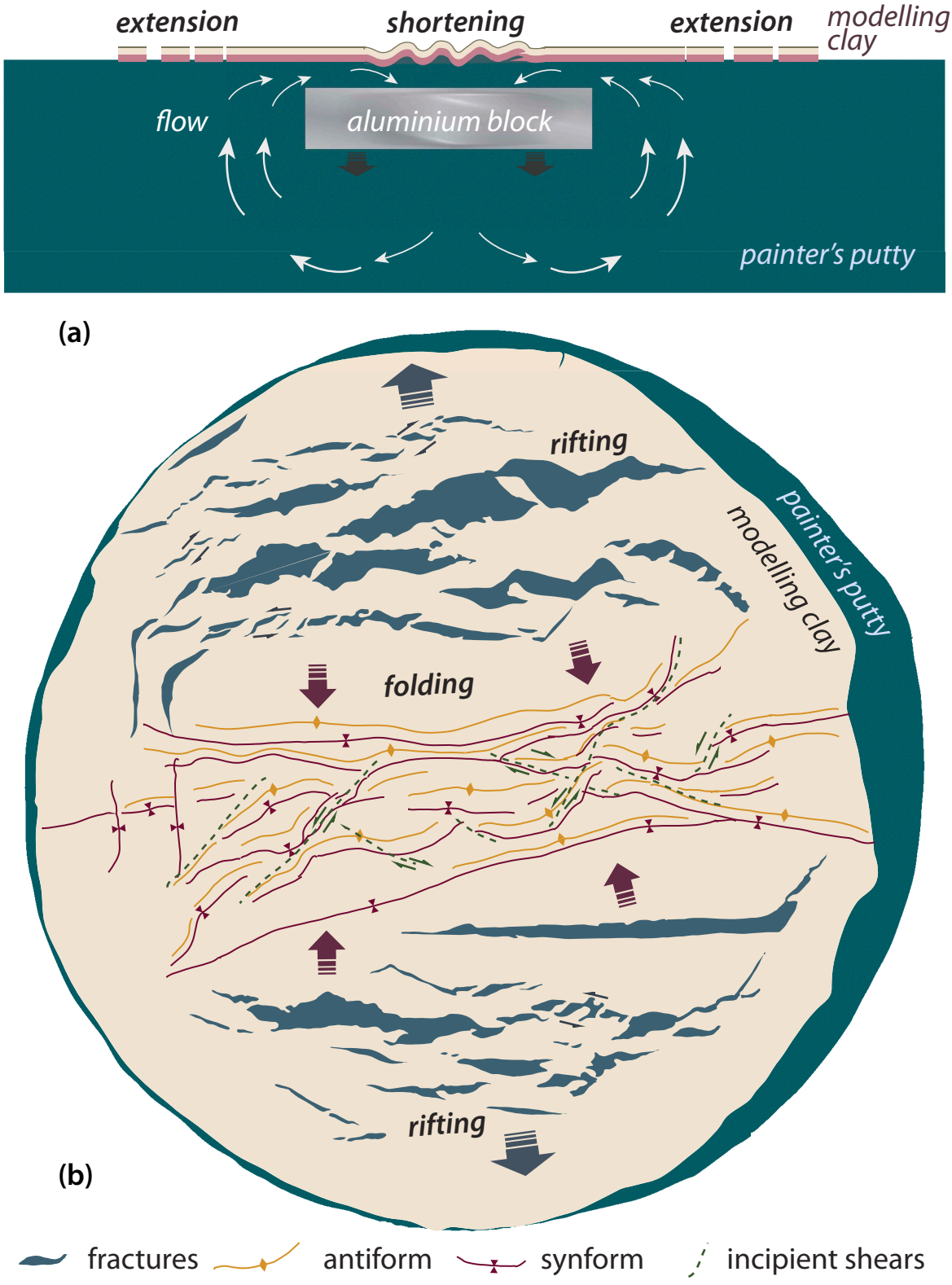
extension
shortening
extension
modelling clay
flow
aluminium block
painter's putty
(a)
rifting
modelling clay
painter's putty
folding
rifting
(b)
fractures
antiform
synform
incipient shears

Supplementary Fig. 3. Centrifuge model, redrawn after photographs in Ramberg (1967), simulating the effects of mantle tractions on the overlying crust. (a) Schematic cross-section. (b) Surface view. A sinking aluminium block was used to generate flow of the ductile material (painter's putty) simulating mantle beneath a semi-brittle modelling clay layer simulating the crust. Whilst extremely simplified, the model shows that rifting may occur in areas above upwelling flow whereas shortening, leading to the formation of folds and conjugate shear zones, have formed in the area of convergent horizontal and downwelling flow. A similar relationship between mantle flow, rifting and shortening is envisaged for Venus. (More detailed centrifuge experiments incorporating crustal thickness variations and a multi-layer lithosphere are planned to better test our Venus interpretations.)

RAMBERG, H., 1967. Gravity, Deformation and the Earth's Crust as studied by centrifuge models. Academic Press, London, 214 p.p.