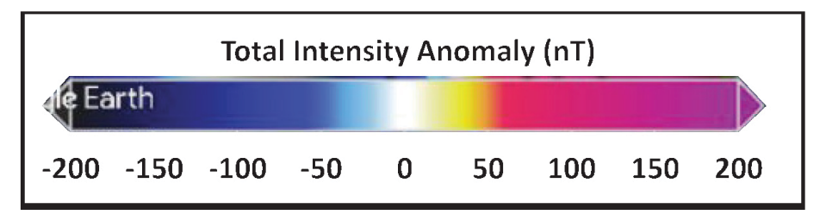
Earthquake Report: 2018.07.28
M 6.4 Lombok



Jason R. Patton
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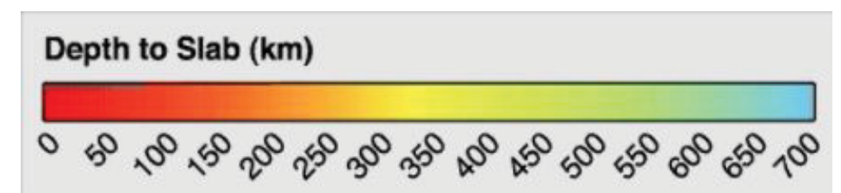
USGS Google Earth



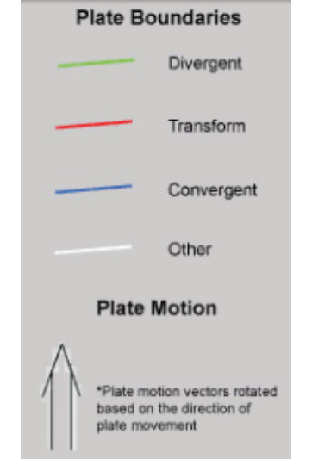
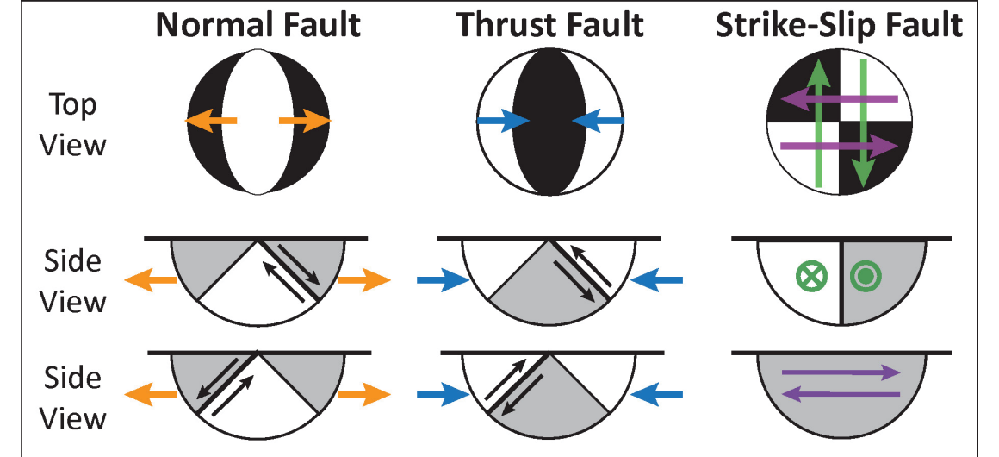


Plate Boundaries
Divergent
Transform
Convergent
Other
Plate Motion
*Plate motion vectors rotated based on the direction of plate movement


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)

Magnitude
8
7
6
5
4
3
2
1
Depth (km)
0 - 33
33 - 70
70 - 150
150 - 300
300 - 500
500 - 800
115°E
120°E
125°E
5°S
10°S
Continental crust margin (approximate)
NSA-1F
SG P-1
Kangean West-2
Flores Basin
Pantar Fracture
Sumba Fracture
Flores
Inner Arc (Volcanic)
Savu Basin
Sumba
Timor
Outer Arc Ridge
Lombok Basin
Java Trench
Argo Abyssal Plain
Limit of continental crust
Scott Plateau
200 km
Darman, 2012
Legend
Bathymetry
0 200 1000 2000 3000 4000 5000 6000
Inner Arc (Volcanic)
Outer Arc Ridge
Exposed Fore Arc basement
Subduction zone
Anticlinal
Depression
Normal faults
Darman, 2012
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
Hengesh and Whitney, 2016
Sunda plate
2018.07.28
M 6.4
P
T
2018.07.28
M 6.0
T
P
INDO-AUSTRALIAN PLATE
EURASIAN PLATE
N
JAVA
Oceanic crust
Continental crust
Lithospheric mantle
Lithospheric mantle
Asthenospheric mantle
Subduction zone
Asthenospheric mantle
Depth (km)
0
50
100
150
200
250
0
100
200
300
400
500
600
Distance from the trench (km)
Earth Observatory Singapore
Java
Bali
Lombok
Sumbawa
Flores
Sumba
Timor
Flores Thrust
III
IV
V
VI
II
Sunda subduction zone
AU-SU
AU-SU
AU-SU
AU-SU
AU-SU
Australia plate
Silver et al., 1986
Silver et al., 1986
0 10 20
Kilometers
Contour Interval 100m
Thrust
High Angle Fault
Possible Mud Diapir
FLORES
BASIN
7°45'S
8°00'S
120°00'E
120°30'E
121°00'E
121°30'E
116
120
124
128
4
6
8
10
12
EXPLANATION
Thrust Fault
3000m Contour
Active Volcano
Sunda Shelf
South Sulawesi
SE Sulawesi
Salayar
Bonerate
BANDA
SEA
Gunung Api
Wetar Thrust Zone
Wetar
Romang
FLORES THRUST ZONE
FIGURES 2,3
Bali
Flores
Alor
Timor
Sumba
Timor Trough
0 200
Kilometers
3000
Java Trench
Australia Continental Shelf