



Overview of the Barberton Drilling Project

Nicholas T. Arndt (1), Allan Wilson (2), Paul Mason (3), Axel Hofmann (4), and Don Lowe (5)

(1) CNRS, ISTerre, Grenoble cedex 09, France (arndt@ujf-grenoble.fr, +33-(0)4-76514058), (2) Dept Geosciences, Univ Witwatersrand, Johannesburg, South Africa, (3) Dept Geosciences, Univ Utrecht, 3584 CD Utrecht, Netherlands, (4) Department of Geology University of Johannesburg, Johannesburg South Africa, (5) Department of Geological & Environmental Sciences, Stanford University CA, USA

The Barberton Greenstone Belt in South Africa is one of the best-preserved successions of mid- Archean (3.5-3.2 Ga) supracrustal rocks in the world, and, as such, a remarkable natural laboratory where conditions and processes at the surface of the Archean Earth can be studied in detail. Volcanic and sedimentary sequences in the belt provide information on the environment in which life emerged and evolved. A drilling project, sponsored by the International Continental Drilling Program (ICDP), and many national funding agencies, was completed in May 2012. More than 3000 m of core from 5 holes at four sites were recovered. At the Tjakastad site, two ca. 300 m holes were drilling through sequences of komatiites and komatiitic basalts. The other three holes targeted sedimentary rocks: the Buck Reef hole sampled over 700m of mainly banded black and white cherts; the Mid Fig Tree hole sampled a sequence of ferruginous charts and mudstones; and the Barite Valley hole samples a more varied sequence including sandstone, shale, cherts and volcaniclastic rocks. The core is stored and has been logged in facilities of the University of the Witwatersrand. Core logs can be found at [tp://www.peerintobarberton.com/Sites.html](http://www.peerintobarberton.com/Sites.html) . An open call for proposals to work on the core, sent out in November 2012, was answered by over 50 scientists from 12 countries who plan to study the core using techniques ranging from petrography, through major and trace-element analysis, to sophisticated isotopic analysis. A workshop to discuss the drilling project and to view the core is planned at the University of the Witwatersrand in Johannesburg from Mon 18th to Wed the 21st February 2013, followed by a short trip to the Barberton belt to visit the drilling sites.