



The Center Collaborates with Mexican Archaeologists and Historians

The CBBS recently entered into an historic agreement with the *Instituto Nacional de Antropología e Historia* (INAH), the federal agency that oversees and investigates prehistoric and historic sites in Mexico. Through a memorandum of understanding (MOU) signed in Mexico City on July 18, 2017, the two entities agreed to collaborate on a range of projects in the Texas-northern Mexico borderlands. Importantly, this is the first such agreement between INAH and any entity in the United States!

A long, complex history between the Center and INAH provided a solid foundation for the MOU. The connection goes back to Dr. J. Charles Kelley, a pioneer archaeologist in the greater Big Bend region during the 1930s. Kelley oversaw excavations in the Presidio, Texas, area about the same time that INAH was founded in 1939. When Kelley conducted reconnaissances along the Río Conchos in Chihuahua in 1949 and 1951, it was INAH that approved the trip. Twenty years later that relationship was reinforced when Kelley and his wife Ellen worked with INAH on large-scale excavations (from 1971 through 1993) at Alta Vista, a major frontier Mesoamerican site in western Zacatecas, Mexico.

By the early 1980s, when Kelley was serving as an adjunct professor at Sul Ross State University, he advocated for the creation of the CBBS as a research department at the institution. Following its creation, he published an article in the Center's second *Journal of Big Bend Studies* on his work along the Río Conchos and supported the Center's mission, freely sharing a lifetime of accumulated knowledge on regional archaeology with CBBS staff until his death in 1997 at the age of 84.

In a sense, then, the MOU between the CBBS and INAH reestablishes the link Kelley made with our Mexican counterparts decades before and opens the door for collaborations on an unprecedented scale. Over the last several years, the two organizations have shared research, made presentations at each other's conferences, and attended various events and board meetings. Now, with the MOU in place, more substantive collaborations are being planned such as joint research at La Junta de los Ríos, the moniker given to the area where the Río Conchos of Chihuahua joins the Río Grande/Río Bravo

del Norte. It was at and around this confluence that Native Americans established farming villages ca. A.D. 1200; villages that were still present when Spaniards first visited the area in the sixteenth century. Other possible collaborations include a site registry in the region along both sides of the Río Grande/Río Bravo, repatriation of artifact collections smuggled

into the United States from Mexico, and field assistance with each other's archaeological projects.

INAH's Director General Diego Prieto Hernandez summed up the greater significance of the agreement when the MOU was signed. "The study of our shared borderlands is of enormous importance," he said, [and] . . . "we have a large task ahead of us regarding the study of geography, archaeology, history, culture, and migration patterns along the Río Grande, on both sides of the river. We have to work together towards the understanding of that area, not only as a border but as an element that unites us."

Since both organizations endeavor to study our common human past on respective sides of the border, collaborative work will

undoubtedly provide more meaningful results and enhance mutual understanding of past and present cultures across the broader region. The CBBS looks forward to a long and fruitful relationship with INAH through this agreement.

—William A. Cloud



Sul Ross State University president Dr. Bill Kibler and Texas State University System chancellor Dr. Brian McCall look on as Instituto Nacional de Antropología e Historia secretary general Diego Prieto signs the historic memorandum of agreement.



The Sul Ross contingent and INAH's National Archaeological Coordinator Pedro Sanchez Nava following a research meeting in Mexico City after the MOU was signed. From left to right: Texas State University System chancellor Dr. Brian McCall, CBBS director Andy Cloud, Sanchez Nava, SRSU president Dr. Bill Kibler, and CBBS senior archaeologist (and former director) Bob Mallouf.

Tinklers, Shells, Needles and Bells: Copper de los Rios

From at least as early as the tenth century A.D., trade items of copper and copper alloy such as bells, punches, needles, tinklers, axes, and celts manufactured in the prehistoric states of west and northwest Mexico began filtering into the American Southwest. Similarity in material and ideas between western Mexico and the American Southwest suggests the presence of ancient, but episodic, trade networks between the two regions that is reflected in archaeological sites of ancestral Puebloan, Mogollon, and Hohokam culture areas. The major source of copper items entering the Southwest was likely Casas Grandes (i.e., Paquime) in northwest Chihuahua. The primary item being bartered was copper bells, almost

“Among the articles given us, Andres Dorantes received a hawk-bell of Copper... which the natives had shown, greatly prizing it... We showed them the hawk-bell we brought and they told us... it was a thing they greatly esteemed, and where it came from were fixed habitations.”
(Cabeza de Vaca 1984:95–97)

700 of which have been documented in southwestern archaeological sites. With the abandonment of Casas Grandes around A.D. 1450, the indigenous copper trade ceased, and it was not until the initial colonization of New Mexico by the Spanish in the late 1500s and early 1600s that the flow of copper items—this time of European origin—began anew. Among the items reintroduced into the Southwest by the Spanish were European-manufactured copper “hawk bells” and needles.

Based on the presence of Casas Grandes trade wares, marine shell, obsidian, and other exotic artifacts in their villages, the semi-sedentary prehistoric agriculturalists of La Junta de los Rios were at least indirectly involved in trade with Casas Grandes by way of the Jornada branch of the Mogollon and other peoples to the west and northwest. Some trade materials entering the Jornada Mogollon culture area from Casas Grandes were likely passed down the Rio Grande into the La Junta villages. Based on ethnohistorical sources, J. Charles Kelley noted that copper bells were among trade items obtained from the west by the Patarabueye Indians at La Junta, and makes reference to a “copper sleigh bell” observed by an early Spanish visitor there.

While a direct overland trade route between La Junta and Casas Grandes might once have existed, the most likely route of indigenous interaction—both before and after the collapse of the Casas Grandes trade center—was along the Rio Grande between Presidio and El Paso—the same route chosen by early Spanish entradas of the sixteenth century into New Mexico. This likelihood should serve to impress upon archaeologists and ethnohistorians a critical need for research and preservation of the special, very limited, and irreplaceable archaeological sites that occur within this mostly ignored stretch of the river corridor.

One example that comes to mind is that of the “Rediscovery site,” visited by the author in company with J. Charles Kelley and Virginia A. Wulfkuhle in the mid-1980s. It is an extensive prehistoric



Virginia Wulfkuhle examines a massive ring midden at the Rediscovery site in 1986. Photo by author.



Copper trade items from the Rediscovery site. Fragmentary hawk bell (upper left), tinkler, and needle. Photo by author.

er Trade at La Junta

and Spanish contact period campsite in that segment of the Rio Grande. The site contains numerous hearths and unusually massive ring middens (thermal ovens) where intensive and repeated episodes of plant processing were pursued—most likely in early historic as well as prehistoric times. Among the surface artifacts encountered here are a variety of decorated southwestern ceramics as well as copper tinklers, copper alloy needles, and at least one fragmentary copper trade bell—rare finds for a site on the eastern periphery of the Southwest. However, whether these copper items are of prehistoric or contact-period Spanish origin has yet to be determined.

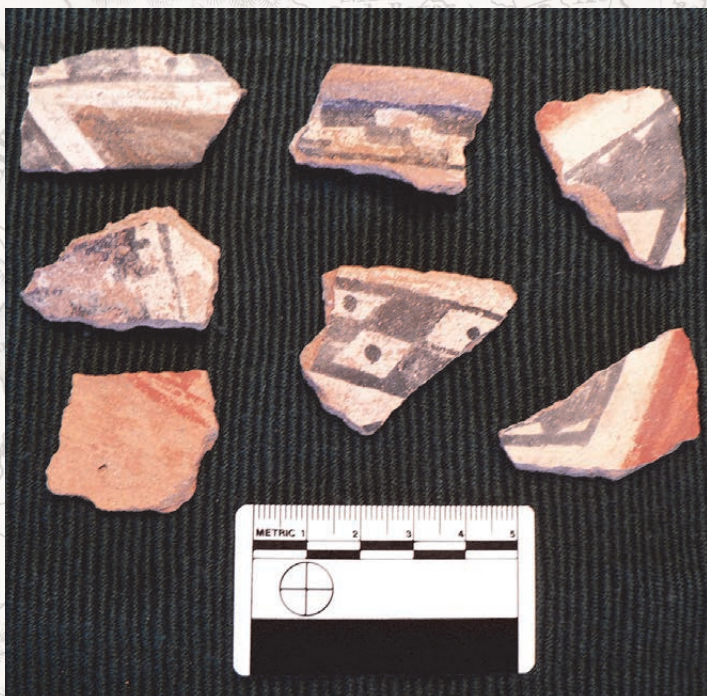
The Rediscovery site is only one of several in this river segment that contains unusually large oven features and has yielded early historic artifacts of special interest. It is also one of the sites that motivated J. Charles Kelley to hypothesize their function as resource procurement “stations,” where surplus foodstuffs were produced specifically for transfer west to the redistribution center of Casas Grandes. Moreover, this impressive site might well be one of the locations visited by the Antonio de Espejo entrada of 1582–1583 and the Juan Dominguez de Mendoza expedition of 1683. Although remote, the Rediscovery site has been and continues to be vulnerable to relic hunting and, along with others in the river corridor, should be earmarked as a high priority for scientific research.

—Robert J. Mallouf

Reference Cited:

Cabeza de Vaca, A.N.

- 1984 The Narrative of Alvar Nunez Cabeza de Vaca. In *Spanish Explorers in the Southern United States, 1528–1543*, edited by Frederick Webb Hodge and Theodore Lewis, pp. 12–126, Texas State Historical Association, Austin.



Example of trade ware sherds from the Rediscovery site. Photo by author.

Fool Me Once, But Not Twice!

It's true! Even archaeologists are fooled every now and again. Upon initial discovery and examination of a Late Paleoindian Dalton dart point (8500–7900 B.C.) embedded in soil ca. 30 cm below the surface in the cutbank of a drainage at the O2 Ranch, we were ecstatic. We suspected this artifact was *in situ* and possibly associated with a thermal feature since a few of the rocks adjacent to the point appeared to be thermally altered and in a linear alignment. We probed underneath the rock alignment searching for charcoal but found none. Taking this into account, we optimistically thought the fractured rocks could represent the outermost portion of the hearth—the rest having washed away down the drainage.

On our second visit to the site, we had more time and better visibility, allowing a survey of the drainage and thorough examination of the cutbank and possible hearth. Notably, we discovered an outcrop of dark reddish-gray, crumbly, tuffaceous rock exposed throughout the drainage—a thermally altered rock impostor! Also, the profile of the possible hearth revealed no charcoal or ash staining, further supporting the idea that the Dalton point was associated not with a thermal feature, but a rogue alignment of naturally occurring tuffaceous rocks.

Sometimes excitement gets the best of us—including professional archaeologists. Only after careful examination and consideration are we able to arrive at the most tenable hypothesis. That said, we would much rather have found a Late Paleoindian dart point in association with a hearth. Such are the vagaries of science!

—Erika Blecha



In situ Dalton point (far right) adjacent to “pseudo-hearth.”

Project Updates

Ongoing Research on Pinto Canyon Ranch

Since the beginning of the CBBS's investigations at Pinto Canyon Ranch (PCR) in 2001, a total of 1,000 sites have been documented. Excavations have taken place at 30 sites, and 93 radiocarbon samples have been recovered from thermal features, stratified deposits, rockshelters, rock structures, and a variety of other archaeological contexts. Ongoing investigations at open campsites Cerro Hueco and Gateway Terrace (each having multiple components but with a preponderance of Middle Archaic occupations—2500 to 1000 B.C.) have revealed a range of feature and artifact types. We now have a total of 14 square-meter units open at Cerro Hueco that have revealed a variety of projectile points and chipped stone tools as well as an enigmatic cluster of small boulders—presumably cultural—roughly 1 meter below the surface. However, despite the discovery of a Dalton-like dart point in the early stages of excavation, a substantive Late Paleoindian occupation remains elusive. Excavations at the Gateway Terrace site have revealed a remarkable series of dense, closely overlapping Middle Archaic occupations—the likes of which have not been seen elsewhere in the Big Bend. To date, 25 features have been documented at the site and 17 radiocarbon dates demonstrate occupations ranging from the Early Archaic to the Late Prehistoric period, 10 of which date to the Middle Archaic.

Additional excavations were recently conducted at Spirit Eye Cave (this issue), El Asta, Second Gate, Briscoe Midden, and five sites containing stone enclosures (see below). El Asta, a rockshelter just below the Mas Manos site (discussed in the 2016 newsletter and below), is comprised of a large leaning boulder that shelters shallow archaeological deposits, and a burned rock talus extends down the slope below. Notably, small, shallow test excavations yielded a piece of charcoal that produced a calibrated radiocarbon date of 8850–9230 B.C.—the oldest date yet recorded on the PCR. However, additional research is needed to determine whether the



CBBS staff archaeologist Rodrigo Molina mapping artifacts surrounding a stone enclosure at the Rattler Ring site.



Digitally highlighted hearth stones adjacent to a stone ring at the Pueblo Viejo site.

date represents cultural activity or a natural event such as wildfire. The Second Gate site contains 10 thermal features buried in a terrace along one of the major drainage systems on the ranch. All of the radiocarbon dates (nine so far) are Late Archaic, and many cluster tightly in a portion of the period around 250 B.C. Carlsbad, Frio, and Shumla dart points were recovered from buried deposits, though other types of chipped stone tools have been sparse. At Briscoe Midden, the CBBS excavated a deep trench into a massive prehistoric midden (containing burned rock, carbon-stained sediment, and abundant artifacts) in order

to explore the depth and character of the deposits and to evaluate the technological diversity and time depth of the feature. Significant zonation is evident in the stratigraphic profile of the midden, indicating a continuum of occupations and a variety of human behavior through time. Three Late Prehistoric radiocarbon dates along with a number of arrow points and ceramic sherds indicate a series of occupations in the early portion of the period around A.D. 690–1040. Of particular note is a cluster of rounded river cobbles amidst the midden debris that formed a discrete feature containing a fossilized *Turritella* (a genus of sea snails) shell, suggesting some kind of special function.

For several years non-thermal aboriginal rock features have formed a significant part of the PCR project research program (see 2016 newsletter). A range of feature types have been documented



CBBS crew members excavating a stone enclosure at the Sundown site.

consisting of 280 stone enclosures, 24 redoubts, 33 alignments, 174 cairns, and a handful of untyped or enigmatic features (such as rock groupings or platforms). To date, 17 structures have been excavated (stone rings or augmented bedrock enclosures) at 5 sites from which a total of 12 radiocarbon samples were collected from 7 different features. Renewed excavation at the Sundown site produced new information and radiocarbon dates for an augmented bedrock stone enclosure and a mostly buried rock ring, each situated along the margins of a substantial burned rock midden (the byproduct of earth oven, hot-rock cooking). In addition, three ridgetop structures have been excavated at the Mas Manos site, though the cultural deposits inside the rings turned out to be extremely ephemeral. Excavations at Pueblo Nuevo Rings, Rattler Ring, and Pueblo Viejo focused on stone enclosures and features in close proximity to such structures. Through these efforts, the CBBS is gradually building a site and feature database to help us better understand the range of behaviors associated with structures—over time—in the Big Bend.

Investigations at structural sites on the PCR continue as an important aspect of the Trans-Pecos Archaeological Program, and new sites with intriguing features come to light with each field visit. Background



Boulder mortars and cupules adjacent to a stone enclosure at the Pueblo Viejo site.



CBBS volunteer Benny Roberts mapping artifacts at the Pueblo Nuevo Rings site.

research, laboratory work, GIS analysis, and comparative studies will contribute to a detailed study synthesizing CBBS efforts in a publication entitled *Aboriginal Structural Research on the Pinto Canyon Ranch*. Additional manuscripts detailing excavations outlined above are underway, as well as an overview of the larger suite of PCR archaeological investigations.

— Samuel S. Cason



Toyah arrow point recovered from excavations within a stone enclosure at the Pueblo Viejo site.

CBBS Partners on Historic Preservation Project in Big Bend National Park

This year, the CBBS entered into an exciting new partnership with BBNP to help preserve and protect the park's ailing historic structures. Long known for its leadership in regional history and archaeology,



2017 BBNP historic preservation crew. From left: Rene Sanchez, Sergio Serrata, Pat Taylor, Mattie Matthaei, and David Keller.

the CBBS also continues to make inroads in historic preservation. The 15-day field season held this fall was the first of a 5-year collaboration between the CBBS and BBNP under a CESU (Cooperative Ecosystem Studies Units) agreement which allows the National Park Service (NPS) to partner with academic institutions and nonprofits. In this way, work is accomplished that might otherwise remain undone as a result of continuing budget and staffing shortfalls. CBBS senior project archaeologist David Keller and BBNP archaeologist and cultural resources program manager Connie Gibson are the project's co-principal investigators. Adobe specialist Pat Taylor, from Mesilla, New Mexico, is serving as the project consultant and contractor, conducting assessments and supervising the work. From October 15 to November 6, Taylor—along with masons Rene Sanchez from Marfa, Texas, and Sergio Serrata from Camargo, Chihuahua, in addition to Keller and several park employees and volunteers—conducted work on seven of the park's most neglected historic structures, including the iconic Hernandez-Alvino house and the Sublett farmhouse near Santa Elena Canyon, among others. Preservation treatments included adobe basal stabilization, mud plastering, parapet repair, and repointing stone masonry with natural mud mortar along with a range of other tasks. The project is strategic in helping the park meet its preservation mandate, but is also urgent—a race against time to protect these critically endangered relics of our historic past.

—David W. Keller

More updates on page 12

Astronomical Sighting Station and Summer Solstice Solar Marker Sites in the Black Hills

Originally recorded in 2006 in the Black Hills of east-central Brewster County, the Pecked Cupule site (BH-57) sat quietly for 10 years before it came under additional scrutiny. A crew from the Center for Big Bend Studies returned to the site in the fall of 2016 to formally map a horizontal sandstone boulder spall and the 23 cupules carved into it (Fig. 1).

those only accounted for its front end. There were no cupules representing the stinger portion of Scorpius.

One possible explanation comes from ethnologist/folklorist George Lankford (2007:241) who relates that many native cultures in eastern North America and as far west as the Great Plains, see the constellation

not as a scorpion, but as a serpent in the sky. The bright red star in the constellation—Antares—represents either the eye or the heart of the serpent, depending upon the culture involved. If prehistoric people of the Big Bend held a similar view of Scorpius, then this may explain why the stinger portion of Scorpius is missing on the cupule panel in the Black Hills.

After creating a scaled drawing of the Pecked Cupule panel, we made a second discovery. Five somewhat segregated cupules on the panel appear to represent the five brightest stars in the Pleiades star cluster. Comparing the configuration of the five cupules with these five stars of the Pleiades as seen with the naked eye was a fascinating revelation (see Fig. 1). Visible for only part of the year in the Northern Hemisphere, the annual reappearance of the Pleiades star cluster in the eastern sky occurs at the

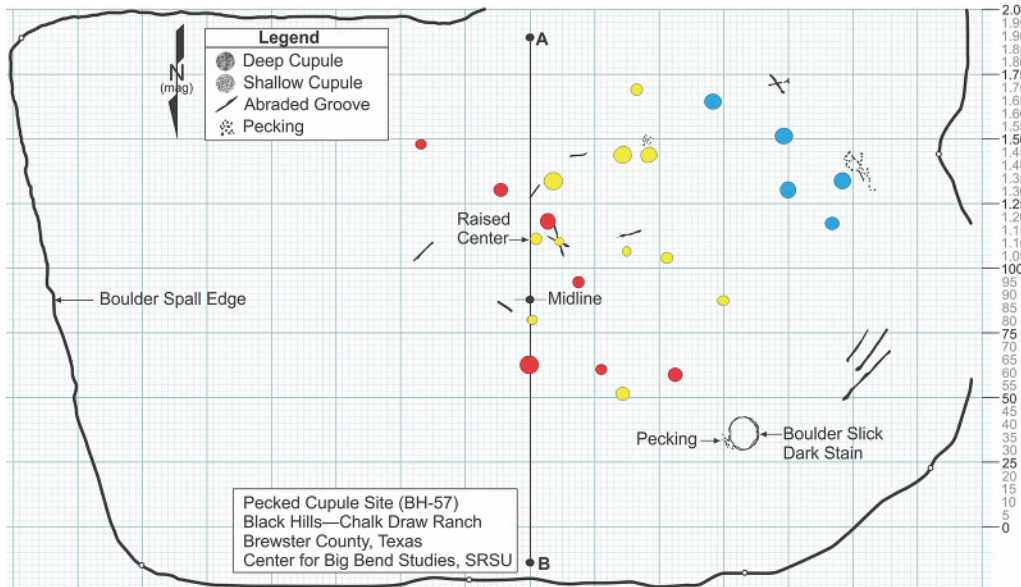


Figure 1. Scaled, color-coded schematic of Pecked Cupule rock art boulder, eastern Black Hills. Red: Scorpius constellation. Blue: Pleiades star cluster. Yellow: unreconciled cupules. Drafted by Letitia Wetterauer.

What inspired us to return was a hypothesis forwarded by volunteer Benny Roberts who, along with his wife Gena, have worked with the CBBS for years. While we have known for some time that they are both highly skilled avocational archaeologists, we did not know that Benny was also an avocational astronomer with 40 years of experience. When Benny first saw the Pecked Cupule site, he immediately recognized the constellation Scorpius, as formed by the pattern of a portion of the cupules. “But why,” we asked, “would prehistoric hunter-gatherers of the Big Bend peck a constellation onto a rock face?” Indeed, archaeoastronomy—the study of the astronomical knowledge of prehistoric cultures—was completely new to most of us at the CBBS. It fell to Benny to provide convincing evidence for his hypothesis.

Utilizing astronomical computer software, Benny was able to demonstrate that from the location of the site, Scorpius would rise in the southeast at 118° azimuth—the angle between true north and the celestial body’s location on the horizon—on the winter solstice. Significantly, the sun would follow an hour later. To naked eye observers the constellation and the sun would appear to rise at the same location on the horizon. The conjunction of both events, our reasoning went, might suggest that the site functioned as an aboriginal sighting station marking the coming of winter. Because the winter solstice occurs at the most southerly extent of the sun’s travels during the year and signals the beginning of winter in the Northern Hemisphere, it would have been an event holding major significance for aboriginal people.

But there was a problem. Even though there are 23 cupules on the panel, only 7 cupules appeared to represent Scorpius, and

approximate time of the summer solstice—the most northerly extent of the sun’s travels. Scorpius and the Pleiades cluster correspond with the two most significant seasonal events of the year—events that likely held far more significance to people in prehistory than they do to us today (Fig. 2).

With the identification of Scorpius and the Pleiades star cluster, we have accounted for 12 of the 23 cupules on the panel and are currently working with astronomical software in an attempt to account for the remaining 11 cupules. Benny has already identified two celestial events, both occurring in the A.D. 700s, involving planetary alignments and/or planetary conjunctions rising along with Scorpius on or near the winter solstice and just prior to sunrise. These events may account for three to four of the remaining cupules on the panel. Research continues, however, in an effort to positively identify the rest.

Continued on page 14



Figure 2. Locations on the horizon of the summer solstice sunrise (62 degrees) and the winter solstice sunrise (118 degrees) as viewed from the Pecked Cupule site. Photo by Benny Roberts.

Thank You!

The CBBS extends sincere thanks to foundations and individuals who have provided support since publication of the last newsletter (2016). These contributions have played significant roles in our many achievements. Listed below are all contributors based on a cumulative total.

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Ellen Sue Turner Memorial Fund

Ellen Sue Turner made many contributions to Texas archaeology, including tireless research of the many projectile point types (dart and arrow points) in the state. She continues to contribute to Texas archaeology through the Ellen Sue Turner Memorial Fund, which supported the salaries of our summer interns—Juan “Kiko” Morlock and John Jorgensen (2014), Juan “Kiko” Morlock (2015), and Lindsey Griffin (2016 and 2017). This fund is yet another way that Ellen Sue’s name and legacy can contribute to the study of Texas archaeology.

Please visit our website (<http://cbbs.sulross.edu>) to learn more about the fund or to donate. Or use the CBBS store on page 15 of this newsletter to make your donation. Call 432-837-8179 for more information.



Unlocking the Mysteries of Spirit

In May of 2017 the Center for Big Bend Studies began the first systematic excavations at Spirit Eye Cave (41PS25). Located on Pinto Canyon Ranch some 17 kilometers northeast of the small border town of Ruidosa, the cave contains a system of shafts and chambers, all of which were occupied and used in prehistory. The cave's name originates from the triangular shape of the two entrances and this shape's association with spirituality in many cultures. Both entrances lead to a large main chamber from which smaller horizontal and vertical shafts branch off.

Years earlier, news of the rich prehistoric deposits in Spirit Eye reached artifact collectors from Texas to Colorado, many of whom dug inside the chamber of the cave over multiple decades. Although we can account for some of these looting episodes, the exact history of collecting will in all likelihood remain murky. However, the intensity and destruction of their exploits is very clear. Outside both entrances mounds of screened cave fill rise almost three meters tall—the first indicators of destruction. Just inside the lower entrance, deposits resemble a mineshaft from untold looting exploits. Near the upper entrance, from the back wall of the cave to the opening, is a large, stratified mound of looted cave fill over a meter tall. The persons who mined Spirit Eye seemed to be after the same thing: the unique perishable artifacts this cave preserves.

Before beginning work at the site, we knew it was important to better understand the progression of amateur excavations. What has emerged is a complex and storied history, including multiple sustained periods of excavation within the main chamber by unrelated groups. The earliest account is from a high school report detailing the recovery of two mummified infant burials from the cave during the 1950s that were displayed in various hotel lobbies throughout Marfa. Although they were

rumored to have been sent to the Smithsonian Institution in Washington, D.C., staff at the Smithsonian could find no information about the burials and suggested the excavators simply may have used their name for the prestige it conveys. The location of the infant mummies remains unknown.

The 1960s may have been the most active period of unscientific excavation at Spirit Eye. Early in the decade, a group of men believed to be from Pecos, Texas, exhumed a mummified male and associated artifacts. The mummy was subsequently placed on display at a small county museum that garnered the attention of locals and eventually led to a conflicting narrative regarding the origins of what is now called the “Chinati Mountain Mummy.” After considerable research we were able to reasonably associate this individual with Spirit Eye and are in negotiations to secure the artifacts and the mummy for analysis and proper curation. In the mid-1960s, one Larry Clabaugh invited several different groups to the site and the work they conducted has become the best-documented chapter to date. In the fall of 1968 the Clabaugh party uncovered a flexed mummified female burial in a clay-lined pit. A member of the party sent numerous letters to various professionals but, due to the remoteness of the cave and the involvement of many archaeologists in the Lake Amistad Project in the Lower Pecos Canyonlands, the individual received no response.

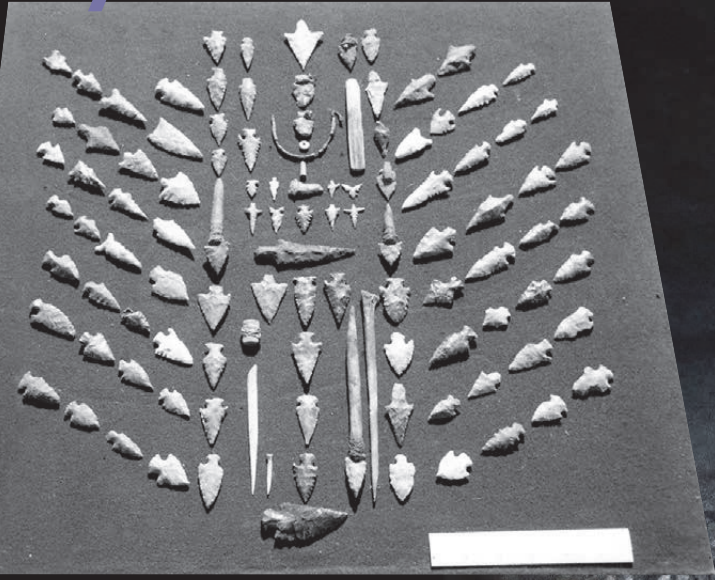
However, members of the El Paso Archaeological Society did eventually respond and spearheaded what they called the “Mount Chinati Expedition” in late 1968. The group mapped the site, photographed the artifacts collected, and excavated a small portion of the main chamber. The mummified female was given to Adrian Benke, a student at Sul Ross State University originally from San Antonio, who had agreed to transport her to the Witte Museum. Instead, Benke kept and displayed



Taylor Greer and Locke Ann McIvor excavating at the upper back dirt pile in Spirit Eye Cave. Photo by author.

Overview of the double entry at Spirit Eye Cave. Photo by author.

Eye Cave



Artifacts collected from Spirit Eye Cave by the Clabaugh party and photographed by the El Paso Archaeological Society in 1968.

her behind glass in an oak case he'd built until 1988 when he placed an advertisement in the back of a shotgun magazine and sold her to one Bob Howard of Palm Springs, California. In 1998, Howard's house was raided by California Fish and Game agents to recover exotic and illegal wildlife, at which time the mummified woman was confiscated and sent to the Texas Archeological Research Laboratory in Austin where her remains and the associated artifacts are now held. Although additional amateur excavations took place by a group from Colorado in the early 2000s, the 1960s remained an active decade, largely because the former landowner offered digging opportunities for payment.

Because of the history of looting, we chose to focus our first excavations on a large backdirt pile at the upper entrance of the main chamber of the cave. Our goal was to better understand the years of unsystematic excavation, identify intact cultural deposits, and develop research methods to salvage data from this and other highly compromised archaeological sites. Although much of this work is still pending analysis, to date we have recovered 20,339 artifacts including a remarkable—and unexpected—number of projectile points, perishable artifacts, and even the articulated skeleton of a burro (*Equus asinus*). In sum, Spirit Eye Cave has been severely impacted by decades of artifact collecting, and intact cultural deposits remain difficult to identify. However, the site still holds immeasurable value to science even if it requires an unconventional research design to unlock its true potential.

Our upcoming work at Spirit Eye Cave will focus on creating a detailed 3-D map of the cave system and excavating within the shafts as well as portions of the main chamber. At the same time, we will be working with a number of private collectors to analyze and date their collections. Our hope is to radiocarbon date key perishable items such as atlatl throwing sticks and dart foreshafts from these private collections to help refine the Big Bend cultural/technological chronologies. The site will also serve as an anchor in our historic collaboration with *Instituto Nacional de Antropología e Historia*. We also plan to use the site to launch a research program focused on dating perishable artifacts from this and other dry caves to better understand the spread of technological innovation across the Trans-Pecos. Perhaps most promising is our collaboration

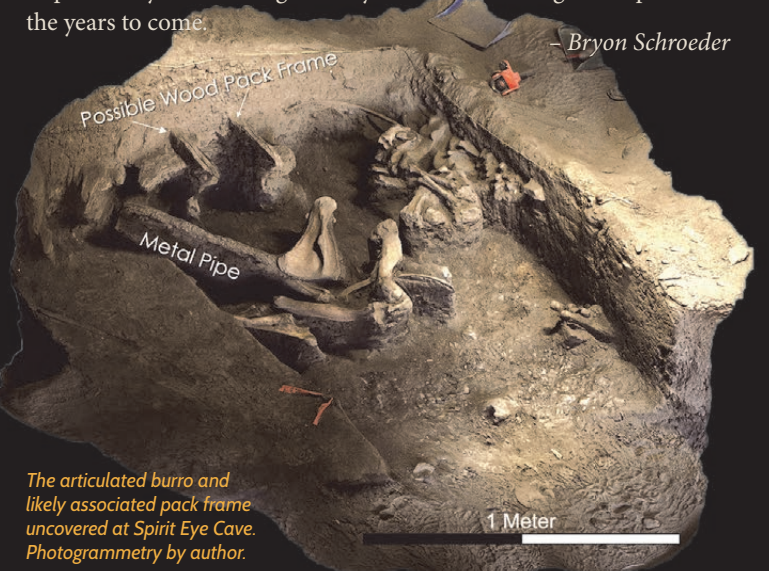


Shaft C exploration by Erika Blecha and Bob Mallouf. Photo by author.

with researchers at Harvard University and the University of Montana who have found new ways to extract ancient DNA (aDNA) from artifacts that were in contact with prehistoric people (i.e., corn, pipes, sandals). The co-occurrence of these items with prehistoric individuals at Spirit Eye Cave provides an unrivaled opportunity to refine this technique as well as to determine the ancestry of its occupants. This research will provide a direct window into understanding who the occupants of the site were and the ways in which this changed over time.

Spirit Eye Cave has long been a dynamic place with a complex history of human occupation. Despite years of unscientific excavations by artifact collectors, the cave still holds an unparalleled research opportunity both in the artifacts that were taken and in those we have yet to discover. If we allow ourselves to think about the site in an unconventional manner and design our excavations and analyses accordingly, we can use it as a one-of-a-kind laboratory to push our understanding of prehistory to new heights. Stay tuned for exciting new updates in the years to come.

— Bryon Schroeder



The articulated burro and likely associated pack frame uncovered at Spirit Eye Cave. Photogrammetry by author.

Collaborations with Texas State University Archaeologists

In today's world, every research organization tries to stretch limited funding to achieve as much as possible and the CBBS is no different. Thanks to several generous grants from the Still Water Foundation (SWF) of Austin over the last few years, the CBBS has been able to collaborate with archaeologists from Texas State University (TexState) on several projects benefitting both organizations. The grants have facilitated work between the CBBS and two of TexState's archaeological programs: the Gault School of Archaeological Research (GSAR) and the Ancient Southwest Texas (ASWT) Project. In addition, the grant has also funded joint symposiums by the two institutions at the Texas Archeological Society's annual meeting the last two years.

Collaboration between the CBBS and GSAR began about a year before the first SWF grant, and ultimately inspired the funding. Sergio Ayala of the GSAR had reached out to the CBBS for information on the regional distribution of Early Archaic Andice projectile points, a type under study by Ayala that is well represented at the Gault site in Central Texas. From that inquiry, an informal partnership began, setting the stage for more significant collaborations. With the aid of the first SWF grant, Ayala was able to make a series of visits to the CBBS to document Andice points from the region. In so doing, he gained a better idea of the point's distribution in West Texas as well as distinctive manufacturing subtleties unique to these points. In turn, Ayala assisted the CBBS with our ongoing Andice-related research.

Through the second grant, Ayala's visits have focused on the Big Bend's lithic material sources and select Middle and Late Archaic projectile points—Almagre and Shumla, respectively. In addition to standard laboratory analyses, Ayala is using his expertise as an accomplished flint knapper to better understand manufacturing techniques associated with these points. Among his goals are to assess the validity of the Almagre type in the region—which was delisted in the most recent edition of *Stone Artifacts of Texas Indians* by Ellen Sue Turner, Thomas R. Hester, and Richard L. McReynolds—and to refine the Shumla type which, over the years, has become somewhat of a catch-all category. Along the way, Ayala has been sharing his knowledge of stone tool manufacturing with the CBBS staff through lectures and demonstrations, helping to broaden our understanding of regional lithic technology.

The CBBS-ASWT connection also began prior to the SWF grant. Following an historic flood event near Langtry in June of 2014 (over 11 inches in 8 hours!) that damaged Bonfire Shelter—one of the most significant archaeological sites in Texas (arguably in North America)—ASWT director, Dr. Steve Black, reached out to the archaeological community for help. The CBBS agreed to assist the preservation effort and, with the aid of the SWF grants, we were able to provide both financial support and field assistance during a visit to the site by CBBS staff this past summer.

This collaboration has already reaped benefits for all entities involved, helping to initiate and solidify partnerships that will hopefully endure long into the future. Such partnerships, especially in research, are often game changers, maximizing funding while creating more accurate and robust findings. We at the CBBS are extremely happy about the way this particular collaboration has gone . . . a definite Win-Win!

—William A. Cloud



Sergio Ayala of the Gault School of Archaeological Research (Texas State University) examines a suspected Andice dart point in a private collection during one of his visits to the CBBS. Photo by author.



CBBS project archaeologist Bryon Schroeder stands in front of the "deep hole" at Bonfire Shelter. Photo by Erika Blecha.



Dr. Steve Black, director of the Ancient Southwest Texas Project and associate professor at Texas State University, gives CBBS staff an overview of the work completed at Eagle Cave. In this photo all excavation units have been back-filled. Photo by Bryon Schroeder.

In Memoriam

Joe Orr: Past and Present CBBS Supporter

Floresville, Texas, native Joe Orr graduated from Sul Ross State University in 1981 with a B.A. in Spanish and a minor in Biology before working as a river guide for Far Flung Adventures (FFA) in Terlingua, Texas. In 1988, Joe joined an exploratory horseback expedition into the high peaks of the Maderas del Carmen, a biosphere reserve in Coahuila, Mexico. John Morlock (former FFA employee and recently retired superintendent of the Fort Davis National Historic Site), who was also on the trip, recalled “. . . it was just the type of adventure that Joe loved. It included birding, archaeology, and discovering a piece of the unknown borderlands, all things Joe was very passionate about.” From 1989 to 1995, FFA offered guided raft trips on the Río Usumacinta in Mexico’s Yucatan Peninsula. With his keen interest in archaeology, Joe took the lead in learning about the Mayan people and their history—knowledge he eagerly shared with paying customers. Through his years of guiding, Joe developed a deep connection to the rivers he floated—most notably to the Río Usumacinta, the Rio Grande, and Grand Canyon’s Colorado River.

In 2012, at the age of 57, Joe became a lifetime CBBS member, reconnecting with his alma mater and rekindling his enthusiasm for archaeology. Furthering his widespread interests, he joined the boards of several organizations, including Friends of the Big Bend (now the

Ruth F. Necheles Jansyn

Ruth F. Necheles Jansyn was a seasonal resident living winters in Terlingua and summers in Highland Park, New Jersey. She began volunteering at the Center for Big Bend Studies’ J. Charles and Ellen A. Kelley Memorial Library in 2012 where, among many other tasks, Ruth digitized the voluminous Miriam Lowrance rock art archives. After receiving her Ph.D. from the University of Chicago, she was director of Labor Studies and professor of History at Long Island University. Upon retirement from academia, Ruth traveled the world, recording rock art in Italy and Australia in addition to studying drawing, painting, and photography. Her wonderful images of the Big Bend aptly demonstrate her skill. Ruth passed away this August at the age of 81 while visiting the Catskills with her family. We will miss her cheerful smile and dry wit, attributes that made Ruth the person we all loved.



Big Bend Conservancy) and McDonald Observatory’s Board of Visitors. Although Joe passed away in December of 2013 following a short illness, his legacy survives through financial support of the CBBS by the Orr Family Foundation. Because of Joe’s lifelong passion for many of the CBBS’s ongoing research programs (such as rock art, archaeoastronomy, borderland studies, and Big Bend archaeology), the Orr family has generously included the Center as a part of their grant program to honor Joe. As such, even in death, Joe’s support for the CBBS endures.

George M. “Mickey” Canon

On February 23, 2017, longtime CBBS associate member and stalwart supporter George M. “Mickey” Canon lost his battle with cancer. Mickey’s fascination with archaeology began at an early age on his ranch along the edge of the Stockton Plateau near Iraan, founded by his grandfather in 1895. Later in life he completed an M.A. in archaeology from the University of Denver, examining sites on the Canon Ranch for his thesis—research he later published in the *Journal for Big Bend Studies* (see Volume 10). Mickey was also an esteemed historic preservationist, devoting great care to historic structures on the ranch, notably the old prove-up shack and a painstakingly restored antique Railroad Eclipse Windmill. His affiliation with the CBBS was a natural extension of his interests, including hosting research of unique thermal features on his ranch in 2011, the same year he became a Center lifetime member. Mickey regularly attended the annual CBBS conferences and was a recurrent financial supporter. He will be sorely missed by the CBBS family.



Project Updates *continued from page 5*

Big Bend National Park Archaeology Report Nears Completion

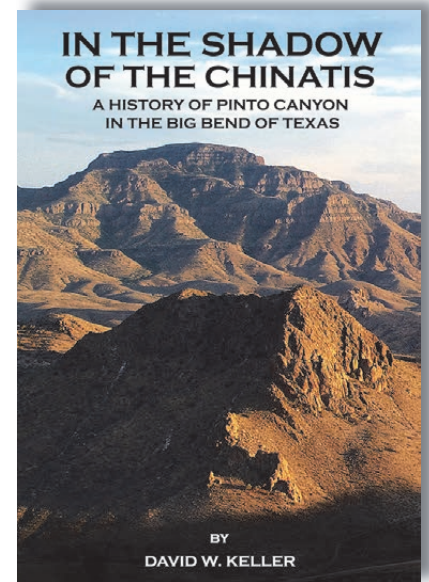
Although fieldwork for the 10-year-long Big Bend National Park (BBNP) project ended in 2010 and the bulk of the project report was completed in 2015, the release of the final report has encountered recurrent delays. The good news is that it is still moving and we are hopeful for a 2018 release. The final section of the report—a thematic context for placing national park sites on the National Register of Historic Places—is now in review. Once that is complete, all that remains is the final edit of the manuscript. However, considering

its length—standing now at over 1,000 pages—that is no small task. Thanks to state budget cuts in recent years that have left us unable to fill our much-needed staff editor position, all editorial work is either outsourced or added to the existing workloads of CBBS staff, most of whom are already stretched thin with other projects. This has caused delays in virtually all recent CBBS publications, but none more than the BBNP report. Even so, progress continues and we believe the highly anticipated results will be worth the wait. Stay tuned!

—David W. Keller

In The Shadow of the Chinatis to be Published by Texas A&M University Press

Years in the making, *In the Shadow of the Chinatis: A History of Pinto Canyon in the Big Bend of Texas* is finally on schedule for publication in the fall of 2018. In August the manuscript was unanimously approved by Texas A&M University Press's academic committee, representing the book's final hurdle. For the author, CBBS senior project archaeologist David W. Keller, it was the end of a long and tedious journey. Written over the course of eight years, and involving over a hundred personal interviews, weeks of fieldwork, extensive research of government documents, and visits to archives as far away as Washington, D.C., the book was an exhaustive (and exhausting) undertaking. But the level of detail has produced a work unique in its scope. As Keller claims in his preface, the book may be "the deepest look at the smallest place of any history yet written about the greater Big Bend." As such, it is expected to complement the broader historiography of this extraordinary region.



Progress at the Genevieve Lykes Duncan Site

As investigations proceed at the Genevieve Lykes Duncan (GLD) site, the CBBS continues to make exciting new discoveries about the Late Paleoindians of the Big Bend. Having reached target elevations across the excavation blocks, we are now concentrating on Feature 10, a small earth oven that dates to ca. 8700 B.C. Interestingly, most of the exposed fire-cracked rock (FCR) are larger and more rounded than FCR in Feature 1, which may suggest a different stage in hot rock cooking as well as preferential selection of stones from nearby stream-load deposits—Terlingua Creek and/or Davenport Draw. In addition to learning more about the oven's morphology, we are also hopeful to recover a range of special samples as well as functionally and temporally diagnostic artifacts.

In February of 2016, CBBS director Andy Cloud and staff archaeologist Richard Walter met with several scientists at The University of Texas at Austin, including environmental archaeologists Dr. Arlene Rosen and Dr. Thomas Hart, geoarchaeologist Dr. Charles Frederick, and archaeologist/paleomalacologist Dr. Ken Brown. The purpose

of the meeting was to discuss new findings and future sampling and analysis strategies for the GLD site as well as to identify the most appropriate peer-reviewed, international journals in which to present our findings—preferably ones that publish on subjects related to economic adjustments through time in response to a changing climate. Discussion of future work included archaeomagnetic dating of core samples extracted from FCR to help corroborate radiocarbon dates and cultural contexts, residue analysis of FCR to discover what was cooked at the site, and the use of high-magnification to detect microwear signatures indicative of function, individual contact materials, and possible residues remaining on working edges.

New discoveries from special studies at the GLD site include geoarchaeological data indicating that during the Paleoindian occupation of the site, warm season vegetation contributed a greater percentage of organic material, which suggest drier conditions may have existed at that time—data we hope to use as an aid in identifying discrete occupation zones or living surfaces. New archaeomalacological data (remains

of mollusks) indicate a rise in the frequency of amber snails (both juvenile and adult), *Helicodiscus singleyanus* (a minute species of air-breathing land snail), *Gastrocopta pellucida* (slim snaggletooth snail), and *Planorbella trivolis* (marsh ramshorn) within the paleosol. These data generally suggest more mesic conditions during the Late Paleoindian occupations between ca. 7585 and 6680 B.C. Finally, starch grains and phytoliths collected from the occupation zone identified as cattail, sotol, prickly pear, and gourd suggest that Late Paleoindians who occupied the GLD site enjoyed a highly diversified diet. Taken as a whole, and in spite of the limited number of subsurface artifacts that have been recovered from the site, the special samples collected from feature fill and occupational surfaces continue to yield an amazing wealth of data—offering a unique window to a far distant past.

—Richard W. Walter



Plan view of Feature 10 currently under excavation at the GLD site. Photo by author.

Backhoe Trench Exploration on the O2 Ranch

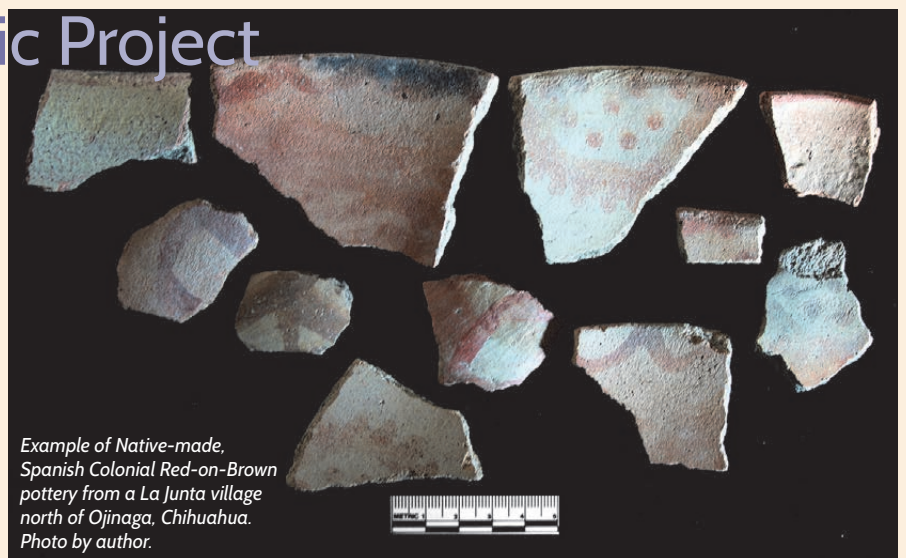
This past April, backhoe trenches were excavated at the newly discovered Prospector site and the previously recorded Rendezvous site—both of which we believed held potential for deeply buried deposits associated with the Late Paleoindian period (ca. 10,200–6500 B.C.) The Prospector site is situated on an alluvial terrace that runs parallel with a gravel ridge and a spring-fed section of an arroyo system. Projectile points collected from the surface indicate a long sequence of occupations ranging from Late Paleoindian to Late Prehistoric times (ca. 10,200 B.C.–A.D. 1535), a span of some 11,700 years. However, five backhoe trenches excavated at the site failed to reveal expected cultural deposits from the lower Early Holocene and Late Pleistocene strata even though cultural material was identified within Late Holocene strata.

More promising results came from the Rendezvous site located along the upper reaches of Davenport Draw, which has yielded numerous Paleoindian and Early Archaic projectile points from the surface. Because it also has terraces with potential for deeply buried deposits, six backhoe trenches were excavated, one of which revealed a small rockless hearth at around one meter below the present ground surface. Charcoal recovered from the hearth yielded a conventional date of 5150 ± 30 B.C., placing its construction and use during the early part of the Early Archaic period (6500–2500 B.C.)—a finding that corroborates temporal diagnostics recovered from the surface.

—Richard W. Walter

The La Junta Ceramic Project

In the 1940s, pioneer archaeologist J. Charles Kelley hypothesized that sometime after A.D. 1450, villagers from the La Junta region began making their own pottery rather than acquiring it from outside sources in the Casas Grandes and Jornada regions as they had done for the previous 200 years. Their new, locally made pottery was distinguished from earlier wares by being largely undecorated, sand-tempered brownwares, with a lesser number of decorated and surface-treated vessels bearing simple designs. Limited petrographic and Instrumental Neutron Activation Analyses (INAA) have largely supported Kelley's hypothesis, but additional analyses are needed to further refine our understanding of these local wares. The La Junta Ceramic Project, designed to address this shortcoming, focuses on these later brownwares from five village sites at La Junta. The CBBS plans to submit approximately 300 sherds for both INAA and petrographic analyses from collections housed at the CBBS, the Museum of the Big Bend, and the Texas Archeological Research Laboratory in Austin. The project is being funded by the Texas Preservation Trust Fund with additional help from the National Science Foundation Subsidy Program for Archaeological



Example of Native-made, Spanish Colonial Red-on-Brown pottery from a La Junta village north of Ojinaga, Chihuahua. Photo by author.

Research at the Missouri University Research Reactor Center. Results from these studies are expected to provide new insights concerning acculturation, cultural interactions, trade networks, and social systems of the La Junta villagers during a period of rapid cultural change amidst Spanish missionization and colonization.

—Richard W. Walter



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The Center for Big Bend Studies fosters interdisciplinary scholarship of the diverse prehistoric, historic, and modern cultures of the borderlands region of the United States and Mexico, with emphasis on the area encompassed by Trans-Pecos Texas and north-central Mexico. The Center is committed to the recovery, protection, and sharing of this region's rich cultural legacy through dynamic programs involving research, education, public outreach, and publication.

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Continued from page 6

If the Pecked Cupule site is, indeed, an astronomical observation station, it may not be alone. At the Beehive site (BH-39) on the western side of the Black Hills, Gena, Benny and I made an additional discovery during the summer of 2016. In an alcove at the site a two-ring concentric circle is carved into a vertical sandstone panel. Above the alcove is an opening in the rimrock that Benny believed might cast some kind of sun or shadow alignment involving the concentric circle around the time of the summer solstice based on where the sun would set on the horizon.

As a result, the summer solstice found the three of us spending the entire day at the Beehive site poised to document any sunlight/shadow/rock art interaction we might encounter. Throughout the day sunlight shining through the opening in the rimrock created some interesting designs on the ground but no alignment with the concentric circle or any other rock art at the site. Then at about 6:30 P.M., we noticed a distinct ray of light coming from the west that began to creep along the ground, slowly approaching the panel holding the concentric circle. The sunray began to climb up the panel and at about 7:50 P.M. the stark line between the sunlight and shadow bisected the concentric circle vertically. It appeared to be the summer solstice solar marker event we were hoping to witness. Still, it was a full two weeks later, while examining our photographs and videos, that we noticed an even more profound phenomenon.

After bisecting the concentric circle, a shadow cast by the nearby edge of the alcove continued to move south across the panel until the profile of a human figure appeared. Suddenly, the two-ring concentric circle became the figure's goggle-eye, while a cleft in the rock face formed an ear, and the shadow created the nose, mouth, and chin of a human-like figure wearing a conical hat (Fig. 3). Upon examination we noted that the edge of the alcove was intentionally modified by removing large flakes to create this profile. What we had discovered was no less than a unique and intentional design created by humans using sun and shadow to mark the arrival of the summer solstice. Interestingly, at two additional sites in the Black Hills, there are petroglyphs of round human faces, including facial features, and each is wearing a conical hat. This is a possible opening to a greater understanding of the rock art in the Black Hills.

These two astronomical sites in the Black Hills represent groundbreaking discoveries that are expanding our understanding of prehistoric people and the significance of seasonal and celestial events in their lives. Indeed, it turns out that Benny was right all along.

—Roger Boren

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Figure 3. Sunlight/shadow interaction creating the profile of a human head wearing a conical hat at the summer solstice sunset event. Photo by author.

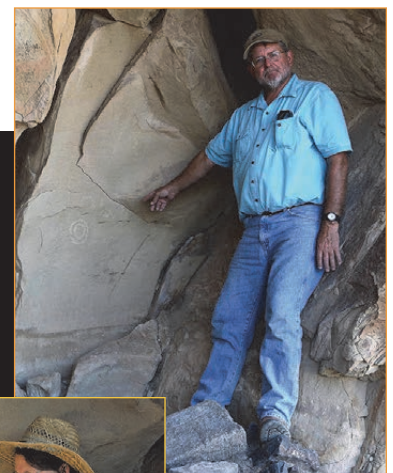


Figure 4. Gena and Benny Roberts examining the two-ring concentric circle associated with the summer solstice solar marker at the Beehive site in the Black Hills. Photo by author.

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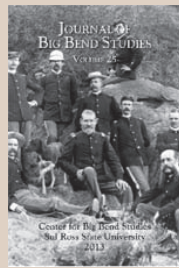
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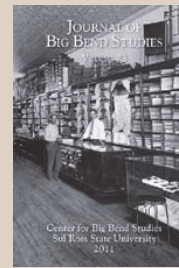
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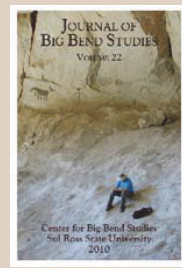
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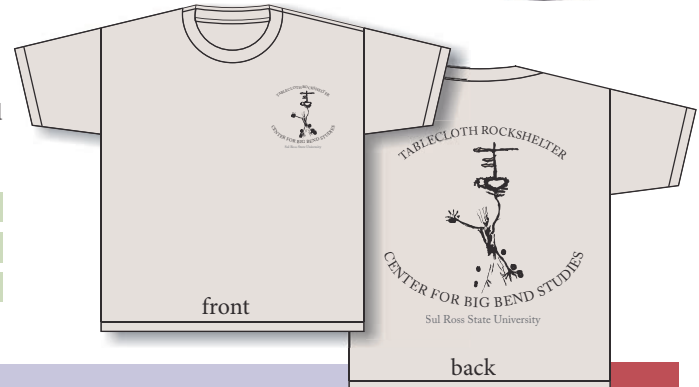
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