

## Kathu Pan 1: Application for Excavation Permit

Applicants: Michael Chazan (University of Toronto); David Morris (McGregor Museum)

Context: Kathu Pan 1 is a doline infill site that preserves a sequence spanning Earlier Stone Age (Strata 4a-4b); Middle Stone Age (Stratum 3); and Holocene (Strata 2-1). Excavations by P. Beaumont recovered a large assemblage of Acheulean (St. 4b) and Fauresmith (St. 4a) artifacts and associated fauna. In 2004 our team reopened the excavation area and cleaned sections to recover samples for dating. The results of this research (Porat et al. 2009) place the Fauresmith of St. 4a at ca. 450-500,000 BP based on both OSL and ESR ages. Research by Jayne Wilkins for her PhD thesis has demonstrated intentional blade production in St. 4a, thus establishing this contexts as among the earliest known sites with evidence of this technology (Wilkins and Chazan 2011). Further research by Wilkins suggests that points in the St. 4a assemblage were used as spear tips.

Goals: This project has the following goals:

1. To collect further samples to confirm the dates for Strata 3 and 4a. This will include soil samples for OSL and faunal specimens for ESR.
2. To identify and define the contact between St. 4a and 4b.
3. To collect paleomagnetic dating samples for St. 4b. At present this is the only method for dating this stratum.
4. To collect intact faunal material. The faunal remains are extremely fragile as they consist largely of the enamel of teeth. Very few intact teeth are available from the Beaumont excavation.
5. To collect sediment samples for geological analysis of site formation processes.

Scope: Excavation will extend Beaumont's excavated area north over an area of 2 x 6 meters. This area will be excavated to the base of St. 4b. Sounding will be made into the underlying St. 5 for sampling for paleomagnetic dating.

Methods: Excavation will take place in 0.25 square meter units in spits of 5 cm. All finds will be plotted in situ using a total station and strike and dip will be recorded. Sediments will be screened through a 2 mm. mesh screen. Emphasis will be placed on in situ consolidation of faunal remains using methods developed by the Florisbad Research Station. All materials will be curated at the McGregor Museum. Conservation and analysis of faunal remains will take place at the Florisbad research station.

Conservation: At the end of the excavation the excavated profile will be buttressed using military sandbags and backfilled. This research takes place in the context of long term planning by the McGregor Museum for the protection of Kathu Pan 1 and other sites in the vicinity.

Research Team: This project is an offshoot of the Wonderwerk Cave research project and shares much of the same personnel.

Michael Chazan (University of Toronto): Project Director, Lithic Analysis

Jayne Wilkins (University of Toronto): Lithic Analysis

David Morris (McGregor Museum): Site Management

James Brink (National Museum) : Paleontology

Liora Kolska Horwitz (Hebrew University): Taphonomy

Naomi Porat (Israel Geological Survey): OSL Dating

Hagai Ron (Hebrew University): Paleomagnetic Dating

#### Publications

2012. Wilkins, J. and M. Chazan. Blade production ~500 thousand years ago at Kathu Pan 1, South Africa: support for a multiple origins hypothesis for early Middle Pleistocene blade technology. *Journal of Archaeological Science*, Available online 4 February 2012.

2009. Porat, N., Chazan, M., Grun, R., Aubert, M., Eisenmann, V., Kolska-Horwitz, L New radiometric ages for the Fauresmith industry from Kathu Pan, Southern Africa: Implications for the Earlier to Middle Stone Age Transition. *Journal of Archaeological Science* 37: 269-283.