



Fig. 5: Aerial image indicating the area of the survey, which comprises over 1,000 km² between the towns of Azraq and Safawi

The Western Harra Survey Project is investigating late prehistoric settlements, from the Late Neolithic to the Early Bronze Age (7th millennium–early 3rd millennium B.C.), in the arid harra region of northeastern Jordan—the so-called Black Desert. The research area covers a rough square of over 1,000 km² between the towns of Azraq and Safawi, divided into four targeted regions selected for detailed fieldwork investigation (Fig. 5). These regions are representative of the different types of landscape found in the harra: A) undulating steppe carpeted by a dense layer of basalt blocks; B) large wadi (valley) systems surrounded by pockets of basalt outcrops; C) large *qe'an* (mud flats) within areas otherwise similar to A; and D) basaltic hilly areas crossed by small wadis. The aim of the project is to give a holistic picture of the region's past human landscape through a diachronic approach to the study of settlement systems and socio-economic activities, according to the environmental context and available resources. This is being carried out with an emphasis on material dating evidence and the categorization of site types through comparisons with their appearances on satellite imagery from a remote sensing investigation that identified nearly 2800 sites and structures.

Following a first survey in 2015, a second short fieldwork season was carried out in September 2017. We investigated 20 basalt features—especially those known as “wheels” and “encircled enclosure clusters”—to be able to more precisely specify the properties of these site forms. The preliminary lithic study identified large quantities of raw material in Region B, and

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Fig. 6. Probable ancient 'stepped' pathway found during surveys

showed that while some of the sites contain material of the Chalcolithic/Early Bronze Age, the majority were at least first occupied during the Late Neolithic (Imad Alhussain, pers. comm.). These conclusions are currently being synthesized with the ongoing OSL dating of sediment samples that were taken at five different sites using a process recently successfully employed at Wisad Pools (Athanasas et al. 2015). By collecting from both "wheels" and "encircled enclosure clusters", any clear difference in dates between the two site types should be identifiable, tying into one of this project's main goals of enabling rapid dating of sites across the wider region by remote sensing.

Additionally, the 2017 season's work emphasized the natural environment and the identifying of off-site features related to landscape building. We focused on methods of traversing the harra, a crucial issue as travelling in the region is made difficult due to the dense cover of basalt boulders. Apart from the open spaces of the qe'an (singular: qa'a) and the corridors made by wadi valleys, paths need to be created in order to allow for easy and speedy travel. We identified several such paths, clearly arranged by the deliberate moving of basalt boulders. Some are several kilometers long while others are very short, for example from a site to a nearby qa'a or wadi. In this case, paths up or down slopes seem to be arranged with some kind of "steps" (Fig. 6). We believe these paths to be ancient, possibly contemporaneous to the visited sites in some cases. Their study will be a priority of the next season, as well as investigating sources of raw material and continuing the OSL sampling methodology by collaborating with Dr. Dimitri Vandenberghe of the University of Ghent Geology Department.

REFERENCE:

Athanasas, C.D., G.O. Rollefson, A. Kadereit, D. Kennedy, K. Theodorakopoulou, Y.M. Rowan, and A. Wasse. 2015. "Optically stimulated luminescence (OSL) dating and spatial analysis of geometric lines in the Northern Arabian Desert." *Journal of Archaeological Science* 64: 1–11.

Project website: www.facebook.com/WesternHarraSurvey