
EAR - EAST ANTARCTIC RIFT
G - GOULBURN GRABEN
GD - GODAVARI BASIN (INDIA)
GLHR – GREATER LORD HOWE RISE
GR - GREECE
H-V - HEYWOOD-VULCAN FAILED RIFT
L - LAMU BASIN (KENYA)
LC - LESSER CAUCASUS
LR - LAMBERT RIFT (ANTARCTICA)
M - MALITA FAILED RIFT
MG - MADAGASCAR
MR - MAHANADI RIFT
MZ - MOZAMBIQUE
NP - NORTHERN PERTH BASIN
P - PERTH BASIN
PM - PATERNOSTER-MERATUS
PG - PANAGARH AREA (INDIA)
PNG - PAPUA NEW GUINEA
PT - PETREL SUB-BASIN
R - ROEBUCK BASIN
S - SYDNEY BASIN
SH - SAHUL PLATFORM
SK - SIKULEH (WESTERN SUMMATRA)
SP - SOUTHERN PERTH BASIN
T - TIMOR
WB - WEST BURMA
WS - WEST SULAWESI

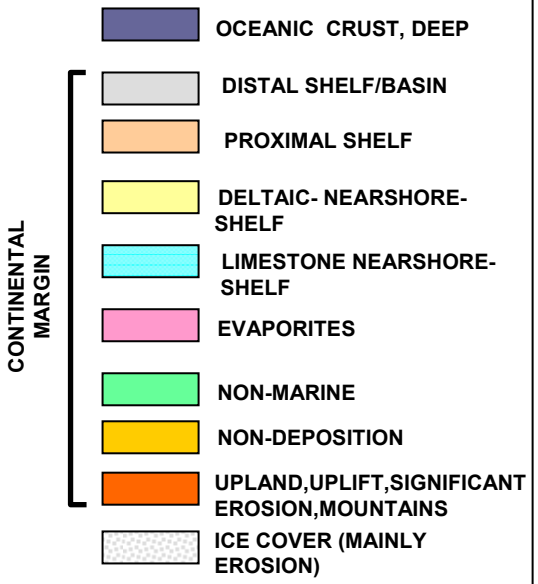
PLATE/BLOCK BOUNDARIES



OTHER

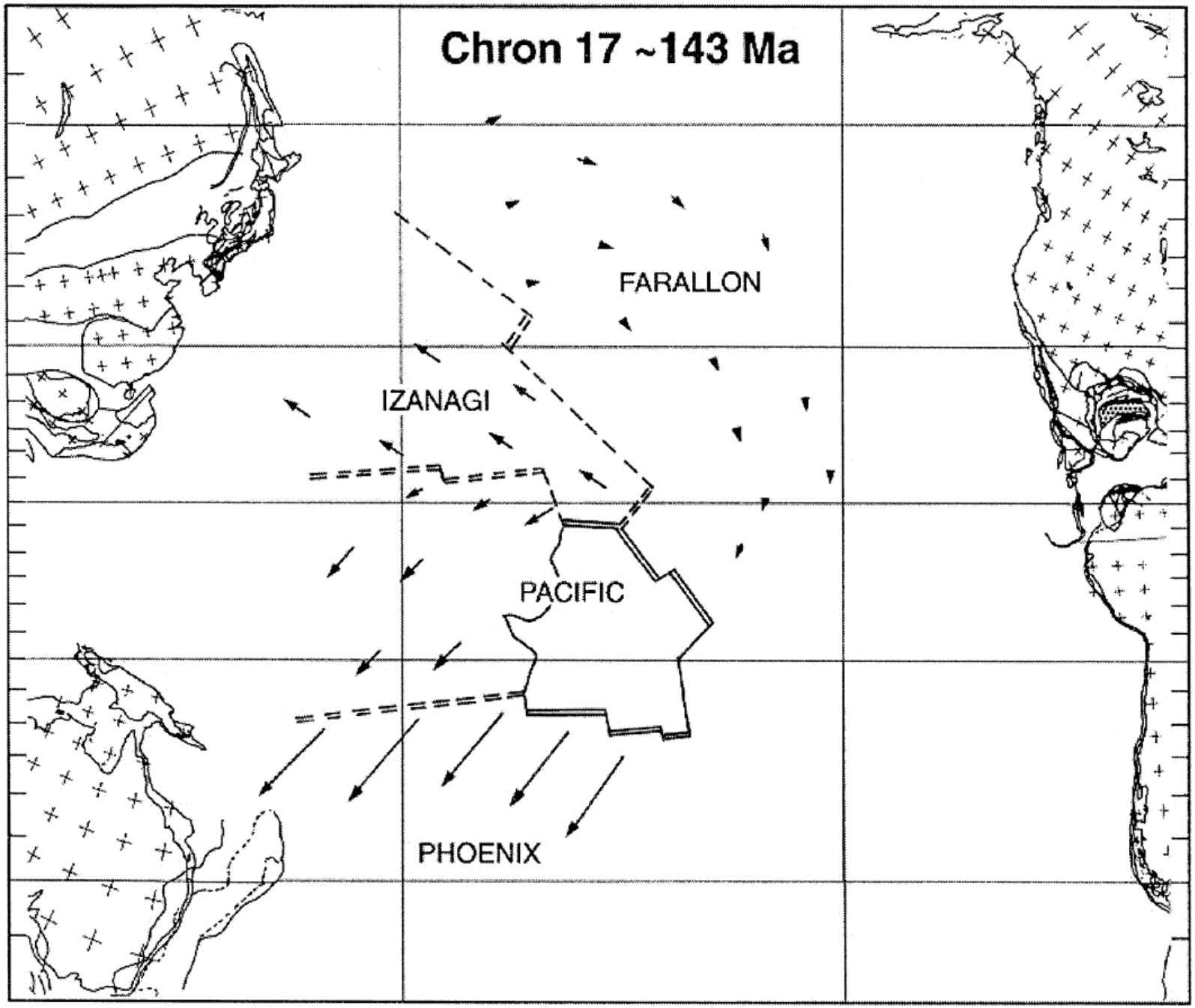


ENVIRONMENTS



NOTE:
PALAEOGEOGRAPHIC MAPS ILLUSTRATE MAXIMUM LITHOFACIES DISTRIBUTION DEPOSITED DURING INDICATED TIME SLICE (PRESERVED PRESENT DAY DISTRIBUTION NOT SHOWN)

NOTE:
Not All figures are referenced


Chron 17 ~143 Ma
FARALLON
IZANAGI
PACIFIC
PHOENIX

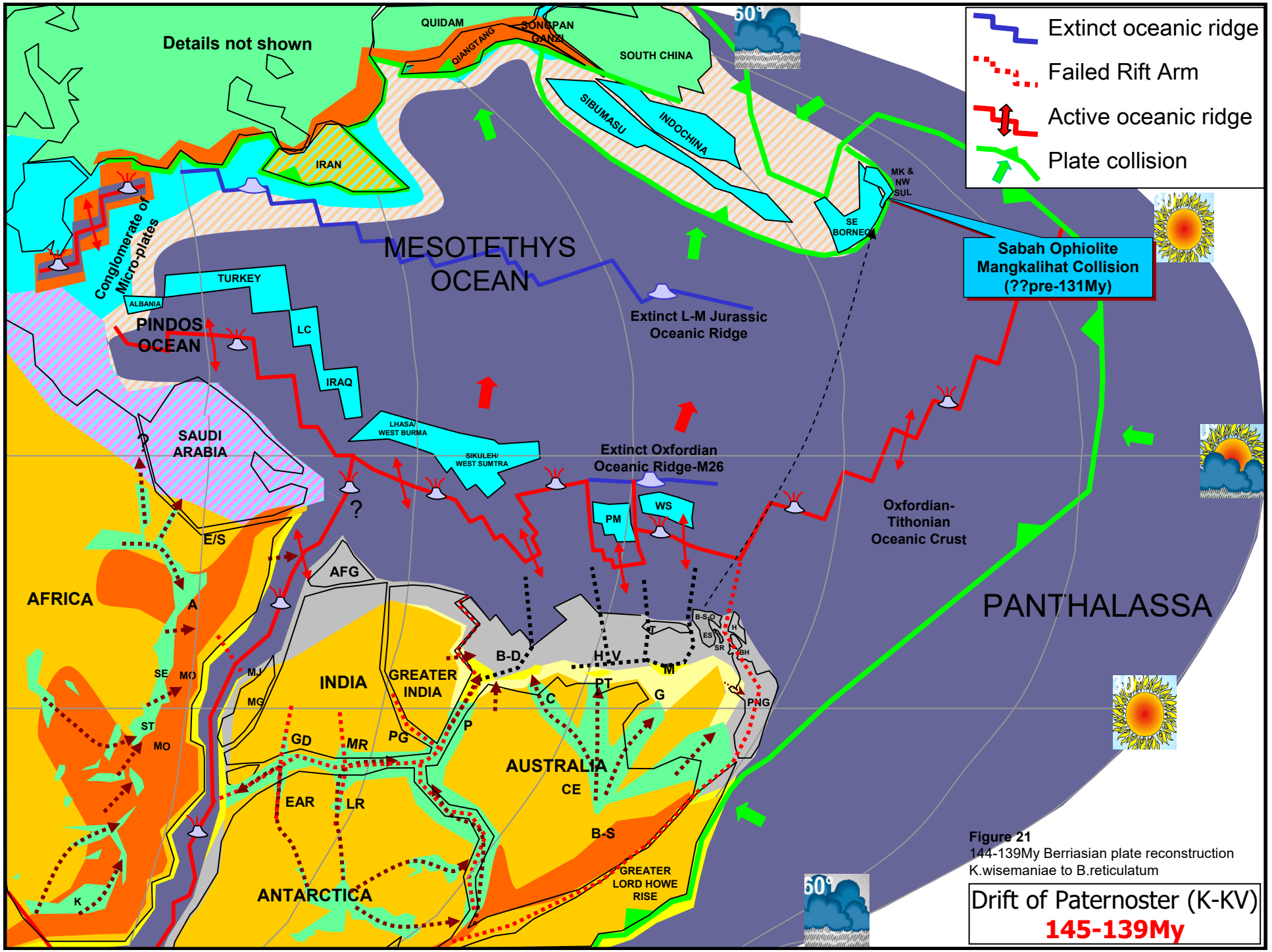
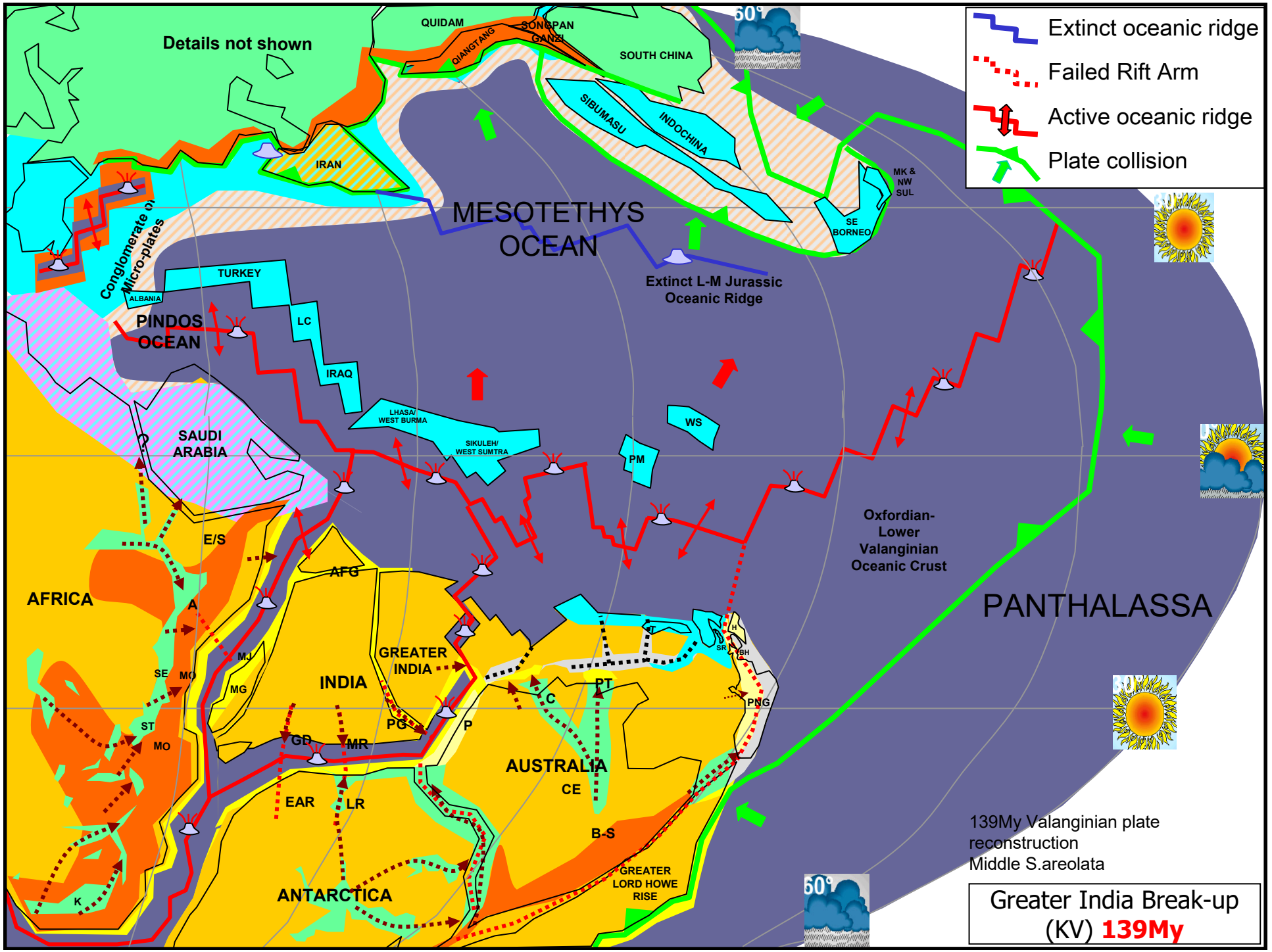
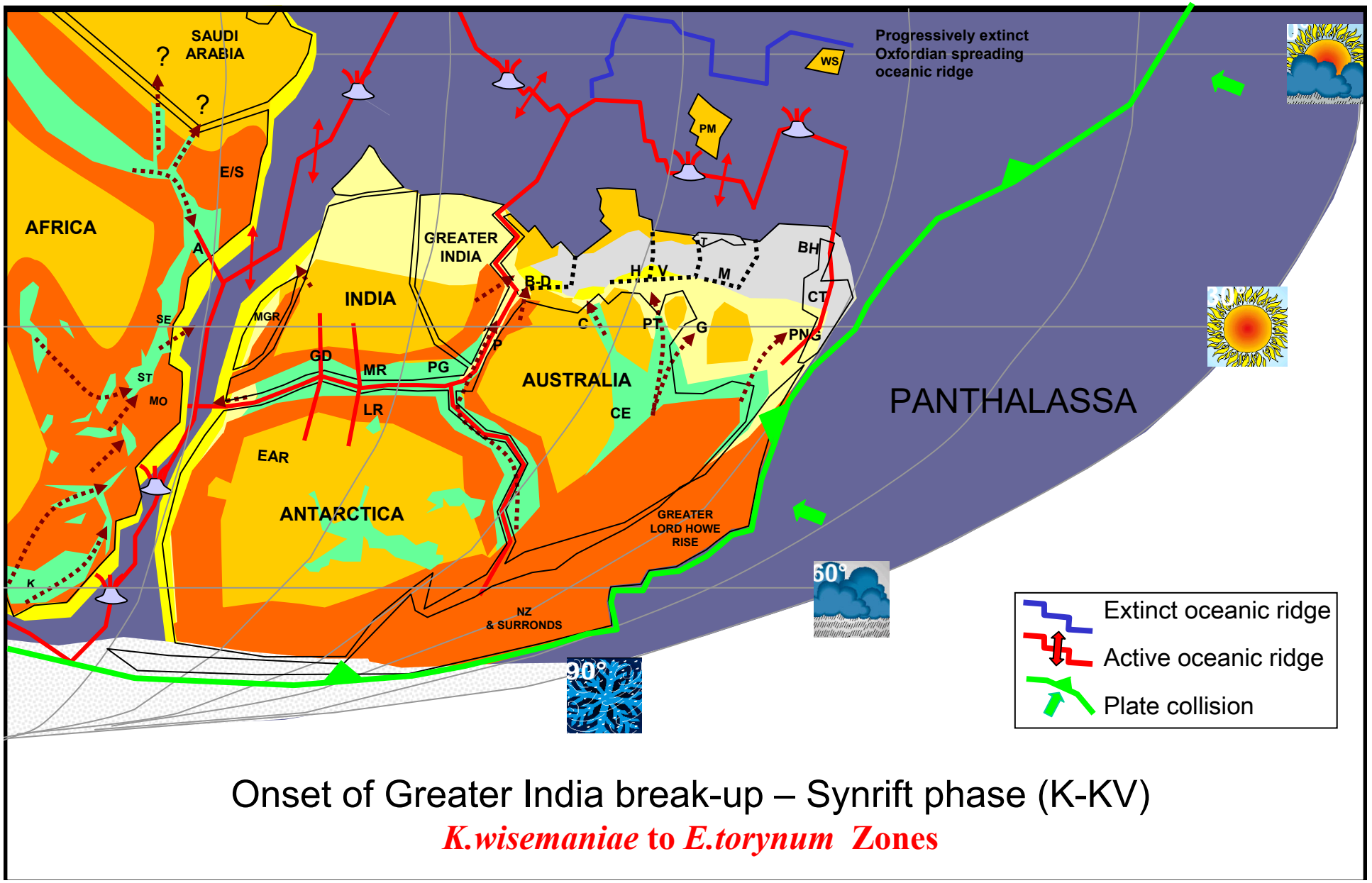


Figure 21
144-139My Berriasian plate reconstruction
K.wisemaniae to B.reticulatum


Extinct oceanic ridge
Failed Rift Arm
Active oceanic ridge
Plate collision
Details not shown
QUIDAM
SONGPAN GANZI
QIANGTANG
SOUTH CHINA
SIBUMASU
INDOCHINA
IRAN
MK & NW SUL
SE BORNEO
MESOTETHYS OCEAN
Conglomerate of Micro-plates
TURKEY
ALBANIA
PINDOS OCEAN
LC
IRAQ
Extinct L-M Jurassic Oceanic Ridge
LHASA/ WEST BURMA
SIKULEH/ WEST SUMTRA
SAUDI ARABIA
PM
WS
Oxfordian-Lower Valanginian Oceanic Crust
PANTHALASSA
E/S
AFRICA
A
AFG
MJ
MG
GREATER INDIA
INDIA
SE
MO
ST
MO
GD
MR
PG
P
C
PT
H
SR
YBH
PNG
AUSTRALIA
CE
EAR
LR
B-S
ANTARCTICA
GREATER LORD HOWE RISE
K
139My Valanginian plate reconstruction
Middle S.areolata
Greater India Break-up
(KV) 139My

145-139My Berriasian plate reconstruction

DJGeoscience

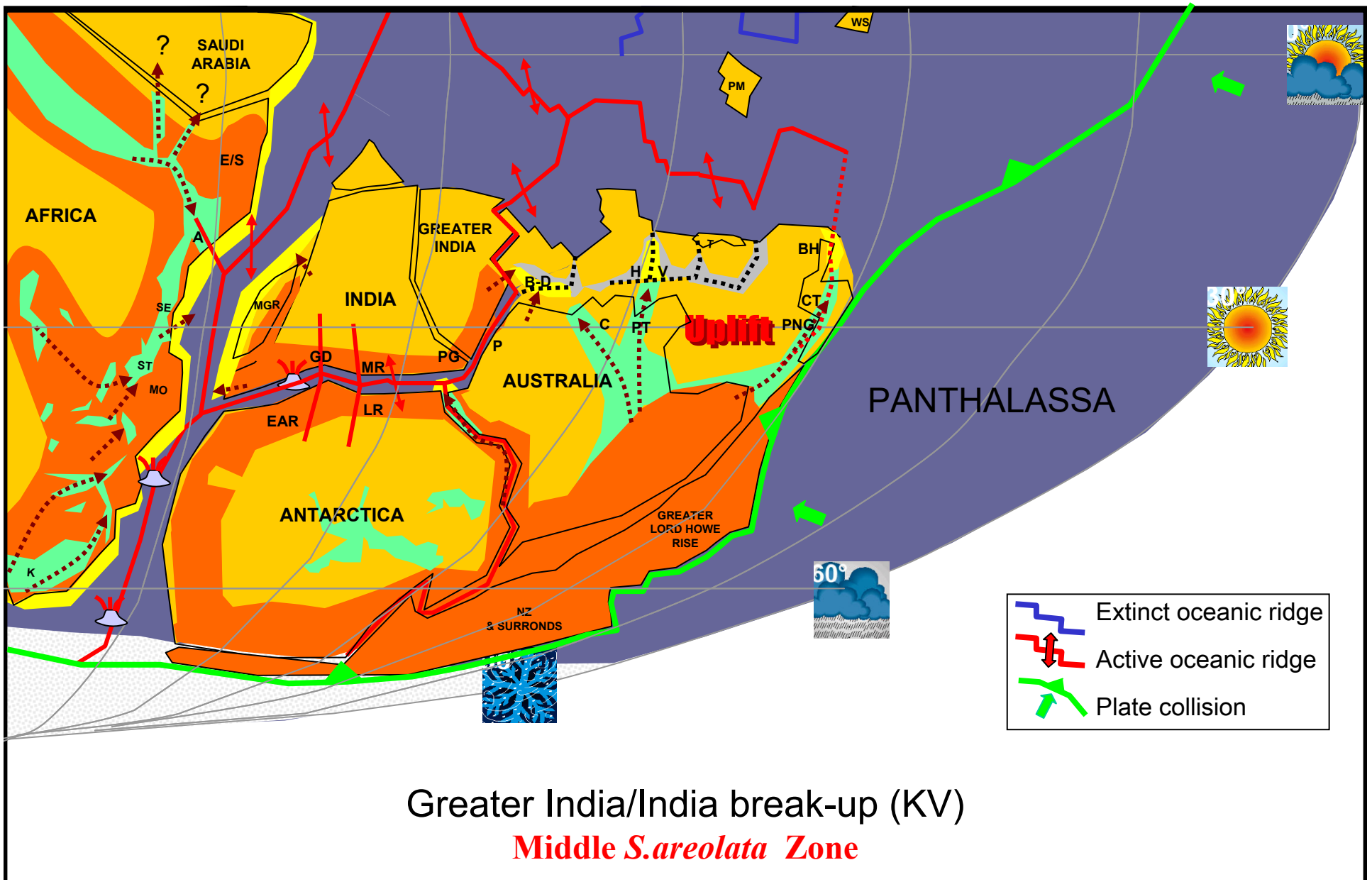


Onset of Greater India break-up – Synrift phase (K-KV)

***K.wisemaniae* to *E.torynum* Zones**

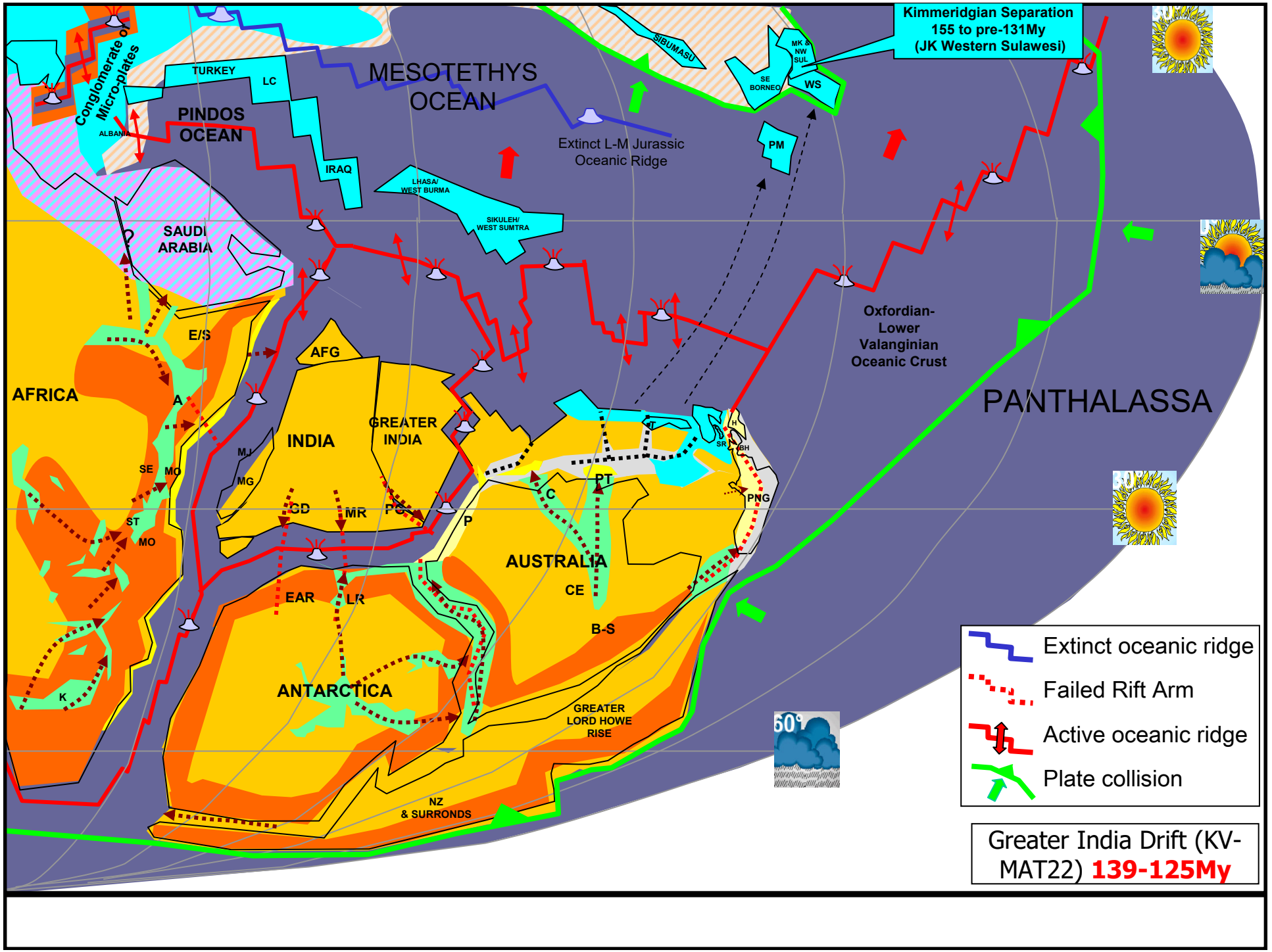
139My Valanginian plate reconstruction

DJGeoscience



Greater India/India break-up (KV)

Middle *S.areolata* Zone


Kimmeridgian Separation
155 to pre-131My
(JK Western Sulawesi)
Conglomerate of Micro-plates
ALBANIA
TURKEY
LC
PINDOS OCEAN
MESOTETHYS OCEAN
SIBUMASU
MK & NW SUL
SE BORNEO
WS
Extinct L-M Jurassic Oceanic Ridge
PM
IRAQ
LHASA/ WEST BURMA
SIKULEH/ WEST SUMTRA
SAUDI ARABIA
Oxfordian-Lower Valanginian Oceanic Crust
PANTHALASSA
AFRICA
E/S
A
AFG
INDIA
GREATER INDIA
MJ
MG
SE
MO
ST
MO
K
CD
MR
PC
P
T
H
SR
BH
PT
C
PNG
AUSTRALIA
CE
B-S
EAR
LR
ANTARCTICA
GREATER LORD HOWE RISE
NZ & SURRONDS
Extinct oceanic ridge
Failed Rift Arm
Active oceanic ridge
Plate collision
Greater India Drift (KV-MAT22) 139-125My

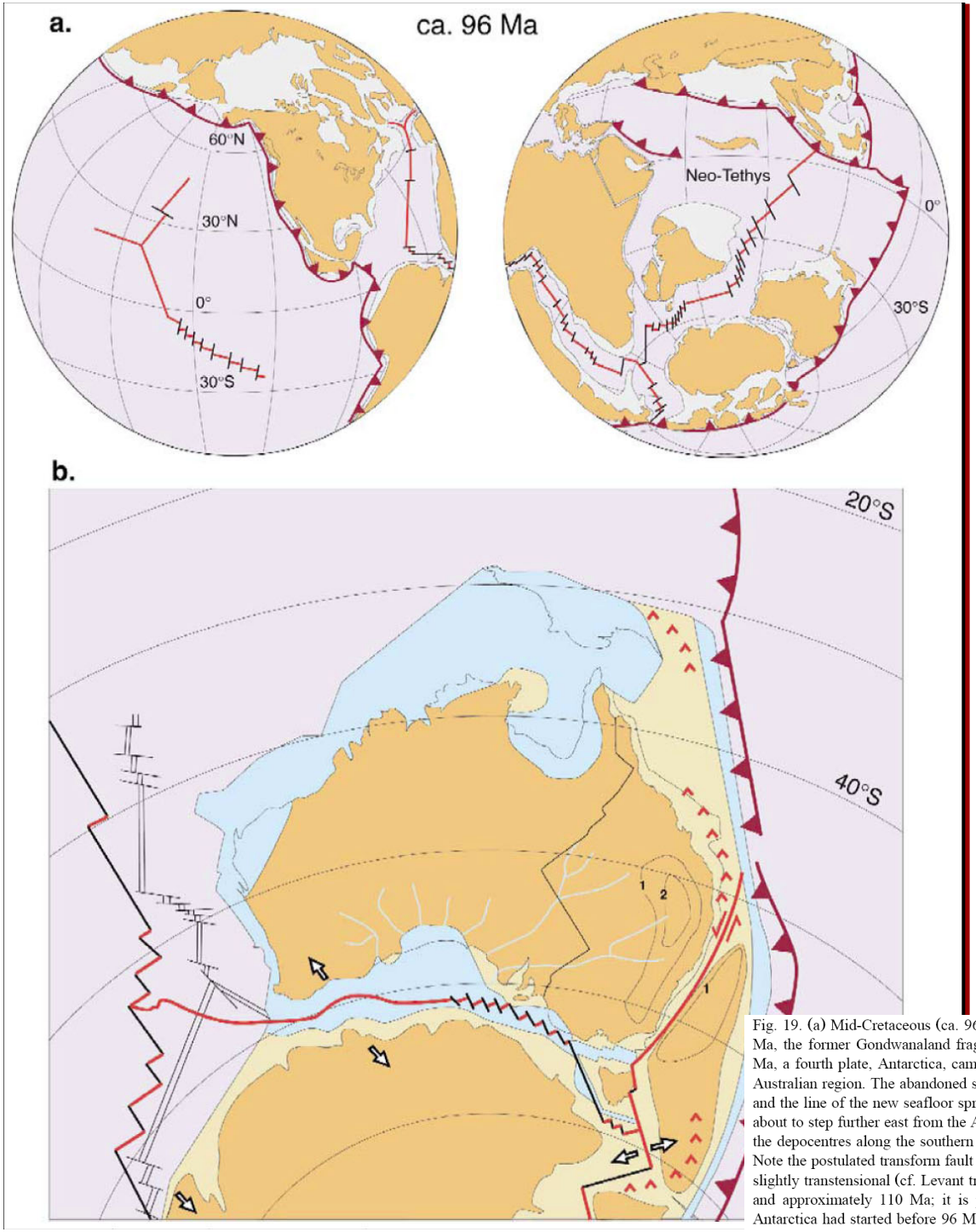


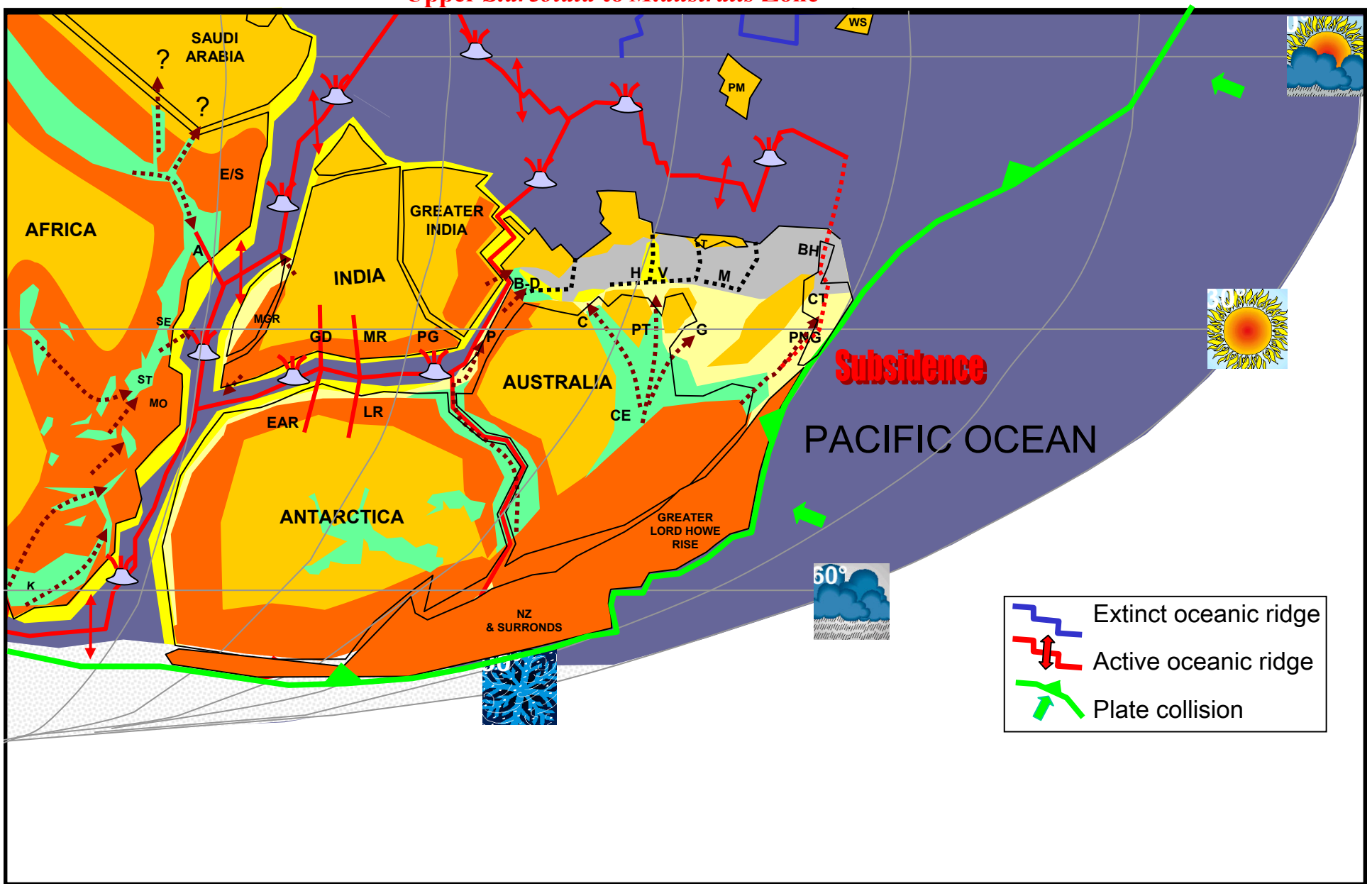
Fig. 19. (a) Mid-Cretaceous (ca. 96 Ma) reconstruction (after Powell et al., 1988; Lawver et al., 1992 and PLATES). From ca. 117 to 96 Ma, the former Gondwanaland fragments were separating on three major plates, South America, Africa–India, and Australia. Around 96 Ma, a fourth plate, Antarctica, came into existence, and soon after, India moved rapidly north on a fifth plate. (b) Palaeogeography of the Australian region. The abandoned spreading ridge in the Indian Ocean is shown as a black double line connected by single line transforms, and the line of the new seafloor spreading is shown as red lines. Volcanism in Queensland is related to extension, as the subduction zone is about to step further east from the Australian continental margin. Highlands in southeastern Australia and Queensland provided sediment for the depocentres along the southern margin of Australia. Numbered closed lines are postulated topographic contours with elevations in km. Note the postulated transform fault along the southeastern margin of Australia is depicted as a rift feature in anticipation that it had become slightly transtensional (cf. Levant transform margin to the Arabian plate). Continental stretching in New Zealand occurred between 130 Ma and approximately 110 Ma; it is possible that early seafloor spreading between New Zealand (attached to the Lord Howe Rise) and Antarctica had started before 96 Ma. Palaeogeography based on Veevers (1984) and Powell (unpubl. work).

138-126My upper Valanginian to Barremian plate reconstruction

DJGeoscience

Greater India/India break-up (KV-MAT22)

Upper *S.areolata* to *M.australis* Zone

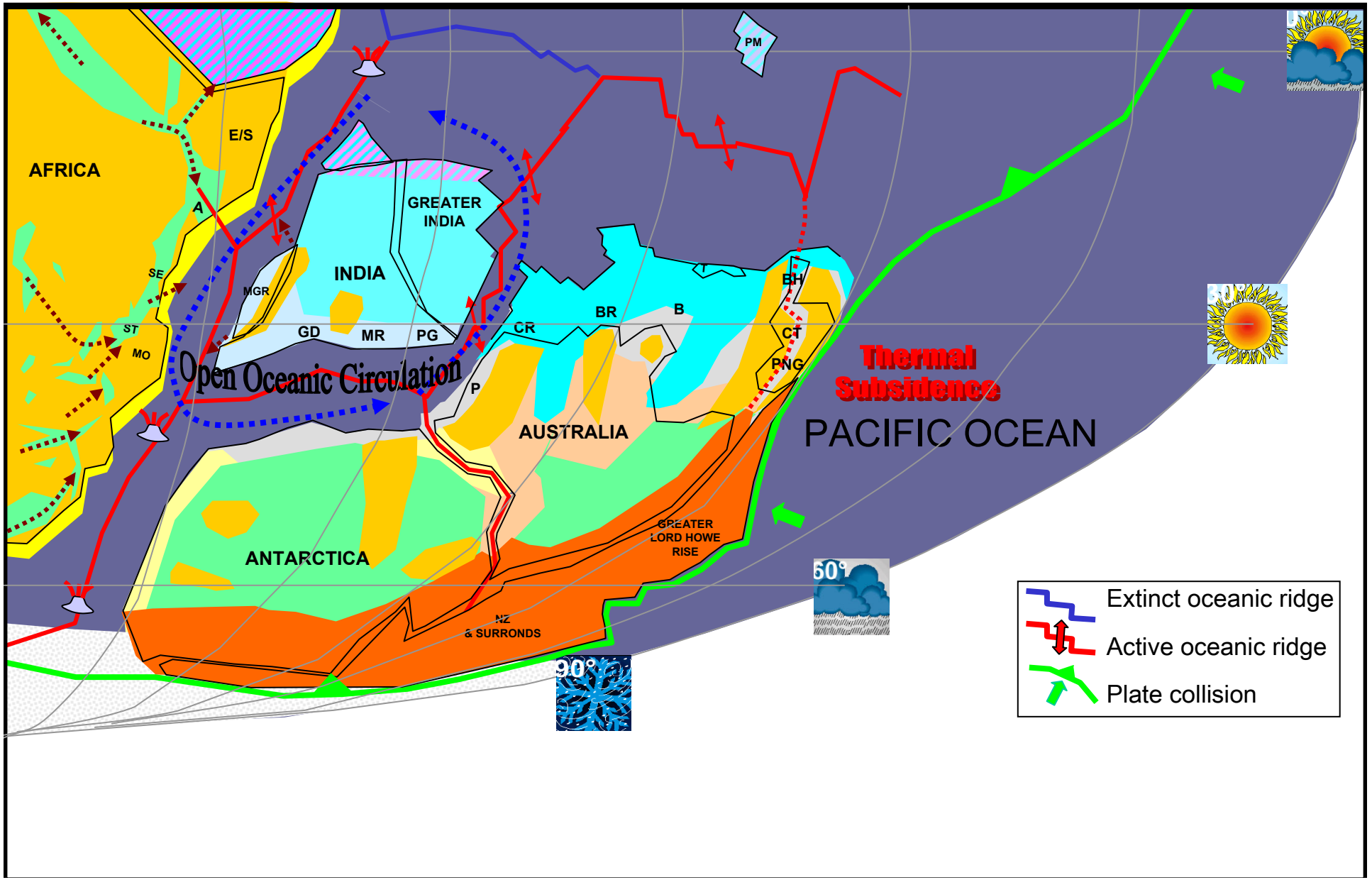


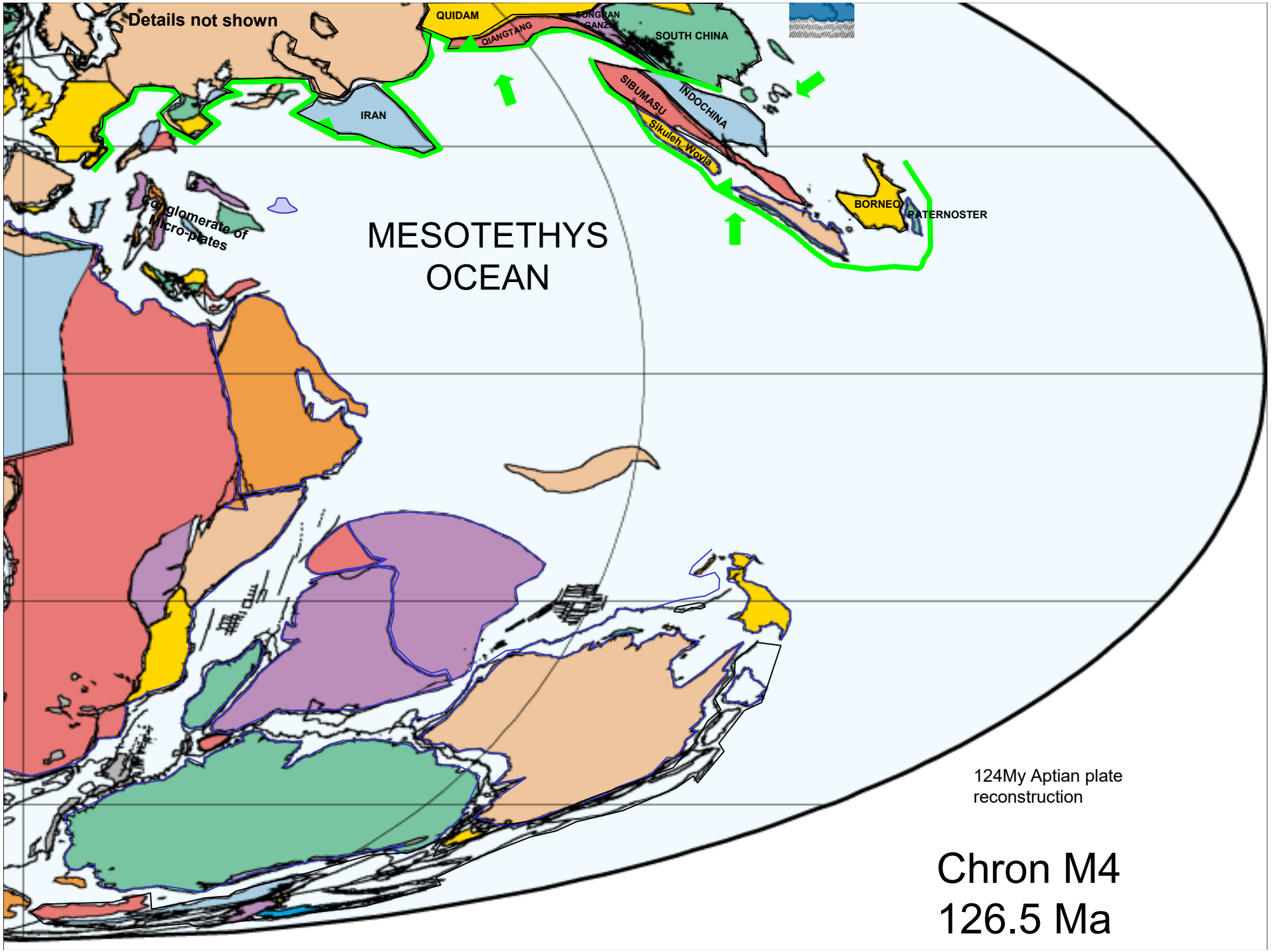
124My Aptian plate reconstruction

DJGeoscience

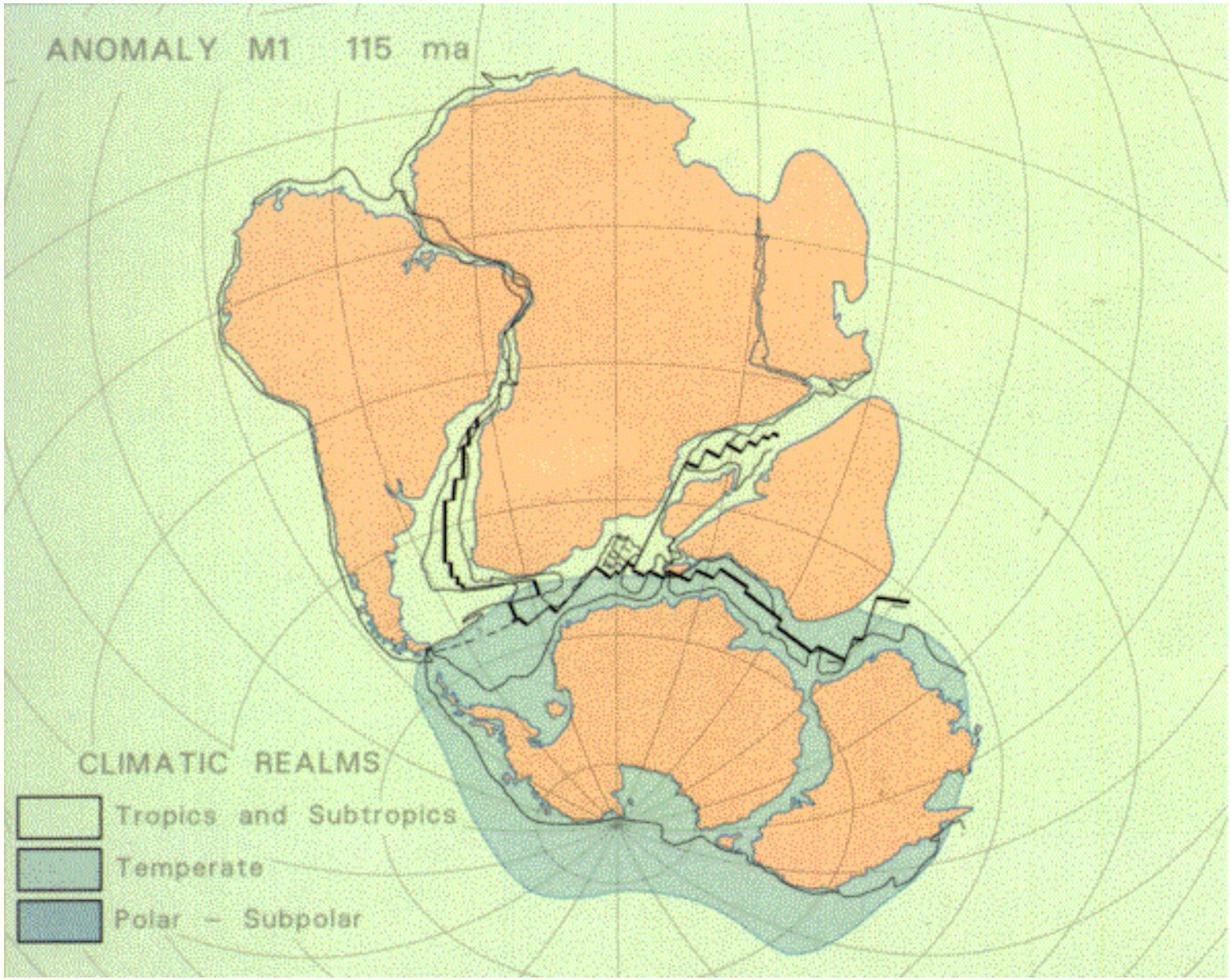
Greater India/India drift – Post-rift thermal subsidence phase (KA)

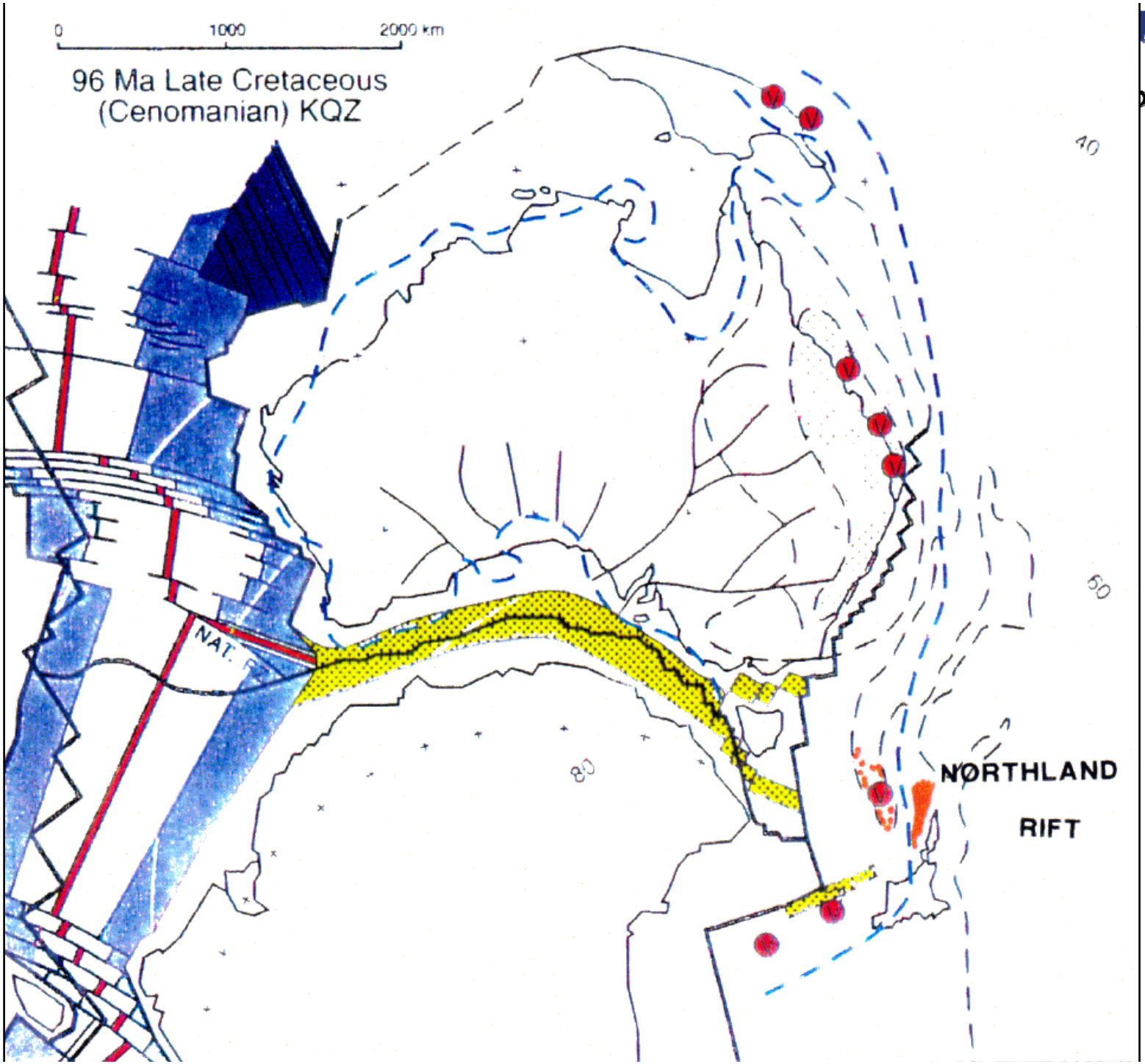
Lower *O.operculata* Zones




Details not shown
QUIDAM
QIANGTANG
SONGPAN GANZI
SOUTH CHINA
SIBUMASU
INDOCHINA
Sikuleh Wovla
IRAN
BORNEO
PATERNOSTER
Conglomerate of Micro-plates
MESOTETHYS OCEAN
124My Aptian plate reconstruction
Chron M4
126.5 Ma

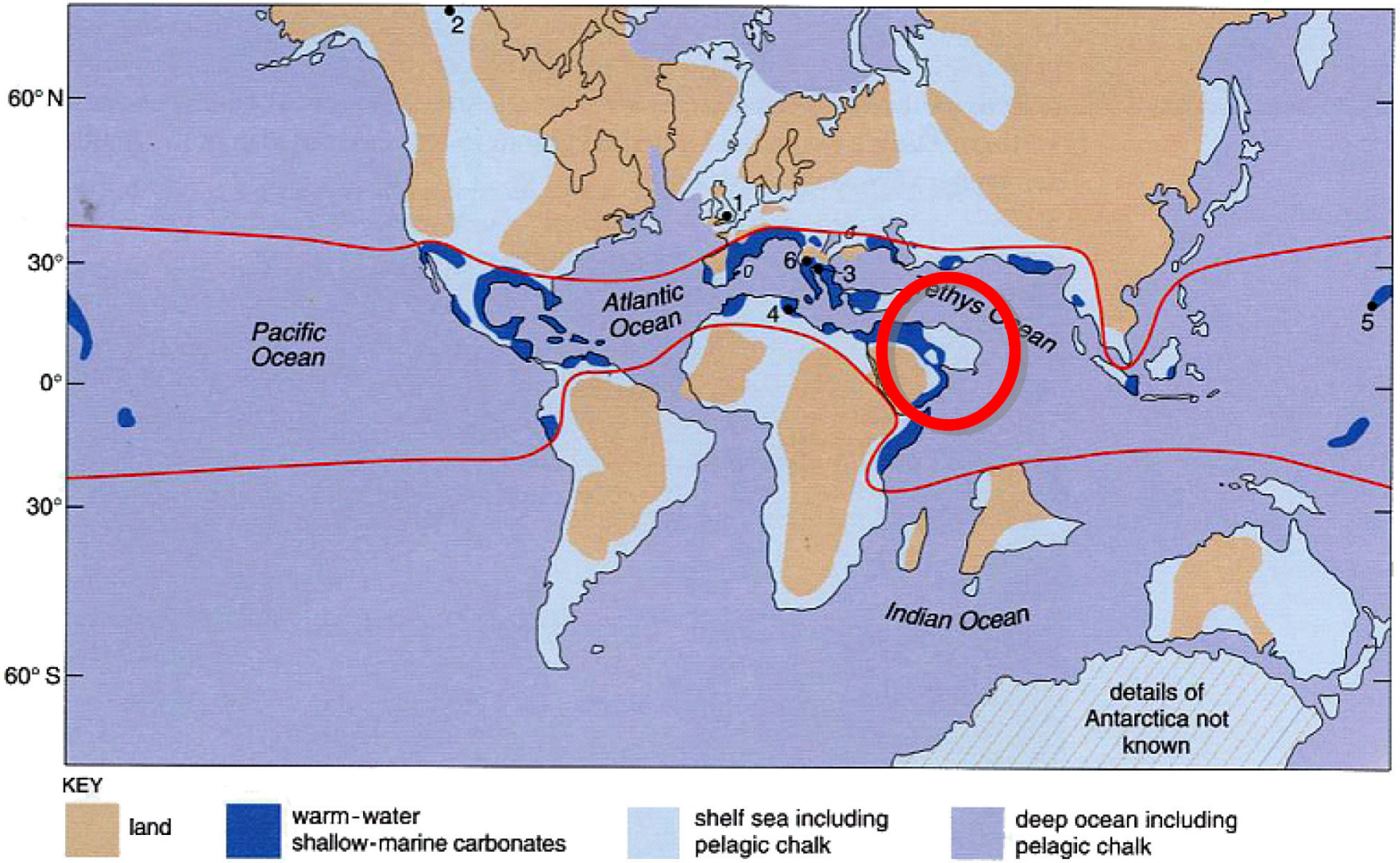
DJGeoscience





DJGeoscience

Cret Paleogeog



After Peter Skelton

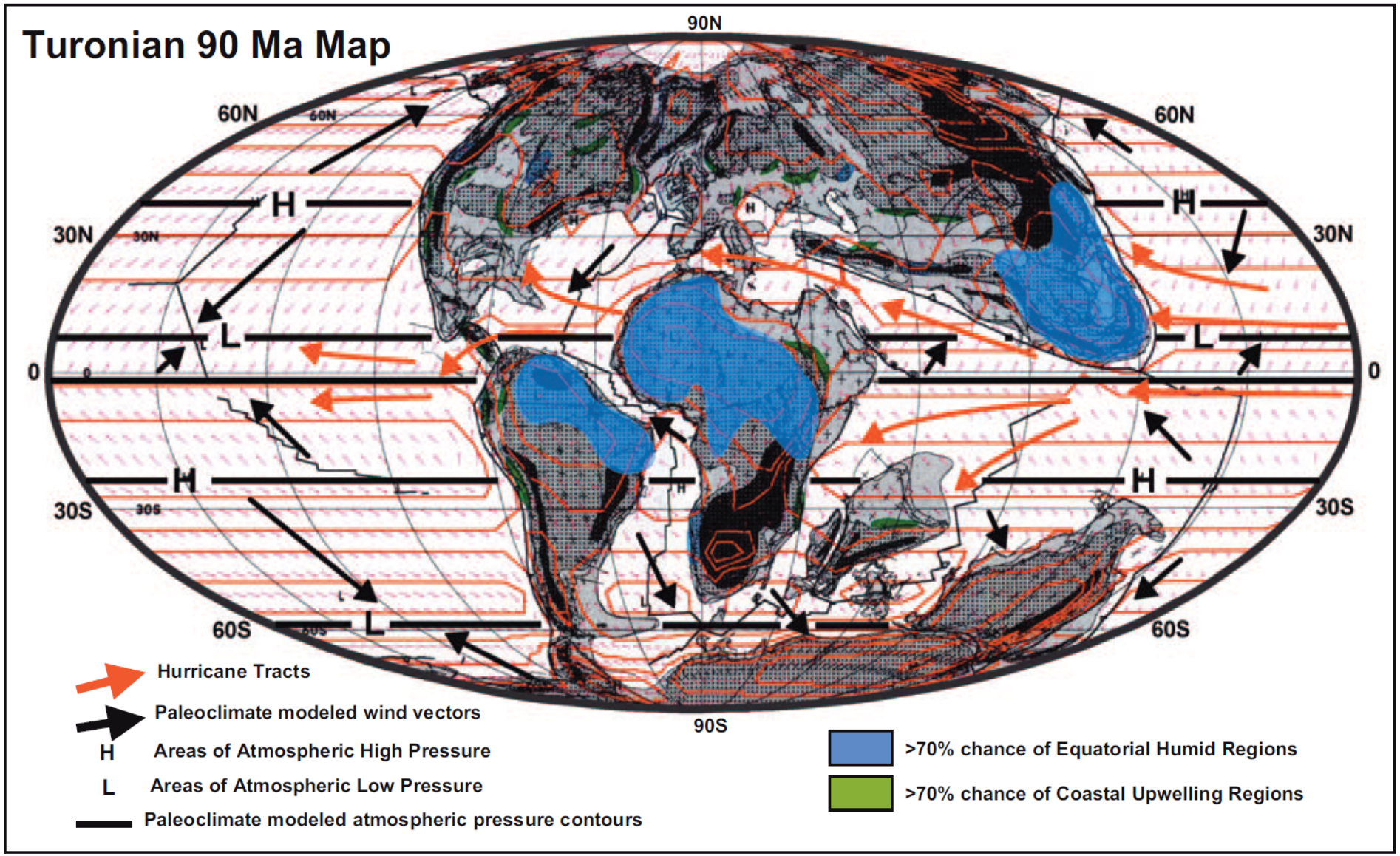


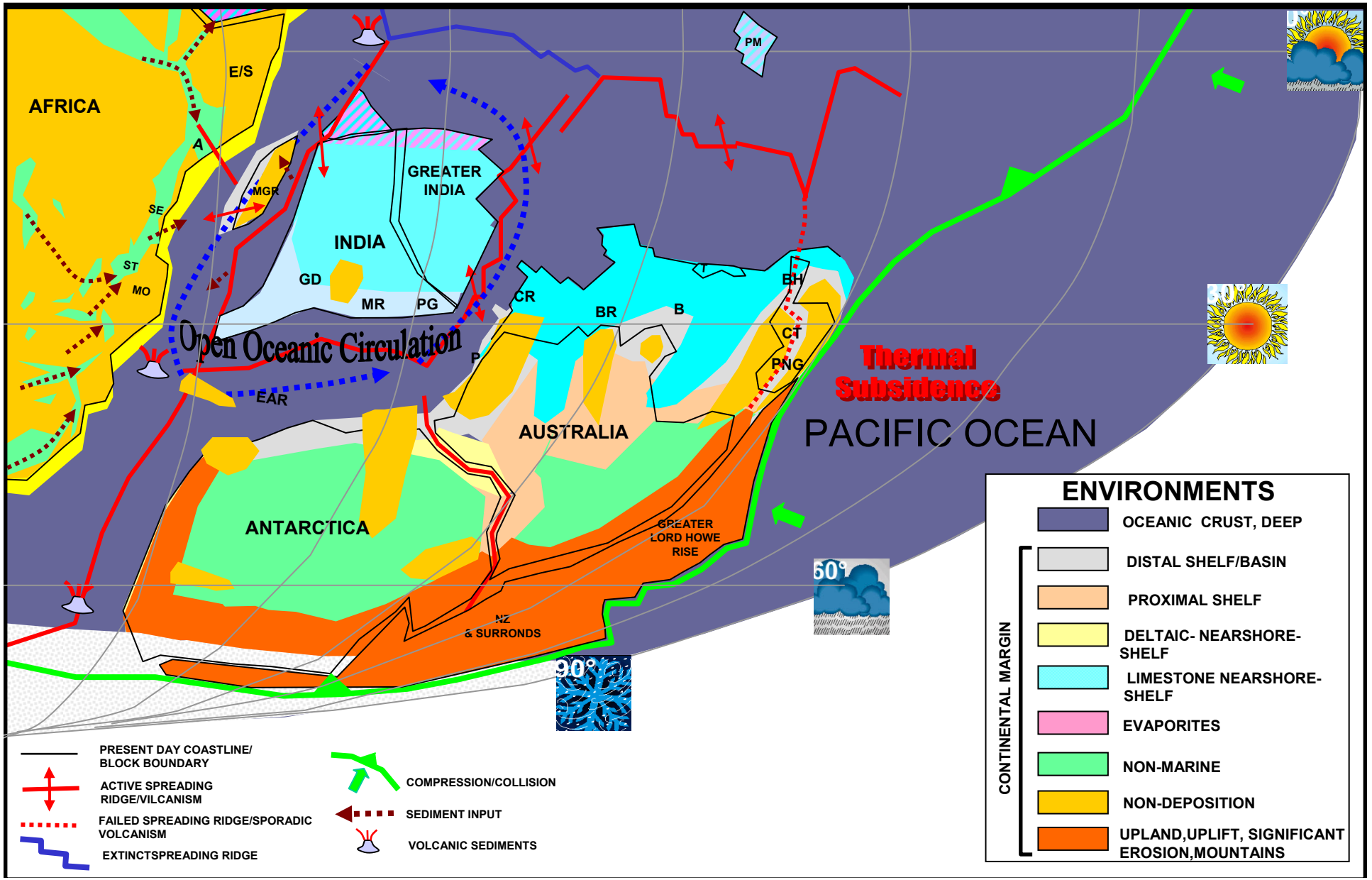
FIG. 9.—Example of a paleoclimate-modeled map from the map series of Golonka et al. (1994) (Late Cretaceous, Turonian—90 Ma). This map was first developed using 1990s computer models for paleoclimate reconstruction. Atmospheric attributes and climate phenomena probabilities were calculated from parametric modeling. Hurricane or large oceanic storm tracks were nonquantitatively determined, and were included on the maps as analog interpretations for this research project. See text discussion for explanation of paleo-storm tract interpretations. All interpreted paleoclimate maps with superimposed storm tracks are presented in Appendix 5 and are on the enclosed CD.

94My Turonian plate reconstruction

Australia<->Antarctica, Madagascar<->Greater India Separation – Post-rift thermal subsidence phase on NWS (KC to T)

uppermost *D.multispinum*

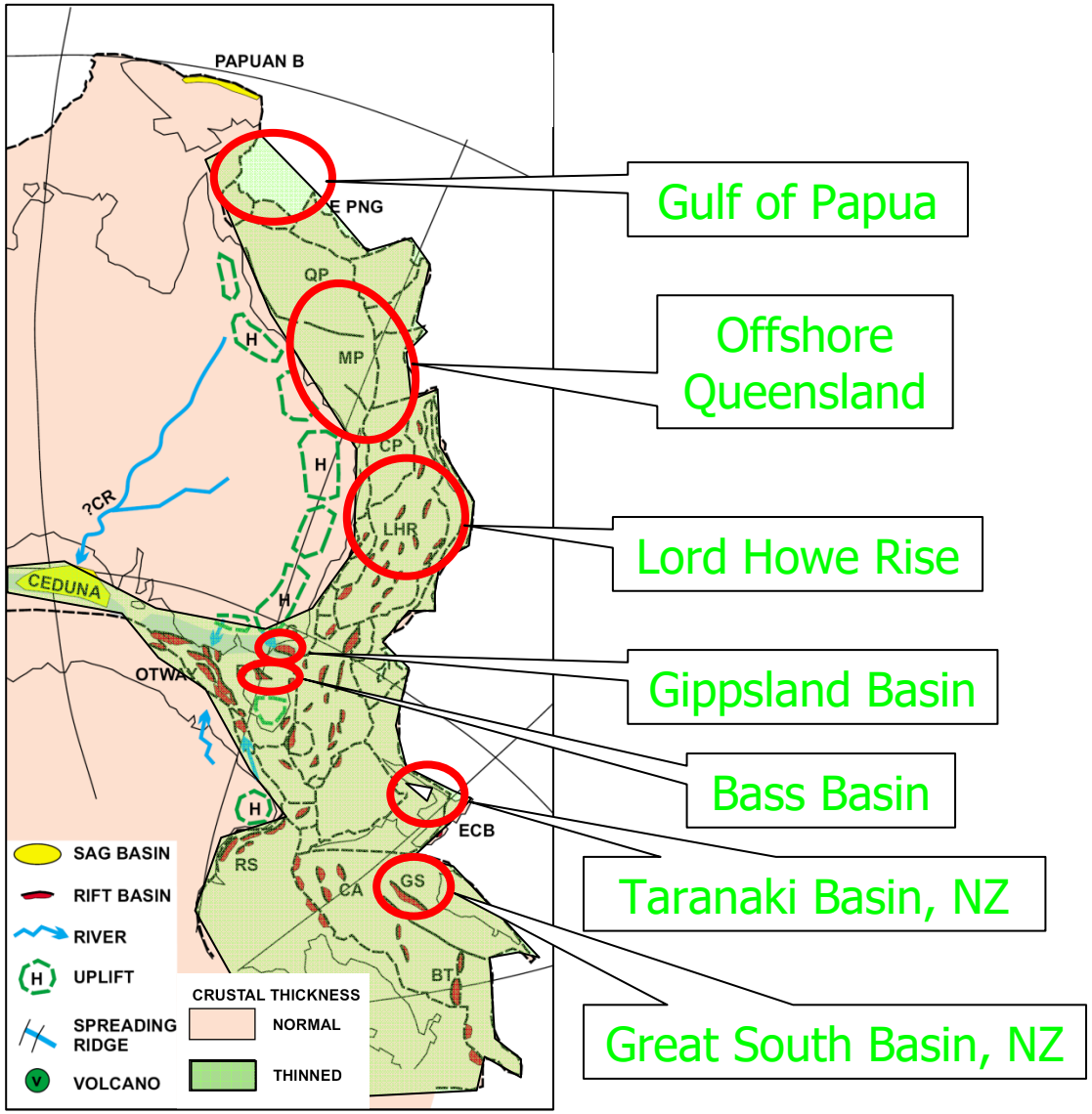
DJGeoscience



94My Turonian plate reconstruction

DJGeoscience

Onset of Synrift - Australia-Antarctica 1st Crustal Stretch



Gulf of Papua

Offshore Queensland

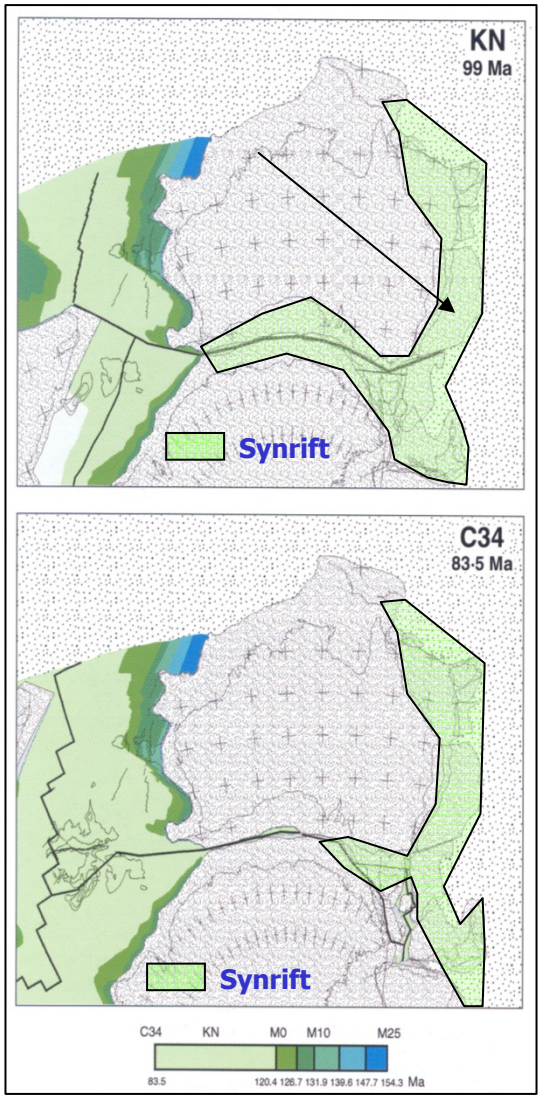
Lord Howe Rise

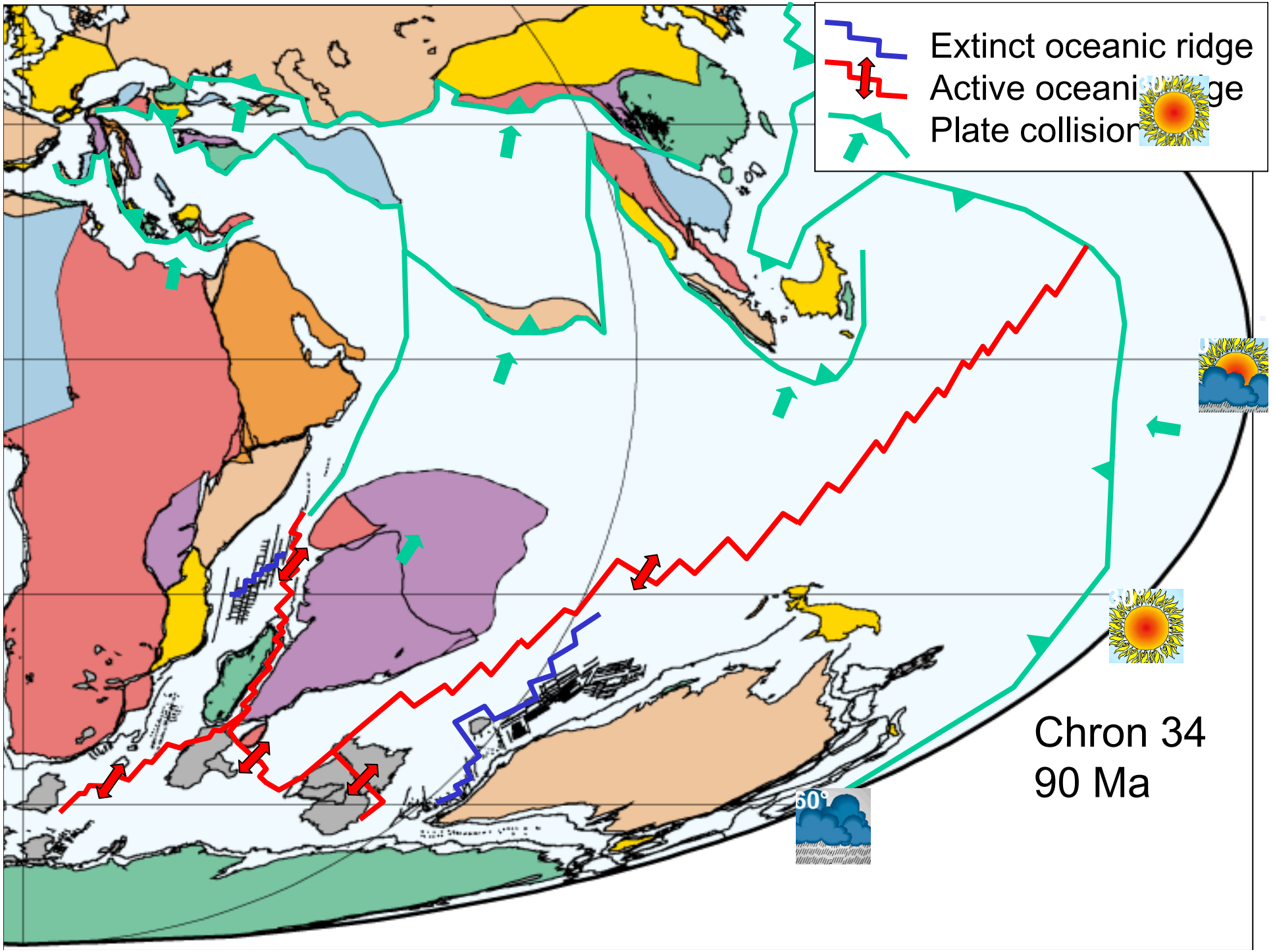
Gippsland Basin

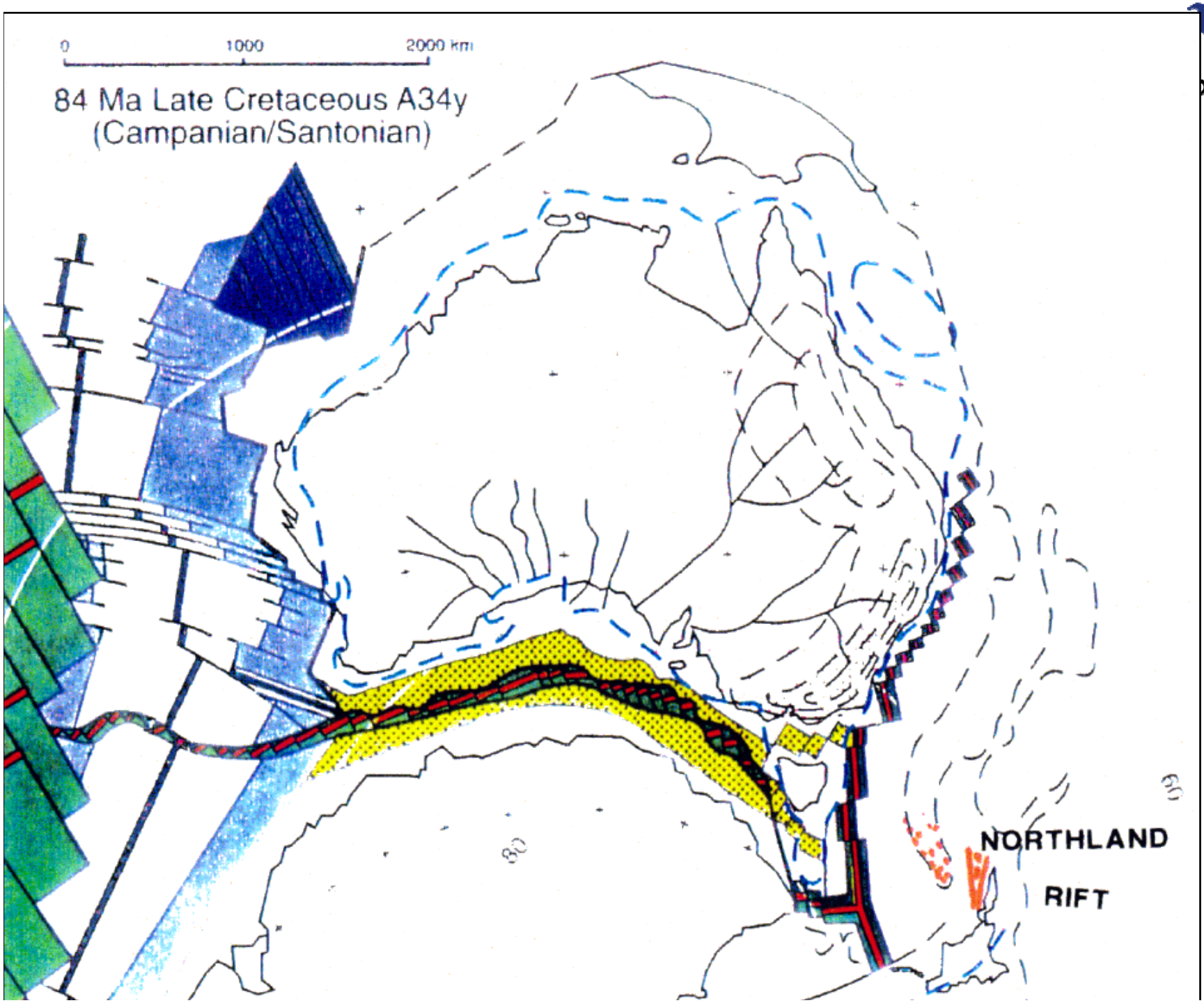
Bass Basin

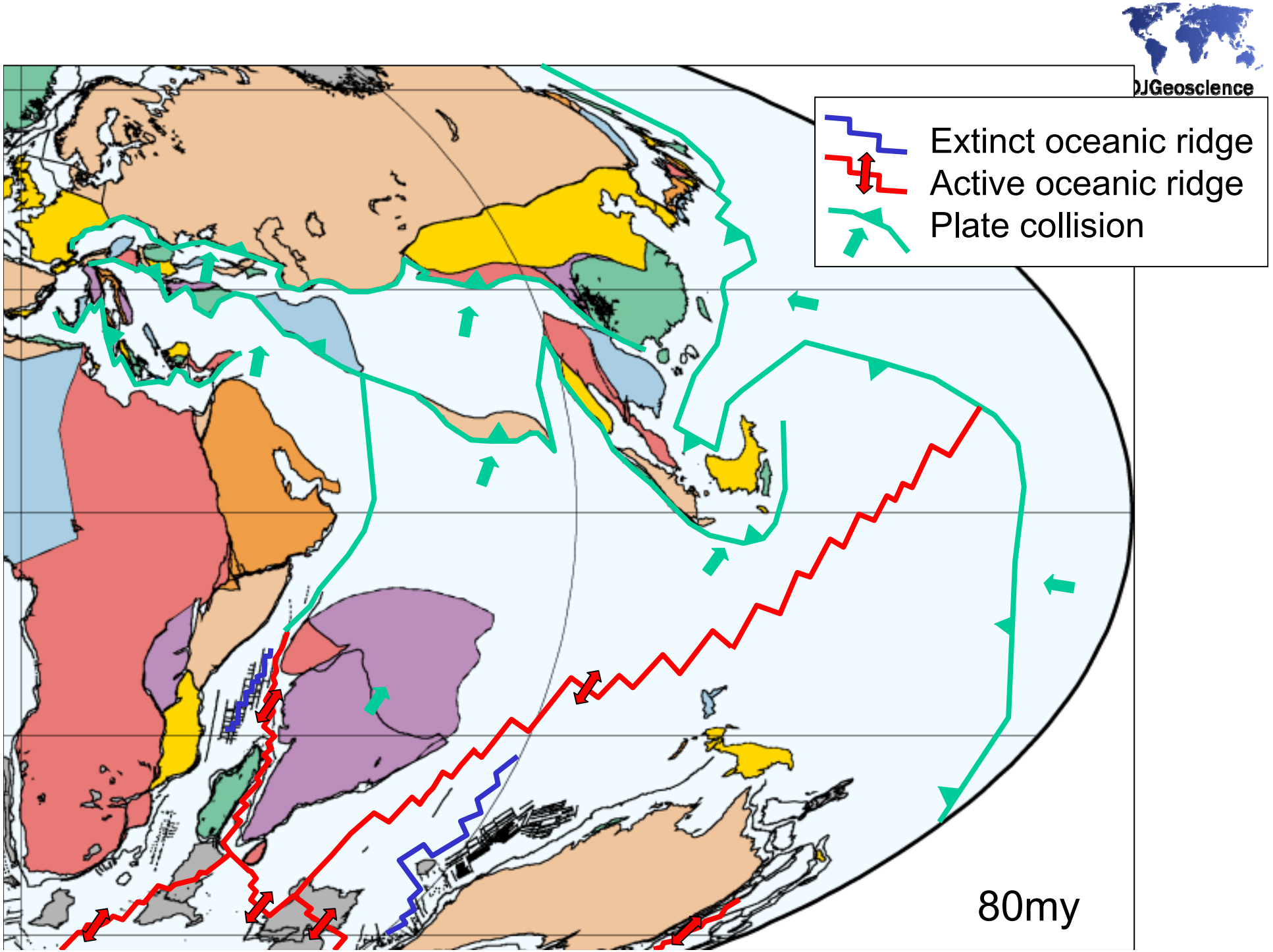
Taranaki Basin, NZ

Great South Basin, NZ



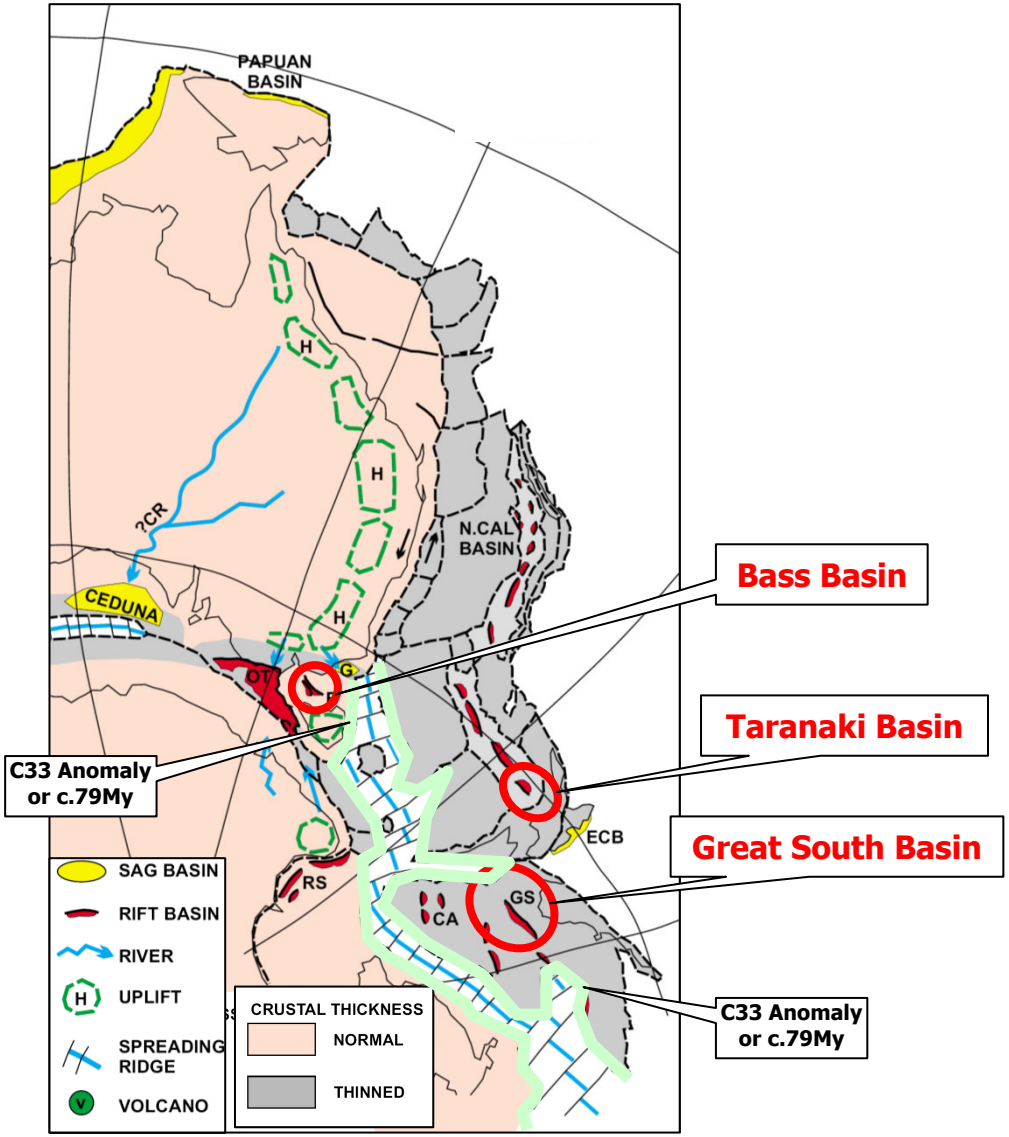

Extinct oceanic ridge
Active oceanic ridge
Plate collision
Chron 34
90 Ma



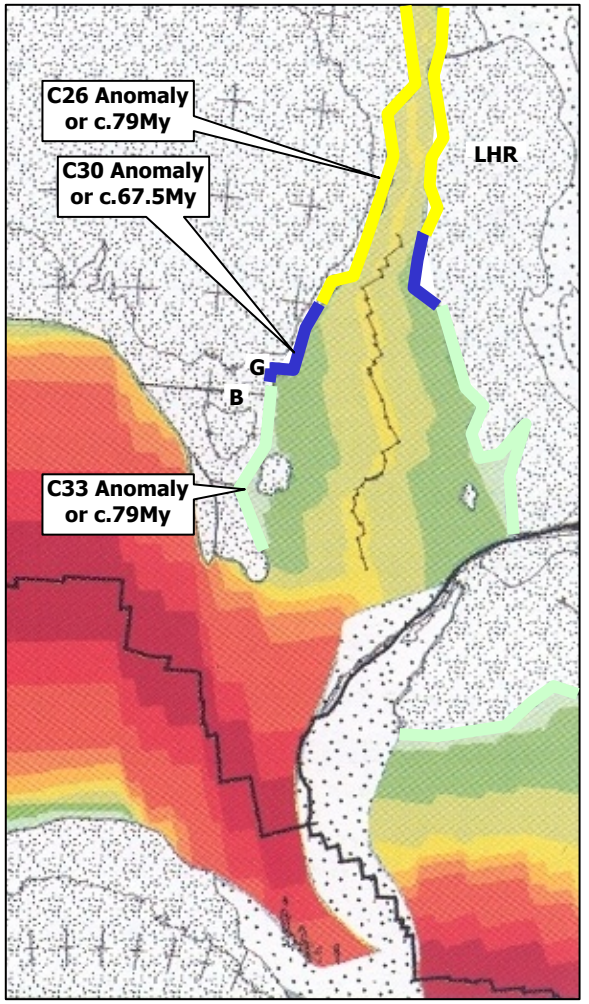

Extinct oceanic ridge
Active oceanic ridge
Plate collision
80my

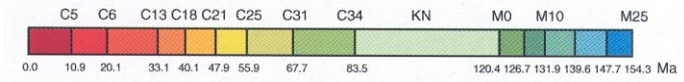
79My Campanian plate reconstruction

Break-up Unconformities (1st Oceanic Crust at c.79My)

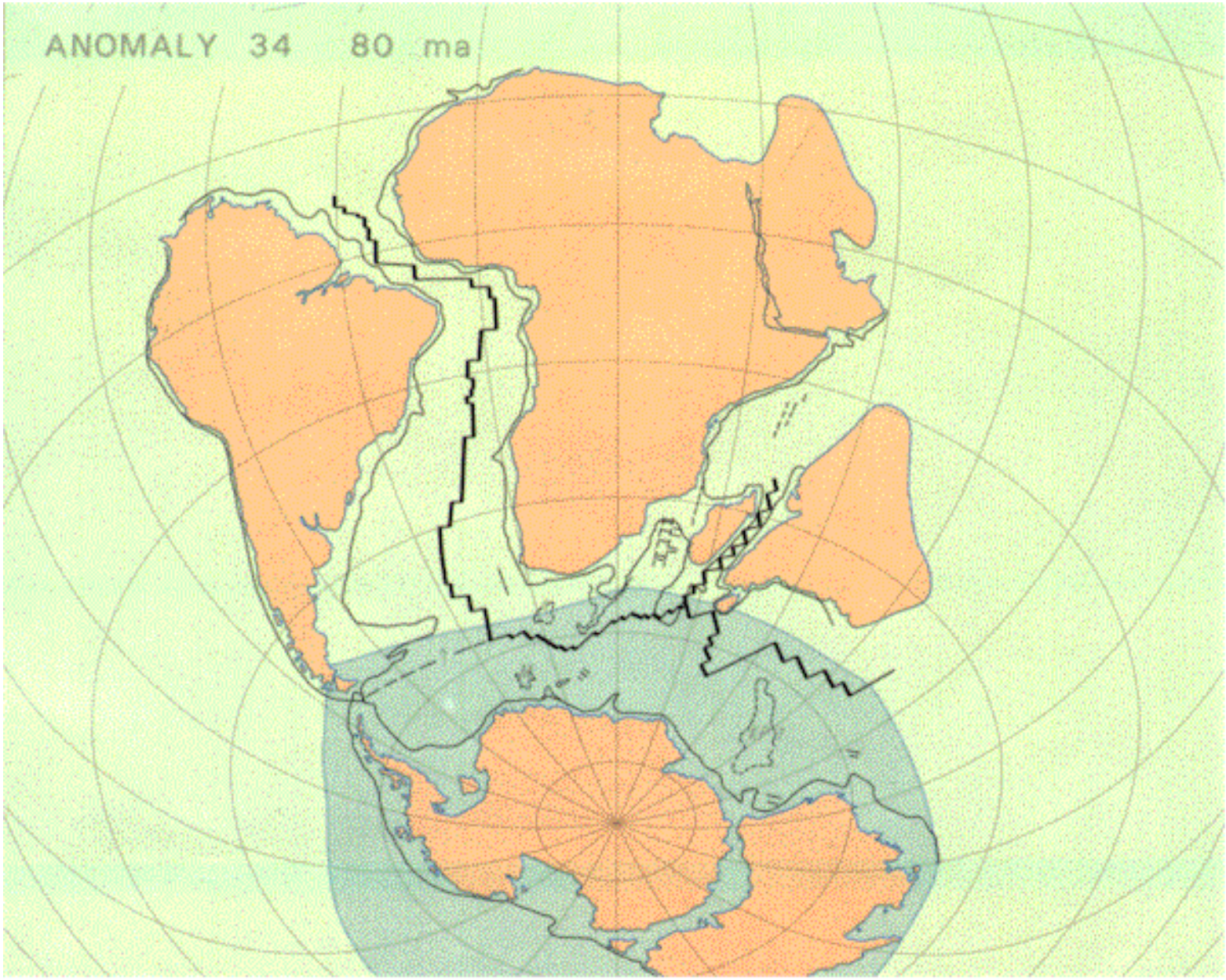


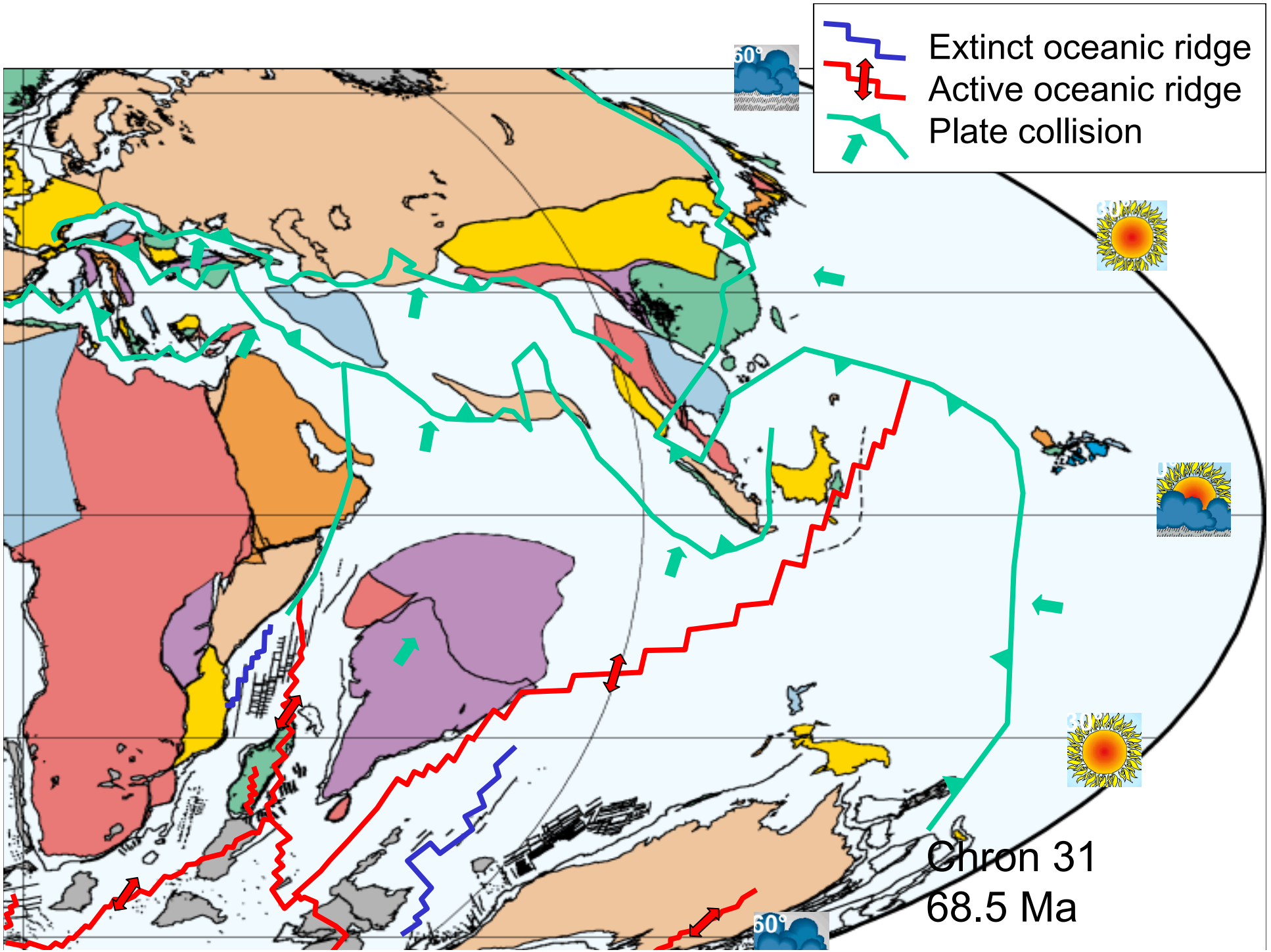
Sea Floor Spreading History



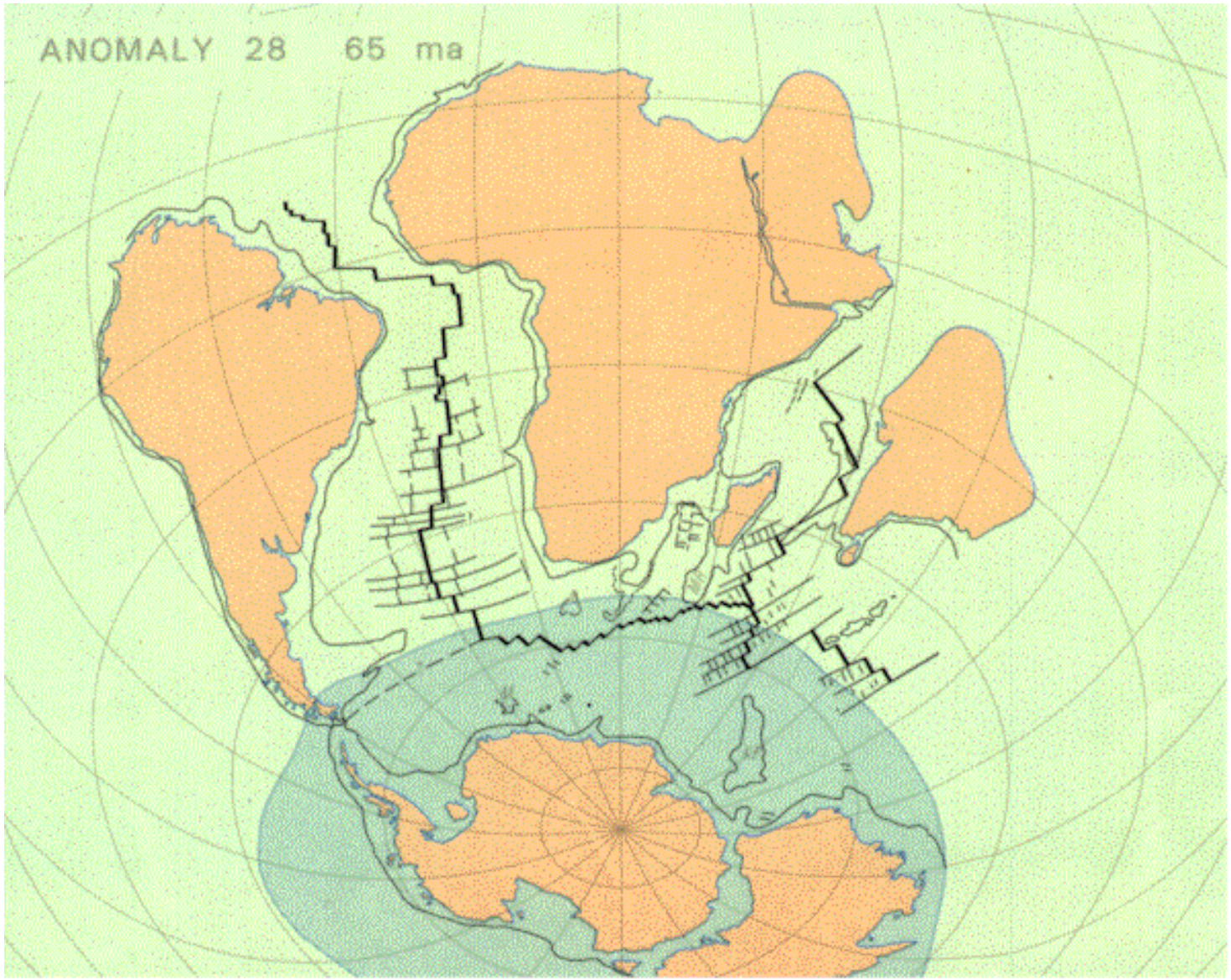


DJGeoscience




Extinct oceanic ridge
Active oceanic ridge
Plate collision
60°
60°
Chron 31
68.5 Ma

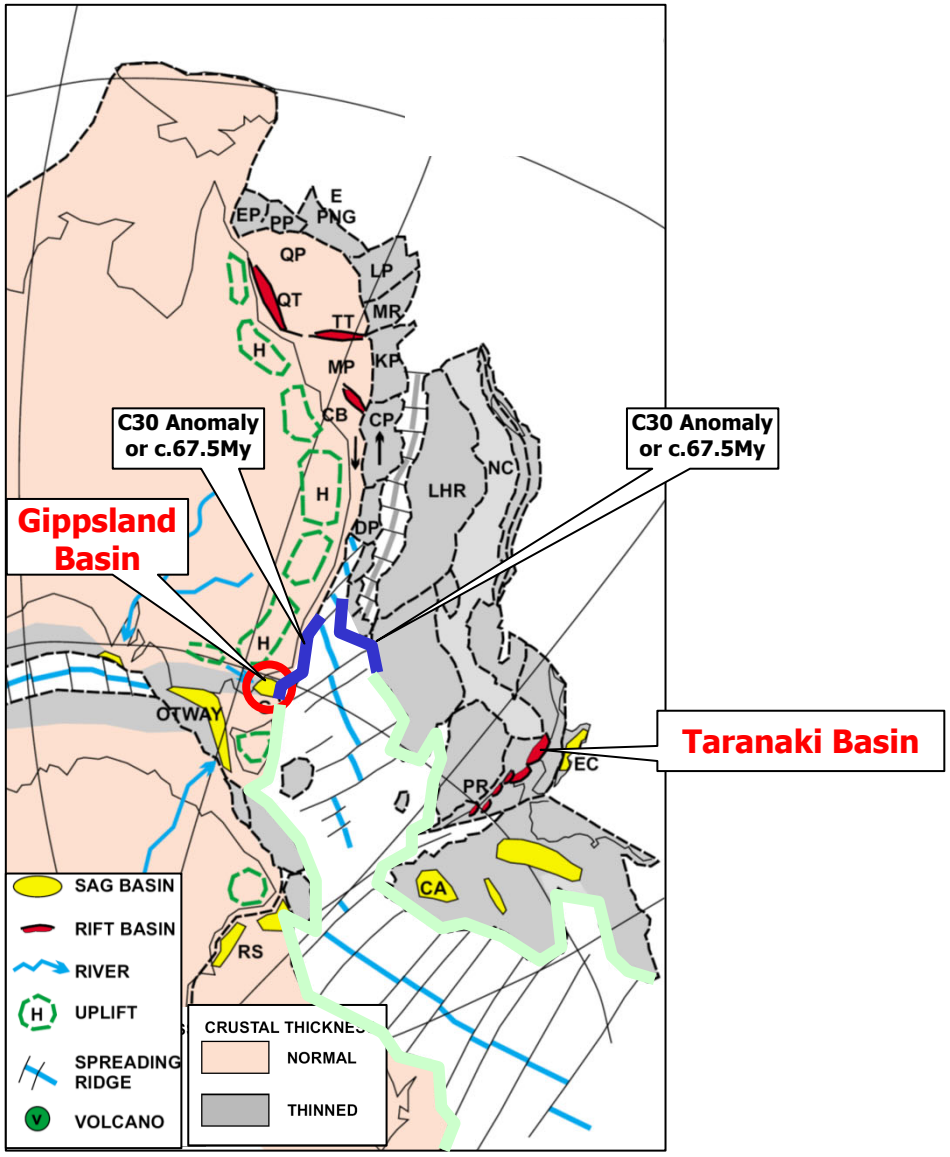
DJGeoscience



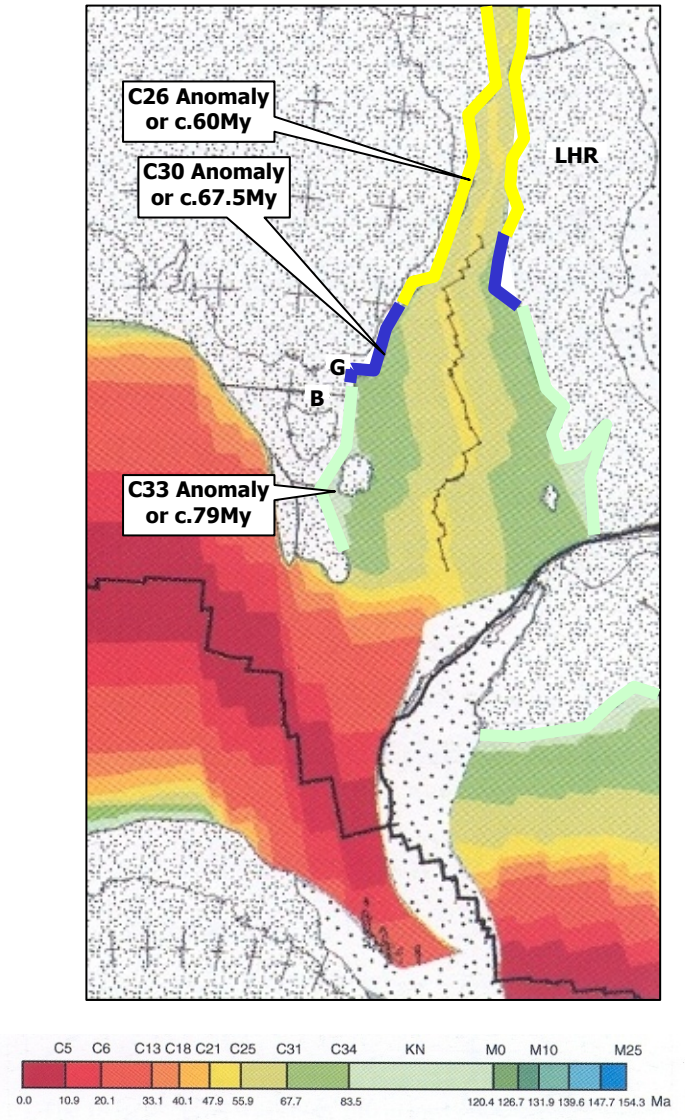
67.5My Intra_Maastrichtian plate reconstruction

DJGeoscience

Break-up Unconformities (1st Oceanic Crust at 76.5My)



Sea Floor Spreading History



94-66My Turonian to Maastrichtian plate reconstruction

DJGeoscience