Earthquake Report: 2018.08.05
M 6.9 Lombok (& USGS Seismicity 1918-2018 M ≥ 6.0)

Total Intensity Anomaly (nT)

Earth

-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

Jason R. Patton
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USGS Google Earth

Depth to Slab (km)

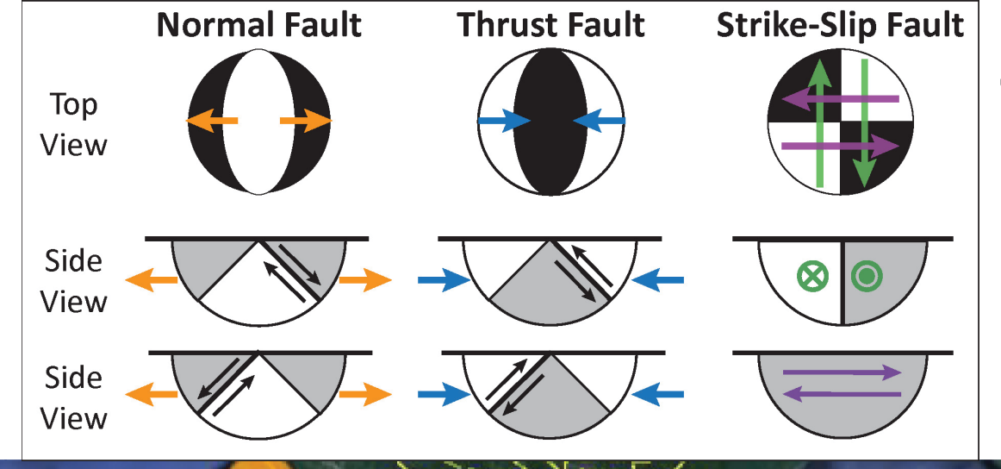
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700

Plate Boundaries

- Divergent
- Transform
- Convergent
- Other

Plate Motion

*Plate motion vectors rotated based on the direction of plate movement


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
Molucca Sea
Bird's Head
Sulawesi
Sorong Fault
Seram Trough
Walanae Fault
Selayar Trough
Banda Sea
Webber Deep
Madura
Java
Sumbawa 2009 Mw 6.7
Flores 1992 Mw 7.9
Alor 2004 Mw 7.5
Flores Thrust
Flores Sea
Wetar Thrust
Damar
1763 Mw 7
Tual
1857 Mw 7
1815 Mw 7
1836 Mw 7.5
1648 Mw 7
1891 Mw 7
1896 Mw 7
Bali
Lombok
Sumbawa
Savu
Rote
Semau F.
Timor Trough
Java Trench
Sumba 1977 Mw 7.9
Scott Plateau
0° -2° -4° -6° -8° -10° -12° -14°
110° 112° 114° 116° 118° 120° 122° 124° 126° 128° 130° 132° 134°
N6E
S6W
(a)
0 -100 -200 -300 -400 -500 -600 -700
Kilometers
Flores thrust
Java trench segment of Sunda arc subduction zone
Indian oceanic slab
INDO-AUSTRALIAN PLATE
EURASIAN PLATE
JAVA
N
Oceanic crust
Lithospheric mantle
Continental crust
Lithospheric mantle
Asthenospheric mantle
Subduction zone
Asthenospheric mantle
Depth (km)
0 50 100 150 200
0 50 100 150 200 250
0 100 200 300 400 500 600
Distance from the trench (km)
Earth Observatory Singapore
Sunda plate
2018.08.05
M 6.9
2018.07.28
M 6.4
2018.07.28
M 6.0
P
T
Java
Flores Thrust
Bali
Lombok
Sumbawa
Flores
Timor
Sumba
2018.07.19
M 5.4
IV
V
VI
III
AU-SU
Sunda subduction zone
Australia plate
Flores Thrust
Wetar Thrust
Semau F.
Timor Trough
Java Trench
Fault normal
(a)
mm/yr
−40 −20 0 20 40
Fault parallel
(b)
-8° -12°
112° 116° 120° 124° 128°
50 mm/yr
Sunda Block
WMAK
Walanae Fault
EMAK
Banda Sea
Webber Deep
Kendeng Thrust
6.8 ns/yr
Wetar Thrust
Flores Thrust
16.6 ns/yr
EJAV
TIMO
17.4 ns/yr
SUMB
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°

Koulali et al., 2016

Hengesh and Whitney, 2016

Earth Observatory Singapore

Koulali et al., 2016

Koulali et al., 2016

Koulali et al., 2016