

PROJECTILE POINT PETROGLYPHS OF THE COSO RANGE: CHRONOLOGY AND FUNCTION

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Identification and analysis of a series of corner-notched and basal notched projectile point images and those rendered in association with human or supernatural figures are located in the Coso Range of eastern California. These images when considered in detail appear to date to the period when Elko and Humboldt Series points were in use. Two direct, experimental XRF dates made directly on two of the images support this determination.

The XRF dates provide a mean age of 2,750 plus or minus 700 calendar years before present for these images (and an indirect basis for dating the others). The dates provide a general age range for these corner notched and basal notched point depictions. The age is consistent with the well documented and radiocarbon supported ages for Elko Series dart points and Humboldt Basal Notched thrusting spears, knives and dart points.

Therefore we believe those dart point depictions and XRF dates place the Coso drawings during a range of time from about 2000 BC to AD 1. The latter age range is synchronous with the end of a period of dart and atlatl use and earliest accepted dates for the initiation of Rose Spring Series arrow points. The latter are now better understood as initiating about 2000 years before present or ca. AD 1.

Also some surprising new observations associate the feminine gender with at least two of the projectile point glyph images integrated with animal-human or human hunter (shamanistic?) figures. Suggestions are included for understanding this apparent paradoxical relationship of male weaponry with the feminine gender.

The depiction of realistic renderings of projectile point forms is an unusual feature at prehistoric rock art sites in the United States. This rare occurrence has only been documented at a handful of archeological sites in North America (Callahan 2003; Keyser and Klassen 2001; Riggs 2001; Sutherland and Steed 1974; Thomas and Thomas 1972).

Campbell Grant and his associates initially recognized a number of such projectile point petroglyphs within the Coso Range (Grant et al. 1968:37). The authors mention them briefly in a single paragraph within their 147 page monograph. However, they did not attempt to date those images nor did they comment on the character of the figures or their possible meaning and function.

For this study, we relocated most of the Grant et al. sites, discovered some new ones and attempted to correlate the most common corner-notched and basal notched forms with temporally diagnostic (time sensitive) southwestern Great Basin point styles to help date the Coso petroglyphs (Figure 1). This study was limited to the area within the confines of the China Lake Naval Weapons Center and the glyphs at Little Lake. Other examples of Coso Style petroglyphs are known outside that area including those in the El Paso Mountains, Panamint Mountains, Argus Range and north of the base at Centennial Springs. Those other areas were not included in this research.

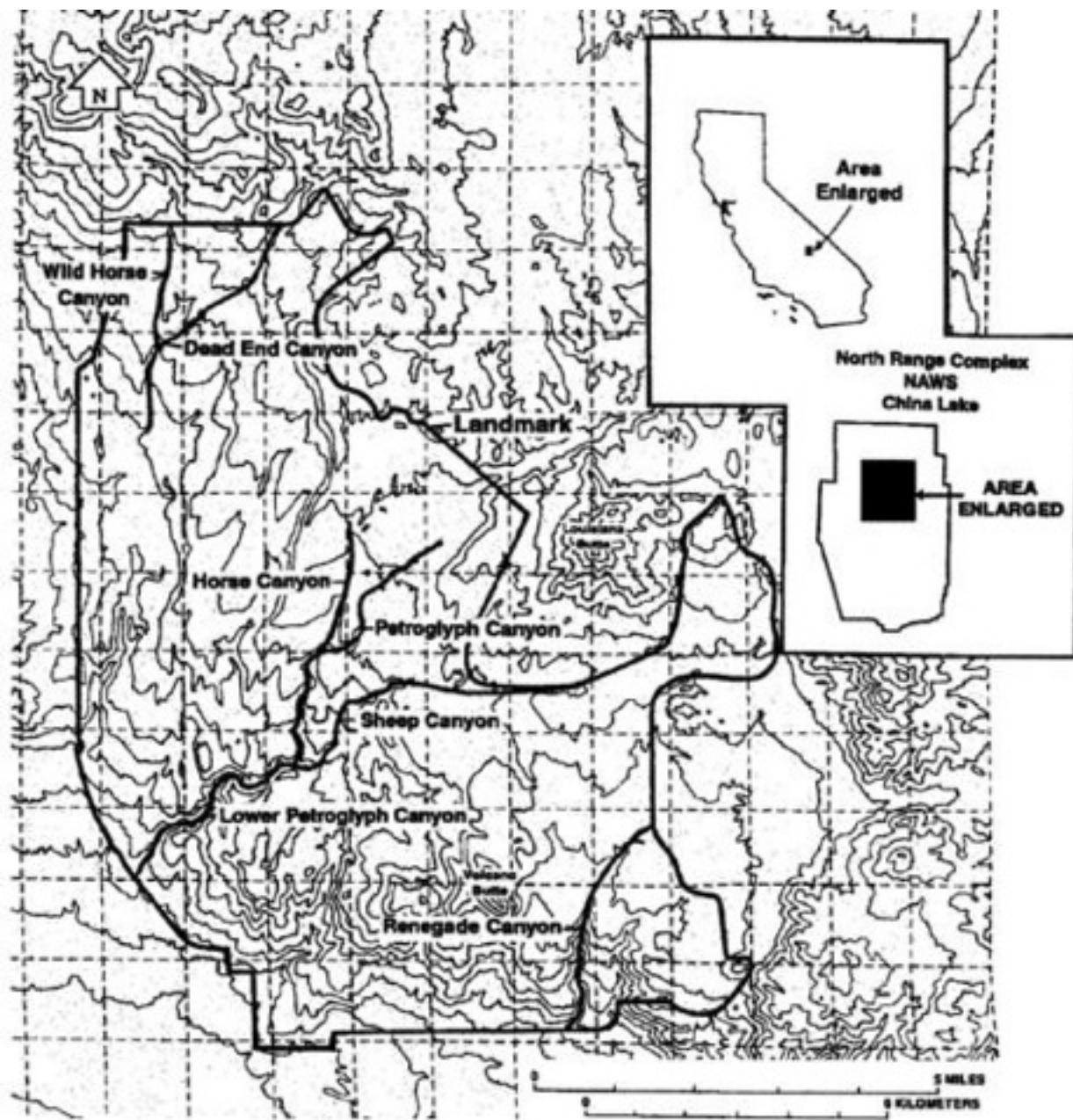


Figure 1. Location of Coso Style rock art area

LOCATIONS AND FREQUENCY

Grant and his colleagues originally illustrated 13 rock art panels containing 17 individual projectile point images occurring at five distinct localities within the Coso Range (Grant et al. 1968:37). Five of these images depict anthropomorphs with single or multiple projectile point adornments (Figure 2). The remaining eight (8) images were individual glyphs depicting dart points hafted to wooden foreshafts.

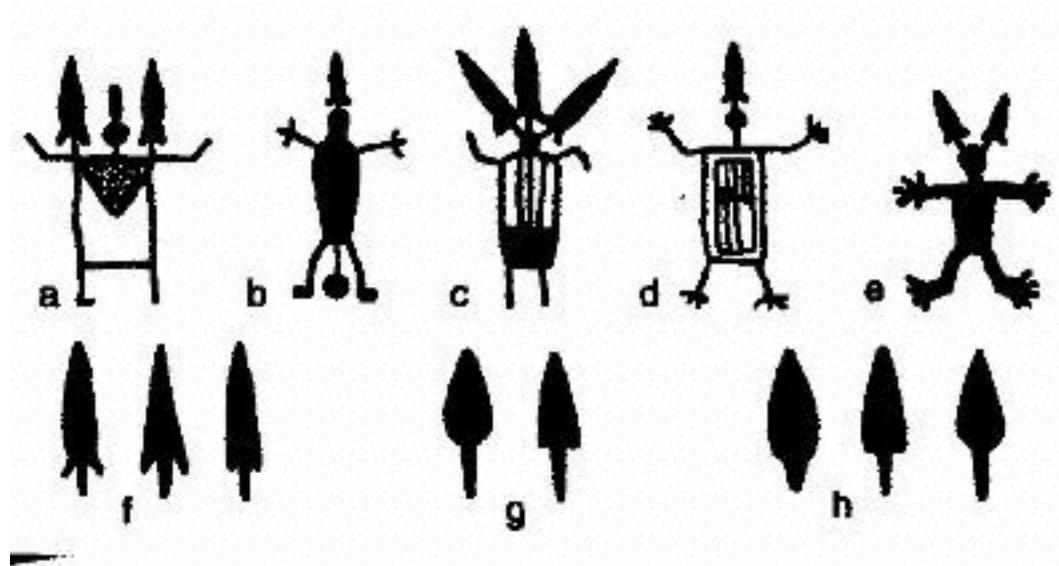


Figure 2. Projectile point petroglyphs from Grant et al. 1968:37. (a), (g), and (h) Little Petroglyph (Renegade) Canyon; (b) Darwin Wash; (c) Parish Gorge; (d) and (e) Sunrise Cliffs; (f) Sheep Canyon

We were able to relocate all but four of the previously illustrated glyphs (see Grant et al. 1968:37 lower figure b, c and g). In visiting and relocating most of the projectile point petroglyph panels known to occur in the Coso Range, we identified a few more distinctive and even more realistically rendered elements not previously identified. Well-grounded estimates for the total number of petroglyph elements in the entire Coso Range locality now suggest a minimum tally of 100,000 individual elements

(Gilreath 1997). Yet no more than 26 glyphs bearing 38 individual projectile point images have been identified.

As originally reported in Grant et al. (1968) and by our own field visits, we now recognize projectile point petroglyphs at the following localities: CA-Iny-9A/S-15 (Sheep Canyon- formally recorded as CA-INY-1375) (8), Little Petroglyph (Renegade) Canyon (6), Big Petroglyph Canyon (5), Dead End Canyon (1), CA-Iny-11 (Darwin Wash) (2), CA-Iny-5 (Junction Ranch 3/ Sunrise Cliffs) (2), CA-Iny-43 (Parrish Gorge) (2) and Little Lake (2).

Two types of glyphs are represented: isolated or individual projectile point images (19) and anthropomorphs with associated projectile point adornments (9).

Tabulating the various types of glyphs, styles of projectile points and their locations provided the following observations.

Most of the points recognized would be classified as corner-notched forms. Corner-notched points occurred both as isolated images and in conjunction with pattern bodied anthropomorphs. All anthropomorphs were adorned with points that were corner-notched. Most all depictions, whether isolated or with anthropomorphs, were corner-notched points.

Shouldered points were found in the greatest number in Little Petroglyph Canyon – among some of the oldest glyphs in the Cosos. Those shouldered points are more highly patinated than many of the corner-notched examples. The logical conclusion is that the predominant depiction of points in Coso petroglyphs was a corner-notched image with noticeable barbs. In this study we consider what the most likely analog or morphological equivalent

for this corner-notched point form is in terms of standard Great Basin projectile point typology (Holmer 1986; Thomas 1981).

CLASSIFICATION OF POINT STYLES

Three broad categories of projectile point forms are commonly recognized in the Great Basin: shouldered, side-notched and corner-notched (Thomas 1981). Although no true metrics are available for the Coso point petroglyphs (such as the actual length, width, thickness or weight of the artifacts they represent), it is possible to estimate from the glyph outlines their gross general morphology. Other operational criteria that have routinely been used to classify projectile points can also be estimated including: approximate Distal Shoulder Angles, possible Proximal Shoulder Angles, Basal Width/Maximum Width Ratios and Notch Opening Indexes.

Unfortunately the bases on all the point petroglyphs are obscured by the petroglyph representation itself - since they all are rendered as though they were hafted on foreshafts. Yet even with the latter condition, the isolated examples contain no side-notched specimens. The points adorning the anthropomorphs might lead us to think they might represent side-notched points as they do contain rather incurvate edges. Yet we think this is actually a "visual short hand" and are intended as an artistic convention meant to depict the prominently represented corner-notches, barbs or tangs as seen clearly in the outlines of the less stylized, isolated, corner-notched Coso point petroglyphs (Figures 3 and 4).

For the corner-notched examples, the notch opening index, as represented in the most realistically rendered, individual Coso point images, might be estimated to average about 50 degrees, the distal shoulder angle would average about 140 degrees and proximal shoulder angles might average about 90 degrees.

Assuming that the points depicted do not have concave bases, they would appear to have basal indentation ratios near 1.0. The basal width / maximum width position we would estimate at 0.0 and the maximum width position is 0%.

Projecile Points and Foreshafts

With most other examples of projectile point petroglyphs, realistically rendered rock art images exist and the researchers have tried to use these depictions as templates in order to equate them with certain styles of points having chronological sensitivity. In the current case, a confounding feature was evident. The Coso images differed from most others in that they were hafted to foreshafts making their exact basal morphologies somewhat more difficult to discern (Figure 3 and 4).

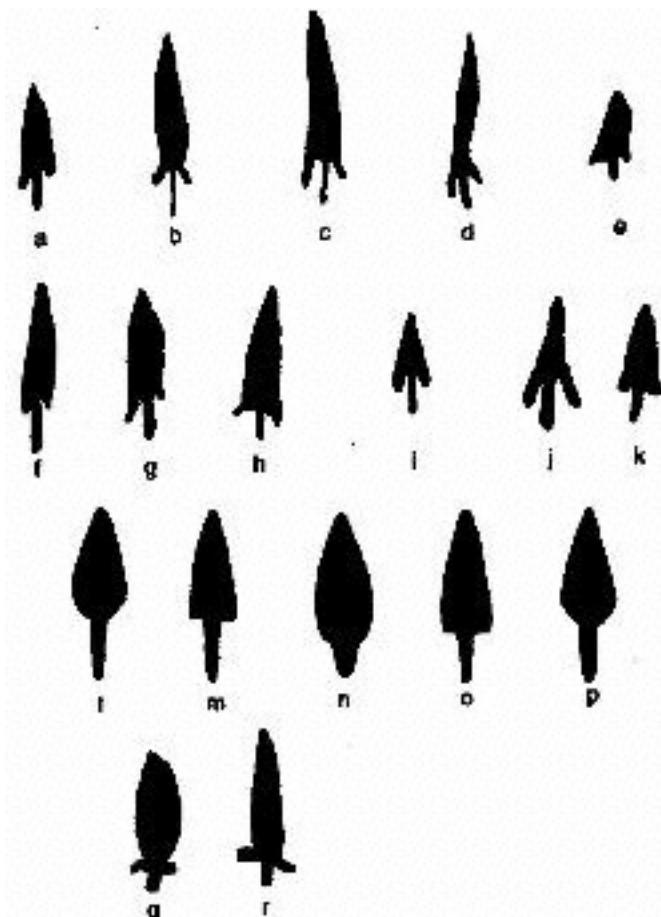


Figure 3. Projectile point petroglyphs with attached foreshafts.

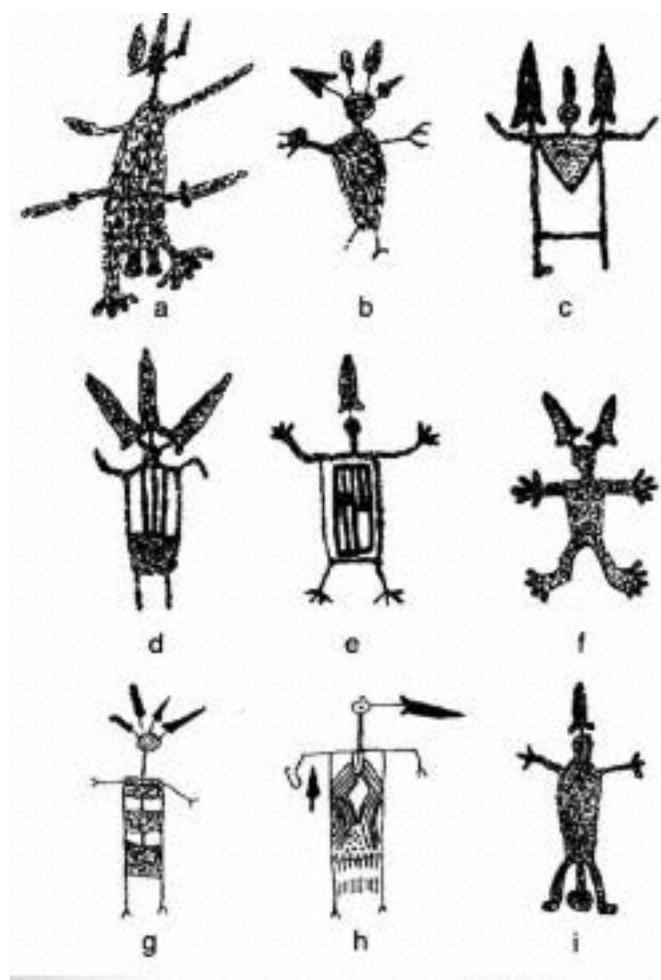


Figure 4. Projectile point adorned anthropomorphs from the Coso Range. (a) Parish Gorge; (b) Junction Ranch/Sunrise Cliffs; (c) Little Petroglyph (Renegade) Canyon; (d) Iny-43/Parish Gorge; (e) and (f) Iny-5/Junction Ranch 3/Sunrise Cliffs; (g) and (h) Big Petroglyph Canyon; (i) Iny-11/Darwin Wash.

Wood foreshafts were common components of atlatl dart forms manufactured prehistorically. Less commonly recognized is the fact that arrow points could also be manufactured with hard wood foreshafts especially when using cane or reed (*Phragmites communis*) for the shafts of composite arrows. In the John Wesley Powell Collection (1867-1880) of Numic (Great Basin Paiute and

Shoshone) hafted arrows, with only one exception, all arrows (99) with reed-cane mainshafts also have hard wood foreshafts (Figure 5 - this paper and Fowler and Matley 1979:64, Figures 52 and 53).

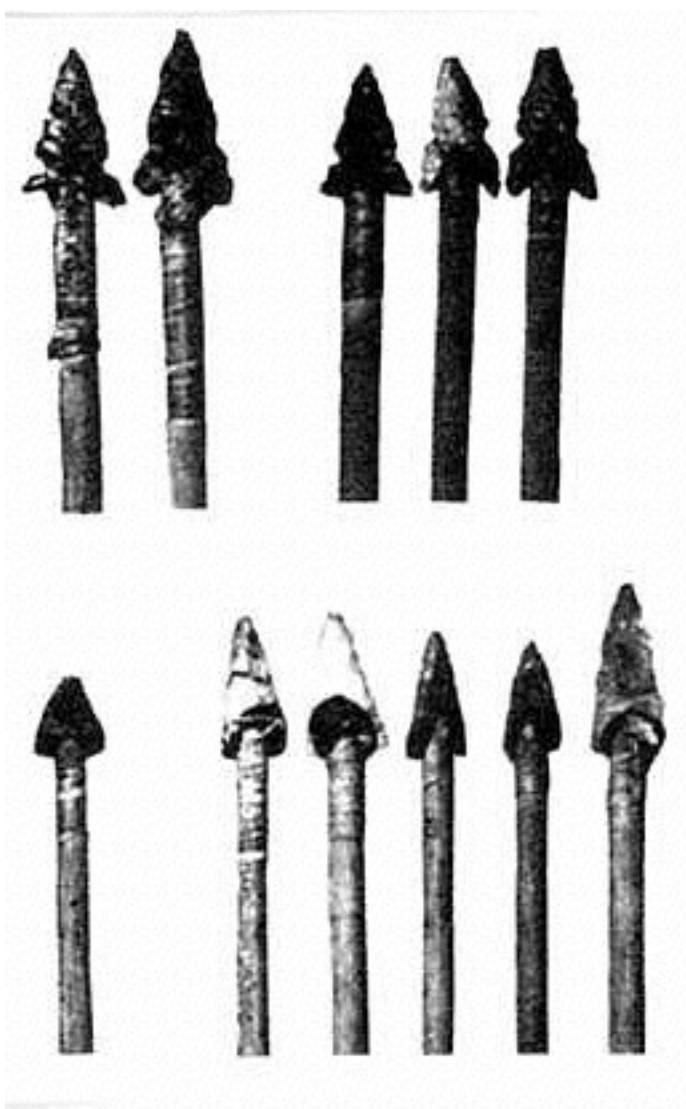


Figure 5. Numic hafted arrows from the John Wesley Powell Collection. From Fowler and Matley 1979:64, Figures 52 and 53. Top row -- Hafted Desert Side-notched style arrow points; Bottom row -- Hafted Cottonwood style arrow points.



Figure 5.1. Desert side-notched projectile points.
From left to right, Desert General; Desert General,
Humboldt County, Nevada; Desert Delta;
Desert Delta; Desert Sierra. Photo by Donald Austin.



Figure 5.2. Cottonwood projectile points, Great Basin.
Right and center right, Cottonwood triangles; left and
center left, Cottonwood Leaf. Photo by Donald Austin.

Examination of the Coso drawings led a number of archaeologists to suggest the possibility that what we were viewing were dart points attached to foreshafts that were used with atlatls in hunting large game, based simply on the large size (10-15 x 5 cm) of some of the point images. Hence we reviewed the common dart point forms that were recognized in the Coso Region for possible analogs.

Elko Series

The prominent barbs or tangs displayed by some of the Coso projectile point glyphs could correspond to elements morphologically equivalent with dart points of the Elko series. Heizer and Baumhoff (1961) were the original identifiers of Elko points. To better compare the Coso glyphs, a hafted Elko series point, still attached to its foreshaft and recovered from Lovelock Cave, was reviewed (Loud and Harrington 1929:178, Plate 45c). That specimen does appear to somewhat conform in basal morphology and overall outline to the corner-notched Coso point glyphs. Significantly, some recently identified projectile point petroglyphs from Nevada also closely resemble Elko Series points (Sue Ann Monteleone and Alanah Woody personal communications 2003).

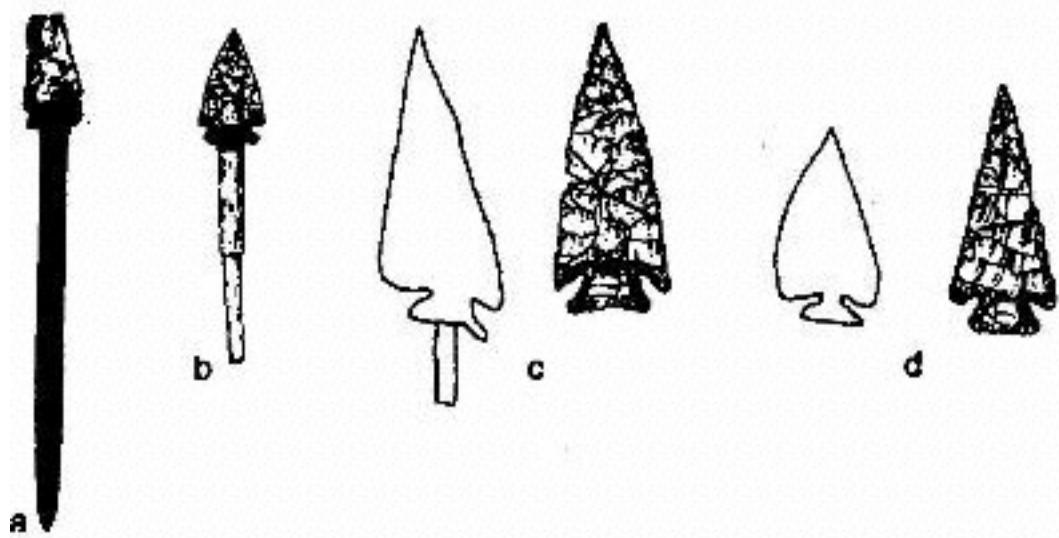


Figure 6. (a) Hafted Elko Corner-notched style from Lovelock Cave. From Loud and Harrington 1929:178 and Plate 45c; (b) Artists reconstruction of hafted Elko Corner-notched style point with wooden foreshaft; (c) Reproduced renderings of comparably scaled Elko Corner-notched style point petroglyph from the Dancing Man Site in Nevada and actual dart point of the same style; (d) Reproduced renderings of comparably scaled Elko Corner notched style projectile point petroglyph from the Dancing Man site in Nevada and actual point of the same style. Projectile point renderings [c & d] by Noel Justice (2002).



Figure 7. Elko Eared Style projectile point petroglyphs from the Lagomarsino site and drawings of similar style projectile points. Photo by Alanah Woody.

Projectile point petroglyphs at the Lagomarsino and Dancing Man sites bear a striking similarity to Elko-Eared (Lagomarsino) and Elko-Corner-notched forms (Dancing Man) (Figures 6-8). At the Dancing Man site we have both hafted and unhafted images. The hafted point glyph from Dancing Man compares favorably to the Lovelock Cave example. At Lagomarsino all the images are unhafted. The Elko style projectile point petroglyphs from Nevada are quite different from the Coso glyphs. They lack the characteristic tangs or barbs found in the corner-notched Coso glyphs and have proximal shoulder angles between 110 and 150 degrees. The Coso corner-notched glyphs would appear to have proximal shoulder angles that might range from 90 to 110 degrees (cf. Justice 2002: 436). Those Elko forms date to a period from about 4700 BC to AD 800 in Nevada (Gilreath and Hildebrandt 1997; Justice 2002; Smith et al.2013).



Figure 8. Elko Corner-notched projectile point petroglyphs from the Dancing Man site. Photo by Alanah Woody.

Figure 8.1. Elko projectile points. Left and center, Elko eared, Nye County Nevada; Right, Elko corner-notched, Panamint Valley, California. Photo by Donald Austin.

Humboldt and Desert Series

Yet another possibility is that the Coso corner-notched point petroglyphs were representations of hafted Humboldt or Desert Series (Cottonwood or Desert Side-notched) points. Examination of hafted examples of Humboldt style points from Hidden Cave (Pendleton 1985) closely resemble the Coso Range projectile point petroglyphs.

However, the hafted Cottonwood and Desert Side-notched types from the John Wesley Powell collection (Fowler and Matley 1979) appeared to rule out these as likely possibilities (Figures 5 and 9). In neither case did the hafted points contain the distinctive tangs found on many of the Coso corner-notched point glyphs.

Cottonwood series points are shouldered and so would be ruled out as analogs for most of the corner-notched Coso point drawings. It may be noted here that shouldered points are depicted at Sheep Canyon and give the distinct impression of being Humboldt Basal-notched analogs (Figure 3 a and f).

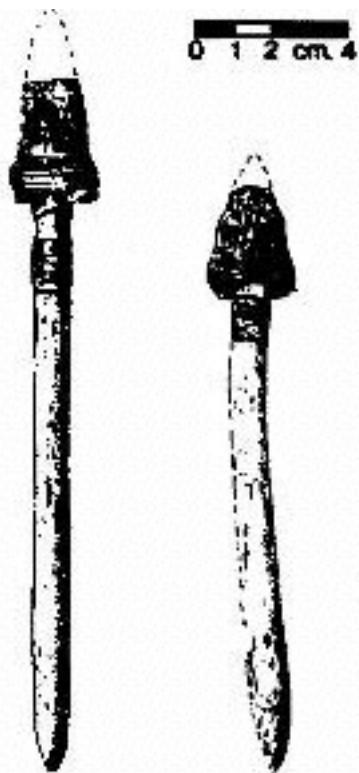


Figure 9. Hafted Humboldt Basal notched bifaces from Hidden Cave, Nevada. From Pendleton 1985:198, Figure 62.



Figure 9.1. Humboldt Concave Base style projectile points, Humboldt County, Nevada.

Photo by Donald Austin.

Desert Side-notched points did not compare favorably with most of the Coso renderings in terms of their proximal shoulder angles (Thomas 1970, 1971; Thomas et al. 1976). The Coso point glyphs also do not have the distinctive side-notches that conform to the Desert Side-notched form (see discussion above for the point glyphs adorning the anthropomorphs).

Rose Spring and Eastgate Series

Alternatively, many of the distinctively corner-notched and prominently tanged or barbed Coso projectile point petroglyphs could be representations of arrow points of the Rose Spring or Eastgate series (Heizer and Baumhoff 1961; Lanning 1963). Rose Spring points were originally recognized from the type-site of that same name located in southern Owens Valley at the edge of the Coso Range (Lanning 1963). Eastgate points were first identified in the materials from Wagon Jack Shelter, near Eastgate, Nevada (Heizer and Baumhoff 1961). Yet if they were arrow points the ages would be much younger than expected. Providing only an age, at most, of some 2000 years.





Figure 10. Sheep Canyon projectile point petroglyphs. Photo by Ken Pringle.

Figure 11. Projectile point adorned anthropomorph from Sunrise Cliffs. Scale is 15 cm (6 inches) in length. Photo by Alan Garfinkel.

Rose Spring and Eastgate arrow points are reasonably well-dated (Bettinger and Taylor 1974; Justice 2002). Robert Yohe's research at the type-site itself indicates a beginning date of ca. A.D. 300 and a terminal date of ca. AD 1300 for both forms. This

temporal span is based on the vertical distribution of Rose Spring and Eastgate arrow points and their associated radiocarbon determinations at the physically and culturally stratified site of Rose Spring (Yohe 1992, 1998). An example of a Rose Spring point from Tommy Tucker Cave in Lassen County still retained a horizontal wrapping of sinew across its haft element indicating that the shoulder barbs were normally left free and the wrapping extended onto the arrow foreshaft (Riddell 1956: Plate 1, 34). This is important since the representations of the points in the Coso glyphs depict this characteristic feature.



Figure 12. Projectile point adorned anthropomorph from little Petroglyph Canyon. Photo by Bill Wight.



Figure 13. Projectile point petroglyph from Sheep Canyon.
Photo by Ken Pringle.

Figure 14. Artists conception of hafted Corner-notched points comparably scaled with projectile point petroglyph element (Sheep Canyon). (a) Hafted Rose Spring Corner-notched projectile point, (b) Outline of Sheep Canyon, Coso Point glyph. (c) Hafted Eastgate Expanding Stem Projectile point. Points from Justice 2002.

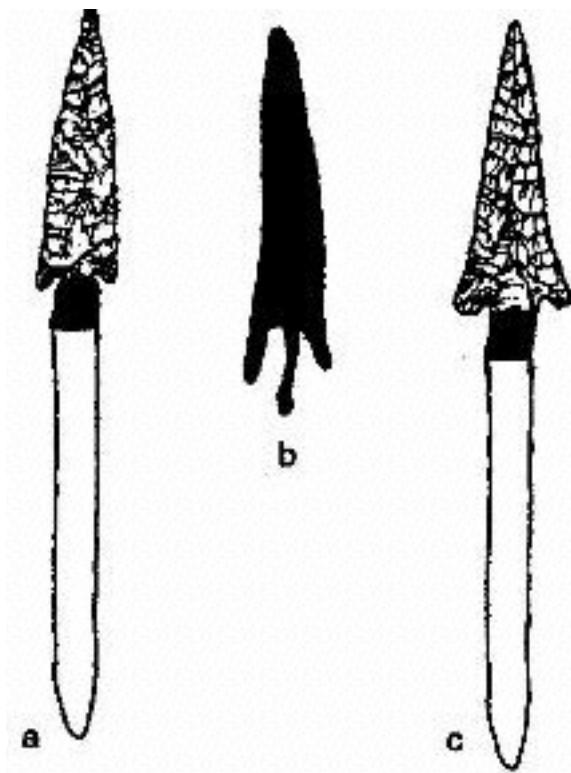


Figure 14. Artists conception of hafted Corner-notched points comparably scaled with projectile point petroglyph element (Sheep Canyon). (a) Hafted Rose Spring Corner-notched projectile point, (b) Outline of Sheep Canyon, Coso Point glyph. (c) Hafted Eastgate Expanding Stem Projectile point. Points from Justice 2002.

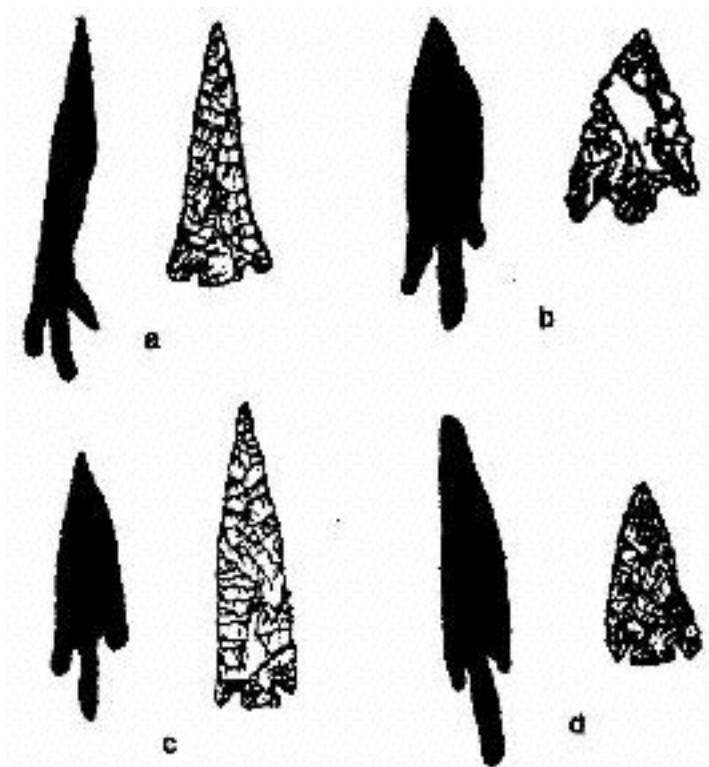


Figure 15. (a), (b), and (c) Outline of Coso projectile point petroglyph and drawing of Eastgate projectile point (points from Justice 2002); (d) Outline of Coso projectile point petroglyph and drawing of Rose Spring corner notched projectile point.

The Rose Spring Corner-notched type is a narrow triangular arrow point with shallow corner notches placed at the intersection of the blade and base elements. Arrow points that are similar in overall morphology are known as Eastgate Expanding Stem types. The Eastgate Expanding Stem form is a wide triangular arrow point with deep notches placed along the base; leaving squared or rounded shoulder barbs and sometimes an expanding stem. The Eastgate forms are rather distinctive in that they have prominently barbed shoulders. These points also have blade forms that in some instances are actually slightly concave in outline (Figure 10). Many are quite large and broad having an outline not unlike an equilateral triangle. The notches are narrow and completed in a fashion such that the point outline is

uninterrupted. Hence, the barbs might be described as “hanging” or extending to the level of the base or even farther (Delacorte 1990:118).



Figure 15.1. Rose Springs projectile points from eastern Nevada.
Photo by Donald Austin.

Eastgate points are not common in the Coso Range and Owens Valley. They are not, however, as rare as some believe (Lanning 1963:253). Archaeological studies have in fact revealed a fair number of Eastgate and sharply-barbed, look-alike Rose Spring Corner Notched points (cf. Basgall and Giambastini 1995, Figure 4.2 a-j; Basgall and McGuire 1988, Plate 27 a and d; Bettinger 1989: Figure 9.12 m-r; Eerkens and King 2002, Figure 7, top row center and 2nd row extreme right; Gilreath and Hildebrandt 1997: 75, Plate 2 i and n; Jackson 1985, Plate 11 a-f) in the Coso Range and Owens Valley area. Extensive excavations conducted in direct association with a large concentration of Coso petroglyphs in upper Renegade Canyon (Gilreath 2000 summarizing their unpublished notes from

excavations by Phil Wilke) recovered 22 Rose Spring, three Eastgate and two indeterminate Rose Spring or Eastgate style points. Sixteen Elko, two Desert Side-notched and no Cottonwood or Humboldt forms were retrieved. Hence the most frequent points forms were Elko (16) and Rose Spring (22) and those might be the most likely analogs.



Figure 15.2. Eastgate projectile points from eastern Nevada.
Photo by Donald Austin.

Experimental X-ray Fluorescence Dating of Coso Petroglyphs

Desert varnish forms on the surface of exposed rocks most likely through bacterial action. The bacteria ingest atmospheric dust and excrete a manganese concentrate from the dust. The petroglyphs are created by removing the desert varnish to expose the lighter heart rock below the varnish layer. Through signal processing one can use a non-destructive, portable XRF (x-ray fluorescence) machine and calculate the age of the glyphs.

To do this one subtracts the background signal of the un-pecked rock, computes the signal under the MN (Manganese) K line and applies a calibration curve to determine their age (see Rogers 2011 and Lytle et al. 2008 for the details of this process).

Measurements on two panels in the Coso Range with corner-notched points first in Sheep Canyon (Figure 16) as above and next in Little Petroglyph (Figure 12) provide nearly identical ages 2600 (Sheep) and 2800 (Little Petroglyph). The sigmas for these dates are generally considered to be in the range of plus or minus 25%. Hence the mean age calculated using the XRF dating technique are in the realm of 1350 BC to AD 1. Those dates are within the Coso Region cultural sequence and would date within the Newberry Period (ca. 1500/2000 BC to AD 600). Significantly, those suggested ages are in alignment and consistent with the independently corroborated ages of Humboldt Basal Notched bifaces [wide base variant 500 BC to AD 1000] (Garfinkel and Yohe 2004) and Elko Series point forms [2000 BC to AD 600] (Smith et al. 2013).

This was a time of elevated big game exploitation (particularly bighorn sheep) as evidenced through archaeofaunal studies documented within the Coso Region (Garfinkel et al. 2010)



Figure 16. Lower left, projectile point petroglyphs in Sheep Canyon. Dates provided through experimental X-ray fluorescence dating indicate an age of 2600 calendar years.

About this same time there is documented a period of extensive Coso obsidian biface production and exchange, and regionally extensive peak production of Coso rock art (Gilreath and Hildebrandt 1997).

Conclusions

The evidence we've mustered here seems to support the notion that corner-notched projectile point petroglyph images in the Cosos are most likely analogs for Elko Corner-notched form. The other basal-notched form is most likely the representatives of the

Humboldt Series points - either Humboldt Basal-notched or Humboldt Concave Base.

It must be admitted that these Coso dart point images are rendered with considerable “artistic license” and flourishing design and at other times are rather simplistically drawn and always hafted to dart foreshafts. The most readily discernible examples are indeed the eight (8) images found in the three panels in Sheep Canyon (5), Dead End (1) and Big Petroglyph Canyon (2) localities within the Coso Range (Figure 2 top row, b-e and middle row b, e and f).

SHEEP CANYON

Grant et al. (1968:70) noted that this Sheep Canyon locality (S-15, Iny-9A) contained some 744 drawings and that over half of those renderings were of bighorn sheep. Six individual corner-notched projectile point images have been identified in that area (Table 2). That is the highest number of projectile point images for any location yet identified within the Coso Range.

SYMBOLIC DIMENSIONS OF PROJECTILE POINTS AND THE MISTRESS OF ANIMALS

The age for the projectile point petroglyphs center on a date of 2700 cal BP plus or minus 690 years (1350 BC to AD 1) and this age is roughly in line with the Newberry Cave expression for elaborate efforts of totemic increase rites (Garfinkel 2014) associated with split twig figurine production dating to a time from 1800 to 1200 BC).

It is interesting to note that two of the Coso anthropomorphic figures with Elko and Humboldt dart points are most likely women! The first image, depicted in Figure 4i, is frequently identified as a

birthing scene (cf. Slifer 2000, Figures 19a, 122e?, 57a, 63h). . Another image, Figure 4a, definitely a gendered female animal-human figure, with avian legs and feet and exhibits the conventionalized female gendered attributes depicting the conventionalized elements identified as "pendant labias" (cf. Slifer 2000, Figure 21, 22, 44, 95a, 152).

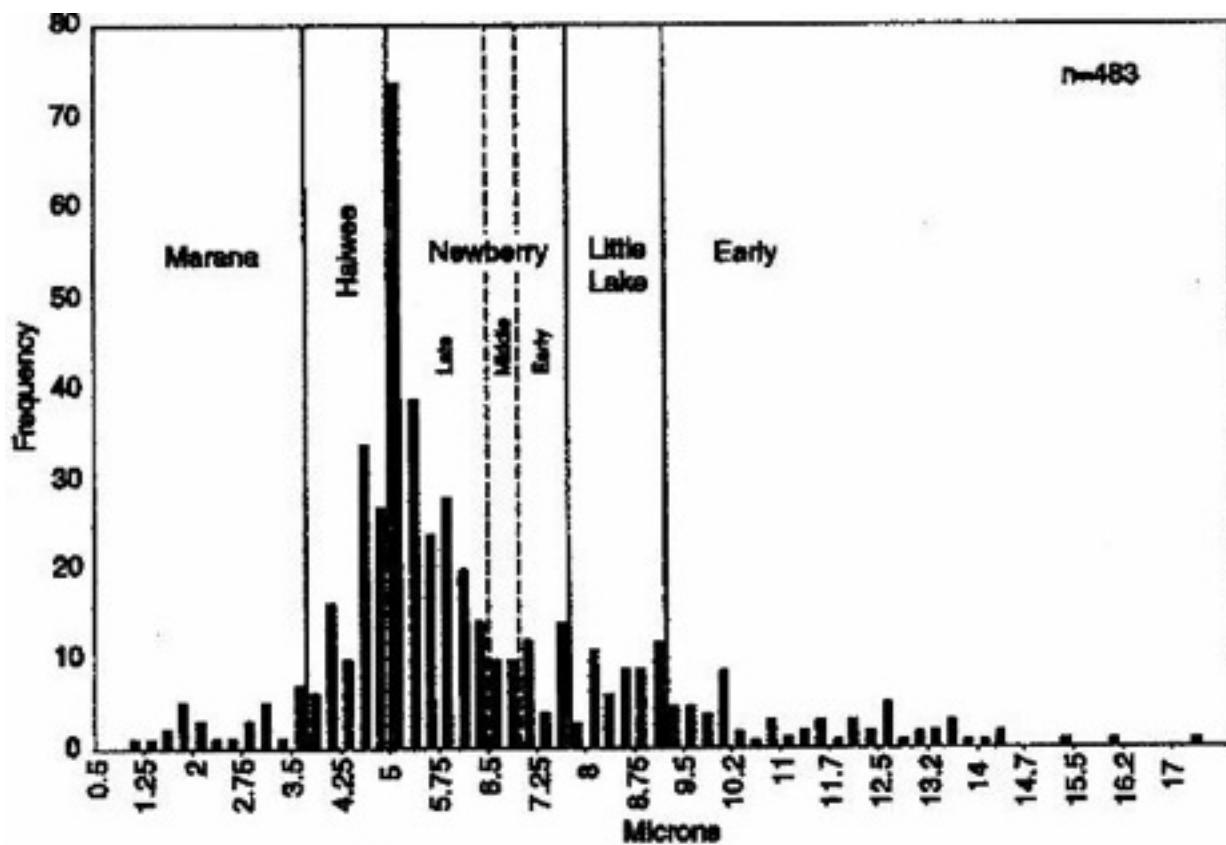


Figure 16. Composite hydration profile of Coso hydration rim values at archaeological sites in the Coso Range.
From Gilreath (1999:11, Figure 1).

In another piece of research the senior author and a number of his colleagues (Garfinkel et al. 2009) have argued that there may be a rough analog between the Uto-Aztecán deity variously known as Yahigal or Yahwera (i.e. the Master of the Animals) and

the decorated torso, avian-human figures of the Coso Range. This Animal Master (or is it Animal Mistress) is an ancient concept with shamanistic roots. It can be found throughout the world but is expressed in the immediate area of the Coso Range through the sacred narratives of both the indigenous tribes of the area identified as the Kawaiisu and the Tubatulabal.

The Animal Mistress or Mother of the Animals is conceptualized as a deity who “owns and controls” the animals and is responsible for their increase. Hunters were advised to engage in the correct ceremonies and if these rituals were properly carried out with reverence, she would allow the hunter to slay one of her children (Slifer 2000:90-91).

Specifically, the images depicted as females with projectile points might be best understood as a Mother of the Animals icon. The projectile points would be metaphors representing hunting success.

If this line of thinking is correct, and the class of projectile point embellished figures does represent the Animal Mistress, this would also be consistent with one perspective on the meaning for much of Coso rock art (cf. Garfinkel 2006). Although the function of much of rock art is mysterious and elusive, we can be certain that fertility is one of its central themes.

Images in the Cosos, and also around the world, indicate a desire for successful human reproduction and extending those feelings to a reassurance of the continued fertility of the earth.

The ethnographic record of hunter gatherers worldwide documents indigenous group ceremonies performed to preserve and enhance the fecundity of culturally important game animals. These increase rituals include calling out the game animal name, chanting melodies related to the animal and dramatic presentations of the mythic history of the site and the animal’s

association with the area. Acts of magic are also included and aimed at enhancing the prevalence of game animals in general. These visits sometimes facilitate group ceremonies including male initiation and coming-of-age rites.

Recent suggestions by Hildebrandt and McGuire (2002) echo the importance of the symbolic dimension of male hunting technology and its association with the rather spectacular artistic realm of the Coso tradition. Hildebrandt and McGuire aver that the elaborate prestige or “show-off” behaviors of male hunters, directing their attention at big game animals (specifically large artiodactyls such as bighorn, pronghorn and deer), conferred preferential fitness benefits to these male hunters. If such were the case, the depiction of projectile point images would logically be part of just such a pattern, where male hunters accrue power and hunting success through sympathetic magic facilitating the hunting of large game.

Period designations conform to the following parameters:

Period Age (years before present) Hydration Range in Microns

Marana 650-Historic
<650
<3.7

Haiwee 650-1275
3.7 to 4.9

Newbery 1275-3500
4.9 to 7.6

Little Lake 3500-5500
7.6 to 9.2

Early >5500
>9.2

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We are most grateful for her generosity in sharing her data with us. We would also like to acknowledge the Little Lake point glyph materials graciously provided by Jo Anne Van Tilberg, Research Associate of the Cotsen Institute of Archaeology at the University of California, Los Angeles. Lastly, we appreciate the ongoing dialogue with our friend and colleague, Eric Ritter. His enthusiasm and insights on the subjects of art history, shamanism, and the ethnic identification of prehistoric rock art are always welcome.

This article appeared in an earlier format and has been significantly revised in terms of its conclusions from that in American Indian Rock Art, Volume 30, published by American Rock Art Research Association. ARARA is the oldest rock art

organization in the world and is dedicated to the support of rock art research, conservation and education.



Alan Garfinkel, Donald Austin, & J Kenneth Pringle
at an Eastern Sierra pictograph site.

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