

ALL POINTS BULLETIN



Colorado Archaeological Society-Denver Chapter

...in the future, as in the past, the gathering of information will depend to a great extent on cooperation between avocational and professional archaeologists. ~ H.M. Wormington, 1978

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BOARD ANNOUNCEMENTS:

Membership: The Board would like to extend a warm welcome to our new members, and to thank existing members for their membership renewals. Your support means a lot! Should you wish to contact board members, information is located on the last page of this newsletter.

Thank You: The Board would like to thank Ken Andresen for his most generous donation to DC-CAS in March 2022. Ken has been a long-time member of the Chapter and an important contributor to the Board, most recently as Historian. His devoted support to the Chapter is most appreciated! Thank you, Ken!

The Board would also like to thank another long-time member, Bill Haddock for his valued contributions to the Chapter. Bill was kind enough to lend his expertise to redesign the DC-CAS website. He continued his support by providing website maintenance and updating for the last few years until a replacement volunteer could be found. Thank you, Bill!

Welcome: The Board would like to welcome two new volunteers, Aiden Kent and Emily Seabold. Aiden Kent will be replacing Bill Haddock as the Chapter's website guru. Emily Seabold will be the new Editor for the *APB* Newsletter. Thank you, Aiden and Emily for the generous gift of your talent and time!

Field Trip: The June 3rd Field Trip to visit the Office of the State Archaeologist and the Emery Archaeology Lab at History Colorado Center was an enjoyable event. Participants were treated to an informative tour of the facilities, as well as behind the scenes tour of the Archive and Collection areas. Many thanks to Todd McMahon, Shawn Faucett and the Stephen H. Hart Research Center Staff for a job well done.

Elections: Board Election season is upon us. President, Craig Dengel is currently laying the groundwork for establishing an Election Committee. Work over the next few months will be focused upon identifying candidates for the 2023 Board. The slate of candidates will be announced during the October General Meeting. Elections will be held during the November General Meeting. The 2023 Board members will be introduced to membership during Members Night in December. If you wish to be on the Election Committee or are interested in serving on the Board, please contact Craig. Other non-board volunteer project-specific positions do come up from time-to-time. If this suits your schedule, please be sure to put your name in.

Archive Digitizing Project: The Board is looking to apply for grants to digitize the DC-CAS Archive. If you have talents related to digitizing archival materials or grant applications which you'd be willing to share, please contact us!

Alice Hamilton Scholarship Awards: Earlier this Spring, the CAS Alice Hamilton Scholarship Award Committee announced five new Alice Hamilton Scholars who will share a \$4,100 award. Congratulations to this year's recipients:

- Andrew Aceves, Doctoral Candidate, University of Colorado-Boulder
- Caitrin Scarlett Engle, Doctoral Candidate, University of Colorado-Boulder
- Spencer Little, Masters Candidate, Colorado State University
- Lia Plankenhorn, Masters Candidate, University of Colorado-Denver
- Elin White, Masters Candidate, University of Colorado-Denver

For further information about the Alice Hamilton Scholarship Award, please visit - <https://www.coloradoarchaeology.org/alice-hamilton-scholarship>.

UPCOMING DC-CAS LECTURE:

Monday, August 8th, 7:00 pm – Our Annual DC-CAS/ESS Joint Meeting will be held in the Emery Archaeology Laboratory at History Colorado Center, 1200 N. Broadway, Denver 80203. For those folks planning to attend in person, please enter the building through the afterhours security entrance located on Lincoln Street. The Emery Archaeology Lab is located on the third floor. There will be someone available to give directions to the lab. We will also send out a Zoom link for those who wish to attend remotely.

Speaker: The evening's speaker is Danielle Candelora. The title of her presentation is, *Flexible 'Foreignness' and Multicultural Kingship in Ancient Egypt*. The speaker will be presenting in-person.

If you are attending in-person, please join us for a pre-lecture dinner gathering between 5:00-5:15 pm at Stoney's Bar and Grill, 1111 Lincoln Street 80203. Paid garage parking is available on the northwest corner of 12th Ave and Broadway across from History Colorado Center. Street parking is also available on Lincoln Street, and is free after 6 pm.

OPPORTUNITIES TO GET INVOLVED:

History Colorado – There are volunteer opportunities for CAS members to assist the Office of the State Archaeologist in record digitizing and library indexing work. Volunteer opportunities are also available in the Emery Archaeology Lab for those who have completed PAAC classes or have archaeological artifact cataloguing experience. Please contact Todd McMahon, Staff Archaeologist, State Curation Coordinator at todd.mcmahon@state.co.us.

PAAC Classes – Classes are currently on hiatus. They are tentatively set to resume in the Spring 2023. We will provide updates when they become available. You may visit <https://www.historycolorado.org/paac> for updates, to learn about the PAAC program, and to see offered classes.

Classes on Museum Basics – Curatorial Services and Collections Access at History Colorado is offering fee-based virtual classes on Museum Basics. Classes are designed for those who currently work or volunteer at cultural institutions as well as for graduate students interested in doing so. Upcoming classes are Patron Services (Sept. 14th) and Digitizing and Metadata (Nov. 9th). Please visit <https://www.historycolorado.org/insights-inperson> for further information.

Paleocultural Research Group – PCRG has partnered with Scott Dersam for the Beartooth Ecosystems Alpine Archaeological Research (BEAAR) Project in the Beartooth Wilderness of Montana. There will be three sessions: August 1-8, August 11-18, and August 20-26. Please note space is limited, and the work will be physically demanding at high altitude. Visit <https://paleocultural.org/participate/> for further details.

Crow Canyon – Crow Canyon has partnered with the Cortez Cultural Center to offer an archaeological field survey opportunity in September 2022. Two sessions are offered (September 12-16 and 26-30), each session costing \$400.00 and limited to 8 participants. Please visit <https://www.crowcanyon.org/archaeology-research-program/> for further information.

Community College of Denver – Our May 9th Speaker, Gene Wheaton, Professor of Anthropology has invited CAS members to participate in excavations on Fridays on the Auraria Campus during the Fall semester. If you are interested, please contact him at gene.wheaton@ccd.edu. Be sure to identify yourself as a CAS member to receive further information.

ANCIENT ECHOES: A MUSICAL EVENING WITH LITHOPHONES

- By Stacy Greenwood, Member and DC-CAS Secretary

Thanks to a last-minute heads up from History Colorado's Todd McMahon, Jon Kent and I attended a performance of the Longmont Symphony Orchestra entitled, *Soundings: Past and Present* on the evening of Saturday, April 23, 2022. Nestled between music of Stravinsky and Brahms was the treat of a world-premiere percussion concerto featuring archaeological lithophones recovered from Great Sand Dunes National Park and Preserve (GSDNPP). The composition titled, *Ancient Echoes* was written by composer, Michael Udow, a retired University of Michigan Music Professor and Longmont resident (<https://michaeludow.com>). The piece was performed by Anthony Di Sanza, Percussion Soloist and Madison, Wisconsin School of Music Professor (<http://anthonydisanza.com/index.html>). The performance was the culmination of a three-year project sparked by lithophone research by Longmont archaeologist, Marilyn Armagast Martorano, RPA of Martorano Consultants, LLC (Ahlborn 2022).

Martorano's interest in the lithophones began in 1974 while she was a park service volunteer at GSDNPP. She had encountered the cylindrical lithic artifacts amongst GSDNPP's collections. The lithics had been variously identified as possible pestles, grinding stones, digging tools, hide-working tools, net weights, or groundstone (Peglar 2019) (Martorano 2018). In the early 2000s, Martorano had an opportunity to revisit the lithic artifacts and to carry out use-wear analysis on them. There was no evidence the lithic artifacts were used for crushing or grinding. This piqued her curiosity as to their purpose. In 2013, a colleague, David Killam forwarded a video filmed by a French researcher, Eric Gonthier of the Museum of Man, Paris. Gonthier studied cylindrical lithics brought back from Africa by French WWI soldiers, and found them to be acoustically-active artifacts, likely portable lithophones (https://www.youtube.com/watch?v=fRamnKf6OEY&list=P_LFciHXeXq7KhETp7Z1PTwY3n1bXaT8E0N&index=1 English subtitles available in Settings/Sub-titles). Upon viewing the video, Martorano tested the GSDNPP lithic artifacts using percussion mallets and found they produced musical notes. A search on the acoustic qualities of lithic artifacts revealed that stationary and portable lithophones are found worldwide. She reported her finding to Fred Bunch, Chief of Resource Management at GSDNPP. With the support of Fred Bunch and sponsorship of the Friends of the Sand Dunes organization, a grant application was made to the History Colorado, State Historical Fund to enable Martorano to carry out a more detailed study of the lithic artifacts (Ahlborn 2022) (Martorano 2018). In 2016, History Colorado, State Historical Fund awarded the Friends of the Dunes a substantial grant, and Martorano's formal research project began (History Colorado 2016).

Martorano examined twenty-two cylindrical lithic artifacts from the GSDNPP and private San Luis Valley collections to determine if they fit into lithophone characteristics identified by previous researchers such as Eric Gonthier. For example, a study by Duncan Caldwell identified common characteristics amongst lithophones such as diameter (between 4 and 8 centimeters), length (between 35 and 80 centimeters), and dimensions (4.5 times longer than wide). Also, there were few signs of being used for pounding or grinding, and the material utilized was acoustically-active, such as chlorite-schists and schist-actinolites (Martorano 2018) (Caldwell 2013). The GSDNPP and San Luis Valley cylindrical lithic artifacts were tested for their acoustic properties and physical characteristics. They were found to produce two notes, with some having more resonance and musical quality than others. They produced sounds similar to the marimba, xylophone, glass crystal or metal bells when they were tapped or friction-rubbed. They did not make a sound unless they rested or were suspended from two points called acoustical nodes or dull zones, a point of least vibration. Their physical characteristics were similar to known lithophones. Martorano thought their material were of andesite stone, basalt and other volcanic material. Based upon their characteristics, the GSDNPP and San Luis Valley cylindrical lithic artifacts could be classified as lithophones. With respect to the age of the lithophones, twenty-one of the twenty-two artifacts were collected without their provenience recorded. Only one lithophone was known to have been recovered within or immediately adjacent to other artifacts at the Fish Bone Site 5AL326, located just outside of GSDNPP. The recovered materials dated to the end of the early Archaic with a radiocarbon date range of 6280-5900 B.P. Martorano noted that it was not known if the lithophones had a single-purpose or multi-purpose, nor if the artifacts were reused at a later date for other purposes. She did caution about assuming the presence of certain characteristics such as grinding, polishing and striations to be related to grinding and crushing functions. Evidence of such characteristics can also be related to shaping the lithic to produce a certain sound or due to its use as an instrument (Ahlborn 2022) (Martorano 2018). It should be noted that Matorano received a Stephen H. Hart Award in 2021 for her lithophone research (History Colorado State Historic Preservation Office 2021).

In 2018, Matorano did an interview with Brad Turner on Colorado Public Radio (Turner 2018). Udow heard the interview, and contacted Matorano to learn more about the GSDNPP and San Luis Valley lithophones. After examining the lithophones in person, Udow proposed to compose a percussion concerto featuring the lithophones which he hoped would, "...conjure up an image of what it might have felt like 6,000 years ago when someone was sitting along at the Great Sand Dunes". He had the

opportunity to play lithophones while on tour in Asia. Udow noted the GSDNPP and San Luis Valley lithophones did not correspond to Western musical pitches. Therefore, he considered creating a piece which began with the archaeological lithophones, and then transitioned to a modern lithophone configured to a xylophone or a vibraphone. As lithophones were known in different cultures, Udow also wished to incorporate traditional instruments of stone, wood, metal and skin into the composition. These instruments included marimba, vibraphone, Korean gongs, Japanese drum including the Odiko drum, Javanese bamboo rattle, and German cowbells (Ahlborn 2022) (Alexander 2022). After a lengthy and detailed study of various stone materials for their acoustic attributes, Udow settled upon Absolute

Black granite from India from which to construct a modern lithophone. In total, thirty-seven stone bars, with thirty-seven different pitches, were put together into a custom-built frame to create the new lithophone. It weighed nearly three hundred pounds. In 2021, the Longmont Symphony Orchestra commissioned the percussion concerto from Udow, with the support of Conductor and Director, Elliot Moore. Udow approached his former graduate student and soloist percussionist, Anthony Di Sanza to perform the piece (Ahlborn 2022). Di Sanza's dexterous performance was mesmerizing, and the music which emanated felt of deep roots and ancient. At the end, the audience rose to give Di Sanza and Udow a well-deserved standing ovation.

- Watch the April 22, 2022 rehearsal preview of *Ancient Echoes* on YouTube courtesy of the Madeleine Ahlborn of the Alamosa Citizen:

(<https://www.youtube.com/watch?v=QJdwpslmlAw&list=PLFCiHXeXq7KhETp7Z1PTwY3n1bXaT8E0N&index=10>).

- Virtually play a sample of the GSDNPP and San Luis Valley lithophones courtesy of Colorado Public Radio:

(<https://www.cpr.org/2018/08/29/are-these-mysterious-great-sand-dunes-stones-musical-when-you-hear-it-you-believe-it/>)

- Listen to Marilyn Armagast Martorano's April 20, 2020 lithophone lecture for the Niowat Historical Society courtesy of the Longmont Channel:

<https://www.youtube.com/watch?v=txybFxFuLRI&list=PLFCiHXeXq7KhETp7Z1PTwY3n1bXaT8E0N&index=7>

- Read Marilyn Armagast Martorano's May 2018 Final Report, Volume 1 to History Colorado, State Historical Fund:

<https://static1.squarespace.com/static/544b30c0e4b0023e70482546/t/5b6e2e00032be42d14f8ff9d/1533947468606/SHF+2016-AS-006+Lithophone+FINAL+report+text+2018.pdf>

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Radio, August 29: <https://www.cpr.org/2018/08/29/are-these-mysterious-great-sand-dunes-stones-musical-when-you-hear-it-you-believe-it/>, accessed July 28, 2022.

BLAST FROM THE PAST: A look at the rich 75-year history of the Denver Chapter

This Quarter in DC-CAS History –

April: 1958 – The Denver Chapter took a field trip east of Ault, Colorado. Several nice artifacts were found. The wind was terrific, but 9 cars and 18 people made the trip. **1965** – The Stewarts and the Nelsons went to Grandby, Co to visit with a group of people that were interested in forming an archaeological group. From the artifacts found in the area, it would indicate they had artifacts ranging from Ute to Clovis. The Stewarts and Nelsons hoped they were of some help to them in organizing. **1979** – On April 25th, Steve Cassell offered an evening flintknapping seminar at the State Archaeologist's Office. **1987** – Leni Clubb invited Denver Chapter members to attend her Atlatl workshop in Longmont.

May: 1960 – During the May 18th General Meeting at the Denver Museum of Natural History, Bob Akerley took DC-CAS members on a tour of the museum's workshop to see how displays were prepared. They also toured a special travel exhibit on human origins prepared by the Rochester Museum of Arts and Sciences. **1964** – On May 29th, DC-CAS members took a field trip to Wamsutter, Wyoming. They noted good weather and lots of artifacts. However, they encountered many mud holes on the way out of the area. Everyone pitched in to drain or fill the holes. The caravan was guided by jeep and walkie-talkie as to the road conditions ahead. **1976** – Jerry Chubbuck extended an invitation to the Denver Chapter to attend the June 12th-13th Stone Age Fair at Genoa Tower in Genoa, Colorado. **1985** – Dr. Cynthia Irwin-Williams was the Banquet Speaker. Her presentation was, *The Salmon Ruin Chaco Phenomenon*.

June: 1947 – The Denver Chapter, with 62 members, received its Charter, on June 18th, 1947. It was presented to the Chapter's first president, Paul D. Harrison at the State Convention in September 1947. **1959** – DC-CAS held their June 17th General Meeting at the Cheeseman Park Memorial. There was no special program planned for the summer meeting. Members were invited to bring archaeological objects which would be of interest to the group and to be prepared to discuss them. **1963** – A camping field trip was made June 15-16 to Buena Vista, Colorado. Bruce Stewart was the trip leader. **1979** – The June 20th General Meeting was held at the Denver Museum of Natural History. The speaker, Dr. Asha Kalia presented on the Mummies of the Kabayan Caves in the Philippines.

From the Denver Chapter Poetry Corner –

The Searcher

I have walked many a site far and
wide,
Searching for that find which
time does hide.

Across mountain green and prairies
gold,
I have walked searching for the
past so old.

Many a ridge I have walked,
Many a flake I have tossed.

Searching, searching for that point
so rare,
Looking, looking here and there.

I've never found that ancient
point so rare,
But I did find Nature's beauty
There.

By Gene Nelson, Denver Chapter Member
- Originally published in the *All Points Bulletin*
in April 1964 (Vol. 1, No.4, p4)

A trove of archaeological haiku.

The GPR tools
Show hints to buried treasures.
Now it's time to dig.

We scrape away dirt
To reveal hidden stories.
Look! Another point!

The sherds of ancients
Whisper of forgotten times
We look for their truths.

Who made these fine points?
Tales of bravery and fear
Are buried in earth.

We're hot and sticky
As we toll to find prizes.
Some flakes on the screen!

By Deb Bollig, Denver Chapter Member
- Contributed June 7, 2022

ARCHAEOLOGY NEWS – COLORADO:

History Colorado 2022 Stephen H. Hart Award Winners (April 2022) - On April 19, 2022, History Colorado hosted the 2022 Stephen H. Hart Awards for Historic Preservation at History Colorado Center, 1200 N. Broadway, Denver. This year's award winners are as follows:

1. The Wright Opera House received the Governor's Award for Historic Preservation.
2. The Haycamp Mesa Cultural Historic Landscape received the State Archaeologist's Award.
3. The La Alma Lincoln Park Historic Cultural District received the State Historic Preservation Office Award.
4. The African American Travel and Recreation Resource Survey received the History Colorado Board Award.
5. The Haynie Site received the People's Choice Award.

A full video playlist detailing the 2022 award winning projects is available on History Colorado's YouTube Channel - <https://www.youtube.com/playlist?list=PLI68fplNJM8A9WZob6AzObDnhbNkYYEOc>. Written summaries for the 2022 award winning projects are available at History Colorado's website - <https://www.historycolorado.org/press-release/2022/04/20/history-colorado-honors-excellence-historic-preservation-and-archaeology>

Roses from Camp Amache (May 2022) - In 2012, a rose bush was discovered during excavations of a barrack at the WWII Camp Amache Internment Camp near Granada, Colorado. It was thought to have been planted by those interned in the camp. Recently, lead archaeologist for the Denver University Amache Research Project and Field School, Bonnie Clark contacted the Denver Botanical in hopes that they could assist in coaxing the rose bush to flourish and bloom once again. Ultimately, Clark wished to share the rose bush with camp survivors and their families. Horticulturist, Mike Bone took clippings from the rose bush in Fall of 2021 to be raised at a specialized propagation greenhouse in Denver. The resulting rose bushes were expected to blossom in mid-summer of 2022. Some of the roses will be planted in the Steppe Garden at Denver Botanical Gardens, some will return to Camp Amache, while others will be distributed amongst survivors and their descendants. One survivor, Carlene Tanagoshi Tinkers has already received and planted clippings from the Denver Botanical Gardens in her home garden. While visiting the site of Camp Amache for an annual commemoration event on May 21, 2022, Clark and others discovered the original rose bush had produced tiny pink buds. Time will tell what color the propagated rose plants will be. As both Clark and Tanagoshi noted, the roses stand witness to a shameful time in Colorado and U.S. history. – Original reporting available here: <https://www.cpr.org/2022/05/18/camp-amache-roses/> and <https://www.cpr.org/2022/05/22/the-camp-amache-rose-is-blooming-heres-what-it-looks-like/>.

Operation Sacred Rescue at Loretto Heights (June 2022) – Dr. Michala Stock, Assistant Professor at Metropolitan State University of Denver (MSUD) and Director of MSUD's Human Identification Laboratory has been assisting the Archdiocese of Denver with the delicate and sensitive task of relocating the remains of sixty-two Sisters of Loretto nuns from their resting place in Loretto Heights. The recent sale of the land to a developer necessitated their relocation to Mount Olivet Catholic Cemetery in Wheat Ridge, where they will join twenty-two of their contemporaries. Under Stock's watchful eye, a team of students and faculty from MSUD and other area colleges are painstakingly locating and disinterring the remains originally buried between the late 1800s and 1969. As of June 20, 2022, six burials have been successfully relocated to their new resting place. Further details may be found in the original reporting here: <https://red.msudenver.edu/2022/operation-sacred-rescue/>.

ARCHAEOLOGY NEWS – ELSEWHERE:

(April 5, 2022) - New non-destructive DNA method opens opportunities (<https://www.sciencedaily.com/releases/2022/04/220405084557.htm>) A new method of obtaining ancient genomic data without damaging source material has been developed, creating new opportunities for museum and archaeological collections worldwide.

(April 6, 2022) – New Dating Technology Employed in Tanzania's Olduvai Gorge (<https://www.sciencedirect.com/science/article/pii/S004724842200015X?via%3Dihub>) A new dating technology, the cosmogenic nuclide isochron method has been used for the first time on stone tools recovered from Olduvai Gorge.

(April 20, 2022) – Study challenges theories of earlier human arrival in Americas (<https://www.sciencedaily.com/releases/2022/04/220420170453.htm>) The new analysis suggests that misinterpretation of archaeological evidence at certain sites in North and South America might be responsible for theories that humans arrived long before 13,000-14,200 years ago.

(April 22, 2022) – New Thoughts on the Rise of Complex Societies

(https://warwick.ac.uk/newsandevents/pressreleases/study_sheds_new/) Researchers from Israel, England and Spain suggest cereal crop production fostered the development of hierarchical societies. Unlike root crops, which can be kept in the ground, cereal crops needed to be harvested and stored, making them easier to access and tax.

(May 3, 2022) – Archaeologists have revealed North America's largest cave paintings in rural Alabama through the magic of 3D imaging

(<https://www.smithsonianmag.com/history/3-d-scans-reveal-gigantic-native-american-cave-art-in-alabama-180980004/>) Researchers have used 3D photogrammetry to discover and record previously undetected ancient Indigenous glyphs at a cave site called *19th Unnamed Cave*. The anthropomorphic and zoomorphic figures are thought to be the world's largest cave artwork.

(May 19, 2022) – Research confirms eastern Wyoming Paleoindian site as Americas' oldest mine

(<https://www.sciencedaily.com/releases/2022/05/220519125740.htm>) The Powars II site at Sunrise in Wyoming's Platte County is the oldest documented red ochre mine, and likely the oldest known mine of any sort, in all of North and South America. The mine's earliest use dates to nearly 13,000 years ago.

(May 22, 2022) – Archaeological sites once thought lost under Lake Powell reappear as water drops

(<https://www.knau.org/knau-and-arizona-news/2022-05-12/archaeological-sites-once-thought-lost-under-lake-powell-reappear-as-water-drops>) A persistent drought has lowered Lake Powell's water level, revealing once submerged Indigenous archaeological sites and sacred places. Work is underway to evaluate the condition of the sites and to gauge the impact of public access.

(May 25, 2022) – Archaeologists reveal pre-Hispanic cities in Bolivia with laser technology

(<https://www.sciencedaily.com/releases/2022/05/220525110924.htm>) Researchers have mapped the largest known pre-Hispanic settlement of the Casarabe culture in the Bolivian Llanos de Mojos savannah using LIDAR technology. The site is one of several hundred settlements dating between 500-1400 AD.

(May 30, 2022) – Passageways Discovered at Peru's Chavin de Huantar Temple

(<https://www.reuters.com/world/americas/archaeologists-discover-passageways-3000-year-old-peruvian-temple-2022-05-30/>)

A network of passageways has been found under the Chavin de Huantar temple. The passageways are thought to be older than the 3,000-year-old temple, and connect to a larger network of underground passageways in the area.

(June 20, 2022) – Arizona Fires Sweep Land Rich with Ancient Sites, Artifacts

(<https://www.usnews.com/news/news/articles/2022-06-20/arizona-wildfires-sweep-land-rich-with-signs-of-ancient-life>)

Archaeologists are surveying recently burned areas to identify new sites and evaluate fire damage at known sites. They are also training fire crews on how to minimize damage to sites and artifacts while working with bulldozers and modern tools.

(June 27, 2022) – New Dates Obtained for South Africa's Australopithecus Fossils

(<https://www.purdue.edu/newsroom/releases/2022/Q2/fossils-in-the-cradle-of-humankind-may-be-more-than-a-million-years-older-than-previously-thought.html>)

Sterkfontein Cave *Australopithecus* fossils are more than a million years older than previously thought. New dating of the breccia where the fossils were found indicate a date of between 3.4 and 3.7 million years ago.

(June 30, 2022) – DNA Study Delves Into Dog Domestication

(<https://cosmosmagazine.com/nature/ancient-wolf-populations-dog-ancestors/>) A new DNA study looked at DNA spanning 100,000 of years and 30,000 generations, and found dogs originate from two different populations of wolves. It is suggested that wolves were either domesticated more than once and dogs eventually mixed together, or a species of eastern Eurasian wolf was domesticated once and some these early dogs bred with their wild relatives.

DC-CAS APRIL 11, 2022 GENERAL MEETING MINUTES

The April General Meeting was held online on Monday, April 11, 2022 at 7:00 pm via the Zoom platform. Craig Dengel opened the meeting by announcing plans to host in-person meetings again. A location was being secured and would be announced soon. Virtual access via Zoom would continue for those members who still wished to

attend remotely. Stacy Greenwood announced a June 3rd field trip to History Colorado with a tour of the Office of the State Archaeologist and the Emery Archaeology Lab. The tour will be led by Todd McMahon, Staff Archaeologist and State Curation Coordinator. Those interested in attending should contact Stacy to secure a spot. As the Board was

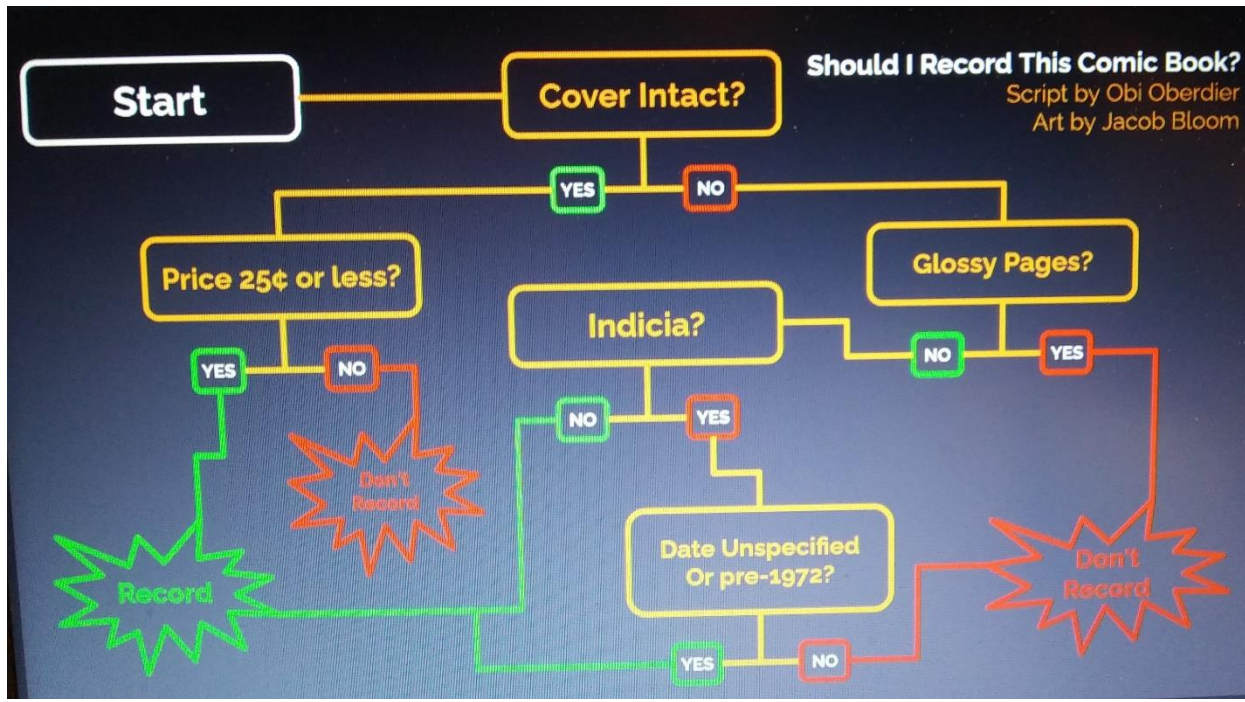
wanting to restart field trips, she asked members to forward their suggestions as to museums and archaeological sites they'd like to visit. Finally, Stacy stated that the Board was seeking a new APB newsletter editor. Anyone interested in volunteering for this position should contact her.

Kayla Bellipanni introduced the evening's speaker, Roger "Obi" Oberdier, a University of Colorado-Denver graduate currently working for a local Cultural Resource Management firm. The title of his presentation was, *Comic Books as Archaeological Data Points: Saving Ephemera*. Oberdier began his presentation by providing background information on comic books as a popular medium. He noted that comic books first appear around 1897 with the technological development to mass-print line drawings. By the 1930s, comic books had become commonly available through newsstands and secondary sources in both the United States and other English-speaking countries. The Twentieth Century saw an increase in the mass production of comic books, with a peak in popularity and cultural influence occurring during the mid-to-late 1900s. During the Twenty-First Century, comic books have become less popular as a medium. However, they continue to hold an important place in pop history and art history due to their artistic legacy and retain cultural value to collectors.

Oberdier noted that archaeologists should be recording the presence of comic books as data points for they can be highly diagnostic with useful temporal information. Their informative value to archaeology comes from their pricing, art, identity and date. Analysis of comic book pricing indicated that 25-Cent comic books are pre-1977, 15-Cent comic books are pre-1972, 12-Cent comic books are pre-1970 and 10-Cent comic books were pre-1963. Free comic books were more common in 1965 and earlier. As such, a comic book recovered from an archaeological context has the potential to provide a publication date. It should be noted that pricing appears on the chemically-treated outer covers, which preserve better than the interior pages. Oberdier also noted there may be evidence of price changes over the life of the comic book from an original price of 12-Cents, to a contemporary resale price of 10-Cents, and to a present-day collector price of \$14.00. Comic book art style is the most significant visual element for analysis and can impart information about the time it was read. Small scraps of artwork may be difficult to identify. However, if enough of the cover is preserved, it is possible to identify the original issue using

comparative collections. Aspects relating to identity of the owner can also be found. For example, the simplest being the direct presence of the owner's name written on the comic book. Also, the topics or themes of recovered comic books can also impart information on the owner's interests. With respect to dating, in addition to direct dating a comic book, its presence within an archaeological site can provide both vertical and horizontal evidence of the historic extent of the site.

Oberdier went on to provide some advanced tips on how to view comic books as a resource. First, one can search for the *indicia*, the comic book's formal publication information. An *indiciu*m usually contains a publisher's information, such as name and address, and publication date. It may not be easy to locate as there was no standard placement location. If preserved, it could be located inside the cover, on the first page or on the last page. Second, the researcher should consider the taphonomy of the comic book. They are very fragile and can degrade quickly. One should consider how the comic book got to its current state of being. Different conditions will result in different degrees of preservation. For example, comic book pages used as insulation, wall paper or stored in a stack can be exposed to various insect, animal or environmental damage. Insects, birds and rodents can nest in the material and eat through the paper, or they can remove the material to another location such as a den. Exposure to heat, sun and moisture can cause the paper to brown, flake and/or mold. If one was to find a comic book in pristine condition, there is no chance that it is an artifact. A comic book which has been deposited for some time will show evidence of deterioration. Oberdier also noted that comic books with glossy interior pages are more recent as such pages began appearing during the late 1980s. Lastly, comic books should be considered a medium rather than a genre. It is through this medium that different genres of storytelling are presented. This was particularly so during the 1930s, 1940s, and 1950s. Niche genres include children's stories, science fiction, romance, westerns, horror, classics, fantasy, pornography, history and manga. Analyzing the genre of comic books can provide insight into the interests of those who owned them. Collecting oral histories of people who read comic books can also provide insight into what attracted them to this medium. Oberdier provided an informative flow chart to help evaluate if a comic book encountered during survey or excavation should be recorded (see below).



Courtesy of Roger “Obi” Oberdier – April 11, 2021 Virtual Presentation to DC-CAS

Oberdier also provided tips on various ways to document and collect comic book materials. As a bare minimum to aid in identification, one should look for the front cover, back cover, advertisements, *indicia*, and centerfold. Describe the condition in terms of what is present, whether intact or fragmentary, if interior pages are newsprint, pricing, art style, comic theme, issue date or number, identifying ownership marks, and dates. GPS coordinates should also be recorded to provide context for the comic book. This may be as a GPS location while conducting a pedestrian survey or as 3-D GPS coordinates during an excavation. When collecting comic books from a site, much care must be exercised so as not to damage the fragile material. Be sure to support the structure so as to keep it from bending or flexing. Storage should be in an archival-grade mylar sleeve or sealed plastic bag. Also ensure that the artifact is stored in a cool, dark and dry environment away from UV light, heat and moisture. By following these procedures, one can ensure the materials are available for future historians and public audiences to understand the past.

The presentation concluded with Oberdier noting that comic books were a great source of information for social

scientists and other researchers. Comic books are of wide interest to the English-speaking world. They also can produce a global narrative, and can be found published in other languages worldwide. Their distribution and reach may be important, and may help to identify those who occupied a particular site. For example, one may be able to determine site occupation by gender and age as well as by adult or childhood interests. Comic books from earlier eras can also be analyzed to highlight social value differences between then and present-day (e.g.: gender and race issues) or to view changes in social values over time. Comic books, public commentaries on comic books, and oral histories about relationships with comic books can provide a wealth of information on both a societal and an individual level. At the end of his talk, Oberdier took several questions from the audience. Should anyone be interested in further discussion or would like to share their experiences with comic books, Oberdier can be contacted by email at PhilosophicalArchaeologist@gmail.com. A recording of this presentation is available on the CAS YouTube Channel - <https://www.youtube.com/watch?v=qaHhy9BIZ7k>

DC-CAS MAY 9, 2022 GENERAL MEETING MINUTES

The May General Meeting was held in the Emery Archaeology Lab at History Colorado, 1200 N. Broadway, Denver on Monday, May 9, 2022 at 7:00 p.m. Virtual access to the meeting via the Zoom platform was also

provided to membership. Craig Dengel opened the meeting by welcoming those in attendance. He announced the Denver Chapter was celebrating its 75th Anniversary, and that it was the oldest chapter of the

Colorado Archaeological Society. As the Board would like to commemorate the anniversary, Craig asked for members' input as to how to celebrate the occasion and where to hold the event. Those members with ideas to share should contact Stacy Greenwood. He also noted that the new quarterly issue of the APB newsletter was out, and thanked Stacy Greenwood for putting it together. Craig indicated the newsletter was still in need of a volunteer editor. He also encouraged members to contribute articles, book reviews and reports of site visits to the newsletter for the benefit of fellow members. Craig then announced a big thank you to member and Board Historian, Ken Andresen for his recent generous donation to the Chapter. It was very much appreciated. Next, Craig announced the CRM firm, ERO headed by Jon Hedlund was looking for CAS volunteers to help with a cave excavation this summer. Additional details and contact information were available in the most recent APB newsletter. Finally, Craig thanked Todd McMahon and Shawn Faucett for making the Emery Archaeology Lab available to DC-CAS for their monthly general meetings. Stacy Greenwood also announced that Lamb Springs Archaeological Preserve recently announced their 2022 public tour dates. Tours of the site will take place at 9:00 a.m. on the second Saturday of every month through October, with exception of May which will be on May 21st. Members could book a tour at <http://www.lambspring.org/free-tours>. If none of the available dates were suitable, members were to contact Stacy Greenwood so that a private tour could be arranged for DC-CAS members. She also provided a reminder of the upcoming June 3rd field trip to History Colorado. Todd McMahon and Shawn Faucett would be hosting a tour of the Office of the State Archaeologist and the Emery Archaeology Lab, and would include a discussion of volunteer opportunities. Stacy also gave a reminder the application deadline for the 2022 Miles-Bancroft Awards was June 1st. History Colorado was sponsoring the

awards, with each award providing a \$1,000 prize to outstanding projects or research highlighting Colorado history. The final list of nominees would be announced on August 1st, 2022.

Dengel introduced the evening's speaker, Gene Wheaton, Professor of Anthropology at Community College of Denver. The title of Wheaton's talk was, *The Astronomy of Chaco Style Great Kivas and Intersite Visibility*. His presentation centered upon the Chacoan Regional System within the Four Corners Area. The Four Corners Area is comprised of the states of Arizona, Utah, Colorado and New Mexico. Wheaton began his work in the area eighteen years ago, of which five or six years were focused upon examining landscapes, landscape features, and site visibility. In 2004, while working as a technician at the New Mexico site of Aztec Ruins, Wheaton observed a full moon rising in the general orientation of the Great House. He noted that when the moon was at its major standstill at the northern maximum, it was visible from the south off the plaza of the Great House. During the same year, an architectural association with astronomical phenomena was also observed at the Chimney Rock Monument. Situated on a mesa six hundred feet above the plain floor, the pueblo's architecture is oriented towards Chimney Rock's two stone pillars. Four times over the summer, the moonrise can be observed between the pillars at Chimney Rock when viewed from the pueblo. Due to the cycle of the moon, this astronomical phenomenon is only observable over a two-year period every 18.3 years. Over approximately nine years, the moon moves from north to the southern extreme. It then takes just over nine years for the moon to move from the south to the northern extreme. In comparison, the solar solstice and equinox occur every year. Wheaton provided a detailed explanation of the moon's cycle along with the solstitial map below:

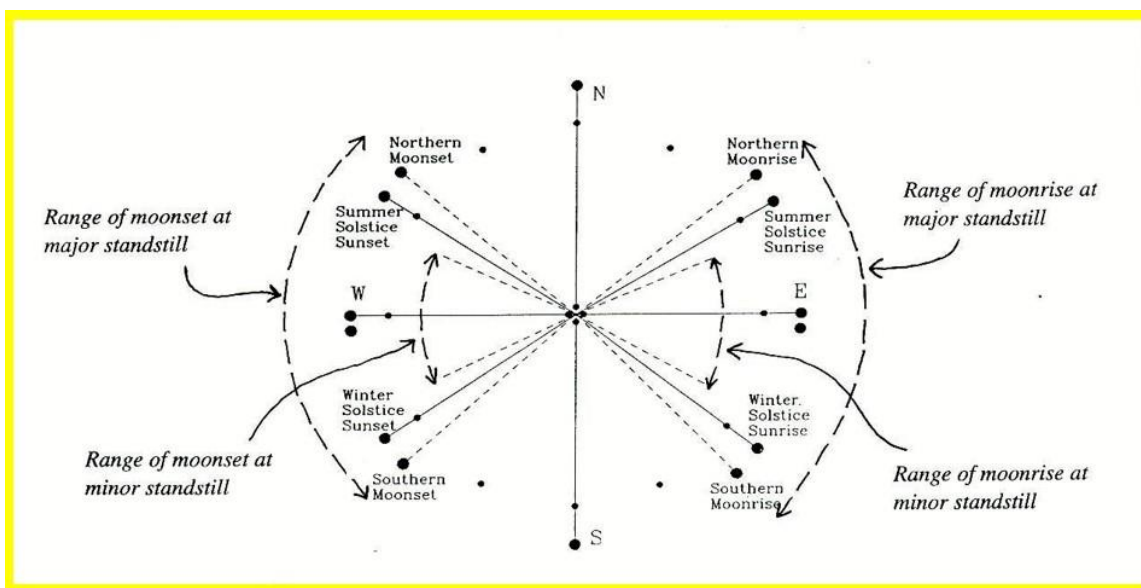


Illustration courtesy of Gene Wheaton's PowerPoint presentation to DC-CAS May 9, 2022 General Meeting

An understanding of the solstitial map is important when examining the orientation of the architecture within the landscape. Below is an illustration of the solstitial map overlaid upon the landscape:

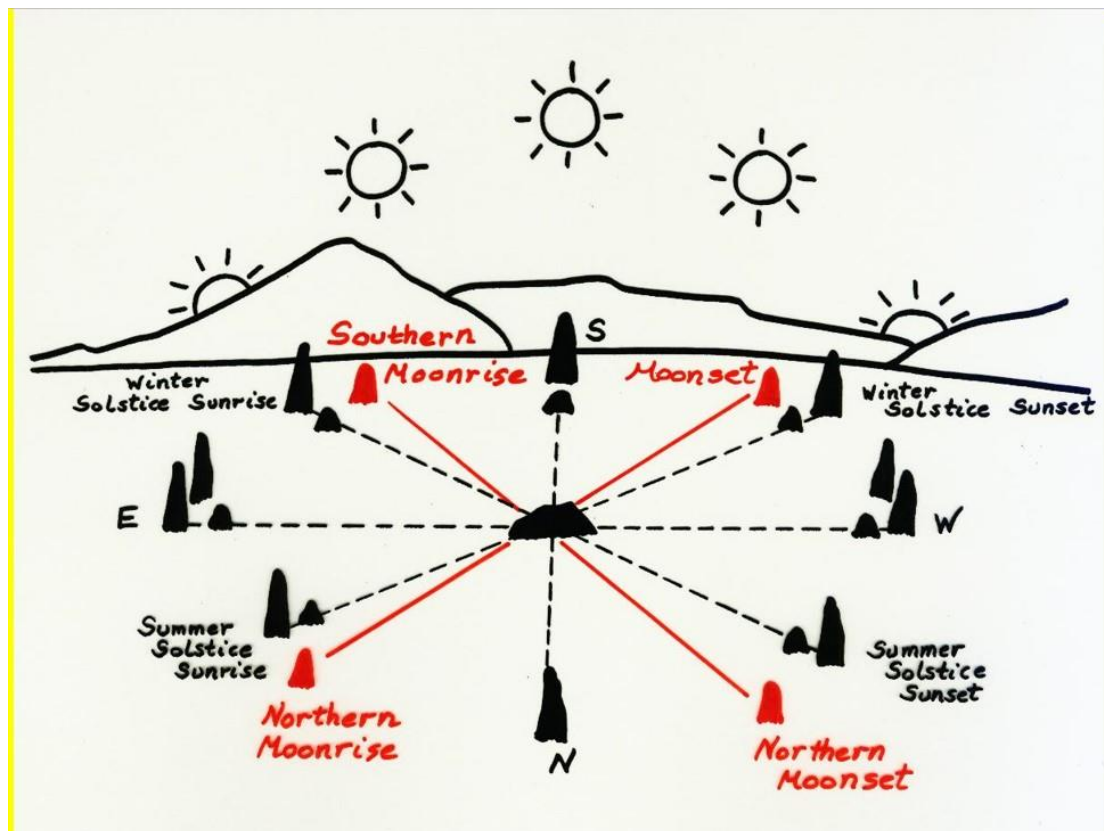
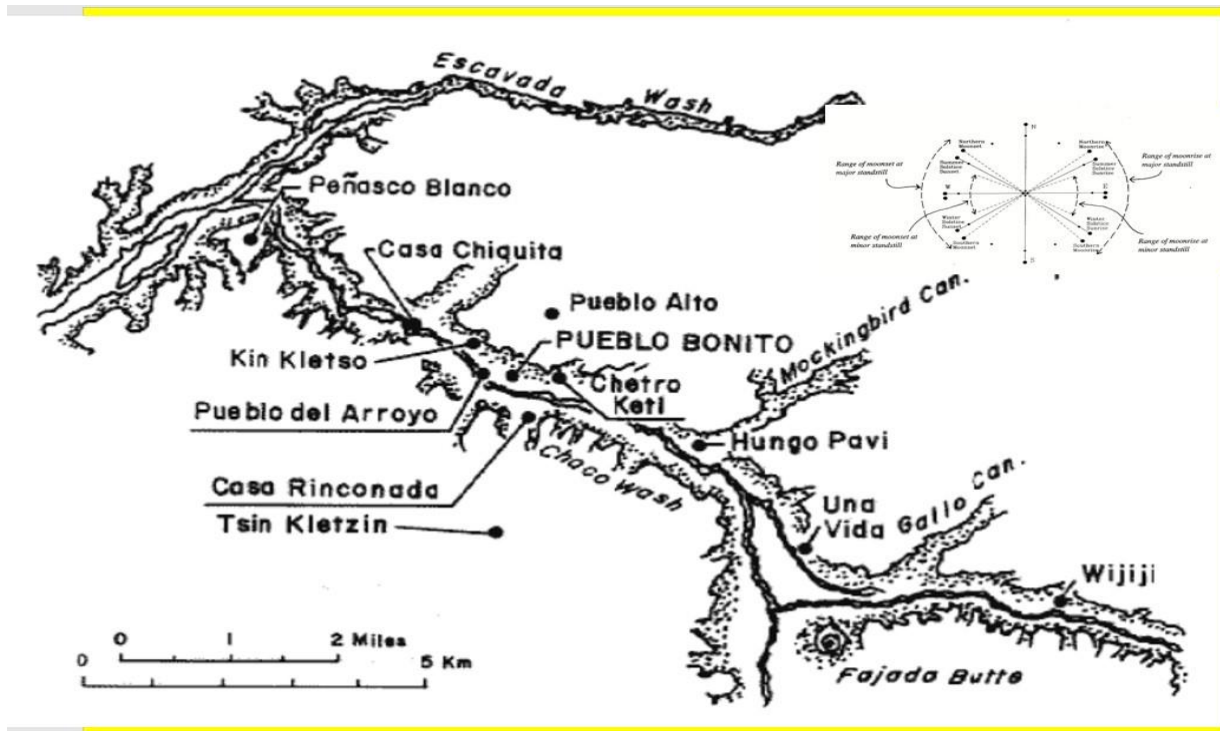


Illustration courtesy of Gene Wheaton's PowerPoint presentation to DC-CAS May 9, 2022 General Meeting

Wheaton noted that there are an estimated three hundred and fifty Great Houses in the Chacoan Regional System. Great Houses typically were three-to-four-story buildings with up to five hundred rooms and usually contained a centralized round ceremonial structure called a *kiva*. There are some exceptions whereby a *kiva* is isolated away from its Great House. The entire architectural structure is tiered downwards towards a plaza. The plaza's orientation provided maximum warming from the winter sun, and provided a view of the moonrise at its southern maximum and the rise of the winter solstice. At the site of Aztec, the architecture was oriented at 62.47° towards the moonrise at the southern maximum of the moon. Similarly, the site of Chetro Ketl had an orientation of 69.1° , while the site of Salmon had an orientation of 65.75° . On July 2, 2004, the moon rise was observed for twenty-to-thirty minutes in one of the *kiva* windows. Between December 21st and 26th, 2004, the moonrise was observed through a different *kiva* window. Interestingly, the summer solstice sunrise was also observed in the

same window as the December moonrise. It was noted that when the sunlight from the summer solstice entered this window, it lined up with a set of posts and a disc located on the floor in the northern antechamber. Approximately one-half mile from Pueblo Bonito, across the Chaco Wash, is the site of Casa Rinconada. Casa Rinconada's *kiva* is isolated from its Great House, and has a similar orientation and layout as the Aztec site, including the presence of a northern antechamber and similar window locations. Casa Rinconada's *kiva* only differs from the Aztec's *kiva* in that it has external peripheral chambers.

During his research into the relationship between architectural orientation and astronomical phenomena, Wheaton visited several sites along Chaco Wash and nearby Escavada Wash. Over the course of this work, he realized that not only were the sites generally oriented to the solstitial map, but both the Chaco Wash and Escavada Wash appeared to be as well (see map below).



Map courtesy of Gene Wheaton's PowerPoint presentation to DC-CAS May 9, 2022 General Meeting

For example, the site of Peñasco Blanco is located at the junction of Chaco Wash and Escavada Wash. The site's architecture is on Chaco Wash, but it is oriented to observe the winter solstice sunrise or the northernmost full moon event aligned with the Escavada Wash. A petroglyph depicting the sun, the moon and a hand print is associated with Peñasco Blanco, and is thought to possibly record a supernova event around 1200 AD. Wheaton also observed that the sites were interconnected visually and/or by foot paths. For example, Peñasco Blanco is connected via a seven-mile trail to the site of Pueblo Bonito, which is oriented to observe the summer solstice. From Peñasco Blanco, one can see six miles down the mesa towards the site of Tsin Kletzin. From Tsin Kletzin, Casa Rinconada, Pueblo Bonito and Pueblo Alto are visible. From Pueblo Alto, the Great North Road moves northward towards Aztec and modern-day Farmington. Twin Angels Peak is also visible from Pueblo Alto.

Visible from the top of Twin Angels Peak is La Plata Wash. Within the La Plata Wash is Kutz Canyon, which leads southward to the San Juan River linking up the Shannon Bluff-San Juan communities near modern-day Farmington. This area is where the Animas, San Juan and the La Plata rivers come together. Along the La Plata Wash a series of small sites were found about three-to-four miles apart. These small sites may have served as small road houses or rest stations. Located ten miles upriver to the north is a La Plata community site at the Lake Jackson. The Lake Jackson site contains a Great House with a central *kiva* from which the winter solstice sunset could be viewed from the plaza. The Great House has a similar U-shape to that at the Aztec site. Nearby on

a hilltop is the largest isolated Great *kiva* belonging to the La Plata and Animas Valley Great House Complexes. The Great *kiva* is unexcavated, but it is estimated to be forty feet across and ten feet deep. Looking south from Lake Jackson, the Shannon Bluff communities are clearly visible. To the north from Lake Jackson, the sites of Morris 39, Holmes Group and Morris 41 are within sight. Morris 41 contains the largest number of Great Houses with twelve-to-fifteen U-shaped Great Houses with possible *kivas* in their plazas. Another isolated Great *Kiva* is located above Morris 41 on a five-mile-long rock formation known by its Navajo name, the *Snake*. It is thirty-five feet in diameter, six-to-eight feet round, and six feet deep. As its location is highly visible, it may have been used for signal fires. From the Great *Kiva* above Morris 41, the winter solstice sunset is visible in a notch along the *Snake* rock formation. From the Great *Kiva* above Morris 41, the southern communities of Shannon Bluffs, Jackson Lake and Morris 39 are visible. To the north, the Morris 19 through Morris 23 sites and Red Mesa are visible. From Red Mesa the sites of Mesa Verde, Hoven Weep and other sites in between are visible.

Wheaton concluded his presentation by emphasizing the interconnectedness of sites. Based upon historical records, the Hopi and Taos used *kivas* as places where old men gathered to make ceremonial sticks known as *pahos*, to smoke and to drink. During the equinoxes, they would send young runners to the rock shrine sites located along a line-of-sight. Here the runners would place an offering of corn meal. This interconnectedness had great meaning to the people for the sacredness of place and direction. The audience expressed their thanks for an interesting talk and Wheaton answered several questions.

Kayla Bellapanni announced that the June speaker would be Amber Cabading, who would be speaking on pirates off the coast of Florida.

For those wishing to view this year's moonrise at Chimney Rock Monument, reservations can be made at this website - <https://www.recreation.gov/ticket/facility/234787>.

A recording of Gene Wheaton's presentation is available on the DC-CAS YouTube Channel - <https://www.youtube.com/watch?v=2OrTX3GAhYs>

The meeting adjourned at approximately 8:00 pm. Submitted by Stacy Greenwood, Secretary for DC-CAS.

DC-CAS JUNE 13, 2022 GENERAL MEETING MINUTES

The June General Meeting was held in the Emery Archaeology Lab at History Colorado, 1200 N. Broadway, Denver on Monday, June 13, 2022 at 7:00 pm. Virtual access to the meeting via the Zoom platform was also provided. Craig Dengel welcomed those attending in-person and virtually. He also thanked Shawn Faucett for hosting DC-CAS in the Emery Archaeology Lab. Stacy Greenwood announced there would be no Board Meeting nor General Meeting during the month of July. General Meetings would resume in August with the annual Joint Meeting between DC-CAS and the Egyptian Studies Society (ESS). ESS would be hosting this year's meeting, and it had yet to be determined if the meeting would be virtual or hybrid. Meeting details were to follow when available. Stacy also reminded members of several opportunities to participate in archaeological field work. The cave excavation headed by Jon Hedlund of ERO Resources was still on-going. Volunteers were still being sought to work on a rotating schedule for June and July. The work required a daily hike of approximately one mile in to the site. Jon could be contacted by email at jhedlund@eroresources.com. Crow Canyon was offering a survey experience through the Cortez Cultural Center. Two sessions are being offered in September 2022. Cost is \$400.00 with a limit of eight participants per session (<https://www.crowcanyon.org/archaeology-research-program>). May's speaker, Gene Wheaton will be conducting excavations on Auraria Campus during the Fall semester on Fridays. Those interested in participating should contact Gene at gene.wheaton@ccd.edu. Finally, Stacy announced the Board would be working over the summer to identify potential candidates for next year's Board. A slate of candidates will be presented to membership in October, the election will be held in November, and the incoming 2023 Board introduced during December's Members Night. Anyone interested in joining the Board or volunteering for smaller project opportunities should contact Stacy Greenwood.

Kayla Bellapanni introduced the evening's speaker, Amber Cabading, Project Archaeologist at the Maritime Research Division, South Carolina Institute of Archaeology and Anthropology. She is a recent graduate from the Graduate Program in Maritime Studies at East Carolina University. The title of her presentation was, *After Wrecking: Examining Spanish Salvage of the 1622, 1715,*

*and 1733 Plate Fleets*¹. Cabading's thesis research focused upon the Plate Fleets with special interest in enslaved divers who conducted salvage operations. Between the Sixteenth and Eighteenth Centuries, Spain dominated transatlantic trade between Europe and the New World. To protect their ships and cargo from pirates and privateers, the Spanish created a convoy system. Every two years, a flotilla would depart from Spain and sail across the Atlantic Ocean to the Caribbean Sea. Upon arrival, the ships would split into two groups. The *Terra Firma Fleet* sailed towards South America while the *New Spain Fleet* sailed to Mexico to connect with the Transpacific trade route. Two months later, both fleets would rendezvous at Havana and undertake their return voyage to Spain. From time to time, the flotillas would be exposed to destructive hurricanes with the greatest losses experienced during 1622, 1715 and 1733. As shipwrecks occurred in predictable locations along the convoy route, the Spanish established a salvage industry with permanent facilities in the major ports of Cartagena, Panama, Vera Cruz and Havana from which they could send ships to rescue survivors and to begin salvage operations. One area of Cabading's research focused upon the salvage camps, known as *Reals*, set up near shipwreck locations. Using historic documents and archaeological remains, she hoped to identify the physical presence of those charged with carrying out salvage operations. Cabading posed several questions related to what tools, techniques and boats were used by the Spanish during salvage operations. She also sought to determine what types of salvage camp archaeological sites were known and investigated, and how these sites were characterized in terms of material culture, form and organization? Cabading was also interested in understanding who directed or conducted the salvage operations, how they were organized, what were their motivations, and what modes of labor did they employ in the salvage operations (e.g.: waged or forced labor). To aid her in answering these inquires, Cabading consulted historical and archival materials consisting of primary sources, secondary sources, archaeological reports and treasure hunting adventure novels. She also compared historic descriptions of salvage tools and equipment to recovered archaeological material culture. Finally, Cabading employed ESRI StoryMap software to display and interpret the available data within a maritime cultural

landscape to portray the overarching networks, to identify participants in and around the area, as well as identify those affected by the Spanish salvage industry. She also applied techniques derived from Critical Race Theory to her work in an effort to illuminate the experiences of enslaved divers.

Historic sources provided information regarding the estimated locations of the Plate Fleet shipwrecks. Three 1622 Plate Fleet shipwrecks occurred between Dry Tortugas National Park and Key West Wildlife Refuge. Six 1715 Plate Fleet shipwrecks happened along the east coast of Florida. Twelve 1733 Plate Fleet shipwrecks are spread out throughout the Florida Keys. This information helped to identify likely locations where *Reals* had been established to carry out salvage operations. Few *Real* sites have been archaeologically investigated due to high development in these areas. Only two *Real* sites have been excavated. The 8IR24 Higgs Site was excavated between 1942 and 1949, while the Winter Beach Salvage Camp was excavated between 1985 and 1988. The site reports provided information on site layout as well as an inventories of recovered cultural material. Both sites are associated with 1715 Plate Fleet shipwrecks, and no longer exists due to modern development. There has been limited investigation of the shipwrecks due to heavy treasure-hunting activities, and a number of shipwreck sites are under private salvage control. The Florida Bureau of Archaeological Research, Division of Historical Resources carried out archaeological surveys of the 1733 Plate Fleet shipwrecks in 1977 and 2004 as part of the establishment of the Underwater Cultural Heritage Trail. Little research had been previously carried out on Spanish salvage operations. Cabading's examination of historic documents provided detailed information about these operations and those who were involved. She was able to locate illustrations of Spanish salvage techniques from 1623, and conduct a study of small ship construction. The study identified a small, versatile vessel called a *Balandra* being used in in salvage operations. Although it is not known what the *Balandra* looked like, Cabading was able to determine that it was a swift and easy-to-manuever vessel with a shallow draft. These features made the *Balandra* an ideal vessel for transporting wreck survivors, salvage divers and equipment. They were also useful for communicating between *Reals* and main salvage operation ports, and to defend the coastline against pirates and privateers. Cabading created an inventory of tools and equipment described in historic primary and secondary documents. She compared this inventory with that recovered from the excavated *Reals* and shipwrecks to identify tools and equipment which were salvage-specific as well as those which had a multipurpose. For example, a diving bell used during the 1626 salvage work on the 1622 Plate Fleet shipwreck, *Santa Margarita* would be considered salvage-specific equipment. Examples of multipurpose tools and equipment would be hammers, nets, ropes, pick axes, sounding leads and crowbars. These were commonly found on ships as well as at the *Reals*.

Cabading also uncovered historic information which provided insight into the modes of labor, power dynamics and work conditions of enslaved divers. Research suggested the enslaved divers occupied a unique niche which differed from land-based enslaved labor. Instead of using violence, it appears Spanish salvagers treated enslaved divers more as skilled labor. Rewards and incentives were used, such as offering enslaved divers fresh meat or a percentage of the goods recovered. In rare cases, enslaved divers were granted their freedom or paid wages. Often enslaved divers lived in their own settlements away from their owners, where they were able to safe guard their skilled knowledge and to prevent exploitation. Archaeological site reports from the 8IR24 Higgs site and the Winter Beach Salvage Camp site also indicate there was abundant Native American cultural material such as beads, clothing, gaming pieces and ceramics. Unfortunately, the artifacts from Winter Beach Salvage Camp were discarded, and ceramic data is only available from the 8IR24 Higgs site. Ceramics were identified as San Marcos Plain, San Marcos Stamped, Glades Plain, and St. Johns Plain. Native American ceramics are not found in the shipwrecks. There is no definitive evidence that Native Americans were present at the *Reals*. Early historic documents do record interactions between the Spanish and Native Americans, primarily the *Aís*, but they were not used as salvage divers. Salvage reports from 1622 indicate Spanish salvagers trained Keyes Native Americans and Native Americans from northern South America to be divers. However, they were limited in their diving abilities to a depth of thirty feet. As native populations were killed by the Spanish, enslaved African pearl divers were brought from the Western Ivory Coast. The African pearl divers could dive to a depth of eighty feet, and were able to reach deeper wrecks. By 1715, historic and archaeological records do not indicate if the Spanish continued the use of Native American divers in their salvage operations or whether they just had contact with Native American groups such as the *Aís*. Despite being visible in the historic record, the presence of enslaved African divers and Native Americans is difficult to retrieve from the archaeological record. Based upon archaeological analysis of the excavated 1715 *Real* sites, there was little to distinguish the Spanish salvagers from the enslaved divers in terms of camp organization and hygiene. Garbage, such as animal bones and oyster shells, was strewn about amongst multiple fire pits. Both groups may or may not have lived separately.

Cabading hoped that further research into *Real* sites would continue so that researchers could better understand how to identify enslaved divers in the archaeological record. She also noted that while her research provided a wide view of Spanish salvaging operations, there remained numerous topics which would benefit from more detailed study by others. Cabading concluded her presentation by giving the audience a tour of her online StoryMap. She then took several questions

from the audience. A recording of Cabading's presentation is available on the DC-CAS YouTube

Channel - <https://www.youtube.com/watch?v=AHEhy2eDwpU>.

For those interested in further information, Amber Cabading kindly provided the following links related her research:

- ESRI StoryMap (<https://storymaps.arcgis.com/stories/db09376268664d6190c79a1d9522daee>),
- Pedro de Ledesma's Description of Seven Salvage Techniques manuscript: https://catedranaval.files.wordpress.com/2014/09/manuscrito_de_ledesmaoriginal.pdf
- Underwater cultural heritage trail info: <http://www.flheritage.com/archaeology/underwater/galleontrail/fleetOf1733.cfm>
- History in 3D for 1733 artifacts: <http://floridahistoryin3d.com/history.html>
- Sir Francis Drake's manuscript: <https://www.themorgan.org/collection/Histoire-Naturelle-des-Indes/47>
- Aleck Tan's StoryMap of the transpacific Spanish trade route: <https://www.arcgis.com/apps/MapSeries/index.html?appid=ea91f5a1a27c43659c43f42ca1644871>

The meeting adjourned at 7:57 pm. Submitted by Stacy Greenwood, Secretary for DC-CAS.

¹ Plate Fleets are "...vessels engaged in transporting masses of precious metals, especially the vessels which transported to Spain the projects of the mines in Spanish America." (<https://www.wordnik.com/words/plate-fleet>).

DC-CAS BOARD MEETING MINUTES AND FINANCIAL STATEMENTS – Please note that the monthly Board Meeting Minutes and the quarterly Financial Statements are no longer published in the *All Points Bulletin*. These documents are available to all Chapter members upon request. Please contact us should you wish to receive them.

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https://documents.saa.org/container/docs/default-source/doc-publications/style-guide/saa-style-guide_english_updated_2021_final08023c15928949dabd02faafb269fb1c.pdf?sfvrsn=c1f41c1b_2

Suggestions for book reviews should be sent to the editor. Books for review should be sent to: Denver Chapter CAS, P.O. Box 100190, Denver, CO 80250-0190

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