

***Interactive comment on “Re-evaluation of the
Mentelle Basin, a polyphase rifted margin basin,
offshore south-west Australia: new insights from
integrated regional seismic datasets” by
D. Maloney et al.***

S. Cande (Referee)

scande@ucsd.edu

Received and published: 15 April 2011

This is a well written paper that presents reprocessed and reinterpreted seismic data from the Mentelle Basin. The basin is located in a tectonically complex place, being adjacent to both the axis of rifting of India from Australia-Antarctica and the slightly later axis of rifting between Australia and Antarctica. The rifting history of Australia-Antarctica is particularly enigmatic and clues as to the tectonic events during this prolonged period of hyperextension and ultraslow spreading are badly needed. The description of the sedimentary and tectonic histories of this basin are very informative

C75

and will be of interest to a broad audience. The only specific comment I have is in the discussion of tectonic events on page 84 where the authors state that the “Mid-Eocene magnetic anomalies [coincide] with the onset of fast spreading between Australia and Antarctica and the start of rapid northward motion of greater India.” Actually the onset of fast spreading between Australia and Antarctica occurs at the end of the period of rapid northward motion of India. India’s rapid northward motion starts around 70 Ma and ends around 50 Ma. It is right after India slows down that Australia speeds up. Australia and India fuse into a single large plate around 45 Ma; the combined plate moved quite a bit slower than India did by itself and much faster than Australia did by itself. A very minor point in an otherwise well crafted discussion.

Interactive comment on Solid Earth Discuss., 3, 65, 2011.

C76