Sacramento Archeological Society, Inc.
Newsletter

www.sacarcheology.org. November/December - **2024**

UPCOMING EVENTS CALENDAR

Please note the following events for the next two months. The November presentation will be via Zoom and the December event will be our annual meeting in person on University of California campus and via Zoom. We encourage in person attendance at the annual meeting. Both will be Saturday afternoons.

November 2024

November 9, 2024 – Saturday, 2:00 – 3:30 PM PT - SAS Webinar "Some Astronomy in Classical Hohokam and Mimbres Locations" by **Robert Garfinkle**, FRAS

December 2024

December 7, 2024 - Saturday, 1:00 – 6:00+ PM PT in person - SAS Annual Meeting and SAS Webinar "Archaeological Research on Norse in Greenland" by **Christyann Darwent**, Professor of Archaeology, UC Davis

See announcements: https://sacarcheology.org/announcements/ for **webinar access information** and calendar: https://sacarcheology.org/archaeology-activities/calendar-of-events/ for the complete set of events in our website: www.sacarcheology.org.

For all SAS Webinars friends are welcome and also invited to join our organization. There is no participation fee.

UPCOMING EVENTS

SAS Webinar

"Some Astronomy in Classical Hohokam and Mimbres Locations"

by

Robert Garfinkle, FRAS (Fellow Royal Astronomical Society)

Saturday, November 9, 2024

2:00 – 3:30 PM PT

Casa Grande

During the classical period of the Hohokam and Mimbres tribes of the Native Americans of Arizona and New Mexico, the Hohokam built the Casa Grande structure (now ruins in Coolidge, AZ) and used it for astronomical observations. In the year 1054 CE, the Mimbres observed a bright new star visible for 23 days in the daytime sky that actually was the Super Nova, now known as the Crab Nebula (M-i). Robert's PowerPoint presentation will cover these hundreds of year-old events.

Bob Garfinkle is an author and a recognized independent scholar on the history of astronomy and observing the night sky. His first book, Star-Hopping: Your Visa to Viewing the Universe, was published in 1994 by Cambridge University Press. This best-selling book was republished as both a hardback and paperback in 1997. He co-authored another best-selling book, Advanced Skywatching, also in 1997. Bob spent 30 years writing his 3-volume lunar observers' reference book, Luna Cognita. It was published by Springer in 2020.

Bob is the Historian for the BAA's (British Astronomical Association) Lunar Section and is a longtime member of the Antique Telescope Society. In 1998, he was elected a Fellow of the Royal Astronomical Society. In May 2018, Bob was notified that the International Astronomical Union had renamed Minor Planet 2000 EY70 to be "31862 Garfinkle" in his honor.

Bob received his first BA in History (1975) and a second BA in English Literature (1994) from Cal State University-Hayward. He is a Past President of the California Writers Club (2010-12) and Mayor of Union City, CA. Bob is also the former Vice-President and Membership Chair of the Niles Essanay Silent Film Museum in Fremont, CA.

The webinar will start at 2:00 PM PT and formally conclude at 3:30 PM. You may join starting at 1:45 PM to say "Hello" and participate in a social time.

Sacramento Archeological Society, Inc.'s Annual Meeting & Webinar

Saturday, December 7, 2024

1:00 – 6:00+ PM PT

"Archaeological Research on Norse in Greenland"

by

Christyann Darwent, Professor of Archaeology, UC Davis

at U.C. Davis campus, Room 302 Young Hall, and via Zoom

The Annual Meeting will be conducted in person at the U.C. Davis campus, in Room 302 Young Hall, and broadcasted via Zoom starting at 2:00 PM PT with a presentation by Christyann Darwent, UCD Professor, and formally conclude after the SAS Annual Meeting. After which all attendees are invited to attend a dinner to socialize at a local restaurant.

The schedule for the event is as follows:
1:00 – Set up, meet and greet (If you are unable to attend in person, you may join the webinar starting as early as 1:45 PM.)
2:00 – Featured talk "Archaeological Research on Norse in Greenland" by Christyann Darwent
3:30 – SAS Annual Meeting
5:00 – Socialize at restaurant

"Archaeological Research on Norse in Greenland" by Christyann Darwent

The historical records of Norse settlement and life in Greenland between 986 and 1400 are relatively scarce compared to similar Viking-Norse occupations in the British Isles and Iceland for example. Saga accounts provide some insight, but most of what is known about Norse (and Inuit) in Greenland comes from archaeological investigations of the Eastern and Western Settlements. Bioarchaeological analysis, zooarchaeology, and archaeometric methods such as stable isotope analysis and ancient DNA have enhanced our understanding of changes in Norse hunting practices, diet, and economics (e.g., walrus ivory trade). In addition, recent studies of textiles provide insight into religious practices and gender roles. This talk will review recent archaeological findings and how these support or challenge previous understandings of more than 400 years of Greenlandic Norse life.

Chris Darwent in NW Greenland with walrus skulls

Christyann Darwent, Professor of Archaeology in the Department of Anthropology at University of California Davis (UCD) is a zooarchaeologist interested in how humans adapt to arid, high arctic environments and coastal ecosystems. Professor Darwent's focus lies primarily in animal skeletal remains from archaeological sites and how these remains can shed light on past human subsistence economies and past environments. In support of this interest she manages the Zooarchaeology Lab and Comparative Skeletal Collection at UCD, which includes the Peter D. Schulz Osteoichthyology collection.

Over the past 25 years her arctic field research has taken her to western Alaska, northwestern Greenland, and the high arctic islands of Nunavut. In collaboration with Bowdoin College and the Greenland National Museum, research continued at the site of Iita in northwestern Greenland with support of the National Science Foundation in 2016.

Dr. Darwent received her B.Sc. in Archaeology at the University of Calgary, Canada, M.A. in Archaeology at Simon Fraser University, Canada, and Ph.D. in Anthropology at University of Missouri-Columbia. She teaches upper, lower and graduate level courses in Anthropology including Introduction to Archaeology, Indigenous Arctic Peoples, **Vikings**, Zooarchaeology, Archaeological Theory and Method, and Personal Identification in Forensic Science and has also taught for the Osher Lifelong Learning Institute.

See announcements: https://sacarcheology.org/announcements/ for **webinar access information.**

PAST EVENTS

SAS Webinar "Stuck in Pits: Uncovering the Secrets of Ice Age"

On September 14 via Zoom Mairin Balisi, Raymond Alf Museum of Paleontology updated the attendees on La Brea Tar Pits, a paleontological research site in urban Los Angeles Hancock Park.

SAS Webinar "A Critical Test of the Younger Dryas Impact Hypothesis?"

On October 7, 2024 via Zoom Vance Holliday, Professor Emeritus University of Arizona reviewed the evidence that questions the hypothesis that a meteor was the cause of the Younger Dryas climatic event. The general premise of this theory is that at 12.9 ka North America and other continents were subjected to some sort of extraterrestrial 'event' (either supernova shockwave; meteoritic, cometary, or very low-density object – impact(s); bolide airburst(s); or some combination thereof).

Vance started by showing evidence from the earth's last 2 ½ million years that periodic fluctuations between glacial and interglacial events are common but not necessarily smooth. Blips occur. One argument for the extraterrestrial event is that Younger Dryas is associated with the end of mega fauna. Evidence shows that mega fauna did not died out at one point in time. Instead the points of extinction were variable and differed in time over locations.

A second argument centered on the change in the Clovis Culture. Vance offered evidence that there was not a rapid behavioral shift in the use of Clovis points during Younger Dryas. Stylistic changes naturally occur and the Younger Dryas period does not specifically show a break in the Clovis culture. Clovis technology overlaps with the Folsom style during this period. Finally proponents of the extraterrestrial event point to microscopic deposition from the event. These carbon spherules (i.e. black mat at Murray Springs, Arizona) have been found at a few locations. More instances are needed to prove the theory.

SAS Tour - Indian Grinding Rock State Park

On Saturday, September 28th a group of seven SAS members attended Big Time celebration at Indian Grinding Rock State Park. The event featured a visit to the museum, viewing of the massive group of grinding rocks, entrance to the large Roundhouse to view native American perform traditional dances, and of course, delicious food.

MEMBER'S CORNER

Memberships

We thank everyone who has renewed your membership and welcome David Stuart as a new member.

Election of 2025 Board of Directors

During the Annual Meeting the 2025 Board of Directors will be elected. The following slate of officers is proposed but additional members may still be nominated. We invite members to become involved. Serving on the Board of Directors is a way to influence the content and timing of events. Join us for the annual meeting and consider participation on the Board.

The slate of the board is:

Candidate	Office	Candidate	Office
Jan Johansen	**President**	Rae Ann Eckstrom	**Member at Large**
Paul K. Davis	**Vice-President**	Kim Frasse	**Member at Large**
Debra Brinson or Lynette Blumhard	**Secretary**	Jeremy Johansen	**Member at Large**
Tori Lyon	**Treasurer**	Martie Lewis	**Member at Large**
Tom Johansen	**Past President**	Ruth McElhinney	**Member at Large**
		Carolyn McGregor	**Member at Large**
		Lydia Peake	**Member at Large**
		Roger Peake	**Member at Large**
		Knuti VanHoven	**Member at Large**
		Debra Brinson or Lynette Blumhard	**Member at Large**
		Write in	**Member at Large**

Major Donors for 2023/4

We are pleased to acknowledge our major contributors for 2023/4. These donations support our scholarship program.

Patron ($1000 or more, listed in alphabetical order)
Paul K. Davis and Knuti VanHoven
Dennis Fenwick and Martha Lewis
Jan and Tom Johansen
Ruth McElhinney
Carolyn and Gordon McGregor

Sponsor ($100 - $999)
OSISoft a division of AVEVA
Lynette Blumhardt
Jeannie Coy
Penelope Coy
Paul K. Davis and Knuti VanHoven
George W. Foxworth

Jeremy Johansen
Tori Lyon
Roger and Lydia Peake
Diane Sangster

Annual Memberships

All memberships are renewable on **January 1** annually except for those who joined recently (after September 1 of the previous year). Please support the society by promptly paying your **2025** dues. Remember your dues help make **scholarships** possible. We keep overhead low so that the funds can be used to support students. You may now use our web site https://sacarcheology.org/society-membership/pay-dues/ to renew and make payment using a credit card or Paypal. Remember a membership benefit is email receipt of archaeological/anthropological articles and notices of related events.

The annual dues are:	
Student/Limited Member	$15
Individual Membership	$30
Family Membership	$40
Sponsor	$100 - 999 (individual)
	$500 - 999 (business)
Patron	$1000

Alternatively, please make out your check to "**Sacramento Archeological Society, Inc**." and mail it to:

Sacramento Archeological Society, Inc.
P.O. Box 163287
Sacramento, CA 95816-9287
We really appreciate your support.

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Annual Dues for 2025

Name(s):_____ Email: _____ **Phone:** _____

_____ Email: _____ **Phone:** _____

Address:

_____

_____

Student/Limited Member	$15	____	$_____
Individual Membership	$30	____	$_____
Family Membership	$40	____	$_____
Sponsor	$100	____	$_____
Scholarship Donation			$_____

Total enclosed $_____

ARCHAEOLOGICAL REFERENCES

Recent Articles

The reviewed article(s) chronologically presented (oldest subject first) are:

- "Oldest human genome comes from a Denisonvan – 200,000-year-old DNA shows our now-extinct cousins mated with Neanderthals"
- "Neanderthals in Europe split up"
- "Dynamics of Holocene extinction"
- "Narrative cave art in Indonesia by 51,200 years ago"
- "Ancient monument's builders know their science –Building a Spanish megalith required sophisticated physics, geometry and geology"
- "Fire Power: Ritual Blaze Marks Maya Regime Shift"
- "Frequent disturbances enhanced the resilience of past human populations"
- "History of Medieval Mounts—From the Horse's Mouth"
- "Widespread horse-based mobility arose around 2200 BCE in Eurasia"
- "Digital archive helps researchers track, study stolen antiquities"

"Neanderthals in Europe split up - The continent had at least two distinct populations, DNA hints"

"Neanderthals traveled at least two revolutionary paths on their way to extinction around 40,000 years ago, a new study (Sept. 11, 2024, *Cell Genomics*) suggests. A team led by archaeologist Ludovic Slimak of Université Toulouse III, Paul Sabatier in France and population geneticist Marin Sikora of the University of Copenhagen discovered in 2015 and subsequently analyzed a skeleton found at the entrance of Grotte Mardrin rock-shelter. Several dating methods applied to its teeth and animals buried near his body, as well as his position in Grotte Madrin sediment indicate that this Neanderthal lived between around 50,000 to 42,000 years ago. Analyses of carbon and other diet-related chemical elements in the bones and teeth suggest that he lived during an ice age, which did not develop in Europe until about 50,000 years ago.

Molecular segments representing about 65 percent of the genome were recovered from a molar. The recovered DNA was then compared with DNA from other Neanderthal and present-day people. The arrays of gene variants in his DNA more closely align with the previously reported DNA structure of Neanderthals that lived around 105,000 years ago than with Neanderthals dating to around 50,000 to 40,000 years ago. Whether classified as a separate species or a variant of *Homo sapiens*, Neanderthal has typically been viewed as a genetically consistent population. But this adult male's partial skeleton contains genetic clues to a Neanderthal line that evolved apart from other European Neanderthals for about 50,000 years, nearly up to the time these close relative of *H sapiens* diet out." (Bruce Bower, *Science News*, 2024-10-5 p. 10)

"Oldest human genome comes from a Denisovan 200,000-year-old DNA shows our now-extinct cousins mated with Neanderthals"

"On 11 July 2024 Stéphane Peyrégne gave a talk on a new Denisovan genome from a 200,000-year-old male. He introduced evidence, (a molar found in a deep layer of the Denisovan Cave) that a newly sequenced male represents a distinct population of early Denisovans that interbred multiple times with a group of Neanderthals. The male, labeled Denisova 25 came from a separate population of Denisovans from the girl, known as Denisova 3, and from the other seven Denisovans in the cave. The girl's DNA is more closely related to the Denisovan sequences in living modern humans. This suggests that the older males' population was replaced in the cave by later Denisovans. Denisovans were apparently replaced in the cave by Neanderthals from a period, based on the Neanderthal fossil dated to about 120,000 years ago. By about 60,000 years ago though, the Denisovans had moved back in. The two groups may have even met in the cave—DNA from a bone fragment from a female dated to more than 5,000 years ago shows her mother was a Neanderthal and her father a Denisovan. Later, both DNA and fossils indicate modern humans occupied the cave and Denisovans and Neanderthals did disappear.

Although Denisovans and Neanderthals apparently interbred, their lineages are distinct: They diverged from a common ancestor at least 400,000 years ago. The ancestors of Neanderthals settled in Europe and the Middle East, whereas Denisovans headed father east into Asia where they evolved separately, acquiring roughly 300,000 genetic changes that differentiate them from Neanderthals." (Ann Gibbons, *Science*, V385, 2024-7-19 pp. 240-241)

"Dynamics of Holocene extinction"

"Many species of megafauna have gone extinct concomitant with the spread of humans across the globe and with radical climatic shifts. However, why these organisms went extinct has been difficult to determine. Fordham *et al.* considered ancient DNA and the fossil recording spatiotemporal simulations to estimate what dynamics led to the extinction of the woolly rhinoceros. These models predicted that woolly rhinoceros populations became fragmented and eventually trapped in regions with suboptimal climates. Population decline in these isolated groups was then compounded by low but consistent levels of hunting by humans. Many endangered species today face these same issues, making these considerations important for conservation efforts." (Corinne N. Simonti, Proc. Natl. Acad. Sci. U.S.A. (2024) 10.1073/pnas.2316419121) (*Science*, V385, 2024-7-5 p. 41)

"Narrative cave art in Indonesia by 51,200 years ago"

"Previous dating research indicated that the Indonesian island of Sulawesi is host to some of the oldest known rock art. That work was based on solution uranium-series (U-series) analysis of calcite deposits overlying rock art in the limestone cave of Maros-Pangkep, South Sulawesi. In this article researchers report on the use of a novel application of laser-ablution U-series imaging to re-date some of the earliest cave art in this karst area and determine the age of

stylistically similar motifs at other Maros-Pangkep sites. This method provides an enhanced spatial accuracy, resulting in older minimum ages for previously dated art. They show that a hunting scene from Leang Bulu' Sipong 4, which was originally dated using the previous approach to a minimum of 43,900 thousand years ago (ka) has a minimum age of 50.2±2.2 ka and so is at least 4,040 years older than thought. Using the imaging approach, they also assign a minimum age of 53.5±2.3 ka to a newly described cave art scene at Leang Karampuage. Painted at least 51,200 years ago, this narrative composition, which depicts human-like figures interacting with a pig, is now the earliest known surviving example of representational art, and visual storytelling, in the world. Their findings show that figurative portrayals of anthropomorphic figures and animals have a deeper origin in the history of modern human image-making than recognized to date, as does their representation in composed scenes." (Adhi Agus Oktavian, *et al. Nature*, V631, 2024-7-25 pp. 814-818)

"Ancient monument's builders know their science

Building a Spanish megalith required sophisticated physics, geometry and geology"

"In southern Spain stands a giant, earth-covered monument upheld by gargantuan stone blocks and pillars that has withstood 6000 years of rain, wind, and earthquakes. In a study published in "Science Advances" researchers argue that the builders of The Dolmen of Mengas had a sophisticated understanding of engineering and scientific principles.

Massive monuments called megaliths are a hallmark of the Neolithic period, which began in Europe in about 7000 BCE coinciding with the early domestication of plants and animals. Menga is one of the largest and best studied; its 32 limestone rocks weigh a cumulative 1140 tons and include one of the largest stones ever moved in Europe's prehistory, at 150 tones. Its roofed and walled structure is still nearly entirely intact. Although archaeologists aren't totally sure what Menga was used for, similar Neolithic structures were tombs.

In the paper, the team reports that Menga's builders embedded more than one-third of the wall stones deep into the bedrock for stability. The researchers teased out the order in which all 32 stones were placed, finding they were slotted together somewhat like Tetrus pieces. The blocks were placed with high precision, locked with each other, so they support each other and the whole block. For fortification and waterproofing, a mound of smaller rocks and soil was placed on top of the roof. The heaviest stone has a slight convex shape, which distributes its load to the sides, making Menga the earliest known structure to deploy the principle of the arch.

Minuscule fragments of fossilized algae, crustaceans, and mollusks found in the stones indicate they came from a quarry of sedimentary rocks about 850 meters from the site 50 meters higher. Other researchers have argued the blocks were probably rolled across on a bed of logs, but the authors suggest sledges would have worked better, giving the soft stone a gentler ride." (Hannah Richter, *Science*, V385, 2024-8-30 p. 923)

"Fire Power: Ritual Blaze marks Maya Regime Shift"

"The ancient Maya were organized into several kingdoms, some of which began to collapse from around AD 760. Archaeologists have now found evidence from the ritual burning of the remains of Maya royals—an event that probably marked a major change in the political regime of one Maya kingdom.

Christina Halperin at the University of Montreal in Canada and her colleagues discovered burnt human remains and artifacts in a pyramid at a Maya site in Guatemala. The artifacts included a precious-stone mask of a type typically placed in royal tombs, fragments of a diadem and many personal ornaments made from jade. These suggest that the remains belonged to May royals.

The researchers estimate that one of the individuals died up to a century before the fire, which occurred between AD 773 and 881, when the bodies and their ornaments were moved out of the original tomb to be burnt.

The authors say that the fire, which was probably a public event, marked the destruction of an earlier dynastic line and the start of a new reign that seems to have begun with a leader named Papmalit." (Antiquity https://doi.org/mr4g (2024))" (*Nature*, V628, 2024-4-25 p. 693)

"Frequent disturbances enhanced the resilience of past human populations"

"The record of past human adaptations provides crucial lesson for guiding responses to crises in the future. To date, there have been no systematic global comparisons of humans' ability to absorb and recover from disturbances through time. In this article the researchers synthesized resilience across a broad sample of prehistoric population time-frequency data, spanning 30,000 years of human history. Cross-sectional and longitudinal analyses of population decline show that frequent disturbances enhance a population's capacity to resist and recover from later downturns. Land-use patterns are important mediators of the strength of this positive association: farming and herding societies are more vulnerable but also more resilient overall. The results show that import trade-offs exist when adopting new or alternative land-use strategies." (Philip Riris *et. al. Nature*, V629, 2024-5-23 pp. 837-842)

"History of Medieval Mounts—From the Horse's Mouth"

"Horses were central to life in medieval England as farm labor, in battle and for transport; they also served as status symbols. Alexander Pryor at the University of Exeter, UK and his colleagues were able to glean information about the international reach of medieval horse-trading networks from an usual source: a horse cemetery near Westminster, in what is now central London, that was the final resting place of what were probably elite animals owned by elite households.

Using historical records, radiocarbon dating of the animals' skeletons and an analysis of horseshoes found with the remains, the team dated the horses to around 1425 - 1517. Chemical analysis of teeth from 15 horses revealed that although some of them were probably born and raised in the London area or the nearby chalk uplands, others hailed from farther

afield, perhaps Scandinavia or the Western Alps. Both mares and stallions had been moved long distances.

The teeth also revealed early years of sedentary living for some horses, for training and other purposes, before they began their working lives." (Sci. Adv. 10. Eadj5782 (2024)) (*Nature*, V628, 2024-4-4 p. 11)

"Widespread horse-based mobility arose around 2200 BCE in Eurasia"

"Horses revolutionized human history with fast mobility. However, the timeline between their domestication and their widespread integration as a means of transport remain contentious. In this article the researchers assemble a collection of 475 ancient horse genomes to assess the period when these animals were first reshaped by human agency in Eurasia. They found that reproductive control of the modern domestic lineage emerged around 2200 BCE, through close-kin mating and shortened generation times. Reproductive control emerged following a severe domestication bottleneck starting no earlier than approximately 2700 BCE, and coincided with a sudden expansion across Eurasia that ultimately resulted in the replacement of nearly every local horse lineage. This expansion marked the rise of widespread horse-based mobility in human history, which refutes the commonly held narrative of large horse herds accompanying the massive migration of steppe peoples across Europe around 3000 BCE and earlier. Finally, the researchers detected significantly shortened generation times at Botai around 3500 BCE, a settlement from central Asia associated with corrals and a subsistence economy centered on horses. This supports local horse husbandry before the rise of modern domestic bloodlines." (Pablo Librado *et. al. Nature*, V631, 2024-7-25 pp. 819-825)

"Digital archive helps researchers track, study stolen antiquities"

"Organizers of a new online catalog of nearly 1 million looted cultural artifacts hope it will help reduce the illegal global trade in these objects. The Museum of Looted Antiquities, which debuted last month at mola.omeka.net provides details about the artifacts—such as bronze statues and clay sculptures—drawn from 800 repatriation cases that returned them to their rightful owner or country of origin. The digital archive, which also features online-only exhibits about select artifacts, gathers information difficult to obtain elsewhere because museums typically delete it from their records after they return stolen items. Organizers used financial records for about 650,000 of the repatriated artifacts to produce what they call the first reliable minimum estimate of the of the global trade's value: at total of $2.5 million since 1950. Researchers can also use the data to study the harm to communities from which artifacts were looted. A *Science* interview with the organizers is at smim.ag/MOLA." (*Science*, V385, 2024-7-5 p. 9)

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