

# ARCHAEOLOGY IN TUCSON

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## Cerro de Trincheras: A PreHispanic Terraced Town in Sonora, Mexico

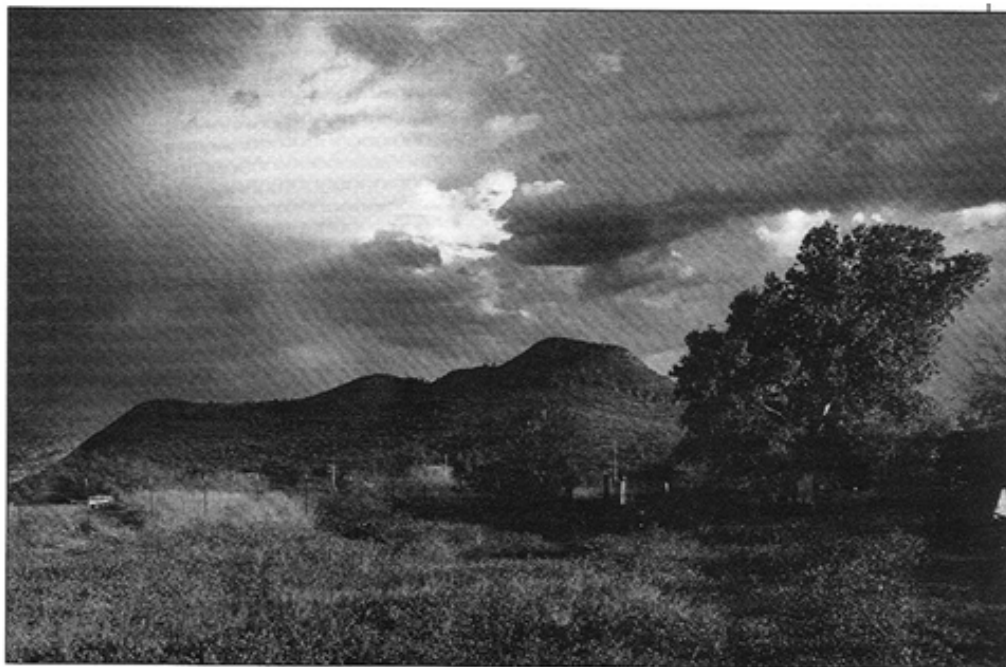
Randall H. McGuire, Binghamton University

Elisa Villalpando C., Centro Sonora de INAH

The international frontier that divides the United States and Mexico is a recent political fiction. It has no meaning for the development of preHispanic Native Americans, or for the archaeological remains they left behind. It has, however, had a profound impact on the study of the archaeology in the area. To the north of the line lies one of the most intensively investigated archaeological regions of the world, while to the south of the line archaeologists have done only a handful of projects.

American archaeologists are hesitant to cross the border because it involves research in a foreign country, requires mastery of a second language, and because very little funding is available for such work. Most Mexican archaeologists prefer to work farther south among the pyramids of the Aztecs, Mayas, and their ancestors. Thus, northwest Mexico remains an immense gray zone, and our knowledge of the prehistory of the Southwest dwindles when the frontier is crossed.

For the last 13 years we have been trying to transcend the modern border in order to study the archaeology of the Trincheras tradition in northern Sonora, Mexico, and its relationship to archaeological traditions to the north in southern Arizona, and to the east in the Mexican state of Chihuahua. Most recently we have been conducting excavations at the largest and most well known archaeological site of this tradition, Cerro de Trincheras. Our research has demonstrated, contrary to many other interpretations, that Cerro de



*Above: The Cerro de Trincheras site (photo courtesy of Randall McGuire, 1995); left: Archaeological traditions of southern Arizona and northern Mexico.*



Trincheras was a major preHispanic town, and a regional center in its own right. It has also revealed a paradox, that we feel is essential to why the town was built.

### The Trincheras Tradition

The use of the term trincheras can be somewhat confusing because archaeologists have used the name to refer to a ceramic type (Trincheras Purple-on-red), to an archaeological tradition, to a type of site (cerros de trincheras), and to a specific site (Cerro de Trincheras).



*Aerial photos of La Cancha (above) and El Caracol (right) after excavation (photos courtesy of Adriel Heisey, 1996).*

The ceramic type appears to have been manufactured in northern Sonora, and it defines the Trincheras tradition. Cerros de trincheras are sites that consist of terraces, rooms, and walls built on isolated, usually volcanic hills. These sites are most common in the Trincheras tradition, but they also occur among the Hohokam, and west into the Casas Grandes region of Chihuahua, Mexico. The largest example of this type of site is the Trincheras tradition site of Cerro de Trincheras.

The Trincheras tradition extends approximately from the international border on the north, south to Desemboque, and from the Gulf of California on the west to the Rio San Miguel on the east. Archaeologists divide the chronology of the tradition into four phases. The earliest of these phases (?-A.D. 200) was a late Archaic complex much like the San Pedro stage of the Cochise tradition of southeastern Arizona. Settled villages, Purple-on-red ceramics, and agriculture appeared in Phase 2 (A.D. 200-800). During Phase 3 (A.D. 800-1300) these developments continued with larger pit house villages, cremation burial, and the appearance of cerros de trincheras. In the transition to Phase 4 (A.D. 1300-1450), the tradition changed dramatically. The production of painted pottery ceased, the geographical range of the tradition contracts, and Trincheras people built the site of Cerro de Trincheras. When the first reliable Spanish reports of the region appear in the 1600s, the region

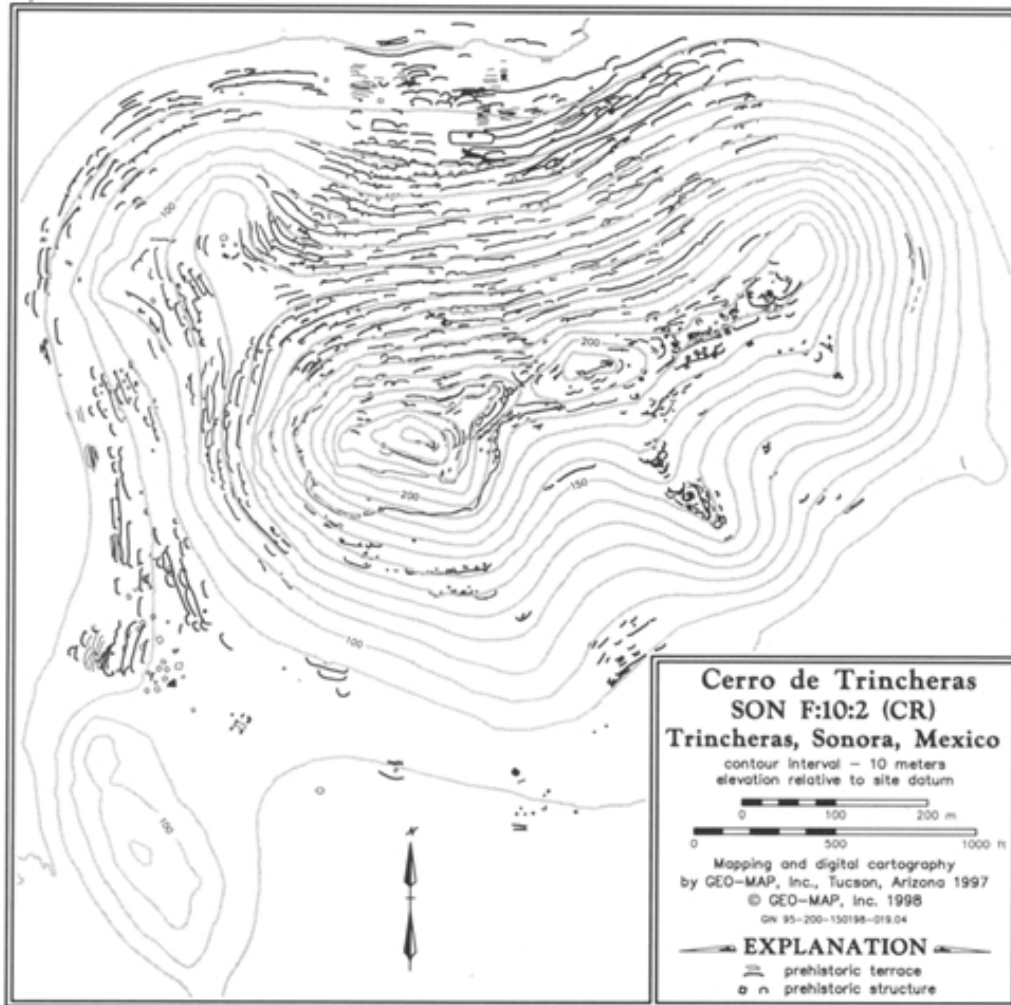
was inhabited by O'odham (Pima and Papago) peoples who are probably the descendants of the Trincheras tradition.

### **The Site of Cerro de Trincheras**

Cerro de Trincheras covers a large, dark, isolated, volcanic hill, south of the modern town of Trincheras, in the Rio Magdalena drainage. The site is visually monumental and can be seen across the flat plain from over 25 miles away. The hill covers an area of over 230 acres and rises over 150 m above the surrounding desert floor. The most obvious features at the site are the more than 900 terraces, located primarily on the north slope of the hill. Some of these run for a hundred meters or more, but most are 15 to 30 m in length. They range in height from tens of centimeters at the base of the hill to more than 3 m at the summit. The hill is also dotted with hundreds of round and circular rooms with dry laid rock walls standing up to a meter in height. Two special structures stand out from the rest of the architecture on the site. La Cancha (the court) is a large 15-m-by-57-m elongated oval that lies near the base of the hill on the north side. The Plaza del Caracol sits on the crest of the hill towards the east end. El Caracol (the snail shell) itself is built of dry laid cobbles with walls standing to a height of 1.6 m. In plan view these walls form a 13-m-by-8-m spiral that looks like a snail shell cut in half.

The Rio Magdalena drainage greatly resembles the Tucson Basin. Before arroyo cutting and large-scale water pumping in the late nineteenth century, the river was perma-





*Map of Cerro de Trincheras  
(prepared by Geo-Map, Inc.)*

Our research has shown that the site was a terraced town with a population of 1,000 people or more. Thus, Cerro de Trincheras could not have been a refuge fort, a massive terraced agricultural field, or a rustic village. We have also found no artifacts or architecture that would indicate that foreign traders built the town or that it was a Hohokam community. What we have found suggests that Cerro de Trincheras was an indigenous development and a regional center in its own right.

#### **Archaeological Research**

Although the earliest written account of Cerro de Trincheras dates to the end of the seventeenth century, intensive investigations at the site began with our work. We received permits for the research from the Instituto Nacional de Antropología e Historia (INAH) of Mexico. Binghamton University in Binghamton, New York, and the Centro Sonora de INAH in Hermosillo, Sonora, sponsored the project with much help from the Arizona State Museum and

Geo-Map, Inc., both in Tucson, Arizona. In 1991 the National Geographic Society (Grant 4454-91) funded the surface survey and aerial photography, to produce a map of Cerro de Trincheras. In 1995 and 1996 we returned to excavate the site with a grant from the National Science Foundation (Grant SBR930224). Analysis of the results of these excavations is ongoing in Binghamton and Hermosillo.

Our two seasons of excavation generated abundant information about the site. We excavated in 21 of the terraces and uncovered 118 features, including 15 houses, 26 rock rooms, La Cancha, and El Caracol. We recovered in excess of 1,000,000 artifacts, over 900,000 of which were pottery sherds. We also collected botanical samples and animal bone to learn about the diet of the people who built the town. Finally, we processed 20 radiocarbon dates. Nineteen of the dates fall in the range of A.D. 1300 to 1450, suggesting that all areas of the site were occupied during this 150-year time span.

#### **The Town of Cerro de Trincheras**

Our excavations show that Cerro de Trincheras was an agricultural town and a regional center. The town had a complex internal organization with each precinct serving a distinct function. The people of the town also manufactured

nent, wide, and marshy. Today it is dry most of the year. Precipitation comes primarily in the form of summer cloudbursts with lesser amounts of rain falling in extensive winter fronts. Temperatures between the months of June and September routinely exceed 100 degrees F. Sufficient rain does not fall to support corn agriculture without the use of irrigation. Creosotebush, with some ironwood, mesquite, and cholla cactus, covers the flat plains. Several species of columnar cactus (saguaro, cardón, senita, and organ pipe) thrive on the lower slopes of the mountain along with paloverde and other cacti. The floodplains of the river are wooded.

Cerro de Trincheras is easily the most visually impressive archaeological site in Sonora. Traditionally, American archaeologists have tried to explain the site in terms of processes coming from outside of Sonora. Charles Di Peso identified Cerro de Trincheras as a commercial center established by Mesoamerican traders to protect their marine shell industry. He thought these merchants shipped bulk raw shell to Hohokam shell artisans. Others have argued that the site was a refuge fort, or that it was a massive terraced agricultural field. Emil Haury felt that Cerro de Trincheras was only a peripheral village of the Hohokam, specializing in the production of shell jewelry for trade north to Arizona.

shell jewelry and engaged in trade with other preHispanic peoples to the east, but apparently not the north.

### Agriculture

The people of Cerro de Trincheras practiced agriculture, cultivating corn, squash, and cotton. They also grew agave, or century plant, which is an important plant for food, fiber, and basketry. The natural range for agave starts about 300 m higher than Cerro de Trincheras. In southern Arizona, preHispanic peoples used specially designed fields to grow agave at elevations comparable to Cerro de Trincheras. We suspect that some of the low, narrow, terraces that we tested at the base of the hill may have been used to grow agave.



*Above: Ruth Rubenstein recording domestic terraces above La Cancha in 1991.. left: Beth Bagwell and John McGregor mapping the lowest terrace of El Mirador in 1996 (photos courtesy of Randall McGuire).*

foundations and a brush superstructure. None of these structures would have been particularly massive or durable. Ironically, the terraces that supported them are quite substantial and have stood for over 500 years.

High on the north face of the hill, one group of three terraces stands out from the rest with the highest terrace walls in the town. We called this group El Mirador (the lookout). They occupy the only spot from which someone could have viewed all of the household terraces on the north slope of the hill. The lowest terrace had a ramp leading to it from below and the highest

concentration of trade pottery from the site. A second ramp connected this terrace to the middle terrace. The middle terrace contained a rock room and other evidence of habitation. The third and highest terrace was filled with rocks, instead of soil, and we found very few artifacts on it. We think that this complex was the home of the site's ruling household. There would have been a reception area below, a domestic area in the middle, and a platform above from which proclamations could be made or ceremonies conducted in view of the town's populace below.

There seems to be a definite organization to the terraces on the north face of the hill. The lowest terraces, below La Cancha, appear to be for specialized activities, such as agave

### Architecture

La Cancha and El Caracol both appear to have been specialized ritual structures, but each was designed for very different audiences. La Cancha lies near the base of the hill, and it was not roofed. The rest of the site rises above La Cancha like a gigantic amphitheater so that virtually everyone who lived in the town could have seen the ceremonies held there. El Caracol, on the other hand, is located on the crest of the hill, in a walled plaza. Many fewer people could have viewed ceremonies here.

The vast majority of the terraces on the hill created platforms or families to live on. Each household included at least one brush and mud house, a ramada, and sometimes a round room with rock





*Aerial photo of terraces on the north slope of Cerro de Trincheras, with La Cancha in the lower left hand corner, and El Caracol in the upper center of the photo (photo courtesy of Adriel Heisey, 1996).*

the sun on the winter solstice. A little lower down on the north face of the peak another V-shaped wall points to the rising of the sun on the summer solstice.

### **Trade**

Many other researchers before us had interpreted Cerro de Trincheras as a trade outpost or specialized shell manufactory that served Hohokam consumers in southern Arizona. Our excavations recovered over 3,000 pieces of marine shell, most of it manufacture waste from the production of shell jewelry. However, we also found many fragments of finished jewelry and believe that artisans produced the jewelry primarily for local use. The fact that we found very few exotic, imported ceramic sherds at the site (less than 500 of 900,000) further supports our conclusion that the site was not a trade outpost. These sherds came primarily from the Casas Grandes region of Chihuahua with no sherds or any other artifacts from the closer Hohokam of southern Arizona, suggesting limited trade to the east but none to the north.

### **The Paradox**

Cerro de Trincheras presents us with a paradox. The site is visually monumental due to the hundreds of terraces that cover this promi-

nent hill. These terraces represent a major investment of labor. We estimate that the work involved in terracing the hill was comparable to that required to build a large pueblo such as Pueblo Bonito in Chaco Canyon, New Mexico. On the other hand, the structures that the Trincheras people built on these terraces were quite insubstantial, with a minimum of labor investment.

This paradox may be the key to understanding why the Trincheras people constructed their grand town on this hill. They built their homes in an open, breezy, but insubstantial style that works well in the hot, dry Sonoran Desert. They used the position of households on the hill, rather than the substantiality of their homes to communicate the relative social position of families. By terracing the hill, the Trincheras folk transformed a prominent natural feature into a human creation that expresses their social organization and religious beliefs. They achieved a degree of monumentality and distinction for their town that never could have been achieved by stacking the same rock into a pueblo, or mound.

fields. The next group of terraces above that, from La Cancha to El Mirador, appear to be primarily for domestic use. The terraces, the structures on them, and the artifacts the people used seem to get more elaborate with greater elevation. A cluster of households on the eastern end of the north face specialized in shell work. The terraces from El Mirador to the crest do not appear to be habitation terraces, because they lacked domestic structures or artifacts. The highest terrace in El Mirador is one of a series of terraces and walls that circle the entire hill and block access to the crest. This barrier is only broken at El Mirador and along a trail that goes up the west side of the hill. This pattern of walls and trails suggests to us that access to the crest of the hill was limited and controlled.

The crest of the hill would have been an administrative, ceremonial precinct accessible only to a few of the site's inhabitants and/or only at special times or ceremonies. This precinct included the plaza of El Caracol, on its eastern end, and the highest peak of the hill, on the west. The only feature on the peak of the hill is a V-shaped wall that points to the rising of

# Rediscovering el Presidio de Tucson

*Lisa Armstrong, Center for Desert Archaeology*



*The last surviving remnants of the Presidio wall ran south from Alameda Street (ca.1915). The 1881 Pima County Courthouse cupola is visible in the background (courtesy of the Arizona Historical Society, Tucson, photo 656).*

Tucson has been called "The Old Pueblo" for over 60 years, yet visitors seeking out the structures that formed the Presidio of Tucson are often surprised to find that most are gone, lost to decay and progress, many torn down as the city redeveloped in the late 1960s and early 1970s. In an attempt to rediscover El Presidio de Tucson, the Center for Desert Archaeology announces a volunteer excavation and a panel lecture that will explore the roots of the Presidio, its archaeology, and the changing character of downtown Tucson.

How can we rediscover el Presidio de Tucson? Some information about the Presidio has been preserved in archives, photographs, and drawings. However, unlike other presidios, no contemporary architectural plans, views, or descriptions have survived (or at least have yet to be found). To better understand the locations of Presidio structures we have to search beneath the modern streets, sidewalks, lawns, and building floors in the heart of downtown Tucson.

Recently, a coalition of organizations formed to work together on a plan to enable research, analysis, and interpretation of the Presidio site. The Center for Desert Archaeology, the Tucson Presidio Trust for Historic Preservation, the City of Tucson, the Tucson-Pima County Historical Commission, and Los Descendientes del Presidio de Tucson are cooperating to restore awareness of Tucson's Spanish and Mexican past.

One goal is to identify the location of the north and west Presidio walls through archaeological testing. Seed money to begin the search has been provided by the Arizona Humanities Council (AHC) and the City of Tucson. The AHC grant stresses public education and the Center for Desert Archaeology will meet this criterion in several ways.

## **A Volunteer Test Excavation**

Archaeological testing in search of the north and west walls of the Presidio is scheduled to begin Tuesday, March 17 and continue through Saturday, March 21. We will resume excavating on Wednesday, March 25 and work through Sunday, March 29, 1998. Homer Thiel, veteran of the 1992 excavations in the Presidio area, will lead the fieldwork. Each day, we will need six volunteer excavators. We are preparing for ongoing site tours and group visits, and will provide information on the Presidio site to all interested observers. If you are interested in joining the field research, you must be an active member of the Center for Desert Archaeology. You must make a reservation to participate in the dig. Participants will receive an orientation to the site and instruction on basic field procedures. Contact Lisa Armstrong for more information at 881-2244.

## **A Public Lecture**

On Wednesday, April 29, 1998 from 2 to 4 p.m., the Arizona Historical Society in Tucson will host a free lecture on the Presidio in the AHS auditorium, 949 East 2nd Street. Experts in Tucson's early history are scheduled to speak, including Tom Sheridan, Professor of Ethnohistory at the University of Arizona; Tom Peterson, Chief Curator at the Arizona Historical Society; Homer Thiel, Research Archaeologist, Center for Desert Archaeology, and Armando Elias, President of Los Descendientes del Presidio de Tucson. Marty McCune, Historic Program Administrator for the City of Tucson, will moderate the discussion.

## Arizona Archaeology Awareness Month

March is Arizona Archaeology Awareness Month and the Center for Desert Archaeology will be helping out with the speaker's series presented by the Arizona Archaeological and Historical Society. Three talks, all free, will be presented at Tucson-Pima County libraries:

"Growth and Collapse of an Ancient Community: Archaeological Explorations at Los Morteros, a Premier Prehistoric Town at Point of the Tucson Mountains" will be given by Henry Wallace on Thursday, March 5, 1998 at 2:00 p.m. at the Dusenberry-River Center Library, 5605 E. River Rd., Room 105.

"The Archaeology of Territorial Phoenix: Excavation of Blocks 72 and 73" will be presented by Homer Thiel on March 9, 1998 at 7 pm at the Wilmot Branch Library, 530 N. Wilmot Rd. Thiel will also present this talk on March 11 at the Pueblo Grande Museum and Cultural Park in Phoenix at 7:00 p.m.

"Recent Archaeological Discoveries Along the Santa Cruz River in Tucson" will be discussed by Jonathan Mabry on March 24, 1998 at 7 p.m. at the Wilmot Branch Library, 530 N. Wilmot Rd.

The annual Archaeology Exposition will be held March 14 and 15, 1998 at the Deer Valley Rock Art Center from 9 a.m. to 4 p.m. The Center for Desert Archaeology will have a booth at this event. The Rock Art Center has a museum and a guided trail to an impressive rock art site. Its phone number is 602-582-8007. To get to the Deer Valley Rock Art Center from Tucson: Take I-10 north to I-17. Follow I-17 north and get off at the Deer Valley Road exit. Head west on Deer Valley Road until the third stoplight. At .4 miles after this light, the road forks; stay right and watch for a purple and magenta sign for the museum.

## Volunteer Opportunity: The Cienega Valley Survey



*Petroglyphs along Cienega Creek  
(Photo courtesy of Elaine Halbedel).*

Over the past three years, the Center has conducted a survey of the Cienega Valley, located just southeast of the Tucson Basin. Over 250 archaeological sites dating between the Early Archaic and early historic periods have been located. Most of these sites are located in the Bureau of Land Management's Empire-Cienega Resource Area, but many sites are also recorded in Pima County's Cienega Creek Natural Preserve. Last year, we recorded a number of particularly interesting sites including several petroglyph sites and habitation sites with surface structures. The data collected during the survey has greatly increased our knowledge of land use and settlement patterns in the Cienega Valley. During the coming field season, we will be exploring new areas that will help develop a more complete picture of human occupation of the valley.

The Cienega Valley Survey is a unique opportunity for AIT members to participate in an ongoing archaeological research project. Please review the schedule below, then call Jessica Silvers at 881-2244 to sign up for specific survey dates. Remember, you must be a current AIT member to participate in the survey. The dates for the last Cienega survey season are:

Saturday, February 7  
Sunday, February 22

Saturday, March 7  
Sunday, March 22

Saturday, April 4  
Sunday, April 5

## Dramatic

*William H. Doelle, Ph.D., President Center for Desert Archaeology*

The close of 1997 saw an event that has already initiated a gradual transformation of the Center for Desert Archaeology. Through a generous, anonymous donation, we have been able to establish an endowment fund that will help support our core operations. Over the next year, we will plan some new directions for the Center.

One change that you will see is a further expansion of our area of coverage in the Newsletter. We have always had the Greater Southwest as our broad area of interest, as is evidenced by the lead article of this issue on the magnificent site of Cerro de las Trincheras. In the future we will consistently seek a wider regional coverage.

To better reflect our broadened focus, we will be searching for a new name for our *Archaeology in Tucson* newsletter. Expect this change a year from now. In the meantime, we encourage you to submit suggestions for a new name to our newsletter editor Homer Thiel. If your suggestion is selected, you will receive a 2-year subscription to the newsletter.

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### Time to Renew?



If your address label indicates that your *Archaeology in Tucson* membership has expired, please renew promptly to remain eligible for all activities, newsletters, and discounts on T-shirts and Center for Desert Archaeology publications.

The CENTER FOR DESERT ARCHAEOLOGY is a nonprofit research and educational organization specializing in the archaeology and history of desert regions. Our primary research focus is southern Arizona.

ARCHAEOLOGY IN TUCSON is the Center for Desert Archaeology's membership program. Center members receive the *Archaeology in Tucson* quarterly newsletter; discounts on the Center's publications; and opportunities to participate in archaeological projects, attend site tours, and come to archaeology lectures. Membership runs for one year from when dues are received.

For further information about the Center for Desert Archaeology or the Archaeology in Tucson program, call Lisa Armstrong at 520-881-2244. For information about the *Archaeology in Tucson* newsletter specifically, please contact the editor, Homer Thiel.

#### Annual Membership Categories and Rates

Patron	\$ 500
Sponsor	\$ 200
Sustaining	\$ 100
Contributing	\$ 50
Supporting	\$ 25
Family	\$ 15
Individual	\$ 10

### Archaeology in Tucson Membership Renewal

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