

## GRAVITY FEATURES IN THE EROMANGA BASIN

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### BIOGRAPHY

Vadim Anfiloff obtained his B.Sc. (Hons.) degree in geology and physics from the University of Adelaide. In 1969 he joined WAPET and gained experience in oil geophysics and data processing. In 1970 he joined the B.M.R. and concentrated mainly on the processing and interpretation of gravity data. He was chief compiler of the 1976 Gravity Map of Australia, has investigated large sections of the Australian gravity field, and has been involved in numerous detailed surveys. Current interests include computer systems for the display and interpretation of combined seismic, gravity and magnetics data.

### SUMMARY

The gravity field over the Eromanga Basin provides information on the development of troughs, faults, and on the basin's relationship to adjoining areas. A major change in free-air level across the Cork Fault may have important implications for the evolution of the basin as a whole (Anfiloff, 1982).

A rectilinear pattern of elongate gravity lows suggests Palaeozoic rifting along a pre-existing system of crustal sutures. Some patterns extend beyond the basin, implying that Proterozoic basement occurs throughout the area. Subsidence into the rifts was very gradual, and may have been accompanied by upwelling of the lower crust, and the production of granites under the larger troughs.

Various narrow basement highs such as the Nebine Ridge, may represent "bridges" along which compression is transmitted laterally. During the latter part of the Phanerozoic, a compression network may have caused a pattern of differential isostatic adjustments, producing growth faults and a multiplicity of simple structures which dislocated the original rift network.

### Reference

ANFILOFF, V., 1982: Elevation and gravity profiles across Australia - some implications for tectonism. BMR J. Aust. Geol. Geophys., 7, 47-54.