

Results of a magnetic survey at the Bronze Age site of Shahr-e Sukhteh, Sistan, Iran

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INTRODUCTION

Shahr-e Sukhteh (Burnt City) is located to the east of Sistan and Baluchestan (Iran), some 50 km southwest of Zabol (Fig. 1). The site was first recognized by Maurizio Tosi, who conducted field surveys and undertook excavations in the area between 1967 and 1978 (Tosi 1983). Between 1995 and 2010 and later in 2014, the area was reinvestigated by S.M.S Sajjadi, in cooperation with a team from ICHHTO and an international team (Sajjadi 2003; 2005; 2006a; 2006b; 2008). Shahr-e Sukhteh is one of the most important sites of the Bronze Age in the east of Iran and was occupied from 3200 until 1900 BC. According to Iranian and Italian studies, Shahr-e Sukhteh had extensive business relationships with other contemporary civilizations in Central Asia, the Indus plains and the western part of the Iranian plateau.

The site covers an estimated surface of 151 hectares and surface pottery is spread over an area of more than 120 hectares. There are three main areas: the residential central part divided into two sub-sectors (central residential area and monumental area); the northwestern part corresponding to the industrial area, and the southern part occupied by the necropolis. The buildings are constructed of mud brick, rammed earth and wood. Each building was divided

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Fig. 1. Map of Iran, showing the location of Shahr-e Sukhteh (map © www.mapyahoo.com)

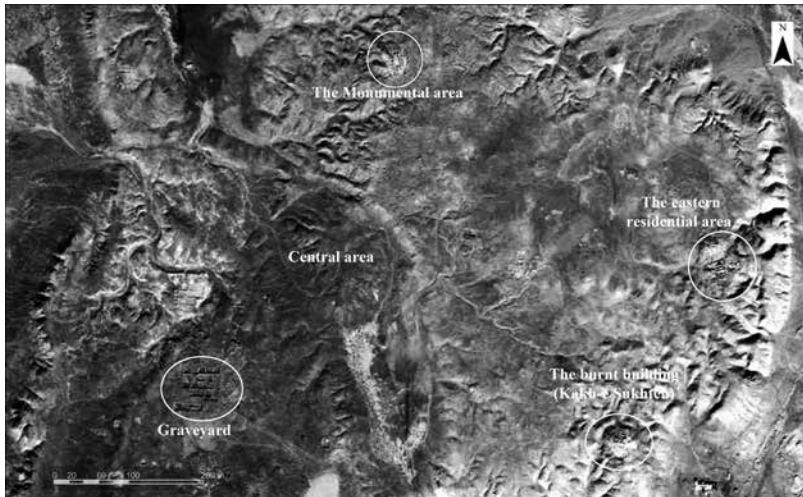


Fig. 2. Satellite image of Shahr-e Sukhteh, showing the location of archaeological structures (© Google Earth 2015)



Fig. 3. Map of magnetic surveys results at Shahr-e Sukhteh (Iran)

into six to ten rooms at various levels, considering the remains of stairs, ceilings and floors that were found. Each structure had a kiln. There are also some faint traces of architectural remains on the surface. The site was abandoned between 2100 and 1900 BC. According to Sajjadi, the main reason for this was the change in the course of the Helmand River (Sajjadi 2006b: 465).

Large-scale high-resolution magnetometry has been carried out in the area between the excavated parts to complete a plan of the settlement layout. This campaign was organized in cooperation between the Iranian center for Archaeology Research (ICAR) and the Iranian center of Heritage, Handcraft and Tourism Organization (ICHTO) in Zahedan.

RESULTS OF MAGNETIC PROSPECTION

The area selected for the first campaign was divided into two sectors, one located to the west of the eastern residential area and the other in the central part of the site, between the monumental area and the graveyard (Fig. 2). The survey, which covered 13 hectares, was completed with a caesium gradiometer (G-858 by Geometrics).

The resulting magnetic map shows very concentrated sectors with dense and planned organization to the south of the central area and a more isolated monumental building in the eastern sector (Fig. 3). This building of 38 m by 31 m was composed of a central courtyard surrounded by rectangular rooms to the north and to the east. The western part had a slightly different orientation, which might be interpreted as a later extension. In the central area, the urban layout is mostly orthogonal and composed of buildings and streets following an almost exactly north–south orientation. There are some local variations in this orientation, particularly to the west, where a very dense

settlement composed of small cells was recorded, possibly linked to the graveyard area identified in the excavations 100 m to the west. A huge building (at least 60 m to the side) was also identified in the southern part of the central area, apparently “disconnected” from the main sector.

Whereas urban planning from the Bronze Age is well known in other geographical areas (Syria and Turkey, for instance) (Creekmore 2010; Gondet and Castel 2004), this is the first time that such a planned organization has been revealed in Iran over an extended surface by means of a geophysical survey. This first campaign revealed some major finds, including domestic and monumental areas, and a presumed part of a necropolis.

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