



The Three Rocks Report

An Ancient Calendar

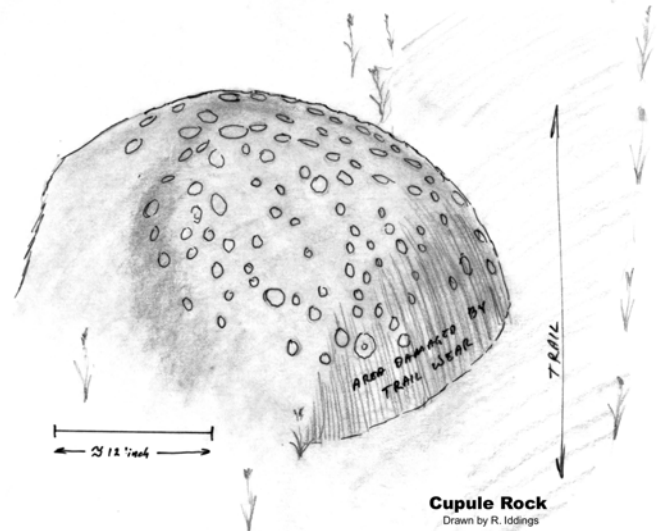
An important rediscovery occurred at sunrise on June 21, the morning of the 2006 summer solstice, within the southern Diablo Range by researcher Ray Iddings and Three Rocks Research volunteer, Rodger Tiffin. The adventure began on June 19 when we rediscovered a cupule petroglyph high on the ridge and the excitement continued on June 20 as we found an unusual fossil, and then rediscovered a half-mile long series of bedrock mortars, cupule petroglyphs and camp shelters. However, none of this prepared us for the inspiring revelation of the summer solstice sunrise.



Fossil - Probably an Ancient Clam

This fossil is unusual because no other fossils have been previously found at this location. It was found in a cluster of other identical fossils. The fractured remains of another fossil reveal a fossilized adductor mussel and other internal organs suggestive of a clam or other bivalve. Fossil is about 10 inches wide.

The first clues to possible summer solstice elements associated with this site were observed last August when it was noticed that the petroglyph panel is perpendicular to the 66° azimuth of the solstice sunrise and that certain features on the rock appear oriented to that sunrise. These clues mandated our return to this revered site to investigate solstice elements. It is well established that this prehistoric site, which was first discovered by our Native forebears, is a significant ceremonial place, however, the solstice element was lost with the destruction of the Native culture in this region.



Sketch of a Cupule Petroglyph Rock

Petroglyph cupules cover this spherical sandstone concretion. Although this is sandstone, it still takes a tremendous effort, dedication and very many hours to carve a single cupule. While it may be difficult for us to imagine why this stone was decorated, considering the huge labor investment leaves no doubt that this stone and its location was of significant importance to our Native forebears.

The solstice site is located on a natural terrace in a broad sloping canyon at an elevation of about 2650 feet. The site is at an ecotone where the surrounding flora is mostly grass, buckwheat, juniper and scrub oak with some artemisia. A large sandstone cliff is across an ephemeral drainage, about 200 yards to the south. Another seasonal drainage is a few yards to the west of the site. Sunrise will occur to the northeast, on a chaparral covered sandstone ridge, a half-mile away and about 400 feet above us. That upward viewing elevation provides an extra hour before sunrise reaches the canyon where the site is located.

“Solstice” is derived from two Latin words: “sol” meaning sun, and “sistere,” to cause to stand still. This is because, as the summer solstice approaches, the noonday sun rises higher and higher in the sky on each successive day. However, for a few days around the time of solstice, it rises an imperceptible amount, compared to the day before and in this sense, it *stands still*.

Rodger's skillful Jeep driving got us within a short half-mile hike of the site and we had two tripod-mounted video cameras set up by 06:00. One of the mounted cameras watched for sunrise on the distant ridge, while the other recorded the face of the petroglyph panel during sunrise. Another handheld video camera records events around the site, while two digital and one 35-mm SLR camera captures high-resolution stills during the event. It was important to record the event with several cameras to collect as much information as possible because every missed detail meant waiting another year. We expected to spend several hours studying video clips and photographs before determining if summer solstice elements might be associated with this site, but were surprised with the obvious evidence revealed during sunrise.

There are several large sandstone boulders on the terrace site, three of which, including the petroglyph panel, exceed 8-feet in height. A long 3-inch wide vertical crack, the depth of which is in-line with the summer solstice sunrise, transcends the petroglyph rock. The glyphs carved into the rock are an organized mixture of cupules, pecked bars, concentric circles, solar icons, zoomorphic and anthromorphic figures.



Zoomorphic Glyph

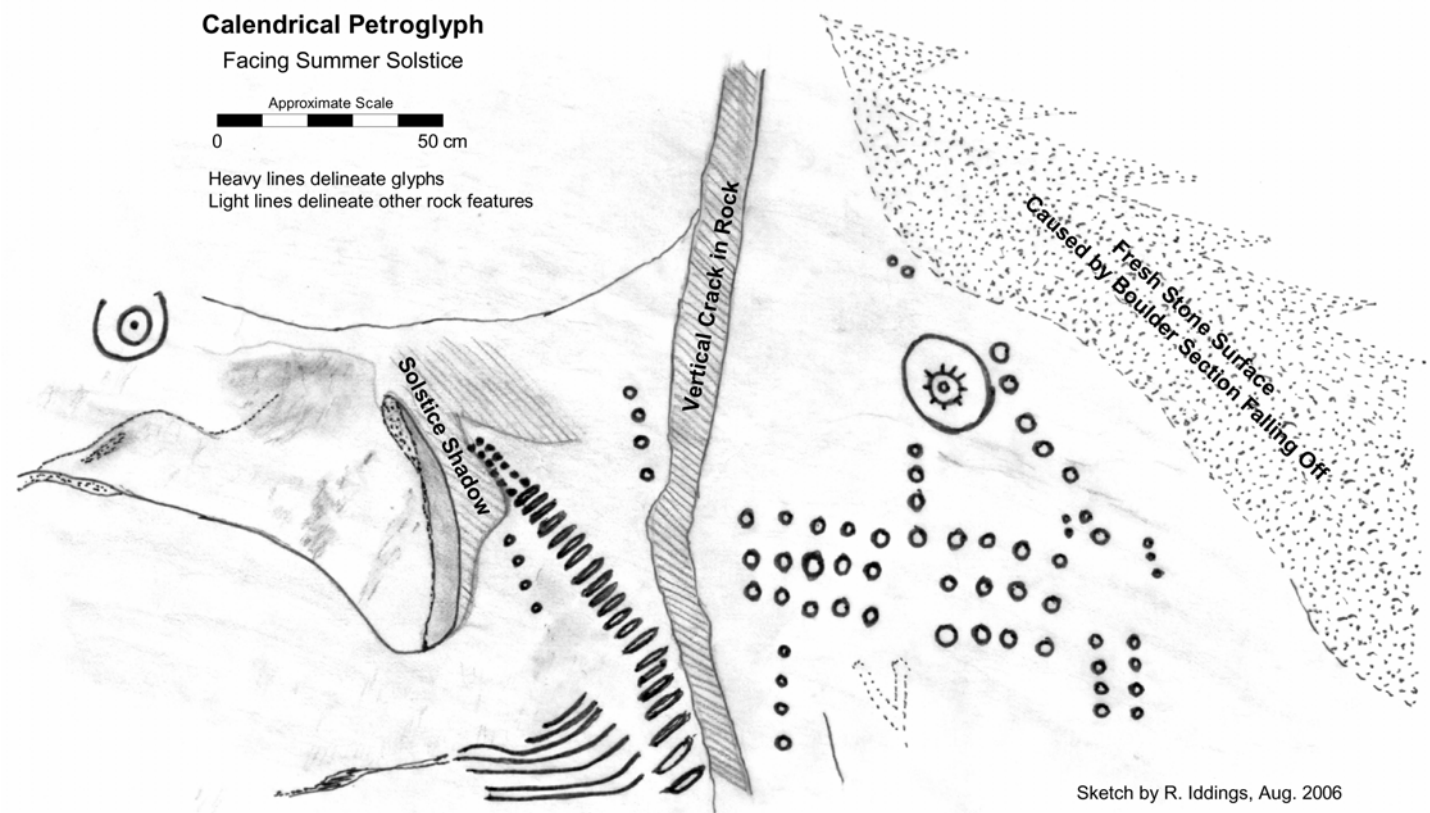
The first thing that captured our attention during sunrise was that the sun completely illuminated the inner portions of the fissure. Because of its angular orientation to the horizon, this illumination only occurs during a few mornings around the time of summer solstice. As the morning begins, the fissure is a dark, black crevice that is quickly illuminated as the sun peaks over the distant ridge creating a captivating transformation as the sleeping rocks awakens. After witnessing this transformation, it becomes easy to understand what attracted the ancient artist to this feature.

Ancient Native people had a particularly developed view of astronomy and nature's seasonal calendar. Rather than gauging minutes and hours, they were tuned to nature's clock and paid attention to the seasons and the changes within the seasons. Because each season held a special relationship with their life's cycle, the Native people constantly sought blessings from nature's custodians. No doubt, this rock became useful in predicting the annual cycle. Moreover, the rock artistry suggests that as time passed, a sophisticated calendar began to develop within the central area of the panel.

Shortly after the rock face became fully illuminated, our attention was drawn to a lighted wedge that bordered with the edge of a series of small engraved bars. Upon close examination, we determined that the rock portion that created the shadow had been modified to cause the straight edge of light to occur along the edge of the bars. This feature on the rock face is a calendrical petroglyph because the wedge alignment only occurs in association with the summer solstice. Recognition of the solstice marker on the petroglyph panel caused us to wonder if other glyphs on the panel were part of this ancient calendar, particularly the 3x9 cupule matrix a few inches away. (See graphic on page 3.)

This is a series of cupule dots that are three dots high and nine dots wide with a gap about mid-way. The gap space is equal to a three-dots column, thus creating space for a 3x10 dot matrix. A series of four dots lead between the gap and a concentric circle glyph that is marked with radial striations. Attempting to view this matrix in association with the solstice marker leads to a series of questions that demand further research. For example, could this matrix be representative of a ten-month calendar such as used by the Luiseño group in southern California? Could the four-dot series above the gap be an equinox marker? Only further research will tell.

Discovery of a calendrical petroglyph in the southern Diablo Range sheds new light on the ancient people who inhabited this region and it speaks volumes about their cultural sophistication and their understanding of certain astronomical events. This is an exceptional discovery that warrants much more research that is sure to lead to greater understanding and appreciation of our Native forebears.



A Story

The following story is included because it illustrates an historic account of a ten month calendar used by Native people in California.

Chinigchinich

by Friar Geronimo Boscana, Translated by Alfred Robinson in 1846

Chapter XI - Their Calendar

We cannot but believe that the calendar is one of the most important and the most necessary of inventions. But theirs, if we may call it such, differed but very little from the natural instinct of the brute creation, which possessed a knowledge of time, and the seasons for their sustenance and procreation. We see that many animals change their places, and even climates, at a time prefixed; either on account of the temperature or want of food; and at the proper time for their return they visit again the same locations. The Indians had the same custom, as regards the changing from place to place; for in the winter they resided in one place, and in summer in another. This was general amongst them, excepting with those located on the sea-coast, who seldom removed, because their maintenance was derived from the sea; unlike the others who subsisted entirely upon fruits and seeds of the fields. Their calendar contained merely the names of the months, directing the times or seasons for the collecting of their different seeds, and produce of the earth. Not all of them possessed this knowledge; it being confined to the Puplem who were the criers that informed them when to cultivate their fields, and observe other requisitions. In the first place, they were destitute of chronology, by which to calculate the period of time transpired; hence, the difficulty in giving any account of their antiquities, as they had neither figures nor signs to preserve them; and possessing no idea of the past, their thoughts

were limited solely to the present. On this account their calendar was confined to the months of the year, but as they reckoned these by the number of moons, they differed from the "sun's reckoning," having almost every year a less number of days--for at the conclusion of the moon in December, that is, at the conjunction, they calculated the return of the sun from the Tropic of Capricorn; and another year commenced, the Indian saying "the sun has arrived at his home." When the new year begun, no thought was given to the past; and on this account, even amongst the most intelligent, they could not tell the number of years which had transpired, when desirous of giving an idea of any remote event.

They observed with greater attention and celebrated with more pomp, the sun's arrival at the tropic of Capricorn, than they did his reaching the tropic of Cancer, for the reason, that, as they were situated ten degrees from the latter, they were pleased at the sun's approach towards them; for it returned to ripen their fruits and seeds, to give warmth to the atmosphere, and enliven again the fields with beauty and increase.

The names of the months were as follows:

Aapcomil, December and January.	Sintecar, June and July.
Peret, February.	Cucuat, August.
Yarmar, March.	Lalavaich, September.
Alasoguil, April.	Aguitscomel, October.
Tocoboaich, May.	Aguit, November.

In order to comprehend the manner in which they counted the months, it is necessary to know that their year commenced always on the 21st day of December, and upon the sun's arrival at the tropic--consequently, the days which transpired between the last conjunction and the 21st were not noticed--or, in their mode of explanation, "There was no day." The month "Aapcomil" always begun on the 21st, without any regard to the moon's age, and not only continued during the remainder of its term, but throughout the one following; thus including nearly two moons. Sometimes it so happened that the moon's conjunction occurred on the 21st or afterwards, in which case two entire moons were counted in the first month. Nearly the same occurrence took place in "Sintecar," with this difference only, that if the sun's arrival at the tropic of Cancer fell upon the day of the moon's full, then the month began; but the days previous to this were made use of, and annexed to the antecedent "Tocoboaich,"--that is, the month did not expire with the conjunction, but at the full; when the other began, and continued throughout the following moon. All the other months of the year commenced with the conjunction, therefore, they seldom agreed with ours.

Their calendar contained no more; and served, principally, to denote when to harvest the grain, celebrate their feasts, and commemorate the death of their friends. But of the number of days contained in their months, they had no knowledge whatever, and much less of those composing the year--so that the phases of the moon were their only guide, and these informed them when they were to observe their feasting, which never fell upon the same day in any other year. The way they ascertained when to celebrate them, was as follows. When the month arrived, one of the Puplem (to whom belonged the privilege of holding the feast) observed with attention the moon's aspect; and when its appearance denoted the time, he made known the fact to the public by sending a crier through the town.

In like manner, they proceeded, in regard to the anniversaries of the dead, although they were never celebrated on the same day in any other year, as that on which the person died. At the time of the decease of a captain, or of one of the Puplem, (for they paid no attention to others) a Pul observed the moon's aspect, also the month in which the death occurred; and in the following year, in the same month, when the moon's aspect was the same, they celebrated the anniversary.



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