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Mythical Women in Prehistoric Art of Southeast Utah

By Carol Patterson

Introduction

THE SOUTHEASTERN portion of Utah state, in the U.S.A., is the location of prehistoric art dating back to 900 B.C. to A.D. 1300. It is found in alcoves and cliff faces depicting what I believe to be the “beginning stories” that are still recited and represented in the oral traditions of the Keresan, Zuni and Hopi Pueblo people who now live in northern Arizona and New Mexico.

Foundation myths, or “Beginning Stories” are canonical text, passed down orally and through pictography from generation to generation without changing, thus ensuring the preservation of the culture through centuries. Today, the Hopi, the Keres and the Zuni insist these stories attest to their cultural continuity that they have preserved in ritual poetry (in their ancient language), and ceremonies in their kivas away from foreign influences. What is available in early ethnographic text are but fragments of the entire corpus of the emergence and migration stories that are retained in oral traditions preserving their cultural continuity to this day. What follows is a simple correlative hypothesis of representations of these very important mythical women within the corpus of sacred text that define each culture.

Within this large canyon-laced landscape are painted

images of the Cloud Women, Corn Maidens, and Dawn Mothers. These mythical women play important roles in the creation stories, as humans seek to form a harmonious partnership with the environment through songs, prayers and ceremonies. Clouds, lighting, and thunder were animate beings with names and character that was addressed, prayed to and mythologized in oral traditions and re-enacted within formalized rituals and cyclical ceremonies. As environmental conditions deteriorated, there seems to have been a resurgence in larger depictions of these spirit beings in an effort to balance the fluctuations of rainfall and drought in this desert environment. Their formalized rituals and cyclical ceremonies strive to balance the fluctuations of rainfall and drought in this desert environment.

I am an archaeologist and cultural anthropologist who looks for the very “beginning” stories that every culture has. These stories describe the *place* and the *events* that occurred at the beginning of history. The “place” in relation to where they live now is a geocentric reference that anchors each culture in the landscape and defines their mythical universe. For the Keres and the Zuni, and some clans of Hopi, this place is northwest from where they live now.

The ancestral Keresan Pueblo people, of Acoma, Zia and Laguna pueblos have oral traditions of the “Mythical

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President's Message

GREETINGS ARARA Membership! ARARA is alive and well as we begin a new year—2022! New beginnings bring new adventures, new resolutions, re-initiating unfinished and/or new projects, in each we keep the going in stride. Even though we have not had the opportunity to come together in person, we continue to stay connected in various ways.

ARARA's eight (8) Board members attended the Board of Directors virtual winter business meeting, held on February 5–6, 2022, via Zoom. During these two full days we discussed ARARA's business action items, financials, and committee reports that were provided by each Board member. We reviewed and updated the organizational chart, which includes the Board members' positions and all the Committee and Ad-hoc Committee chairs and co-chairs assigned. We noted that there are committee chairs that are open and must be filled. These are the Membership Chair, Awards Chair, and Archives Chair and Archives Secretary. Also, we had committee chairs attend our business meeting to provide their reports firsthand. ARARA depends on our membership to support the organization by volunteering their time to keep ARARA in motion. Please contact us via ARARA's website if you are interested in a Chair position.

ARARA'S nominating committee chair reported that a slate has been established and this year's election process was conducted via email to the membership. We thank all who cast their votes when the time arrived!! The elected officers will be announced during the virtual June conference business meeting.

ARARA's conference committee continues to coordinate and organize our virtual conference for June 17–19, 2022. We were hoping that we could have held an in-person conference; however, based on the conference committee's assessments of health, safety, and economic concerns, the Board concurred with the conference committee's decision that it would not be viable to host an in-person conference. Given that last year's virtual conference was successful, this

year we believe it will be just as successful—we will have several great presentations and virtual workshops. Keep an eye out for postings, which will be in all the usual places: the ARARA website, Facebook, and via email.

We continue to applaud the Conference Committee, led by Mavis Greer, Jim Keyser, and their team to produce another outstanding virtual conference. Keep in mind that 2024 is not that far away, this will be ARARA's 50th anniversary, the conference will be held in Farmington, New Mexico where ARARA held its very first conference. I hope to see you all at this year's ARARA's virtual conference!!

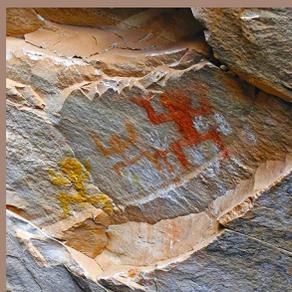
The Conservation Committee continues to conduct outreach to agencies and entities; as well as distributing the backpack tags to various rock art site managers. These backpack tags will be handed out to site managers at ARARA's booth in Chicago at the Society of American Archaeology (SAA) conference.

ARARA members and Board members that are planning to attend the 2022 SAA conference are planning to share alternating schedules to staff the booth. ARARA Vice President Linda Olson will be overseeing ARARA's booth logistics, should you be interested in supporting our effort, please contact Linda Olson.

ARARA wants to hear from you, should you have a rock art story to tell or news updates referencing rock art, please contact Linda Hylkema, araraeditor@rockart.us, *La Pintura* editor.

Please continue to remain safe and healthy in body and mind and continue to conduct your research and encourage others to join us in fulfilling ARARA's mission statement. ARARA's mission continues, as we build research upon research and along the way, we garner the trust of others, and most of all we educate others of the importance of the protection and preservation of the ancestors' fine rock art, across the United States and abroad. 🌀

Respectfully,
Ann Brierty, ARARA President



Coming in June!

San Diego Rock Art Association Presents:

Rock Art and Archaeology in Cedar Mesa and Bears Ears, Utah

By Wanda Raschkow

June 12, 2022, Starting at 4:00 p.m. (Pacific Time)

For more information or to register: <https://www.sandiegorockart.org/meetings.html>

Virtual ARARA 2022: June 17-19

by Mavis Greer, James D. Keyser, Jennifer Rilk, and Donna Gillette

AS MOST of you have already heard via email, Facebook, or a Zoom lecture, the 2022 ARARA Conference will be Virtual again this year. After a successful conference last year, your Conference Committee and Board are approaching this year's virtual event with less stress and more confidence. We know what is required to bring you together to celebrate what is new in rock art throughout the Americas and across the world. One of the positive aspects of a virtual conference is not having to travel, which not only provides the opportunity for more people to attend but also for more people to present their research. Because we are now experienced in online conferences, we can offer you more activities than last year.

2022 Workshops

Two workshops are in the planning stages for 2022. First, the Education Committee, under the leadership of Karen Steelman, is teaming with Project Archaeology to present information on teaching rock art basics to elementary school children. This is a subject that will have appeal regardless of your location. Second, the Conservation Committee, under the leadership of Linea Sundstrom, is bringing together a panel of experts to teach a workshop on how to develop a management plan for rock art sites. There will be a separate charge for the workshops to cover their direct expenses that will be announced during registration.

T-Shirts



Once again, the Conference Committee will be offering T-shirts to commemorate our gathering. Like last year, T-shirt ordering will not be tied to conference registration so that people can have their shirts to wear while listening to the conference online. By the time you read this, Troy Scotter will have created an easy-to-use order form featuring the T-shirt we are offering this year in both short- and long-

sleeved shirts. Orders must be submitted by **MAY 1** to allow time for us to get the shirts printed and mailed to participants in time for the conference. Once you place your order online, you may pay online with a credit card.

T-shirts are \$20 per shirt regardless of size (S, M, L, XL, and 2XL) and that includes shipping within the United States. We will not give a discount for shipping more than one shirt to one address because of the added weight of the package. Unfortunately, we will not be able to accommodate shipping to addresses outside the United States.

2022 Conference Logos

We have two logos for the 2022 conference. Both were originally designed for the Great Falls venue. The first, rolled out for the 2020 conference, features a mounted warrior found at Verdigris Coulee near Writing-on-Stone Provincial Park. Although the rock art at Writing-on-Stone has been studied and recorded in various projects for over 60 years, this image was newly recorded in 2019 by a crew from the Oregon Archaeological Society under the direction of Jim Keyser. The second, from the Whitetail Bear site in southwestern Montana, was designed by Carolynne Merrell, and was selected to represent the Foothills Abstract tradition rock art that is so common along the Rocky Mountains. The committee has decided to use both logos for our 2022 Virtual Conference in our media and social media outreach, but we will only use the Writing-on-Stone design for the T-shirts because it will print best.

Virtual Conference Management

The virtual conference logistics will again be handled by Allied Video Productions, who produced and directed last year's conference. They provide a fully professional production for the best cost we can obtain. From experience, we know they will provide a professional-level conference by being there for all of its aspects from planning to execution. Last year's conference showed the value of their behind-the-scenes directing and the smooth operations in front of the camera. This year our virtual host will be Jim Keyser, Conference Committee member, which will free Dave Kaiser to do more of the behind-the-scenes work.

As always, if any of you have ideas about items the committee needs to consider, please feel free to email us at mavis@greerservices.com. 

Education Workshop at ARARA Conference: We're going virtual!

by Karen Steelman

AS PART of the ARARA 2022 Virtual Conference, the Education Committee will be hosting a workshop by Project Archaeology on Friday, June 17th. This workshop will include a video tour of the rock art at Medicine Rocks State Park in Montana and examples of activities to conduct in the classroom. *Teachers will receive 2 hours of Continuing Education Credits.* The Education Committee will advertise this workshop to elementary school teachers in Montana as well as across the US. We hope ARARA members interested in volunteering at their local school across the US will attend this workshop to bring rock art education into your own communities.

Project Archaeology (projectarchaeology.org) is a network of archaeologists, educators, and concerned citizens that are working to make archaeology education accessible to students and teachers nationwide through high-quality educational materials and professional development. Their

aim is to give students a basic understanding of how archaeology works and to teach students to respect and protect our nation's rich cultural heritage. In 2018, Project Archaeology launched a series of curriculum for teachers and students in grades 3-5, entitled *Investigating Rock Art*. This program is supplemented with online regional investigations at sites across the country.

The ARARA workshop leader, Sabre Moore of the Carter County Museum, is a lead author on a new regional supplement, *Investigating Rock Art at Medicine Rocks State Park, MT*. The curriculum will transform grade 3-5 classrooms into a community of student archaeologists who ask questions, make observations and support their inferences with evidence, analyze primary sources, and relate culture to their own lives, all while learning about archaeological resources.

Check out the curriculum activities at <https://project-archaeology.org/product/investigating-medicine-rocks/> 

Uncle Sam Wants You! ...to Protect Our Heritage

by Marglyph Berrier

THE LAS Cruces Bureau of Land Management has been helping with the protection of the "leave no trace" philosophy at archaeological sites, especially at petroglyph sites like at Three Rivers. Trinity Miller and ARARA board member Marglyph Berrier take groups of children and/or hikers out to the habitation site just south of Three Rivers and then to the petroglyphs. In February they took a group from the local "Celebrate Our Mountains" group and were able to find a man that is willing to help with volunteering in the future. In March they took a group of children and adults from the Alamogordo Big Brothers and Big Sisters group. Bill Wight, new BLM Public Affairs Officer for the Las Cruces District Office, and his wife came along and took photos. Both Trinity and Marglyph agree that this volunteering time is very well spent and they learn more each time they take different groups. Marglyph later talked to her grandson, Camden, who now wants to help too, "especially with the shy boys." ARARA is an all-volunteer organization, and we can all find ways to help. There are many sites on Bureau of Land Management properties that can use volunteers, so contact your local BLM or other archaeological associations or rock art groups. ARARA is ALWAYS looking for volunteers. **WE WANT YOU!** 



Photos by William Wight (BLM Public Affairs Officer).



Figure 1. Five Faces panel in Davis Canyon, Canyonlands National Park, Utah, A.D. 1100 to 1300 (photo by Randy C. Brown).

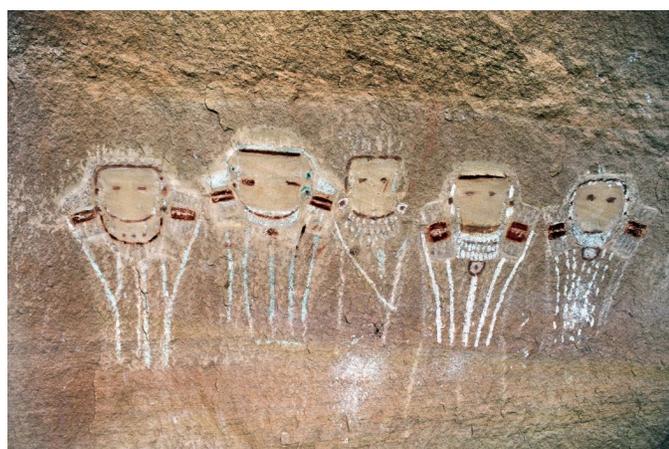


Figure 2. Five Faces Panel, Red Woman, (south), Blue Woman (west): Sun Youth, Yellow Woman, (north), and White Woman (east) (photo by Randy Brown).

MYTHICAL WOMEN, continued from page 1

Women,” granddaughters of Spiderwoman, who represent the clouds of the four directions that bring the rain. The clouds, namely Yellow Woman, Blue Woman, Red Woman and White Woman collectively are called “the Yellow Women,” the first and original clan mothers. Sun Youth rises ev-

ery morning carrying his great sun shield across the sky and arouses the Mythical Women (clouds) from the four directions. It his job to bring them altogether and produce rain. Through his interactions with the Yellow Women (marriage in one version, punishment for not marrying in another) results is the continuation of life-giving rain.

The Five Faces site in Davis Canyon, Utah, is a painted site, contemporary with the shield figure of Sun Youth in Salt Creek not far away that has been radiocarbon dated at A.D. 1295 (Chaffee et al. 1994) and a second date of A.D. 932 (Watchman, personal communication 1998; 2003). In this panel (Figure 1) one can see how the faces seem very placid as they look outward (see the entire analysis in Patterson-Rudolph 1997).

Each face was created by abrading the sandstone exposing a pinkish white surface. Then paint was applied only to the outlines of the faces, the ornaments, hair ties, chin and throat elements, and body decor. Each figure has a slightly different color scheme and ornamentation, yet each has the characteristic mask-like face with a dark line under the face, a light “beard” with dots, and vertical stripes or dashed lines on the torso (Figure 2).

Four of the figures are female, with two on either side of



Figure 3. Comparison of the top of the cloud between storm cloud formation with Yellow Woman Katsina mask from Zia Pueblo (1930). The face of the cloud, dark line under the cloud, rain falling below the cloud and prayer feathers attached to the rain beard. Zia Yellow Woman mask (from Stevenson 1890, Plate 31) compared with Yellow Woman at the Five Faces site (photo from Randy Brown).



Figure 4. Corn grinding grooves at the base of the Five Faces panel (photo by Joe Vinyard).

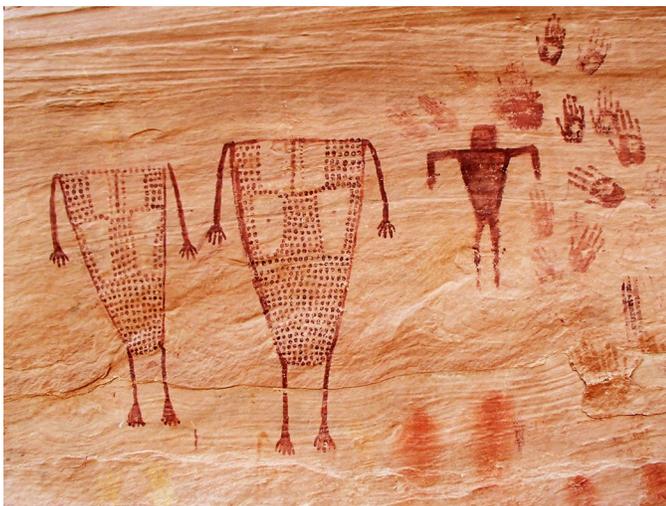


Figure 5. At right: handprints for prayers with a generic figure gesturing a downward movement; a reference to calling on the dawn grandmothers on the left (with flat chests and low breasts and nipples.)

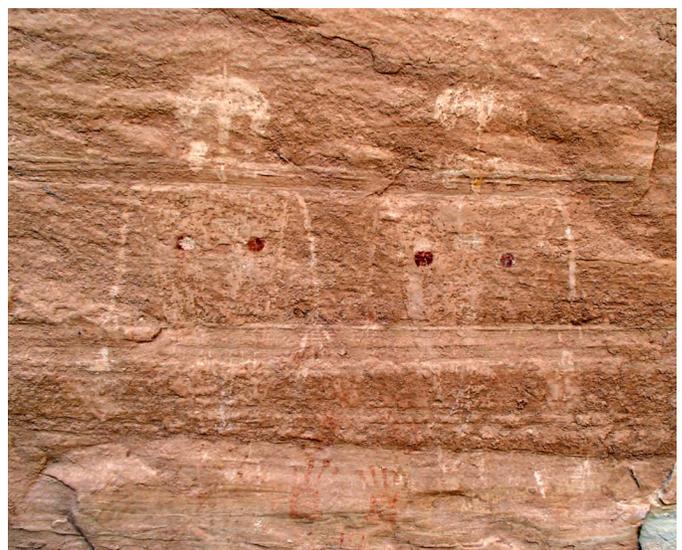


Figure 6. (a) Third pair of matron women with red painted areoles of breasts. (b) Fourth pair of young girls with budding breasts.

the central male figure. The females have hair buns wrapped in cotton twine lying on their shoulders and a throat ornament, while the male figure has earplugs and quiver strap across his chest. “Maidens have their hair bound over square pieces of wood and fastened with yarn. This is said to be the ancient headdress of Zuni maidens” (Bunzel 1932c:867). Their eyes are like those of the Keresan K’otcininako masks. A dark line encircles each chin, representing the dark line under a storm cloud. From this line falls the rain, decorated with white breath-feathers. Yellow Woman is the most striking figure. Her rain cloud face with the broad band under her chin is more yellowbrown than black like that of the others. Blue Woman has blue ear ornaments, Red Woman has red hair ties, and White Woman has white body markings like snow falling down her front.



Figure 7. Two female figures, one in labor with a breech birth. Handprints are associated with praying.



Figure 8. “Hla’hewe, Corn and Dew Maidens Dancing in Plaza” and their assistants (Stevenson 1904:193, Plate 39). They wear tablitas and carry wands of cottonwood branches with white fluff cotton emblematic of moisture.

Figure 3 shows a comparison of an actual storm cloud in profile, and a mask of the Yellow Woman Katsina from Zia Pueblo. One can see the abstraction of the storm cloud in the face of K’otcininako.

The “faces” of the Yellow Women are situated over very large row of prehistoric grinding bins used by young women to grind corn during their initiation ceremony (see Figure 4). The Keresan Pueblo corn grinding ceremony recorded in historical times that describes maidens grinding corn for several days to prove their stamina and efficiency. Their faces are smeared with corn pollen to purify them as they grind their corn. Similarly, the faces at this site have been abraded and appear as if they had been smeared with corn pollen that partially obscures the eyes and softens the details of the faces.

Zuni Mythical Dawn Mothers

Deep in a canyon within Cedar Mesa, situated beside a flowing spring is a painted site with four pairs of female figures. It is a very long panel and shown here are closeups of selected panels I believe are representative of the following Zuni prayer:

Dawn old women,/Dawn matrons,/Dawn maidens,/Dawn girls,/Had risen standing to their sacred place,/Saying, “let it be now,”/Four times,/Drawing up our grandmother,/And making her arise [Bunzel 1932b:640].

In Figure 5, the first and second pair of figures “arrive”



Figure 9. *Thirteen Faces*, showing the Corn Maidens on a corn-ear base. The Corn Maids come in pairs with one attendant. Black Corn Maiden is assigned to the end because she makes everyone invisible.

on the left. They have “hanging hands and feet” that indicate they are spirits. (Patterson 2019). The first two have red triangles in their heart area. The ghostly white shadows of bodies, arms and legs and their heads are visible only in digitally enhanced photos. The white arc shape above their heads is an emblem of the “sky world” where they reside (Patterson 2019). It stems from the metaphor “stone bowl of the sky,” the Zuni way of describing the sky, (Bunzel 1932a:467; Tedlock 1979:499).

The next two on the right have bare panels on their upper chests and a pair of flattened low hanging breasts with the breast nipples depicted in red. These are the large flat breasts of grandmothers. The rest of their bodies are dabbed with red fingerprints.

Further to the right along the panel, are a pair female figures with their nipples or areola in red paint. These women are painted in white also and they have remained more visible. The red painted hands in supplication to them may suggest prayers to these ancestral women. They appear to be mature fertile matron women (Figure 6a).

The fourth pair of women (young girls) (Figure 6b) are painted with their breasts on a slightly rounded surface of the sandstone cliff. The rock incorporation using a natural breast shape bulge in the surface adds to the description of young girl’s breasts. Their tiny nipples are barely visible. They are Dawn Girls, not yet mature females.

The final panel shows a female in labor with baby in a breech birth position. The little central figure with breasts may be a midwife (Figure 7).

As noted earlier, the relationship of Zuni men and women is reflected in the attitudes of Zuni men toward women today. Dennis Tedlock writes that a Zuni informant admonished him by saying:

Didn’t I know that the bodies of women are tehya — precious, valuable, guarded? No, it wasn’t just a matter of sex: “That’s secondary. It’s their bodies that are tehya.” Finally, in one last effort to make me understand, he crossed the horizon of my own mythic world and said, “It’s like Eve. She found she wanted to be tehya at that spot, so she put a big leaf to it.” And so there she was, Eve as a Zuni saw her, not discovering evil and shame, but choosing to make a part of herself precious, valued, and guarded (Tedlock 2011:293).

Zuni Corn Maidens and Paiyatamu

The dance of the Corn Maidens is called the drama of the Hla’hewe (singular hla’ha) which is according to Stevenson, regarded as one of their most sacred festivals (1904:180-181) (Figure 8).

During the Dance of the Corn Maidens, the Flute Youths became impassioned by their beauty and attempted “to make free with their persons.” This so insulted the Maidens that they fled the dance and went into hiding. Figure 8 from Canyon Lands National Park may depict the corn maidens on their corn bases on the left, but Black Corn is on the far-right side. Benedict writes: “During the time that they were hiding, Black Corn had been placed in the rear of the sisters so that they were covered with



Figure 10. Paiyatamu Kachina playing the flute (Wright 1985).

darkness, i.e., ‘invisible’” (Vol. I, p. 41, note 2).

The lineup of corn maidens (Figure 9) shows the dark-faced maiden at the right end. Next to her are Corn Maidens not fully defined and partially invisible. Moving to the left, they appear more well defined in colors and elaboration, ending with the last four that have corn bases. The last image is nearly invisible. They appear to fade in and out of view; that is purposeful.

Their absence for many years results in corn crop failures and starvation for the Zuni people. Eventually the people ask the War Twins to call upon the magnificent Paiyatemu to find and bring back the sacred Corn Maidens. Paiyatemu is the son of the Sun, God of Music and Flowers and God of early Dawn Moisture and Dew that is deemed necessary to the growth of corn. His flute music attracts butterflies and flowers. The songs he plays are prayers for the return of warmth and vegetation. He lives in a crevasse hidden by

mist where the Flute Youths play music and entertain the Maids of Dew and Corn (Figure 10).

The maidens in the nest of a duck in a lake within a canyon. Stevenson writes (1904:52):

After leaving I'twanna, Bi'tsitsi [Paiyatamu] ascended a tall cottonwood tree and looked all over the world. Finally, he espied one of the maidens in the far south through the separated plumes of one of the duck's wings.

Duck-headed anthropomorphic figures represent the Katsinas (rain bringers) who live in Koluwala'wa, Katsina Village, below the water. When Katsinas travel, they take the form of a duck (Stevenson 1904:52 note b) because it can dive into the water underworld and fly through the sky upper world.

When Paiyatuma finds the lost Corn Maidens, he sat down and played his flute of beautiful music and Yellow



Detail of Figure 11. The corn ears with leaf sprouts on their tops.

Figure 11. (above) The panel reads right to left: the vertical row of corn ears are the maidens lying in hiding. In the center of the panel is the very faint painting of Paiyatamu sitting and playing his flute. On the left are the Corn Maids and Maids of Dew standing up on either side of Paiyatemu, wearing a duck disguise. He is holding each line maiden and returning to the Zuni village.



Detail of Figure 11. Paiyatemu sitting and playing his flute.



Figure 11: *The Corn Maids and Dew Maids in hiding, disguised as ears of corn.*

Corn Maiden arose and greeted him. He asked her and her sisters to come back home, but she refused four times and then finally she said yes, if the people will treat her flesh with respect. He then waved his flute over them, to follow him to the home of their children. The maidens arose and followed him as he flew swiftly before them (Cushing 1988). This pictograph in Lime Canyon shows the events of Paiyatamu playing his flute to the Maids of Dew and Maids of Corn (Figure 11).

Along one side of the panel are rows of corn-ears, who are the maidens lying in hiding. Above in the center of the panel is a white painted image of a sitting flute player. It is Paiyatamu playing his musical flute to incise the Corn Maids to come out of hiding. Paiyatamu, as with all Zuni Katsinas, takes the form of a duck and returns by traveling east, (left to right). The white duck represents the color of the sun, referring to Paiyatamu, who is the son of the Sun. His arms are holding a row of Corn Maidens and Maids of Dew on either side.

The Zuni Molawia Katsina dance, is a re-enactment of the loss and recovery of the Corn Maidens. It reinforces the lesson for respect for corn and its proper care, and rituals as well as for women. It also emphasizes the importance of the Ne'we-kwe Society. Paiyatamu is the father of the Ne'we-kwe and is Bitsitsi later on in the mythic sequels (Wright 1985).

The moral of the story centers around the sacred nature of women, who nourish their children and families. Corn is considered “mother” to all. “The Corn Maidens are sacred and they give us themselves to eat. If we plant in the spring for the rains to water we shall be fed again with their flesh. They will be our mothers and we shall be their children. If at any time we think evil thoughts or are unhappy they will go away from us again and we shall have nothing (Cushing 1988).

Conclusion

This essay includes only three examples of the importance of women in Pueblo religion. The interpretation of each panel is based on ethnographic documentation that is available. The sacred myths of the “beginning” time present the moral code of ethics for survival of Pueblo culture. I’m sure that English is not adequate to translate the full meaning embedded in the metaphors. But beyond the written text are the patterns of similarity that can be seen in the pictographs and in the passages in the mythic text. These are confirmed by statements from Zuni and Keresan colleagues to me, throughout the decades of this study. ☼



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Recent Public and Academic Rock Art Presentations

SHUMLA Archaeological Research & Education Center
(<https://shumla.org/research/presentations/>)

The Lower Pecos Canyonlands by Dr. Carolyn Boyd

Chemical of Lower Pecos Pictographs by Dr. Karen Steelman

PXRF Analyses at the Meyers Spring Pictograph Site by Dr. Karen Steelman

ARARA Monthly Lecture Series
(<https://www.youtube.com/channel/UCPCI2NQ3RN-3J5TilCuxF3cA>)

The COVID Trips: Sanity Trips During Lockdown by Dave Manley

D-Stretch Tutorial by Jon Harman

Patterns from Petroglyph Recordings at 62 Ancestral O'odham Sites by Janine Hernbrode

California Rock Art Foundation Podcasts
(<https://www.archaeologypodcastnetwork.com/rockart>)

Rock Art of the Sierra de San Francisco with Trudi Angell - Ep 71

Making a City Known for Petroglyphs with Kari Crutcher - Ep 67

Touring Baja California with Ryan Gerstner - Ep 65

Scotland's Rock Art Project (<https://www.rockart.scot/resources/videos-and-podcasts/>) ☼



Upcoming Summer 2022 Recording Projects Planned by Sacred Sites Research, Inc.

by Larry Loendorf and Amanda Castañeda



Shield-Bearing Warrior at Greybull South with associated bear paws. Bear imagery, including paws in several styles, is very common at the site.

SACRED SITES Research, Inc. will be working with White Sands Missile Range archaeologist Mike Stowe and Versar, Inc. archaeologist Tim Graves to record several pictograph and petroglyph sites on the Missile Range. The Painted Shelter site (LA72165) contains rock paintings of at least two and perhaps three components with Archaic-age Abstract Polychrome figures that are superimposed in places by Mesilla Phase figures like goggle-eye paintings, a sun shield, and a fish. A possible horse suggests an Apache component.

Another site, Hembrillo (LA16291) has been known for decades with a main panel, identified as Apache, that has been photographed it has not been recorded with scale drawings. It is a significant panel with a horse and rider and what appear to be Apache Gan dancer-like figures.

Several additional sites have a mixture of petroglyphs and pictographs. The current project is the first phase of a multi-year project to record more rock art sites on the White Sands Missile Range.

Additionally, Sacred Sites will document the Greybull South site in northern Wyoming during the upcoming summer. This field work is supported in part by the Frison Institute and the Wyoming Archaeological Society. The Greybull South site was damaged in the early 1960s when large blocks of petroglyphs were removed from the cliff wall. Beginning in 2018, a concentrated effort began to create 3D models and record the removed blocks. The proposed field work will bring the extant portions of the site up to date with modern recording techniques. ☉

Revisiting and Recording Pictographs at Fort Hunter Liggett, Monterey County, California

by Megan Stueve

ARCHAEOLOGISTS Megan Stueve, Greg Haynes, and Dave Page of Desert Research Institute, in conjunction with Lisa Cipolla, Cultural Resource Program Manager at United States Army Garrison Fort Hunter Liggett, have recently re-recorded six pictograph sites on the Fort Hunter Liggett installation in southern Monterey County, California.

The purpose of this project was to revisit all known rock art sites on the installation and develop a rock art management plan for ongoing monitoring of the sites. Fieldwork included re-recording the six sites, relocating all previously documented panels and elements, and conducting a comprehensive condition assessment of each. The rock art sites are clustered in two places on the installation: one very large site with multiple loci at the top of the St. Lucia Range and five others on the floor of a narrow river valley.

Of the documented 68 panels and approximately 1,000

individual elements, all are pictographs with the exceptions of two petroglyphs. The pictographs are mostly abstract dots, circles, and lines, or combinations thereof, with only a few anthropomorphic, zoomorphic, and complex geometric elements. Pigment colors vary to include blacks, reds, whites, blue-gray, bi-color, and polychrome.

Future investigations are planned and will include several components. The first is to conduct reconnaissance at selected locations that, following particular geologic and archaeological settings, might contain more pictographs. The second component is to conduct pXRF analyses on a large number of elements in order to identify the exact pigments used to create the panels. This will also produce a database of pigment signatures from pictographs on the installation. The final component is to identify the geologic and/or geographic sources of the various pigments. ⚙

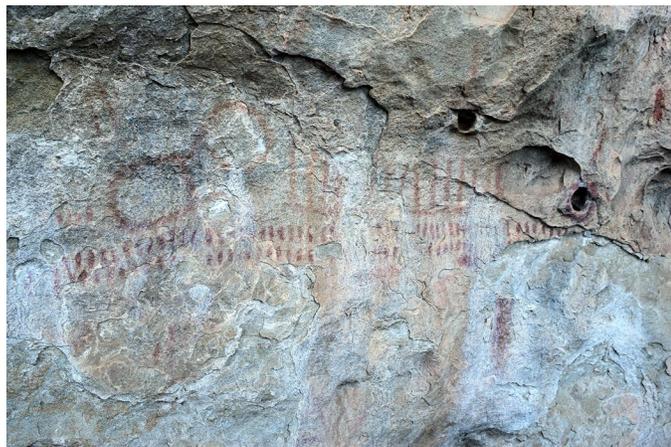


Image 1 (original)



Image 2 (original)

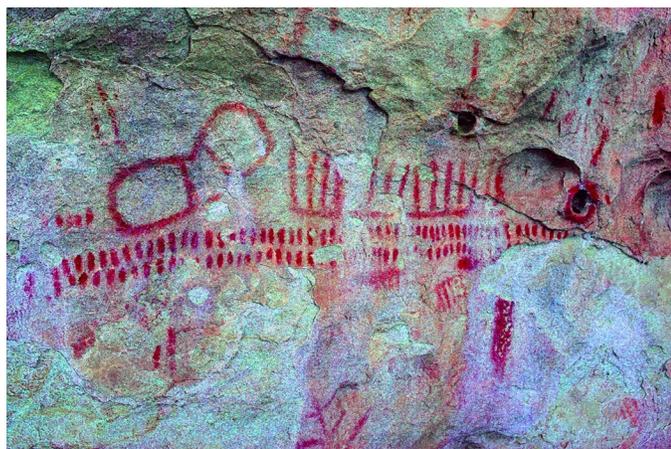


Image 1 (DStretch YRD)

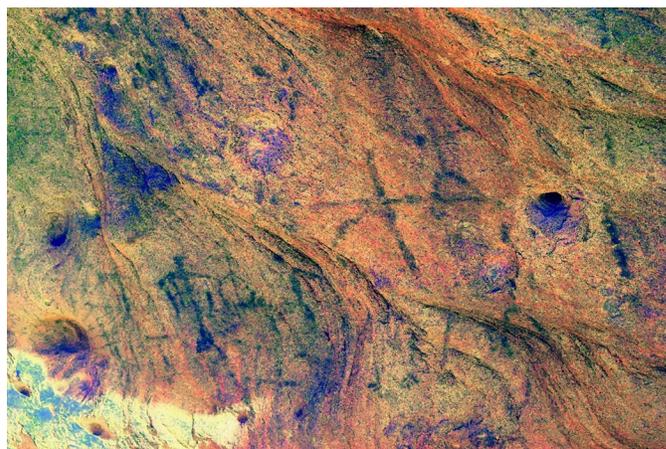


Image 2 (YBK)

La Pintura Information/Submissions

La Pintura is the quarterly newsletter published by the American Rock Art Research Association. Subscription to this publication is a benefit of membership in ARARA. Beginning with Volume 47-1, *La Pintura* is being produced digitally only. Back issues of *La Pintura* are available electronically on the ARARA website: arara.wildapricot.org.

ARARA members love to read about your new rock art discovery, recording project, or new idea for interpretation. For that to happen, *La Pintura* needs you to submit articles on current research or fieldwork. Doing so will make *La Pintura* a better journal.

Editorial deadlines insure timely publication of each issue. Deadlines for submissions are:

- February 15 (March)
- May 1 (June)
- August 15 (September)
- November 15 (December)

La Pintura is edited by Linda Hylkema, araraeditor@rockart.us

The editor extends an open invitation to members to submit articles, news, letters to the editor, book reviews, and other items of interest to ARARA members.

Letters to the Editor: No special format necessary.

News Items: Please provide pertinent information such as the event, time, place, cost (if any), group or person in charge, who to contact, address, and deadline.

Articles: Manuscripts of original research are welcome. They should embrace sound principles of investigation and present data in a clear and concise manner. Consult the ARARA Style Guide at: <https://arara.wildapricot.org/AIRA>

Current Events: Current events and news of items of interest to our members that need public notice prior to the next issue of *La Pintura* should be submitted to ararawebmaster@rockart.us.

American Rock Art Research Association

Mission Statement: ARARA is a diverse community of members with wide-ranging interests who are dedicated to rock art preservation, research, and education in order to communicate to a broad audience the significance of rock art as a non-renewable resource of enduring cultural value and an important expression of our shared cultural heritage.

About ARARA: ARARA is a 501(c)(3) non-profit organization dedicated to encourage and to advance research in the field of rock art. Association members work for the protection and preservation of rock art sites through cooperative action with private landowners and appropriate state and federal agencies.

Code of Ethics: ARARA subscribes to a formal [Code of Ethics](#) and enjoins its members, as a condition of membership, to abide by the standards of conduct stated therein.

ARARA on Facebook: Content for consideration should be submitted to Scott Seibel, scottseibel@cox.net

ARARA's Official Website: arara.wildapricot.org. Considerable information about our organization is provided at our official website.

Additional Contacts and Information: contact Conference Chairs via <https://arara.wildapricot.org/Contact>

Annual Meeting, 2022:

- Conference Chairs, Mavis Greer and Donna Gillette
- Local Committee, Jim Keyser

All Other Correspondence: The official mailing address is: ARARA c/o Troy Scotter, 569 East 320 North, Orem, UT 84097-4817.

ARARA Membership

For all Membership matters contact: Membership annual fees are:

ARARA Membership	Donor	\$120.00
Troy Scotter	Family	\$50.00
569 East 320 North	Individual	\$45.00
Orem, UT 84097-4817	Society/Institution	\$60.00
	Student*	\$35.00
	*Requires photocopy of current student ID.	

Membership runs from January 1 through December 31 of each year. The Association is concerned primarily with American rock art, but membership is international in scope. Benefits include *La Pintura*, one copy of *American Indian Rock Art* for the membership year, reduced conference fees, and current news in the field of rock art.

Officers & Board

Officers, Board Members, and Committee Chairs contact: <https://arara.wildapricot.org/Contact>

President: Ann Brierty

Vice-President: Linda Olson

Secretary: Karen Steelman

Treasurer: Troy Scotter

Board Members:

- Peter Anick
- Margaret "Marglyph" Berrier
- Amy Gilreath
- David Kaiser



ARARA
2022
VIRTUAL
CONFERENCE

PROGRAM
and
ABSTRACTS



2022 Conference Logos

We have two logos for the 2022 conference. Both were originally designed for the Great Falls venue. The first, rolled out for the 2020 conference, features a mounted warrior found at Verdigris Coulee near Writing-on-Stone Provincial Park. Although the rock art at Writing-on-Stone has been studied and recorded in various projects for over 60 years, this image was newly recorded in 2019 by a crew from the Oregon Archaeological Society under the direction of Jim Keyser. The second, from the Whitetail Bear site in southwestern Montana, was designed by Carolynne Merrell, and was selected to represent the Foothills Abstract tradition rock art that is so common along the Rocky Mountains. The committee has decided to use both logos for our 2022 Virtual Conference..



Saturday, June 18, 2022: Part I

All Times shown in U.S. Pacific Time (PT)/Eastern Time (ET)

- 9:00 – 9:15 a.m./12:00 – 12:15 p.m.** **Conference Welcome** – Ann Brierty, President — **15 mins.**
- 9:15 – 10:15 a.m./12:15 – 1:15 p.m.** **Keynote Address:** *An Introduction to the Rock Art of Alberta, Canada* – Jack Brink, Curator Emeritus, Royal Alberta Museum — **60 mins.**
- 10:15 – 10:30 a.m./1:15 – 1:30 p.m.** **BREAK** — **15 mins.**
- 10:30 – 11:20 a.m./1:30 – 2:20 p.m.** **Session 1: Technology to See Better** — **50 mins.**
Using retroReveal as a Complement to DStretch for Enhancing Red Ochre Pictographs – Thomas Andrews and Jack Brink (Regular Paper)
 10:30 – 10:50 a.m./1:30 – 1:50 p.m. *Fort Mojave Twins Geoglyphs: Position and Orientation* – Lee Knutson (Report)
 10:50 – 11:05 a.m./1:50 – 2:05 p.m. *A Photogrammetric Case Study from Lincoln County, Nevada* – Megan Stueve (Field Trip Video)
 11:05 – 11:20 a.m./2:05 – 2:20 p.m.
- 11:20 a.m. – 11:40 a.m./2:20 – 2:40 p.m.** **BREAK** — **20 mins.**
- 11:40 a.m. – 12:40 p.m./2:40 – 3:40 p.m.** **Session 2: Chronology** — **60 mins.**
 11:40 a.m. – 12:00 p.m./2:40 – 3:00 p.m. *The Hearthstone Project: Archaeological Science, and Research Design for Radiocarbon Dating Pictographs* – Karen Steelman (Regular Paper)
 12:00 – 12:20 p.m./3:00 – 3:20 p.m. *Human representations in the region of El Arenoso-El Sásabe (Sonora, Mexico)* – Beatriz Menéndez Iglesias and Alejandro Terrazas Mata (Regular Paper)
 12:20 – 12:40 p.m./3:20 – 3:40 p.m. *Characteristics and Chronology of Incised Figures within Pataki's Bear Alcove* – Peter Anick and Walter van Roggen (Regular Paper)
- 12:40 p.m. – 1:00 p.m./3:40 – 4:00 p.m.** **BREAK** — **20 mins.**

Saturday, June 18, 2022: Part II

- 1:00 – 1:30 p.m./4:00 – 4:30 p.m.** **Awards Ceremony — 30 mins.**
- 1:30 – 1:50 p.m./4:30 – 4:50 p.m.** **BREAK — 20 mins.**
- 1:50 – 2:50 p.m./4:50 – 5:50 p.m.** **Session 3: Landscape Forms and Rock Art — 60 mins.**
 1:50 – 2:10 p.m./4:50 – 5:10 p.m. *The Correlation Between the Lion Panel from the Chauvet Cave and the Landscape of Pont d'Arc – Johan Ellefsen (Regular Paper)*
- 2:10 – 2:30 p.m./5:10 – 5:30 p.m. *Rock Art and Biodiversity: The Figures of Plants in the Northeast of México – María del Pilar Casado López (Regular Paper)*
- 2:30 – 2:50 p.m./5:30 – 5:50 p.m. *Near-field vs. Far-field Acoustic Study of White River Narrows Rock Art – Steven Waller (Regular Paper)*
- 3:00 – 3:20 p.m./6:00 – 6:20 p.m.** **BREAK — 20 mins.**
- 3:20 – 4:20 p.m./6:20 – 7:10 p.m.** **Rock Art and The People: Then and Now — 60 mins.**
 3:20 – 3:40 p.m./6:20 – 6:40 p.m. *Archaeoastronomical Investigations of Ancestral Puebloan Rock Art in the Lower Sand Canyon area, Canyons of the Ancients National Monument, Colorado – Maiya Gralia, Ross Gralia, Vincent MacMillan, Katarzyna Ciomek, Michał Znamirowski, and Radosław Palonka (Regular Paper)*
- 3:40 – 4:00 p.m./6:40 – 7:00 p.m. *Students, Stats, and Science: Citizen-science Contributions to Ongoing Research by Student-intern Youths at the Mesa Prieta Petroglyph Project – Chester Liwosz (Regular Paper)*
- 4:00 – 4:20 p.m./7:00 – 7:20 p.m. *Understanding a Ritual Landscape: An investigation into the Rock Art of the Jornada Mogollon Region of the American Southwest – Belinda Mollard (Regular Paper)*

Saturday, June 18, 2022: BONUS!

- 4:20 – 5:15 p.m./7:20 – 8:15 p.m.** **Documentary: *Nolis Geni (Spirit-Land)* — 55 mins.**
 This film by Robert David, a member of the Klamath Tribes, documents the introduction of his rock art research to the tribal community of the Klamath and Modoc to help reconnect the present and future of the Tribes to their past.

Sunday, June 19, 2022: Part III

- 9:00 – 9:45 a.m./12:00 – 12:45 p.m.** **Business Meeting**
- 9:45 – 10:10 a.m./12:45 – 1:10 p.m.** **George Poetschat and Mike Taylor Tribute – Oregon Archaeological Society — 25 mins.**
- 10:10 – 10:30 a.m./1:10 – 1:30 p.m.** **BREAK — 20 mins.**

10:30 – 11:35 a.m./1:30 – 2:35 p.m.	Session 5: Montana! — 65 mins.
10:30 – 10:50 a.m./1:30 – 1:50 p.m.	<i>Shield-bearing Warrior in Combat with a Bow and Arrow Warrior</i> – Larry Loendorf (Regular Paper)
10:50 – 11:05 a.m./1:30 – 2:05 p.m.	<i>Using retroReveal to Enhance Images at Montana Pictograph Sites</i> – David Minick and James Keyser (Report)
11:05 – 11:15 a.m./2:05 – 2:15 p.m.	<i>Bison Bones and Hoofprint Stones: Echo Hawk and Wahkpa Chu'gn</i> — David Kaiser, David Minick, and James Keyser (Field Trip Video)
11:15 – 11:35 a.m./2:15 – 2:35 p.m.	<i>Echo Hawk: A Newly Documented Hoofprint Boulder on the Milk River</i> – Cynthia Sturm, and James Keyser (Regular Paper)
11:35 – 12:00 p.m./2:35 – 3:00 p.m.	BREAK — 25 mins.

Sunday, June 19, 2022: Part IV

12:00 – 1:15 p.m./3:00 – 4:15 p.m.	Session 6: Ethnographically and Archaeologically-Informed Research — 75 mins.
12:00 – 12:20 p.m./3:00 – 3:20 p.m.	<i>Contextualizing Northern Sinagua Rock Drawings at the Rattlesnake Petroglyph Site</i> – Richard Rogers (Regular Paper)
12:20 – 12:35 p.m./3:20 – 3:35 p.m.	<i>Interpreting the Prehistoric Activity Areas in Baglatwa Hill, Jharkhand, India</i> – Shubham Rajak (Report)
12:35 – 12:55 p.m./3:35 – 3:55 p.m.	<i>Tracking Bead-Spitter: Rock Art, Persistence of Belief, and a Journey of 1,700 Miles</i> – Linea Sundstrom (Regular Paper)
12:55 – 1:15 p.m./3:55 – 4:15 p.m.	<i>Game-Calling Shamans at Verdigris Coulee, Southern Alberta</i> – James Keyser (Regular Paper)
1:15 – 1:35 p.m./4:15 – 4:35 p.m.	BREAK — 20 mins
1:35 – 2:35 p.m./4:35 – 5:35 p.m.	Session 7a: Revisiting and Rethinking — 60 mins.
1:35 – 1:55 p.m./4:35 – 4:55 p.m.	<i>Rivers, Rocks, and Rain — Petroglyphs of Southwest Oregon</i> – David Kaiser (Regular Paper)
1:55 – 2:15 p.m./4:55 – 5:15 p.m.	<i>Ventana Cave Pictographs Observed 1950–2018</i> – Robin Gay Wakeland (Regular Paper)
2:15 – 2:35 p.m./5:15 – 5:35 p.m.	<i>The Great Rock of the Naquane National Park in Valcamonica, virtual visit</i> — Andrea Arcà (Regular Paper)
2:35 – 2:55 p.m./5:35 – 5:55 p.m.	BREAK — 20 mins
2:55 – 3:55 p.m./5:55 – 6:55 p.m.	Session 7b: Revisiting and Rethinking — 60 mins.
2:55 – 3:15 p.m./5:55 – 6:15 p.m.	<i>The Great Wall(s) of the Barrier Canyon Rock Art Style</i> — David Sucec (Regular Paper)
3:15 – 3:35 p.m./6:15 – 6:35 p.m.	<i>New Insights into the Petroglyphs at Washington State Park and the Three Hills Creek site</i> – Michael Fuller (Regular Paper)
3:35 – 3:55 p.m./6:35 – 6:55 p.m.	<i>Ancient Pecked Rock Art in Southwestern Wyoming: Black Rock</i> – Julie Francis, Mark Willis, and Larry Loendorf (Regular Paper)
3:55 – 4:05 p.m./6:55 – 7:05 p.m.	Announcements — 10 mins.
4:05 – 4:20 p.m./7:05 – 7:20 p.m.	ARARA 2023 Conference Preview — 15 mins.

Thomas Andrews (Arctic Institute of North America, University of Calgary), and Jack Brink (Royal Alberta Museum)

Using retroReveal as a complement to Dstretch for enhancing red ochre pictographs

The web-based program retroReveal has been used primarily for providing improved visibility of faint text documents including stamps, currency, music, and so forth. It has yet to be utilized to its potential by archaeologists interested in rock art. The plugin DStretch, used on the ImageJ platform, has been the standard for enhancement of faint red ochre rock art images. We introduce retroReveal as a supplement to photographic investigation through comparison of images from four rock art sites in Alberta, Canada. Processing photographs with the two techniques typically yields comparable results, but often with slight differences. In a few cases, retroReveal makes certain features more apparent than was the case with DStretch; in other cases the opposite is true. Other positive and negative aspects of the two techniques are discussed. Experiments with black pictographs indicate that retroReveal does not perform satisfactorily with these images. Overall, our results indicate that retroReveal should be added to the toolkit for illuminating rock art images.

Peter Anick (Brandeis University), and Walter van Roggen (Sedona Friends of the Forest)

Characteristics and Chronology of Incised Figures within Pataki's Bear Alcove

A number of panels on the cliff walls of the Palatki Heritage Site in central Arizona show evidence of fine linear incisions forming parallel lines, snakelike designs, checkerboards, and cross-hatching, sometimes intermixed with clusters of deeper vertical grooves. Previous research has indicated that some of these incised elements predate archaic-style pictographs painted within the same areas. In this paper, we extend our study to a set of panels within Palatki's Bear Alcove in order to better understand the distribution of "incised art" with respect to rock surfaces, panel heights, and the presence of pictographs, cupules, and pecked petroglyphs which have been stylistically associated with Archaic, Sinagua and Yavapai cultures. The placement of linear incisions both near ground level and well beyond the reach of someone standing at ground level imply planning and the significance of such features.

Andrea Arcà (Footsteps of Man)

The Great Rock of the Naquane National Park in Valcamonica, virtual visit

The Rock 1 of Naquane national Park, known as The Great Rock for its size — 65 square meters of engraved surface — is one of the most important of the entire Valcamonica rock art. Andrea Arcà, under a Ph.D. research program, recently performed its complete documentation: iconographic tracing, ultra hi-def stitched zenith giga-photos, 3D models, and catalog of the figures, realizing an online interactive virtual tour that allows visiting it in great detail (www.europreart.net/NAQ1). The spectacular sandstone surface of the Great Rock, a 240 million-year-old clay turned into stone during the geological ages and shaped by the glaciers, hosts 2040 figures, dating back from the Copper Age (4th mill. B.C.) to A.D. 1942. Most of them pertain to the Iron Age (1st mill. B.C.): deer hunting scenes, acrobatic riders, sword duels, wooden barns, the mysterious palettes, a duel connected to a labyrinth — probable representation of the *Lusus Troiae*, an initiation ritual game tied to the Theseus myth — and weaving scenes — unique in European rock art. You are kindly invited to enjoy the virtual visit, guided by the author, to fly over the engraved surface, and enlarge it until you can recognize even the smallest details, highlighted by the best grazing winter light.

Pilar Casado (Escuela Nacional de Antropología e Historia)

Rock Art and Biodiversity: The Figures of Plants in the Northeast of México

In the change from the Pleistocene to the Holocene, the northern region of Mexico was inhabited by groups of hunter-gatherers, who had to adapt to the new situation, tending to a dry climate. In this wide region, man's experience was shared with a community of living beings (animals, plants and other living organisms) that formed a specific biodiversity.

The category of fauna, biotic element, was well represented in the rock art of the region, but not the biotic plant-vegetable-flora community (trees, bushes, plants, flowers) that it was also part of the

ecosystems and intimately related to the landscape in which they live, develop and die, as an existential spatiality in which man lived and is linked to memory and myth.

The challenge of this paper is to present a taxonomic analysis of painted and engraved figures of plants in rock art, as well as suggestions of landscape forms in rock art sites in northern Mexico.

Johan Ellefsen (Independent Researcher)

The Correlation Between the Lion Panel from the Chauvet Cave and the Landscape of Pont d'Arc

Right below the ancient entrance to the Chauvet cave is the natural bridge of Pont d'Arc pierced by the Ardeche river. It is possible that the artists of the Chauvet cave may have attributed some significance to this unusual topography. Comparing the shapes of the Pont d'Arc with the main panels of the Chauvet cave, there is a possible correlation between the position and shapes of certain animals painted in the Lion Panel in the End Chamber of the cave and the rock formations of Pont d'Arc. The animals painted in the Lion Panel correspond to certain rock reliefs found in Pont d'Arc that resemble the head of a rhinoceros, the 'ball-feet' of the mammoths, and the head of a bison. Similarly, the positions of certain rhinoceros emerging from recesses in the cave's wall have a correlation with cavities found in the vicinity of the Pont d'Arc. The proximity of the Chauvet painting and Pont d'Arc, and the number of these correlations suggest the association of the painting and the rock formation is not by chance. It is likely that the landscape around the Pont d'Arc formation may have been the basis to organize the composition of the Lion Panel.

Julie Francis (University of Wyoming), Mark Willis, and Lawrence Loendorf (Sacred Sites Research, Inc.)

Ancient Pecked Rock Art in Southwestern Wyoming: Black Rock

The Black Rock site (48SW5952) contains two panels of fully pecked representational and abstract images. It is one of the few pecked rock art sites known from southwestern Wyoming, with the oldest imagery dated to Paleoindian times. Tratebas (1999, 2018) has interpreted one panel at Black Rock as a single, late Pleistocene age composition depicting a mountain sheep surround and a hunt shaman. Although known since the 1980s, the Black Rock site has not been recorded to modern standards until 2018 when relocated by Francis and Willis. However, recent recording indicates multiple manufacturing episodes created over the course of the Holocene.

Michael Fuller (St. Louis Community College)

New Insights into the Petroglyphs at Washington State Park and the Three Hills Creek Site

Sites 23WA1 and 23WA2 are protected and interpreted for the public at Washington State Park near Desoto, MO. The first scientific research at these sites was conducted in 1959 by a team that included Ron Wyatt (a graduate student at UMC) and two citizen archaeologists (Leonard Blake and Robert Elgin). The artifacts from the 1959 fieldwork were not washed and studied until 2018. Three Hills Creek Site (23WA1702) was recognized as early as the 1960s, but not registered until 2018; it is situated on private property. The iconography and artifacts from these sites relate to the Mississippian populations at Cahokia Mounds in Illinois.

Maiya Gralia, Ross Gralia (Canyons of the Ancients National Monument and Sand Canyon-Castle Rock Community Archaeological Project), Vincent MacMillan (Canyons of the Ancients National Monument/Bureau of Land Management), Katarzyna Ciomek, Michal Znamirowski, and Radoslaw Palonka (Department of New World Archaeology, Institute of Archaeology, Jagiellonian University in Kraków (Poland) and Sand Canyon-Castle Rock Community Archaeological Project)
Archaeoastronomical Investigations of Ancestral Puebloan Rock Art in the Lower Sand Canyon Area, Canyons of the Ancients National Monument, Colorado (USA)

This paper presents the results of a few years of research on the rock art from the Castle Rock Community. This cluster of Ancestral Puebloan sites from the central Mesa Verde region, is dated to the thirteenth century A.D. (Late Pueblo III period) and is located within Canyons of the Ancients National

Monument of southwestern Colorado. Since 2018, some of our efforts have focused on the documentation of three sites, located in lower and central parts of Sand Canyon. These three sites were likely seasonally occupied and contain solar or lunar markers with evidence of possible connected ceremonies and rituals. Field observations were conducted during both solstices and both equinoxes. Additional observations were made every two weeks at each site over the course of multiple years. Analysis of the final results suggests that these sites may have functioned as calendrical markers, most probably related to agricultural activities such as planting and harvesting. The methods for recording these rock art panels included hand tracing, digital photography, photogrammetry, and 3D laser scanning documentation. Representatives of The Hopi Tribe also visited several of these rock art panels, bringing invaluable Indigenous understanding and analysis based on their oral traditions. Interpretation of these data was supplemented by studies of other sites in the US Southwest and beyond, a review of the relevant ethnographic literature, and further consultation with several specialists in archaeoastronomy. This research is part of larger project being conducted by the Institute of Archaeology, Jagiellonian University in Kraków, Poland, in cooperation with several American institutions, mainly Canyons of the Ancients National Monument and Crow Canyon Archaeological Center, Colorado.

David Kaiser (Oregon Archaeological Society)

Rivers, Rocks, and Rain — Petroglyphs of Southwest Oregon

Common in the eastern half of the state, rock art is relatively rare west of the Cascade Mountain range. While the handful of sites found in the Willamette Valley and the Cascade foothills are relatively well known, a cluster of little studied rock art exists in southwestern Oregon, where the Northwest Coast and California culture groups meet. Initial in-person investigations and a survey of the literature gives context to two previously unrecorded sites: Elk Rock, a hunting related petroglyph along the Lower Coos River with a convoluted history, and a seaside boulder at 35CU142 displaying the northernmost example of the Pecked Curvilinear Nucleated (PCN) tradition.

David Kaiser, David Minick, and James Keyser (Oregon Archaeological Society)

Bison Bones and Hoofprint Stones: Echo Hawk and Wahnka Chu'gn

In July of 2021 the Oregon Archaeological Society's Rock Art Research Group recorded a pair of small Hoofprint tradition petroglyph boulders in Northern Montana. Wahnka Chu'gn, a bison kill just outside Havre, Montana revealed a great deal about communal bison hunting. The interpretive center showed the deeply buried layers of bison bone exposed in the kill midden. Hoofprint boulders are associated with several such bison kills. The second site, the Echo Hawk petroglyph boulder, lies north of Havre near the Canadian border. This boulder is nestled in a small rock cairn on a low knoll with a commanding view of the Milk River valley below. Small sites like these are often overlooked in favor of more spectacular locations, but these boulders provide good examples of Hoofprint tradition rock art in Northern Montana and how it relates to local archaeology.

James Keyser (Oregon Archaeological Society)

Game-Calling Shamans at Verdigris Coulee, Southern Alberta

Verdigris Coulee, just west of Writing-on-Stone park, contains a large corpus of petroglyphs at two sites that shows humans and animals in structured relationships suggesting the practice of shamanistic game-calling. Comparing these images to ethnographic and archaeological accounts of game-calling we see similarities in the use of ritual objects, drive lane fences, killing weaponry, and the portrayal of supernaturally powerful shamans who are able to exercise control over several species of animals. The Verdigris Coulee images are compared and contrasted to those from two other northern Plains sites.

Lee Knutson (Independent Scholar)

Fort Mojave Twins Geoglyphs: Position and Orientation

This report describes two previously unreported features of the anthropomorphic geoglyph figures on the Fort Mojave Indian Reservation in Arizona. One is the location of the site, roughly perpendicular to an

axis heading about 279 degrees between two prominent elevations in this section of the lower Colorado River Valley. The second is the orientation of the two principal geoglyph figures to different southwesterly headings, of about 200 and 212 degrees, at which the Milky Way can be seen on the horizon at the autumnal equinox and one month later. Observation of these features has been made simpler by aerial photography, open-source satellite imaging, and positional astronomy software.

Chester Liwosz (Mesa Prieta Petroglyph Project)

Students, Stats, and Science: Citizen-science Contributions to Ongoing Research by Student-intern Youths at the Mesa Prieta Petroglyph Project

So named for one of the most prolific rock art landscapes in North America, the Mesa Prieta Petroglyph Project (MP3) is fundamentally built upon a dedication to citizen science. Both adult volunteers and youth interns constitute our working base of citizen scientists. Since 2019, MP3's archaeological recording has shifted towards a greater emphasis on scholarly research, often straddling both STEM and the Humanities. This interdisciplinary, community-focused engagement is no more apparent than in our Summer Youth Intern Program (SYIP) curriculum. Each year, high-school-aged SYIP student-interns earn dual credit recording petroglyph panels, other archaeological evidence, and learning advanced techniques in virtual heritage management. Often unsung heroes, these students not only earn themselves valuable college credits as they move towards university programs and careers in the STEM fields, but also contribute directly to ongoing archaeological research on this impressive petroglyph landscape. This presentation looks both back upon these recent contributions, and forward to their ongoing developments; it is simultaneously a retrospective on the interns' accomplishments and newly acquired skills, and also an acknowledgement of gratitude for their contributions to recent and still-developing studies of iconography, archaeological contexts of petroglyphs, and forays into advancing archaeological practice into the realms of virtual reality and archaeogaming.

Lawrence Loendorf (Sacred Sites Research, Inc.)

Shield-bearing Warrior in Combat with a Bow and Arrow Warrior

Studies of projectile point style, size and weight indicate the resident atlatl-using inhabitants of central Montana were introduced to the bow and arrow by hunters from the Avonlea Phase about A.D. 500. It is not clear if this interaction was peaceful or warlike, but a rock painting at the Painted Coulee site, south of Great Falls, Montana, suggests it was the latter. In the scene an atlatl wielding shield-bearing warrior is directing a dart at a bow-carrying warrior. Direct radiocarbon dates for the paintings indicate the scene was painted about A.D. 300 or within the time when the Avonlea Phase hunters initially entered the region.

Beatriz Menéndez Iglesias (Student, Gerda Henkel Foundation, Patrimonies Funding Initiative, Düsseldorf, Germany), and Alejandro Terrazas Mata (Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México)

Human Representations in the Region of El Arenoso-El Sásabe (Sonora, Mexico)

On the north of H. Caborca (Sonora, México) and close to the border with Arizona (USA) is located the region of El Arenoso-El Sásabe, within what is known as the Sonoran Desert. The study area has numerous archaeological and paleontological sites. Some of these sites are rock art sites, all of which are petroglyphs and some of which may date to the Archaic period. More than 1,700 graphic units were documented throughout the region, with a predominance of abstract elements. However, an important part of the representations refer to human figures. Among the typology present, human figures, anthropomorphic figures, hands, feet and vulvas stand out. The aim of this paper is to make these rock art sites known, to study in depth the typology of the human representations and to compare them with those of other nearby areas, both in the Caborca area and in the southern USA. From this comparative analysis we will try to approach their chronocultural contextualization, bearing in mind that we have very few archaeological materials at the rock art sites.

David Minick & James Keyser (Oregon Archaeological Society)*Using retroReveal to Enhance Images at Montana Pictograph Sites*

Using the retroReveal enhancement technique suggested to us by Jack Brink we analyzed pictographs at 24GL67 and 24GL1664, both near Cut Bank, Montana, to determine whether additional images could be identified at those sites. We were somewhat successful in both instances. At 24GL67 we could discern additional minor details for the heraldic designs of two shield-bearing warriors. At Hidden Handprint Alcove (24GL1664) our results were more noteworthy. At that site we were able to identify more than a dozen new characters in several horizontal rows of Vertical Series tradition imagery. The results of this research demonstrate that retroReveal is a valuable supplement to DStretch for rock art research.

Belinda Mollard (Gila National Forest)*Understanding a Ritual Landscape: An Investigation into the Rock Art of the Jornada Mogollon Region of the American Southwest*

The Tularosa Basin is a region rich in rock art sites associated with the Jornada Branch of the Mogollon Culture. Sometime around A.D. 1450 the Jornada ceased to exist as a distinct archaeological expression. The tendency to focus on the “monumental centres” and diffusion of ideology has left a gap in the research for this area. The overarching goal of this research was to integrate rock art with the landscape and the people and gain an understanding of rock art as social practice. The role the location played in the worldview of the Jornada people was examined, and how they modified their landscape according to those beliefs.

Pueblo concepts of emergence and transformation played a much larger role in the everyday lives of the Jornada than was previously thought, and the evidence indicates that their settlement patterns were influenced heavily by their cosmology. Through this study rock art was addressed in a new context. Based on my dissertation work, incorporating place-making theory and the notion of places as didactic resources, the relationship between material culture and the ritual use of space was highlighted. This amalgamation of design and practice was employed to gain a better understanding of this historically understudied group.

Shubham Rajak (Student, Deccan College Postgraduate and Research Institute, Pune, India)*Interpreting the Prehistoric Activity Areas in Baglatwa Hill, Jharkhand, India*

Humans are the most adaptive and expressive mammal in the food chain and survival strategy, this adaptive quality had made the prehistoric humans opportunist with the extensive utilization of limited natural resources with social growth. Baglatwa hill in Jharkhand, India is a classic example of prehistoric adaptive qualities which are projected in form of occupation in natural rock shelters with the creation of rock art, early Mesolithic stone tool production, and activity areas in the foothill region. Four rockshelter sites in Baglatwa hill present an arena of the prehistoric behavioral system in form of geometric and figurative rock art and blade technology. But, unfortunately, these rock art sites are vanishing due to the hydration process of sandstone rock surfaces. Therefore, now it is essential to document the remaining rock art and stone tools for interpretation of the prehistoric behavioral system. The present research has used the GIS technology, drone survey, 3D documentation of landscape, and artifacts to interpret the spatial dimension of prehistoric behavior in relationship with rock art, stone tool production, and taskscape utilization strategy. This research would help us to understand the prehistoric mobility pattern and social dimensions.

Richard Rogers (Northern Arizona University)*Contextualizing Northern Sinagua Rock Drawings at the Rattlesnake Petroglyph Site*

This paper presents the documentation and contextualization of the Rattlesnake Petroglyph Site east of Flagstaff, Arizona, composed of at least 70 elements on 24 panels on a basalt outcrop. Based on the surrounding archaeology, the characteristics of the petroglyphs, and their location in the northern Sinagua “heartland,” they are likely northern Sinagua. Given proximal ceramic assemblages and the resemblance of some of the imagery to designs on datable ceramics, they were likely produced between 1070 and 1225

C.E., after Sunset Crater erupted and before the northern Sinagua left the area. The petroglyphs are contextualized in relation to others in the immediate area (Rogers 2021), other documented northern Sinagua petroglyph sites (Weaver 1994, 2014-2015; Weaver and Slominski 1992) and general overviews of northern Sinagua rock drawings (Colton 1946; Hays-Gilpin and Weaver 2012). The site reflects similarities with other northern Sinagua rock drawings, including indications of participation in a broader regional iconographic system and interaction with surrounding archaeological cultures, but, as with other northern Sinagua petroglyph sites, also manifests potentially distinctive local variations. Evidence also indicates the presence of multiple “bell rocks” at the site (Hernbrode and Boyle 2016).

Karen Steelman (SHUMLA Archaeological Research, and Education Center)

The Hearthstone Project: Archaeological Science, and Research Design for Radiocarbon Dating Pictographs

To build a chronological model for Pecos River style pictographs in southwest Texas, we have selected ten murals for study that are geographically distributed throughout the region. Our research design involves: (1) conducting a formal analysis of the art to document and describe diagnostic Pecos River style pictographs selected for dating; (2) examining mural stratigraphy using digital microscopy and the construction of Harris matrices for superimposed figures; and (3) obtaining 60 radiocarbon dates for Pecos River style pictographs using plasma oxidation and accelerator mass spectrometry.

We present our research design as an example of “best practices” when considering radiocarbon dating pictographs. Researchers should have clear research questions that require radiocarbon dating beyond just “how old are the paintings.” Full documentation of pictographs must be conducted prior to sampling, no matter how minimally destructive the process may be. If superimpositioning is present, an analysis of paint stratigraphy using field microscopy may help with identifying the best sampling locations. Finally, all stakeholders (archaeologists, dating specialists, land owners/managers, site stewards, indigenous groups, et al.) should have open communication to better understand the process of obtaining radiocarbon dates prior to the initiation of a project.

Megan Stueve (Desert Research Institute)

A Photogrammetric Case Study from Lincoln County, Nevada

Archaeologists from Desert Research Institute in Las Vegas, Nevada have tested the efficacy of using unmanned aerial vehicles to create 3D maps of a rock art site in eastern Nevada. A success, this video shows a walk-through of the site and a concise representation of the work performed during the project. Aside from an increase in the speed of mapping new rock art sites, the benefits to using UAV/UAS technology in this way include high resolution imagery that can be shared without advanced software, the ability to precisely measure elements digitally, and the capability of recording rock art in remote or hard to reach places.

Cynthis Sturm, and James Keyser (Oregon Archaeological Society)

Echo Hawk: A Newly Documented Hoofprint Boulder on the Milk River

Following a lead from the estate of John Brumley, the Oregon Archaeological Society rock art group relocated and recorded the Echo Hawk petroglyph boulder located on the Milk River northwest of Havre, Montana. In addition, the group also recorded the hoofprint boulder at Wahkpa Chu’gn bison kill in Havre. With these two sites as a basis, we summarize a small group of six Hoofprint tradition sites found in the upper Milk River drainage and compare and contrast them to Hoofprint tradition sites downstream. Finally, we examine the Gestalt symbolism of the bisected oval motif, found at several of these sites.

David Sucec (BCS Project)

The Great Wall(s) of the Barrier Canyon Rock Art Style

On the Colorado Plateau, particularly in the State of Utah, prehistoric Barrier Canyon style (BCS) paintings are often found in shallow shelters or on walls underneath rock ledges. The size of the panel

walls ranges from a few feet in width to the length of a football field (ca. 300 feet), as is the case at the Great Gallery in Canyonlands National Park.

The Barrier Canyon style is noted for its number of large billboard-plus-sized sites scattered through its style area. The largest of the sites are well known and relatively accessible to the public (e.g., Great Gallery, Buckhorn Wash, Thompson Wash). This presentation will show and discuss the figure variations found at these larger panels — the Great Wall(s) of the Barrier Canyon Rock Art Style.

Linea Sundstrom (Independent Scholar)

Tracking Bead-Spitter: Rock Art, Persistence of Belief, and a Journey of 1700 Miles

Siouan- and Muskogean-speaking nations with homelands in the American Southeast relate the story of a hero called Bead-Spitter or Shell-Spitter — a story that is illustrated by the patterns seen on the full moon. Siouan-speakers in the northern Great Plains tell the same story and see the same pattern in the moon. A version of the story is illustrated on a rock art panel at the Daly Site in north-central Wyoming. The rock art panel extends the known occurrence of the story farther west than the narrative is otherwise recorded. This is a case where mythology and rock art inform one another.

Robin Gay Wakeland (Independent Scholar)

Ventana Cave pictographs observed 1950–2018

Recent digital photos of pictographs at Ventana Cave, Hicikwan District, Tohono O’odham tribe, are compared to Haury’s excavation notes, photos, and drawings (1950). Three humanoid figures with headdresses are not described by Haury. Others show weathering and destruction via time. Haury’s assessment of the paintings as artistically inferior is refuted. Literature review explains that Ventana Cave’s human occupation history began 6800–8,500 B.C.E. and continued throughout the archaic (6500 B.C.E.–700 C.E.). However, surviving pictographs are attributed to Hohokam (700–1100 C.E.) and/or Tohono O’odham (post-1450 C.E.). Fill sediment height in the cave during these later dates, as well as affinity with pottery designs, provide rationale for this conclusion. Motif and style comparisons have been applied to date petroglyphs in this region, but not to those in Ventana Cave. The literature reflects chronology dilemma.

Steven Waller (Independent Scholar)

Near-field vs. Far-field Acoustic Study of White River Narrows Rock Art

White River Narrows (WRN, site 26LN210) in Lincoln County, Nevada, has rock art clustered into discrete decorated locations separated by long stretches of non-decorated locations.

Near-field study (sound source and recorder co-located) results of WRN showed a statistically significant difference of 3.2 dB between the average sound pressure levels at decorated locations compared to non-decorated; i.e., the echoes are approximately 44% stronger at rock art sites.

Far-field study (sound source located far from recorder location) results showed that very distant echoes could clearly be heard bouncing around within the canyon when loud sounds such as vocal yells were produced at the various rock art locations, demonstrating sound transmission between distant rock art sites.

The general conclusion from this study is that the artists apparently choose to decorate surfaces giving the intrinsically strong local sound reflections that also help to gather and focus sounds from distant sources. The unusually strong sound reflection at each of the WRN rock art sites, and the acoustic interactions demonstrated for sound transmission between the various rock art locations within WRN, fit together into a possible concept of a cascade of sound flowing through the canyon, that can be heard best at certain places of power