# Some Terrain Features Represented in Rock Art

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**Abstract:**

The idea that some rock art panels include "maps" of local terrain is normally difficult to test. First, a person from a far different time and culture than ours might have a far different way of abstracting three dimensional terrain features into a two dimensional format. Second, it is difficult to demonstrate direct associations between our inferred "map" and terrain features or other archaeological features.

Interactive rock art relates directly to the position of the sun at specific times of year (key dates). Interactions on a given key date stress panel elements important at that date. Archaeoastronomic "observatories" use the sun's position and path relative to a prominent terrain feature. The terrain feature appears against the sun to any observer as a two dimensional silhouette. The sun daily traverses an east-west arc inclined to the south. Thus, representation of a prominent terrain feature silhouette, in conjunction with representation of the sun's path property oriented to that silhouette, accompanied by interactions stressing that silhouette on the correct key date, would strongly support the hypothesis that a specific panel element is intended to be a "map" of specific terrain feature.

## Introduction

Does some rock art include "maps" of surrounding terrain features? If so, how can we recognize them as maps? How might someone of another culture depict three dimensional terrain in a two dimensional format? To investigate these questions, we might try to identify two dimensional rock art "maps" of essentially tow dimensional terrain, such as a river course or a horizon. The principal requirement is some way to link features of any supposed map unambiguously to terrain features. First, let us review some features of maps, and of rock art.

## Maps

A map symbolically portrays a terrain to those who share the symbols used. Maps are generally drawn in two dimensions, with the third dimension implied by various subterfuges (contour lines on a topographic map). Maps generally have certain features. These include: (a) instructions (legends) explaining how to use the symbols, (b) some way to identify *when* the map is useful (a date, for instance), (c) reference points on the terrain (a section marker or cairn), (d) some durable physical factor by which to orient the map to the terrain (magnetic North). There may also be physical evidence from an independent source linking a spot on the map to a spot on the terrain (longitude and latitude, a Global Positioning System).

## Rock Art

There is growing archaeological evidence that some rock art is of Interactive design, and that some rock art serves as a horizon observatory. Both panel designs utilize the position of the sun at specific times of year (Key Dates), but they are conceptual opposites: Interactive panels are designed to be looked *at*. An interaction identifies *when* (which Key Date) an element or element group is important, and the patterning of shadow templates with elements gives additional information about each symbol: a legend of sorts. Being immovable, rock art is already oriented and serves as a reference point on the terrain.

Horizon observatories are a place from which to look outward toward the horizon. They also are already oriented, and establish a reference point. They indicate another reference point

somewhere on the horizon, appearing against the sun as a two dimensional silhouette. The position of the sun's arcing path relative to the terrain is an independent physical factor that may be useful to link rock art to the terrain.

Therefore, to test the idea a rock art element "maps" a given terrain feature (and examine how such a map might vary from ours), the ideal situation would be an Interactive rock art panel that includes a "map" of a horizon features and is also a horizon observatory. Since we wish to examine in what ways rock art symbols match our perception of terrain shapes, we begin by inference from shape alone that a panel element represents a specific horizon observatory on the same Key Date, it has the features necessary to support or refute the inference. We can compare the element shape and situation with the two dimensional silhouette, using (a) the Interactive patterns as a legend to explain the symbols, (b) the Interactive date to tell us *when* to use the map, (c) panel position as a reference point, and (d) the relationship of panel and unambiguous terrain features to orient the "map" to the terrain. The distinctive arcing path and position of the sun relative to the terrain may offer additional evidence if portrayed on the panel.

If the inference is valid, we can expect to find that : (1) the panel and its situation emphasize both the terrain feature and the map of the terrain feature, (2) an Interaction accurately suggests the relationship between the supposed map and the sun, (3) the sun's path and position (if portrayed on the panel) is accurate, and (4) horizon observations match the inferred relationship between sun and horizon features.

Given a sufficient panel sample, we may identify conventions in rock art "maps" comparable to our conventions for map making.

The five panels selected share the requisite features in varying degree.

**Club Creek Main A: Panel 3**

1. The panel faces a roughly trapezium shaped cap on a sandstone monolith. The largest anthropomorph on the panel faces the horizon feature and is directly associated with the "map" element. The map element is a trapezium, reversed (high point to observer right, opposite of the horizon feature). Pecking details emphasize a small notch present on top of the horizon feature.

2. Winter Solstice (WS) morning interaction involves a streak of sunlight passing down through the top of the trapezium element.

3. The streak of light is slanted normal to the sun's arc, were the sun to set behind the horizon feature on WS

4. On WS the sun sets behind the horizon feature for 5 1/2 foot tall observer standing in a crack in front of the large anthropomorph.

**Cliff Creek A: Panel 2b**

1. The panel faces a distant horizon with a distinctive double hill, flat topped to the left and rounded to the right. An otherwise isolated anthropomorph on the panel faces the horizon feature and points with one raised arm to the "map" element. The map element (reversed) closely

resembles the top and sides of the flat topped hill on the horizon. A possible explanation for these reversals lies in the fact that the map elements are Interactive. Interactive rock art elements are often adjusted or distorted in some way to fit a shadow template.

2. A WS morning interaction involves shadow retreating downward, defining the map element as it bisects the right hand concentric circle elements below the "map".

3. The relationship of the circles to the map element is as the relationship between the sun and the horizon features, were the sun to rise along the left slope of the horizon feature on WS.

4. On WS the sun rises along the slope of the horizon feature for an observer on a flat rock inferred to be an observation point, located between the panel and the horizon feature.

**McKee Spring: Panel 2**

1. The panel faces WNW. The largest anthropomorph on the panel "looks" West toward a sloping horizon, and is connected to a sloping, normally depicted "map" element on the West, which in turn connects to a large circular "shield" below.

2. An active event at Equinox mid day is not yet categorized.

3. Relationship between map element and shield suggests the appearance, were the sun to set along the sloping horizon feature at Equinox.

4. On Equinox the sun sets along the sloping horizon feature for an observer standing in front of the large anthropomorph on the panel.

**Hogback: Panel 3**

1. The panel faces West toward a small ridge with a shallow, cup-shaped notch on top near the pint. On close inspection, the edge of this notch is broken in a way suggesting it may have been "improved" by human agency. On the panel, an otherwise isolated anthropomorph faces the horizon feature and is associated with a pecked arc "map" suggesting the horizon feature. This differs from necklace depiction (thicker and squared at the ends) and crescent moon depiction (thicker in the center and pointed on the ends).

2. This panel has not been investigated for interactions.

3. There is no depiction of the sun associated with the "map".

4. On Equinox, the sun sets into the horizon feature for an observer standing approximately two meters North of the panel. This panel is on a large sandstone block resting on a shale and clay hillside rising to the North. It is possible this block may have been transported downhill some distance by natural forces since the rock art was placed.

**Club Creek Main C: Panel 21**

1. This panel faces NW toward a long, even, slightly sloping horizon of Weber sandstone with one small peak near the middle. Beyond this horizon, a more distant horizon peaks at the same point. The anthropomorph on the panel faces the horizon feature, holding to his right a circular pecked shape. This circular shape is bisected by the "map": a natural rock feature that resembles (reversed) the horizon feature. Since both the horizon feature and the "map" are natural, this reversal was not within the control of the panel designer.

2. No interactive data has yet been acquired for this panel.

3. The relationship between the circular object and the "map" suggests the sun will set directly behind the horizon feature for an observer in front of the panel. The direction from the panel to the horizon feature suggests this event occurs at Summer Solstice (SS).

4. SS sunset has not yet been documented from this position. I predict the sun will set behind the horizon feature at SS.

**Conclusions**

This investigation supports the inference that the elements discussed above were intentionally designed as "maps" of the horizon features indicated. For the panels discussed here, the primary purpose of the map seems to be a demonstration of the sunrise or sunset position. Key Dates used are : WS (2), Equinox (2), Summer Solstice (probably 1.)

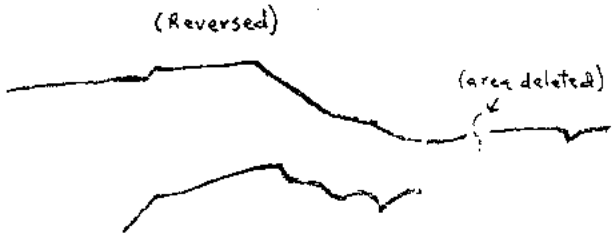
These panels depict horizon shapes in a readily recognizable fashion. Figure 1 shows tracings (from projected slides) of horizon silhouettes as seen from the panel, paired with tracings (from projected slides) of "map" elements. Horizon silhouette and map elements are shown the same size for easier comparison. The horizon silhouette is reversed for Club Creek Main A Panel 3, Cliff Creek A Panel 2b, and for Club Creek Main C Panel 21 as noted, for better comparison to the map element. Horizon silhouettes are above the map elements.

Similarities of treatment between these panels (at four separate sites) suggests certain conventions were employed. An anthropomorph is associated with the "map" element. The anthropomorph (and normally the panel) "look" at the area mapped. Horizons are represented normally unless there is a reason to reverse the element. Only the critical area or details of the horizon are mapped. The path or position of the sun (where shown) is correctly oriented in relation to the map element. Horizon shapes are slightly abstracted in depiction, rather than exact. Elements depicting the horizon, anthropomorphs, and the sun are not to any scale.

This study suggests that prehistoric rock artists in NE Utah saw horizon shapes much as we do today. They depicted these shapes about the way you or I might when including a distinctive terrain feature on a simple map for a friend. Given their purpose and including their Interactive nature, these maps are as sophisticated as maps made by many world cultures at 1000 BP.

Further study of horizon silhouette maps will enable us to better understand symbolic portrayal of two dimensional terrain. We may then be able to identify more complex maps, or conventions for portrayal of three dimensional landscapes.

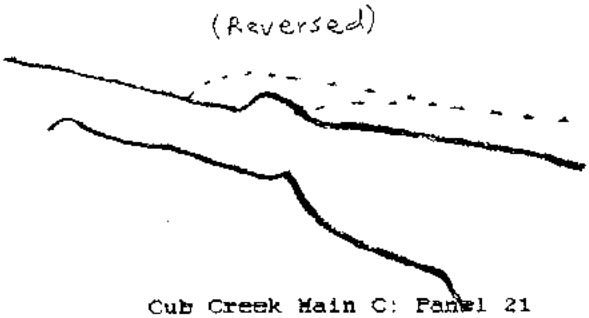

Cub Creek Main A: Panel 3




Cliff Creek A: Panel 2b

McKee Spring: Panel 2

Hogback: Panel 3




Cub Creek Main C: Panel 21

Figure 1. Horizon Silhouette (top) *versus* Element Shape