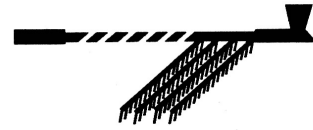


# CALUMET



Newsletter of the Indian Peaks Chapter of the Colorado Archaeological Society  
October, 2010

## CALENDAR OF EVENTS

Presentation (lecture) meetings are held in the University of Colorado Museum, Dinosaur Room on the Second Thursday of most Months, at 7:00 PM. **The public is always welcome.**

**Web Site: WWW.INDIANPEAKSARCHAEOLOGY.ORG**

- October 1-3** CAS Annual Meeting, Gunnison  
**October 6-9** Plains Anthropological Conference, Bismarck, ND  
**October 7** IPCAS Executive Board Meeting, 7:30PM  
**October 8-11** Utah Rock Art Research Association symposium, in Blanding, UT  
**October 14** **IPCAS Presentation Meeting**, Dr. Alice Tratebas, Newcastle, Wyoming BLM,  
Topic: Whoop-up Canyon - dating, fire damage, and finished photogrammetry  
**October 20-23** Great Basin Anthropological Conference, Layton, UT  
**October 20** Boulder PAAC, Colorado Archaeology (start, 1 of 7)  
**October 27** Boulder PAAC, Colorado Archaeology (session 2)
- November 3** Boulder PAAC, Colorado Archaeology (session 3)  
**November 4** IPCAS Executive Board Meeting, 7:30PM  
**November 10** Boulder PAAC, Colorado Archaeology (session 4)  
**November 11** **IPCAS Presentation Meeting**, TBA  
**November 17** Boulder PAAC, Colorado Archaeology (session 5)
- December 1** Boulder PAAC, Colorado Archaeology (session 6)  
**December 2** IPCAS Executive Board Meeting, 7:30PM  
**December 8** Boulder PAAC, Colorado Archaeology (end, session 7)  
**December 9** **IPCAS Christmas Party**, TBA

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## October Presentation

Dr. Alice Tratebas, Newcastle, Wyoming BLM

Whoop-up Canyon - Dating, Fire Damage, and Finished Photogrammetry

A description from John Slay, retired Archaeologist and IPCAS member:

“Alice was a staff archaeologist with the South Dakota Archaeological Research Center (SADARC) when I was assigned as the archaeologist for the Black Hills National Forest in 1977! Alice completed many contracts for the Forest Service while I was in the Black Hills and we were lucky to be able to hire her! She was a very skilled and a talented field archaeologist. And I never had to "red-line" and return her reports for corrections! I recall that she used a great deal of data from the area of the Black Hills in her Ph.D. dissertation.

You may know that Alice has had a long-time interest in rock art and she has had a long and productive interest in the area of Whoop-Up Canyon! Actually, Alice is well known in the international world of rock art, especially in the research she has done in the relations between Asia and North American rock art. ‘The oldest rock art in North America may be linked to Asian rock art by shared themes that derive from ancient legends and beliefs’ - that is a quote from one of Alice's many papers that I have read; sorry I cannot recall which one!

You can expect a great presentation from Alice with fantastic photos and lots of factual information”.

## COLORADO ARCHAEOLOGICAL SOCIETY

### 2010 RAFFLE

*For the Benefit of the Alice Hamilton Scholarship Fund*



*CAS is proud to announce the offering of “Peñasco Blanco”  
An oil painting by noted Alamosa artist David Montgomery*

The well-known ruin depicted is located in Chaco Canyon National Historic Park in NW New Mexico. Peñasco Blanco is an unexcavated great house, built concurrently with Pueblo Bonito and Una Vida, unique in design (oval), and connected to several Chacoan roads to the west. This light-filled work measures 11’x14”, mounted in a gold leaf carved frame. Mr. Montgomery is a well-known artist of the San Luis Valley and Southwest open air spaces, landscapes, ruins and rock art. His bio sketch is attached.

As in the past several years, raffle tickets are sold by CAS Chapters to Members and to the general public as a fund-raising effort for CAS’s Alice Hamilton Scholarship Fund. CAS makes annual awards to qualifying Colorado archaeology students.

This work of art was originally donated by Ms. Gayle Andresen, Denver. It was raffled in 2006 and won by Mr. Don Nordstrom, formerly Denver Chapter and close friend of Alice Hamilton, the Scholarship’s namesake. Mr. Nordstrom passed away and his family has re-donated it to again raise funds for this worthwhile Scholarship. The value is estimated at \$800+.

*The raffle drawing will be held at 7:00 pm on December 7, 2010 during the CAS Hisatsinom Chapter meeting at the Cortez Cultural Center in Cortez, CO. The winner need not be present.*

***Raffle ticket prices are \$3 each or 4 for \$10.***

For additional info, contact \_\_\_\_\_ at \_\_\_\_\_ or [www.coloradoarchaeology.org](http://www.coloradoarchaeology.org)

## **Archaeologists Uncover Land Before Wheel; Site Untouched for 6,000 Years**

ScienceDaily (Apr. 6, 2010) — A team of archaeologists from the University of Chicago's Oriental Institute, along with a team of Syrian colleagues, is uncovering new clues about a prehistoric society that formed the foundation of urban life in the Middle East prior to invention of the wheel.

The mound of Tell Zeidan in the Euphrates River Valley near Raqqa, Syria, which had not been built upon or excavated for 6,000 years, is revealing a society rich in trade, copper metallurgy and pottery production. Artifacts recently found there are providing more support for the view that Tell Zeidan was among the first societies in the Middle East to develop social classes according to power and wealth.

Tell Zeidan dates from between 6000 and 4000 B.C., and immediately preceded the world's first urban civilizations in the ancient Middle East. It is one of the largest sites of the Ubaid culture in northern Mesopotamia.

Thus far, archaeologists have unearthed evidence of this society's trade in obsidian and production and development of copper processing, as well as the existence of a social elite that used stone seals to mark ownership of goods and culturally significant items.

"The project addresses questions not only of how such societies emerged but how they were sustained and flourished," said John Yellen, program director for archaeology in the National Science Foundation's (NSF) Social, Behavioral & Economic Sciences directorate. NSF supports the University of Chicago's research.

Covering about 31 acres, Tell Zeidan was situated where the Balikh River joins the Euphrates River in modern-day Syria. The location was at the crossroads of major, ancient trade routes in Mesopotamia that followed the course of the Euphrates River valley. The Ubaid period lasted from about 5300 to 4000 B.C.

"This enigmatic period saw the first development of widespread irrigation, agriculture, centralized temples, powerful political leaders and the first emergence of social inequality as communities became divided into wealthy elites and poorer commoners," said Gil Stein, director of the Oriental Institute and a leader of the expedition.

"The research also is important because it provides insight into how complex societies, based on linkages which extended across hundreds of miles, developed," said Yellen, noting the distance traveled for raw materials needed for many of the Tell Zeidan artifacts.

For example, copper ore was carried by workers from sources near modern-day Diyarbakir, Turkey, about 185 to 250 miles away, then smelted at Tell Zeidan to produce metal tools and other implements.

One of the most remarkable finds was a stone stamp seal depicting a deer, Stein said. The seal was about two inches by two-and-a-half inches and was carved from a red stone not native to the area. A similar seal design was found 185 miles to the east near Mosul in northern Iraq.

"The existence of very elaborate seals with near-identical motifs at such widely distant sites suggests that in this period, high-ranking elites were assuming leadership positions across a very broad region, and those dispersed elites shared a common set of symbols and perhaps even a common ideology of superior social status," said Stein.

Stein said the location's potential for further discoveries is so great the project is likely to last for decades.

## **Americans Cultivated And Traded Chili Peppers 6,000 Years Ago**

ScienceDaily (Feb. 16, 2007) — Smithsonian researchers and colleagues report that across the Americas, chili peppers (*Capsicum* species) were cultivated and traded as early as 6,000 years ago--predating the invention of pottery in some areas of the Americas. The researchers analyzed starch grains to trace the history of chili peppers in the Americas. Their findings contribute significantly to the current understanding of ancient agricultural practices in the Americas. The report is published in the Feb. 16 issue of the journal *Science*.

When Europeans arrived in the Americas, chili peppers were among the most widespread of the plants domesticated in the New World. However, the chronology and precise geography of their origins and early dispersals had been very poorly understood. Tropical environments, where many chili varieties were first domesticated and then incorporated into prehistoric farming systems, degrade most organic archaeological remains, washing away and decomposing all but the most durable evidence of ancient human activities. Lead author Linda Perry, of the Smithsonian's National Museum of Natural History, and colleagues overcame this obstacle by identifying chili pepper starch grains. The starch microfossils were found at seven sites dating from 6,000 years ago to European contact and ranging from the Bahamas to southern Peru.

The Smithsonian holds the most extensive reference collection of microscopic plant remains available to archaeologists--starch, pollen grains and microfossils called phytoliths. The team of researchers adding to this collection discovered that starch grains from chili peppers, members of the genus *Capsicum*, are shaped like red blood cells, with a strong, central line or split on the side. "Sorting through microscopic particles and finding a type that distinguishes such an important plant group is like opening a window to the past," Perry said. "While we once based our understanding of chili peppers on rare sites with exceptionally good preservation, suddenly we are able to gain incredible insight into ancient agriculture, trade and cuisine by making these plants visible nearly everywhere they occurred."

Cultivated chili starch grains are discernible from those of wild chilies. The remains of these domesticated chili peppers were often found with corn, forming part of a major, ancient food complex that predates pottery in some regions. The oldest *Capsicum* starch grains were found in southwestern Ecuador at two sites dating to 6,100 years ago. The chili remains were associated with previously identified corn, achira, arrowroot, leren, yucca, squash, beans and palm fruit, adding to the picture of an early, complex agricultural system in that region. Ecuador is not considered to be the center of domestication for any of the five domesticated chili species. A more ancient record of the domestication and spread of chili peppers awaits investigators working in other regions where wild chilies were first brought into cultivation.

In Panama, chilies occurred with corn and domesticated yams that dated 5,600 years before present (ybp). Chilies were found at a site occupied 4,000 ybp in the Peruvian Andes, with microscopic remains of corn, arrowroot and possibly potato. In this case, the chilies were identified as the species *C. pubescens*. The rocoto pepper, a cultivar of this species, is still a staple in the Peruvian diet. Newer sites in the Bahamas (1,000 ybp) and in Venezuela (500-1,000 ybp) also yielded remains of both corn and chilies. "It's hard to imagine modern Latin American cuisine without chili peppers," said co-author Dolores Piperno, Smithsonian scientist at the National Museum of Natural History and at the Smithsonian Tropical Research Institute in Panama. "We demonstrate that prehistoric people from the Bahamas to Peru were using chilies in a variety of foods a long time ago. The peppers would have enhanced the flavor of early cultivars such as maize and manioc and may have contributed to their rapid spread after they were domesticated."

Authors: Linda Perry, Smithsonian National Museum of Natural History (NMNH); Ruth Dickau and Sonia Zarillo, University of Calgary; Irene Holst, Smithsonian Tropical Research Institute (STRI); University of Calgary; Deborah Pearsall, University of Missouri; Dolores Piperno, NMNH/STRI; Mary Jane Berman, Miami University; Richard G. Cooke, STRI; Kurt Rademacher, University of Maine; Anthony J. Ranere, Temple University; J. Scott Raymond, University of Calgary; Daniel H. Sandweiss, University of Maine; Franz Scaramelli, Instituto Venezolano de Investigaciones Cientificas; Kay Tarble, University Central de Venezuela, Caracas; and James A. Zeidler, Colorado State University.

## **Easter Island Discovery Sends Archaeologists Back to Drawing Board**

ScienceDaily (May 12, 2010) — Archaeologists have disproved the fifty-year-old theory underpinning our understanding of how the famous stone statues were moved around Easter Island. Fieldwork led by researchers at University College London and The University of Manchester, has shown the remote Pacific island's ancient road system was primarily ceremonial and not solely built for transportation of the figures.

A complex network of roads up to 800-years-old crisscross the Island between the hat and statue quarries and the coastal areas. Lying alongside the roads are dozens of the statues, or moai. The find will create controversy among the many archaeologists who have dedicated years to finding out exactly how the moai were moved, ever since Norwegian adventurer Thor Heyerdahl first published his theory in 1958. Heyerdahl and subsequent researchers believed that statues he found lying on their backs and faces near the roads were abandoned during transportation by the ancient Polynesians. But his theory has been completely rejected by the team led by Manchester's Dr Colin Richards and UCLA's Dr Sue Hamilton.

Instead, their discovery of stone platforms associated with each fallen moai -- using specialist 'geophysical survey' equipment -- finally confirms a little known 1914 theory of British archaeologist Katherine Routledge that the routes were primarily ceremonial avenues. The statues, say the Manchester and UCL team just back from the island, merely toppled from the platforms with the passage of time. "The truth of the matter is, we will never know how the statues were moved," said Dr Richards.

"Ever since Heyerdahl, archeologists have come up with all manner of theories -- based on an underlying assumption that the roads were used for transportation of the moai, from the quarry at the volcanic cone Rano Raraku. "What we do now know is that the roads had a ceremonial function to underline their religious and cultural importance. "They lead -- from different parts of the island -- to the Rano Raraku volcano where the Moai were quarried.

"Volcano cones were considered as points of entry to the underworld and mythical origin land Hawaiki. "Hence, Rano Ranaku was not just a quarry but a sacred center of the island." The previous excavation found that the roads are concave in shape -making it difficult to move heavy objects along them. And as the roads approach Rano Raraku, the statues become more frequent -- which the team say, indicated an increasing grades of holiness.

"All the evidence strongly shows that these roads were ceremonial -- which backs the work of Katherine Routledge from almost 100 years ago, " said Dr Sue Hamilton. "It all makes sense: the moai face the people walking towards the volcano. "The statues are more frequent the closer they are to the volcano -- which has to be way of signifying the increasing levels of importance." She added: "What is shocking is that Heyerdahl actually found some evidence to suggest there were indeed platforms. "But like many other archaeologists, he was so swayed by his cast iron belief that the roads were for transportation -- he completely ignored them."

## **Extreme Archaeology: Divers Plumb the Mysteries of Sacred Maya Pools**

ScienceDaily (July 22, 2010) — Steering clear of crocodiles and navigating around massive submerged trees, a team of divers began mapping some of the 25 freshwater pools of Cara Blanca, Belize, which were important to the ancient Maya. In three weeks this May, the divers found fossilized animal remains, bits of pottery and -- in the largest pool explored -- an enormous underwater cave.

This project, led by University of Illinois anthropology professor Lisa Lucero and funded by the National Geographic Society and an Arnold O. Beckman Award, was the first of what Lucero hopes will be a series of dives into the pools of the southern Maya lowlands in central Belize. The divers will return this summer to assess whether archaeological excavation is even possible at the bottom of the pools, some of which are more than 60 meters deep. "We don't know if it's going to be feasible to conduct archaeology 200 feet below the surface," Lucero said. "But they are going to try."

The Maya believed that openings in the earth, including caves and water-filled sinkholes, called cenotes (sen-OH-tays), were portals to the underworld, and often left offerings there. Ceremonial artifacts of the Maya have been found in pools and lakes in Mexico, but not yet in Belize. Maya structures have been found near two of the eight pools the team surveyed. "The pools with the most substantial and most obvious settlement at the edge also turn out to be the deepest that we know," Lucero said. The divers so far have explored eight of the 25 known pools of Cara Blanca.

The use of these pools at the end of the Late Classic period (roughly A.D. 800-900) corresponds to an enduring drought that deforested parts of Central America and -- some believe -- ultimately drove the Maya from the area. The need for fresh water could have drawn the Maya to the pools, Lucero said. No vessels other than water jars were found in the structures built near the pools. "They could have been making offerings to the rain god and other supernatural forces to bring an end to the drought," she said.

Patricia Beddows, one of the divers and a hydrologist and geochemist at Northwestern University, found that the chemistry of the water in each of the pools was distinct. She also found that the water in Pool 1, the pool with the huge cave and a Maya structure at its edge, held the freshest water of the pools surveyed. But the water contained a lot of soluble minerals, Lucero said, making it problematic for anyone who used it as their primary water supply. Those who drank the water over an extended period would have been at risk of developing kidney stones, she said.

The divers extracted core samples of the sediment at the bottoms of two of the pools. An analysis of the soil, debris and pollen in the cores will offer insight into the natural history of the cenotes and the surrounding region.

Lucero recruited expert cave exploration divers for the expedition. She provided food, lodging and other basics, but the divers donated their time and expertise. The dive team included Robbie Schmittner, Kim Davidsson (an independent cave dive instructor), Bill Phillips, and videographer Marty O'Farrell, who produced the video. The research team also included archaeologist Andrew Kinkella, of Moorpark College. In Pool 1, Kinkella and diver Edward Mallon recovered ceramic jar shards in the wall of the pool just below the Maya structure. Three more divers, Steve Bogaerts, James "Chip" Petersen and still photographer Tony Rath will join the project this summer.

Lucero has studied Maya settlements and sacred sites in Belize for more than 20 years, and works under the auspices of the Institute of Archaeology, which is part of the National Institute of Culture and History, Government of Belize.

## **Finding Rewrites The Evolutionary History Of The Origin Of Potatoes**

ScienceDaily (Oct. 4, 2005) — MADISON - Humans have cultivated potatoes for millennia, but there has been great controversy about the ubiquitous vegetable's origins. This week, writing in the Proceedings of the National Academies of Sciences, a team led by a USDA potato taxonomist stationed at the University of Wisconsin-Madison has for the first time demonstrated a single origin in southern Peru for the cultivated potato.

The scientists analyzed DNA markers in 261 wild and 98 cultivated potato varieties to assess whether the domestic potato arose from a single wild progenitor or whether it arose multiple times - and the results were clear, says David Spooner, the USDA research scientist who led the study.

"In contrast to all prior hypotheses of multiple origins of the cultivated potato, we have identified a single origin from a broad area of southern Peru," says Spooner, who is also a UW-Madison professor of horticulture. "The multiple-origins theory was based in part on the broad distribution of potatoes from north to south across many different habitats, through morphological resemblance of different wild species to cultivated species, and through other data. Our DNA data, however, shows that in fact all cultivated potatoes can be traced back to a single origin in southern Peru."

The earliest archaeological evidence suggests that potatoes were domesticated from wild relatives by indigenous agriculturalists more than 7,000 years ago, says Spooner. Today, the potato - an international dietary staple - is a major crop in both the United States and in Wisconsin, which is fourth in the nation for potato production. Potato diseases such as late blight can cause significant economic damage to farmers in America and throughout the world.

"As a taxonomist, my job is to help determine what is a species and to classify those species into related groups," Spooner explains. "Other scientists use these results as a kind of roadmap to guide them in the use of these species based on prior knowledge of traits in other species." Spooner spends about two months each year trekking through the mountains of South America, collecting and identifying wild potatoes and researching them. "When researchers discover an important trait - for example, that a certain species is resistant to disease - then everything related to that species becomes potentially useful," Spooner says. "We can screen samples to see if related germplasm has similar resistance, in which case we may be able to guide plant breeders to germplasm to use in breeding programs." And beyond the agricultural benefits, Spooner's study has helped to rewrite a small but important chapter of evolutionary history.

"Books are written about questions of how crops originate," he says. "Sometimes statements are repeated so often that they are accepted as fact. This is a way to get people to reconsider long-held assumptions of the origin of the potato, and stimulate us to reconsider the origins of other crops using new methods."

Spooner's collaborators included colleagues from the Genome Dynamics Programme at the Scottish Crop Research Institute in Scotland. The work was supported financially by the USDA Agricultural Research Service, by the USDA's Foreign Agricultural Service, and by the Scottish Executive Environment and Rural Affairs Department.

## **Is there a valid connection between Astrology and pre-historic cave paintings?**

I never thought there was until I was living in Southwest France and came across an article about the famous cave of Lascaux. The title, *Lascaux Prehistoric Planetarium?* suggested that the prehistoric cave paintings were actually animal representations of the zodiac. How could any astrologer resist such a title? **There was just one slight problem; since the article was in a French publication, it was, naturally, in French.** My Sagittarian Moon dared me to tackle the translation and at the same time, to visit Lascaux and see the cave for myself. Armed (Mercury in Aries) with Webster's Pocket French Dictionary, I was confident that my Taurus Sun would keep me on task. The following is a loose but sincere translation of the article.

### **THE PAINTERS OF LASCAUX WERE ASTRONOMERS**

Cro-Magnon men painted a zodiac on the walls of the cave, which showed the formation of the sky in the Magdalenian era, 17,000 years ago. This discovery of ancient astronomy, if confirmed, could change our understanding of pre-historic art and also of the people who painted the pictures. Research conducted and revealed in this article by independent prehistoric-astronomer, Chantal Jegues-Wolkiewiez could revolutionize presently held concepts of prehistoric man's knowledge of astronomy.

At the center of the controversy is Lascaux cave. A natural rock formation in the Dordogne region of southwest France that existed for 17,000 years before four teenage boys accidentally discovered it in 1940. Since that time the paintings found in the majestic Hall of Bulls in the cave are considered to be one of the highest achievements of humanity and have astounded and mystified both art historians and prehistoric archeologists.

## THE FIRST ZODIAC?

In November 2000 Chantal Jegues-Wolkiewiez presented a paper at the International Symposium of Prehistoric Art in Italy. The paper was entitled, Lascaux, the Magdalenians View of the Sky. In it, paleo-astronomer, Jegues-Wolkiewiez, states that the cave paintings were records of the zodiac constellations, fixed stars and the solstice points. She confirmed her thesis by showing that all the constellations of the zodiac except Aquarius and part of Pisces are represented by the animals in their natural state of that time. The precision of the respective orientations as well as the presence of the figure of the setting Sun demonstrates that Cro-Magnon men were remarkable observers of the sky.

This announcement that Paleolithic men were great astronomers as well as extraordinary artists was revolutionary. The idea that they marked the zodiac belt as a band of sky that holds twelve constellations dancing in an eternal circle following the path of the Sun and that they painted these calculations on rock puts our understanding of the history of astronomy in a radically new light. In effect this says that in far-off time men represented the actual constellations by drawing/tracing them on the pictures of certain animals particularly the bull. If this is true then they preceded the Babylonian astronomers by 10,000 years. These were surprising statements...

## HOW DID THEY DO IT?

In order to represent the constellations in the cave, the ancient painters/astronomers had to find a way to mark the lines between the stars, similar to amateur astronomers today who know how to make angles by using their fingers to measure distances between the different stars. Perhaps these Cro-Magnon men used sticks as rulers to mark and measure the height of certain stars in the sky. When they returned to the cave the painters traced the drawing of the sky from their observation. According to Chantal Jegues-Wolkiewiez, these first astronomer/painters were already capable of using the stars as heavenly guides to find the position of the stars that were not visible above the horizon.

But how did Chantal Jegues-Wolkiewiez arrive at this conclusion? In 1999 she joined with Jean-Michel Geneste, a member of the team who studied the Grotto at Chauvert in Ardeche. The idea that certain paintings at Lascaux represent stars or constellations was not new. But it was never verified by serious scientific studies based on astronomical measurements. This is exactly what Jean-Michel Geneste proposed that he and Chantal Jegues-Wolkiewiez should do.

From the first contact with the cave and the immense and poignant Hall of Bulls the two scientists followed scientific procedures, which was different from past research. A constant humidity and temperature was maintained in the interior of the cave and Jegues- Wolkiewiez scientifically demonstrated that the Lascaux paintings were 17,000 years old by using the Carbon 14 dating technique.

The paleo-astronomers made constructions of the sky in the Magdalenian period, which was different from our sky today, using astronomical software (*unfortunately not named*). They made models of the western map of each constellation. Then they made measurements of the orientation of all the paintings according to an astronomical compass, which is precise to half of azimuth (an arc of the heavens extending from the zenith to the horizon, which it cuts at right angles). Finally through further measurement they compared the outlines of the paintings in the Hall of Bulls with the sky in Magdalenian times.

Then from measurements taken on site the scientists established that the entrance to Lascaux cave faces west and slopes downward at a 12-degree angle. This was the plan that the paleo-astronomers presented: to prove that the NW entrance to the cave was identical to the one perceived by the prehistoric artists and that the 12 degree angle of the entrance led to the paintings in the Hall of the Bulls. From this Jegues-Wolkiewiez conjectured that the rays of the setting Sun at the Summer Solstice penetrated into the cave and touched certain paintings.



## **JUNE 19 AT 21 HOURS GMT**

There was only one way to confirm this: to observe the direction of the light of the setting Sun on the following Summer Solstice on June 19, 1999. The point on the horizon where the Sun sets on the Solstice is a point which does not vary significantly from year to year and century to century.

Jegues-Wolkiewiez then verified her hypothesis that the rays of the setting sun at the Summer Solstice 17,000 years ago could have penetrated into the cave at Lascaux. She concluded that it was possible that these rays lit up the painting of the Red Bull on the back wall in the Hall of Bulls with an experiment. On the Summer Solstice June 21, 1999 Jegues-Wolkiewiez went to the Lascaux cave. At 21h GMT she observed the last rays of the setting Sun hitting the entrance to the cave for 15 minutes.

“On June 19 at 21h we saw the solar rays lighting, little by little, for 15 minutes, the large opening which marked the entrance of the cave” said Chantal Jegues-Wolkiewiez. She also stated that 17,000 years ago the last rays of the Sun during other Summer solstices lit the paintings of Lascaux! The discovery constitutes a revolution of all previous knowledge on the subject of prehistoric caves and on the art of the times.

## **THE HALL OF BULLS**

In order to explain the predominance of bulls in the prehistoric zodiac, Chantal Jegues-Wolkiewiez says that it was precisely the constellation Taurus that culminated in the Summer Solstice sky and was of primary importance to prehistoric painters. The entire Hall of Bulls is proposed to correspond to the constellation Taurus. The eye of the Bull is in alignment with the supergiant Alderbaran in the center of the constellation. While there are also stars configured that make up the Hyades which encircle the eye of Alderbaran. The Pleiades are above his shoulder.

Further examples are found in the Facing Bulls who stand opposite each other. According to Jegues-Wolkiewiez these bulls align with the constellations of Taurus and Scorpio. That these constellations are not visible in- the same sky at the time of the opposition strengthens her theory that Cro-Magnons possessed a direct knowledge of astronomy. Parts of these same bulls also correspond to the rising and setting opposition of the fixed stars of Alderbaran (the eye) in Taurus and to Antares in the Scorpio Bull.

## **THE FALLING HORSE**

At the end of the Axial Gallery is an animal unique to Lascaux- the upside down or Falling Horse. The legs and the head of this horse are visible in the passageway and raised towards the sky while the lower half of the body is hidden behind a fold of the wall. “I have measured the direction indicated by this horse and found it to be the point where the Sun rises on the first day of winter”, explains the scientist.

This hypothesis is strengthened by the presence above the Falling Horse of another horse that is identical to the one in the main Hall of Bulls. This second horse is placed above the bulls and corresponds to the constellations of Leo and Scorpio. The mane of this horse points to the brilliant star Arcturus and is exactly visible at the end of winter at the point above the horizon where the Sun rises. As the horse above in profile corresponds to the Sun at Spring Equinox, so below, the Falling Horse relates to the Sun at Winter Solstice.

Art historians have long been delighted that the cave paintings are accurate to a minute degree in their knowledge of animal anatomy and seasonal habits of each species. But that is not what is important. What is implied is that each painting in the Hall is aligned with a corresponding zodiac constellation. “This is what we hold to be true”, said Chantal Jegues-Wolkiewiez. It is the positions and relationships of the animals that indicate astronomical knowledge of the solstice positions, the constellations and the fixed stars.

Her computer simulations, her measurements and the experiment at the cave itself, all led her to conclude that Cro-Magnon man did indeed possess the mathematical abilities to calculate and project the positions of the stars regardless of their visibility. In other words, she puts forth the theory that Cro-Magnon man was not only an artist but also an astronomer and a mathematician.

## CONCLUSION

In the interests of objectivity, author Pedro Lima ends the article with the comments from several French scientists who say that Jegues-Wolkiewiez's discoveries at the cave at Lascaux should be viewed as one isolated incident and that they must be verified by other studies and measurements in other caves of the same period. The scientists also argued that with the millions of stars in the sky there would always be some that could be found to be in correspondence to the paintings or to anything.

Lima's final statement is that perhaps other researchers will confirm the conclusion for themselves, by statistical studies on many caves using a multi-dimensional approach. Perhaps further research will prove that prehistoric men were also astronomers and that, in the Magdalenian Period, ancient men held religious beliefs that were contained and revealed in the sky, and were of primary importance to them. Perhaps Cro-Magnon man did look to the stars for answers to the deepest human questions.

## Ancient Humans Left Evidence From The Party That Ended 4,000 Years Ago

ScienceDaily (July 22, 2009) — The party was over more than 4,000 years ago, but the remnants still remain in the gourds and squashes that served as dishware. For the first time, University of Missouri researchers have studied the residues from gourds and squash artifacts that date back to 2200 B.C. and recovered starch grains from manioc, potato, chili pepper, arrowroot and algarrobo. The starches provide clues about the foods consumed at feasts and document the earliest evidence of the consumption of algarrobo and arrowroot in Peru.

"Archaeological starch grain research allows us to gain a better understanding of how ancient humans used plants, the types of food they ate, and how that food was prepared," said Neil Duncan, doctoral student of anthropology in the MU College of Arts and Science and lead author of the study that was published in the *Proceedings of the National Academy of Science* (PNAS). "This is the first study to analyze residue from bottle gourd or squash artifacts. Squash and bottle gourds had a variety of uses 4,000 years ago, including being used as dishes, net floats and symbolic containers. Residue analysis can help determine the specific use."

In the study, researchers recovered starch grains from squash and gourd artifacts by a method that currently is used to recover microfossils from stone tools and ceramics. First, the artifact was placed in a special water bath to loosen and remove adhering residue. Then the artifact's interior surface was lightly brushed to remove any remaining residue. The residues were collected, and starch grains were isolated from each of these sediments.

"The starch residues of edible plants found on the artifacts and the special archaeological context from which these artifacts were recovered suggest that the artifacts were used in a ritual setting for the serving and production of food," Duncan said. "The method used in this study could be used in other areas and time periods in which gourds and squash rinds are preserved."

Scientists believe the Buena Vista site, where the starch grains were recovered, served as a small ceremonial center in the central Chillón Valley. The social and ritual use of food is not well understood during this time period in Peru, but this research will enhance the potential for understanding, Duncan said.

The study, "Gourd and squash artifacts yield starch grains of feasting foods from preceramic Peru," is coauthored by Duncan; Deborah Pearsall, professor of anthropology; and Robert Benfer, emeritus professor of anthropology.

## Minutes – IPCAS Executive Board Meeting

August 12, 2010 – 7:00pm – 9:00pm

**Location:** Boulder (Glacier Ice Cream)

**Executive Board Member Attendees:** Carolyn Camell-Coppin, Cheryl Damon, Kris Holien, Karen Kinnear, Joanne Turner, and Anne Robinson.

**Secretary's Report** (Holien):

Minutes of the Board meeting on May 6, 2010 were approved for publication in the *Calumet* Newsletter.

**Treasurer's Report** (Camell-Coppin):

End of Month Date	Beginning Balance	Ending Balance	New Members	Renewals
May 2010		\$2,906.03	1	6
June 2010	\$2,906.03	\$3,001.32		3
July 2010		\$3,001.32		1

Discussion regarding change in renewals as of January. Suggestion that Tom should put a blurb in the newsletter regarding the change.

**Vice President's Report** (Kinnear)

Susan Collins is resigning as state archaeologist as of October 1, 2010. No job announcement out yet.

2011 Annual meeting – it was proposed by the CAS Board that the Indian Peaks chapter consider hosting the 2011 annual meeting. Board discussed the proposal and voted to host the 2011 annual meeting. Board members attending the 2010 annual meeting in Gunnison will talk with the board concerning details of hosting, including tracking down or creating a checklist of items to consider. Karen will let the CAS Board know that IPCAS will host.

**Old Business:**

Speakers for Fall meetings

September – Mark Owens

October – Alice Tratebas, Whoop-up Canyon

Meetings for this fall will be held at the CU Museum – Collections Building. Cheryl will contact CU to let them know. We will probably have to move the April meeting to the third Thursday to accommodate the Conference on World Affairs.

Fall tours were discussed –

Lindenmeier site– Kris will check with Jason

CU Museum tour – Anne to follow up

RMNP – historical survey near McGregor or project recording historical trash site

Sept. 23 – Laramie – field trip (Kris will get more information before the next meeting)

South Park field trip last July was good. Susan Bender will be coming back to Colorado to help with designation as National Historic Site (?). She might be considered as program speaker if the timing could be worked out.

**Membership committee** – Karen will contact IPCAS member to see if she is still interested in holding a potluck at her home to discuss membership options/ideas. Board believes that it should be held on a weekend, possibly Sunday, in late afternoon or early evening sometime in October. Member will determine the date.

**PAAC class** – currently 7 people signed up, need 10 to hold it. Suggestion was made to announce it at the September meeting and put it on the website.

Discussion of ways to share summer experiences – information/photos. Suggestion was made to send photos with captions to Tom for inclusion in the newsletter.

Discussion of refreshments for meetings – how we should/could modify for this year. Possibility of asking people to bring refreshments based on the first letter of their last name – A-E one meeting, G-M for next meeting, N-Z for next meeting, etc. Anne will bring cookies to the September meeting.

Next board meeting will be held at Anne's home on September 2 at 7.00 p.m.

## 2010 IPCAS Officers, Board Members, and major functions

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Vice-President	Karen Kinnear	(303) 516-9260	<a href="mailto:kinnearkaren@hotmail.com">kinnearkaren@hotmail.com</a>
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### MEMBERSHIP APPLICATION - INDIAN PEAKS CHAPTER

<u>Quarterly new member enrollment</u>	<u>Individual</u>	<u>Family</u>	<u>Student</u>
January-March	\$28.50	\$33.00	\$14.25
April-June	\$21.50	\$24.75	\$10.75
July-September	\$14.25	\$16.50	\$7.25
October-December	\$7.25	\$8.25	\$3.75
<input type="checkbox"/> <b>New</b> <input type="checkbox"/> <b>Renewal</b> <b>Tax-Exempt Donation</b> <input type="checkbox"/> <b>\$10,</b> <input type="checkbox"/> <b>\$25,</b> <input type="checkbox"/> <b>\$50,</b> <input type="checkbox"/> <b>Other</b> _____			
NAME _____		TELEPHONE (____) _____	
ADDRESS _____		E-MAIL _____	
CITY _____		STATE _____ ZIP _____	

**Please make check payable to:** Indian Peaks Chapter, CAS. Mail to: PO Box 18301, Boulder, Colorado 80308-1301

**(We) give CAS permission to :**

- Yes \_\_\_ No \_\_\_ disclose phone numbers to other CAS members  
 Yes \_\_\_ No \_\_\_ publish name/contact information in chapter directory  
 Yes \_\_\_ No \_\_\_ publish name in newsletter (which may be sent to other chapters, published on the internet, etc.)

**CODE OF ETHICS**

As a member of the Colorado Archaeological Society, I pledge: To uphold state and federal antiquities laws. To support policies and educational programs designed to protect our cultural heritage and our state's antiquities. To encourage protection and discourage exploitation of archaeological resources. To encourage the study and recording of Colorado's archaeology and cultural history. To take an active part by participating in field and laboratory work for the purpose of developing new and significant information about the past. To respect the property rights of landowners. To assist whenever possible in locating, mapping and recording archaeological sites within Colorado, using State Site Survey forms. To respect the dignity of peoples whose cultural histories and spiritual practices are the subject of any investigation. To support only scientifically conducted activities and never participate in conduct involving dishonesty, deceit or misrepresentation about archaeological matters. To report vandalism. To remember that cultural resources are non-renewable and do not belong to you or me, but are ours to respect, to study and to enjoy.

Signature: \_\_\_\_\_ Signature: \_\_\_\_\_

## CALUMET

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 P.O. Box 18301  
 Boulder, CO 80308-1301