

# Rock Art at CA-RIV-981: Chronology, Imagery, and Function

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## Abstract

A limited corpus of rock art consisting of seven small petroglyph boulders with 11 separate panels at CA-RIV-981 is discussed for its potential chronological implications, content of its imagery, and functional role in the local prehistoric landscape. Close inspection of the petroglyphs suggests a relative chronology of potentially considerable duration. The entoptic images on multiple panels suggest trance-induced manufacturing behavior, and the associated stone circles, aboriginal trail, and trail shrine suggest functionally important social associations with other features of the prehistoric archaeological landscape.

## Site Location and Description

CA-RIV-981, also known as the Gus Lederer site, is located in the northeast Colorado Desert near Desert Center in eastern Riverside County (Figure 1). Situated on a long, low knoll atop an alluvial fan on the northeast slopes of the Chuckwalla Mountains, RIV-981 overlooks the Chuckwalla Valley, with Ford Dry Lake a few miles to the east. The site, initially recorded by McCarthy (1993), measures 160 m east-west by 35 m north-south and includes petroglyphs, a rock circle, a trail shrine, flakes, ceramic sherds, metates, and a mano (Figure 2). Analysis of the rock art and other features suggests that RIV-981 represents a long-used way station for travelers along a major aboriginal trail and a place where visitors participated in ritual activities.

The aboriginal trail (CA-RIV-343) extends 3.5 km west up the canyon to Corn Springs, the closest permanent source of water and the location of the

important oasis site of Corn Springs (CA-RIV-32). Prospector Augustus Lederer built a cabin at the spring in the early years of the twentieth century; he was known as the “mayor” of Corn Springs until his death in 1932 (Henderson 1945) and was renowned for his efforts to protect local archaeological resources (Metcalf 1982; Kaldenberg and Crites 2006). Listed in the National Register as the Corn Springs Petroglyph site, CA-RIV-32 includes the extensive remains of a prehistoric habitation site in addition to a large concentration of rock art (Fenenga 1981; Whitley 1996). The oasis is approached from the east by the trail (RIV-343) that is associated with the Gus Lederer site and by CA-RIV-892, another trail that intersects RIV-343. Both are believed to be part of a system that connects the Colorado Desert with the Coachella Valley to the west (McCarthy 1990, 1991). A segment of an east-west trail (CA-RIV-893), now destroyed, has been recorded in the vicinity of Corn Springs Road and Chuckwalla Valley Road (Underwood et al. 1987).

The Gus Lederer (RIV-981) site contains few surface artifacts. The inventory consists of four chert flakes, five Lower Colorado Buff Ware sherds, one mano, and nine metates. Nine features distributed amid the dominant creosote vegetation represent the most significant aspects of the site. These features include a rock ring that is similar to features in the region that have been interpreted as sleeping circles, teaching circles, or prayer circles; two concentrations

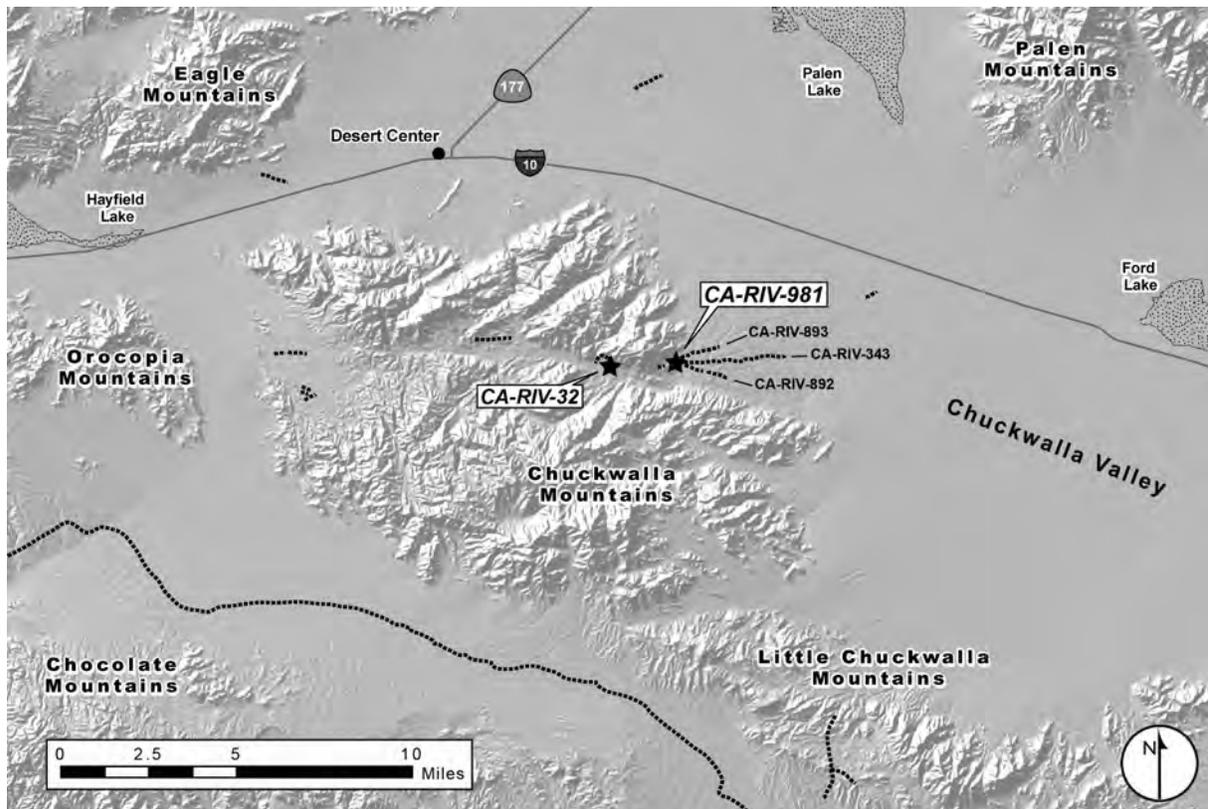


Figure 1. Location of CA-RIV-981 and CA-RIV-32. Dotted lines represent documented aboriginal trails.

of four metates each; and seven small boulders with petroglyphs.

### Non-Petroglyph Features

#### *Feature 1*

Feature 1 is located near the west boundary of the site, where it is offset roughly 17 m from the north branch of the trail. It consists of a concentration of four metates and six other clasts that are larger than the cobble matrix of the desert pavement in which they are located. None of the metates exhibit any but the most minimal traces of abrasion on the upper surface. None are shaped; each is a locally derived large cobble with a grinding slick facet indicating ephemeral usage. The concentration measures 3.5 m by 7.5 m and

contains no other surface archaeological indicators. Its proximity (about 5 m) to Feature 2, however, implies that the two features are probably associated.

#### *Feature 2*

Feature 2 (Figure 3) is located about 5 m east of Feature 1. It consists of a roughly circular ring formed by 18 rocks and of two offset rocks at the southwest corner which lend the feature a vague “fishhook” shape. Measuring approximately 2.4 m by 2.5 m, the feature’s size is consistent with descriptions of “sleeping circles” that are thought to have been used by aboriginal travelers along desert trails. Other possible interpretations are offered below. Of unusual interest in the rock ring configuration is what we have termed Rock 1, the first in a numbered series of

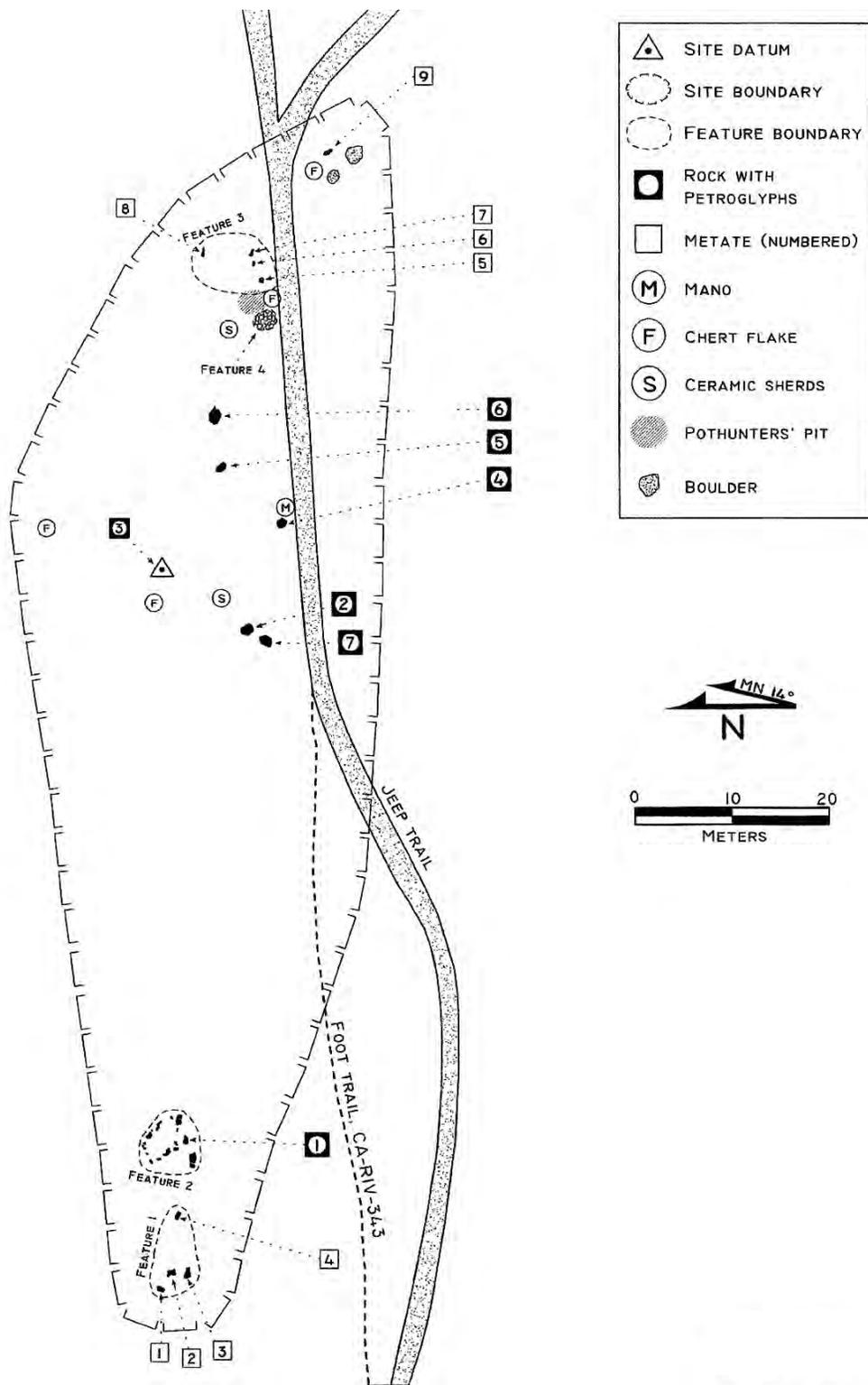


Figure 2. Site map, CA-RIV-981. Ancient Enterprises, 2001.



Figure 3. Feature 2, a rock ring.

petroglyph rocks at the site. It is discussed in more detail below. No other surface archaeological indicators were noted in or near the feature.

### **Feature 3**

Feature 3 is located near the eastern end of RIV-981, just north of a jeep trail that cuts through the eastern portion of the site. It consists of a concentration of four metates within an area of 8 m by 4 m immediately east and north of a large pothunter's pit. The pit appears to have been made as an excavation adjacent to a large rock cairn, or trail shrine, and as a consequence, the trail shrine is badly disturbed by the displacement and scattering of the stones of which it was made. All four metates are on locally derived cobbles which evidence minimal abrasion from ephemeral usage on their upper surfaces, an observation that replicates that made for the four specimens identified in Feature 1. No other archaeological surface indicators were present within the area of the feature itself, but a red chert primary flake with cortex was observed just outside the southwest boundary.

### **Feature 4**

Feature 4 (Figure 4) is best characterized as a trail shrine, following McCarthy's (1993) original site record observation. As such, it consists of a large rock cairn which has been vandalized, with the constituent rocks moved and scattered, probably during the excavation of the immediately adjacent pothunter's pit. The present dimensions of the shrine are roughly 2.5 m by 2.8 m. The shrine's original dimensions and configuration are impossible to determine. Two small Lower Colorado Buff Ware ceramic sherds were noted about 2 m north of the present rock scatter.

### **Petroglyphs**

Seven rocks or boulders at RIV-981 exhibit one or more panels with petroglyphs. These boulders, numbered consecutively as Rocks 1–7, are the primary source of our insights on chronology and imagery as represented at the site. The seven petroglyph rocks are aligned in a roughly linear pattern along the east-west axis of the site. Five of the rocks display a single petroglyph panel (Rocks 1, 2, 5, 6, and 7), while the



Figure 4. Feature 4, a disturbed cairn or trail shrine.

additional two rocks each exhibit three panels (Rocks 3 and 4), making a total of 11 petroglyph panels for the site.

### ***Rock Art Recording Methods***

A primary goal of the recording effort, in addition to providing an accurate record of the shape and scale of each individual petroglyph, was to evaluate the various degrees of repatination present among the petroglyphs. Each petroglyph panel at RIV-981 was traced onto Visqueen plastic film and photographed on 35 mm transparency film. Through previous experiments we determined that the desert varnish layer on igneous rocks reflects invisible ultraviolet radiation, while the underlying rock, if stripped of its patina, has a greater tendency to absorb ultraviolet. Unlike the human eye, most 35 mm transparency film is sensitive to ultraviolet light and reproduces these wavelengths as a deep shade of blue. The transparencies were scanned and digitally manipulated with Adobe Photoshop software. Each Photoshop

file was separated into its individual red, green and blue channels, and the red and green channels were discarded. We found that the blue channel when viewed alone showed relative repatination of the petroglyphs most effectively. Because this channel represents primarily the reflected blue and ultraviolet wavelengths, the contrast of the desert varnish was artificially enhanced, and the differences in repatination among adjacent areas of rock could be seen more clearly than in a full-color photograph or with the eye alone.

By manipulating the scanned transparencies in this manner, it became clear that three fairly distinct degrees of repatination were present among the petroglyphs. In some cases these differential patination types had been apparent to the field crew while they were recording the panels, so the photographic evidence served as a confirmation of their observations. The digitally processed images were used to generate the line drawings shown here, although conventional photographs have been used for publication.

### **Repatination**

Of considerable interest and significance is the fact that three distinct degrees or types of repatination can be readily observed within the panels noted. These three types can be characterized as light, moderate, and heavy when analyzed by visual comparison and contrast. All three repatination types can be seen on pecking and abrasion that is deep enough to have completely penetrated the host rock's original, fully developed patina, and therefore seem to provide a reliable indication of relative age. Two rocks show only light repatination (Rocks 5 and 7), two others show moderate repatination alone (Rocks 1 and 6), and three of the petroglyph rocks show both light and moderate repatination (Rocks 2, 3, and 4). One of these (Rock 3) has one panel (Panel 3) on which light, moderate, and heavy repatination may be observed.

#### **Rock 1**

Rock 1 (Figure 5) bearing one petroglyph panel is located within Feature 2. At first glance the rock appeared to exhibit the minimally altered grinding surface of a somewhat ephemeral slick or metate, not totally dissimilar to other metates at the site. On closer inspection, however, it was noted that some of the surface alteration had been executed by striking or battering, the typical mode of petroglyph production. Moreover, the modified area is smaller and more discontinuous as well as deeper than the slickened portions of true metates at the site, and unlike the site's nine metates, which have no apparent repatination, Rock 1 exhibits repatination to a moderate degree, like the majority of other rock art elements at CA-RIV-981. It was therefore classified as part of the rock art corpus from the site. The pecked area is somewhat amorphous in shape and does not represent any recognizable composition. In addition to its creation as a petroglyph, it is possible that the specimen also represents a "striking stone" which, when struck with a quartz cobble, would have produced "quartz

lightning" as part of a ceremonial function documented at other California desert sites (see Altschul and Ezzo 1994:53; Whitley 2001a). Such a function is consistent with the other ritual aspects of the site as discussed below. A third potential explanation of the somewhat anomalous piece is that it served, at least on occasion, as a sharpening stone.

#### **Rock 2**

Rock 2 (Figure 6) is located about midway along the site's east-west axis, some 2 m north of Rock 7. Like Rock 1, it has a metate-like appearance on first observation and displays one petroglyph panel. Unlike Rock 1, however, Rock 2 exhibits two distinct episodes of production as reflected by the moderate repatination on its underlying template and the light repatination superimposed on the basic design. The moderately repatinated portion of the element is a subvoid central area of easily detected abrasion with 10 or more lines or rays

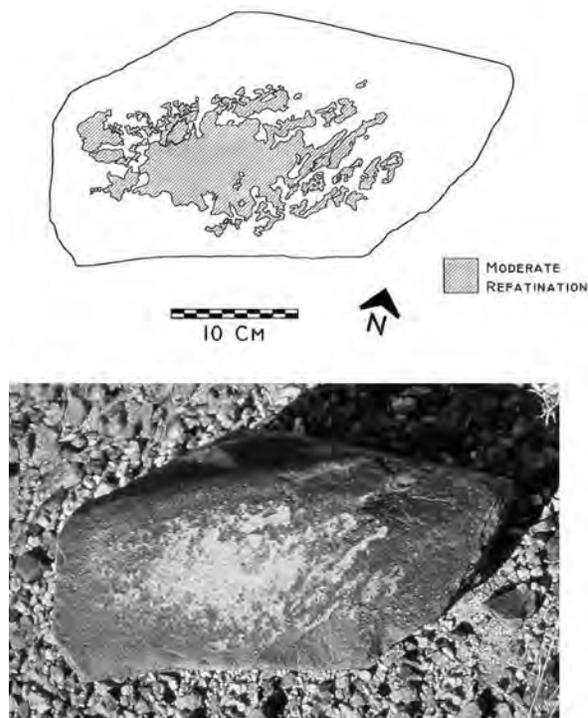


Figure 5. Rock 1.

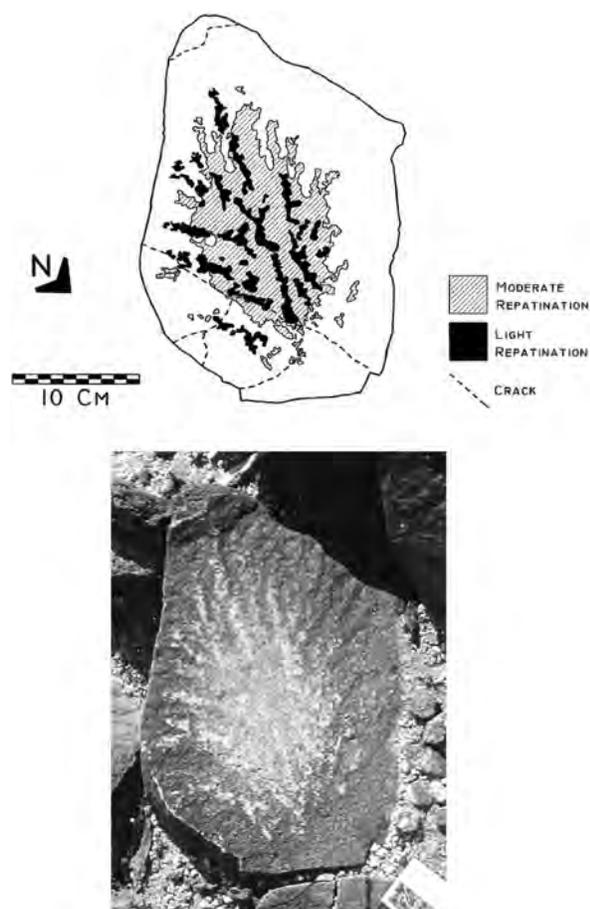


Figure 6. Rock 2.

which project upward from its top half in a crudely rendered and imprecise manner which, if more artfully executed, might resemble a sunburst motif. A series of dots and smaller abraded patches with moderate repatination surround the lower half of the element. In contrast to the “filled in” nature of this underlying element, the later component, which exhibits light repatination, is composed of a series of discontinuous lines or linear meanders interspersed with a number of dots, some of which were made with a single blow against the parent stone. The flow pattern of these lines and dots is upward, in rough parallel to the rays that extend from the top portion of the larger element. These lightly repatinated lines are narrow and almost appear to have been made by a scratching method.

We believe that these elements comprise an intentional composition, however unusual, and are not the result of the rock’s use as a striking stone. Further, the manufacturing techniques used during both episodes of production cut across the natural grain of the parent stone, rather than going with the grain, as one would expect with abrasion on a typical metate. Also, both techniques have penetrated far deeper into the stone’s surface than the grinding seen on any of the nine metates at the site.

While small and of dubious note as a photogenic example of prehistoric art, Rock 2 is nevertheless of particular interest in that it shows unequivocal evidence of having been manufactured in two distinct temporal episodes. This notion can be argued from three different lines of reasoning. First of these is the clearly differential repatination pattern in which the older component shows moderate patina while the later (linear) component is only lightly patinated. Secondly, the moderately repatinated parts of the modified surface were clearly manufactured by abrasion, thus filling more surface area than the lightly patinated overlying lines, which were produced by pecking or scratching and which fill up a far smaller part of the whole image. Thirdly, as may be seen in the Figure 6 line drawing, there is a natural split or crack which crosses the lower quarter of the stone at an oblique angle. The bottom part of the moderately repatinated main element goes across this crack, indicating that it was placed upon the rock before the natural split occurred. Most of the lightly repatinated modifications are confined above the crack, with some ending precisely at the edge of the split, and two meanders are placed well below the fissure. None of them traverse this feature of the rock, which would seem to indicate that they were introduced to the composition after the split had occurred. Thus, two episodes of manufacture are evidenced by differential repatination, different manufacturing techniques, and element placement relative to the natural geological morphology of the rock itself.

### Rock 3

Rock 3, located in the central portion of RIV-981, is the northernmost of the seven petroglyph-bearing rocks and was used as the primary datum for the site (see Figure 2). It contains three separate petroglyph panels, each one placed upon a different face or facet of the parent boulder. Taken together, these three panels are home to the greatest number of elements, the most complex motifs, and the longest temporal sequence (as reflected by light, moderate, and heavy repatination) of any of the site's petroglyph rocks.

### Rock 3, Panel 1

The glyphs on Panel 1 of Rock 3 (Figure 7) exhibit both light and moderate repatination, reflecting two episodes of production. The former category was manufactured primarily by pecking and consists exclusively of dot motif elements, the largest grouping of which, in the upper right part of the panel, forms a crescent-shaped curvilinear meander. Below this crescent are a series of individual dots and two "patches" formed by the clustering of five and seven dots in group-like configurations. Five individual dots are found in no discernable

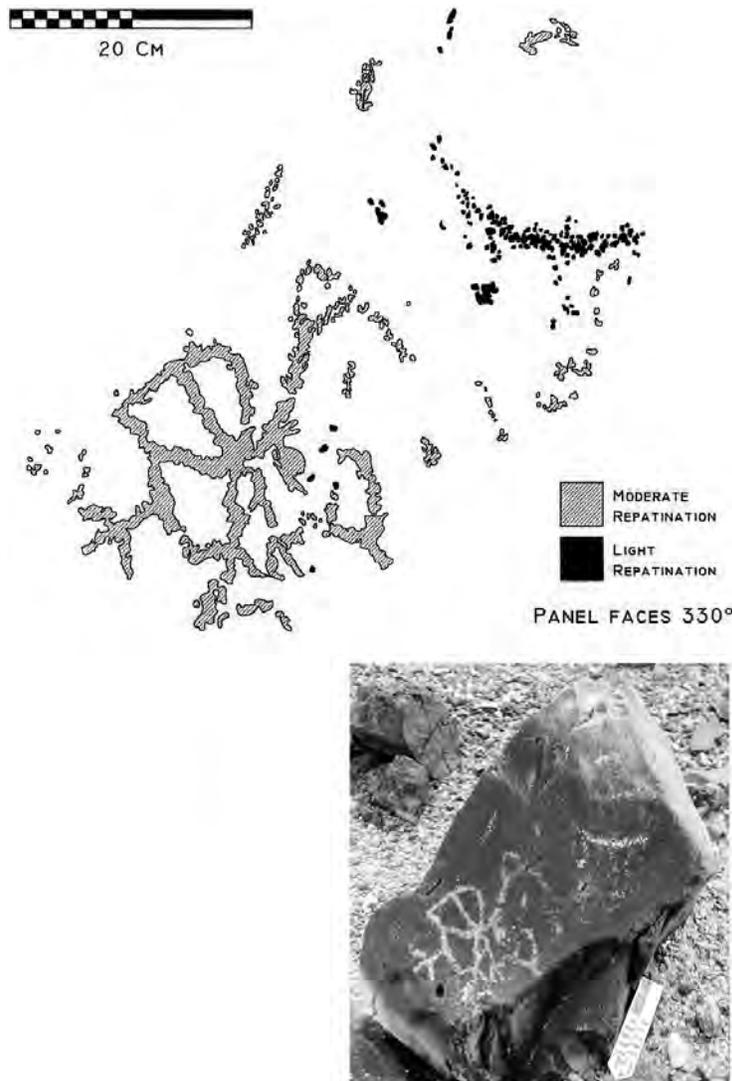


Figure 7. Rock 3, Panel 1.

pattern within the largest of the moderately repatinated elements at the left side of the panel. This large element with moderate repatination is an abstract curvilinear motif best described as a set of four conjoined triangles, but it could be interpreted as a spoked circle with outwardly radiating linear meanders or even a zoomorphic (bird) element. It is the most prominent and obvious of all motifs on the panel and was manufactured primarily by abrasion, with only minimal traces of singular peck marks. It is the only truly composite element on the panel. Outside and to the right of this main element are a series of moderately repatinated dots and dot clusters forming vague linear meanders, and above and to its

right are three separate small linear meanders arranged to form a crude arc.

**Rock 3, Panel 2**

Panel 2 of Rock 3 is best described with reference to the clearly visible natural cracks on the parent boulder, as shown by photograph and line drawing in Figure 8. The panel contains 11 somewhat distinct elements, two with light repatination and nine with moderate repatination. All but four of these elements are almost entirely enclosed within a large set of cracks which form a sort of “frame” around them. In only two places

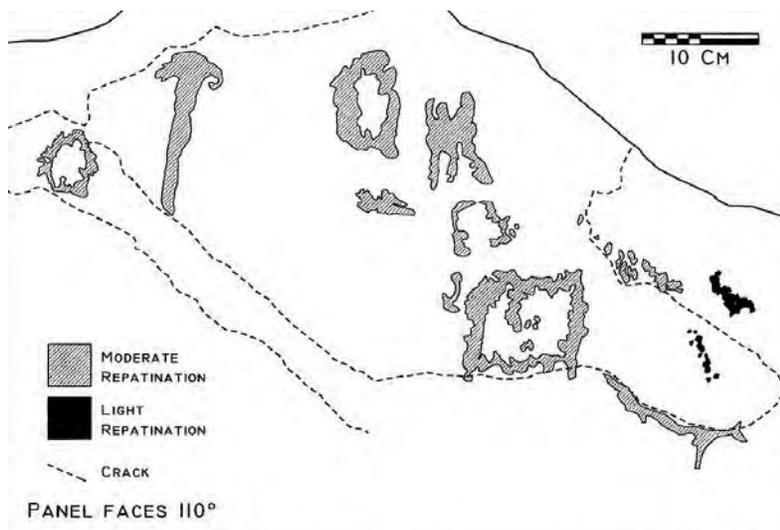


Figure 8. Rock 3, Panel 2.



inside the frame and in three places outside of it do elements encroach closely upon or slightly cross over the surrounding crack. It appears that the makers of the rock art were cognizant of this frame and used it to guide placement of the elements on the panel. If this observation is correct, it would indicate that the parent boulder was cracked before any of the petroglyph elements were placed upon it. The two lightly repatinated elements are found in the right-central part of the panel, one outside and one inside of the prominent crack. Each was executed by pecking, and each consists of a series of dots forming crude curvilinear meanders. Of the nine moderately repatinated elements, six occur within the crack and, starting from the upper left, include: (1) an inverted “anchor” consisting of a vertical line topped with a short horizontal crossbar; (2) an

open circle immediately above a short horizontal line; (3) a bifurcated “H” immediately above a partial circle; and (4) at the lower right, a large, squarish, partially bifurcated subcircular design. Outside the crack at the far left of the panel is an open circle element below which is another crack caused by spalling of the parent rock. In the right portion of the panel, two crude curvilinear meanders occur along the outside edge of the crack. The upper one is made with a series of dots, while the lower one appears as a patch of grinding with a somewhat indistinct curvilinear design.

### Rock 3, Panel 3

Panel 3 of Rock 3 (Figure 9) is the only rock art panel at the site which has elements from three different

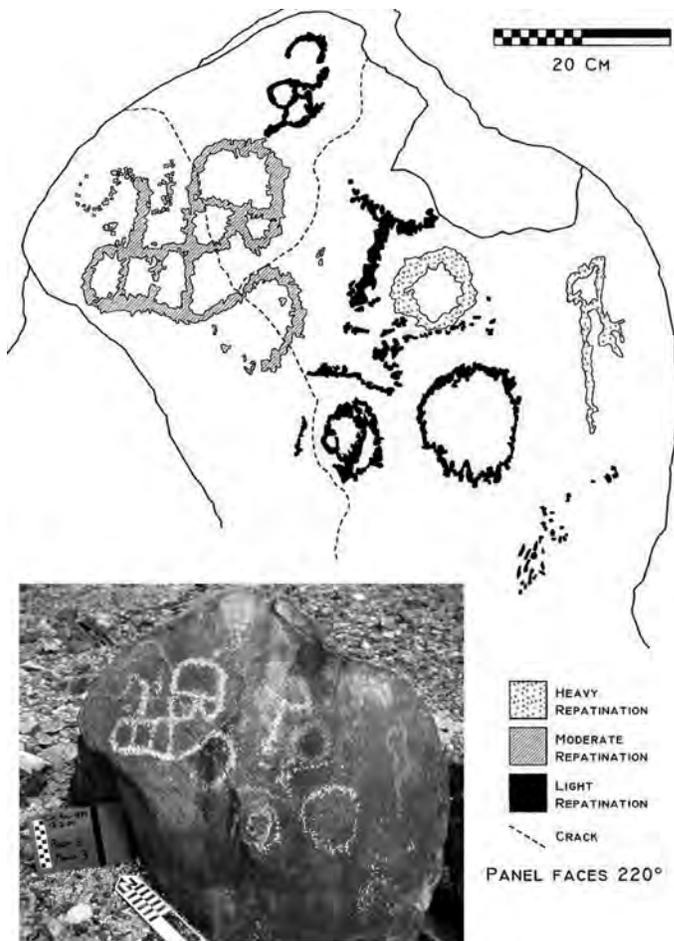


Figure 9. Rock 3, Panel 3.

manufacturing periods or episodes, as reflected by distinctly individual motifs which exhibit either light, moderate, or heavy repatination. It is also the sole panel where elements with heavy repatination could be detected. Only two of these elements were positively identified. The first, in the central area of the panel, is an open circular motif. The second, at the panel's right edge, is a double-tailed circle with the two downward projecting tails being very faint and difficult to observe. Both of these were produced by heavy abrasion or grinding. A single large element at the panel's left side is the only one to exhibit moderate repatination. Also manufactured by abrasion, this composite motif consists mainly of three conjoined circles at its lower left, three more conjoined circles (in a different configuration) at its upper right, and vaguely subcircular curvilinear extensions projecting from the upper left and lower right corners of the design. Unlike the heavily or moderately repatinated designs on Panel 3, the eight elements exhibiting light repatination were all executed by a pecking technique. As described from top-to-bottom, these include a semicircular crescent immediately above a bifurcated, tailed circle, a "T" shape formed by a long vertical line with a curving horizontal crossbar at its top, and a series of dots making up a curvilinear meander. Below this are three elements in horizontal alignment: (1) a short vertical line on the left, (2) a bifurcated circle in the middle, and (3) a large open circle on the right. Below these, at the lower right of the panel, is a meandering, curvilinear cluster of dots. Two natural cracks appear in the rock on the left side of the panel. The element with moderate repatination lies atop the largest of these cracks, while all the elements with light repatination appear to have been placed to avoid it. The elements with heavy repatination are on the right side of the panel where no natural cracks in the rock occur.

#### ***Rock 4***

Rock 4 is located just north of the jeep trail in the central portion of RIV-981, roughly 20 m southeast of

the site datum at Rock 3 (see Figure 2). Like Rock 3, it has three petroglyph panels, each on a natural facet of the parent boulder. Two panels (Panels 1 and 3) are extremely simple in composition, while Panel 2 exhibits a number of element motifs. While the rock as a whole evidences two episodes of petroglyph manufacture, only one such episode, as reflected by relative amounts of repatination, is represented on each single panel.

#### **Rock 4, Panel 1**

Panel 1 of Rock 4 (Figure 10) consists of a centrally placed, poorly executed "anchor," with a horizontally placed crescent as its lower component and a short vertical line extending upward from its center. On either side at the top of this line is a series of clustered dots in no particular pattern. The entire composition, best described as an indistinct linear meander, was manufactured by grinding or abrasion and exhibits moderate repatination. Its minimalism and simplicity could suggest that it resulted from one quick ritual of manufacture by a single person.

#### **Rock 4, Panel 2**

Panel 2 of Rock 4 (Figure 11) has six relatively discrete elements, all exhibiting moderate repatination. At the approximate center of the panel is a "rake" motif consisting of a single horizontal line with roughly seven downward projecting vertical lines of varying lengths. This element is bracketed left and right by two diagonally bifurcated circles. The one on the right is "tailed" by five downward extending vertical lines and one vertical line projecting from its top. A third diagonally bifurcated circle is found just below the left side of the rake element. It is worth noting that all three of these bifurcated circles are oriented in the same direction as measured by the diagonal angle of the lines that bisect them. At the upper left of the panel is a quartered circle or rectangle, or perhaps a series of four conjoined circular elements. The right side of

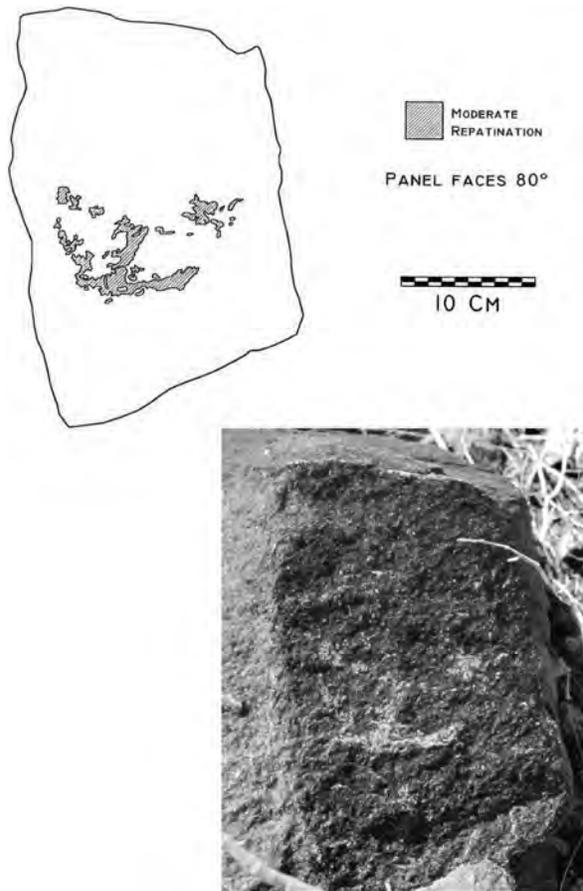


Figure 10. Rock 4, Panel 1.

the panel contains an opened tailed circle with the tail consisting of downward projecting double vertical lines. Rising from the top right part of the rake is a series of dots forming a crude curvilinear meander. Of interest is the natural hole or perforation that is found near the top right of the whole composition. Probably resulting from the erosion or expulsion of a small embedded concretion, this hole has been encircled by a small area of grinding which shows the same relative repatination as the other elements on the panel. All elements on Panel 2 were executed by abrasion or grinding. Of all the rock art panels at RIV-981, this seems, at least on an impressionistic level, to show the most balance and consistency in terms of its overall composition. Basically, the panel could be briefly

characterized as a central rake motif, surrounded by five circular designs, each being either bisected, quartered, and/or tailed. On these grounds it might be suggested that the entire panel was made by the same person or persons, possibly at a single ritual sitting.

### Rock 4, Panel 3

Panel 3 of Rock 4 (Figure 12) contains a series of dots made by pecking, all exhibiting light repatination. While easily meeting the definition of a crude curvilinear meander, the design could also be imagined to represent a badly executed bifurcated circle. It is obvious that the panel took little time or effort to produce and, like the other panels on Rock 4, seems to be the consequence of a one-time individual performance.

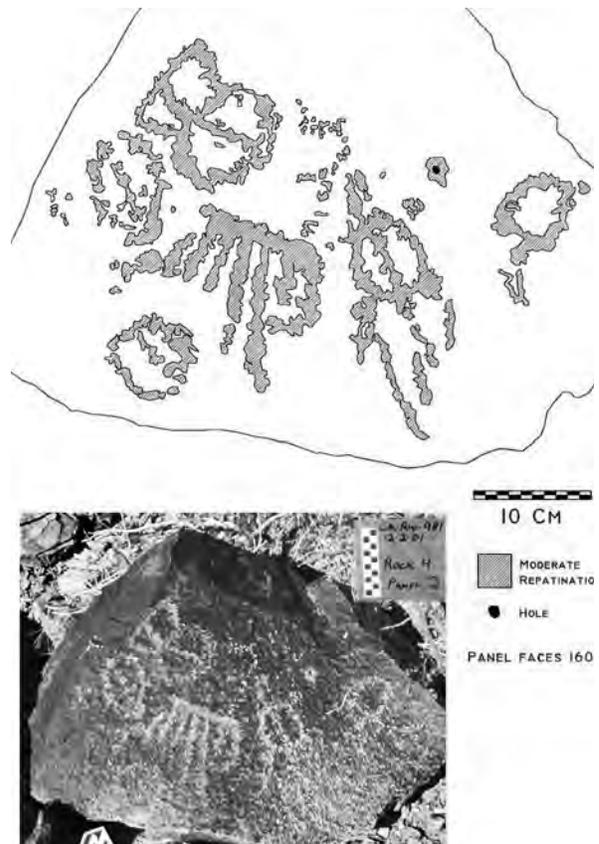


Figure 11. Rock 4, Panel 2.

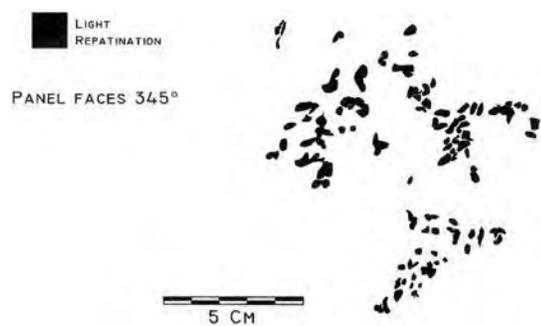


Figure 12. Rock 4, Panel 3.

**Rock 5**

Rock 5 (Figure 13) has a single panel with two extremely simple elements, each made by a limited pecking effort and each exhibiting only light repatination. Placed at either end of the upward-facing plane of a detached clast of modest dimensions, the elements are a cross resembling a modern plus sign and a fragmented straight line, not unlike a modern minus sign.

**Rock 6**

Rock 6 (Figure 14), the top portion of which has been fractured off, displays the remains of a single composite element with moderate repatination. Manufactured by grinding or abrading, the upper part of the element represents what appears to be most of a bifurcated

circle with an upwardly curvilinear projection extending from its right side. Immediately below and attached to this upper part is a well-made quartered circle. The entire petroglyph is on a small boulder fragment that appears to have been detached from a much larger parent stone. It appears to have been produced with some skill and precision.

**Rock 7**

Rock 7 is a detached cobble of modest size which fractured into two parts. The upwardly facing plane displays a number of pecked dots, which occur individually and in patches and/or clusters. Most of these pecked marks are on the larger, right-hand side of the rock as depicted by the line drawing and

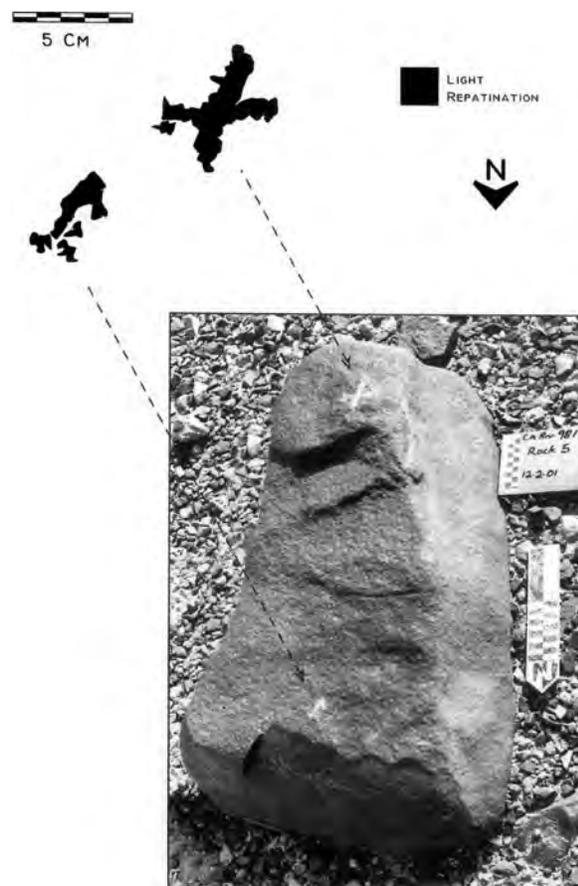


Figure 13. Rock 5.

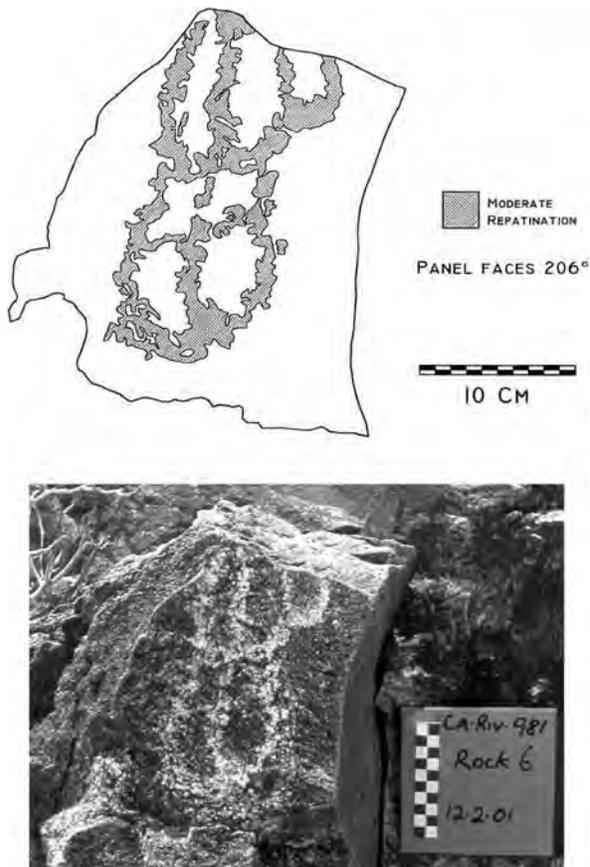


Figure 14. Rock 6.

photograph in Figure 15. A small, patchy concentration of pecking is visible on the left part of the rock, clearly placed there before the stone split into two pieces. The pecked markings are almost random in placement and, with generous use of the term, could collectively be said to represent a nearly amorphous curvilinear meander. All the pecked marks exhibit only light repatination.

## Discussion

### *Chronology*

Information from other archaeological sites in southeastern California indicates that human occupation of the area had begun by at least the end of the

Pleistocene, approximately 11,000 years ago. Dates obtained using the somewhat controversial cation ratio method suggest that humans were present and making rock art as early as 16,500 years ago (Whitley and Dorn 1993). In most cases, however, it is difficult to assign absolute dates to rock art.

With the exception of a few sherds of Late Prehistoric ceramics (Lower Colorado Buff Ware), probably the consequences of “pot drops” by ancient travelers, there are no absolute temporal indicators present at RIV-981. The petroglyphs may, however, be arranged in a relative chronological order based on degree of repatination and manufacturing technique.

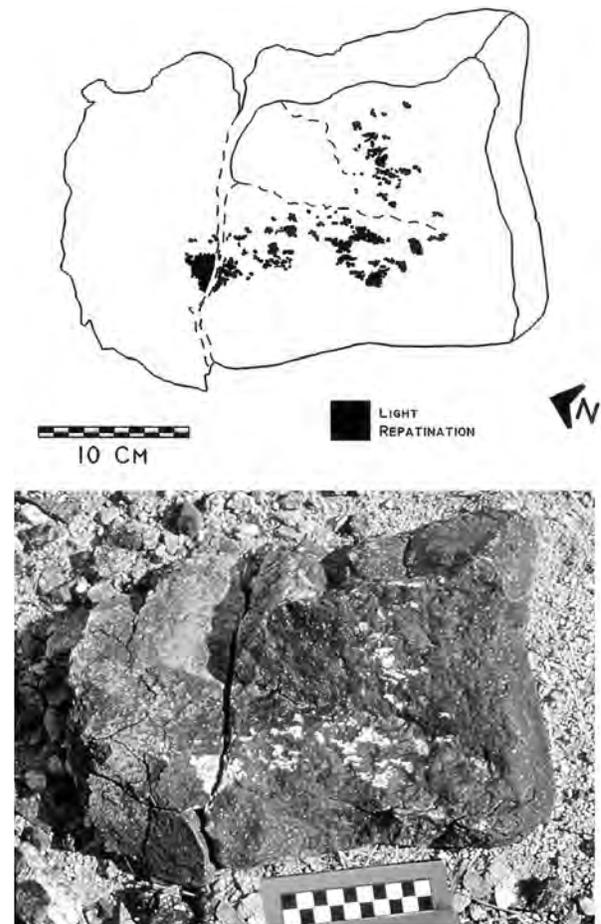


Figure 15. Rock 7.

Figure 16 shows all the petroglyph elements at RIV-981, separated by relative degree of repatination, on a panel-by-panel basis. The earliest petroglyphs, characterized by heavy repatination, occur only on Rock 3. Moderate repatination on other elements indicates that more petroglyphs were later added to Rock 3 and that use of the site expanded with the production of petroglyphs on Rocks 1, 2, 4, and 6 as well. Use of the site continued into the more recent past with the placement of petroglyphs, now with light repatination, on Rocks 2, 3, 4, 5, and 7. With one exception the petroglyphs that are characterized by heavy and moderate repatination were produced by abrasion or grinding, while those with light patination were produced by pecking or scratching. Rock 1, which exhibits pecked elements with moderate repatination, is anomalous and, as discussed above, may represent a striking stone rather than an example of rock art.

These different manufacturing techniques have temporal implications which are consistent with the observed repatination. Heizer and Baumhoff (1962:234) and Heizer and Clewlow (1973) regarded scratched petroglyphs to be one of the youngest California rock art manifestations, dating from AD 1000 to AD 1500 (and probably later), a chronological placement also suggested by the Lower Colorado Buff Ware sherds. The elements with light repatination may be assigned with confidence to this time period.

To determine approximate ages for the clearly older elements with moderate and heavy repatination, it is useful to employ stylistic chronological schemes. All the rock art elements at RIV-981 fall stylistically within the category of Great Basin Abstract petroglyphs, which date as early as 1000 BC (Clewlow 1978). They can be further classified as Great Basin Curvilinear Abstract, which Heizer and Baumhoff (1962:234) placed as early as 1500 BC, one of the most ancient Great Basin styles. Whitley, who has more recently referred to these styles as the Great Basin Tradition, feels that they may occur as early as 14,500 years ago

and may continue into relatively recent prehistoric times (2000:38–39). It should be noted that the majority of panels that appear to us to have relatively formal structure, including all the panels containing conjoined or bifurcated geometric forms, display moderate repatination. Regardless of their absolute ages, the moderately and heavily repatinated elements at RIV-981 fall at the early end of the chronological spectrum. It is likely that the site saw episodic use over a long period of time, long enough for two different manufacturing traditions, but with related symbolic systems.

With one exception the individuals who added to the corpus of petroglyphs over time avoided alteration of the work of their predecessors. On Rock 4 the temporally distinct petroglyphs do not even occur on the same panel. The work of previous artists may have been respected as part of a sacred tradition. Only one example of superimposition occurs at the site. This is on Rock 2 where scratched or pecked elements that exhibit light repatination have been placed over part of a petroglyph that was produced by abrasion and now exhibits moderate repatination. The temporal distinction of the two episodes of production is also supported by the placement of the elements relative to a crack in the rock.

The change in manufacturing technique that is apparent in the most recent petroglyphs argues for a change in cultural tradition. This may reflect use of the site by a different ethnic group or by a different class of individuals within the same cultural group. The latter situation might be correlated with a change in site function. For example, the earlier abraded petroglyphs may have been produced by shamans, while the later pecked and scratched petroglyphs may have been made by non-shamans. The disparity in the skills of the makers, as noted in the individual panel description above, supports this interpretation. The single occurrence of superimposition appears to reflect still another change in the circumstances under which the rock art was produced. This later

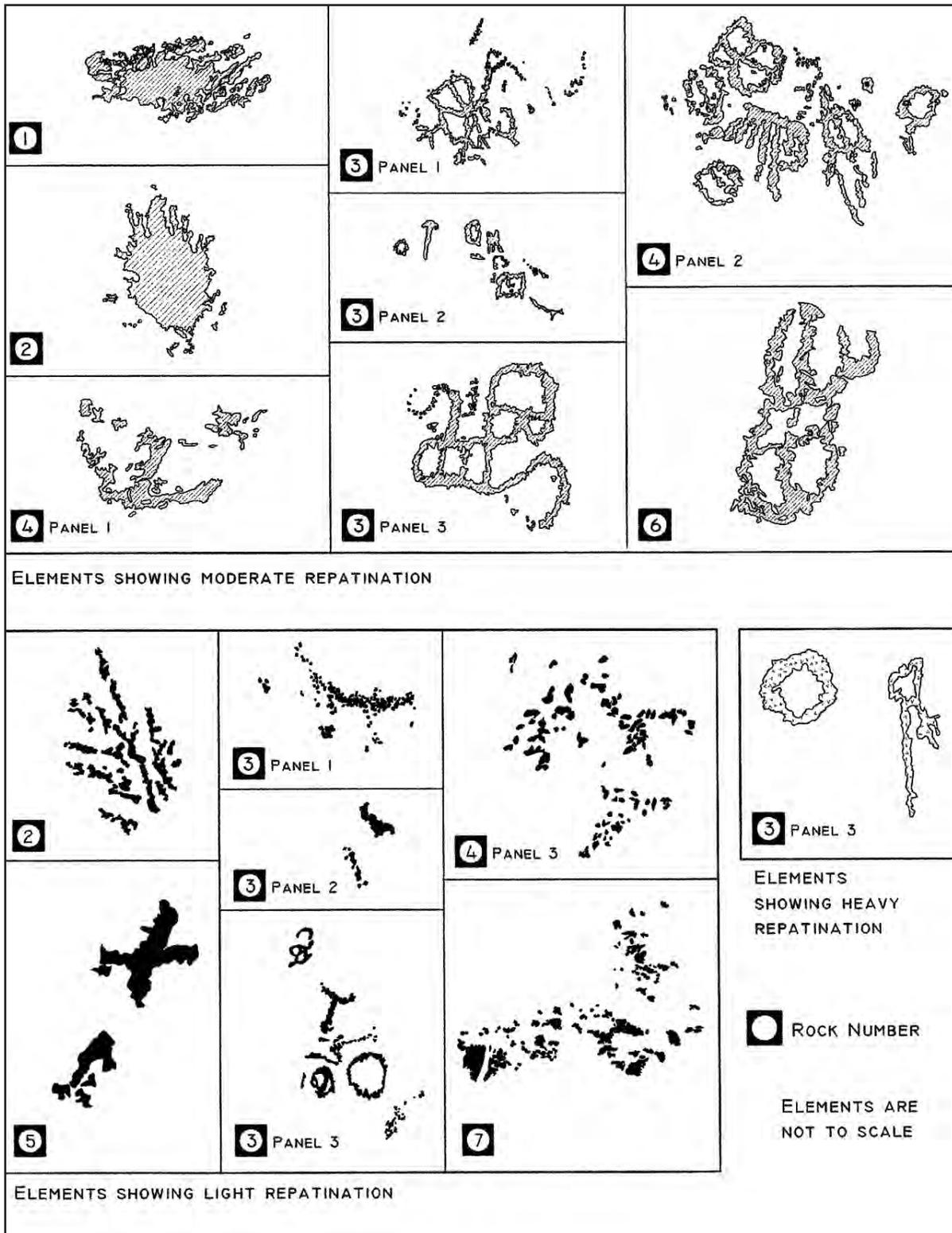


Figure 16. CA-RIV-981 petroglyph elements, grouped by repatination type.

addition to the panel diverges from the pattern of placing new petroglyphs where they do not deface the older ones.

### *Imagery*

The history of rock art research has been marked by a succession of explanatory theories that address both the function of rock art in prehistoric cultures and the circumstances under which it was produced. Prominent among these are theories associating the production of petroglyphs and pictographs with hunting magic, archaeoastronomy, and, most recently, with neuropsychological phenomena that occur during trances (see Whitley 1998). Depictions of game animals have been used to argue for hunting magic, and images that appear to relate to documented celestial events seem to support the archaeoastronomical model.

A wide range of interpretations could be applied to elements such as those that occur at RIV-981. Chippindale (2001:262) presented several examples of lines and partial circles that taken out of context and viewed from different angles can be interpreted as abstract representations of a wide variety of subjects, including humans and material objects. In some instances, Native American consultants have interpreted such abstract elements in a completely different way. Asked about prehistoric petroglyphs at Fortynine Mile Canyon in southern Nevada, Native Americans identified combinations of meandering lines and circles as maps or other depictions of landscape features and noted that rocks with holes (like on Rock 4, Panel 2) have feminine gender connotations (Zedeno et al. 1999:59, 63). Experimental research has led to the hypothesis that such elements represent images that are generated by the human brain during trances. Referred to as “entoptic” or “within the eye,” these elements include spirals, concentric circles, grid patterns, meanders or filigrees, dot patterns, tick marks, parallel lines, nested curves, and zigzags (Whitley 2001b). If this hypothesis is

valid, the imagery displayed by the individual petroglyph elements at CA-RIV-981, regardless of manufacturing technique, may indicate that some of the site activity revolved around initiatory or trance-related ritual.

Whitley (1987, 1994, 1998, 2000, 2001a) has argued that the production of petroglyphs and other types of rock art by shamans and others in connection with specific ritual activities, such as vision quests and initiations, is well documented for the California desert. Several lines of evidence support an interpretation of RIV-981 as a site where such rituals took place. These include the nature of the rock art itself, its location and setting, and the association with other features that when found together with rock art at other locations in the California desert have been interpreted as possible indications of ritual activity. Although no subsurface testing has been conducted at the site and unauthorized collecting has undoubtedly diminished its surface component, the paucity of visible habitation debris suggests that the primary activities at this long-used way station were ritual in nature. At RIV-981 the nature of the ritual and the position of the artist or maker within the culture appear to have changed through time.

### *Function*

The location of RIV-981 along a major trail, perhaps an extension of a system beginning at the Colorado River and continuing at least as far as RIV-32, the Corn Springs site 3.5 km to the southwest, is important in understanding its functional place in the aboriginal landscape. Although ethnographic accounts state that the trail systems of the Colorado Desert were used for such practical purposes as trade, visiting, and carrying messages (Sauvel and Elliot 2004:967–968), they also played a role in ritual. The presence of the rock circle and the rock cairn, or trail shrine, also contribute to our interpretation of the site as a place where rock art was made as part of a ritual journey.

With its larger and more diverse corpus of rock art, RIV-32 has been described by Whitley (1996:107–109) as an important vision quest site where the art was made by shamans. If Whitley’s interpretation is correct, the proximity of Corn Springs and the association with the trail that leads there may be indications that RIV-981 was a small but important part of the prehistoric ritual landscape. As the associated trail apparently continues from there to the west, it is possible that Corn Springs was a final destination for power seekers during some time periods and an interim stop for traders or others enroute to the Coachella Valley at other times. Both categories of travelers might have paused at RIV-981, which presented a panoramic view of the land they had just crossed as well as a preview of the trail ahead. Their time at the trailside stop may have been brief. Replicative studies conducted elsewhere in the desert (Bard and Busby 1974) suggest that each of the petroglyphs at RIV-981 could have been produced very quickly, certainly in less than an hour.

Journeys figure prominently in Mohave myths that recount the far-flung places where the characters traveled (Kroeber 1948). Among Yuman peoples the boys’ initiation ritual involved an actual physical journey as well as a spiritual one, and the initiation included a series of stops along the route where rock art was made by the initiates (Alvarez de Williams 1983:110; Whitley 2000:92). Other sites that apparently represent this kind of activity occur at Mule Tank in Riverside County, where petroglyphs, geoglyphs, and other features are associated with a trail (Whitley 2001b). The situation is similar at the McCoy Springs site east of Ford Dry Lake.

Additional examples have been described by Ritter (1994:65), who noted the occurrence of boulders with scratched elements at trail shrines along what he referred to as “ethnographically sacred routes.” He interprets the petroglyphs as entoptic images resulting

from a trance state experienced by shamans or other travelers at “especially sacred, perhaps logistically important, points along the trail.” The shrines themselves are piles of rocks that occur at the edge of trails throughout the Mojave and Colorado deserts. Ethnographic accounts support their interpretation as shrines. The Cahuilla, for example, described the practice of collecting the rocks from trails and piling them up on the sides. This “pleased the spirits and caused good will” (Patencio 1943:73). Commenting on this quotation, however, Sauvel stated (Sauvel and Elliot 2004:337) that she had heard that rocks were piled up beside trails to “show the way” or to show locations.

These trailside sites are also sometimes marked by the presence of rock circles. A circle and trail association similar to the one at RIV-981 occurs at the Running Man site in Imperial County, located within the ethnographic territory of the Yuman-speaking Quechan people. Native American consultants who visited that site identified rock circles as “power sources” that could be used to find the trail, to rest, or to obtain power (Pigniolo et al. 1997). Rock circles associated with trails at Palo Verde Point within the territory of Colorado River tribes have been described as teaching circles (Underwood 2002). Von Werlhof (2002) referred to similar features as prayer circles.

RIV-981 is a rare example of a rock art site where it is possible to clearly distinguish separate episodes of production of the petroglyphs and to classify panels on individual rocks into a relative chronology based on the degree of repatination. At least two cultural traditions, separated in time, appear to be represented. Future research may be able to determine their affiliations. As the mapping and documentation of aboriginal desert trails and associated sites continues in this region (see Laylander and Schaefer 2011), the place of RIV-981 in a larger cultural landscape will be clarified.

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