frontiers

Supplementary Material

Timor collision front segmentation reveals potential for great earthquakes in the western Outer Banda Arc, Eastern Indonesia

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1 Content of this file

- References mentioned in the Supplementary Material
- Figure S1 and S2
- Table S1

2 References

[1] Keep, M., Clough, M., and L. Langhi. Neogene tectonic and structural evolution of the Timor Sea region, NW Australia. In M. Keep, & S. J. Moss (Eds.), The Sedimentary Basins of Western Australia 3 (Perth, Australia ed., Vol. 1, pp. 342-353). Petroleum Exploration Society of Australia Limited (2002).

[2] Aurio Erdi, Benyamin Sapiie, Indra Gunawan, Novian Martha Kusuma & Alfend Rudyawan. New Perspective of Mesozoic Hydrocarbon Prospectivity Within West Timor, ASEG Extended Abstracts, 2018:1, 1-7 (2018), doi: 10.1071/ASEG2018abP031.

3 Supplementary Figures

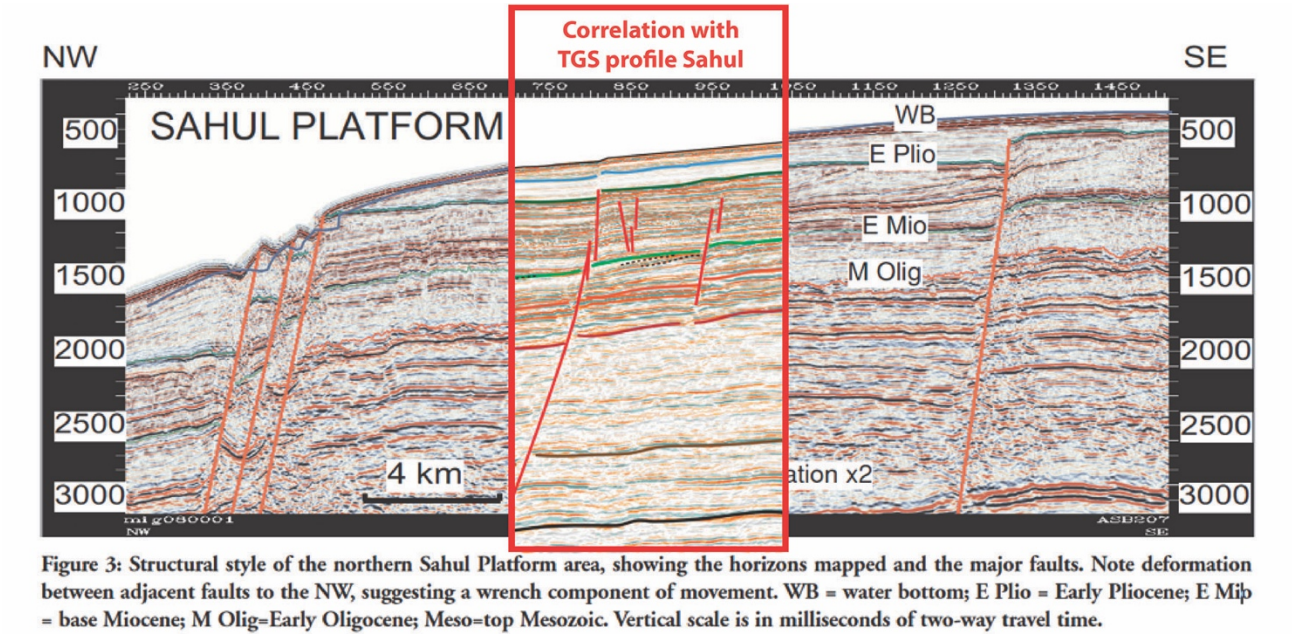


Figure 3: Structural style of the northern Sahul Platform area, showing the horizons mapped and the major faults. Note deformation between adjacent faults to the NW, suggesting a wrench component of movement. WB = water bottom; E Plio = Early Pliocene; E Mio = base Miocene; M Olig=Early Oligocene; Meso=top Mesozoic. Vertical scale is in milliseconds of two-way travel time.

Figure S1: Horizon correlation within the Australian NW shelf sedimentary section in the Sahul platform (i.e., corresponding to the Jamdena region) with seismic profile published by Keep et al. (2002) [1].

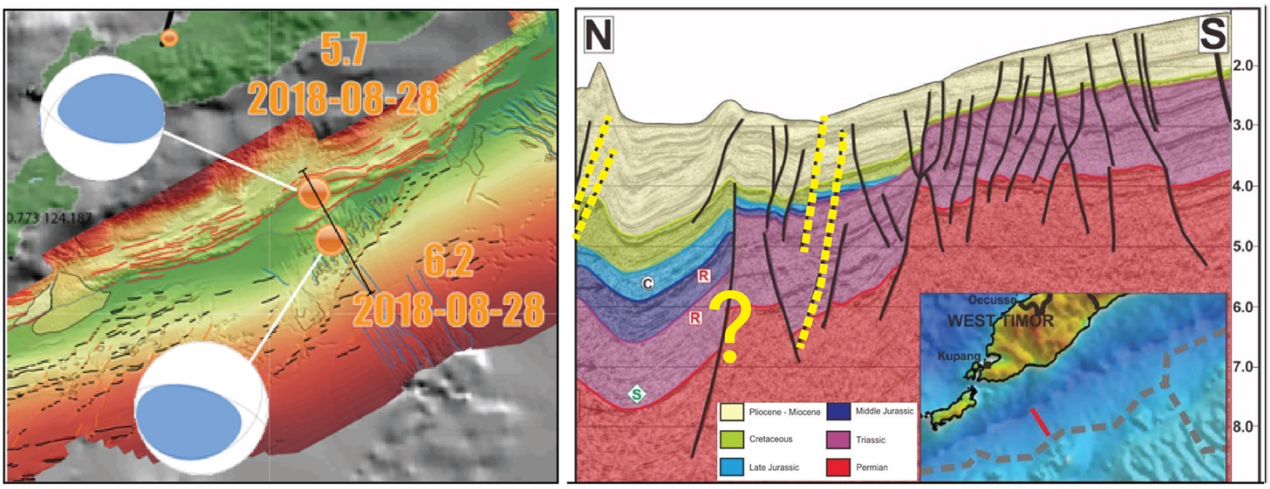
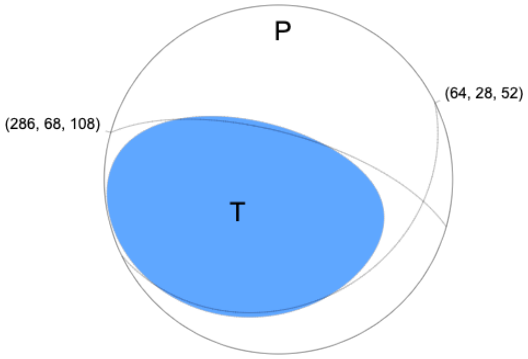


Figure S2: Left: Location of the M_w 6.2 and M_w 5.7, 2018 earthquakes offshore Timor. Focal mechanisms are from USGS. Black line indicates adjacent seismic profile. (Right) Interpreted seismic profile in time section (from Aurio et al., 2018) [2]. Dashed yellow lines highlight possible fault sources of the 2018 earthquakes located at the wedge front (M_w 5.7) and within the incoming Australian northwest shelf sediments (M_w 6.2).

Table S1 : USGS focal mechanisms for the Mw6.2 and 5.7 earthquakes – Southwest Timor region.

USGS			
Time	28/8/18	7:08:11 (UTC)	
Magnitude (Mw)	6.2		
Latitude	10.773°S		
Longitude	124.187°E		
Depth	13.5 km		
Nodal planes	Strike	Dip	Rake
	286°	68°	108°
	64°	28°	52°
Moment	2.692e+18 N-m		



USGS			
Time	28/8/18	7:13:32 (UTC)	
Magnitude (Mw)	5.71		
Latitude	10.631°S		
Longitude	124.136°E		
Depth	11.5 km		
Nodal planes	Strike	Dip	Rake
	249°	33°	60°
	104°	62°	108°
Moment	4.695e+17 N-m