Old petroglyphs on the North American High Plains

Lawrence LOENDORF*

Abstract

Research into the ages of petroglyphs on the North American High Plains has revealed a pattern where Early Archaic (7500 to 5000 RCYBP) figures are pecked abstract designs that display a great deal of autonomy or individualism. Using the age of the Early Archaic petroglyphs as a guide, we have found sites with these early figures superimposed on older petroglyphs. In all instances the older figures are abstract incised patterns rather than the suspected representational forms. There appears to be a pattern where very old High Plains’ petroglyphs include abstract figures.

Résumé – Pétroglyphes anciens des hautes plaines d’Amérique du Nord

L’étude des pétroglyphes des hautes plaines de l’Amérique du Nord a montré que les figures de l’Archaïque ancien (7500/5000 BP) sont des figures piquetées qui manifestent un haut degré d’autonomie, voire d’individualité. En prenant ces figures de l’Archaïque ancien comme référence, nous avons trouvé des sites dans lesquels elles se superposaient à des figures gravées plus anciennes. Dans tous les cas, les graphismes les plus anciens étaient plutôt des incisions abstraites que les formes figuratives que nous attendions. Il semble donc que les plus anciennes manifestations gravées des hautes plaines soient surtout formées de figures abstraites.

Resumen – Antiguos petroglifos en las Planicies Altas de Norteamérica

Se han investigado petroglifos de las Planicies Altas de Norteamérica y se detectó que figuras del Arcaico Temprano (7500-5000 RCAP) consisten en diseños abstractos que muestran un grado elevado de autonomía e individualismo. Tomando como guía la edad de los petroglifos del Arcaico Temprano, encontramos sitios donde tales figuras tempranas se hallan en superposición sobre petroglifos más antiguos. En todos los casos, las figuras más antiguas consisten mayoritariamente en diseños abstractos incisos y no en las formas figurativas buscadas. De esta manera, aparentemente existiría un patrón de grabados muy antiguos en las Altas Planicies con motivos abstractos.

In the past two decades archaeologists have developed a chronology for Archaic Period petroglyphs on the High Plains of Colorado and New Mexico (Fig. 1). To implement the chronology they have used different dating methods that include— the association of temporally diagnostic artifacts at single component sites, the degree of varnish cover, superimposition, a frequency seriation, cation-ratios, varnish microlamination and radiocarbon dating of soil deposits covering petroglyph panels (Loendorf 2008: 30-43).

* New Mexico State University, USA.
Fig. 1. A map that shows the research region. The highlighted area along the Colorado and New Mexico border is the location of the Old Incised sites.

The radiocarbon ages are extremely helpful. Several of them are from two sites on Glorieta Mesa near Santa Fe, New Mexico where petroglyphs are found on a horizontal sandstone surface that is partially covered by 40 to 50 centimeters of soil. Charcoal from these soil deposits is dated between 2500 and 4500 years before present (Abel 1993; Bock & Bock 1994). Soil scientists and archaeologists agree that the Glorieta Mesa petroglyphs exceed 5000 years of age (Loendorf 2008: 60).

The petroglyphs at Glorieta Mesa are abstract forms that are common elsewhere in Archaic Period rock art, but there are also some relatively unique forms, such as star bursts, sun bursts, concentric circles with petals attached to the outer ring, double-ring circles with radiating lines connecting the inner and outer rings, ovals divided by interior parallel lines, circles with long undulating tails, and other circular or ovoid forms (Fig. 2).
At the Clay Creek site in southeastern Colorado, William Buckles (1974, 1980) discovered a petroglyph panel that was exposed in a major flood. Part of the panel remained buried by Piney Creek alluvium which he radiocarbon dated at circa 2000 years before present. The abstract Clay Creek petroglyphs, which are two to three thousand years more recent than those at Glorieta Mesa, retain many of the same designs with some additions and alterations (Loendorf 2008: 68-70). The major difference is the layout and arrangement of the petroglyphs within a group (Fig. 3).

The Glorieta Mesa figures tend to stand alone as individual designs with unmodified rock surfaces around them. On the other hand, the Clay Creek figures are crowded with undulating lines that connect the figures together. There are no quadrupeds or anthropomorphs at these Early and Middle Archaic sites. These figures, poorly-formed quadrupeds and stick figure anthropomorphs, are part of the Late Archaic petroglyph tradition. The important conclusion in this research for the High Plains is that sites with abstract figures, made by pecking, are older than sites with quadrupeds and anthropomorphs. Indeed, pecked abstract curvilinear figures are the oldest recognizable figures on the High Plains and if the figures are independent of their neighbors, they are older than those which are crowded and connected by undulating lines.

**Search for something older**

After the Archaic Period petroglyph chronology was established, I started to wonder what might be older. Because archaeologists have such a difficult time directly dating petroglyphs, I thought the best approach might be to find places where the Archaic images were superimposed on other figures that might be Paleo-Indian in age. With this goal, I set forth three criteria for the research: (1) search in places where there are known Paleo-Indian sites; (2) find a place with basalt surfaces because the petroglyphs preserve better on harder rock; and (3) find recognizable Archaic pecked abstract forms that are superimposed on older figures.
The area of northeastern New Mexico and southeastern Colorado is an excellent place to implement these search criteria. It is the region of Capulin Volcano and other former volcanic events; it is also the region of the Spanish Peaks with their stocks and dikes. In other words, basalt and other igneous rock surfaces are a major part of the landscape. Of equal importance, the original Paleo-Indian Folsom site and the Plano period Olsen-Chubbuck kill site are located in this region, so it was used extensively in the Paleo-Indian Period. It is also the location of Archaic-age pecked petroglyph sites which offer the opportunity to find older figures beneath them.

The first discovery was made in 2006 on a basalt dike that is oriented west to east along the southern boundary of the United States Army’s Piñon Canyon Maneuver site in southeastern Colorado (Loendorf 2008: 74-76). Named the Ancient Hogback site, there are two boulders with old images on them at the site. Somewhat to my surprise the underlying images are abstract incised forms. Since the discovery of Ancient Hogback, we have found three additional sites. Short descriptions of all four sites are included in the following section.

**Ancient Hogback, Colorado – 5LA11049** – The site is situated along the north side of the Piñon Canyon hogback, a basalt dike that has its origin in the stocks associated with the Spanish Peaks in the Sangre de Cristo mountain range. Two boulders with abstract incised designs are found on the site. On one of these the designs are clearly beneath abstract pecked circles and other curvilinear forms and rectilinear forms. These pecked figures are from the Archaic Period with dates from 2000 to 4000 years before present. No artifacts have been recovered from the surface of the site.

The underlying incised figures include a double-line zigzag figure, independent double parallel lines, a cross hatch design, several bisected oval forms, an asterisk figure, multiple parallel incised lines, and lines with points on them. This is the most complete inventory of any of the old incised line panels (Fig. 4-5).

**Fig. 4.** Tracing of panel two at the Ancient Hogback site. The pecked Archaic age figures are superimposed on the older incised figures. A small grid, bisected ovals, zigzag, multiple parallel lines, double parallel lines, intersecting lines and an asterisk can be seen under the pecked figures.

**Fig. 5.** Close up photograph of the panel two at the Ancient Hogback site. The incised zigzag pattern is visible in the photograph. The white lines are modern scars across the rock. (Photo Laurie White.)
The second boulder at Ancient Hogback does not exhibit any Archaic-age pecked figures, but the incised figures on it are so similar to the underlying lines on the other boulder that it is almost certainly the same type of petroglyph (Fig. 6). It displays a bisected oval form that is much larger than the examples on the other boulder. It also has horizontal lines crossing a longer vertical line and a zigzag pattern on it.

![Tracing of panel one at the Ancient Hogback site. This figure is not under pecked figures but made in the same manner as the old incised petroglyphs on panel two.](image)

Water Tank, New Mexico – LA 82961 – The site is south and east of Raton, New Mexico about 25 kilometers from the Folsom type site. Petroglyphs at the site are on columnar basalt that has its origins from the ancient Capulin volcano. The site has not been systematically recorded, but it is relatively large with several dozen panels of petroglyphs across about one kilometer of the outcrop. Isolated boulders away from the main outcrop also contain petroglyph panels.

At least three panels display pecked circles, circular figures and undulating pecked lines that are superimposed on incised designs (Fig. 7). The underlying incised figures include multiple parallel lines, cross hatch patterns, long lines with shorter horizontal bisecting lines and asterisks. The cross hatch designs are the most prominent at the site and found in some form on all of the examples.
East Hogback, Colorado – 5LA2868 – The site is located on the eastern end of the Piñon Canyon hogback about two kilometers east of the Ancient Hogback site. Nine distinct prehistoric petroglyph panels are found on the basalt blocks that make up the top of the dike. Some are on the sides of the blocks where they face outward while others face upward from the tops of the boulders. All of the figures are very old Archaic-age curvilinear meandering figures, curving rakes and other circular forms. They are the oldest recognizable Archaic-age figures in the region. Some of the examples on this site are so heavily varnished that they are nearly indistinguishable from the varnish on the parent rock and can only be viewed in ideal lighting conditions.

One of the abstract panels exhibits a bell-shaped design with an attached oval form (Fig. 8). It is superimposed on a series of incised lines that include parallel double lines, intersecting lines, multiple parallel lines, and a poorly defined oval form with a bisecting line.

Van Bremer arroyo, Colorado – 5LA5418 – The site is situated on the Piñon Canyon Maneuver site along the south bank of Van Bremer arroyo. Van Bremer flows on the north side of the Piñon Canyon hogback and erosion, mostly from Pleistocene outwash, has deposited basalt boulders from the hogback along its banks. The boulders at 5LA5418 display very old Archaic-age petroglyphs on their tops and sides.
One boulder has a pecked u-shaped figure that is superimposed on a set of multiple incised lines and an intersecting line motif (Fig. 9). This site has the least number of the old incised type figures of the four examples.

Fig. 9. Close-up photograph of incised lines under and Archaic-age image on the Van Bremer site. Multiple parallel lines are visible under the pecked form. (Photo Laurie White.)

**Summary**

The finding of abstract incised figures under the Archaic-age pecked designs at the Ancient hogback site was surprising. I expected to find quadrupeds that were also made by pecking or abrasion. Finely incised figures are generally the most recent on the High Plains. They include proto-historic or historic scenes with horses, tipis and guns, so it seemed very unusual to find these very old figures made by incising.

After discovering what the ancient figures looked like, it was relatively easy to find more examples. I started returning to the sites with the oldest pecked Archaic-age petroglyphs and searched for figures that were superimposed on incised figures. In the process of finding new examples, I wondered if some of the designs might be the result of a natural process instead of the work of humans. My initial response was to search for examples of the incised patterns on boulders without any other petroglyphs. I found what appear to be the same old incised lines on one or two boulders where they were not associated with pecked Archaic forms. These may be as old as the other examples but they are not included in the discussion because there is no superimposition to support an older age for them. Significant, however, is the fact that these old incised motifs are extremely uncommon.

I discussed the natural versus cultural origin for the figures with other field workers and it was Laurie White, an artist, who noted that with the cultural examples, one end of the line is more deeply incised. She suggested, and I agree, that the person making the line pressed down harder at the start and then trailed off as the line was made.

As additional examples of the incised lines were examined, it was possible to identify other criteria to establish their cultural origin. Most important was the re-occurrence of designs that suggest the figures are not from random scratching. It is now possible to name eight different patterns or motifs that are within the old incised type.
Old incised line motifs

Fig. 10. Old incised motifs indentified on the four known sites.

**Multiple parallel lines** – these are the most common of the old incised forms (Fig. 10a). They are incised lines with their long axis parallel to each other. Groups with three or four to ten or twelve are found in the parallel sets. They measure about ten centimeters in length with each group about two to three centimeters wide.

**Parallel double lines** – the lines are distinctive because they appear to have been carefully made as a pair (Fig. 10b). They are usually shorter than the multiple parallel lines and measure three to five millimeters between the lines. Parallel double lines are often straight but they can be found in zigzags, cross hatch patterns and they can also connect or intersect with other lines.

**Intersecting lines** – these lines are a simple example of two lines that cross one another at different angles (Fig. 10c). In some examples short lines cross a longer line at right angles while in others the lines intersect at odd angles. The intersections appear to be purposeful and not the result of an error in the stroke as seems to be the case with multiple parallel lines when they occasionally run into one another.

**Asterisks** – a series of incised lines that meet at a central point to form a starburst or asterisk form (Fig. 10d). The lines are usually single but the best known example also has a set of parallel double lines in it. The recorded examples are small covering about five centimeters across their maximum dimension.
Cross hatch or grid patterns – the figures are intersecting lines that meet at right angles to form a grid pattern of squares or rectangles between the lines (Fig. 10e). In some examples the lines meet at 45 degree angles to form open spaces of diamond shaped patterns. The diamond patterns might be called cross-hatch while rectangular patterns are referred to as grids. I have classed them together because the two types tend to blend into one another in some examples. The figures are variable in size with small ones that are less than five centimeters across and others that are nearly a meter across.

Bisected ovals – the figures are oval forms with a straight line bisecting them (Fig. 10f). One end of the line is longer and extends beyond the oval for a greater distance than the other end. The figures resemble feathered arrows or an atlatl form. Some examples are small measuring four or five centimeters across their maximum dimension while others can be as long as 50 or 60 centimeters.

Points on lines – these figures are lines that exhibit points at ends of lines and angular lines attached on each side of a linear one so as to form triangular points (Fig. 10g). The points can be at the ends of the main line or along the sides. The only recorded examples are small with measurements of five to ten centimeters.

Zigzag patterns – the two known examples of the motif are sets of parallel lines that are set with angles rather than rounded corners (Fig. 10h). They resemble a lightning motif. The examples are small with lengths of about five centimeters.

Summary

It is clear that asterisks, points on lines, bisected ovals, cross hatch designs and zigzag patterns do not occur naturally. Multiple parallel lines and simple intersecting lines look more like natural lines but after seeing a dozen or more sets of them they are recognizably different than natural cracks or scratches in the basalt surfaces. Furthermore, they are regularly associated with pecked petroglyphs that were made in the Archaic period. This suggests that the makers of these petroglyphs also noted the incised patterns in the rocks.

How old are the incised motifs?

The overriding question about these old incised motifs is when they were made. All we presently know is that they are superimposed by very old pecked Archaic-age petroglyphs. We do not know the exact age of these pecked petroglyphs, just that they are old with ages that are certainly greater than 2000 years but probably not greater than 4500 years.

The belief that they are not greater than 4500 years is based on the almost total absence of Early Archaic sites in the region where they are found. In an overview of the regional archaeology, Zier (1999: 102) notes the virtual absence of radiocarbon dated sites in the area between 4930 and 7740 years before present. He explains that there is some meager evidence for use of the region during the Early Archaic but it is consists of surface collected projectile points with no associated radiocarbon ages.

At the same time, Early Archaic sites are fairly abundant in the higher elevations of the Rocky Mountains where there are game drive sites and associated campsites. This
settlement pattern is widely recognized as a response to the hot and dry conditions of the Altithermal climatic regime that made the High Plains an inhospitable place to live.

Elevation and a permanent water source appear to be the key for finding Early Archaic sites in the region. The petroglyph sites on Glorieta Mesa, for example, are at more than 8000 feet where they likely represent winter or cool season occupations. Other examples of Early Archaic petroglyph sites on the High Plains are associated with major rivers or continuously flowing freshwater springs (Loendorf 2008: 64-68). On the lower end of this elevation spectrum, the Piñon Canyon hogback and the region south and east of Raton are at elevations that range between 4500 to 5700 feet. Since the end of the Pleistocene, the region has not had good water sources, thus during the Altithermal it would have an inhospitable place to live.

With so little occupation of the region during the Early Archaic, the old incised type is probably not from this time period. Furthermore, we know from Glorieta Mesa and two or three other regional sites that Early Archaic petroglyphs are pecked rather than incised (Loendorf 2008: 67-68).

There could have been dual traditions with some petroglyphs made by pecking and other made by incising. If this were the case, however, we would expect to find the incised figures alongside or on nearby panels instead of beneath the pecked figures.

They might also be made by other Archaic peoples and, in fact, may have been created only a few minutes before pecking began on the overlying designs. Of course, one could ask rhetorically why someone making an incised design would abruptly change gears and begin making a pecked one on top of it. That far-fetched scenario can be definitively rejected simply by pointing out that heavier varnish is present on the underlying incised figures than on the pecked designs that overlie them, proving that a significant amount of time elapsed between the creation of the two sets of images.

This opens the possibility that the incised lines are Paleo-Indian in age. Perhaps they were made by Hell Gap hunters who are well represented in the regional archaeological remains. A half-dozen Hell Gap projectile points, which date circa 9000 years before present, have been found at five sites on the Piñon Canyon Maneuver site.

**Not definitive yet**

In the Thunder and Herds book, this discussion is titled “Present, but not Definitive” and in this paper I still claim there are no definitive answers that can be offered as proof that these old incised figures are Paleo-Indian in age (Loendorf 2008: 78). The major change since writing Thunder and Herds is the discovery of three more sites. Because there is so little evidence of Early Archaic in the region, in my mind the more sites that are found, the less the chance they are from that time period.

Still there is the mobiliary art at the Boca de Potrerillos site in Nuevo Leon, Mexico, where archaeologist Solveig Turpin (1996) and her colleagues found incised plaquettes around hearths dated to between 4820 and 5460 years ago. Surface artifacts associated with the incised tablets included Clear Fork tools that are minimally 3000 years old. Turpin has noted that while the tablets at Boca de Potrerillos are probably Early Archaic in age, incised stones from all time periods have been found in sites across southern Texas. Incised stones have also occurred in a wide variety of contexts and in all time
periods in the Great Basin and adjacent regions. They have been found in cultural layers dated to older than 5000 years at Hogup Cave, near Salt Lake City, Utah, and they have also been recovered from numerous excavated contexts of more recent age (Aikens 1970; James 1983).

These sites are important yet it is equally important to recognize that the oldest reliably dated art in North America includes incised limestone tablets at Paleo-Indian sites on the High Plains. Excavations begun in 1998 in Clovis-age deposits at the Gault site in Williamson County, Texas have resulted in the discovery of several dozen stones and pebbles that exhibit incised abstract motifs (Collins et al. 1992). Although I have not analyzed the Gault site stones or other engraved stones from Clovis age sites, many of the designs appear to be similar to the old incised line motifs presented in this discussion. There are multiple parallel lines, double parallel motifs, bisected oval forms, and cross hatch and grid designs. A similar stone with incised patterns was recovered from the Folsom layer at the Blackwater Draw site in southeastern New Mexico (Hester 1972). The inventory of stone artifacts incised with abstract figures also includes those from the 9400-year-old Paleo-Archaic site at Barton Gulch, Montana, whose incised lines of differing depths formed cross-hatched designs (Davis et al. 2009).

There is also the oldest painted image in North America. This is the zigzag that is painted on a 10,000 year-old bison skull that was discovered at the Cooper site in western Oklahoma (Bement 1999). At this Folsom-age site, on three successive occasions, herds of Bison antiquus had been driven into a dead-end arroyo and killed by hunters waiting in the gully. At some point after the first drive, a red zigzag design resembling lightning had been painted on a sun-bleached skull that was then placed by Folsom hunters in the arroyo, possibly as a talisman to attract a second group of bison. The Cooper site zigzag looks exactly like the zigzag patterns of the old incised type.

The similarity between the Paleo-Indian age motifs and the old incised figures in southeastern Colorado and northeastern New Mexico is remarkable. Zigzags, multiple parallel lines, double parallel lines, bisected ovals, points on lines and cross hatch patterns are common to both the mobiliary stones and the petroglyphs panels.

As more sites are found, the evidence begins to support a Paleo-Indian attribution for the old incised type of petroglyphs. Without question, the old incised figures look considerably more like the Paleo-Indian incised stones than they do the pecked Archaic-age petroglyphs of the region.

There are, of course, competing claims for Paleo-Indian age representational petroglyphs. David Whitley (2009: 143) makes a strong case for a Pleistocene age camelid petroglyph figure in the Rodman Mountains of California that is dated by cation-ratio, varnish microlamination and calcium oxalate to more than 12,000 years before present.

Pecked petroglyphs of animals in Wyoming’s Black Hills may be 11,500 years old (Tratebas 1993; Sundstrom 2004). A group of figures including an anthropomorph, a human hand print, a possible bighorn sheep, and an elk at the Legend Rock site near Thermopolis, Wyoming have cation-ratio ages that are greater than 10,000 years before present (Francis & Loendorf 2002). It is important to note, however, that all of these figures are dated by experimental techniques. They are mostly stand alone numerical
ages without other evidence, such as superimposition or associated Paleo-Indian artifacts, to support them. This does not mean the dates are wrong but everyone would be more comfortable with the dates if there were some secondary evidence to support their ancient ages.

On the other hand, figures in the old incised type that I think may be Paleo-Indian in age are very much like the incised tablets and stones from sites that date more than 9000 years ago. The incising technique has been used to make the same motifs on the mobiliary art as the petroglyph panels. I believe this is sufficient evidence to complete more detailed recording at the known sites and to search for more sites with the old incised petroglyphs. After all, we could find a tiny incised mammoth or a long-horned bison.

BIBLIOGRAPHY


AIKENS M. 1970. — Hogup Cave. Salt Lake City: University of Utah Press. (Anthropological Papers; 93)


HESTER J.J. 1972. — Blackwater Locality No. 1: A Stratified Early Man Site in Eastern New Mexico. Taos, New Mexico: Fort Burgwin Research Center & Southern Methodist University. (Fort Burgwin Research Center Publication; n° 8).


LOENDORF L., Old petroglyphs on the North American High Plains


Quote this article