Earthquake Report: 2018.08.05
M 6.9 Lombok

Jason R. Patton
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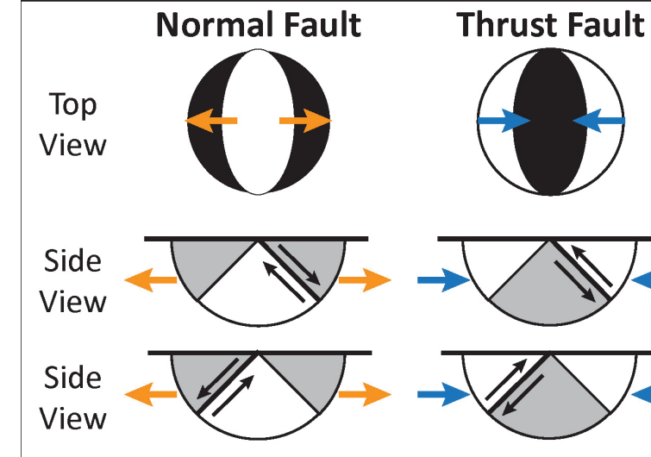
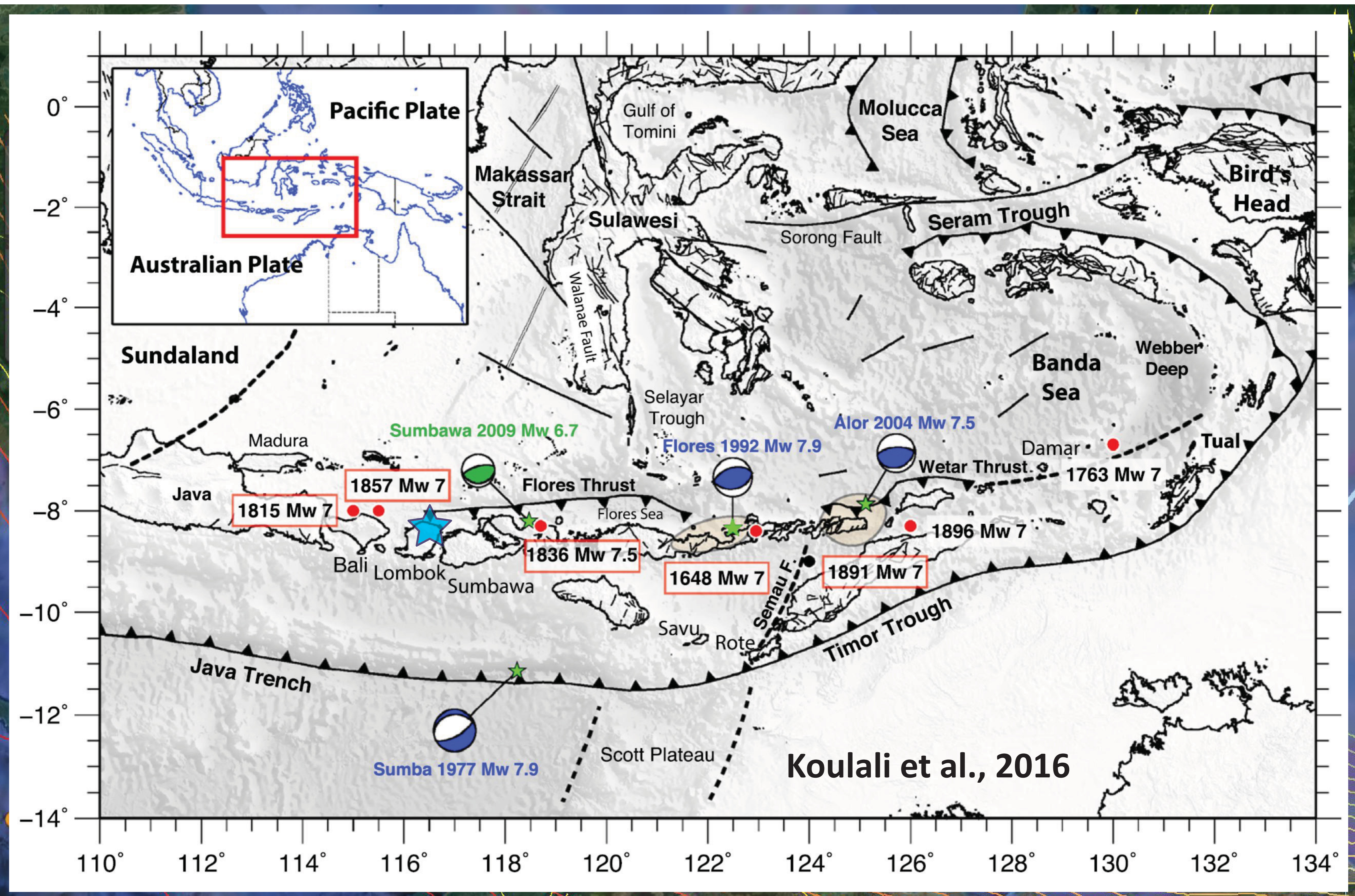
USGS Google Earth

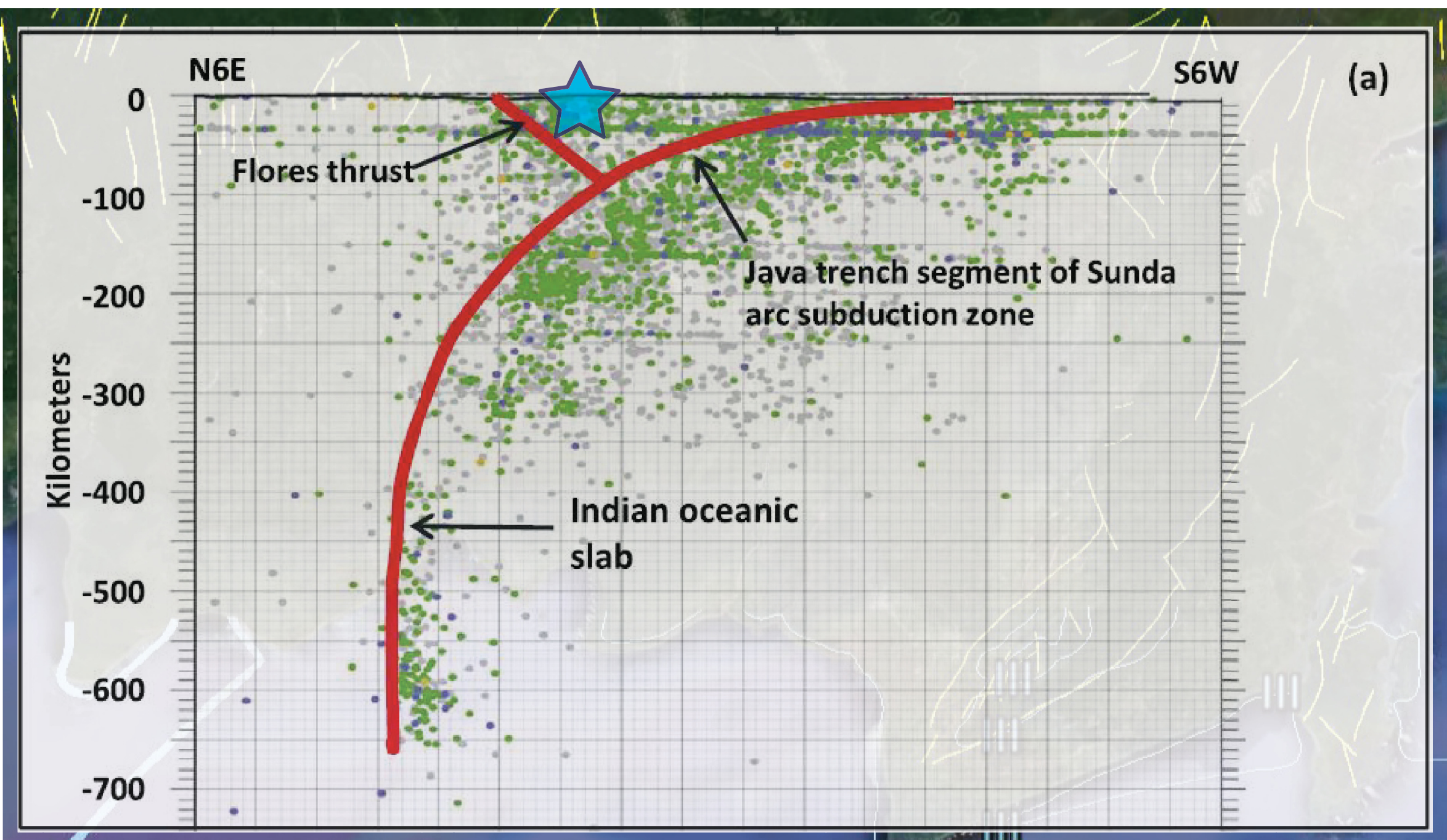

Normal Fault
Thrust Fault
Strike-Slip Fault
Top View
Side View
Side View

INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
Shaking	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
Damage	None	None	None	Very slight	Light	Moderate	Moderate/ heavy	Heavy	Very heavy
Peak Acc	<0.17	0.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
Peak Vel	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16 -31	31-60	60-116	>116

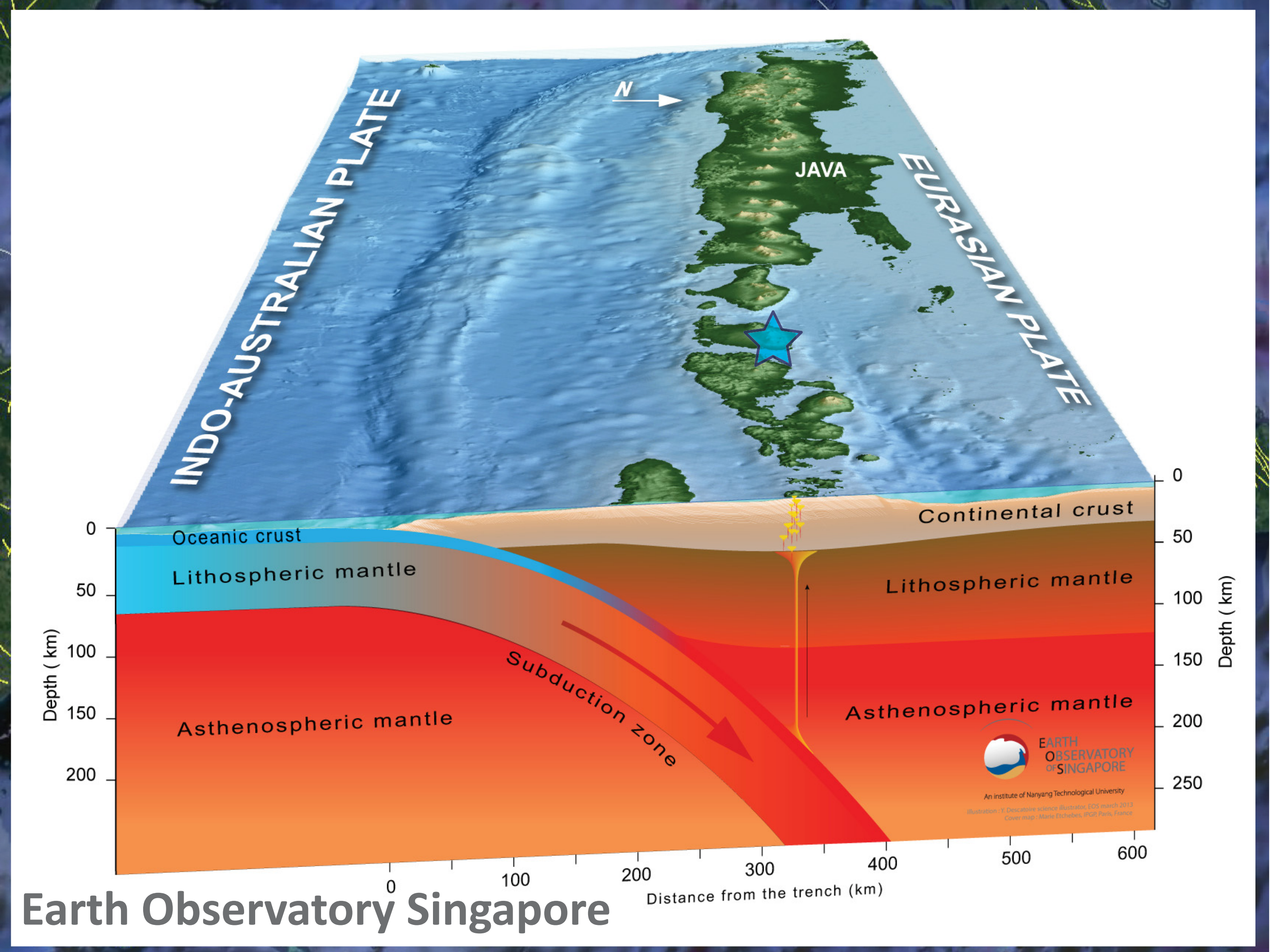
Peak Acc = Peak ground acceleration (g), Peak Vel = Peak ground velocity (cm/s)


Pacific Plate
Australian Plate
Sundaland
Makassar Strait
Gulf of Tomini
Sulawesi
Walanae Fault
Molucca Sea
Sorong Fault
Seram Trough
Bird's Head
Selayar Trough
Banda Sea
Webber Deep
Madura
Java
Bali
Lombok
Sumbawa
Sumbawa 2009 Mw 6.7
Flores 1992 Mw 7.9
Alor 2004 Mw 7.5
Flores Thrust
Flores Sea
Wetar Thrust
Damar
Tual
1815 Mw 7
1857 Mw 7
1836 Mw 7.5
1648 Mw 7
1891 Mw 7
1896 Mw 7
1763 Mw 7
Semau F.
Savu
Rote
Timor Trough
Java Trench
Scott Plateau
Sumba 1977 Mw 7.9
0°
−2°
−4°
−6°
−8°
−10°
−12°
−14°
110°
112°
114°
116°
118°
120°
122°
124°
126°
128°
130°
132°
134°

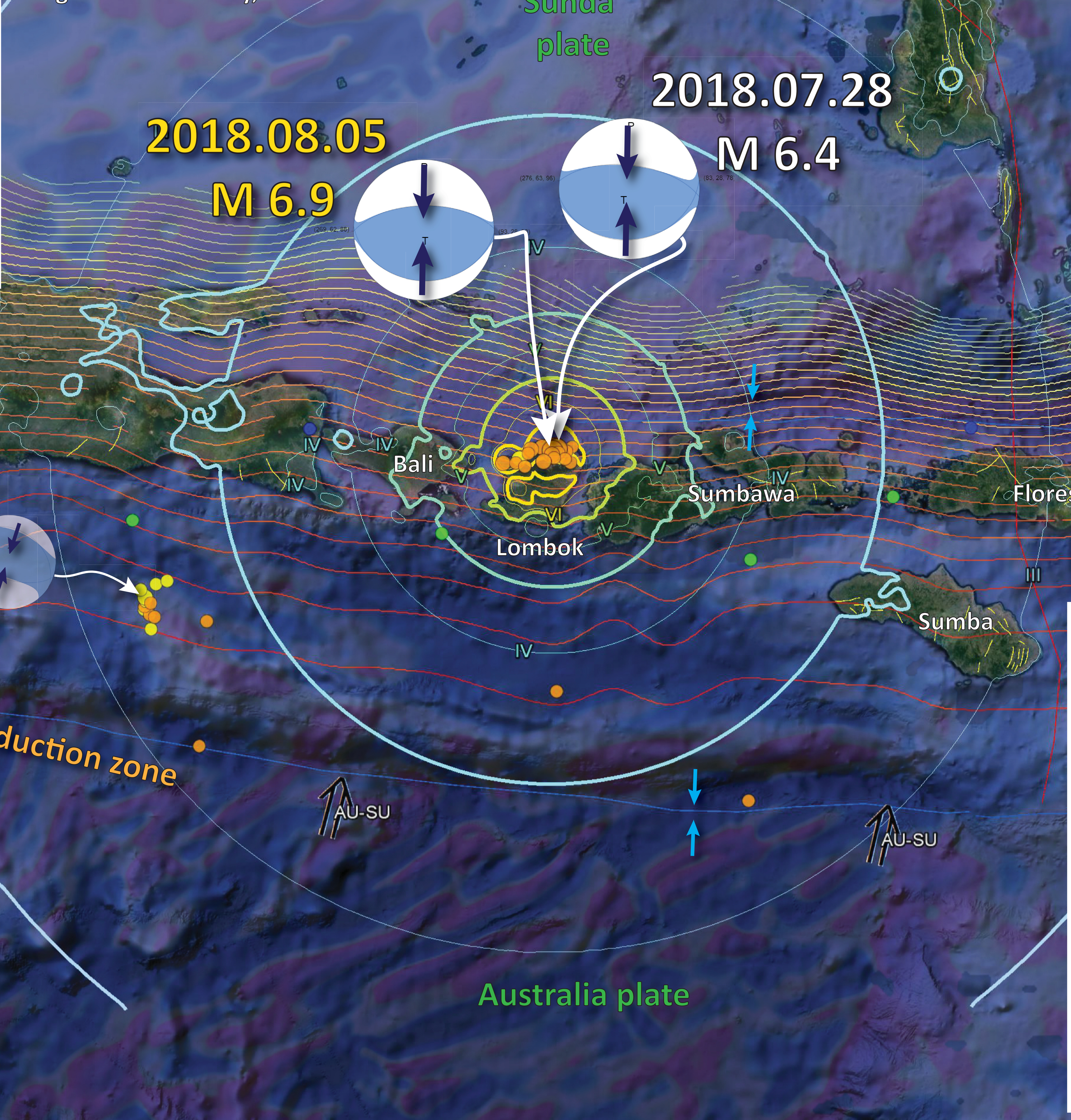
Koulali et al., 2016

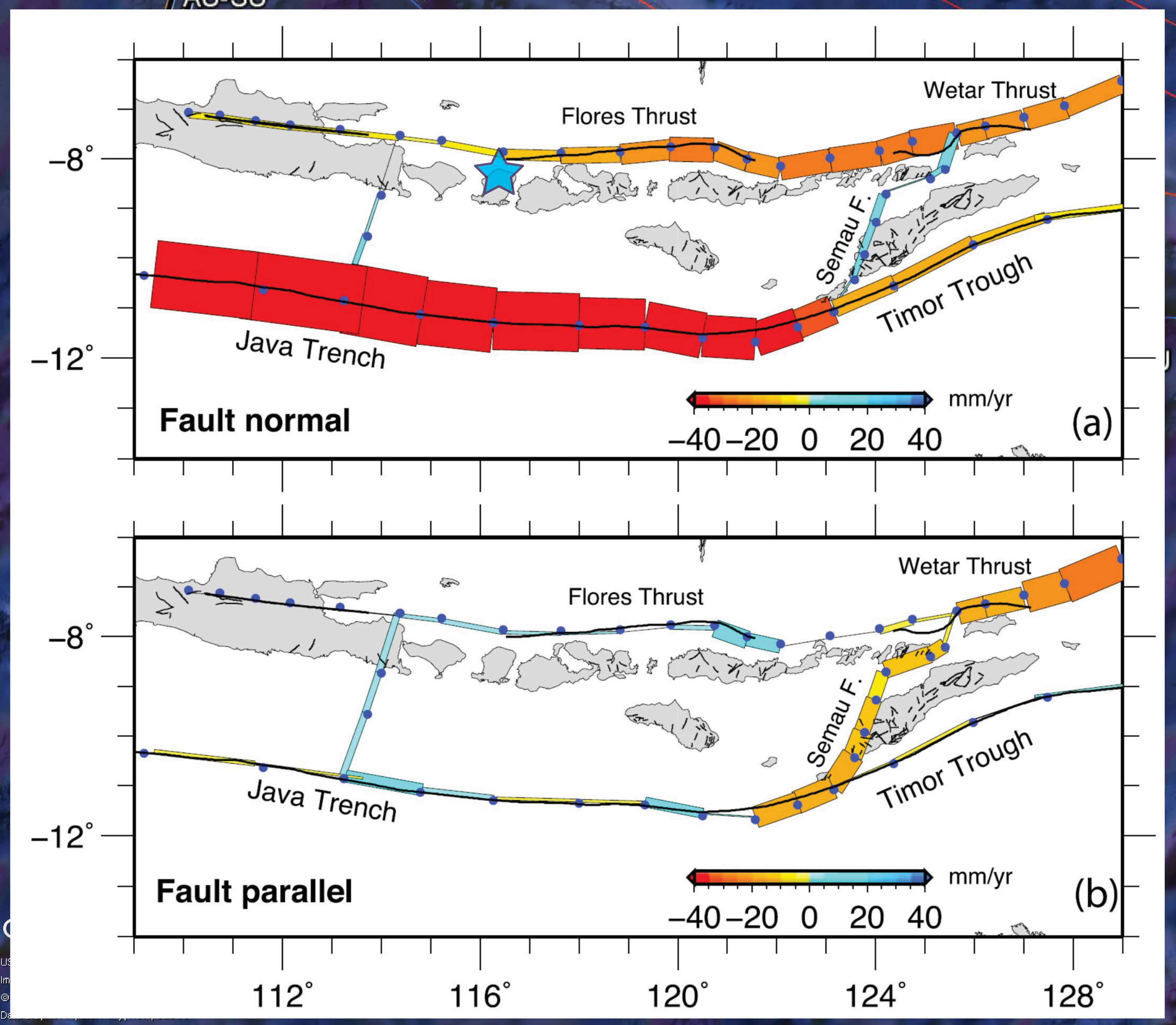


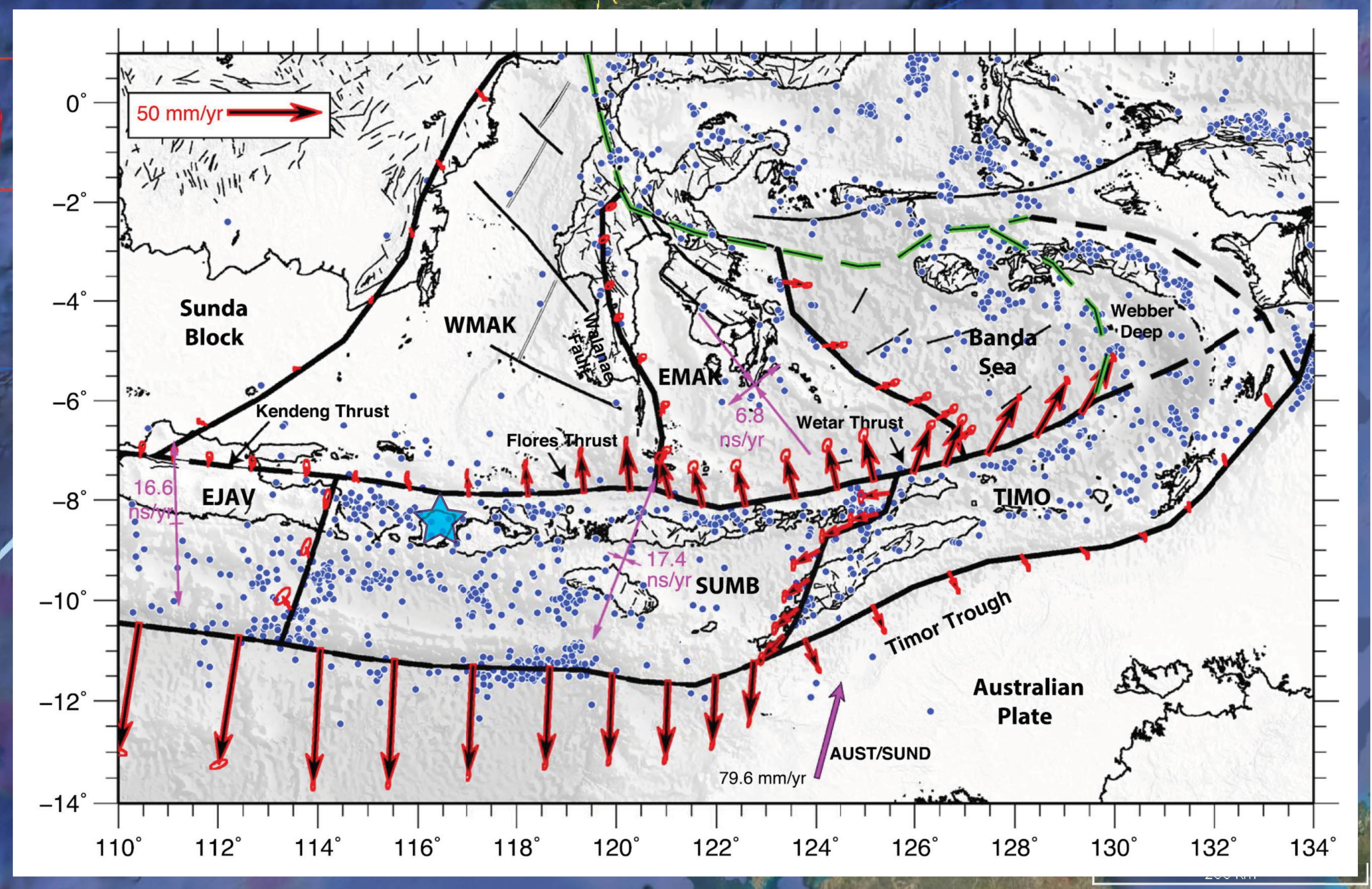
Hengesh and Whitney, 2016


N
JAVA
INDO-AUSTRALIAN PLATE
EURASIAN PLATE
Oceanic crust
Continental crust
Lithospheric mantle
Lithospheric mantle
Asthenospheric mantle
Asthenospheric mantle
Subduction zone
Depth (km)
0
50
100
150
200
Depth (km)
0
50
100
150
200
250
0
100
200
300
400
500
600
Distance from the trench (km)
EARTH OBSERVATORY OF SINGAPORE

Earth Observatory Singapore


Total Intensity Anomaly (nT)
-200
-150
-100
-50
0
50
100
150
200
Magnitude
8
7
6
5
4
3
2
1
Depth (km)
0 - 33
33 - 70
70 - 150
150 - 300
300 - 500
500 - 800
Depth to Slab (km)
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
Plate Boundaries
Divergent
Transform
Convergent
Other
Plate Motion
*Plate motion vectors rotated based on the direction of plate movement
Sunda plate
2018.08.05
M 6.9
2018.07.28
M 6.4
2018.07.28
M 6.0
2018.07.19
M 5.4
Java
Bali
Lombok
Sumbawa
Flores
Sumba
Timor
Flores Thrust
Sunda subduction zone
Australia plate
AU-SU
AU-SU
AU-SU
III
IV
V
VI
Koulali et al., 2016
Koulali et al., 2016


Flores Thrust
Wetar Thrust
Semau F.
Timor Trough
Java Trench
Fault normal
(a)
mm/yr
−40
−20
0
20
40
Flores Thrust
Wetar Thrust
Semau F.
Timor Trough
Java Trench
Fault parallel
(b)
mm/yr
−40
−20
0
20
40
−8°
−12°
112°
116°
120°
124°
128°


50 mm/yr
Sunda Block
WMAK
Walanae Fault
EMAK
Banda Sea
Webber Deep
Kendeng Thrust
Flores Thrust
Wetar Thrust
6.8 ns/yr
16.6 ns/yr
17.4 ns/yr
EJAV
SUMB
TIMO
Timor Trough
Australian Plate
AUST/SUND
79.6 mm/yr
0°
−2°
−4°
−6°
−8°
−10°
−12°
−14°
110°
112°
114°
116°
118°
120°
122°
124°
126°
128°
130°
132°
134°