

AFRICAARRAY

Observational, research and training programs to build geoscience capacity in Africa

Raymond J. Durrheim^{1,2}, Andy A. Nyblade³ & Gerhard Graham⁴

¹School of Geosciences, University of the Witwatersrand, Private Bag 3, Wits 2050, South Africa, email: Raymond.Durrheim@wits.ac.za

²Centre for Mining Innovation, Council for Scientific and Industrial Research, PO Box 91230, Auckland Park 2006, South Africa, email: rdurrhei@csir.co.za

³Department of Geosciences, Pennsylvania State University, University Park, Pennsylvania, USA, email: andy@geosc.psu.edu

⁴Council for Geoscience, Private Bag X112, Pretoria 0001, South Africa, email: gerhardg@geoscience.org.za

AfricaArray is a long-term initiative that promotes linked observational, research and training programs to build geoscience capacity in Africa. The program was initially focused on geophysics, but is now being expanded to include other geosciences disciplines. The observational stations are positioned to provide data that can enable exploration for minerals, groundwater and hydrocarbons, and help to forecast natural hazards such as earthquakes, volcanic eruptions, and changes in climate. AfricaArray has established a backbone network of 41 seismic stations in sub-Saharan Africa, and currently also operates temporary networks to monitor mining-induced seismicity in South Africa, seismicity associated with the East African Rift System, and a seismic network designed to image the boundary of the Congo craton. In 2010 the National Science Foundation awarded a grant to AfricaArray and UNAVCO to install GPS and meteorological sensors at 20 stations. These instruments will enable support studies of geodynamics, hydrology and climate change.

AfricaArray was launched as a 20-year initiative in 2004 by the University of the Witwatersrand, South Africa, the Council for Geoscience of South Africa, and Penn State University, USA. It is supported by IRIS (Integrated Research Institute of Seismology), where AfricaArray seismology datasets are stored and distributed. AfricaArray has grown quickly and been successful largely because of grass-roots support from many people within a variety of African institutions that are committed to its capacity building goals (currently 17 African countries actively participate in AfricaArray in collaboration with 11 private companies and many organizations outside of Africa). Details about AA can be found on the AA website (www.africaarray.org).