A Reorientation in Understanding Hohokam Rock Art

Aaron M. Wright, Ph.D.

Rock art has long captivated the public’s imagination, but until recently it has eluded concerted interest from the professional archaeological community. As a result, our anthropological and scientific understanding of it lags considerably in comparison to most other chapters in the archaeological record. This conundrum is exacerbated by the fact that rock art is not as abundant nor as amenable to scientific, quantitative analyses as other artifact classes. Further, it is often found in relatively remote settings, which...
renders rock art less accessible than most other archaeological site types. Despite these challenges, the past 25 years has seen major theoretical developments in rock art research at a global scale, and in turn archaeologists are increasingly asking how rock art can help them answer questions about the past at regional and local scales.

The increasing relevance of rock art to archaeological scholarship is becoming readily apparent in the American Southwest, where anthropologically oriented rock art research – investigations that are asking questions about the people who made and used rock art – is gaining momentum in various study areas and across academic institutions (see Wright 2016). Knowledge gained from rock art research in central and southern Arizona, particularly the study of petroglyphs attributed to the Hohokam cultural tradition (ca. AD 450-1450), is a case in point. To show this, the following article summarizes new perspectives on the organization and changes in Hohokam ritual practice and religious authority, as derived from an archaeological investigation of Hohokam petroglyphs in the South Mountains (Figure 1), at the heart of the Hohokam World in the center of the Phoenix Basin (Wright 2014).

Background

About a decade ago, several faculty members at Arizona State University and the City of Phoenix Parks and Recreation Department partnered to begin a systematic inventory of the petroglyphs at South Mountain Park in Phoenix. The South Mountain Rock Art Project (SMRAP), as it was called, was inspired by the then-recent publication of Landscape of the Spirits (Bostwick 2002), a well-received introduction and overview of the South Mountains’ petroglyphs based on data Todd Bostwick collected during his tenure as Phoenix’s City Archaeologist. Bostwick’s foundational research showed that the South Mountains host an abundance and diversity of petroglyphs, and that their potential contribution to the region’s archaeology remained largely untapped. It also made a compelling case that, in light of burgeoning visitation and recreation in South Mountain Park, a concerted study of the mountains’ rock art and other archaeological resources was more than timely; a thorough inventory and study were necessary in order to better preserve the park’s archaeological resources for public appreciation and future research.

Considering that the research and preservation of South Mountains rock art fits comfortably within the mission of Preservation Archaeology (Doelle 2012), Archaeology Southwest (then known as the Center for Desert Archaeology) awarded me a Preservation Fellowship to undertake a doctoral project in partnership with the S RPMAP. I believed Bostwick’s (2002) perspective that the South Mountains constituted a sacred landscape, visited by people for religious purposes, was worth exploring in fuller detail. I therefore focused my research through a cultural landscape framework, a mode of anthropological study that explores the interrelationship among different archaeological and cultural phenomena, as well as their relationships to natural features and qualities of the landscape, at multiple spatial and temporal scales.

A cultural landscape approach envisions elements of place as integral to understanding the cultural practices bearing on rock art’s production and use. Regarding the South Mountains, I posited that the rock art was not randomly scattered across the landscape, nor was it isolated from other archaeological materials. Rather, we should expect rock art to be embedded within a broader tradition of landscape use and interaction that is culturally specific, being in this case the Hohokam tradition. Accordingly, from a cultural landscape perspective, we can learn a lot about rock art by studying what is going on around it. Moreover, as a cultural practice, rock art can teach us about the communities who made and used it. To take this angle, it is impor-

Figure 2. Petroglyphs above a spring-fed water tank in the South Mountains
tive to study rock art in a social context, where it can be analyzed in relation to the sequence of social changes that occurred within the communities from which it originated.

A cultural landscape perspective on the South Mountains ushers forth a series of questions designed to situate the rock art in the social context of its creation. Where does the rock art occur, and are there consistencies in placement that inform on why it was made there rather than elsewhere? Who was making and using the rock art? And lastly, when was the rock art made, and are there chronological changes in the locations or style of rock art that speak to broader transformations within the communities who produced it? The answers to these questions offer a more holistic understanding of both the South Mountains and the ancient communities who lived around them, and they illuminate otherwise elusive aspects of the Hohokam World in the Phoenix Basin.

The Places of Hohokam Rock Art

Studies worldwide have shown that rock art was often selectively positioned within the landscape, and its placement is relevant to what it was used for, who was making it, and who the intended audience was. Because cultural landscape approaches essentially require analyses at scales beyond the site level, they offer several advantages for explaining the placement of rock art over more traditional approaches. For one, through such approaches, we can recognize consistencies in the relationship of rock art with other archaeological features and natural aspects of the physical environment. Cultural landscape studies also assess not only where rock art and other archaeological sites occur, but take into consideration the blank spots within the landscape. Knowing where rock art was not made is equally important as ascertaining where it is found. Such an approach bridges the inhabited and uninhabited places of the past into a cohesive topography of human practice and experience. Landscape-scale investigations also reveal meaningful variability in the density of rock art across space, which possibly approximates relative differences in the significances of certain places.

Prior multi-site surveys in mountainous settings of southern Arizona had established some baseline awareness that Hohokam rock art was strongly associated with certain components of the broader landscape. For example, in the first landscape-scale survey of Hohokam rock art, which happened to also be from the South Mountains, Snyder (1966) found that the petroglyphs he observed are concentrated along the parts of the mountains closest to Hohokam villages and canals, and a tendency for Hohokam pottery to be found around the rock art. These basic observations, the first of their kind in southern Arizona, enabled Snyder to attribute most of the South Mountains petroglyphs to the nearby Hohokam communities. In terms of relationships with natural landscape features, Weaver and Rosenberg (1978) identified a tendency for Hohokam petroglyphs to cluster around water sources such as springs, tinajas (naturally occurring basins where rainwater collects), and water tanks (places of standing water in otherwise dry drainages) (Figure 2). Similarly, Wallace (1989; Wallace and Holmlund 1986) recognized a repeated association between rock art and certain landscape features of economic importance and ritual significance, including mountains passes where trails converge, tool-stone quarries, and rockshelters (Figure 3).

The SMRAP targeted the northeastern bajada and slopes of the South Mountains’ Main Ridge, with three survey areas combined covering over 1,000 acres (Figure 1). We selected these areas because Snyder had shown this region to contain the highest density of petroglyphs (due to its proximity to two canal systems and multiple large Hohokam villages with public architecture), and there was a
general awareness that other types of archaeological features are also found in this region. Indeed, within the project areas – representing just about five percent of the South Mountains landscape – we located 108 archaeological sites containing 1,050 rock art panels bearing over 3,300 prehispanic and historic petroglyphs. We also identified a plethora of other features, including trails, different types of agricultural terraces and water diversion features used to irrigate them, roasting pits, quarries, and various rock piles and rings that bear strong resemblance to shrines of historic and contemporary Native American communities culturally affiliated with the Hohokam tradition. Because a cultural landscape approach transcends the traditional organization of archaeological materials into “sites,” the petroglyphs and other subsite archaeological observations, including the artifacts, were the units on which spatial and relational analyses of the SMRAP were based.

At the onset of the SMRAP, it was assumed that meaningful associations between rock art and natural and archaeological aspects of the South Mountains landscape would surface, and they did. In fact, when considering the entirety of the survey sample, all of the petroglyphs fall within a handful of different landscape settings. The most basic association is with trails, where panels with small petroglyphs, rarely more than one, were periodically placed where they could be seen as one passed by (Figure 4). A step above those are level saddles and ridge-tops where trails converge. Often times, such places exhibit several panels of petroglyphs along with small clearings containing low-density assemblages of lithic and ceramic artifacts indicative of plant processing (Figure 5). Petroglyphs in the South Mountains also cluster along the bajada, which represents a more complex setting but with a similar focus on resource gathering. The petroglyphs along the bajada are found juxtaposed with and concentrated around trails, clearings, agricultural terraces (Figure 6), roasting pits (Figure 7), and utilized rock-shelters (Figure 8). Since the density of rock art along the bajada is correlated strongly with that of the

Figure 4. Petroglyph along a trail in the South Mountains

Figure 5. Petroglyphs at a pass in the South Mountains where several trails converge
other archaeological features, much of the rock art there is likely associated with farming and other plant-focused activates occurring in that topographic setting.

Most of the rock art in the South Mountains is found concentrated in particular settings where the crafting and viewing of petroglyphs were the *prima facie* activities carried out in those places. Springs are the principal example. The springs in the South Mountains are relatively secluded, which offers an intimate environment for activities associated with rock art. A lack of other feature types despite the presence of dense petroglyph clusters in such places suggests that the practices involving rock art were very focused on the spring and its immediate surroundings (Figure 9). Sometimes, the hilltops above springs bear petroglyph clusters, seemingly uniting the springs and high places in a symbolic way. This relationship is best expressed at settings with summit trails, causeways that ascend hills and ridges in a strictly linear fashion (Figure 10). Summit trails in the South Mountains start at springs along a hill’s base, and terminate at shrine-like features on the hilltops. Petroglyphs cluster at both ends of the trails, once again uniting spring and summit, water and sky (Figures 11 and 12).

The clear spatial distribution of rock art in the South Mountains underscores the fact that it was not whimsically nor haphazardly placed on the landscape. Rather, the rock art is intimately tied to the ways in which local communities interacted with and perceived the upland landscape peripheral to their villages. Interestingly, while there are obvious differences in

Figure 6 (above). Cluster of agricultural terraces along the South Mountains bajada

Figure 7 (below). Roasting pit along the South Mountains bajada
petroglyph density among the different settings, there is no apparent difference in the types of motifs across the landscape. The symbolism, and likely its meaning, was not restricted to certain contexts of production and use. In fact, many of the rock art motifs show up in other media, such as decorated pottery and ground stone objects. This shows that the religious knowledge underlying the symbolism in the rock art was shared across settings and between artisans.

The Makers of Hohokam Rock Art

Knowing who was responsible for crafting rock art is essential to understanding its relevance to the larger Hohokam World. In the American West, shamanism has become a de facto explanation for prehispanic rock art. This owes, in part, to the altered states of consciousness (ASC) model popularized by South African rock art scholars (Lewis-Williams 2001; Lewis-Williams and Dowson 1988). The ASC model puts forward the contention that some rock art depicts visions seen under altered mental states (i.e., hallucinations), which in aboriginal societies was often the purview of spiritual leaders commonly called shamans, witch doctors, or medicine men. Such an explanation is appealing because there is general agreement among researchers that much of the prehispanic rock art in North America and elsewhere had religious importance. There are several reasons, however, why the ASC model, and the corollary notion that shamans were the rock art artisans, fails to account for most, if not all, Hohokam rock art.

The first limitation to the ASC model in regard to explaining Hohokam rock art is that there is not a consensus on what Hohokam religious leadership and ritual performance looked like. There is some
Hohokam religious practice was participatory, in that community members were actively engaged in the ritual order. This is best evidenced by the community ballcourt network, public mortuary cremation ritualism, the widespread occurrence of ritual objects across households and burials, and the prevalence of religiously charged symbols in multiple media, including rock art (Figure 13). These many lines of evidence suggest that if there were shaman-like spiritual leaders in the Hohokam World, they were not the only people with ritual power and knowledge.

The ASC model's second shortcoming lies in the fact that the vast majority of Hohokam rock art does not meet the model's expectations. As an analytical framework, the ASC model established a set of criteria that a region's rock art must meet in order to warrant its attribution to visionary experiences brought about through altered consciousness (Lewis-Williams 2001; Whitley 2011:138-150). Nothing about the petroglyph symbols, their arrangement on panels, or their selective placement within the landscape conforms to expectations of the ASC model or other lines of evidence used to support a shamanic origin (Wright 2014:166-170). This does not mean that religious leaders, possibly shaman-like figures, did not craft any of the petroglyphs. Instead, it indicates that the rock art cannot be clearly attributed to altered states of consciousness. The rock art served other ends, and was likely created by a more inclusive community of practice.

If shamanism cannot account for all of the Hohokam rock art, then what and who can? The key line of evidence to identifying the producers and consumers of rock art is the context in which it is found. As described above, Hohokam rock art was made in a variety of settings, some of which were focused solely on the rock art while others witnessed a more inclusive range of activities. The rock art artisans were likely individuals engaged in other pursuits, such as run-off farming and traveling into the mountains to gather useful plant, animal,
and mineral resources. They were also people engaged in religiously focused practices associated with springs and hilltops. In short, the rock art was likely created by a diverse body of hands from various walks of life within the nearby Hohokam villages. This conforms to the generally accepted vision of the pre-Classic Hohokam World, when communities were tied and tethered together through a structure of participatory ritual practices and shared a corpus of religious knowledge that is evident in the accessibility of ritual objects, ceremonial space, and religious symbols.

The Timing of Hohokam Rock Art

Along with the social contexts of production and consumption, knowing when rock art was made is critical to understanding its relevance to the communities responsible for it. Dating rock art is no easy task, and techniques are fraught with assumptions and often yield inconclusive results. Nevertheless, there is an assortment of approaches available to us, and when they all offer the same insight, the conclusions that can be drawn are considerably more robust than those provided by any single technique. Accordingly, I relied on four measures to assess the chronology of Hohokam rock art recorded through the SMRAP.

Cross-media design analysis was the first technique I employed to get an initial impression of the date range for the South Mountains petroglyphs. The assumption is that stylistic changes in a datable medium, like decorated pottery, proxy stylistic changes in other media. One of the principal changes in Hohokam iconographic styles, at least as they are understood from pottery designs and other artifacts from datable contexts, are based on the prevalence of life-form motifs and the proclivity for geometric designs to be either curvilinear or rectilinear (Wallace 1995). The earliest designs were abstract linear and curvilinear motifs that continued to employ Archaic designs of prior centuries. Common motifs include zig-zags and squiggles as well as various curvilinear designs, such as circles and scrolls (Figure 14).

Around AD 800, coincident with the advent of the ballcourt network and other indicia of an emergent religious movement and associated social identity that rapidly spread throughout the Hohokam World (Wallace 2014), Hohokam artisans incorporated a new assortment of symbols into their iconography. These include a suite of geometric motifs and a florescence of life-form imagery (Figures 15 and 16). Over the following centuries, curvilinear designs fell out of vogue in favor of more rectilinear designs. By AD 1150, life-forms were also dropped from the design repertoire, leaving abstract rectilinear designs in compact and complex arrangements as the chief style of Hohokam iconography (Figure 17).
Hohokam rock art in the South Mountains consists predominantly of curvilinear and life-form designs (Table 1). Rectilinear designs are present, but they are incredibly rare. While they are most commonly found on pottery dating to the late Sedentary and Classic periods (post-AD 1050), rectilinear designs do occur on decorated buffware pottery throughout the pre-Classic and Classic eras. In fact, their very low frequency in the South Mountains petroglyph assemblage actually approximates their frequency on decorated pottery of the pre-Classic era (Wallace 2001:Table 10.13). All together, if the chronology for stylistic changes in decorated pottery is an appropriate temporal proxy for changes in rock art, the initial indication is that the South Mountains petroglyphs register a strong pre-Classic signature.

Figure 14. Curvilinear scrolls depicted as South Mountains petroglyphs (left) and painted on Gila Butte buffware pottery (right)

Figure 15. Whorl or “pinwheel” motif depicted as a petroglyph in the South Mountains (left) and painted on Sacaton buffware pottery (right); this motif shows up on Hohokam pottery at ca. AD 800 (see also Figure 13, left)
Proximity analysis was the second technique I used to approach the timing of Hohokam rock art. Tobler’s First Law of Geography – which states "everything is related to everything else, but near things are more related than distant things" (Tobler 1970:236) – is the underlying assumption to this method. For chronological studies, this implies that, all things being equal, designs that are physically closer together should be closer in age, relative to designs located further apart. Clearly, this assumption cannot be applied to every example; however, robust patterns of spatial association would indicate that time may have been a chief factor in why certain designs tend to be found together.

A proximity analysis of the South Mountains petroglyphs, using correspondence analysis as the exploratory data analysis tool, revealed a strong tendency for certain motifs to be found on the same panel as other motifs. The results seemingly split the petroglyphs into two groups along a single axis, which I contend is a temporal spectrum (Figure 18). At one end, linear designs clustered with curvilinear and circular motif types. At the other end, life-forms paired strongly with various types of rectilinear designs. These results suggest that different rock art motifs co-occur on panels in a way similar designs on decorated pottery are temporally associated. It also shows that in rock art, the rectilinear designs, albeit rare, are spatially correlated with life-
identical, and they confirmed the general pattern observed in the other dating methods. Curvilinear, circular, and most rectilinear designs tend to be darker (i.e., older) than life-form motifs. Rectilinear scrolls (n = 20) tend to be brighter (i.e., younger) than all the other prehispanic motif types, though they are sometimes integrated into scenes with life-forms with similar degrees of desert varnish accumulation (Figure 20). This would suggest they are a late addition to the petroglyph design repertoire, but this does not necessarily indicate they are of Classic period manufacture. The spatial context and manufacturing techniques of some of the swastika petroglyphs (a particular type of rectilinear scroll) included in this analysis hint at their probable historic or recent manufacture. Their inclusion is thus skewing the data on all rectilinear scrolls toward the lighter end of spectrum. Further, if the rectilinear scrolls date predominantly to the Sacaton phase (ca. AD 900-1150; the terminal pre-Classic era), while life-form motifs span a broader, earlier era covering the Colonial and Sedentary periods (ca. AD 750-1150), then rectilinear scrolls would be, on average, brighter (i.e., younger) than the other design types but still of pre-Classic origin. Lastly, the incredible rarity of rectilinear scrolls in the South Mountains petroglyph assemblage (0.4 percent) approximates their frequency on pre-Classic buffware pottery (Wallace 2001:Table 10.13). Even if a few of the 20 rectilinear scroll petroglyphs are of Classic manufacture, the results of the desert varnish studies nonetheless support a pre-Classic attribution for the vast majority of the South Mountains petroglyphs.

The fourth and final chronological approach to the South Mountains rock art involved an assessment of datable artifacts found in close proximity to the petroglyphs. As people ventured into the South Mountains, they occasionally dropped and broke ceramic vessels they brought with them. While sherds from over 1,000 pottery vessels were examined, nearly two-thirds were not assignable to a particular time frame. Nevertheless, buffware – which is largely though not always a signature of the pre-Classic era – was more than three times as abundant as redware pottery. At a basic level, this implies the South Mountains were visited more often during the pre-Classic than in later periods. This rather crude assessment can be refined. To do so, I again relied on correspondence analysis to recognize patterns of association between diagnostic pottery types and certain petroglyph motifs. Artifacts found within a distance of 10 meters from a rock art panel were assumed to be associated with the petroglyphs on it. The strength of association was somewhat weak, due undoubtedly to the low number of temporally diagnostic sherds (n = 437) relative to the number of prehispanic petroglyphs (n = 3,055), but significant patterns were identified (Figure 21). Curvilinear designs were most strongly associated with ceramics dating to the Pioneer period.

### Table 1. Petroglyph motifs in the South Mountains

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<thead>
<tr>
<th>Design Class</th>
<th>Count</th>
<th>Percentage</th>
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<tr>
<td>Anthropomorphs</td>
<td>542</td>
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<td>Miscellaneous designs</td>
<td>514</td>
<td>16.8</td>
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<tr>
<td>Quadrupeds</td>
<td>445</td>
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<td>409</td>
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<tr>
<td>Miscellaneous curvilinear designs</td>
<td>197</td>
<td>6.4</td>
</tr>
<tr>
<td>Reptiles/amphibians</td>
<td>169</td>
<td>5.5</td>
</tr>
<tr>
<td>Concentric circles</td>
<td>108</td>
<td>3.5</td>
</tr>
<tr>
<td>Curvilinear scrolls</td>
<td>100</td>
<td>3.3</td>
</tr>
<tr>
<td>Zigzags</td>
<td>80</td>
<td>2.6</td>
</tr>
<tr>
<td>Rectilinear solids</td>
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<tr>
<td>Crosses</td>
<td>59</td>
<td>1.9</td>
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<tr>
<td>Miscellaneous lifeforms</td>
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<td>Miscellaneous representational designs</td>
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<td>Rectilinear lines</td>
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<tr>
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<tr>
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Note: Data are from Wright (2014:Table 4.1). See Wright (2014:Appendix A) for petroglyph typology.
(ca. AD 600-750), whereas circular designs and life-form motifs were most strongly associated with Colonial and Sedentary period (ca. AD 750-1150) pottery. Interestingly, none of the design classes registered a strong association with pottery dating to the Classic period (post-AD 1150).

The insights that can be drawn from the analysis of associated artifacts conform to those of the other dating techniques. The earliest petroglyph designs are curvilinear and circular types, to which
a repertoire of life-form motifs was added at a later period. All indicators point to this transition being part of the broader shift in Hohokam iconography at the onset of the Colonial period, ca. AD 750. Further, few of the petroglyphs can be strongly identified with the Classic period based on either stylistic or associated artifact parameters. It is very possible that some of the petroglyphs date to the Classic period, but there is compelling evidence that rock art production went into a major decline after AD 1150, if not earlier.

Pulling it All Together

Hohokam rock art was made in a variety of settings, presumably for a variety of reasons, and by an assortment of people from nearby communities. The contexts of production and consumption covered a spectrum of ritual focus, from settings where the main activities drew largely on either creating or experiencing rock art to others where it was one of several preoccupations. The fact that the symbolism is fairly uniform across settings suggests different people were drawing on a shared set of icons with religious importance. We will likely never know the underlying meaning of the symbols, but we can ascertain to some extent the significance of their production.

During the pre-Classic era, the timeframe in which the vast majority of the South Mountains petroglyphs were made, people ventured into upland settings like the South Mountains for a number of reasons. Rock art ritualism was part of this broader perception and engagement with the landscape along the margins of their villages. This mode of mountain ritualism integrated other aspects of landscape use, such as agriculture and natural resource gathering, and involved different stages like springs and hilltops. This compares favorably with how we understand the pre-Classic Hohokam World, when communities were apparently tied together along a religious dimension. The ritual ballgame and associated activities were central to this social formula that promoted communal ceremonial observance and performance. This
participatory ritual framework extended to other aspects of daily life as well. Household ritualism was one domain, and mountain ritualism involving rock art was another.

With the turn to the Classic period, Hohokam communities began relinquishing much of the ritual glue that held their society together. Ballcourts gave way to platform mounds, edifices that restricted the number of people who could view and participate in ceremonial observance carried out in the community’s central architectural facility. This transition cannot be underemphasized. There was a fundamental reorganization in the focus of community ritual (from a ballgame network to something centered and secreted atop mounds), as well as the organization of religious knowledge within communities. Religiously charged figurative iconography and many of the material items of ritual practice (such as palettes and censers) fell to the wayside. Those items that remained emblematic of Hohokam ritual power and religious authority (such as shell trumpets) became concentrated on and around the platform mounds. Further, over time the mounds became more and more restricted, as walls around them and buildings atop them confined religious observance and authority to smaller and smaller places and presumably fewer and fewer people. The overall decline in mountain ritualism, evidenced by the cessation in rock art production, that paralleled the rise of platform mound ceremonialism further elucidates the extent to which ritual practice and religious authority was cloistered to the new social order tied to the platform mounds.

This case study has shown that rock art had a noticeable role in the social transformation of the Hohokam World, and analyses of it offer a perspective not afforded through other lines of investigation. The fact that mountain ritualism, which was carried away from villages and in less observable settings, waned in tandem with a centralization of religious power speaks volumes to how this social transformation came about. It reveals that people bought into the new social order, and they did not resist nor compete with it by continuing centuries-old ritual practices that were sheltered from the gaze of community leaders. Whatever convinced Hohokam communities to turn their backs on the ballgame and on the lifeform designs on pottery and petroglyphs, and everything those icons and the ballgame stood for, also swayed them to give up many of their religious traditions, including those for which rock art was an integral part.

Figure 21. Correspondence analysis plot of associations among petroglyph motifs and diagnostic pottery in the South Mountains (adapted from Wright 2014:Figure 5.18)
Concluding Remarks

Petroglyphs are one of the most enduring and alluring features of the past. Recent scholarship, such as that from the South Mountains, demonstrates that rock art has a lot to offer the broader archaeological discipline, and vice versa. Among other emerging schools of research, cultural landscape approaches are showing that petroglyphs and other forms of rock art are not doodles; the practices involved in their creation and consumption were not casual acts; and their locations are not random. The intentionality of executing symbolic designs into stone underscores the artisans’ specificity of location and desire for permanence. Of all the elements of material culture that archaeologists study, rock art is clearly one of the few that was intended to remain in place and be witnessed by later generations. We are fortunate to be able to do so, and continued research will surely yield a fuller understanding of the past while garnering the added appreciation for rock art that is essential to its long-term preservation.

Photograph Credits. The artifact photographs in Aaron Wright’s article are all courtesy of the Pueblo Grande Museum, City of Phoenix. All other illustrations in the article were provided by Dr. Wright except the filler designs on pages 9 and 15, which were created by the editor.

References Cited


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Allen Dart
Thanks to Those Who Assisted with Old Pueblo’s June 2016 Mimbres-Area Educational Tour

Allen Dart

Old Pueblo Archaeology Center’s 2016 “Mimbres Ruins, Rock Art, and Museums of Southern New Mexico” archaeology education tour was, as usual, a great success, but it covered so much territory in four days that it was pretty exhausting! (Old Pueblo Archaeology No. 62, on Old Pueblo’s website at http://www.oldpueblo.org/wp-content/uploads/2013/12/201006opa62_AVisitToTheMimbresCountry.pdf, provides a detailed description and photographs of an earlier version of this tour.) The educational value of this year’s tour was greatly enhanced by the archaeologists, volunteers, and government employees who helped arrange and guide the tour to the many archaeological sites we visited.

I happily referred to Professor Barbara J. Roth as the “Instigator” of my Mimbres-area tours when I introduced her to this year’s tour group. Barbara has directed excavations at a number of archaeological sites in and near the Mimbres Valley since the 1990s, and has been an Old Pueblo Archaeology Center supporter for many years. When she was planning her 2005 project at the Archaeological Conservancy-owned La Gila Encantada site in Silver City, she suggested that I offer an Old Pueblo tour to see her excavations and some other sites in the region. Thus was the "Mimbres Ruins, Rock Art, and Museums of Southern New Mexico" tour born – 2016 marked the eighth time I have led it for Old Pueblo and Pima Community College, THANKS To YOU, BARB!

This year Barb was directing the University of Nevada at Las Vegas archaeological field school at the Elk Ridge site in the Mimbres Valley, so she twisted my arm into offering the tour again this year. She came out to show us the excavations on Sunday (her day off), and didn’t leave any of our group disappointed. What a great host!

Native New Mexican Marilyn Markel spent nearly a full day with us on Sunday, guiding us to the Mattocks, Mitchell, and Cottonwood Park Mimbres sites, the Archaeological Conservancy-owned portion of the Elk Ridge site, the Picture Canyon Apache and Mogollon pictographs, and the Lake Roberts Vista Mogollon-Mimbres site. For nearly all of these sites she had notebooks of photographs and information that she shared, along with her personal knowledge about local sites and regional histories. Marilyn has a University of New Mexico Bachelor’s degree, has earned 30-plus graduate
hours in history and archaeology at Western New Mexico University, and is a career educator who has taught archaeology and worked in excavations, surveys, and interpretive projects with the WNMU Museum, Gila National Forest, Museum of New Mexico, and the National Park Service. She has worked with Barb Roth’s university field schools at several Mimbres-area sites over the years, is President of the Grant County Archaeological Society and Education Coordinator at the Mimbres Culture Heritage Site (the Mattocks site), and is the Southwest Chapter Coordinator for the New Mexico SiteWatch program (that state’s counterpart of the Arizona Site Stewards volunteer organization).

One of this year’s tour days started out with a visit to the Mimbres culture pottery and other exhibits at the Western New Mexico University Museum in Silver City. We were unexpectedly treated to a guided tour by archaeologist Dr. Cynthia Bettison, the Museum Director. A Mimbres-culture expert, Cynthia provided a great background on the Mogollon and Mimbres cultures of southwestern New Mexico, and experienced insights on the WNMU Museum’s spectacular Mimbres pottery collection.

After leaving WNMU we forayed northwest of Silver City to the Woodrow, Gila River Farm, and Alma Hump archaeological sites near Cliff and Alma, New Mexico. Volunteers Kyle Meredith and Josh Reeves hosted our visit to the Woodrow site along the upper Gila River east of Cliff for the umpteenth time. Like Marilyn, Kyle and Josh are New Mexico SiteWatch members who monitor archaeological sites to report vandalism or other damages to appropriate authorities. Dr. Maxine McBrinn kindly gave the New Mexico Museum of Indian Arts and Culture’s permission to visit Woodrow, and landowner Margie McKeen allowed us to visit the part of the Alma Hump site on her W S Ranch property.

After we visited Woodrow with Kyle and Josh they accompanied us to the Gila River Farm site, where archaeologists Karen Schollmeyer and Lewis Borck showed and provided information about the excavations that had been opened up recently during this season’s Archaeology Southwest-University of Arizona archaeological field school. This site, which is owned by the Nature Conservancy and a neighboring property owner, includes Classic Mimbres and later Cliff phase (Salado) cultural components.

I am also grateful to Hugh Hawthorne, Rita Garcia, and Ranger Dee Casimero for arranging for the Old Pueblo tour to visit to the TJ Pueblo archaeological site in the Gila Cliff Dwellings National Monument; and to Marten Schmitz (Bureau of Land Management), and Lisa Trujillo and Wendy Sutton (Gila National Forest) for their assistance and efficiency in issuing the federal permits required for Old Pueblo’s tour to visit the Cottonwood Park, Elk Ridge, Lake Roberts Vista, Old Town, Pictograph Canyon, and Frying Pan Canyon and Pony Hills petroglyph sites that are on public lands.
Mesa Verde Elementary Reports

Tucson’s Mesa Verde Elementary School teachers Michelle Ernst, Haylee Heiden, and Tanya Hermanson brought their 4th grade classes to Old Pueblo Archaeology Center earlier this year to participate in the OPEN3 simulated archaeological excavation. After their field trips to Old Pueblo, each class wrote a report on its OPEN3 experience, which the teachers shared with us, along with these photos sent by Ms. Hermanson. The students’ essays are below.

The Old Pueblo Educational Neighborhood (OPEN) program allows students and adults to learn what archaeology is all about by excavation in “OPEN3,” a full-scale model of an archaeological site. OPEN3 is a simulated excavation site that archaeologists have constructed to resemble a southern Arizona Hohokam Indian ruin. It has full-size replicas of prehistoric pithouses and outdoor features that the Hohokam used for cooking, storage, and other (sometimes surprising) purposes. Students participating in the program get to learn and practice techniques used to excavate real archaeological sites. They are also exposed to scientific interpretation of how ancient people constructed their houses, what they looked like, ate, and believed in, and how they created beauty in their lives.

Old Pueblo also offers our OPENOUT (Old Pueblo Educational Neighborhood Outreach) program in which professional archaeologists offer 45-60 minute presentations to children to show them how some aspects of everyday life have changed while others have stayed the same. Our OPENOUT presentations include Ancient People of Arizona, which gives kids an overview of how the Ancestral Pueblo, Mogollon, and Hohokam peoples lived; Lifestyle of the Hohokam, which introduces children to southern Arizona’s Hohokam archaeological culture; and What is an Archaeologist? – a program designed to give children an idea of what archaeologists do, how they do it, and how they help us learn about past peoples. The hands-on materials and fun lesson plans in our OPENOUT programs bring archaeology and the past alive for children and are a perfect prelude for the OPEN3 simulated archaeological excavation.

In addition to the OPEN3 and OPENOUT programs, Old Pueblo provides opportunities for organized children’s groups to go on guided tours to real archaeological sites. Heritage sites that can be visited include the Picture Rocks petroglyphs site, Los Morteros Hohokam Village, and Vista del Rio Hohokam Village. Each youth tour is a guided visit that does not include archaeological excavation; participants are not allowed to collect artifacts.

For details and pricing of our children’s education programs please visit Old Pueblo Archaeology Center’s http://www.oldpueblo.org/programs/educational-programs/childrens-programs/ web page.

The Mesa Verde students’ reports follow.
Research question: How did the Hohokam live in the harsh desert wilderness?

Hypothesis: The Hohokam lived in mud and straw structures called pit houses and made their tools from things available to them.

Expectations to test: We should find evidence of a structure and a hearth for cooking and staying warm. We should also find evidence of tools and how tools were made and used.

Ms. Hermanson’s fourth grade class participated in the excavation of a replica of a Hohokam Indian site at the Old Pueblo Archaeological Center on February 23, 2016. Our class had studied about the Hohokam Indians and how they lived in the desert. The students were excited to see how the Hohokam lived and used tools to survive in the desert. There were 6 groups and each group excavated a unit that was part of a pit house. They found evidence of a pit house from the walls and a doorway three feet from the hearth. They found a variety of tools and evidence of foods bits left behind and preserved by time.

Group A found a mano and metate. These tools may have been used for grinding the corn that was found with the mano and metate. There were also several pots and broken pottery pieces. Items in this unit were clearly centered on food preparation.

Group B and C found pottery with shells inside. This could have indicated that they were making jewelry. The shells would also have indicated that the Hohokam traded with other tribes since they did not near the ocean. They also found three stones together which might have been used as a trivet for cooking. Also found about three feet from the opening of the pit house was charcoal which indicated there had been a fire. They found bones which would have indicated they killed animals for eating and used the bones for tools. The chipped stone found could have been used for making other tools.

Group D found several pots that were completely intact or unbroken. There were a few dried beans which indicated the Hohokams ate beans as part of their food supply.

Group E and F found corn and beans along with other food bits. They also found a whole pot with jewelry inside that might have also been used for trading. They found chip stone, ground stone, and an arrow head which could have been used for tools and weapons. There were additional pottery sherds and charcoal here as well.

The groups also found were several examples of other tools such as an ax head and a hammer stone. Both had a line worn around the stone to indicate it had been attached with leather or something capable of tying the stone to a handle. There were also several pots that appeared to be seed pots and one was maybe a canteen for carrying water. Also found in the pit house area were several clay figurines which probably indicated children played around the pit house.

The students believe the evidence they excavated clearly indicated that the Hohokam used a variety of tools to survive in the desert. The mano and metate were evidence of grinding food. The ax and the hammer stone were evidence of tools made and used for various things. The chip stone and ground stone were also evidence of tool making. The bones, beans, corn, and food bits were evidence that the Hohokam ate meat they killed and possibly farmed beans and corn. The students concluded that the Hohokam used many tools to survive, plant, harvest, and prepare food to survive in the desert.
Research Question: What kinds of tools did the Hohokam use for cooking and other uses?

Hypothesis: The Hohokam used a variety of tools for cooking, working, and decorating items.

Expectations to test: If they used tools for cooking, working, and decorating items, we will find evidence of tools and items made with tools.

On February 22, 2016, Mrs. Heiden’s fourth grade class participated in an excavation of a replica of Hohokam Indian ruins at Old Pueblo Archaeological Center. We wanted to know what kinds of tools the Hohokam used and how the tools were used. The units we excavated were 2m x 1m and we had four groups working. One group excavated two units for a total of six units excavated. We found evidence of tools used by the Hohokams for cooking, working, and decorating of items like pots and shells.

Group A found a variety of pottery sherds in the fill dirt of the unit. They also found shells and obsidian rocks. They found an unfinished stone figurine that appeared to be a horse. This would have required a tool for carving or shaping in some way. They also found several shells with holes in them, which would also have indicated the use of a tool to make the holes. They found three large pieces of a pot that appeared to fit together. They concluded that this area must have been a work area based on the items found.

Group B felt their unit could have been a kitchen area since they found a pot with corn stored in it. The pot was sitting in three rocks that could have been a trivet. They also found four seashells that could have been used for jewelry. The figurine of a dog found might have indicated children played in this area. These items indicate the use of tools for cooking, decorating, and working. They also found the entrance to a pit house, which connected to a ramada.

Group C excavated pieces of corn and a metate, which was used to grind corn. They found a piece of obsidian next to the corn, which might have been used to cut the kernels from the cob. They found a broken bean pot possibly used for storage. A long stone with a sharp edge looked as if it could have been used for an ax. They also found a post to what might have been the ramada attached to the pit house.

Group D found a round metate and mano, a polishing stone, and other pottery. Each of these items indicated the use of tools.

We believe the evidence excavated indicated the Hohokam did use a variety of tools for cooking, working, and decorating their pots and jewelry. The metate was a tool used to grind corn. The long sharp stone was possibly used as an ax. Obsidian was used for making sharp tools to cut items. The post of the ramada indicated the use of tools. Therefore, we believe the Hohokam made and used many tools for cooking, working and for decorating.
Research Question: What are the different uses a pit house and a ramada?
Hypothesis: The Hohokam used the pit house and ramada for different uses.
Expectations to test: If they used these places for different purposes, we will find evidence of various artifacts in both locations.

On February 18, 2016, Mrs. Ernst's fourth grade class participated in an excavation of a replica of Hohokam Indian ruins at the OPEN1 site of the Old Pueblo Archaeological Center. We wanted to know the different purposes of a pit house and a ramada. The units we excavated were 2m x 1m and we had six groups working. We found evidence of various artifacts in the pit house and ramada depending on the unit.

Group A found a variety of pottery sherds in the fill dirt of the unit. They also excavated what appeared to be a whole mano and matate. They knew that these tools were used to do tasks like grinding food. Two large bones were also found which would indicate that animals were probably butchered here. There were some shells found here as well as several pieces of chip stone.

Group B found part of a ramada. They found antlers and several bones. They concluded that this must be where animals were butchered. They also found over 130 pottery pieces. They believe they found a whole mano which is used for grinding.

Group C felt their unit was part of the pit house. They believe this based on the fact that they located a wall during their excavating. They felt that based on their findings of several arrowheads and hammer that this area of the pit house was where they made tools and weapons.

Group D excavated what appeared to be part of a pit house. They found shells which they believed were used to make jewelry. They found over 200 pieces of pottery. In the pit house, they believed that pottery was made here. The Hohokam used pottery to store food and water.

Group E excavated in part of the pit house based on their findings. They found walls and a door. They excavated food, a seed pot and a whole water jug. They found around 80 pieces of charcoal in one spot which they measured to be three feet from the door. They believed the findings of the charcoal to be the hearth especially based on its location to the door.

Group F found the front area of a pit house based on their findings. The found all and what they believe was the doorway and at some point the walls collapsed in. They excavated around 80 pieces of charcoal which led them to believe they found part of the hearth. The hearth is typically located around three feet from the door. They also excavated two whole pots.

We believe the evidence excavated indicated the Hohokam have different uses of the pit house and ramada. They concluded that the pit houses were used for making items, storing food and water and for sleeping. Based on the evidence excavated in the ramada, they concluded that these areas were used for butchering animals and grinding food.
### Upcoming Activities

#### ONGOING:

- OPEN3 simulated archaeological dig,
- OPENOUT in-classroom education programs, and
- archaeological site tours for children

#### OTHER ACTIVITIES MAY HAVE BEEN ADDED!

Contact Old Pueblo Archaeology Center for updates & details

- [info@oldpueblo.org](mailto:info@oldpueblo.org)
- 520-798-1201
- [www.oldpueblo.org](http://www.oldpueblo.org)

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**Wednesday September 7, 2016 ►►**

“Archaeological Investigations in Marana’s Crossroads at Silverbell District Park”

free presentation by archaeologist Allen Dart

at Wheeler Taft Abbett Sr. Library,
7800 N. Schisler Dr., Tucson (actually in Marana)
520-798-1201 or [info@oldpueblo.org](mailto:info@oldpueblo.org)

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**◄◄ Tuesdays September 13 - November 15, 2016**

“Prehistory of the Southwest” 20-hour class

with archaeologist Allen Dart

at Old Pueblo Archaeology Center,
2201 W. 44th Street, Tucson
520-798-1201 or [info@oldpueblo.org](mailto:info@oldpueblo.org)

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**Thursday September 15, 2016 ►►**

Old Pueblo Archaeology Center’s

“Third Thursday Food for Thought” dinner

featuring the presentation “A Boot in the Door: Pioneer Women Archaeologists of Arizona” with Dr. Nancy Parezo

(cosponsored by Arizona Humanities)

at El Molinito Mexican Restaurant,
10180 N. Oracle Rd., Tucson
520-798-1201 or [info@oldpueblo.org](mailto:info@oldpueblo.org)

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**◄◄ Thursday September 22, 2016**

“Autumnal Equinox Tour of Los Morteros and Picture Rocks Petroglyphs Archaeological Sites”

with archaeologist Allen Dart

in northwestern Tucson metro area
520-798-1201 or [info@oldpueblo.org](mailto:info@oldpueblo.org)
Upcoming Activities (Continued)

Saturday October 15, 2016 ►►
“International Archaeology Day Open House”
at Old Pueblo Archaeology Center,” 2201 W. 44th Street, Tucson
Bring the kids! Make your own pottery to take home!
See how ancient people made stone arrowheads!
520-798-1201 or info@oldpueblo.org

◄◄ Sundays October 16, 23, & 30, & Nov. 6, 2016
“Recreating Prehistoric Maverick Mountain
Series Polychrome Pottery Workshop” with
Andy Ward at Old Pueblo Archaeology Center,
2201 W. 44th Street, Tucson
520-798-1201 or info@oldpueblo.org

Thursday October 20, 2016 ►►
Old Pueblo Archaeology Center’s “Third Thursday Food for Thought”
dinner featuring the presentation “When Romans Visited Tucson: The
Lead Cross Controversy” with archaeologist Dr. Todd W. Bostwick
(cosponsored by Arizona Humanities) at
U-Like Oriental Buffet, 5101 N. Oracle Rd., Tucson
520-798-1201 or info@oldpueblo.org

◄◄ Saturday December 3, 2016: Tucson
“The Tumamoc Hill Trincheras Site”
Old Pueblo Archaeology Center site tour
with archaeologists Dr. Paul R. Fish and Dr. Suzanne K. Fish
starting at Mercado San Agustin, 100 S. Avenida del Convento, Tucson
520-798-1201 or info@oldpueblo.org

Saturday Dec. 3, 2016 ►►
is the deadline to get your tickets for the December 15
“Raffle of a 2016 Ford Mustang Shelby GT350”
by the Jim Click Automotive Team to benefit
Old Pueblo Archaeology Center and other Arizona charities
(tickets are $25 individually or 5 tickets for $100)
520-798-1201 or info@oldpueblo.org
Upcoming Activities (Continued)

◄◄ Thursday December 15, 2016
Old Pueblo Archaeology Center’s “Third Thursday Food for Thought” dinner featuring the presentation “Epics of the American Southwest: Hopi, Diné and Hispanic Narratives of Heroes and Heroines in Mythic Literature” by Dr. Sharonah Fredrick (cosponsored by Arizona Humanities) at a Tucson restaurant to be announced 520-798-1201 or info@oldpueblo.org

Saturday January 7, 2017 ►►
“Baboquivari Peak Sacred Cave, Petroglyphs, and Himdag Ki Cultural Center” cultural education tour with archaeologist Allen Dart to sites in and near Topawa, Arizona 520-798-1201 or info@oldpueblo.org

WHAT DO THESE TWO ITEMS BELOW HAVE IN COMMON?
FIND OUT ON THE NEXT PAGE!

Acoma Pueblo polychrome pottery jar
12⅝ inches diameter by 17 inches tall

“Chief” charcoal sketch by Western artist Buck McCain,
14" by 17", framed
Upcoming Activities (Continued)

6-10 p.m. Saturday January 21, 2017: The pottery jar and “Chief” charcoal sketch on the previous page, the 17-inch-diameter by 14¼-inch-tall Acoma Pueblo pottery jar by Doris Patricio shown at right, and over 100 other fine art items will be auctioned during the “Art for Archaeology” fundraising auction of Southwestern arts and crafts to benefit the nonprofit Old Pueblo Archaeology Center. This gala event will be held at the JW Marriott Tucson Starr Pass Resort, 3800 W Starr Pass Blvd in Tucson. Old Pueblo Archaeology Center’s mission is to educate children and adults to understand and appreciate archaeology and other cultures, to foster the preservation of archaeological and historical sites, and to develop a lifelong concern for the importance of nonrenewable resources and traditional cultures. This gala event features opportunities to indulge in delicious hors d’oeuvres and bid on beautiful southwestern ethnic arts, crafts, and western U.S.-themed art donated by famous artists, to raise funds to support Old Pueblo’s education programs. Tickets are $75 each or 2 for $125 if reservations are made by 3 p.m. January 11, or $80 apiece at the door. For tickets or more information contact Old Pueblo Archaeology Center at 520-798-1201 or info@oldpueblo.org.

### Archaeology Opportunities Membership/Old Pueblo Archaeology Subscription Application Form

**Which ever membership level you choose, your membership fee supports Old Pueblo Archaeology Center’s educational programs.**

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Please return this form, with check payable to “OPAC” or with credit card information completed, to the address below:

**Old Pueblo Archaeology Center**

PO Box 40577

Tucson AZ 85717-0577

**Questions?** Contact Old Pueblo at 520-798-1201 or info@oldpueblo.org

Thank you for helping teach and protect the Southwest’s heritage!
Old Pueblo Archaeology Center
located at 2201 W. 44th Street in the Tucson Unified School District’s Ajo Service Center
Mailing Address:   PO Box 40577, Tucson AZ 85717-0577
www.oldpueblo.org  520-798-1201  info@oldpueblo.org

Old Pueblo Archaeology Center’s Archaeology Opportunities Membership and Discounts Program

Archaeology Opportunities is a membership program for persons who wish to support Old Pueblo Archaeology Center’s education efforts and perhaps even to experience for themselves the thrill of discovery by participating in research. Membership is also a means of getting discounts on the fees Old Pueblo normally charges for publications, education programs, and tours. Members of Archaeology Opportunities at the Individual membership level and above are allowed to participate in certain of Old Pueblo’s archaeological excavation, survey, and other field research projects, and can assist with studies and reconstruction of pottery and other artifacts in the archaeology laboratory. Membership benefits include a 1-year subscription to the Old Pueblo Archaeology electronic quarterly bulletin, opportunities to participate in Old Pueblo’s member-assisted field research programs, discounts on publications and archaeology-related items, and invitations and discounts for field trips and other events.

Old Pueblo Archaeology is the electronic quarterly bulletin of Old Pueblo Archaeology Center, a 501(c)(3) nonprofit corporation. Questions, comments, and news items can be addressed to the editor Allen Dart, at info@oldpueblo.org or 520-798-1201, or by mail to Old Pueblo Archaeology Center, PO Box 40577, Tucson AZ 85717-0577. For more information please visit our web site: www.oldpueblo.org.

Your Archaeology Opportunities membership helps support Old Pueblo’s children’s education programs.

Disclosure: Old Pueblo Archaeology Center’s Executive Director Allen Dart is a USDA Natural Resources Conservation Service cultural resources specialist who volunteers his time to Old Pueblo. Views expressed in Old Pueblo Archaeology Center communications do not necessarily represent views of the U.S. Department of Agriculture (USDA) or of the United States.