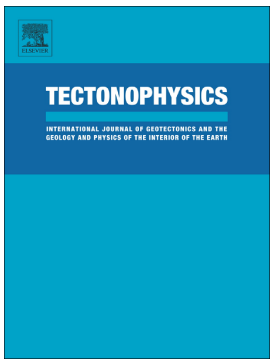

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Structure and origin of Australian ring and dome features with reference to the search for asteroid impact events

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ABSTRACT

Ring, dome and crater features on the Australian continent and shelf include (A) **38** structures of confirmed or probable asteroid and meteorite impact origin and (B) numerous buried and exposed ring, dome and crater features of undefined origin. A large number of the latter include structural and geophysical elements consistent with impact structures, pending test by field investigations and/or drilling. This paper documents and briefly describes **43** ring and dome features with the aim of appraising their similarities and differences from those of impact structures. Discrimination between impact structures and igneous plugs, volcanic caldera and salt domes require field work and/or drilling. Where crater-like morphological patterns intersect pre-existing linear structural features and contain central morphological highs and unique thrust and fault patterns an impact connection needs to tested in the field. Hints of potential buried impact structures may be furnished by single or multi-ring TMI patterns, circular TMI quiet zones, corresponding gravity patterns, low velocity and non-reflective seismic zones.

A. Examples of crater-form and dome-form features containing elements consistent with an impact origin, though unproven, include ***Auvergne, Delamere, Fiery Creek, Monte Christo, Mount Moffatt, Tanami East, Youngerina, Tingha***.

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