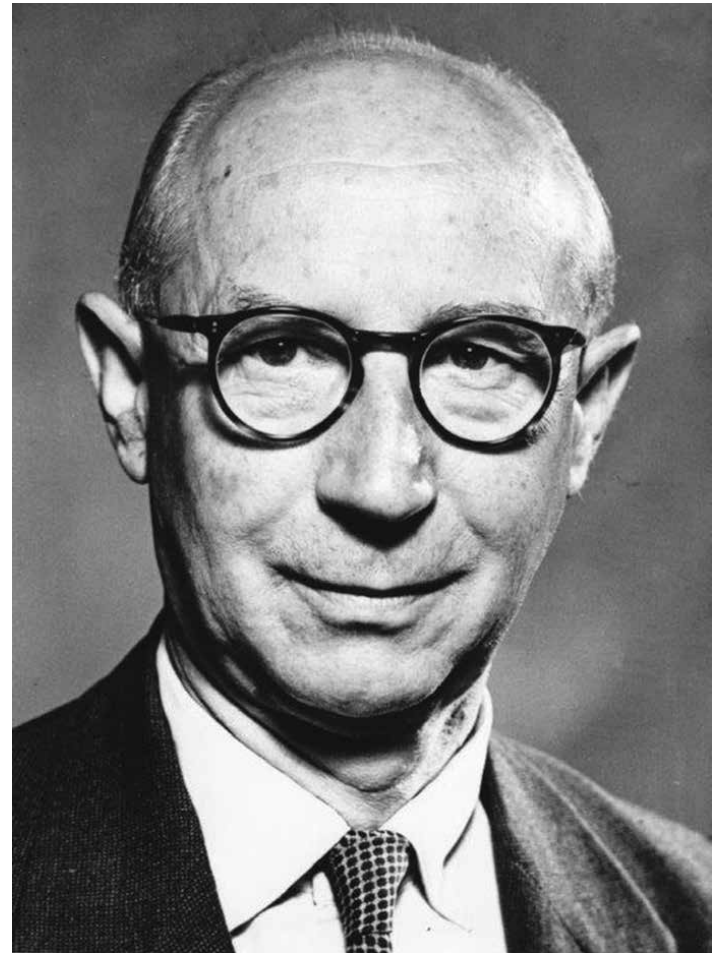


# Phaup Award 2014

Albert Edward Phaup, B.Sc., M.Sc., PhD  
1907 - 1990

The award is given to Author(s) of a paper published in an internationally acclaimed scientific journal, and judged to be making the most significant contributions to the advancement of the understanding of the geology of Zimbabwe



# 2014 Phaup Award Committee

- Forbes Mugumbate
- Tim Broderick

# Papers considered

**Chuma C., Hlatywayo, D.J., Zulu, J., Muchingami, J., Mashingaidze, R.T. and Midzi, V. 2013.** Modelling the subsurface Geology and groundwater occurrence of the Matsheumhlope low yielding Aquifer in the Bulawayo Urban, Zimbabwe. *Journal of Geography and Geology*, vol. 5(3), pp.158-175.

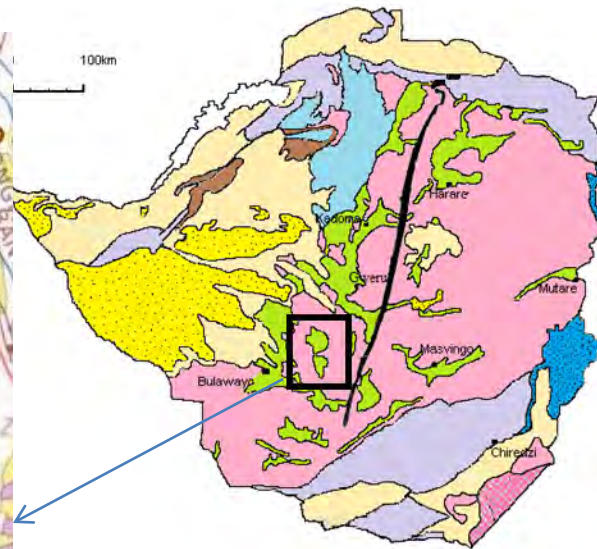
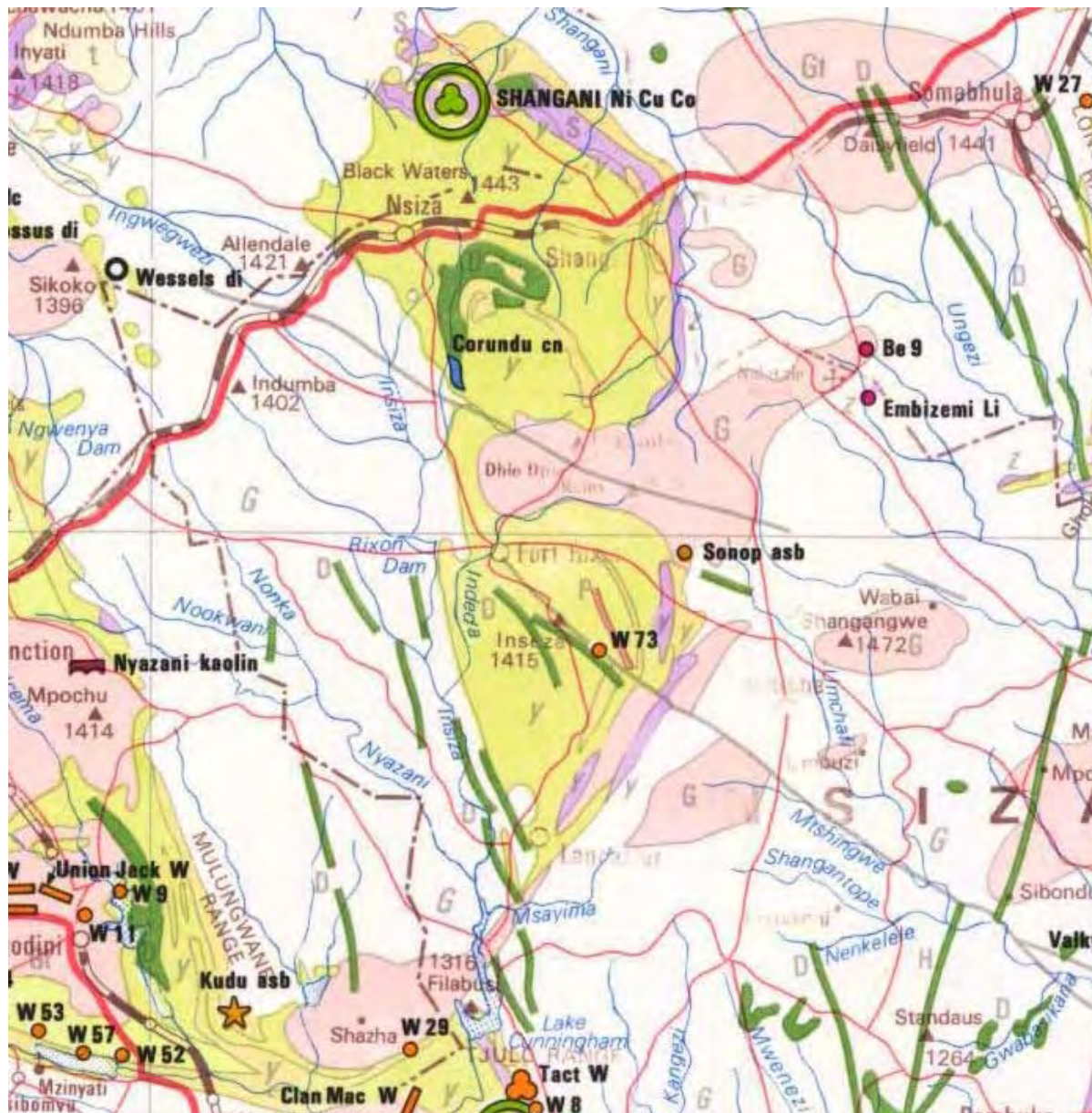
**Khoza D. Jones, A.G., Muller, M.R., Evans, R.L., Webb, S.J., Miensoopust, M. and the SAMTEX Team 2013.** Tectonic Model of the Limpopo Belt: Constraints from Magnetotelluric data. *Precambrian Research* 226, pp. 143-156.

**Njila, T. , Mudimbu, D., Chinguno, N. and Chikwema P. 2014.** An overview of the geology of health in Zimbabwe and surrounding areas. *Minera y Geologia*, vol. 30 (3), pp.1-15.

**Ranganai R.T. 2013.** Structural and subsurface relationships between Fort Rixon - Shangani greenstone belt and the Nalatale pluton, Zimbabwe, as derived from gravity and aeromagnetic data. *South African Journal of Geology*, Vol. 116 (2), pp. 273-296.

# Selected paper

**Ranganai R.T. 2013.** Structural and subsurface relationships between Fort Rixon - Shangani greenstone belt and the Nalatale pluton, Zimbabwe, as derived from gravity and aeromagnetic data. *South African Journal of Geology*, vol. 116 (2), pp. 273-296.



# Citation

- Dr Rubeni Ranganai is a Zimbabwean geophysicist who is showing great interest in Archaean geology of this country as evidenced by the number and quality of papers he has authored/co-authored since completion of a PhD on geophysical investigations of greenstone belts of the south-central part of Zimbabwe in 1995.
- Together with other geophysicists including the current Director of the Zimbabwe Geological Survey, Rubeni was a pioneering member of the Geophysics section at ZGS.
- He is currently at the University of Botswana's Physics Department of from where he continues with studies on Zimbabwean geology, which has resulted in publications on the Masvingo and Filabusi greenstone belts respectively.

# Highlights of the paper

- The paper resulted from comprehensive work including gravity surveys to complement existing gravity data, interpretation of CIDA aeromagnetic data and other existing geological data, and integration of all these data into models.
- The paper is well presented with maps, diagrams, geophysical sections, and is easily comprehensible.
- Dr Ranganai's paper advances the on-going controversial debate on evolution of the Archaean crust. Whereas many interpretations of the evolution of the Archaean crust have largely relied on geology, structural data and geochronology, Dr Ranganai is advancing the usage of geophysics to complement existing data to have a better 3-D understanding of the structure of greenstone belts and surrounding granitoids.
- Some of the areas covered in the paper include:
  - Relationships between greenstone belts and surrounding granitoids
  - Relationships between different greenstone belts separated by granitic intrusions
  - Granite emplacement mechanisms – diapirism and magmatic stoping
- The work also helped to
  - reveal geological structures depicting shear zones, faults and dykes in areas of poor exposure
  - and to add gravity data stations to the existing national gravity database.

# Conclusions

- Dr Ranganai's well articulated paper does not only have implications to the understanding of local geology of the Fort Rixon – Shangani greenstone belt and surrounding areas, but also to the appreciation of the evolution of the Archaean crust in general.
- The paper therefore deserves the A.E. Phaup Award for 2014.



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CONGRATULATIONS**