

# Iranian-French Archaeological Mission in Bam, Kerman. Summary of Field-Seasons 2016-2017

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▶ **To cite this version:**

Benjamin Mutin, Omran Garazhian. Iranian-French Archaeological Mission in Bam, Kerman. Summary of Field-Seasons 2016-2017. Archaeology, 2019, 2 (2), pp.93-106. hal-03856131

**HAL Id: hal-03856131**
**https://hal.science/hal-03856131**

Submitted on 28 Nov 2022

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**Iranian-French Archaeological Mission in Bam, Kerman: Summary of field-seasons 2016-2017**


## Abstract

In this article we present objectives and results of the first two field-seasons in 2016 and 2017 of the Bam Archaeological Mission (BAM), a new Iranian-French field research project in the Bam-Narmashir region, Kerman. The main object of this research project is to reconstruct the ancient settlement in this area with an emphasis on its oldest occupation periods between the Paleolithic and Iron Age. It aims to understand how this settlement evolved, to evaluate the influence of climate and environmental changes on this evolution, and to determine its relationship to the archaeological cultures defined in Iran and Pakistan. As such, this research project also more broadly seeks to contribute to the general study of ancient southeastern Iran and to the reconstruction of the major demic and cultural dynamics—the dispersal of peoples, cultures, and technologies—that occurred in this area and across Middle- and South Asia during pre- and proto-history. In 2016 and 2017, we surveyed the region and recorded about 250 sites mostly dating to between the Paleolithic and Iron Age periods. One of the most significant results from this survey is the discovery of two impressive settlements, one dating to the Neolithic period and one to the fourth millennium BC, probably among the highest concentrations of sites dating to these periods reported so far on the southeastern Iranian Plateau. In 2017, we also resumed excavation at the Neolithic site of Tell-e Atashi. We opened test-trenches that have helped us understand its stratigraphy and general organization, as well as the nature of deposits present in various locations at this site. With new radiocarbon dates, we got confirmation that at least a large part of its occupation levels date to between the second half of the sixth and the middle of the fifth millennia BC. This excavation season was also instrumental in the preparation of more extensive excavations that were conducted in 2018. The aggregate of this work produced new data which have confirmed the unique nature of Tell-e Atashi and its significance for the understanding of the Neolithic period in the Indo-Iranian Borderlands.



Keywords: Neolithic, Southeastern Iran, Bam, Tell-e Atashi, Archaeological Survey, Excavation

## Introduction

This article summarizes the main objectives and results of the first two field-seasons in 2016 and 2017 of the new Iranian-French archaeological mission in the Bam-Narmashir region. This region is located in the southern margin of the Lut Desert, Kerman (Figures 1-2). This mission, Bam Archaeological Mission (BAM), seeks to reconstruct the ancient settlement in this area with an emphasis on its oldest occupation periods between the Paleolithic and Iron Age. It aims to understand how this settlement evolved, to evaluate the influence of climate and environmental changes on this evolution, and to determine its relationship to the archaeological cultures defined in Iran and Pakistan. As such, this research project also more broadly seeks to contribute to the general study of ancient southeastern Iran and to the reconstruction of the major demic and cultural dynamics—the dispersal of peoples, cultures, and technologies—that occurred in this area and across Middle- and South Asia during pre- and proto-history.

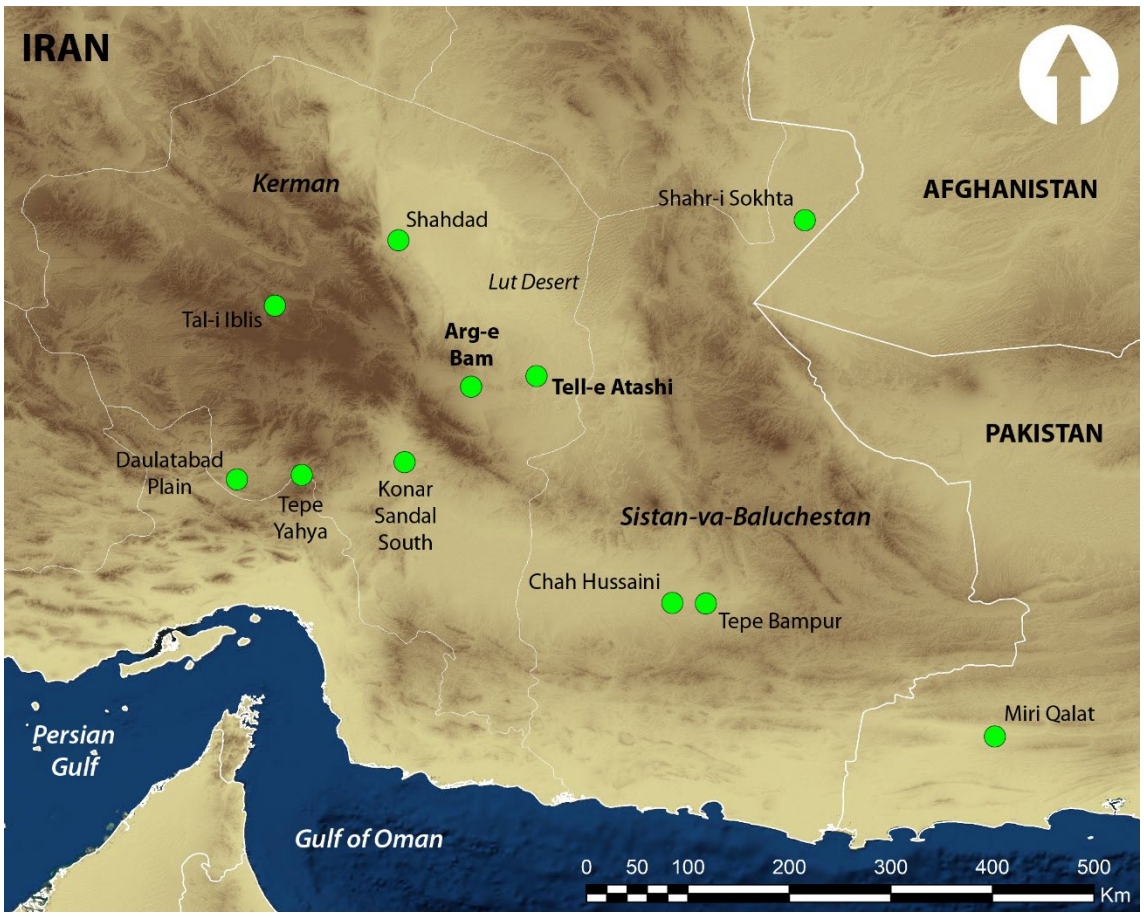



*Figure 1: Map of the southeastern Iranian Plateau with location of the Arg-e Bam and Tell-e Atashi in the Bam-Narmashir region and of the main archaeological sites mentioned in the text.*

The creation of this mission was encouraged by the late Dr. C. Adle who tirelessly made considerable effort to record and protect the cultural heritage of the Bam-Narmashir region in the aftermath of the deadly earthquake that struck this region in December 2003. We are infinitely grateful to him for his constant support while we were setting this field research project between 2014 and 2015. His passing in 2015, just one year before our first field-season began, unfortunately did not let him see the outcomes of these efforts. It is important to recall that prior to our first field-season in 2016, Adle and other colleagues, including one of us (O.G.) as well as M. Atayi, L. Fazel, M. Judaki, N.A. Soleimani, and Sh. Zare, had conducted archaeological surface surveys and excavations in the Bam-Narmashir region (see Adle 2006). This fieldwork currently continues with a focus on the early historical and Islamic periods as part of a program of protection and conservation of the UNESCO World Heritage property "Bam and its Cultural Landscape", nominated to the World Heritage List soon after the December 2003

earthquake (https://whc.unesco.org/en/list/1208). Bam city is famous for its Islamic citadel and fortified town, the *Arg-e Bam*, which was a major hub along the trade routes of the so-called Silk Roads between the 7th and 11th centuries AD. Vestiges of the Islamic period are not limited to the *Arg-e Bam*, but also include many additional monuments and expanses of archaeological materials outside of Bam city. The Bam-Narmashir region is also rich of vestiges dating to previous occupation periods. We should mention here the archaeological remains dating to the Chalcolithic period (and possibly to the Neolithic period) reported by Adle in the *Arg-e Bam* area and west of Bam city (Adle 2006: 39-41), the fourth millennium BC graveyard of Khaje Askar rescued by N.A. Soleimani and his colleagues in the western periphery of Bam city (Soleimani *et al*. 2016), and Tell-e Atashi, large Neolithic site investigated by one of us (O.G.), situated ca. 30 km as the crow flies east of the *Arg-e Bam* in an area called Darestan (Adle 2006: 38-39; Garazhian 2009; Garazhian and Shakooie 2013).

Our first two field-seasons had two main objectives, different in scope: 1) To survey the Bam-Narmashir region to evaluate and get an initial reconstruction of its ancient settlement; 2) To renew fieldwork at Tell-e Atashi. Our survey was mostly conducted during the first field-season in 2016 while additional sectors were explored in 2017. Fieldwork at Tell-e Atashi began in 2017.

## Geographic settings

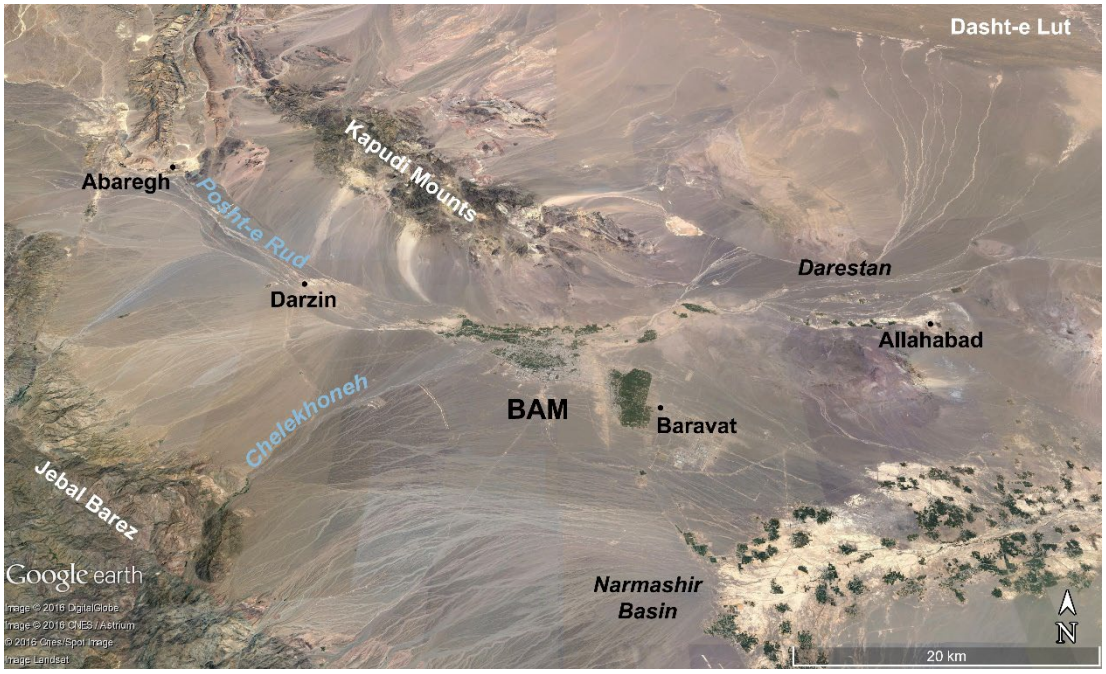



*Figure 2: View of the study area: Bam city and its region in the Bam-Narmashir counties.*

Bam city and the Bam-Narmashir region are located in the eastern part of the Kerman province, close to the Sistan-va-Baluchestan province, in the southwestern periphery of the Southern Lut Desert (Dasht-e Lut). Bam city is between two mountain ranges, both NW-SE oriented: the Kapudi Mounts in the north, with hilltops higher than 2,400 m, and the Jebal Barez in the south, which almost reaches 4,000 m in altitude (Figure 2). The average altitude in the plain located in-between these mountain ranges decreases from west to east; it is ca. 1,250 m at Darzin and ca. 750 m in Darestan. Bam city is located at the confluence of two rivers, the Posht-e Rud coming from the northwest and the Chelekhoneh from the southwest. This drainage system then continues further east and northeast through Darestan down to the Southern Lut Desert. As noted above this region is located in an active seismic zone. Bam city lies directly above the active seismic Bam fault. A well-known geological feature related to this fault is a NS ca. 15-20 m high scarp located in the eastern periphery of the city and west of Baravat. The Bam-Narmashir region is characterized by a desert climate with rainfalls averaging 72 mm/year and an annual average temperature of 21.7°C. Although rain is rare, rainfalls amount to more than 300 mm/year along

the southeastern slope of the Jebal Barez. They provide the plain with water and make it possible, with irrigation systems, for palm tree groves to grow (Fouache *et al*. 2013: 563-564).

**Archaeological Survey of the Bam-Narmashir Region: Field-Seasons 2016-2017**

In 2016, our survey focused on two areas located west and east of Bam city, along the Post-e Rud: 1) Area 1, located west of Bam city between Bam and Darzin, an area called "Bidârzin" by C. Adle and where he reported sites dating to the Neolithic and Chalcolithic periods (2006: 39-40); 2) Area 2, in Darestan, east of Bam, an area where the Neolithic site of Tell-e Atashi is located (Figures 3-4). We systematically surveyed these two areas by foot, aided with prior study of satellite imagery, recording and documenting the archaeological sites we identified and collecting a selection of diagnostic artefacts (mostly stone tools and ceramic fragments) from their surfaces. We also explored additional sectors inside and in the immediate periphery of Bam city, although we had little hope to find any substantial remains in these sectors, since any ancient occupations that may have existed there are today covered and most probably completely disappeared through the cumulative effects of urban expansion and palm tree plantation. In 2017, we briefly visited and recorded a few sites along the Posht-e Rud between Darzin and Abaregh, sites on the fault scarp located west of Baravat, south of Bam city, and sites along the western piedmont of the Jebal Barez, ca. 30-35 km southwest of the *Arg-e Bam* (Figure 3).

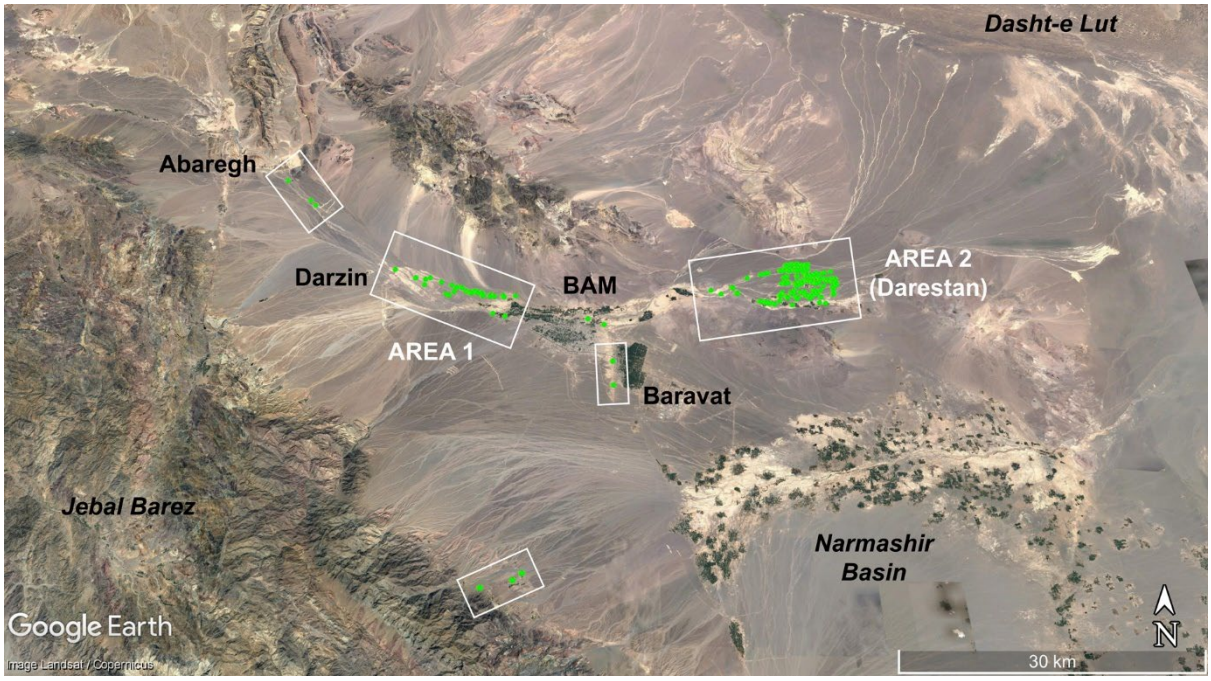



*Figure 3: View of the study area in the Bam-Narmashir region, with location of the areas surveyed in 2016 and 2017 (green dots and white rectangles).*

In total, we recorded about 250 sites with remains mostly dating to between the Paleolithic and the Iron Age periods. The most numerous sites are those with surface material dating to the Neolithic and Chalcolithic periods, ca. 80 sites in both cases. These Neolithic and Chalcolithic sites are the focus of the present, brief presentation of our results. We provide here preliminary estimates of site numbers; exact figures will be presented when the study of the totality of the surface material we collected is completed. As explained below, the lithic assemblage from this survey is the topic of an ongoing PhD dissertation, while issues remain as to the characterization of certain ceramic styles.

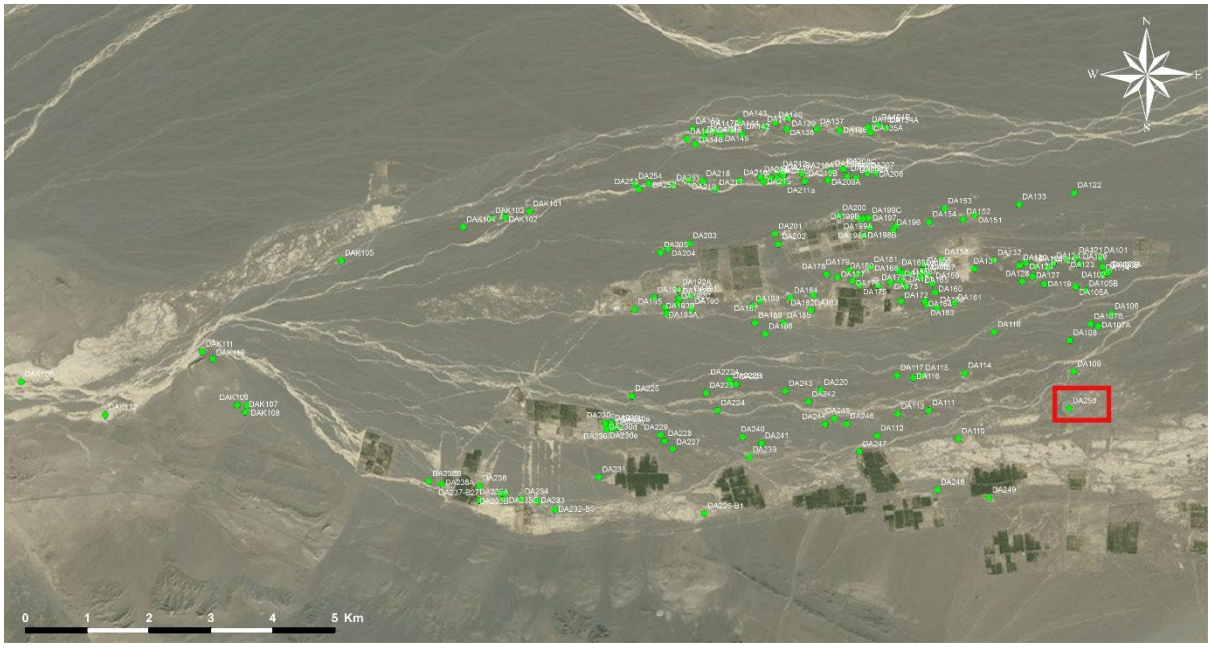



*Figure 4: View of survey Area 2 (Darestan), east of Bam city, with location of the archaeological sites recorded by the BAM survey (green dots) and Tell-e Atashi (red rectangle).*

The Neolithic sites are all located in Darestan (Area 2), east of Bam city. Adle reported one lithic flake from inside the *Arg-e Bam* and additional lithics from Area 1 west of Bam city. However, although it remains possible that the Neolithic settlement in the Bam-Narmashir region extended as far west as the *Arg-e Bam* and Area 1, our systematic survey in Area 1 recorded no clear material relating to this period. The stone tools Adle reported may date to the Chalcolithic period or to a more recent period, and, in any case, there are in this area no Neolithic remains as clear and abundant as those we observed in Darestan. There, the Neolithic settlement is represented by numerous and various types of sites including flat expanses of archaeological material (Figure 5) and mounded sites with Tell-e Atashi being the largest of them (see below). As far as surface material is concerned, we have recorded sites with a distinctive type of vegetal-tempered pottery (Figure 6) as well as sites with no pottery. The latter sites represent slightly less than half of the total. Despite this difference, we have observed similar categories of lithics including blades at both types of sites, although this observation, made in the field, should be considered preliminary, since the lithic assemblage from our survey is currently being thoroughly analyzed by M. Shakooie as part of her doctoral research (University of Mazandaran). It is also important to recall that vegetal-tempered pottery, a primary criterion for identifying pottery Neolithic sites, is not a ceramic product found only during the Neolithic period. Excavation at Tepe Yahya, ca. 170 km southwest of the *Arg-e Bam*, has shown that vegetal-tempered vessels, which appear in the Neolithic period at this site, continued to be produced during the following Chalcolithic period (Beale and Lamberg-Karlovsky 1986: 39-47, 40 fig. 4.1). The sites we have defined as pottery Neolithic sites are sites where we recorded vegetal-tempered material only and where we did not identify a single mineral-tempered, painted or plain ceramic fragment of the styles typical of the Chalcolithic or later periods. While the possibility remains that we mistakenly assigned to the Neolithic period Chalcolithic sites where all mineral-tempered had disappeared from their surfaces, reciprocally, the sites we defined as Chalcolithic may also include sites with Neolithic deposits that we could not identify from just their surfaces. The chronology of the totality of this Neolithic settlement remains elusive, although we should mention, as a preliminary observation, that we have observed a relative consistency in the material remains collected at these sites. The series of radiocarbon dates currently available from the aceramic site of Tell-e Atashi points to a dating of between the late sixth and mid-fifth millennia BC (ca. 5300-4600 cal. BC). At Tepe Yahya, the Neolithic period (Period VII), which yielded pottery, is dated to ca. 5600-4600 cal. BC (Prickett 1986a: 413 Tab. 3.2; 4900-3900 uncal. BC: Beale and Lamberg-Karlovsky 1986: 11), but considerably older dates are reported from the pottery Neolithic site of Tepe Govkashi, excavated by N.A. Soleimani near Jiroft.



*Figure 5: Neolithic site in the Bam-Narmashir region (Darestan) (© BAM).*



*Figure 6: Neolithic vegetal-tempered ceramics from the Bam-Narmashir region (© BAM).*

Chalcolithic sites were recorded in both Areas 1 and 2 as well as west of Area 1 near Abaregh. They divide between: 1) Sites with diagnostic ceramic material relating to Tepe Yahya Periods VB-VA and Tal-i Iblis Periods I-II, namely Black-on-Buff ware and Black-on-Red ware; 2) Sites with Aliabad ware-related ceramics connected to Tal-i Iblis Period IV, or more broadly to Iblis Periods III to V. As such the Chalcolithic sites in the Bam-Narmashir region are culturally linked to the typical archaeological cultures of Kerman during the Chalcolithic period. Both types of assemblages are abundantly recorded in this province such as at Tepe Yahya (Beale and Lamberg-Karlovsky1986), Tal-i Iblis (Caldwell 1967, 1968), in the Daulatabad Plain (Prickett 1986a, 1986b), and in the western periphery of the Lut Desert (Eskandari 2017), as well as in the Bampur Valley in Sistan-va-Baluchestan province and as far as Kech-Makran in southwestern Pakistan as far as Aliabad-related material is concerned (Mutin 2013; Mutin *et al*. 2017; Sarhaddi-Dadian *et al*. 2019). In a general fashion, Yahya VB-VA and Iblis I-II periods date to between the mid-fifth and the early fourth millennia BC, while Iblis IV, or III to V, periods follow them in the general chronological sequence of southeastern Iran with a *terminus ante*

*quem* in the second half or at the end of the fourth millennium BC.[1] Three radiocarbon dates available from sites we surveyed in the Bam-Narmashir region are consistent with the later part of this chronological range. All three dates are between ca. 3650-3350 cal. BC and from sites with Aliabad-related material. One is from a sample collected by Adle from the surface of a site in Area 1,[2] and the two other ones are from samples collected from a test-trench at a site in Area 2.[3] It nonetheless remains difficult to specify the dating of all the Chalcolithic sites we recorded in the Bam-Narmashir region on the basis of surface collection, since stylistic continuity is observed between the assemblages of Periods VB-VA at Tepe Yahya (Beale and Lamberg-Karlovsky 1986: 40 fig. 4.1) and between those of Periods I-II and Periods III-IV-V at Tal-i Iblis (Caldwell 1967: 36, 154-158, 188; Caldwell 1968: 179). A major issue that prevents us from providing a more precise dating of these sites is also, and most importantly, that the chronology of these periods, of ancient southeastern Iran in general, is not well established; few sites have been excavated and few radiocarbon dates are currently available. Additionally, the cultural assemblage that makes transition between the end of the Aliabad period and the early Bronze Age, around the late fourth and early third millennia BC, is not well-known. It is important to recall this issue, since it remains possible that among the sites we define as Aliabad-related are sites that in reality date to this transitional period. Hopefully, current fieldwork conducted by N. Eskandari at Varamin, which precisely focuses on this aspect, will help solve this issue. Thus, the quantity of Aliabad-related sites we recorded might be slightly exaggerated, because it is simply not always possible, based on surface material, to distinguish between sites relating to Iblis III, IV, or V, especially when this material is limited and fragmentary. However, we collected enough clear diagnostics to tell that the Aliabad-related settlement in the Bam-Narmashir was considerable. Lastly, we should admit that the archaeological deposits and materials recorded at Tepe Yahya, Tal-i Iblis, Tepe Dehno, Mahtoutabad, and in the Bam region, as well as at sites in the Bampur Valley and in Kech-Makran, were not necessarily all strictly contemporaneous. The geographic expanses defined on the southeastern Iranian Plateau by the distribution of the Chalcolithic ceramics may partly reflect gradual dispersals of peoples with their traditions and objects, or may reflect connections that happened between some of these sites and regions at some points in time and not necessarily continuously throughout the time these ceramic styles were produced (see Mutin *et al*. 2017; Sarhaddi-Dadian *et al*. 2019).



*Figure 7:Yahya V-related site near Abaregh, Bam region (© BAM).*

Yahya V-related sites in the Bam-Narmashir region are considerably less numerous than the above-mentioned Neolithic sites as well as the Aliabad-related sites. Less than ten Yahya V-related sites are indeed recorded in total (Figure 7). Among the most evident diagnostics of this period collected in this region are buff and red ceramics bearing typical chevron motifs (Beale and Lamberg-Karlovsky 1986: 74-75 figs. 4.33-4.34). One should mention that additional sites may also have been occupied during this period, but their surface material is not diagnostic enough to confirm this hypothesis. In any case, even if we were to include these sites in the Yahya V-related settlement of the Bam-Narmashir region,

[1] See Caldwell 1967, 1968; Beale and Lamberg-Karlovsky 1986: 11; Prickett 1986a: 413 Tab. 3.2; Mutin 2012: 161 Tab. 1; Mutin 2013: 255 Tab. 14.1; Vidale and Desset 2013; Pfälzner and Soleimani 2017: 118 fig. 13.
[2] Lyon 5926: 4690 +/- ? (not indicated) BP, 3627-3371 cal. BC: Fouache *et al*. 2013: 567 note 7.
[3] 3650-3500 cal. BC and 3600-3350 cal. BC. Lab numbers and BP dates are currently not available.

our first impression is that, compared to the Neolithic period, this region (at a minimum the sectors we surveyed) became depopulated sometime after the middle of the fifth millennium BC. Certainly, however, this observation should be supported by a better control of the Neolithic settlement's chronology, of its duration in particular, and we cannot exclude the possibility that we have not identified major clusters of sites dating to this period that may be located outside of the areas we surveyed. Also, it is interesting to note that, in contrast to the Neolithic period, which is clearly identified only in Area 2, there is clear evidence of an occupation in Area 1 beginning with Yahya V-related period.



*Figure 8: Aliabad-related ceramics from the Bam-Narmashir region (© BAM).*

In contrast to the Yahya V-related settlement, sites relating to the fourth millennium BC Aliabad period are much more numerous; they consist of more than 70 sites recorded in total in Areas 1 and 2. Despite the reservations mentioned above as to the reality of this number, the quantity of sites in the Bam-Narmashir region with clear Aliabad-related diagnostics, including typical polychrome and conical ceramics (Figure 8), is high, suggesting an increase in occupation compared to the Yahya V-related period. Furthermore, this settlement includes clusters of sites extending over hundreds of meters,[4] imposing mounded sites, and sites with remains of pottery kilns (Figure 9). One should also mention the graves relating to the same period rescued at Khaje Askar (Soleimani *et al*. 2016). Taken as a whole, this evidence seems to contrast with the following observations made on the Iblis IV/V period in the Daulatabad Plain further west (Beale and Lamberg-Karlovsky 1986: 267): "Settlements continue in the Daulatabad basin immediately after [Yahya] VA, but there is a substantial decline in numbers of sites and total area occupied" and "It would appear clear…that following this break there is some social fragmentation, as communities live in smaller aggregates on sites that are more ephemeral. It is possible that Iblis IV/V represents a period of development of, or reversion to, a more nomadic lifestyle…"

[4] The Aliabad-related settlement in Area 1 extends over more than 5 km.



*Figure 9: Pottery kiln on an Aliabad-related site in the Bam-Narmashir region (Darestan) (© BAM).*

Following this period, the number of third millennium BC Bronze Age sites we recorded is more in the range of that of the Yahya V-related settlement. It is possible that the Bam-Narmashir region once again became depopulated. However, before seeking explanations for this decline, one should consider the possibility that the Bronze Age settlement is mostly not located in the areas we surveyed. It is indeed important to remember that we have observed a shift in sites location between the Neolithic and Chalcolithic periods; we noted above that there is no Neolithic settlement west of Bam city, in Area 1, while settlement in this area seems to begin during the Yahya V-related period and then considerably increases during the Aliabad-related period. It is reasonable to believe that an additional shift may have occurred with the Bronze Age period, particularly considering the fact that most of the Bronze Age sites we recorded in Area 2 are located within the western limit of this area and that we have not thoroughly explored the lands situated just west of it. Furthermore, additional sectors of the Bam-Narmashir region remain to be surveyed. The question as to whether a settlement crisis happened in this region at the time the Halil Rud Civilization developed in the Halil Rud Basin (e.g. Madjidzadeh 2008), just west of the Jebal Barez, is certainly worthy of further investigation.

Two last observations on the results from our survey deserve mention. First, one should emphasize that the Neolithic and Aliabad-related settlements emerge from this survey as probably among the highest concentrations of sites dating to these periods reported so far on the southeastern Iranian Plateau. We mentioned above the observations made on the Iblis IV/V period in the Daulatabad Plain and we should also note here that M.E. Prickett recorded 24 Neolithic sites in that area (Prickett 1986a: 544-579), which is more than three times less than in Darestan. Second, as a general rule, it seems that new sites were settled at each new period. In other words, sites with more than one occupation period are rare and we have not identified a site like Tepe Yahya where settlements of multiple periods accumulated at the same location.

**Renewed Fieldwork at Tell-e Atashi: Field-Season 2017**

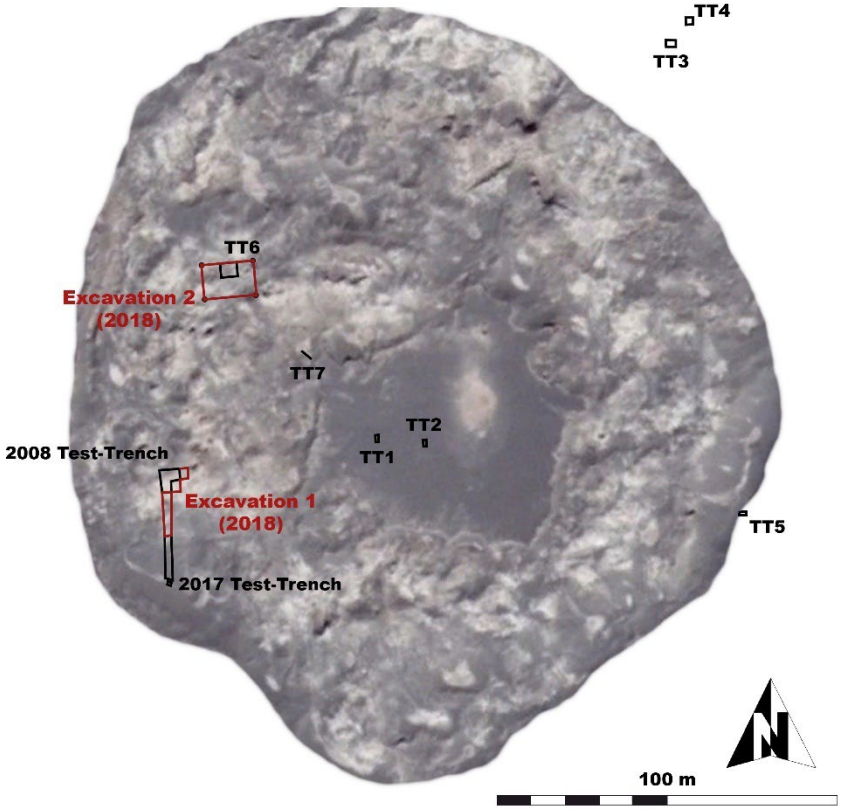



*Figure 10: Tell-e Atashi (© Google Earth). Location of 2008 and 2017 trenches (in black) and 2018 excavations (in red).*

Tell-e Atashi is the largest Neolithic site recorded in Darestan, and its shape, which consists of a mounded ring encircling a lower, flat area in its center, also has no parallel in this region (Figures 4, 10-11). In 2008, one of us (O.G.) conducted a systematic surface survey at this site and opened one test-trench in its southwestern part, where its uppermost archaeological deposits appeared to be located (Figure 10). This trench yielded successive mudbrick architectural levels radiocarbon dated to between the late sixth and the mid-fifth millennia BC. A surprising aspect that emerged from this fieldwork is the complete absence of pottery at Tell-e Atashi, both on its surface and inside the deposits excavated in the test-trench (Garazhian 2009; Garazhian and Shakooie 2013). This indeed is not conforming to what is usually observed at sixth and fifth millennia BC sites in Iran (e.g. Tepe Yahya: Beale and Lamberg-Karlovsky 1986; see for instance Neolithic sites in Matthews and Fazeli Nashli 2013).



*Figure 11: Central area at Tell-e Atashi (© BAM).*

The substantial Neolithic settlement recorded in Darestan has sparked a specific interest in the study of this period, as has the fact that very little data is known at present as to the development of farming life in southeastern Iran and that virtually none is recorded in the areas between Tell-e Atashi and the Neolithic site of Mehrgarh in Pakistan, ca. 870 km to the east (C. Jarrige *et al*. 1995; Jarrige *et al*. 2013). How does this settlement connect to this site in Pakistan and to the Neolithic sites in southeastern Iran and further west in Fars? By investigating this site again, we hoped to gain new information about the processes involved in this major food "revolution" on the southeastern Iranian Plateau. Set as it is between the Fertile Crescent and India, our fieldwork is ideally located not only to investigate the emergence of the earliest farming communities in eastern Iran but also to comprehend how and when this critical development took form across Middle Asia into South Asia. Tell-e Atashi appears to be the largest Neolithic site in Darestan and the only one that, before we resumed excavation at this site, we had pieces of information about the chronology, type of occupation, and material culture. In 2017, we decided to resume fieldwork at this site with four main objectives: 1) To get a comprehensive view of its stratigraphy; 2) To determine the nature of the deposits in the flat area located in the center of the site; 3) To determine whether the Neolithic occupation extends outside of the mounded peripheral archaeological deposits; 4) To locate areas for future, extensive excavation. To answer these questions, we opened: 1) A new stratigraphic trench aligned with the 2008 trench several meters further south of it, where we thought we would have more chance to reach the oldest levels of the site; 2) Three test-trenches in and near the center of the site (TT1, TT2, and TT7); 3) Three additional ones in the eastern periphery of the site, outside of its mounded deposits (TT3, TT4, and TT5); 4) A slightly larger test-trench in the northwestern portion of the site (TT6), where we had identified from the surface vestiges of well-preserved architecture. The placement of these test-trenches was also determined based on the results from a previous geomagnetic survey of the site that was conducted by K. Mohammadkhani in 2011.

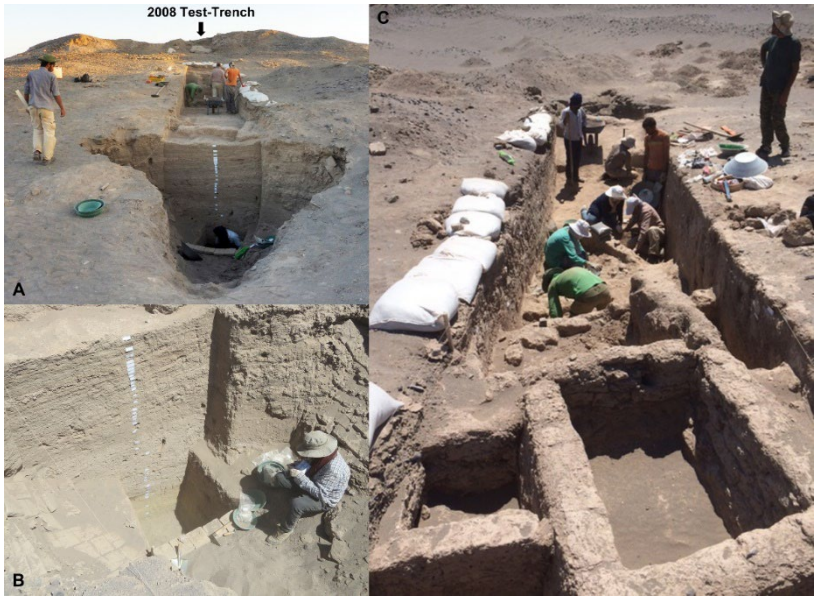



*Figure 12: Stratigraphic trench at Tell-e Atashi: A) view from the south with the 2008 test trench in background; B) view of the deep sounding in the southern part of the trench; C) view of the trench and mud-brick structures close to the surface in foreground, from the north (© BAM).*

The stratigraphic trench is 8 x 2 m. In its upper part, close to the surface, we exposed quadrangular mudbrick structures similar to those brought to light in 2008 (Figure 12C). In its lower part, at its southern end, we reached the virgin soil at about nine meters relative to the surface at the top of the site, and, on top of this soil, the earliest archaeological deposits in this area (Figure 12A-B). Two charcoal samples from this trench are radiocarbon dated to the late sixth millennium BC, which is consistent with the dates from the 2008 test-trench.[5] TT1 and TT2 in the center of the site have shown that this

[5] Beta 500073: 6160 +/- 30 BP, 5214-5022 cal. BC (95.4%); Beta 500074: 6240 +/- 30 BP, 5306-5204 cal. BC (74.7%), 5167-5076 cal. BC (20.7%).

area was mostly filled with natural deposits. Both test-trenches indeed exposed a thick layer of white, compact clayey deposit that appears to have resulted from slow water deposition. We excavated this layer for over more than one meter and observed no change. Certainly, however, this result should be confirmed through deeper excavation, which would help us understand if, or as it appears, why the successive communities at this site organized their habitat around this circular central space. TT3 and TT4, outside of the mounded part of the site in its northeastern periphery, revealed no archaeological deposits comparable to those found in the stratigraphic trench or in TT6 (see below). The stratigraphy in these trenches consists of a series of natural deposits alternating between layers of compact, clayey soil and loose, sandy soil. We excavated these deposits for over more than one meter until we reached a ca. 20-30 cm thick archaeological layer. This layer contains ashes, charcoals, and archaeological artifacts, but we recorded no architecture nor specific feature. Below it, the deposits we found are a natural compact, clayey deposit on top of a pure layer of sand. In TT4, we found the imprints of (a) hoofed animal(s) inside one of the clayey layers. Approximately 75 m north of the stratigraphic trench, in TT6, we excavated the portion of a very well-preserved mudbrick building complex (Figure 13), in which a child burial was placed after the area was abandoned (Figure 14). This child was three to six months old at the time of their death and was wearing two bracelets made of bone beads, one at each of their wrists, as well as an additional one attached to their left leg. Two stone beads were also recorded in this burial as well as traces of ochre. The DNA of this individual is currently being analyzed.

The material culture from the trenches we opened in 2017 includes lithics, stone vessels, beads and perforated discs, as well as clay objects including balls, cones, and figurines (Figure 15). Some of these objects have parallels at Tepe Yahya and Tal-i Iblis, and the mudbricks used in the architecture at Tell-e Atashi, typically with “thumb impressions”, also compare to those excavated at these sites (see Beale and Lamberg-Karlovsky 1986: 119 fig 6.10; 136 fig. 6.19; Caldwell 1967: 219, 222, 304 Pl. 7 lower photograph). At Tepe Yahya, this type of brick continues into Period V but is no longer observed in Yahya VA (Beale and Lamberg-Karlovsky 1986: 248-249 Tab. 10.1). These mudbricks as well as additional objects from Tell-e Atashi show that the Neolithic settlement in Darestan was somehow connected to the pottery Neolithic communities located west of the Jebal Barez. Yet, it is interesting to note that, in contrast to these sites, the community settled at Tell-e Atashi and, as it appears, at other sites in Darestan, did not produce any ceramics.




*Figure 13: Tell-e Atashi, mud-brick building in Test-Trench 6 (© BAM, 3D model created by O. Nasrabadi).*



*Figure 14: Tell-e Atashi, child burial in Test-Trench 6 (© BAM).*




*Figure 15: Tell-e Atashi, selection of clay objects: balls (upper row), cones (middle row) and figurines (lower row) (© BAM).*

## Conclusion

Our survey has revealed that, in addition to having a rich history during the Islamic period, the Bam-Narmashir region has an enormous cultural heritage that dates back to the Paleolithic period and includes, in particular, substantial settlements during the Neolithic period and the fourth millennium BC late Chalcolithic period. One of our objectives of the next field-seasons is to continue our survey program in this region. It also will be important to compare the settlement dynamics we begin to understand in this area, such as those noted above concerning the Neolithic and Chalcolithic periods, with those observed in other regions of the southeastern Iranian Plateau. By looking at how they resemble, how they differ, we hope to get a better comprehension of the broader interregional dynamics that occurred in this area and of how these were determined or influenced by climate and environmental

changes. Why, for instance, does the Bam-Narmashir region seem to see an increasing number of sites during the fourth millennium BC, while at the same time the Daulatabad Plain becomes depopulated?

The test-trenches we opened in 2017 at Tell-e Atashi proved to be extremely productive, as they have helped us understand its stratigraphy and general organization, as well as the nature of deposits present in various locations at this site. With new radiocarbon dates, we have confirmation that at least a large part of its occupation levels date to between the second half of the sixth and the middle of the fifth millennia BC. The 2017 test-trenches were also instrumental in the preparation of 2018 fieldwork. For instance, the fact that we identified in 2017 a portion of a well-preserved building complex in TT6 led us to open in 2018 an extensive excavation in this area. In this excavation, Excavation 2 (Figure 10), we studied many rooms with well-preserved walls, floors, accesses, and fireplaces connected to chimneys, and we collected large amounts of objects including many items in unbaked clay. We were also able to collect many zooarchaeological and botanical samples as well as samples for radiocarbon dating. The aggregate of this work in addition to the results from the stratigraphic trench, which was also extended in 2018 (Excavation 1), have provided substantial new information about Tell-e Atashi. This site emerges as an atypical late aceramic settlement with an original material culture with no pottery and yet connections to pottery Neolithic sites located further west in southeastern Iran. These results are very promising, and it is now evident that not only the study of this site will help us understand the Neolithic settlement in the Bam-Narmashir region, but also, more broadly, it will cast new light onto the various configurations at play during the "food revolution" in the Indo-Iranian Borderlands.

**Acknowledgments**

We are grateful to the Iranian Center for Archaeological Research and its director Dr. H. Choubak and now Dr. R. Shirazi, as well as the Iranian Cultural Heritage and Tourism Organization and its director Dr. S.M. Beheshti and now Dr. B. Omrani. In Bam, our research has been facilitated by the Arg-e Bam World Heritage Base Camp and its director A. Ebrahimi and now Eng. M. Movahedi, Bam county governor R. Ashk and now M. Shahriyarpur, Bam city mayor M. Poshtiban, and Narmashir county governor M. Moshki, as well as the Bam Cultural Heritage NGO and its deputy M. Tohidi. We also would like to thank M. Salehi and S. Naseri, representatives of the Kerman Cultural Heritage, Handcrafts and Tourism Organization (KCHHTO). In France, the Bam Archaeological Mission is part of the research program of the CNRS team Archaeology of Central Asia (UMR 7041 ArScAn – *Archéologies et Sciences de l'Antiquité*), directed by Dr. C. Debaine-Francfort. The mission is funded by a grant for archaeological mission from the French Ministry of Foreign Affairs (*Ministère des Affaires Étrangères et du Développement International* and now *Ministère de l'Europe et des Affaires Étrangères*).

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**Figure captions**

Figure 16: Map of the southeastern Iranian Plateau with location of the Arg-e Bam and Tell-e Atashi in the Bam-Narmashir region and of the main archaeological sites mentioned in the text.

Figure 17: View of the study area: Bam city and its region in the Bam-Narmashir counties.

Figure 18: View of the study area in the Bam-Narmashir region, with location of the areas surveyed in 2016 and 2017 (green dots and white rectangles).

Figure 19: View of survey Area 2 (Darestan), east of Bam city, with location of the archaeological sites recorded by the BAM survey (green dots) and Tell-e Atashi (red rectangle).

Figure 20: Neolithic site in the Bam-Narmashir region (Darestan) (© BAM).

Figure 21: Neolithic vegetal-tempered ceramics from the Bam-Narmashir region (© BAM).

Figure 22:Yahya V-related site near Abaregh, Bam region (© BAM).

Figure 23: Aliabad-related ceramics from the Bam-Narmashir region (© BAM).

Figure 24: Pottery kiln on an Aliabad-related site in the Bam-Narmashir region (Darestan) (© BAM).

Figure 25: Tell-e Atashi (© Google Earth). Location of 2008 and 2017 trenches (in black) and 2018 excavations (in red).

Figure 26: Central area at Tell-e Atashi (© BAM).

Figure 27: Stratigraphic trench at Tell-e Atashi: A) view from the south with the 2008 test trench in background; B) view of the deep sounding in the southern part of the trench; C) view of the trench and mud-brick structures close to the surface in foreground, from the north (© BAM).

Figure 28: Tell-e Atashi, mud-brick building in Test-Trench 6 (© BAM, 3D model created by O. Nasrabadi).

Figure 29: Tell-e Atashi, child burial in Test-Trench 6 (© BAM).

Figure 30: Tell-e Atashi, selection of clay objects: balls (upper row), cones (middle row) and figurines (lower row) (© BAM).