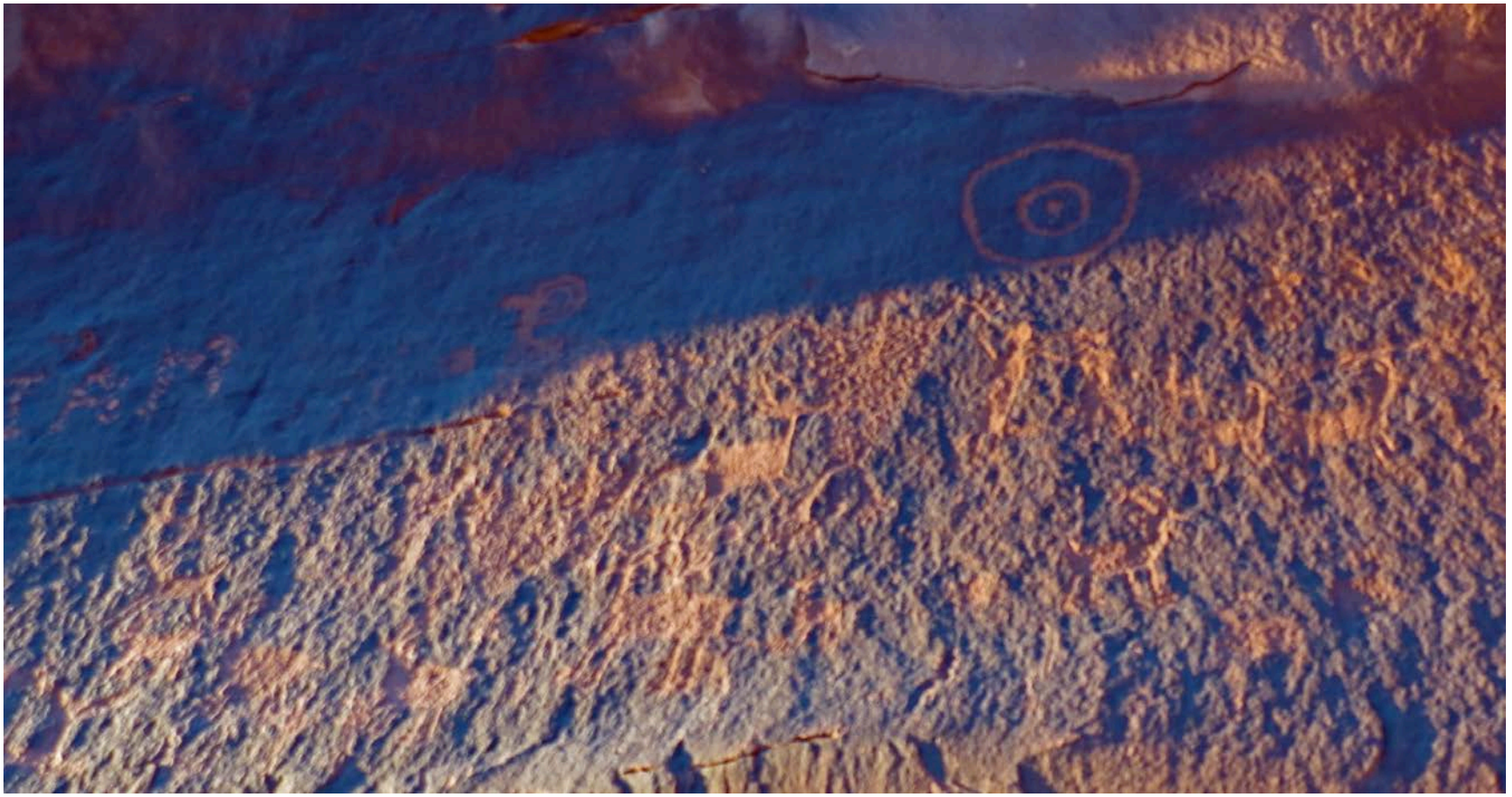

Figure 164. Hidden Valley. *Raven Eats the Sun* display, 19:16 MDT, March 19, 2014. The shadow forms the silhouette of a raven's head and covers the concentric circles, as if it had 'swallowed' them. The *I See the Dark* sheep can be seen in the shadow. Eight minutes later the entire panel is in shade.

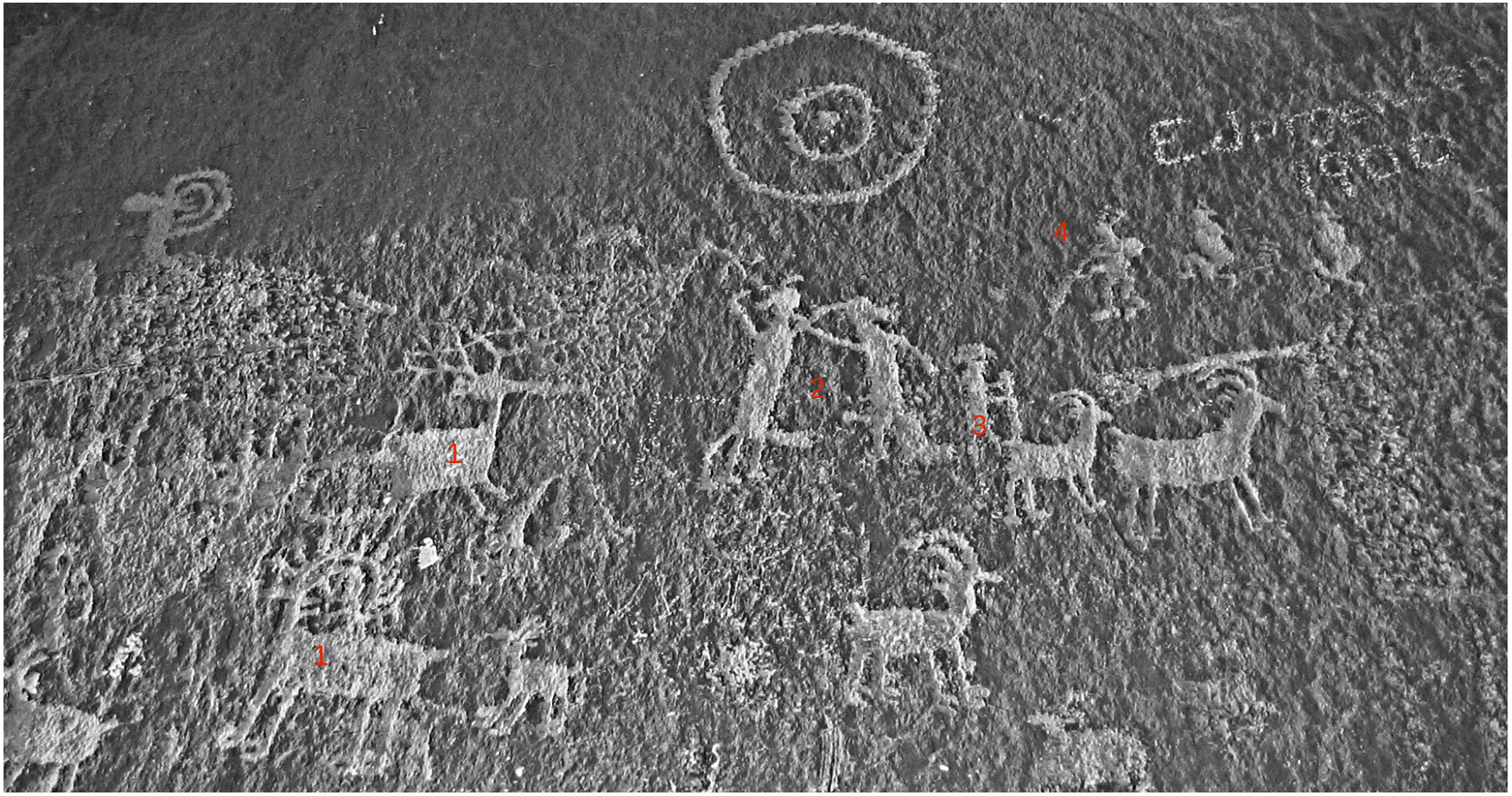

Figure 165. Hidden Valley. Raven Eats the Sun Panel. The *I See the Dark* sheep, upper/left. (1) Sheep and deer with extravagant horns. (2) A pair of aroused combatants. (3) A man with a staff. (4) Three dancing Burden Carriers, one with a flute.

The various patination densities indicate that this site was used as a ceremonial location for a long time. The Basketmaker style predominates. Basketmakers occupied this area for about two thousand years.

Figure 166. Hidden Valley. Raven Eats the Sun Panel. The *I See the Dark* sheep, upper/right. This line of ten Burden Carriers resembles the shorter one in the previous picture. The figure in front also plays a flute. They are accompanied by a man with a staff. There is a festive sense illustrated on the Inner Wall - travel, music, contests, hunting, and so on.

Figure167. Hidden Valley. Two more combatants, also on the Inner Wall. Although these two photos are not part of an astronomical display, they are indicative of the kinds of activities valued by Basketmaker people in the Hidden Valley area.

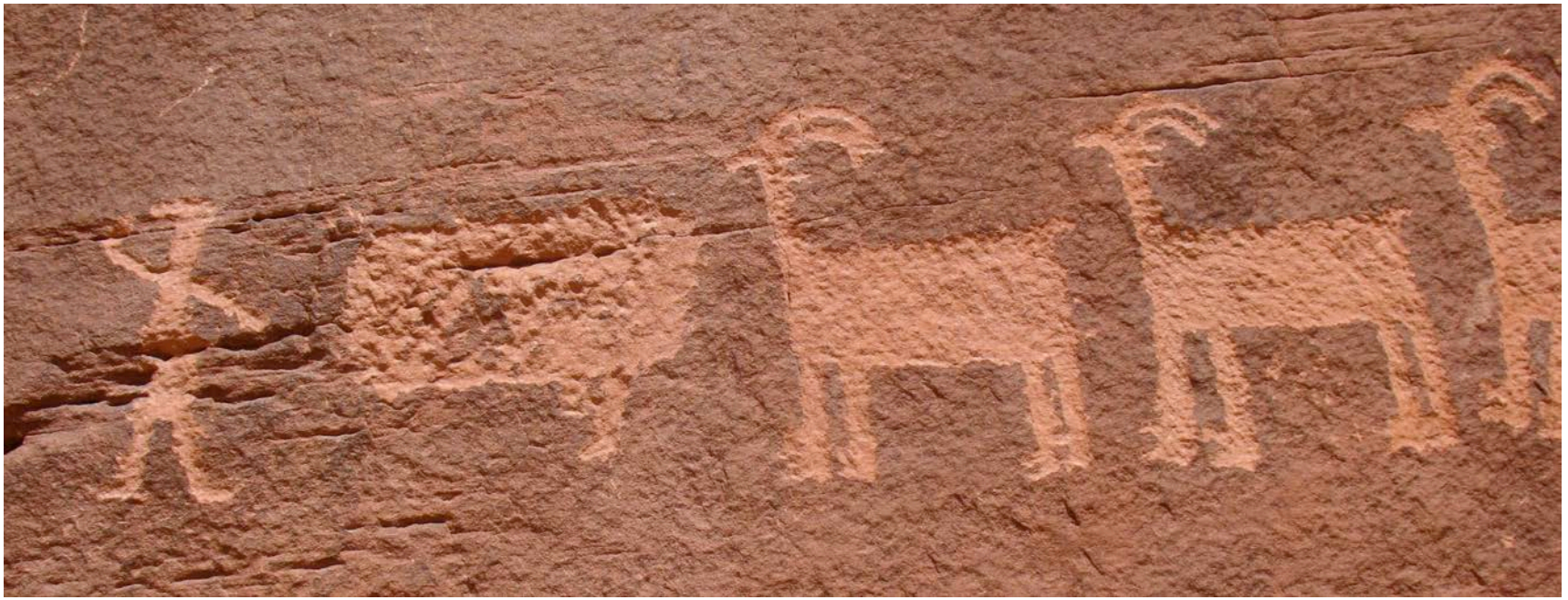

Figure 168. An atlatl thrower in an unmistakable pose confronts a line of sheep. Although there are bow-and-arrow users in Hidden Valley art, there are over twice as many atlatl users. This is typical of Moab Basketmaker sites and reflects the 1500 years of atlatl-using Basketmaker culture prior to the adoption of the bow-and-arrow during their last 500 years.

Figure 169. Hidden Valley Observatory, Inner Wall. This photo was taken from the Raven Eats the Sun Panel. There are several panels along this wall. I have not found any astronomical displays among them.

A person, left, stands next to a Basketmaker ruin that may be an observatory, but that is not certain. See Figure 233.

Outer Wall

Figure 170. Hidden Valley Observatory, Outer Wall. Photo taken from the pass on Hidden Valley Trail, facing west. There are at least fourteen panels containing over two hundred and fifty petroglyphs on this wall. I have identified at least six astronomical displays among them. There is also a large ruin but I have not tied it to an astronomical display.

Four panels with astronomical displays are along the base of the sunlit wall, top. From right to left they are the Pass Panel, Pounce Panel, Big Track Panel, and Ray Panel.

Standing on Light - Equinox

Figure 171. Hidden Valley, Pass Panel. One of the highest panels on the Outer Wall has a number of glyphs scattered over about fifty feet. In this photo they start in the upper/left corner and go to the juniper tree in the lower/right corner.

The *Standing in Light* display is near the juniper tree, right. For a detail of the left side of this panel see Figure 187.

Figure 172. Hidden Valley. *Standing on Light* display, 8:47, March 19, 2008. The first light of the Equinox hits this wall obliquely. The first large glyph on the wall is a sheep, upper/right.

Figure 173. Hidden Valley. *Standing on Light* display. The topological feature in the wall resembles a vagina. The display's theme seems to be fertility, as it is at the Goose Panel, and may be at the Bean Hole at the Snake site.

Figure 174. Hidden Valley. *Standing on Light* display, 8:48:18 MDT, March 19, 2008.

As the Equinox light moves up the wall it comes under the sheep's feet, giving the impression that it is *Standing on Light,* a mirror-image of the 'walking on shadow' display common on the Goose Panel.

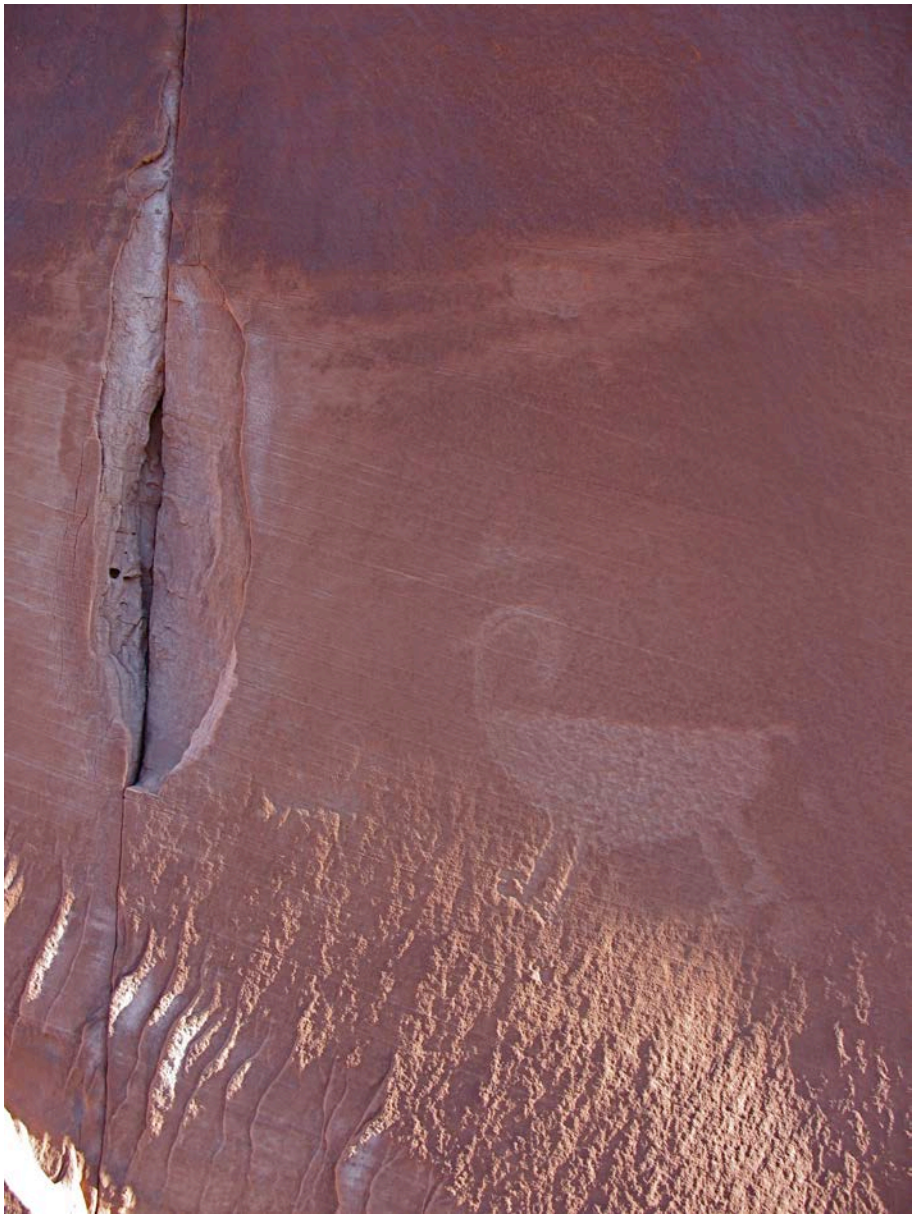

Figure 175. Hidden Valley. *Standing on Light* display, 8:49:14, March 19, 2008.

The Equinox light continues to move up the wall, covering the sheep's front legs.

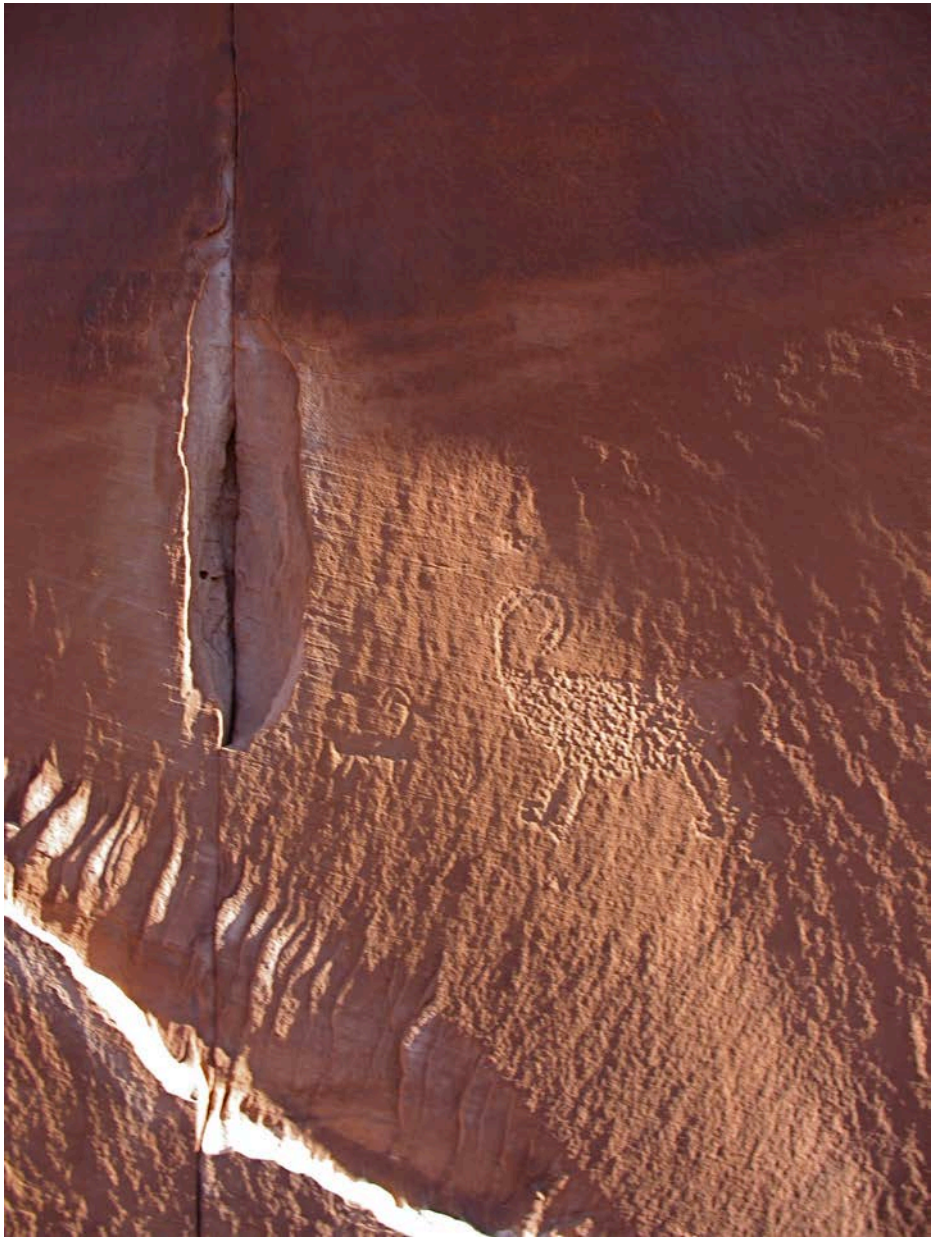

Figure 176. Hidden Valley. *Standing on Light* display., 8:53:53 MDT, Mach 19, 2k008.

As the Equinox light fully illuminates the sheep, it also fills the vagina. It is likely that the artistic and topographical elements are parts of the same narrative. A fertility theme seem obvious but the precise meanings of this symbolism to the artist and culture will remain unknowable.

The small sheep in front of the large one is very well made and filled by a shadow. It may have been part of the *Standing On Light* drama. If so, its role cannot be known either.

Ray Panel - Equinox

Figure 177. Hidden Valley. The Ray Panel is one of the most charismatic and informative panels in the region. The thin ridges coming down the cliff-face form part of the *Ray* Panel display. On Equinox morning the sun rises obliquely over the top of this wall to the east/right. The ridges catch the oblique light and form ‘ray-like’ light daggers down the wall. The oblique angle of the light means that this display can be seen for several days, even though it is an Equinox display.

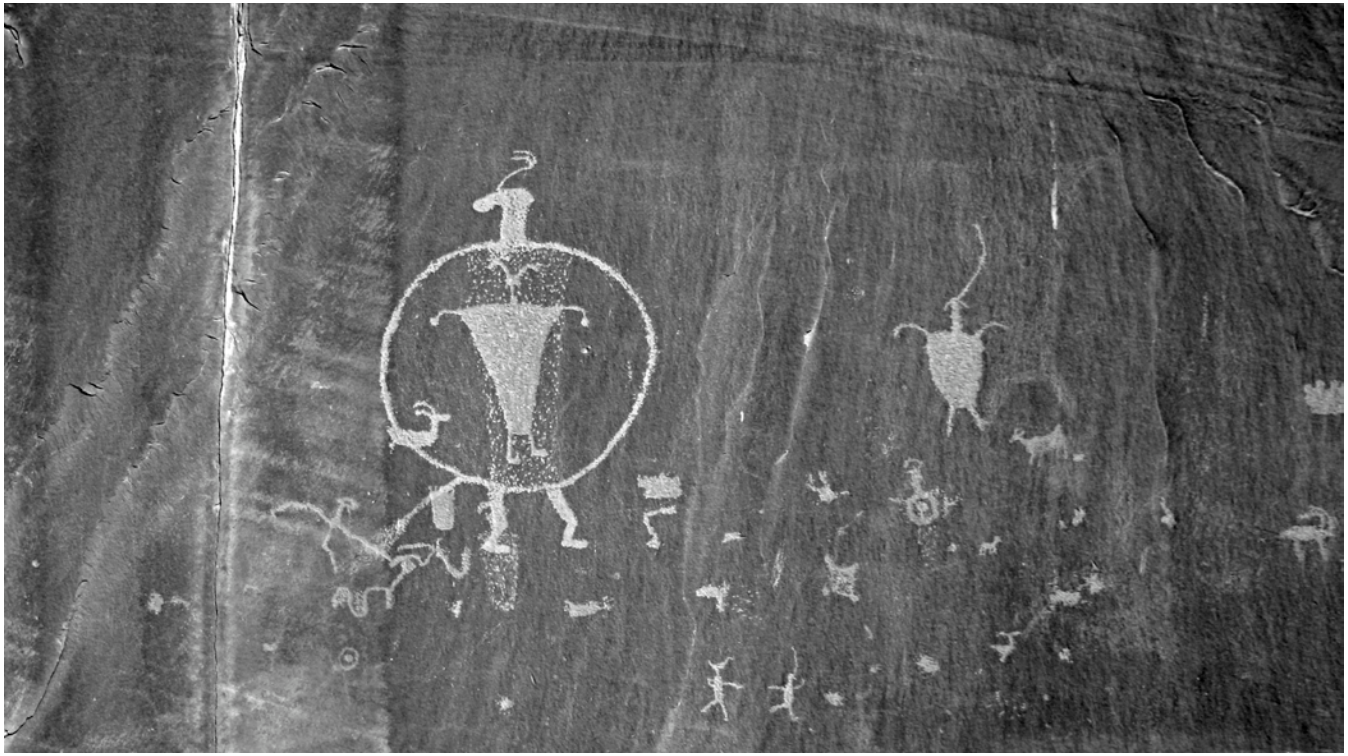

Figure 178. Hidden Valley. Ray Panel. The large figure is in a shallow depression and remains in shadow until the end of the display. His head is the last part of the wall to get lit. His head was pecked on top of an Archaic glyph.

The anthropomorph, right, wears the Cat-in-the-Hat headdress which identifies it as Moab Basketmaker. See Figure 190. It was pecked on top of a row of larger, older abraded Cat-in-the-Hat figures standing shoulder-to-shoulder. They were probably painted when they were made and the paint has worn off. I discuss the Cat-in-the-Hat and Hand Holders in the *Codicon*.

A Cat-in-the-Hat and San Juan Bird Head in an atlatl duel, bottom, This is one of several combat scenes in Hidden Valley. See Figures 156, 167, and 189.

I haven't a clue as to why one figure is standing inside another.

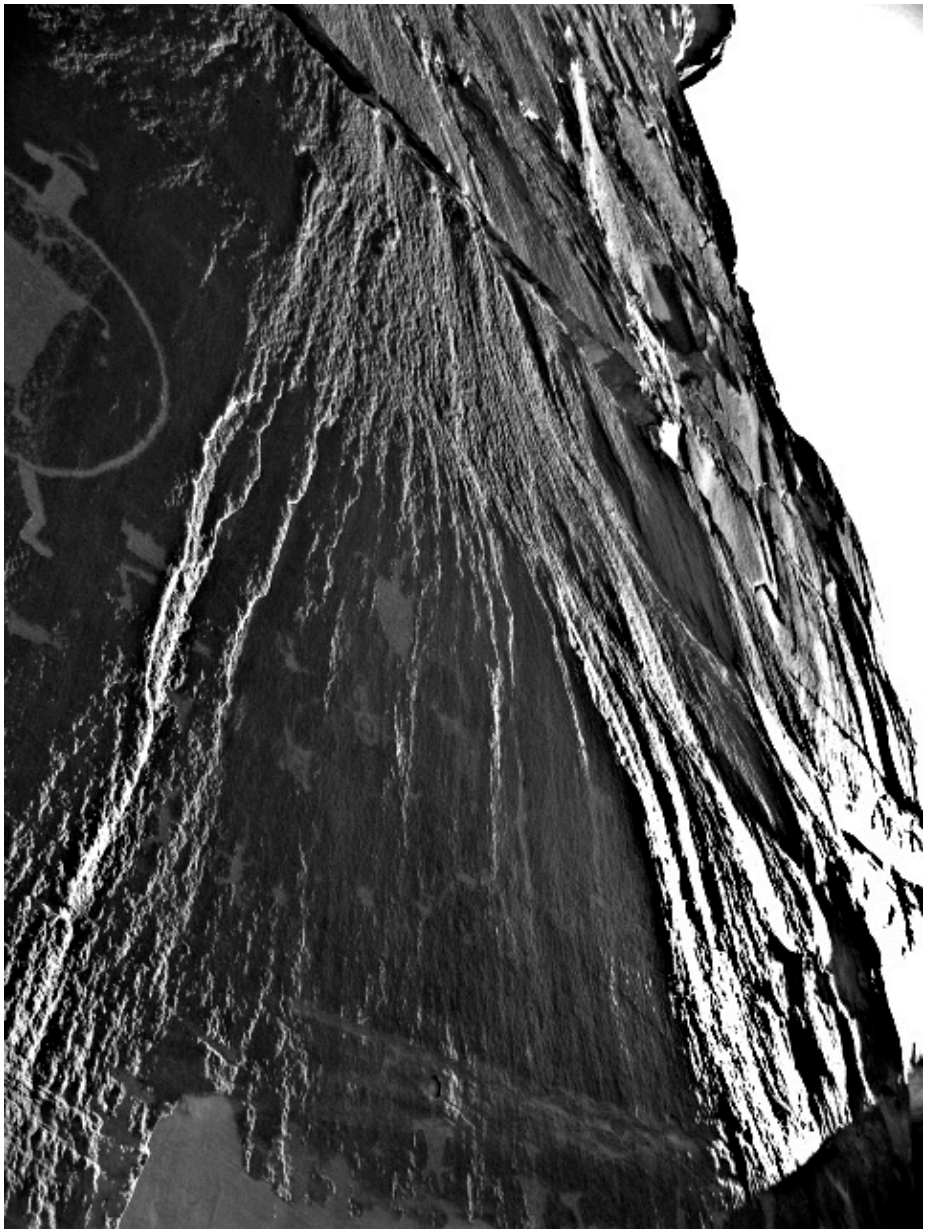

Figure 179. Hidden Valley. *Ray Panel* display, 9:07 MDT, March 24, 2009. Sunlight, coming over the cliff to the east hits the wall at an oblique angle. The large figure, upper/left, is in a shallow depression and is the last part of the wall to get lit.

Figure 180. Hidden Valley. *Ray Panel* display, 8:56 MDT, March 19, 2008. The first photo I took of the *Ray Panel* display. The light-daggers moving down the panel create a ray-like effect. The large figure remains shaded while everything around it gets lit.

The four following photographs are a sequence taken on September 21, 2015.

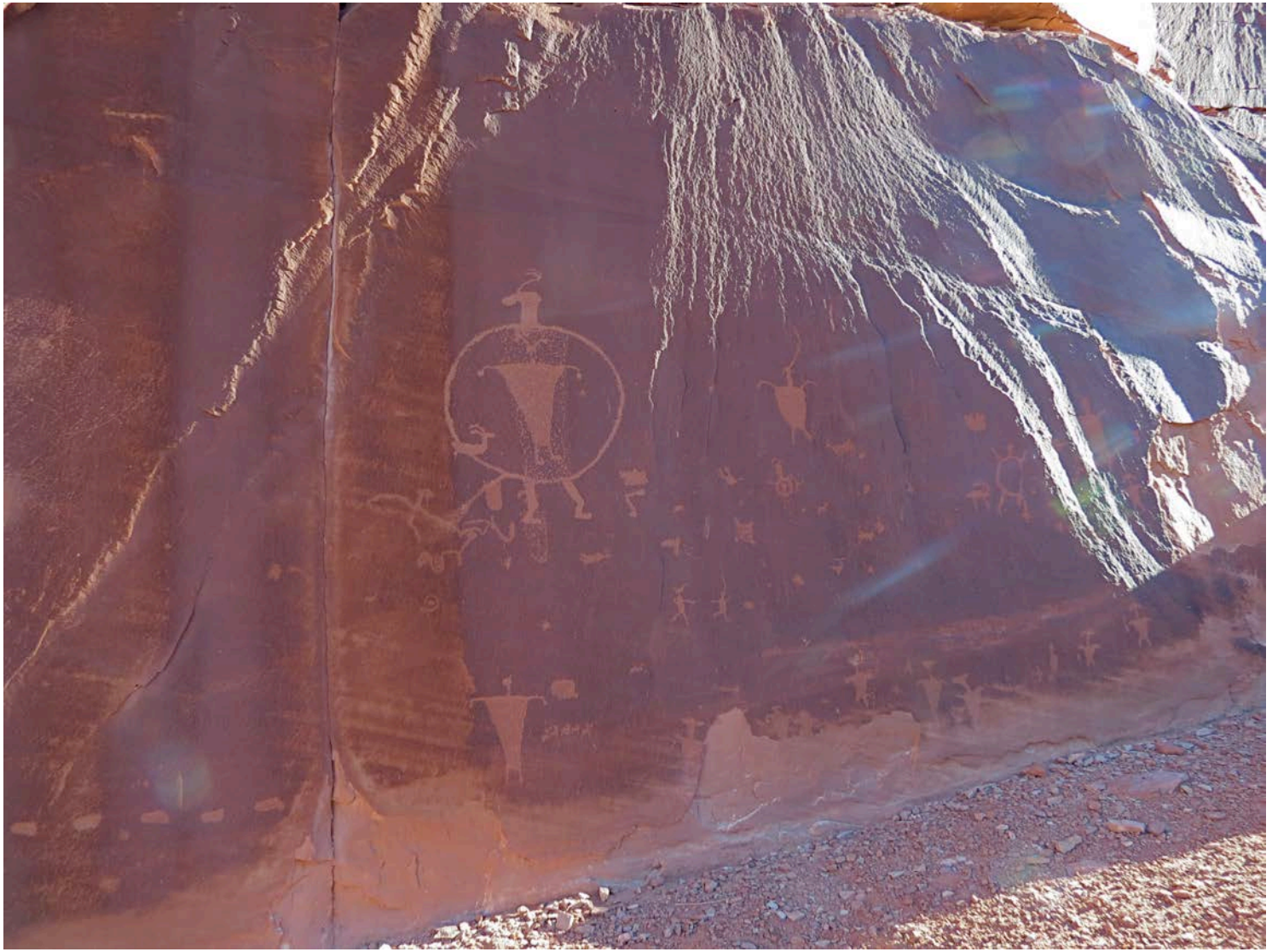

Figure 181. Hidden Valley. *Ray* Pane display, 8:51 MDT, September 21, 2015. The oblique light catches the small ridges on the wall's surface.

Figure 182. Hidden Valley. *Ray Panel* display, 8:54 MDT, September 21, 2015. Three minutes after Figure 181. The ‘rays’ extend down the panel.

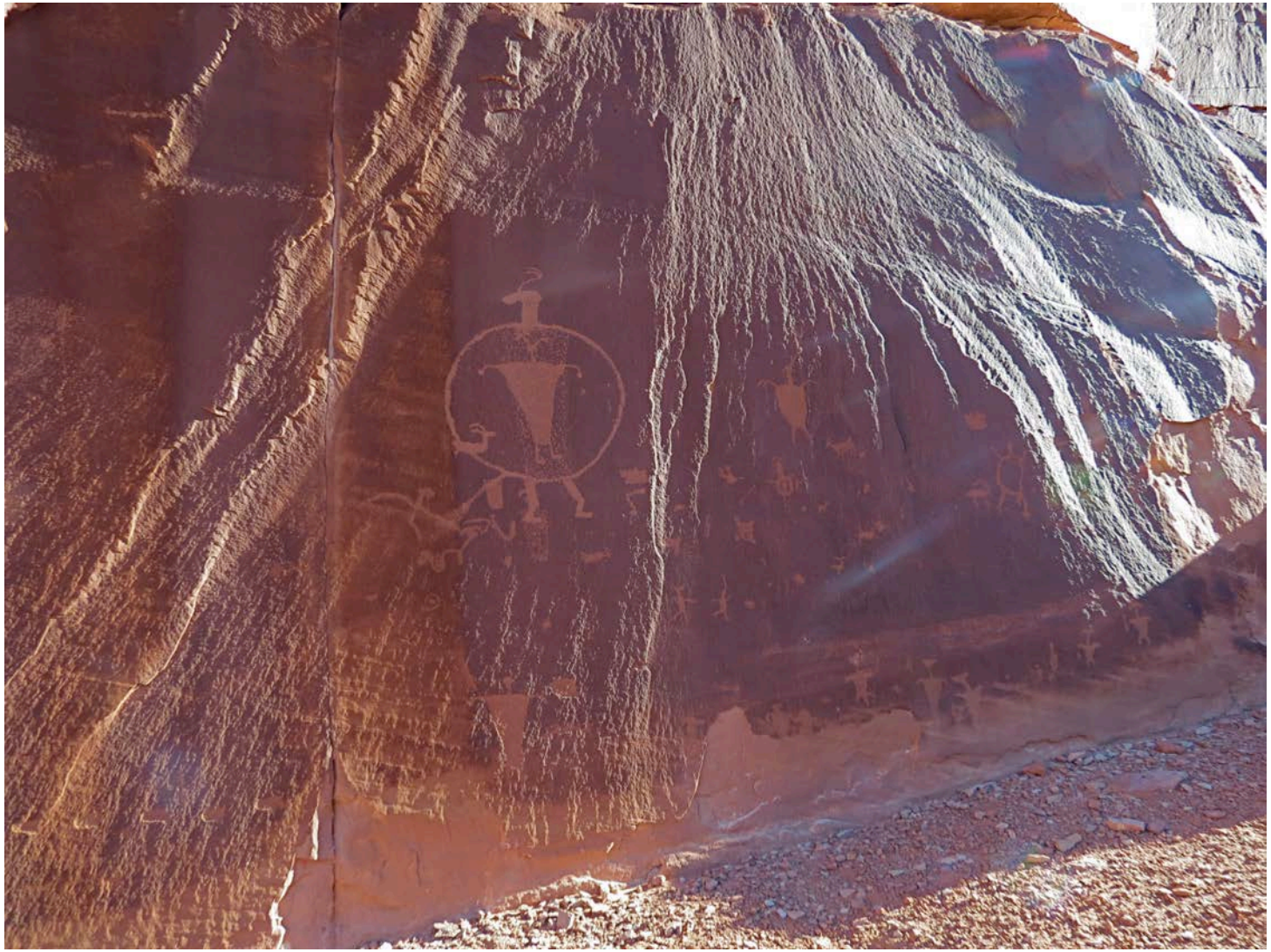

Figure 183. Hidden Valley. *Ray Panel* display, 8:56 MDT, September 21, 2015. Two minutes after Figure 182. Most of the wall is lit except for the Cat-in-the-Hat, right, and the shallow dish where the main figure was placed in the midst of the light-storm.

Figure 184. Hidden Valley. *Ray Panel*, 9:00 MDT, September 21, 2015, four minutes after the previous photo. Virtually all of the wall is lit, except for a small spot at the main figure's head.

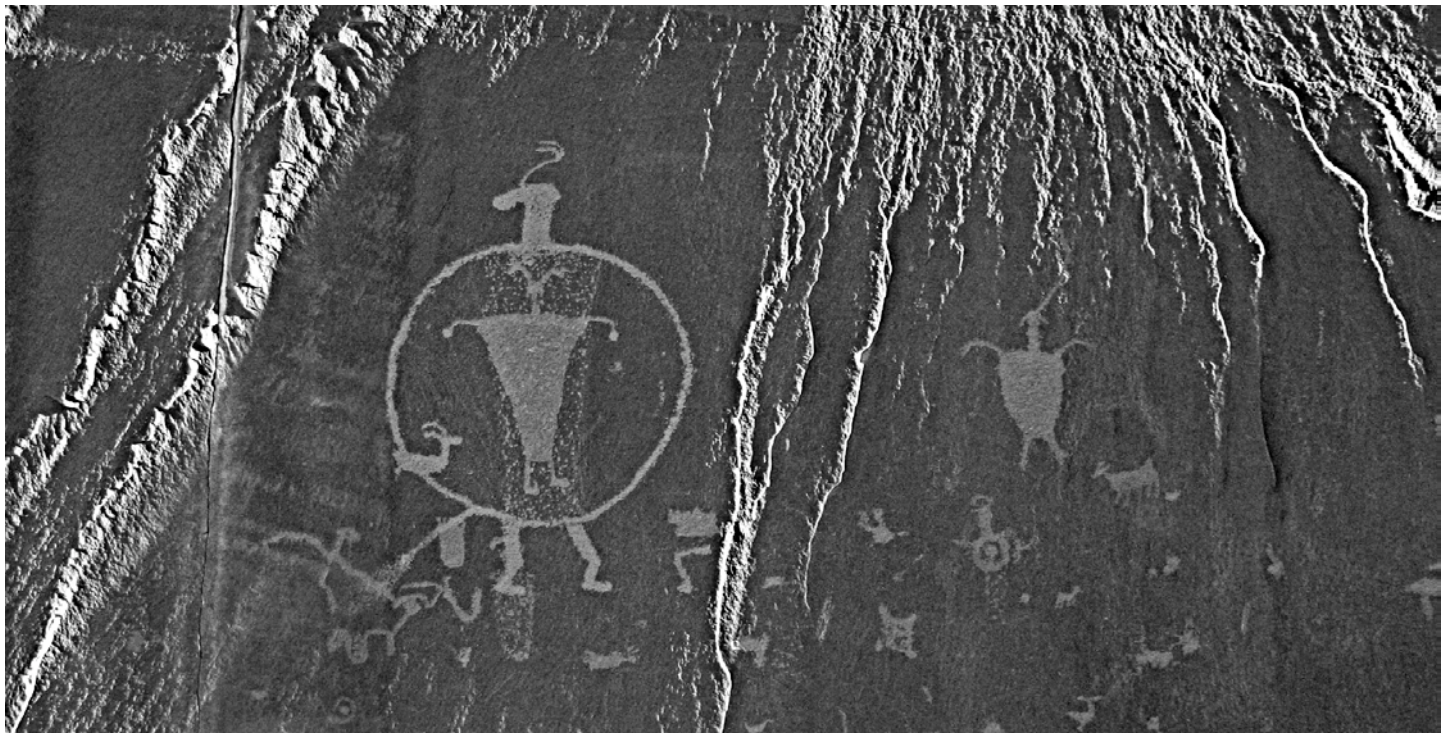

Figure 185. Hidden Valley. Ray Panel, 8:46 MDT, September 21, 2008. As the *Ray Panel* display nears an end, light covers almost the entire wall except for the main figure which is in a shallow depression, and the Cat-in-the-Hat, right. The last place on the panel that the light reaches is the large figure's head, which was pecked on top of the head of a much older Archaic figure.

A line of abraded Hand Holders was placed to the right of the Archaic figure after it was made but before the petroglyphs appeared. These abraded figures also wear the Cat-in-the-Hat headdresses that identify them as Moab Basketmakers.

Together, all of these glyphs indicate that Equinox rites at Hidden Valley were initiated by the Archaic culture and perpetuated by Basketmakers over a span of three to four thousand years. The cultural knowledge and traditions that imbued this display with social meaning dissipated at the end of the Basketmaker era a thousand years ago.

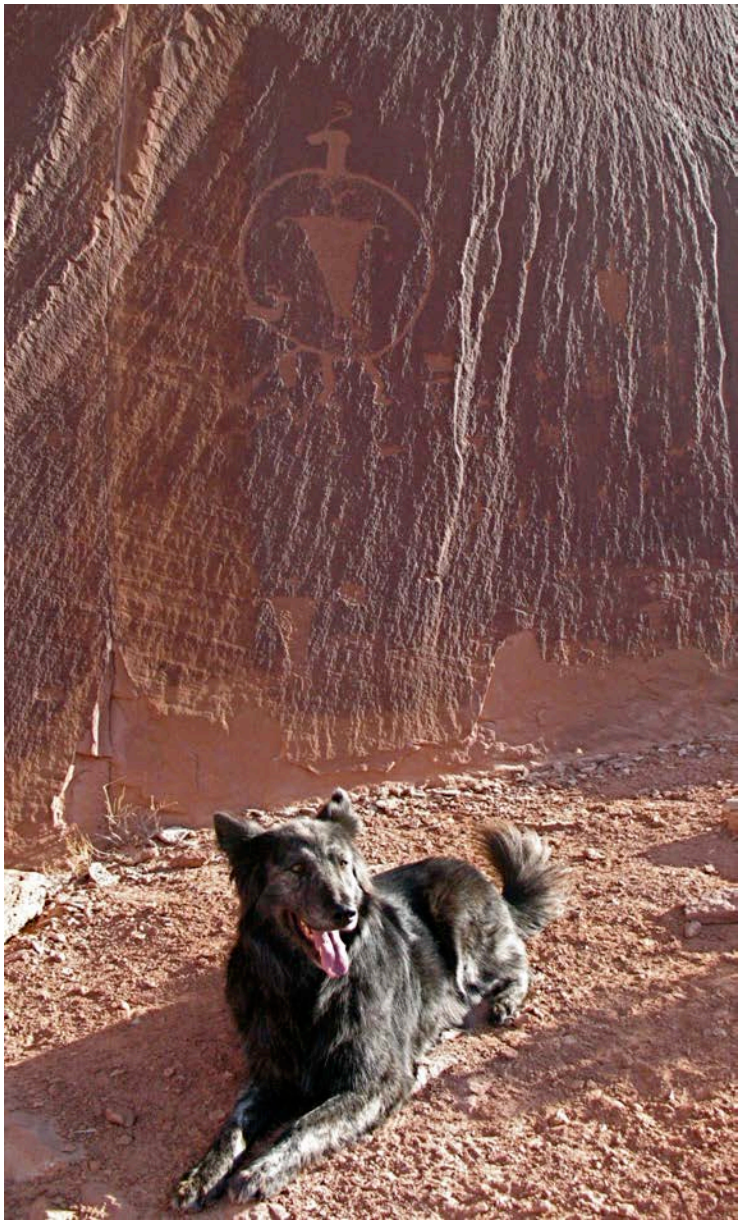

Figure 186. Hidden Valley. *Ray Panel*, 8:50 MDT, September 21, 2008. This photo was taken four minutes after the previous one. The light has covered everything but the main figure.

Girlfriend was Chad Gregory's dog. She went with me many many times. She was one of the best hiking partners ever - patient, willing, brave, and steady to the end. A great and noble being.

Figure 187. Hidden Valley. *Ray Panel* display, 9:09 MDT, March 24, 2009. The last part of the panel to get lit is the main figure's head. This figure is wearing a 'Quail Bun' headdress, which I also see at the Snake Site and the Raven Eats the Sun Panel, suggesting that this headdress was associated with Basketmaker astronomers. See Figure 35.

A headdress with a single hair bun and possible quail feather is common in Fremont culture art; for example on Warrior Ridge in Nine Mile Canyon, a hundred miles north. There, the Quail Bun figures are carrying bows and arrows. The bow-and-arrow came into the region around 300 to 500 AD. This might indicate that this headdress maintained importance in Fremont culture, but its symbolic role may have changed, perhaps losing an astronomical affiliation.[38]

[38]I haven't seen any Fremont astronomy to date, but that don't mean nuthin'. I allude to the Basketmaker/Fremont relationship again in the *Thoughts on Hellroaring Canyon* section of the next chapter. A more complete discussion can be found in *Game Drive*.

Figure 188. Hidden Vally. Ray Panel. The main figure has a hair bun with a small ‘feather’ attached. I named this headdress the ‘Quail Bun’ for reference purposes.[39]

It was pecked on top of an elaborate Archaic glyph. To the Quail Bun’s right there is an arrangement of etched lines. The longest horizontal line has a series of vertical lines depending from it. Above the horizontal line there is a vertical ‘tower’ with a crosshatch infill. This combination of linear elements resembles Archaic anthropomorph styles. Dating for such figures is uncertain. 2000 - 3000 BC is possible.

To the quail feather’s left there is a small circle with a grid-infill and a ‘shaft’ going through the middle. This resembles the atlatl design common to Archaic and Basketmaker cultures. Based on the angle, it passed behind, through, or over of the Archaic figure’s head. See Figure 7.

Much has been made of the Southwest’s Anasazi astronomy, circa 800 - 1200 AD. The Ray Panel proves that native astronomers were in Moab long before that.

[39] I don’t know if this appendage symbolizes a quail feather or if this glyph has anything to do with quails.

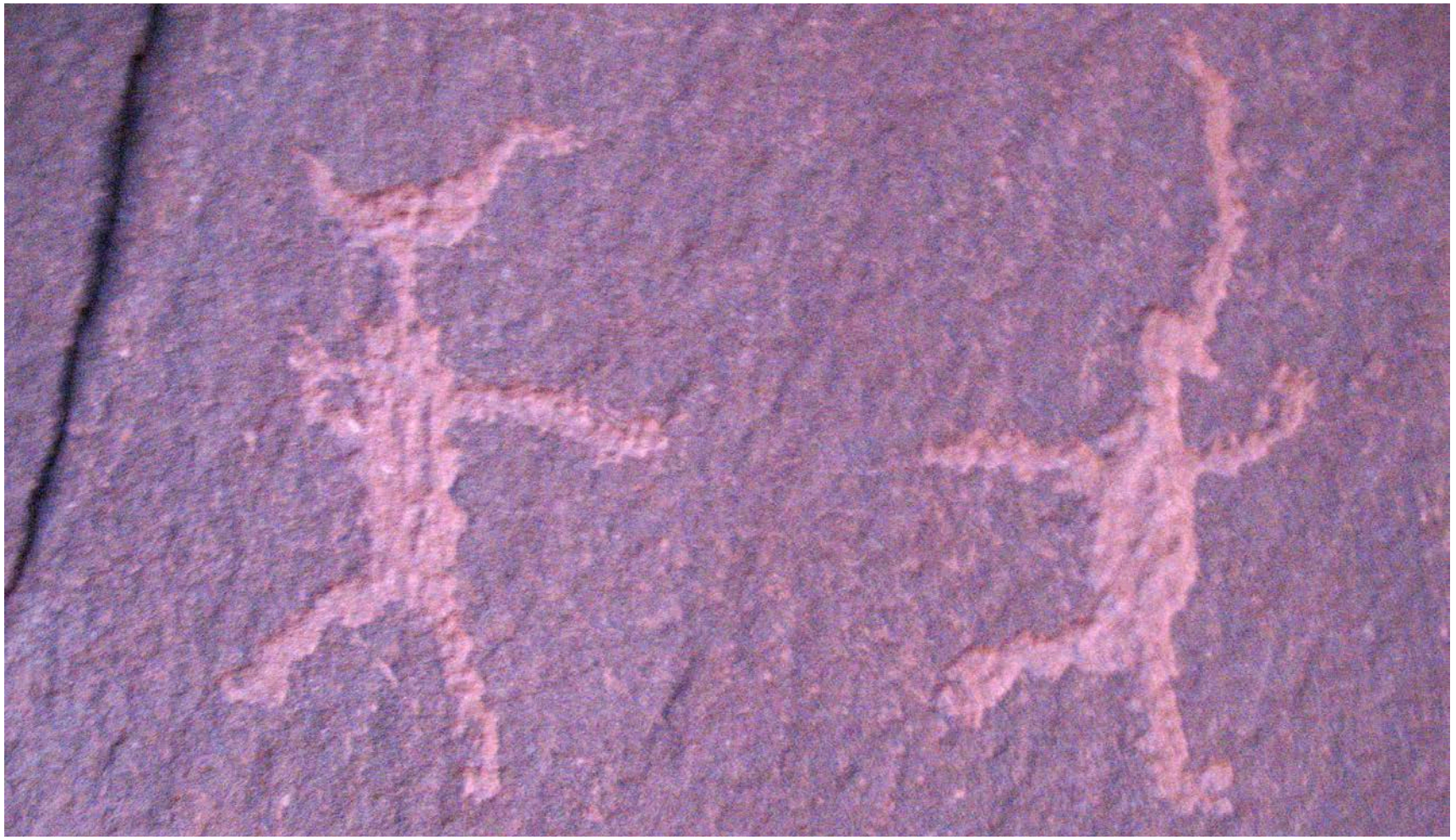

Figure 189. Hidden Valley. Ray Panel. Detail of Figure 178. Both figures are in an atlatl-throwing pose. See Figure 6. The one on the left has a Bird Head headdress common to San Juan Basketmakers, 100 miles to the south. The San Juan Basketmakers adopted the Anasazi culture between 700 - 800 AD. The figure on the right has the Moab Basketmaker Cat-in-the-Hat headdress. There are other examples of Bird Head/Cat-in-the-Hat atlatl duels in the region, which seems quite natural. Hidden Valley may have been a traditional dueling site, as I suggested in Figure 159.

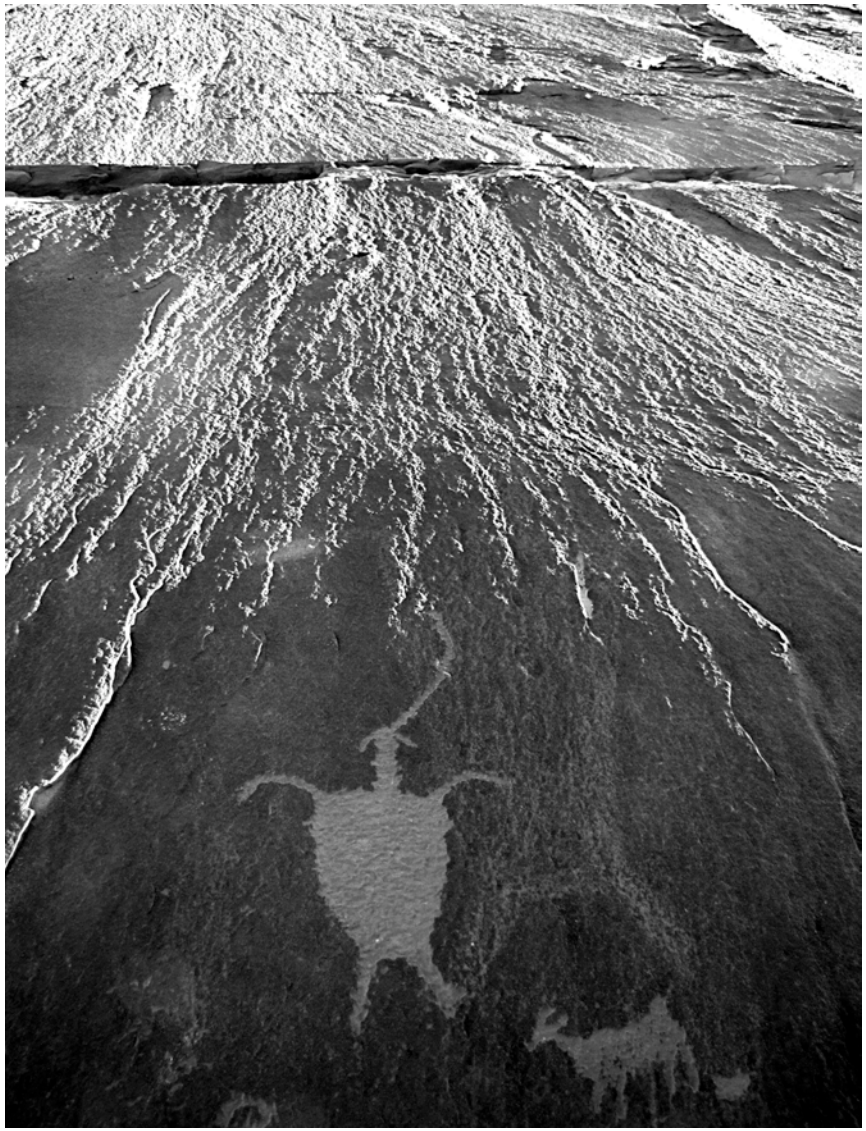

Figure 190. Hidden Valley. *Ray Panel* display, 8:55 MDT, September 21, 2011. The large petroglyph abuts the lower portion of a larger, abraded Cat-in-the-Hat.

This Cat-in-the-Hat clearly has a privileged position in the *Ray Panel* display. This is one of the longest Cat-in-the-Hat design elements I have seen.

This headdress appears throughout the Basketmaker region but is prevalent in the Moab area. Most of Moab's atlatl throwers wear this headdress. This suggests that it represented some sort of hunter/fighter status. Its position in Hidden Valley's astronomical pantheon might indicate that it was known for more than hunting and fighting prowess.

About 150 feet away a design element on the Pounce Panel closely resembles this headdress, Figure 195. Between them, these two design elements led me to think that the Cat-in-the-Hat headdress might represent a mountain lion's tail, a worthy fetish for warriors and hunters. I discuss the Pounce Panel next.[40]

The five remaining Hidden Valley astronomical displays discussed in this chapter appear at Winter Solstice.

[40] I discuss this headdress in the *Codicon*. Kidder and Guernsey's early 20th century photographs are interesting.

Pounce Panel - Winter Solstice

Figure 191. Hidden Valley. *Pounce Panel,* 8:19 MST, December 22, 2018. The Pounce Panel is at the top of the pedestal, upper right, and next to the Pass Panel. From this elevated position it may be the first panel at Hidden Valley to experience the Winter Solstice sunrise.

The shadow of Gnomon Ridge can be seen on the left. In a few minutes it will engulf the Pounce Panel.

Figure 192. Hidden Valley. Pounce Panel. A short-eared, long-tailed mountain lion, upper right, pounces on an unsuspecting bighorn sheep while a three-horned Spirit Sheep watches. At far left, a well-made predator track, probably a cat track. The two small, short-tailed, short-eared zoomorphs, center, have the same footprint. Could they be kittens watching the kill?

The design and execution of the lion's tail closely resembles that of the Cat-in-the-Hat headdress in Figure 190. The two panels are about 150 feet from each other. These two glyphs and their proximity were instrumental in developing the Cat-in-the-Hat interpretation.

Figure 193. Hidden Valley from the Pounce Panel. The Winter Solstice sun rises near where the La Sal Mountains meet the Gnomon Ridge, right. A few minutes after illuminating the Pounce Panel the sun goes behind Gnomon Ridge and does not hit the panel again for over an hour.

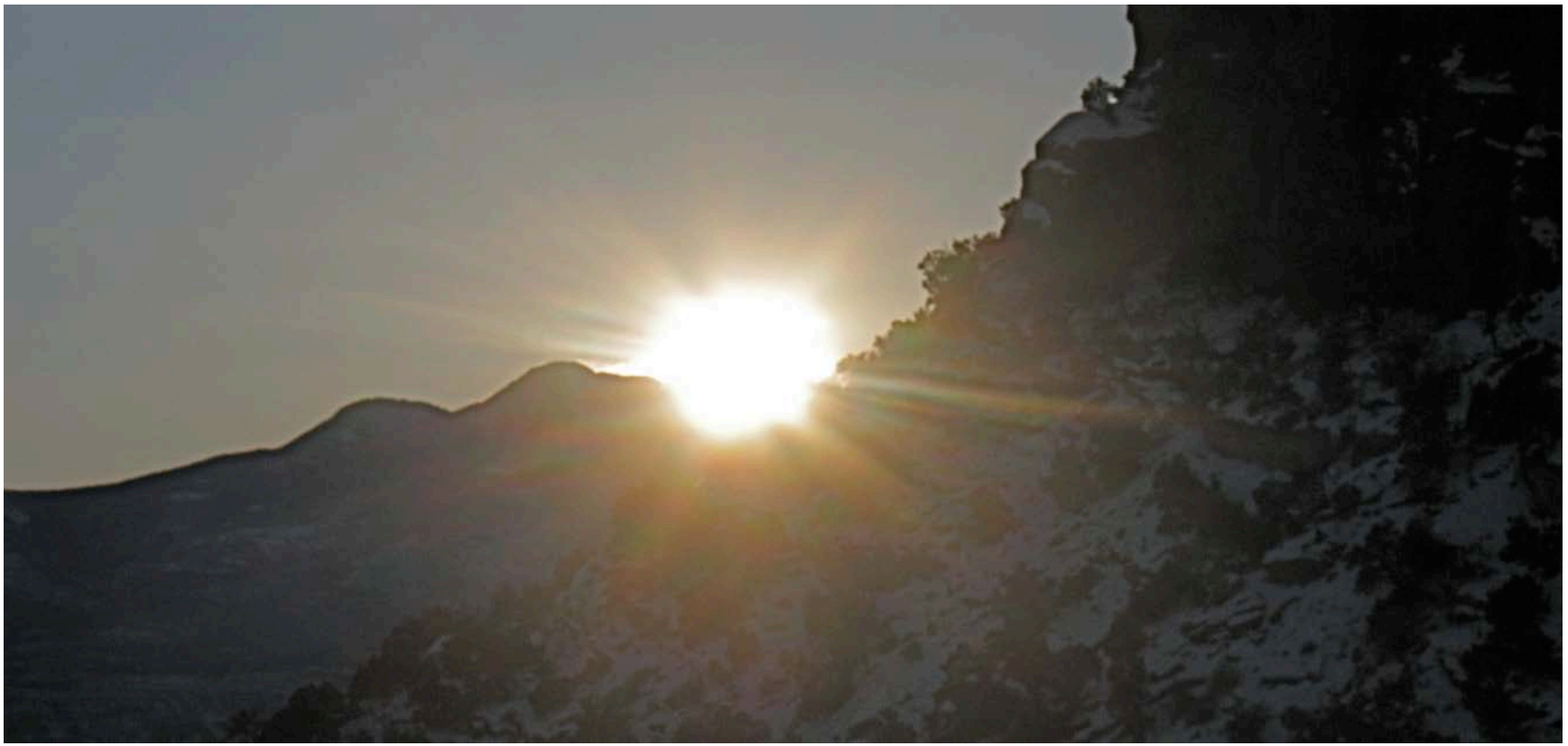

Figure 194. Hidden Valley. Winter Solstice sunrise from *Pounce Panel*, 7:56 MST, December 22, 2007. The Pounce Panel gets the first glimpse of the Winter Solstice sun as it rises . After the sun's shallow trajectory takes it behind the Gnomon Ridge the Pounce Panel remains shaded for over an hour.

Figure 195. Hidden Valley. Pounce Panel. It took me a long time to think that the figure, upper/right, represents a mountain lion making a kill and that its tail resembles the Cat-in-the-Hat headdress seen in Figure 190. Now, besides a tail, I think I see short ears, an open mouth, and a drawn-up front-left leg, part of an action pose and a rare case of foreshortening and perspective in rock art. Identification of this figure as a mountain lion, and the resemblance and proximity of its tail to the headdress design element in Figure 190, were contributing factors to interpreting the symbolic character of the Cat-in-the-Hat headdress that is so prevalent in Moab.

A three-horned sheep stands behind the two-horn, which is unaware that it is about to become a meal. Practitioners of hunting magic often invoke an avatar of the prey species, an over-arching spirit whose generosity or lack thereof influences the hunt. I have come to identify multi-horned sheep as symbols of this ‘Spirit Sheep’. This particular Spirit Sheep seems well-disposed toward the predator. The multi-horn motif appears on other astronomical displays in Hidden Valley.[41]

[41] Another three-horn sheep, Figure 226, is as yet unstudied and may supplant the Pounce Panel as the first panel in Hidden Valley to get the Winter Solstice light.

Figure 196. Hidden Valley. Pounce Panel. I have identified the track design, left, as a predator, usually a mountain lion track. The Big Track Panel, which is the next panel on this wall, includes the largest track in the region with these design elements. The two small zoomorphs have the same paw style, which leads me to think they may be kittens. I discuss this design in the *Codicon.*

The anthropomorph, center, has common Archaic design elements. These include a ‘halo’, wide shoulders, no arms or legs, and intense body-fill. There is another Archaic-style abraded anthropomorph, lower right. These two figures, along with the Basketmaker art, suggest that this site was used for Winter Solstice observations for thousands of years.

Figure 197. Hidden Valley. First light on the *Pounce Panel*, upper right, 8:15 MST, December 22, 2018. The wall beyond the Pounce Panel is in Gnomon Ridge's shadow. The Big Track Panel, about 100 feet away, is the last panel in Hidden Valley to be fully lit. The panels' creators may have used the Cat Track to unite the symbolic disparity between first light and last light.[42]

In the background are the Colorado River Canyon, Long Canyon, and the Big Flat area north of the Island in the Sky unit of Canyonlands National Park.

[42] What the hell does that mean? What are you talking about? *The Boss*

The Big Track - Winter Solstice

Figure 198. Hidden Valley. The Big Track is the last panel in Hidden Valley to be fully lit on the Winter Solstice. This seven-toed track shares design elements with predator tracks throughout the Basketmaker region, including the track on the adjacent Pounce Panel. These elements include a segmented foot, tined toes, and claw marks separated from the toes. This is the largest example I know in the Moab area. The seven toes probably indicate a metaphysical entity like the three-horned sheep.

There are a number of etched lines on this panel. They include a small star-like shape above the track, a line of triangles along the top of the picture, and radiating lines from a pecked dot, right. I typically equate etched lines with Archaic art. Other nearby Archaic glyphs include the adjacent Pounce Panel and the adjacent Ray Panel. All of these Archaic markers so close together indicate that the Hidden Valley Observatory was an important and well-known ceremonial site during the Archaic occupation of the Moab area.

Figure 199. Hidden Valley. 10:43 MST, December 22, 2018. Ray Panel. Big Track Panel. Pounce Panel. The shadow from Gnomon Ridge is moving right. The Big Track Panel had been in the light, but is getting shaded again. It will not be finally and fully lit for another twenty minutes. By that time every other panel in Hidden Valley has been lit.

The *Ray Panel* is an Equinox display. The Equinox light that hits the Ray Panel comes over this cliff line, Figure 179. The *Pounce Panel* and *Big Track Panel* are Winter Solstice displays. Given the shared symbolism and proximity of all three panels I think of them as a more-or-less related and contiguous mental, artistic, and metaphysical expression.

Figure 200. Hidden Valley, 10:55 MST, December 22, 2018. This photo was taken from the vantage of the Big Track petroglyph. The sun's glow can be seen approaching a high pinnacle on Gnomon Ridge. The shadow from this pinnacle keeps the Big Track in shade, making it the last Winter Solstice astronomical display at the Hidden Valley Observatory.

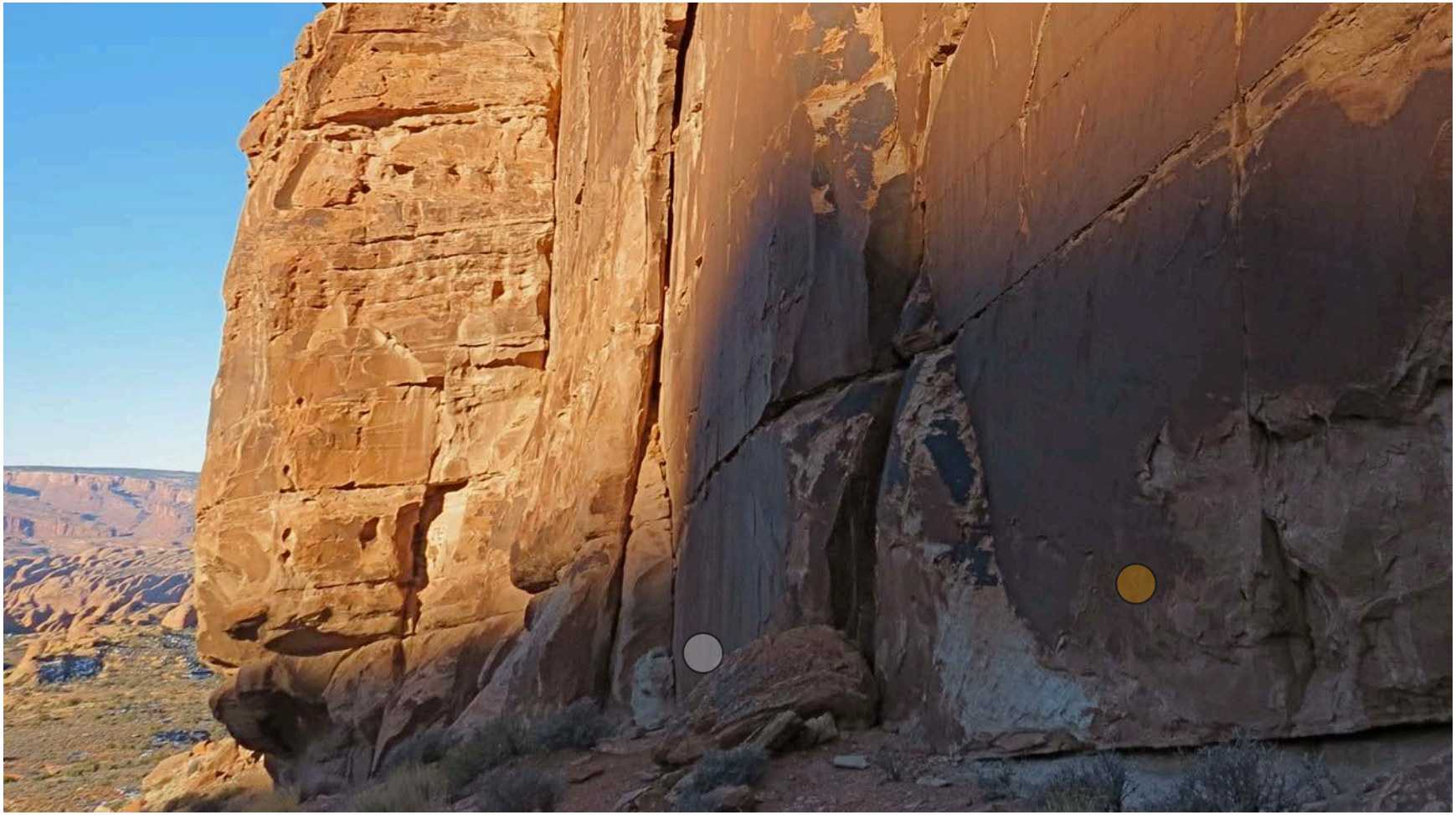

Figure 201. Hidden Valley. Big Track Panel. 10:55 MST, December 22, 2018. Ray Panel. Big Track Panel. The shadow from the tip of Gnomon Ridge can be seen above the Ray Panel. It is moving down and right towards the Big Track Panel.

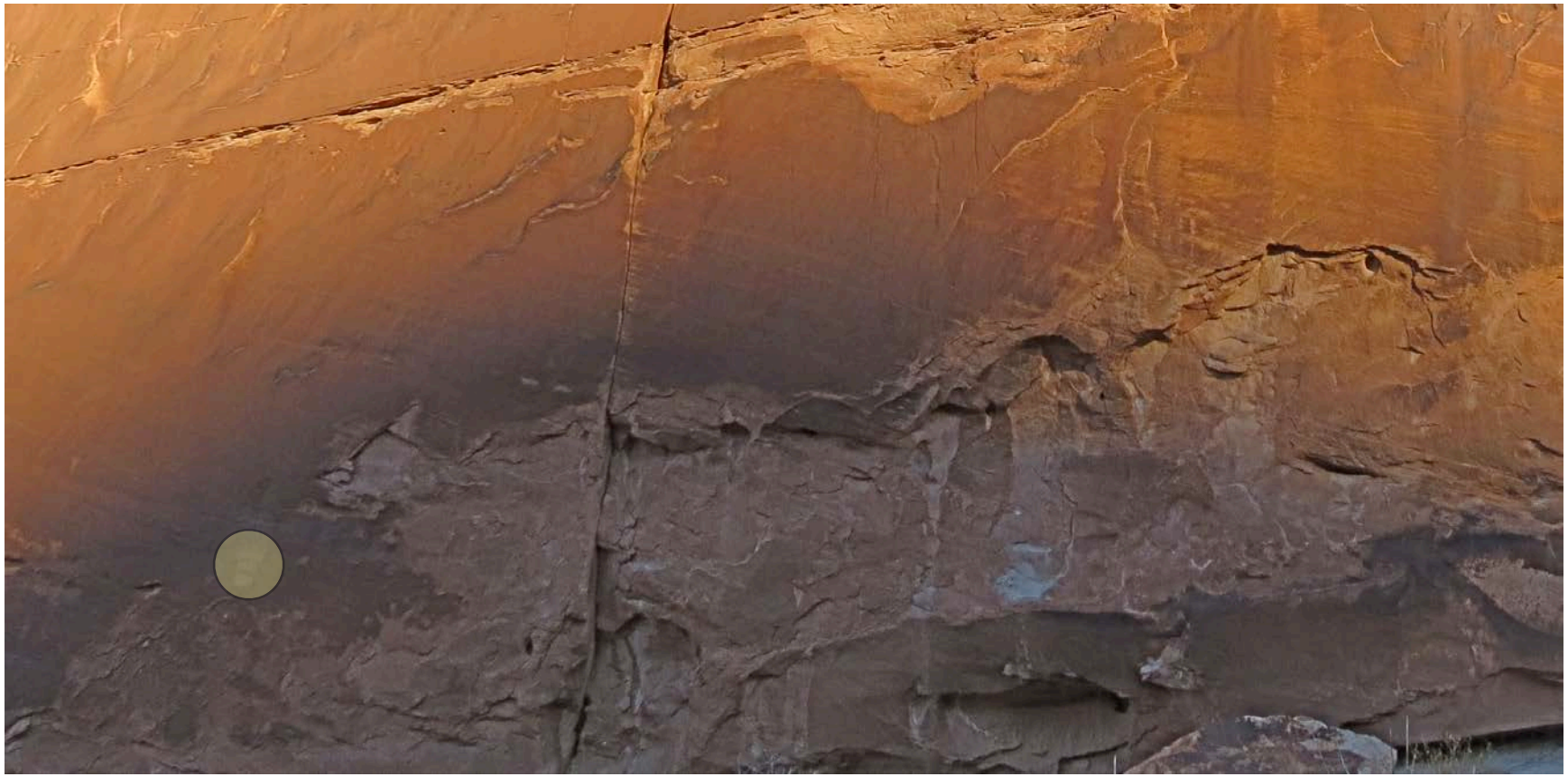

Figure 202. Hidden Valley. *Big Track* display*,* 10:59 MST, December 22, 2018. Big Track Panet. As the shadow from Gnomon Ridge nears the bottom of this cliff, it is about to illuminate the Big Track Panel. The area to the right of the petroglyph is too rough and broken to hold any art.

Figure 203. Hidden Valley. *Big Track* display, 11:00 MST, December 22, 2018. As the light moves down and right it illuminates the *Big Track* display, the final piece of art at the Hidden Valley Observatory to be fully lit by the Winter Solstice sun.

Figure 204. Hidden Valley. 11:00 MST, December 22, 2018. Photo taken from the Big Track Panel.

The high and low points of the Gnomon Ridge form part of many astronomical displays in Hidden Valley. The *Big Track* display was the first place I saw this technique used, but not the last. I discuss some of the highs and lows in this chapter but there are probably more to be observed.[43]

[43] Story of my life.

The White Temple - Winter Solstice

I began studying Hidden Valley in March 2007. On a reconnaissance tour in November, 2009, I noticed that a ruin on the end of the Inner Wall had a good view of the Gnomon Ridge to the southeast. I also noticed a small, distinct rock structure in the ruin and wondered if it might be an observation point. I did not get into Hidden Valley near Winter Solstice until December 24, 2010.

Figure 205. Hidden Valley. The White Temple is made of flat, undressed limestone that forms the top of the Observatory formation. Other ruins at the site use this material to create rough, stacked walls, neither shaping nor dressing these stones, the common Basketmaker style. I thought the Gnomon Ridge to the southeast was well-aspected with this ruin for a possible Winter Solstice alignment.

Figure 206. White Temple, lower left, and Inner Wall. The top of the Observatory is made from limestone formed by a meandering stream about 180 million years ago, Figure 158. Limestone inclusions like this occur throughout Moab's Navajo Sandstone. These inclusions often hold dinosaur tracks. The limestone at the Hidden Valley Observatory contains many. This limestone was used for at least five structures in Hidden Valley.

Raven Eats the Sun Panel.There are a number of panels on the ledge to the left of the dot. See Figure 169.

There are two Basketmaker ruins on top of the Inner Wall. One is at the far right in this photo on the east end of the ridge. The other is out of sight to the left, on the west end of the ridge, Figures 233 - 238.

There may be another Winter Solstice observation site along the bottom of the Inner Wall. See Figure 213.

Figure 207. White Temple. There is a small circular arrangement in front of the bush, top center. This is where I put my camera for recording the sunrise.

The entire hillside appears to have been covered with a layer of white limestone rocks. The placement pattern is fairly uniform and does not seem to be a natural erosion pattern or from rocks tumbling off a man-made wall. If they were intentionally placed, they would have formed a mantle of white rocks that clad the hillside and was lit on Winter Solstice by the sun rising from Gnomon Ridge..

Figure 208. Hidden Valley. Gnomon Ridge, 9:00 MST, December 22, 2018. Photo taken from White Temple. I did not have a compass when I reconnoitered the White Temple. I thought the sun might rise at the intersection of the Outer Wall and Gnomon Ridge, left. Seeing the sun rise from the deep declivity on the other end of Gnomon Ridge was a surprise.

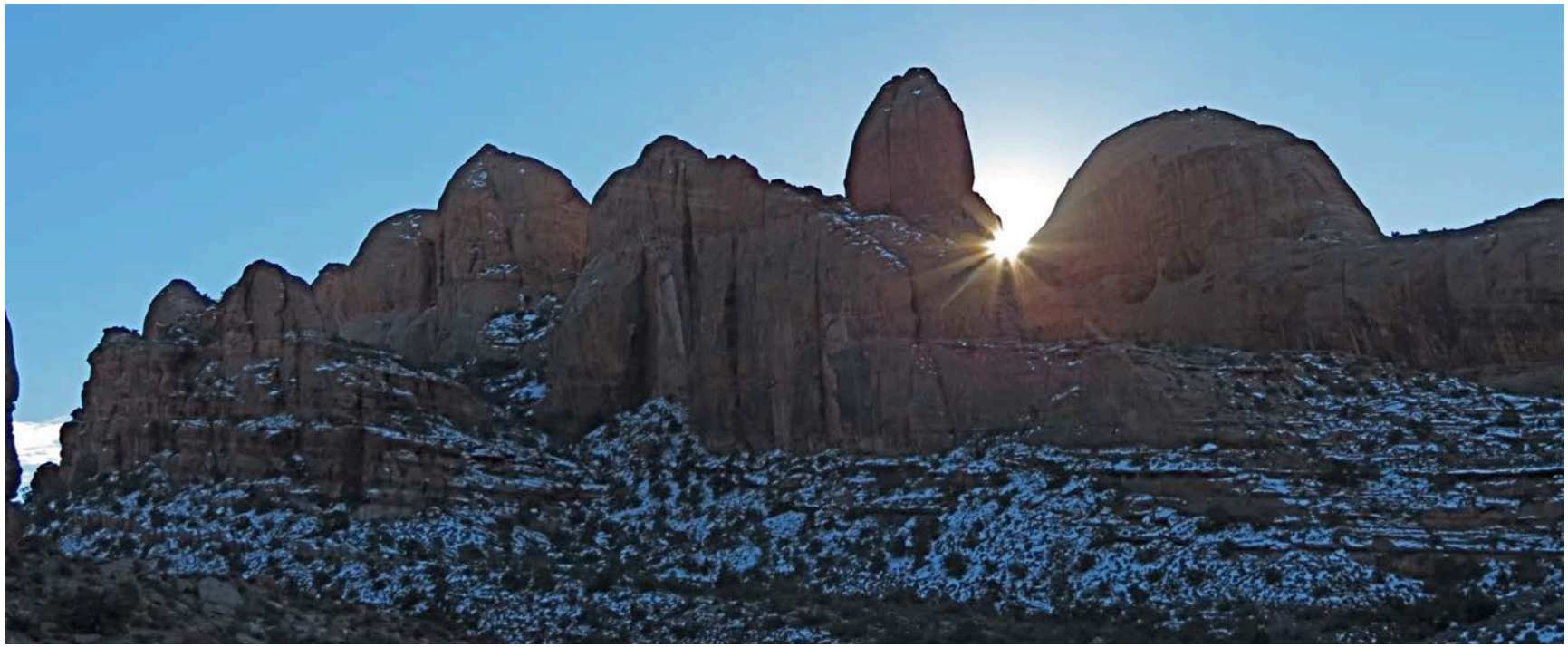

Figure 209. Hidden Valley, Gnomon Ridge. *White Temple* display, 9:01 MST, December 22, 2018.

This was my first lesson in the use of chasms to create gnomons at the Hidden Valley Observatory. As soon as my astonishment abated I began looking for, and finding, markers from the low and high points of Gnomon Ridge's shadow on the Inner and Outer Walls There was clearly more here than had previously met my mind's eye.

Figure 210. Hidden Valley. *White Temple* display, 9:02 MST, December 22, 2018. Words cannot express how I felt when I first saw this image from inside the White Temple in December 2010. Because of personal circumstances I couldn't revisit for eight years.

Figure 211. Hidden Valley. *White Temple* display, 9:03 MST, December 22, 2018. The ‘light dagger’ from the chasm in Gnomon Ridge points at the White Temple.

Figure 212. Hidden Valley. *White Temple* display, 9:05 MST, December 22, 2018. If, as I suggest, the hillside below the White Temple had a mantel of white limestone it would have made an impressive Winter Solstice display.

After the December 2010 observation, I understood that a gnomon could be formed by any peak or a chasm in the Gnomon Ridge, During the Winter Solstice of 2018 I did more observation and documentation, especially of possible ‘peak and chasm’ displays

Figure 213. Hidden Valley. Inner Wall, 9:03 MST, December 26, 2010. Gnomon Ridge shadow on Inner Wall.

The peak of the shadow touches an overhanging shelf with a stacked wall of undressed rocks in front of it. From inside this rock shelter the sun would rise from the top of the gnomon. This is the same kind of display seen at the Big Track Panel.

There is a small ruin near the bottom of the light on the left. It may be another observation point.

Outer Wall

Figure 214. Hidden Valley. Outer Wall, 9:05 MST, December 26, 2010. This view made me realize that there are a number of potential Winter Solstice displays on the Outer Wall. The light dagger on the left illuminates the Three Horn Panel and Spirit Sheep Panel, although I did not know that when I took this picture, Figure 223. A wide-angle time lapse from Gnomon Ridge would be a good analytical tool.

I haven't had a chance to chase down the light at far right and see what it might do.

Necklace Panel Display

Figure 215. Hidden Valley, 9:31 MST, December 26, 2010. The gnomon from Figure 213 migrated from the Inner Wall to the Outer Wall. I knew that there is a line of Basketmaker necklace/belt figures about where the top of the shadow might touch the bottom of the cliff. I went up the hill to see.

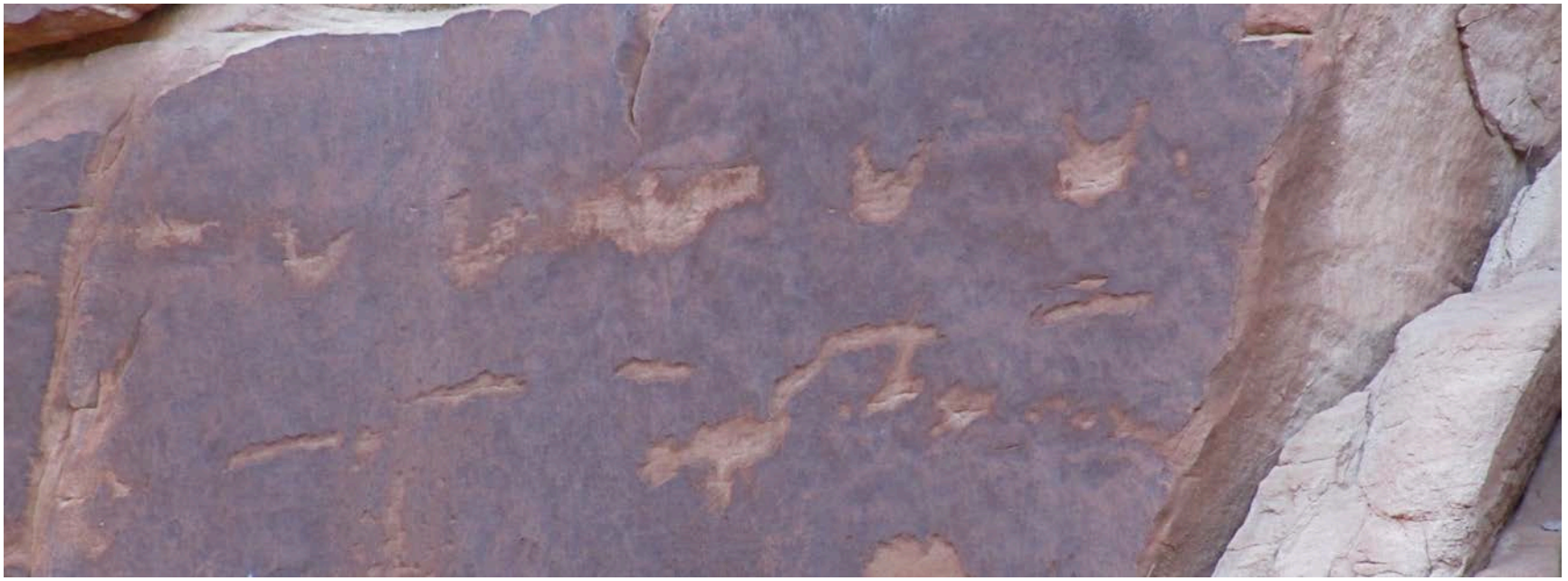

Figure 216. Hidden Valley. Necklace Panel. These petroglyphs represent a line of Basketmaker necklaces with belts below them. When the art was made the bodies were painted, but the paint is long gone. The Cat-in-the-Hat headdress is sometimes added to this common Basketmaker figure, but it does not appear here.

I discuss the Basketmaker necklace/belt design in the *Codicon*. Some of the best necklace/belt lines are on the nearby Old Folks Home formation, Many of those figures include the Cat-in-the-Hat headdress, Figure 303.

Figure 217. Hidden Valley. *Necklace* display, 9:38 MST, December 22, 2010. The top of the shadow nears the bottom of the cliff.

marks the location of the Necklace Panel. The area to its right is too broken-up to hold rock art.

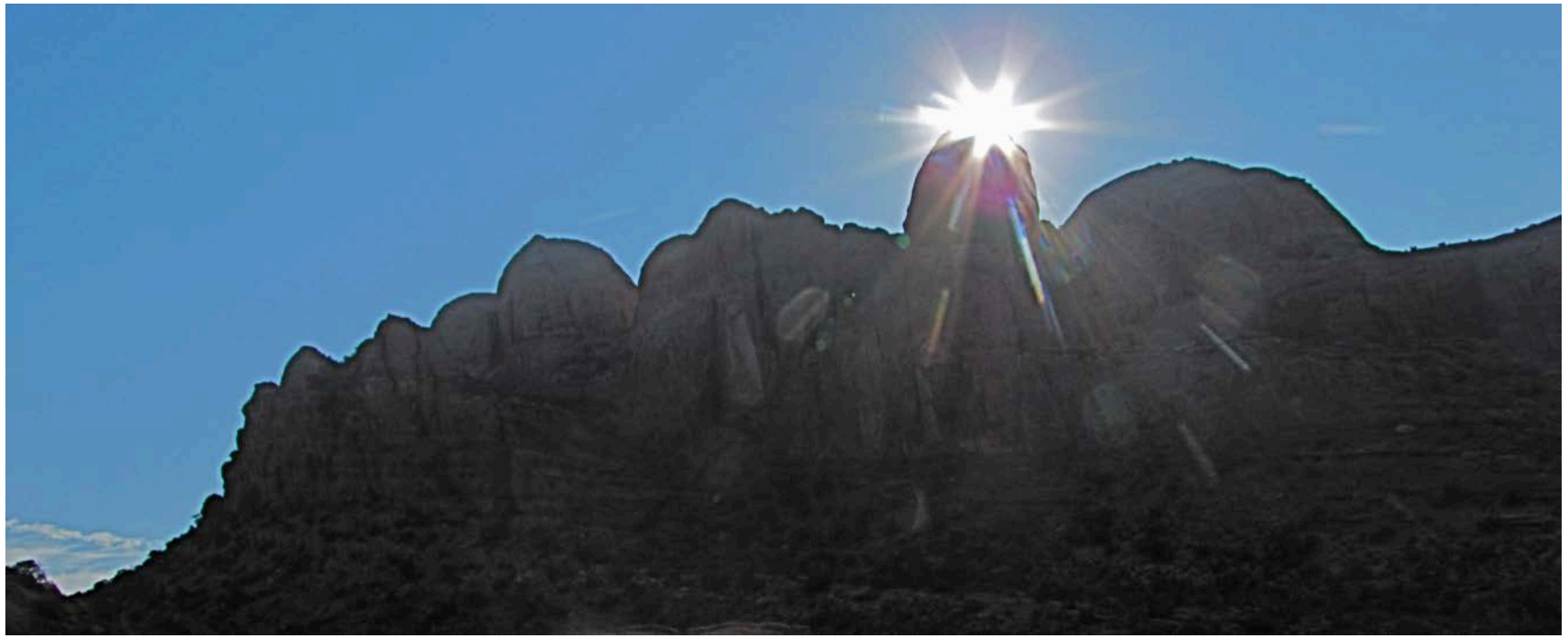

Figure 218. Hidden Valley, Gnomon Ridge. *Necklace Panel* display, 9:41 MST, December 26, 2010. Sunrise from the vantage of the Necklace Panel.

Gnomon Ridge provides light forms for at least five astronomical markers and probably more. The chasm to the right of this sunrise forms the *White Temple* display. On the far left side, a breast-shaped bulge has a nipple that forms the *Big Track Panel* display, Figure 200.

Figure 219. Hidden Valley. *Necklace Panel* display, 9:41 MST, December 26, 2010. The sun moves onto the Necklace Panel. The still-shaded area to the right is too rough to hold rock art.

Three Horn/Spirit Sheep Display

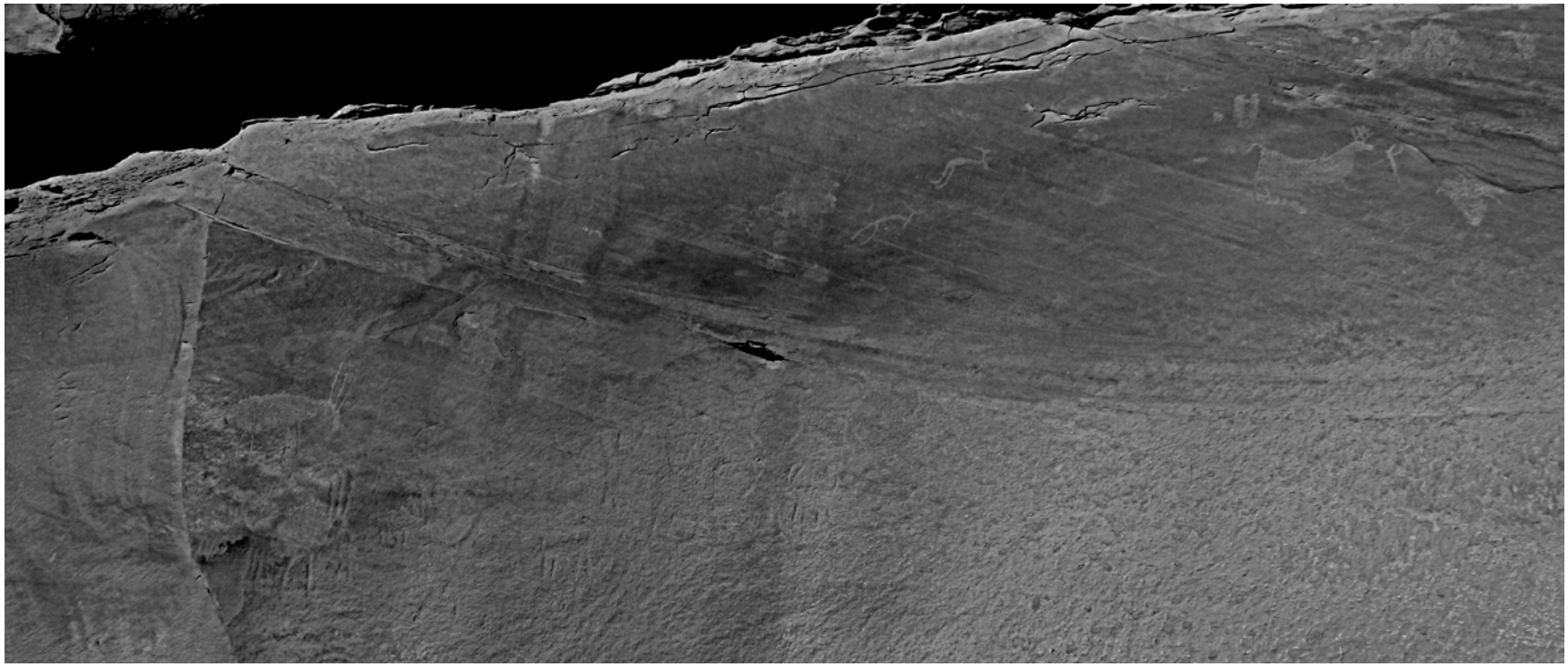

Figure 220. Hidden Valley. Three Horn Panel. The light dagger in Figure 212 hits this panel then slides to the right and illuminates the Spirit Sheep Panel. The multi-horned sheep motif, seen earlier on the Pounce Panel, reappears, left. The appearance of this motif at different astronomical panels indicates a use-pattern of placing supernatural sheep at critical observation points.

Figure 221. Hidden Valley. Three Horn Panel. These three-horned sheep appear on the left side of Figure 220. The multi-horned sheep on the adjacent Spirit Sheep Panel is about fifty feet to the right. Both panels use the same gnomon. This panel is lit first. The light moves quickly to the Spirit Sheep Panel. This would suggest that these panels have a related narrative that uses three-horned sheep as protagonists.

Figure 222. Hidden Valley. Winter Solstice sunrise from the *Three Horn/Spirit Sheep* display, 10:16 MST, December 22, 2018. Again, a low spot in the Gnomon Ridge is used to create an astronomical marker.

Figure 223. Hidden Valley. *Three Horn/Spirit Sheep* display, 10:17 MST, December 22, 2018. The light moves off of the Three Horn Panel, left, and onto the Spirit Sheep Panel, right. These two panels share the multi-horned sheep design, as well as this part of the cliff and a Winter Solstice light display. The movement of light from the Three Horn Panel to the Spirit Sheep Panel may constitute an example of the transference motif.

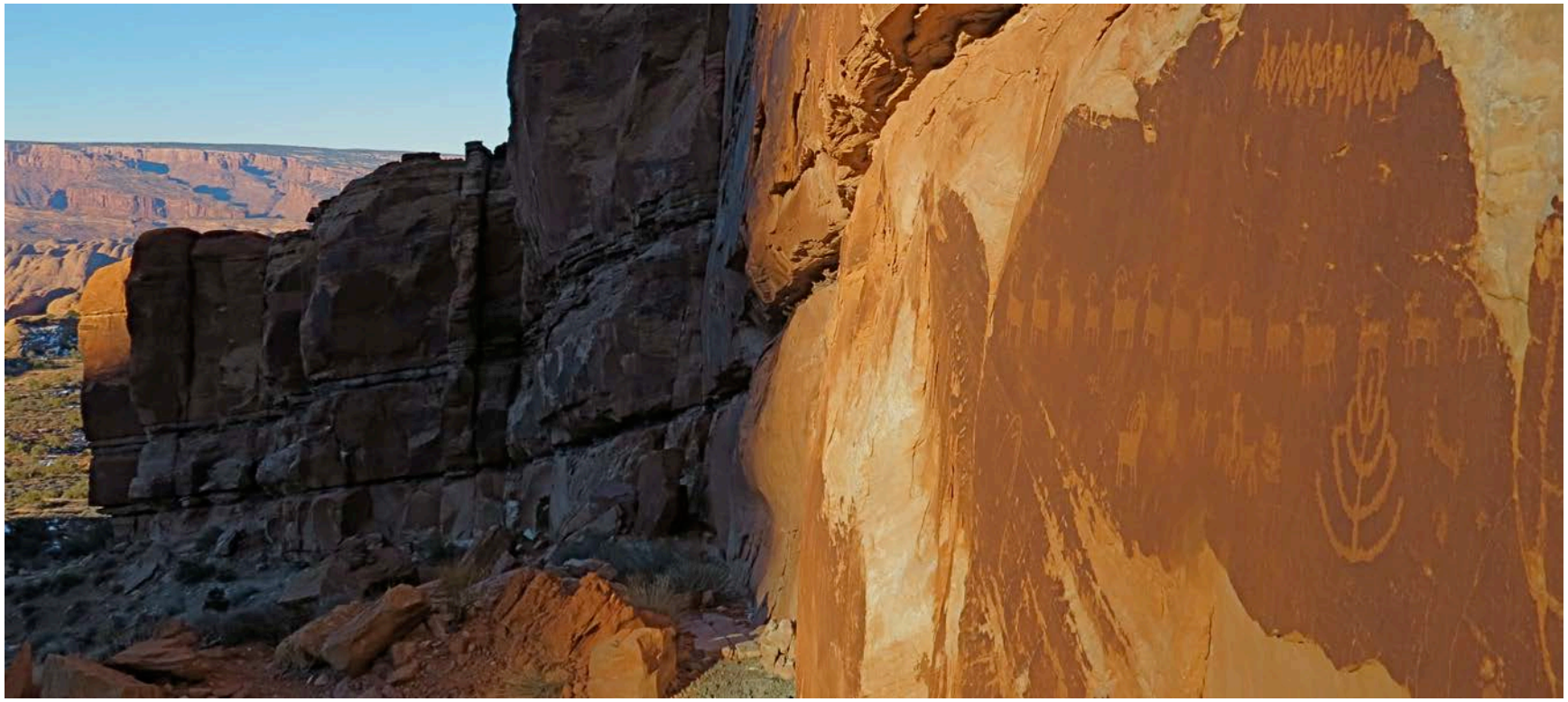

Figure 224. Hidden Valley, Spirit Sheep Panel, 10:17 MST, December 22, 2018. The Spirit Sheep Panel includes several multi-horned sheep, including one on this part of the wall that is watching a kid caught between a lion track and a hunter. A Spirit Sheep watching one of its flock succumb to the predator’s act is a motif which also appears on the Pounce Panel, Figure 192.

Figure 225. Hidden Valley. Spirit Sheep Panel. A four-horned sheep watches four kids on the run. The last one is caught between a hunter and a lion track. This panel was important in deducing the appearance and role of the Spirit Sheep in Moab rock art. I discuss this panel in the *Codicon.*

Thezig-zag line, above, and the linear glyph, right, may represent containment elements, like fences or gates. I discuss this in the *Codicon*.

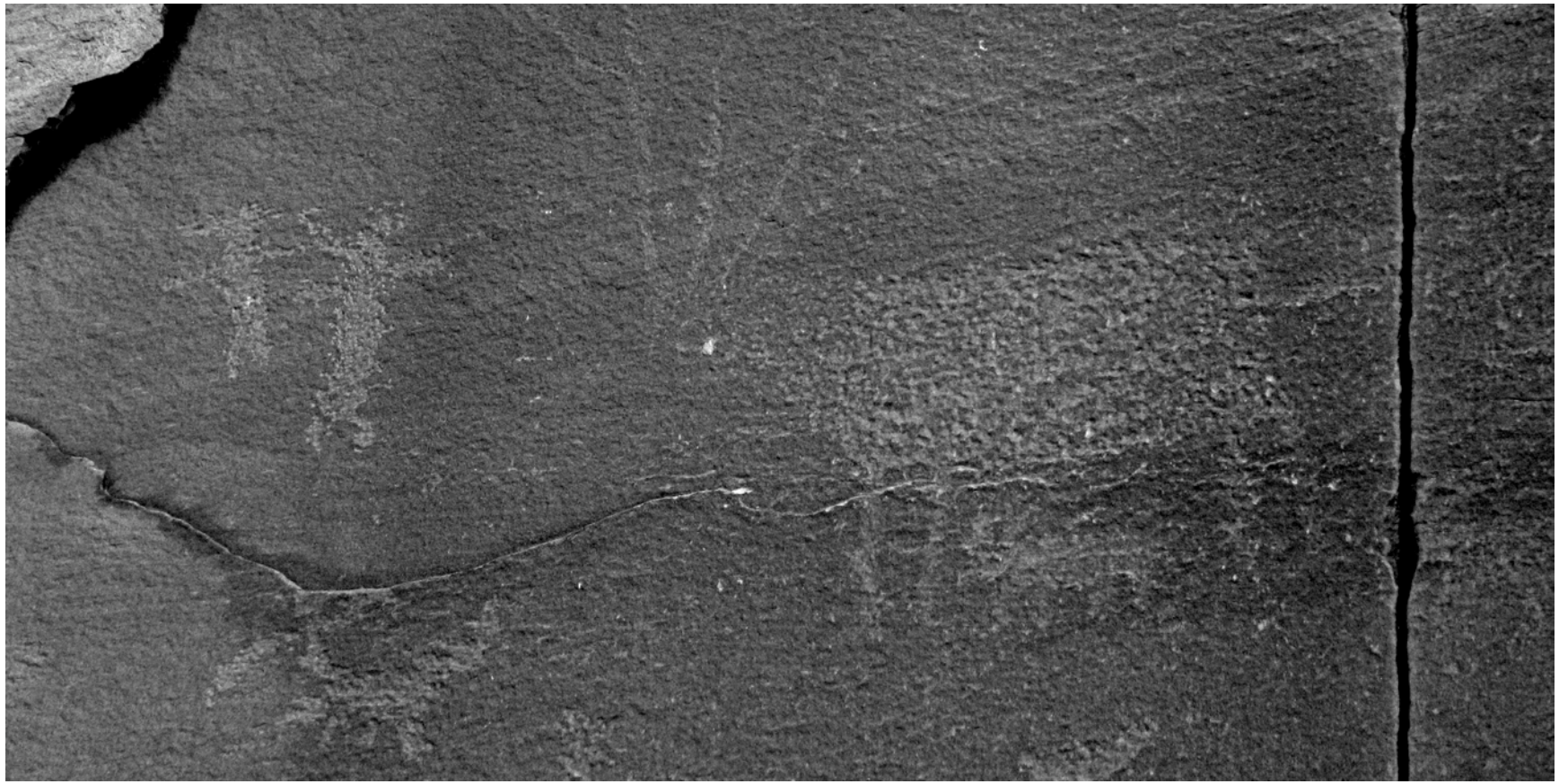

Figure 226. Hidden Valley. East Panel. This multi-horned sheep is placed even further up the Outer Wall than the Pounce Panel. I have not had a chance to observe it for astronomical activity. Its style resembles the multi-horned sheep on the Three Horn Panel.

Two atlatl throwers in front of the sheep sustain the hunting magic motif of the other multi-horned sheep on this wall. There is a small sheep under the large sheep. Based on observations elsewhere, I suggest this may be the proverbial ‘sacrificial lamb’. I discuss the possibility of an ‘underneath’ motif in the *Codicon.*

Stony Point Ruin

The Stony Point Ruin is on a talus slope east/up the Outer Wall from the Spirit Sheep Panel. I thought it might also be a Winter Solstice observatory. My visit in 2018 dispelled that notion and I rate it as a Miss. I discuss Stony Point Ruin here to impart a sense of the temporal context of discovery and failure in a project like this. I discuss other Misses In *Chapter 7: Misses and Maybes*.

Figure 227. Hidden Valley. Stony Point Ruin. I examined this Basketmaker ruin for astronomy during the Winter Solstice 2018. I did not see anything that made me suspect an astronomical function.

Figure 228. Hidden Valley. Sunrise from Stoney Point Ruin, 10:30 MST, December 22, 2018. The Winter Solstice sunrise from the Stony Point Ruin does not appear from the top of a pinnacle or the bottom of a chasm, as it does in other Hidden Valley astronomical markers. I do not know if the chasm, center, acts as a gnomon for another panel or structure.

The small ‘nipple’ to the left of the sun is the gnomon that creates the *Big Track* display further up the Outer Wall and a half hour later, Figure 208.

Figure 229. Hidden Valley. Stony Point Ruin. Some of the stones in the Stony Point Ruin are quite large. It took a great deal of effort to build this structure. There are no adjacent or nearby petroglyphs that seem connected to the ruin. Given the large number of astronomically involved markers in Hidden Valley, one suspects that this structure may have some role in such a display. If so, I haven’f figured out what it is.

The Spirit Sheep Panel is down the hill on the dark wall in the lower/left corner. A lighter-colored limestone inclusion in the Navajo Sandstone can be seen running up the wall from the panel to this ruin.

Further Study at Hidden Valley

I am writing this in May, 2019. I still have questions about astronomical displays in Hidden Valley, including at the Pounce Panel, Big Track Panel, and Ray Panel during Winter Solstice, the ruins on the Inner Wall at Winter Solstice, and a possible ‘mapping’ display on the Pass Panel near the top of the Hidden Valley formation.

Figure 230. Hidden Valley. Gnomon Ridge from Big Track Panel, 10:45 MST, December 22, 2007.

◯ mark the peaks and chasms that merit further observation.

Figure 231. Hidden Valley Observatory, left, and Gnomon Ridge, right.

mark the location of two Basketmaker ruins on top of the Observatory's Inner Wall. I call them the Upper Ruin and Lower Ruin. Photos taken of the Inner Wall during Winter Solstice 2018 are interesting but inconclusive.

The Pass Panel is the location of the *Standing on Light* display, Figure 171. I discuss the Pass Panel again later in this section.

Figure 232. The Inner Wall's Lower Ruin is the more elaborate of the two ruins on this formation. It is not a perfect circle. The side facing Gnomon Ridge is slightly flattened, reminiscent of the *Flat Top* display on the Goose Panel.

Observations in 2018 suggest that this ruin, the pedestal next to it, and this chasm in Gnomon Ridge may be parts of a Winter Solstice sunrise display.

Figure 233. Hidden Valley. Inner Wall, Lower Ruin. The flattened side of the ruin faces southeast. This is the largest Basketmaker structure I know of in the Moab area. I have seen others of this size in the San Juan River Basin.

Other than pit houses, Basketmaker ruins are uncommon near Moab. Stacking unshaped limestone is a typical construction method generally ascribed to late Basketmaker phases, after 300 AD more or less. If this is an astronomical site it may have been recognized and used as an observatory long before a structure was placed here.

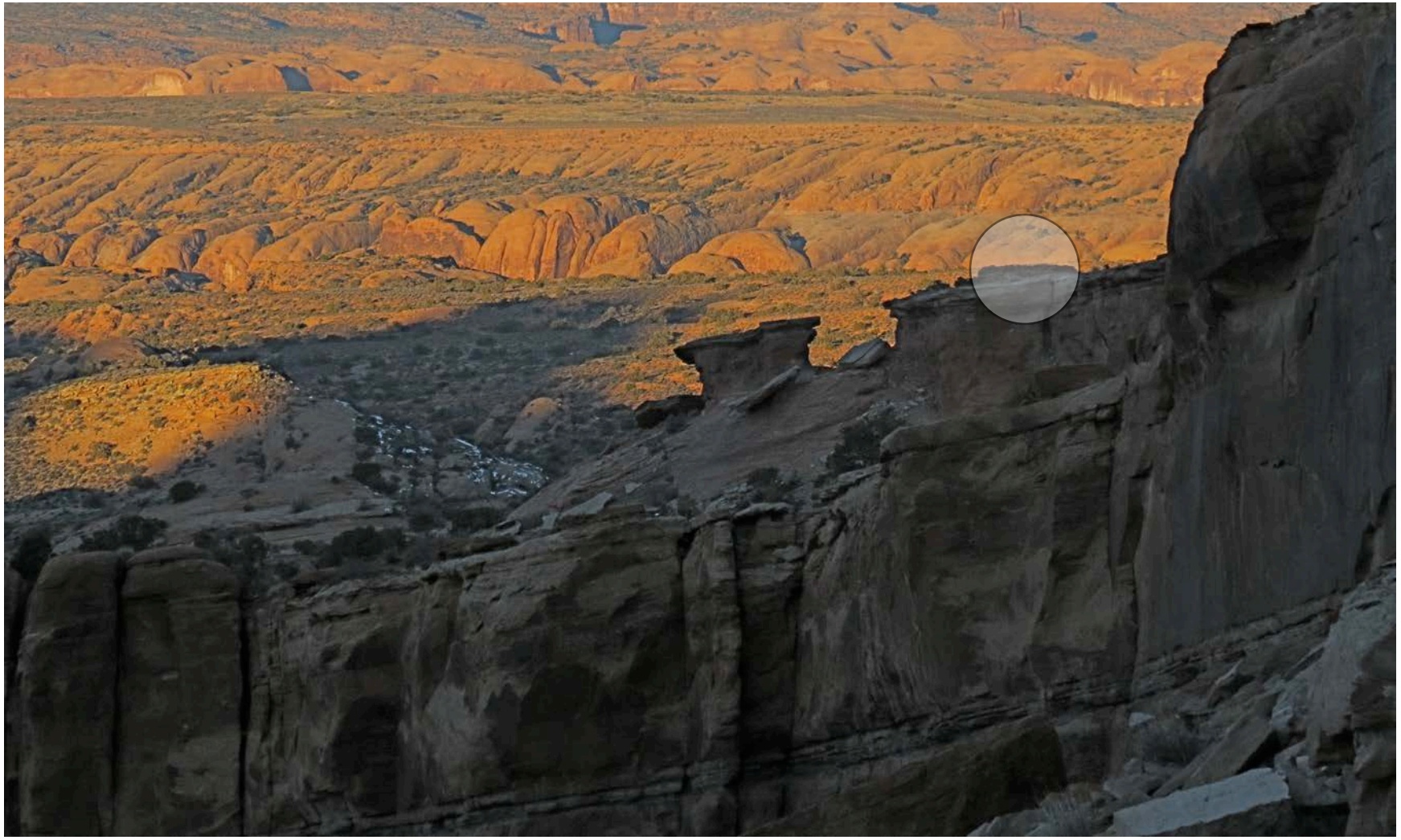

Figure 234. Hidden Valley. Inner Wall, 8:25 MST, December 22, 2018. The large, gray dot covers the Inner Wall's Lower Ruin. The small pedestal to the ruin's left may be part of an astronomical observatory.

Figure 235. Hidden Valley. Inner Wall, 8:47 MST, December 22, 2018. First light on the Inner Wall illuminates the pedestal that is in the center of Figure 234.

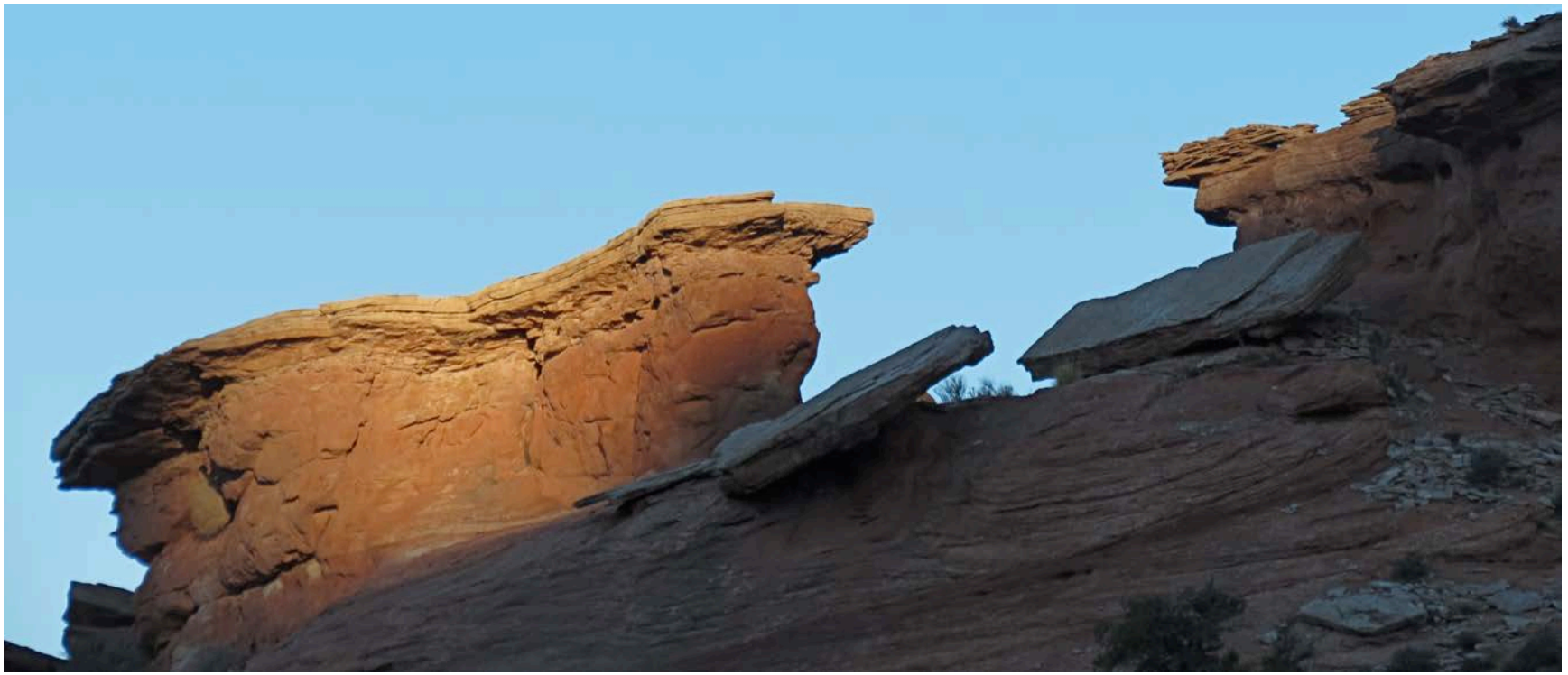

Figure 236. Hidden Valley. Inner Wall, 8:47 MST, December 22, 2018. First Winter Solstice light illuminates the pedestal. A small stack of rocks can be seen on the edge of the formation to the right. They are part of the Lower Ruin. Winter Solstice observations from these location could be interesting.

Figure 237. Hidden Valley. Inner Wall, Upper Ruin. See Figure 231. The Upper Ruin is of late Basketmaker design and workmanship. It has an opening that faces the Gnomon Ridge. I have no idea if this ruin has astronomical significance.

Figure 238. Hidden Valley, Inner Wall. The top of the Inner Wall seen from the Upper Ruin. The Lower Ruin is inside the gray oval. The pedestal in Figure 235 is to its left.

The top of the Hidden Valley Observatory is made of limestone from an ancient stream bed. There are dozens of dinosaur tracks in these limestone inclusions at Hidden Valley. Whether they played into an astronomical narrative, or any other rites or ceremonies, we will never know.

Figure 239. Hidden Valley, Pass Panel. The *Standing on LIght* display is on this wall to the right of this photo. The Pounce Panel is adjacent to the left.

The peaks and valleys on this linear glyph might be related to the Gnomon Ridge across the canyon. I studied this panel to see if it could be a literal map of that ridge line. It does not appear so. Once I understood the role that peaks and chasms in Gnomon Ridge might play in astronomical observations, I wondered if each high and low spot on this linear panel might correlate to an astronomical display that uses Gnomon Ridge. It will take a more complete set of observations to confirm or deny this idea.

The bright circular glyph, left, is of recent vintage. There is a fair amount of graffiti at Hidden Valley. A lot of it is from the late nineteenth and early twentieth centuries, Figure 165. The glyph in this photo is one of few consequential marks from the last fifty years. It would seem that the effort it takes to hike to this site winnows out many of the people who must make their mark when they see a mark made.

Thoughts on Hidden Valley

In *Thoughts on the Snake* I suggested a sequence of artistic creation that likely starts with finding an overt light display, then the discovery and memorialization of nearby markers. In Hidden Valley I suggest that the initial impetus was the light on the Ray Panel. The Archaic anthropomorph-and-atlatl image in Figure 188 is much older than anything else I've seen at the site. We know from the archeological record that the Archaic culture may have been in the region as early as 4000 BC. We do not know when these people began producing art, particularly astronomical art. Is it possible that, whoever they were and however their culture developed, they had astronomical knowledge that had been passed on for generations?[44] The overlays of successive eras of Basketmaker culture at the site are apparent in Figure 190. It is possible that knowledge and use of this location for Equinox observations was passed on from an early phase of Moab's Desert Archaic Culture to the later Basketmaker inhabitants. The knowledge was then passed to successive generations of Basketmaker astronomers and artists until their culture dissolved.

The dissolution of prehistoric native cultures can pose intractable questions. Why did the culture fail? How did it happen? Where did the people go? If the victors write the history, and the victors couldn't write, what does that leave us to analyze and interpret? Not a lot, usually. Hidden Valley, however, has a surprising amount of information concerning the processes of cultural change and development due to the artistic depictions and placement of atlatls and bow-and-arrows within the confines of the Hidden Valley Observatory.

The atlatl was the main projectile weapon among Basketmakers until the bow-and-arrow was introduced between 300 - 500 AD. Therefore, atlatl depictions are temporal markers for cultural change within Basketmaker culture. Of course, Basketmakers may have continued to use and depict the atlatl after the bow-and-arrow's appearance, but I think the transition was fairly rapid and encompassing. At Hidden Valley the Outer Wall has depictions of at least seven atlatl throwers and no bow-and-arrow users. This suggests that all of the art on the Outside Wall was made before 300 AD. The Inner Wall has one atlatl thrower and at least four figures holding the bow-and-arrow. This indicates that much of the art on the Inner Wall was made after 300 AD. The larger number of atlatl depictions compared to bow-and-arrow roughly correlates to the longer span of atlatl-using Basketmaker culture before it was replaced. I have seen similar proportional variations at other large rock art sites.[45]

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[44] I suspect that a lot of the Archaic cultural evolution had its roots in the Late Pleistocene cultures of the northern Great Basin. It would be interesting to study some of the many rock art sites in that region for astronomical possibilities.

[45] In *Game Drive* I discuss the atlatl/bow-and-arrow transition and its possible social consequences at greater length. I haven't seen any other writers or researchers address this topic. Since hunting and combat are both closely tied to weaponry this seems like an oversight.

As far as I can tell, Moab's Basketmaker culture dissipated sometime between 900 - 1000 AD, probably due to pressure from the expanding Anasazi from the south and Fremont from the north. This means there was a significantly shorter period to make art after the bow-and-arrow changeover than the 2000 years of Basketmaker culture that preceded it. The dearth of bow-and-arrow images on the Outer Wall suggests that available artistic space was mostly used up by the time the bow-and-arrow became common. This would agree with the notion that the Ray Panel was the site's first astronomical marker, with subsequent artists expanding their efforts from that site. The preponderance of bow-and-arrow depictions on the Inner Wall suggests that later Basketmakers, while continuing their artistic traditions, moved their efforts to the Inner Wall where there was still space to make art. The exception to this hypothesis is the Raven Eats the Sun Panel. Style and patination both suggest that this panel was started at least by early Basketmaker times and was added to later. I haven't found any signs of Archaic art on this panel, but that doesn't mean there wasn't any as much Archaic art was painted and ephemeral and may have disappeared long ago. Further, some of the art we can see at this panel may be Archaic, but there is no way to distinguish it from early Basketmaker, once again suggesting a prolonged period of coexistence and/or transition between the cultures. I discuss this topic further in the next chapter in the *Thoughts on Hellroaring Canyon* section.

The idea that the Inner Wall was largely the province of later artists is reinforced by the two stacked stone ruins on top of the wall, Figures 233 and 237. Archeologists typically assign structures of this type to later Basketmaker builders.[46] I see no reason to disagree. A comparison of these two structures to the White Temple show a more concerted design and building ethic at work. This suggests that the White Temple was made at a time when Basketmaker culture was less enamored of more elaborate architecture. See Figure 205.

Taken together, the seasonal changes in light-forms, the Archaic art, atlatl and bow-and-arrow depictions, and changing architectural techniques illustrate the process of cultural change at this site. Clearly, it retained its value as an astronomical observatory and ceremonial destination for successive inhabitants of the region.

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[46] They use the venerable Pecos Conference designation of Basketmaker III. The drafters of the Pecos system expected to find a Baketmaker I culture. They never did. Basketmaker II has few stacked rock walls. Basketmaker III structures are more common in the San Juan Basin than around Moab. Outside of Hidden Valley I know of only one structure in the Moab area that uses similar design and technique. It is also in Behind the Rocks. There is nothing I have seen that is overtly astronomical in its construction or placement. For what it's worth, it is next to some large dinosaur tracks and is part of a habitation area with manos, metates, charcoal deposits, and other artifacts and human debris,

Another question at Hidden Valley concerns the Quail Bun headdress. As far as I can tell it only appears at two locations, once on the Ray Panel and a second time on a small figure on the Inner Wall, not far from Raven Eats the Sun. Three similar figures also appear at the Snake site, suggesting a close relation between The Snake and Hidden Valley. Hidden Valley has a number of figures engaged in some sort of combat, possibly some sort of formal contest. There are no obvious combat actions at the Snake, but the Warriors on the Warrior Panel may imply the potential for such activities. As far as I know, there are no other Quail Bun headdresses in the Moab area. However, as mentioned in Footnote 25, there are number of Fremont Quail Bun figures holding bow-and-arrows on Warrior Ridge in Nine Mile Canyon. Could it be that the Quail Bun astronomer and combat traditions of Basketmaker culture are closely linked? Or that the Quail Bun in Fremont culture retained its martial character but lost its astronomical affiliations? I wonder.

Friends and I have discussed whether or not Hidden Valley could have been a hunting site. When looking at the area and seeing the numerous hunting depictions at the site using atlatls and bow-and-arrows one can visualize Hidden Valley as a good location for a sheep hunt, whether it used an atlatl-based game drive strategy or the conceal-and-surprise tactics of bow-and-arrow hunters. Conversely, when I look at an area that is so wide open the difficulties of containing or surprising herds of bighorns seem formidable. On the other hand, the Moab area had a sizable population, which would mitigate the difficulty of finding enough people to do the job. In either case, the logistics and coordination of a hunting party near Hidden Valley would be considerable. But, then, all that grass in Hidden Valley could look pretty tempting to a herd of bighorns, especially when the entire herd gets together for the autumn rut. Questions, questions. I tend to consider Hidden Valley a ceremonial site with positive visualizations of hunting magic, not a major hunting ground. I could easily be wrong about that. In its day it may have served both functions admirably.

Three of the interpretive concepts I define in the *Codicon* are well-represented at Hidden Valley; the Cat Track, Cat-in-the-Hat, and Spirit Sheep. The Spirit Sheep Panel, Figure 225, is an important to my interpretation of the Spirit Sheep motif. The fantastic horns, noble stance, bloody nose, and unperturbed posture are seen in Spirit Sheep icons throughout Basketmaker art, from Moab to the Mogollon. The use of the Spirit Sheep as an astronomical participant is new to me, however. It wasn’t until December 2018, when I tracked the light in Figure 214 that this possibility presented itself.

While working with my photo files I came across the East Point Panel photo, Figure 226. Because of its faded character (it is barely visible in direct sun), remove from other panels at the site, and the charismatic attraction of sites like the Pounce Panel and Ray Panel, I had largely forgotten and/or overlooked the East Point Panel. Mistake. The similarities of the the East Point Panel and Three Horn Panel, Figure 221, are unmistakable. The East Point Panel is a definite Maybe.

Cat Track, Cat-in-the-Hat, and Spirit Sheep icons appear throughout Basketmaker territory. Their prominent roles in Hidden Valley astronomy amplify their import, at home and abroad. The appearance of these three images/concepts, and their counterparts elsewhere, delineate territory within the Basketmaker sphere of influence. Different bands, clans, and tribes existed throughout the region, intellectually and spiritually united by their shared symbolism. This unifying power was amplified by their astronomical importance. It may well have been that, like the Hadj in Mecca or the Pilgrimage to Canterbury, every Basketmaker person wanted to travel to Hidden Valley at least once in their life to fulfill their life's religious requirements to see, for example, The Snake. This pilgrimage ethic may be represented and illustrated by the Burden Carriers on the Raven Eats the Sun Panel, Figure 162. I like to think so.

These are some of theI many questions I have concerning Hidden Valley. I assume there are many questions that, due to my ignorance and stupidity[47], I haven't come close to asking.

[47] Behavioral traits we all share.

CHAPTER 6: HELLROARING CANYON

I found the astronomy at Hellroaring Canyon by accident. I went there on the morning of March 9, 2012 to take pictures of a setting full moon. Because of this, I saw the shadows of the Katchina Towers on the habitation site across the canyon. I knew this site has rock art, all Archaic. Because it is Archaic I didn't suspect astronomical markers. I had never heard of Archaic art with those properties. But the shadows of the Katchina Towers were compelling, so i went into the canyon on March 20, 2012 to see what I could see.

Figure 240. Hellroaring Canyon. Katchina Towers. March 9, 2012. This is the photo I went to Hellroaring Canyon to get. South Katchina on the left. North Katchina on the right. Note the small hole on the right side of the South Katchina, near the top. It is part of the *South Katchina Sees You* display.

Figure 241. Hellroaring Canyon. Katchina Towers, March 9, 2012. In this picture the shadow of the South Katchina can be seen across the canyon near where I knew there is Archaic art. I also knew that, in eleven days, the shadow would be further to the left and closer to some of the Archaic art on that section of the canyon wall.

Figure 242. Hellroaring Canyon. Katchina Towers, December 29, 2013. To date, I haven’t seen anything from the top that I suspect as a Winter Solstice marker. I haven’t been inside the canyon for Winter Solstice observations.

Figure 243. Hellroaring Canyon. South and North Katchinas, upper left. Most of the rock art in this locations is associated with the large alcove, lower right.

Figure 244. Hellroaring Canyon. In Indian times a main pedestrian route from Moab to points West went through Hellroaring Canyon. The route into Hellroaring is suitable for humans, coyotes, cats, and maybe bighorns. It is not suitable for deer, domestic sheep, cows, horses, or wheels.

Left to right, Connie Massingale, Arianne Child, Greg Child, my shadow.

Figure 245. Hellroaring Canyon. The juniper in the upper right corner is in the upper right corner of the previous photo. The route comes through the large crack in the middle of this picture. The boulder in the top of the crack precludes passage by creatures that are too large or inflexible.

There is a dependable spring in the bottom of the canyon. There are prairies of Indian rice grass above. Imagine centuries of basket carriers loaded with rice grass climbing down this route to winnow, parch, and grind their precious harvest.

Figure 246. Hellroaring Canyon. Hellroaring Alcove. A large stone flake arcs over the top of the alcove. There is a fair amount of art along the top of the flake.

There is a small panel on the dark cliff at the base of the Katchina Towers, left. It may represent the Katchina Towers.

Figure 247. Hellroaring Canyon, Katchina Towers Panel. The small glyphs form a tableau on the base of the Katchina Towers. The figure on the left may represent the South Katchina, which has a zoomorphic character. The anthropomorphic figure on the right may represent the North Katchina. It has several characteristics which suggest it is Archaic. These include no arms, a potential ‘halo’ of dots, and potential wide-eyes. The last two design elements are strongly suggested, but not definite. So, while this panel may share an Archaic origin with much of the art is the area, it is not certain.[48]

These figures have no astronomical affiliation to my knowledge.

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[48] Of course they represent the Katchina Towers! ! I’m not trying to mislead you with excessive equivocation. It’s just that I’m still indentured to academically-styled bloviation and obfuscation. Forgive me! Please! Forgive me!

Figure 248. Arianne Child, top bunk, and Connie Massingale, bottom, take a break after carrying their baskets down the Hellroaring Trail.

Figure 249. Hellroaring Canyon. The Hellroaring astronomical site includes Katchina Shadow. Purple Haze. South Katchina Sees You. Comet Man. top, is under the V-shaped aperture that creates the *Comet Man* display. See Figure 286.

Jose Knighton took me here, the Snake, the Goose Panel, and many places besides. Luckily, he doesn't have any friends either so we did a lot of walking together. His knowledge and generosity (towards me) made this work possible.

Figure 250. Hellroaring Canyon. *Comet Man* display, 11:18 MDT, May 30 2016. This Archaic panel is the main attraction in Hellroaring Canyon rock art. A red-and-yellow arc to the left of the anthropomorph has a comet-like appearance. The panel has been called ‘Comet Catcher’ and ‘Comet Thrower’. I settled on Comet Man. Colin Fryar, left, is in front of the comet’s ‘head’ seventeen minutes after it lit the Comet Man, Figure 289. Greg Nunn, right, is looking at the comet’s ‘tail’.

The *Comet Man* display, along with others at this site, prove that the Archaic people had astronomical knowledge. The time-frame for Archaic habitation is uncertain. It may go back as far as 4000 BC and extend as late as 500 AD. The Comet Man is of a later Archaic style called the Barrier Canyon Style. The Ray Panel in Hidden Valley, Figure 188, has Archaic art from an earlier era. This suggests that the Archaic’s knowledge and use of astronomy was widespread and traditional in the region. As far as I know, there is no Basketmaker art in Hellroaring Canyon.

Katchina Shadow

I will discuss four astronomical displays at the Hellroaring Canyon site; *Katchina Shadow, South Katchina Sees You*, *Purple Haze*, and *Comet Man*. It was the Katchina Towers' shadows that made me curious about the site.

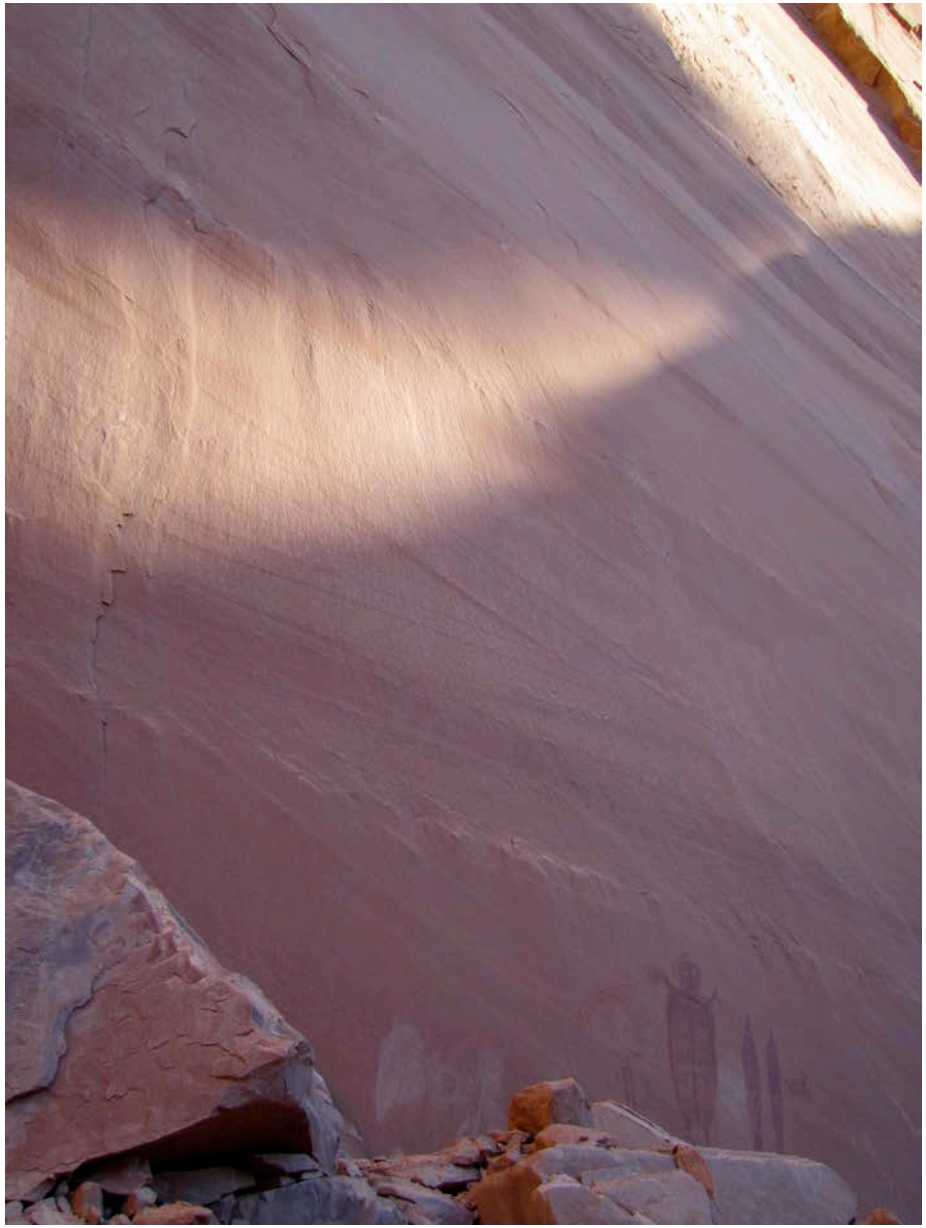
Figure 251. Hellroaring Canyon. *Katchina Shadow* display, 6:57 MDT, March 20, 2012. The shadow from the South Katchina Tower, center, moves down and right towards the top of the alcove. ○ marks the location of a large Archaic pictograph that is part of the display. This figure can be seen from the ground, Figure 276.

The North Katchina shadow, upper right, has not been seen in an astronomical display to date.

Figure 252. Hellroaring Canyon. A stone ramp leads to the top of Hellroaring Alcove. The flattened top of the ramp has rock art on it, including the figure mentioned in the previous photo.

Toeholds and handholds going up the ramp were carved by Archaic Indians. These kind of holds are called Moki steps. Greg Child is an experienced climber. This was as far as he felt comfortable using the Moki steps without aid.

Figure 253. Hellroaring Canyon. *Katchina Shadow* display, 7:05 MDT, March 20, 2012. ○ mark Archaic pictographs on either side of the South Katchina's shadow. This demonstrates the Archaic's awareness of the timing of Equinox and the need for precise placement of astronomical markers.



254. Hellroaring Canyon. Comet Man Panel, 7:22 MDT, March 20, 2012. After observing the *Katchina* Shadow displayI went to see if the Comet Man Panel interacted with the North Katchina's Equinox shadow. It did not. The North Katchina's shadow, left, merges with the shadow of a nearby cliff, right, before light reaches the Comet Man.

Figure 255. Hellroaring Canyon, Comet Man Panel, looking up the talus hill toward the Hellroaring Alcove.

From previous visits to the site I knew that there was a small ruin about here ●. I could see the South Katchina's shadow moving, down and right along the cliff. I climbed the hill to take a look.

Figure 256. Hellroaring Canyon. *South Katchina Sees You* display. The shadow from the South Katchina moves down and to the right. ◯ marks the ruin on the talus slope.

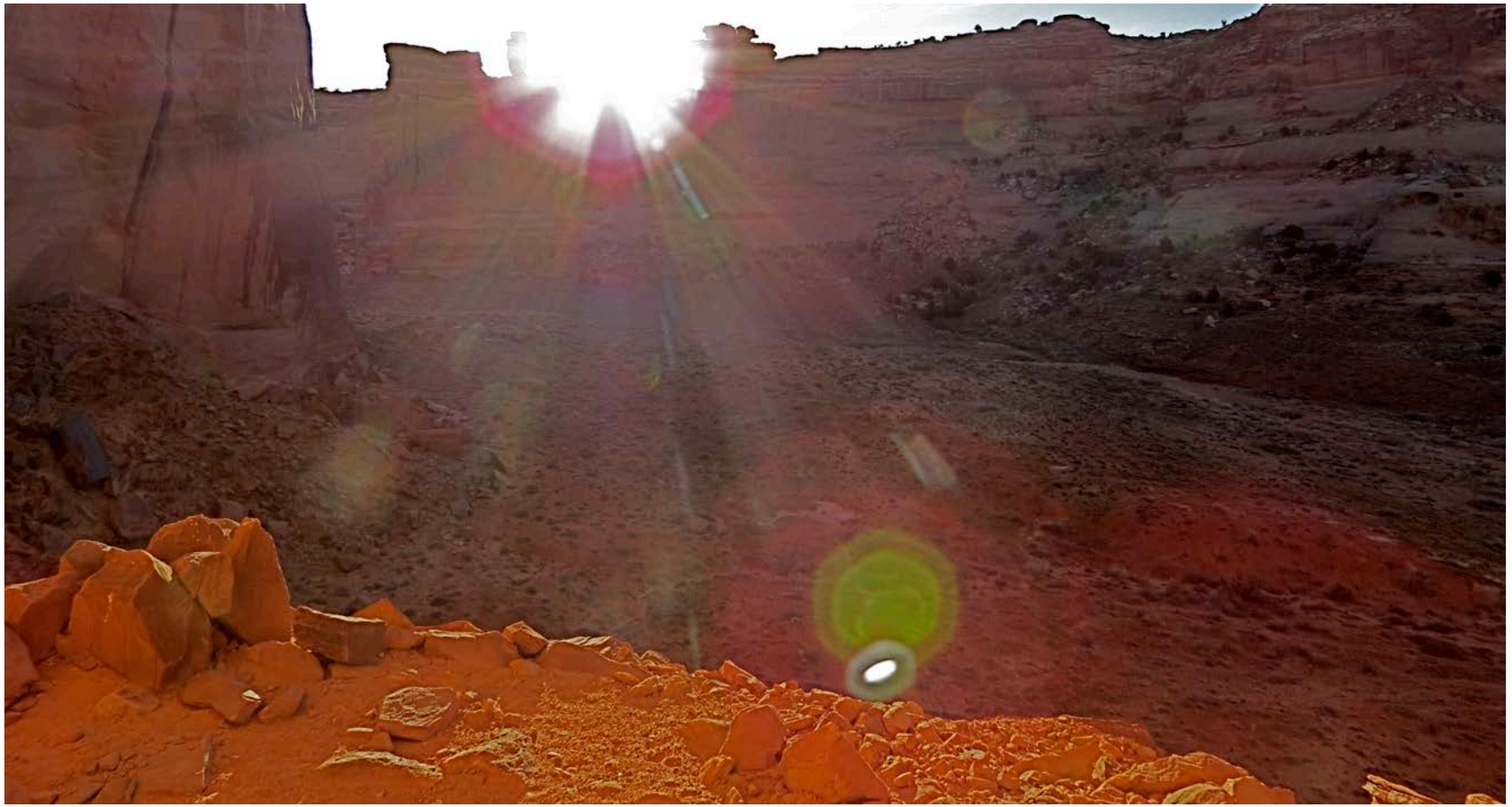


Figure 257. Hellroaring Canyon. *South Katchina Sees You* display, 8:14 MDT, March 20, 2014. A circle of stones, bottom left, outline a small platform about 6 feet in diameter.

The North Katchina, left, can barely be seen in the sun's glare. The South Katchina is obscured.

Figure 258. Hellroaring Canyon. *South Katchina Sees You* display, 7:28:14 MDT, March 20, 2012. Seen from the ruin on the Equinox, the sun goes behind the South Katchina and shines through the small hole mentioned in Figure 240.

A Spirit Sheep, who's eye is made of the Sun, looking directly at you on the first day of Spring and first day of Fall, is a plausible metaphor, metaphysical and poetic.

Observations from the Spring Equinox of 2019 indicate that this display is clearest slightly after the Spring Equinox moment and slightly before the Fall Equinox moment.

Figure 259. Hellroaring Canyon. *South Katchina Sees You* display, 7:28:49 MDT, March 20, 2012. The sun is moving up and to the right. This display is reminiscent of the 'See the Light' motif at the Goose Panel.

The next three photos are a sequence that shows the occlusion and reemergence of the Sun's disc.

Figure 260. Hellroaring Canyon. *South Katchina Sees You* display, 8:21:01 MDT, March 20, 2014. The last glimmer of sun outside the South Katchina, just above the ‘nose’. The ‘star’ effect is faint, but visible.

Figure 261. Hellroaring Canyon. *South Katchina Sees You* display, 8:21:27 MDT, March 20, 2014. The sun's diameter is completely covered. The only direct light is coming through the South Katchina's 'eye'.

Figure 262. Hellroaring Canyon. *South Katchina Sees You* display, 8:21:44 MDT, March 20, 2014. The sun's diameter reappears from the top of the South Katchina. The *South Katchina Sees You* display lasts for less than a minute.

Purple Haze

Figure 263. Hellroaring Canyon. Purple Haze Panel. A large, purple Archaic anthropmorph of Barrier Canyon style rises from a white ‘haze’ of calcium-rich evaporate. There is other art on this wall. It is too dilapidated to be of interpretive use. Herb Crimp, left. Rory Tyler, right.

Figure 264. Hellroaring Canyon. *Purple Haze* display, 8:35 MDT, March 20, 2014. The boulder in the middle is the gnomon for the *Purple Haze* display. Of note is the small nipple in the top of the boulder.

The Katchina Towers can be seen in the background.

Figure 265. Hellroaring Canyon. *Purple Haze* display, 8:40 MDT, March 20, 2014. The nipple mentioned in the previous photo forms a small peak.

Figure 266. Hellroaring Canyon. *Purple Haze* display, 9:00 MDT, March 20, 2014. Twenty minutes later the gnomon has moved down and is framed by the side of the pictograph's head. The nipple's shadow creates a mask-like effect, a possible variation of the 'See the Light' motif.

Figure 267. Hellroaring Canyon. *Purple Haze* display, 9:04 MDT, March 20, 2014. Four minutes later the gnomon has lost its alignment with the pictograph's face.

Figure 268. Hellroaring Canyon. *Purple Haze* display, 8:09 MDT, March 20, 2012. Taken two years before Figure 262. The consistency of the *Purple Haze* gnomon is good.

Figure 269. Sego Canyon. Sego Canyon Panel, The ‘wide-eyed’ design is common in Barrier Canyon art. These three large anhropomorphs, with their wide eyes, wide shoulders and limbless bodies resemble the Purple Haze pictograph. I have not looked for astronomical markers on this panel.

The Climb

In Figures 252 and 253 I mentioned Archaic rock art at the top of the Hellroaring Alcove ramp. In 2014 I asked two good climbers, Herb Crimp and Ed Oak, to get me to the top of the ramp.

Figure 270. Hellroaring Canyon. Hellroaring Alcove. A telephoto image of the top of the Alcove ramp and a single Archaic figure, inside the oval. Figure 251 shows the location of this abraded glyph. It was probably a pictograph when it was made. I wanted to see this art up close and look for more art that could not be seen from the ground.

Figure 271. Hellroaring Alcove. Herb Crimp and Ed Oak got me to the top of the ramp on September 21, 2013. They went back up on September 22, the day of the Equinox, when this photo was taken. The Archaic art in the previous photo is in the upper/left corner of this picture. It is barely visible even if you know where to look and what to look for.

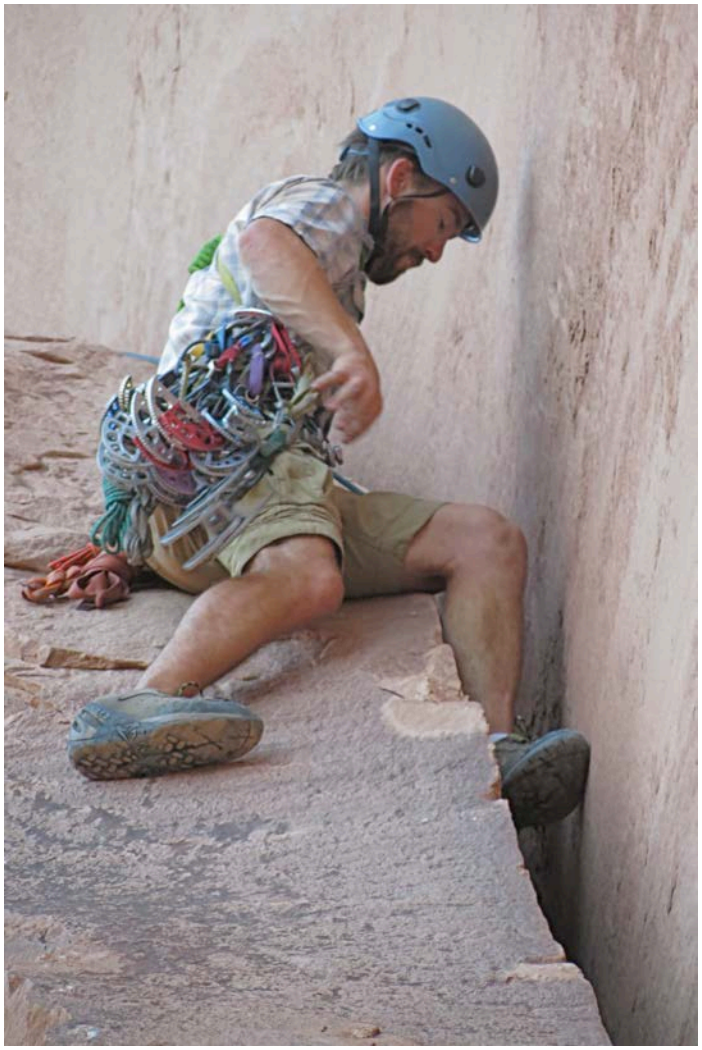


Figure 272.
Hellroaring Canyon. Herb led the way. Note the Moki steps chipped into the ramp's edge.

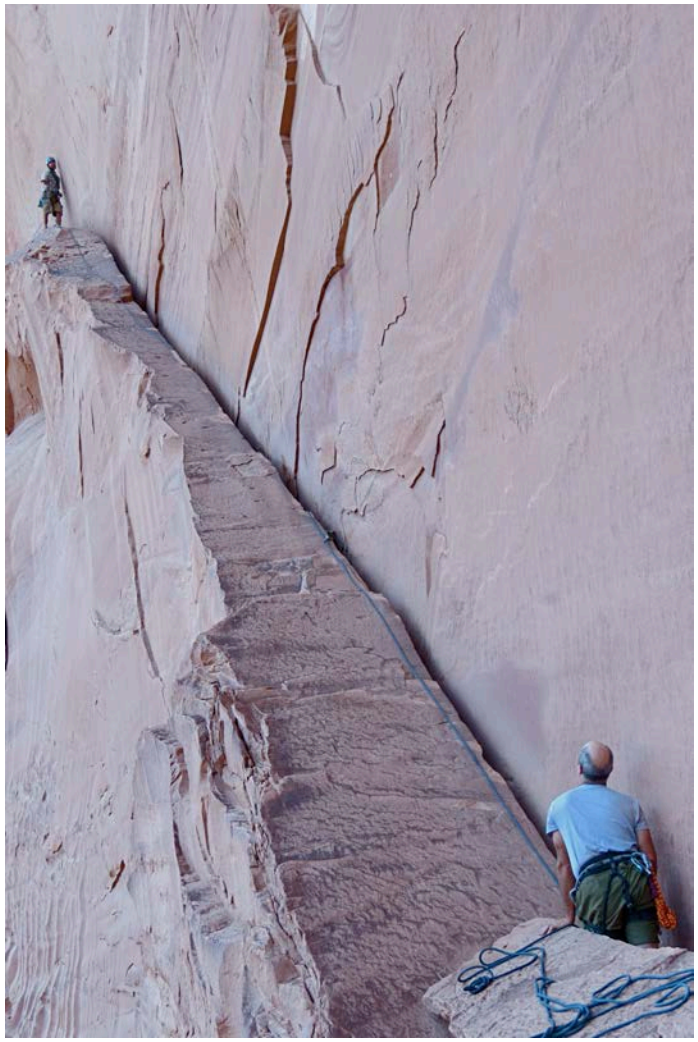


Figure 273. Ed followed.

Figure 274. Hellroaring Canyon. Herb and Ed described my climbing technique as ‘grovelling’ and said I was pretty good at it. Whatever it takes.

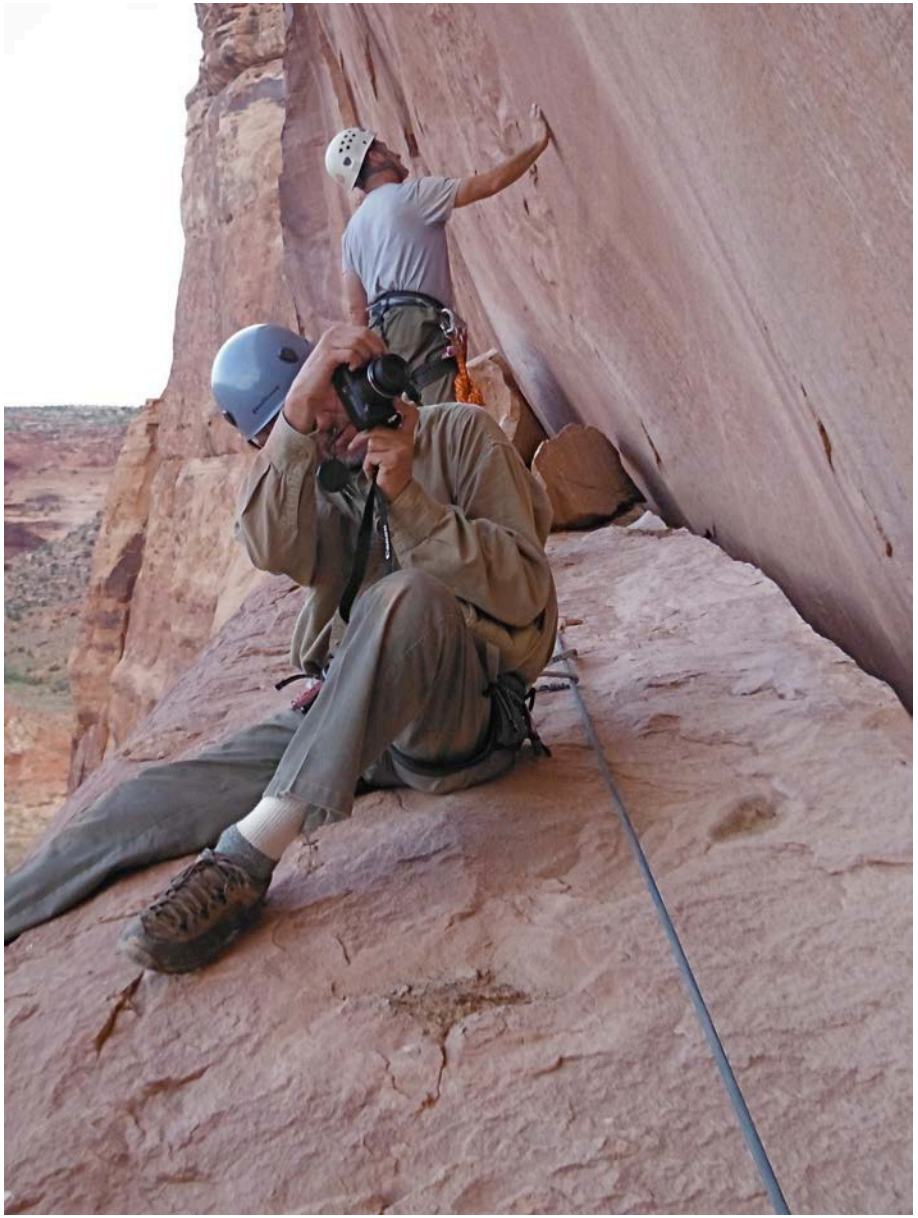


Figure 275. Ed Oak and me. There was art on top of the ramp that could not be seen from the ground.

Figure 276. Hellroaring Canyon. The large anthropomorph in the center of this picture is about four feet tall. It can be seen from the ground.

Figure 277. Hellroaring Canyon. There are a number of vertical lines to Ed's right. These lines are in a pattern typical of Archaic body-fill. At one time there were probably a number of painted Archaic anthropomorphs on the top of the ramp conforming to these vertical lines. I have not identified any astronomical markers on this previously unknown art.

Each line's composition is unusual.

Figure 278. Hellroaring Canyon. Most of the vertical lines on this wall are formed by hundreds of stacked, scallop-shaped incisions. They are deep and precisely placed. This was a labor-intensive effort in a precarious, setting. The amount, quality, and location of the workmanship are all notable. I don't know of any rock art anywhere else that uses this technique.

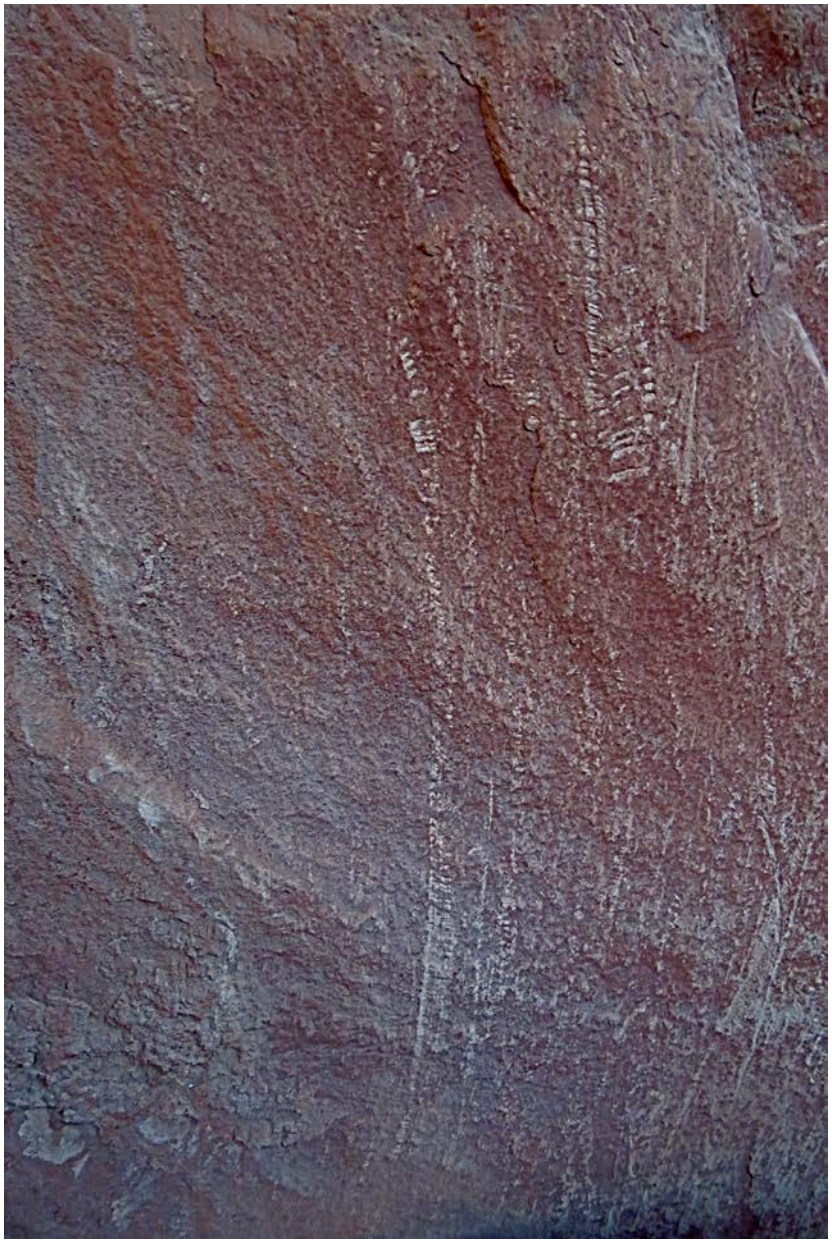


Figure 279. Hellroaring Canyon. In this photo the tapering, limbless Archaic body-form is clear. The artist used lines made of stacked incisions to outline the body, as part of the body in-fill, and to create a necklace or amulet for this figure.

As far as I can tell, all of the rock art at the Hellroaring Canyon site is of Archaic origin. Prior to my work at Hidden Valley and Hellroaring Canyon, I had not heard of Archaic art being included in any astronomical display. Looking into this field might produce some interesting results.

Figure 280. Hellroaring Canyon. Hellroaring Alcove, 7:40 MDT, September 22, 2013. Herb Crimp is in the sunshine. Ed Oak is in South Katchina's shadow. The anthropomorph in Figure 276 is about four feet from Herb. A person in Herb's place would be in a good position to perform Equinox sunrise rites.

Figure 281. A Herb’s-eye vies of the Equinox sunrise taken from his location in the previous photo.

Comet Man

As I mentioned in Figure 254, the Comet Man Panel is not an Equinox site. I have not been to the site at Winter Solstice. In 2016, I went to watch the panel for Summer Solstice astronomical activity. On June 18 I went to the site and began my observations. I set up at 8:00 so that I could get a good look at the Solstice sun when it came over the cliff and moved across the south-facing wall that holds the Comet Man Panel.

During the next five hours the Summer Solstice sun never touched the wall. This is because there is enough of an overhang above the panel so that the high arc of the Solstice sun keeps it behind the rim of the cliff. The Comet Man Panel receives no direct sunlight for three weeks before and after the Summer Solstice.

Figure 282. Hellroaring Canyon. I brought along an umbrella as shelter from the June sun. I bought it in a thrift store and didn't know about the logo. It seems ironic. That day the temperature was about 105.[49]

[49] *Someone* should pay me to do this stuff.

Figure 283. Hellroaring Canyon. Comet Man Panel, 10:07 MDT, June 18, 2015. ● marks the location of the Comet Man panel. The Sun can be seen illuminating the overhanging rim of the wall. This is as close as direct sunlight comes to the Comet Man Panel at Summer Solstice.

Figure 284. Hellroaring Canyon. Comet Man Panel, 11:07 MDT, June 18, 2016. The shadow from the overhanging rim keeps this wall shaded. This is as close as the Summer Solstice sunlight gets to the Comet Man Panel.

Figure 285. Hellroaring Canyon. Comet Man Panel, 11:01 MDT, June 23, 2015. The Summer Solstice sun stays above the rim of the cliff. This is as close as the Summer Solstice sunlight gets to the Comet Man Panel.

Since there was no sunlight on the wall on the Summer Solstice, I began to watch the wall to see when the light does appear and what form it might take.

Figure 286. Hellroaring Canyon. Comet Man Panel. ● marks the location of the Comet Man Panel. This photo shows the extent to which this wall is overhung by the cliff above. The waterfall to the right of the Comet Man Panel is coming through the notch that creates the aperture for the *Comet Man* display. See Figure 249.

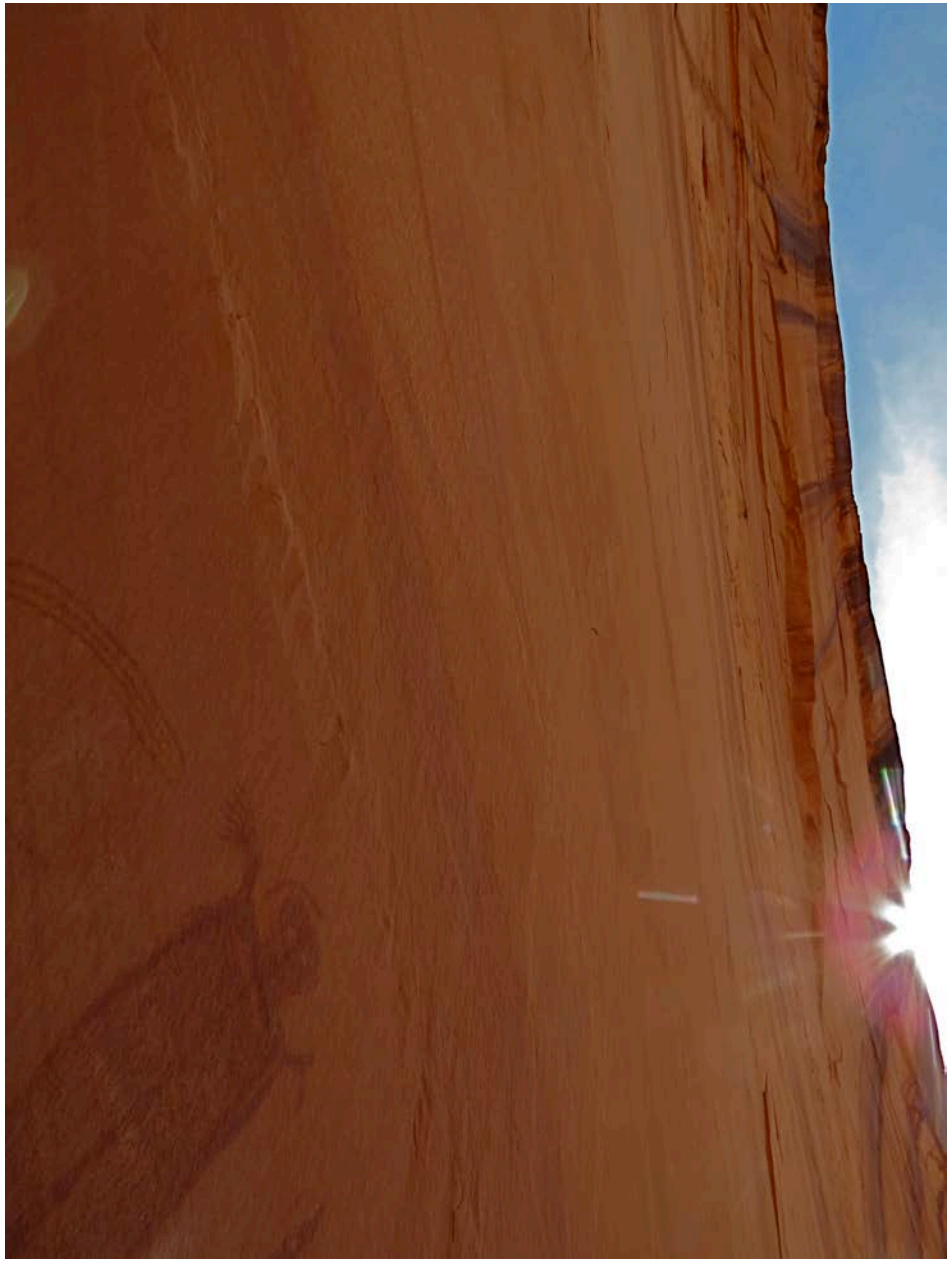


Figure 287. Hellroaring Canyon. Comet Man Panel, 11:07 MDT, June 23, 2015. This photo was taken on the shadow line in Figure 285. Even though it is on a south-facing wall, the Comet Man is shaded throughout the day during the Summer Solstice.

I wondered how long it would be until the sun's arc dropped below the rim and lit up the panel again. I returned on June 30, but it was still far away. I could tell the sun was getting close to lighting the Comet Man by July 10. On July 12 there were faint glimmers of light on the wall in the Comet Man's location. July 13 was the jackpot.

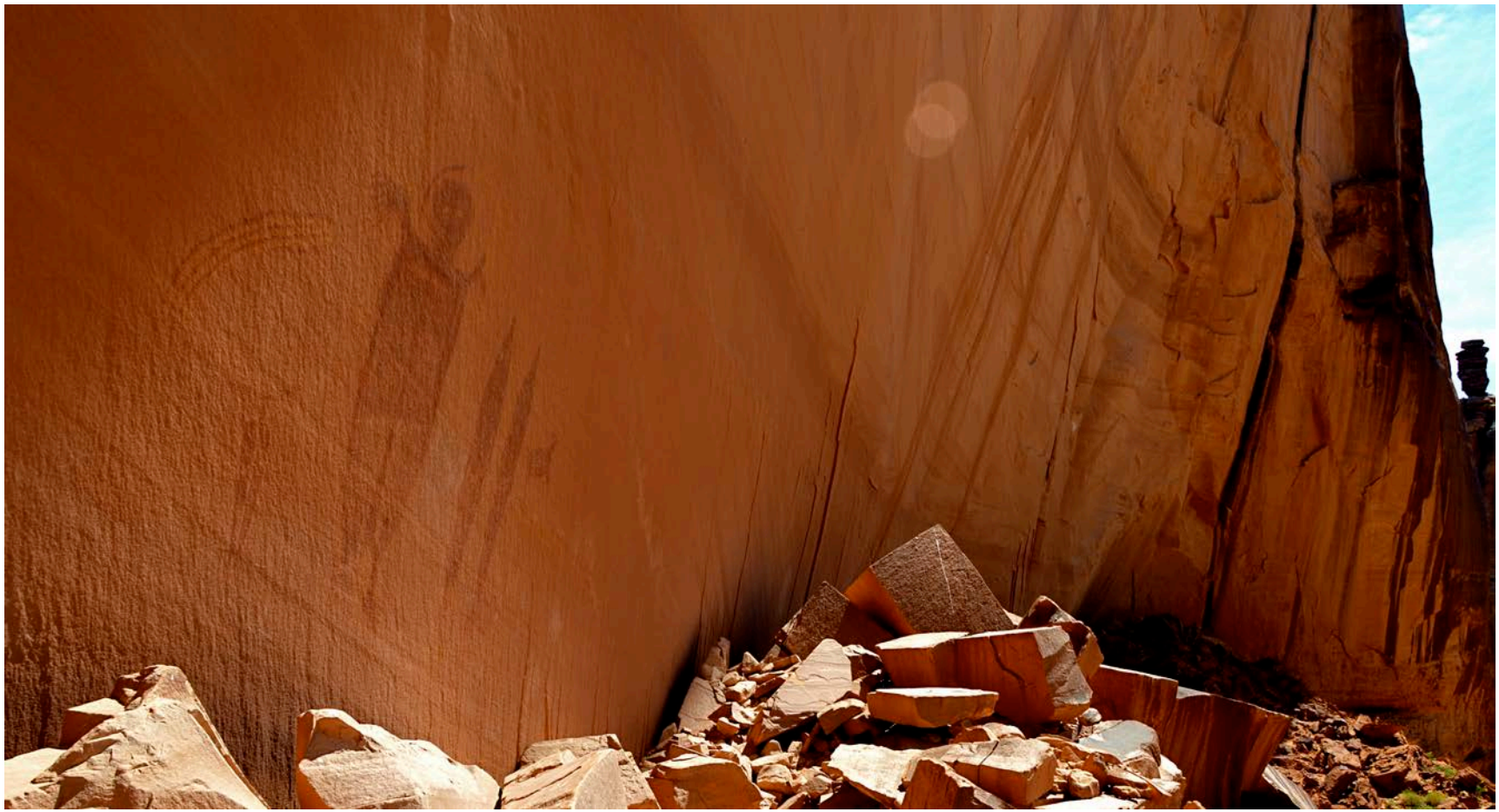


Figure 288. Hellroaring Canyon. *Comet Man* display, 11:10 MDT, July 13, 2015. The first light on this wall after the Summer Solstice forms a triangular shape that frames the Comet Man Panel.

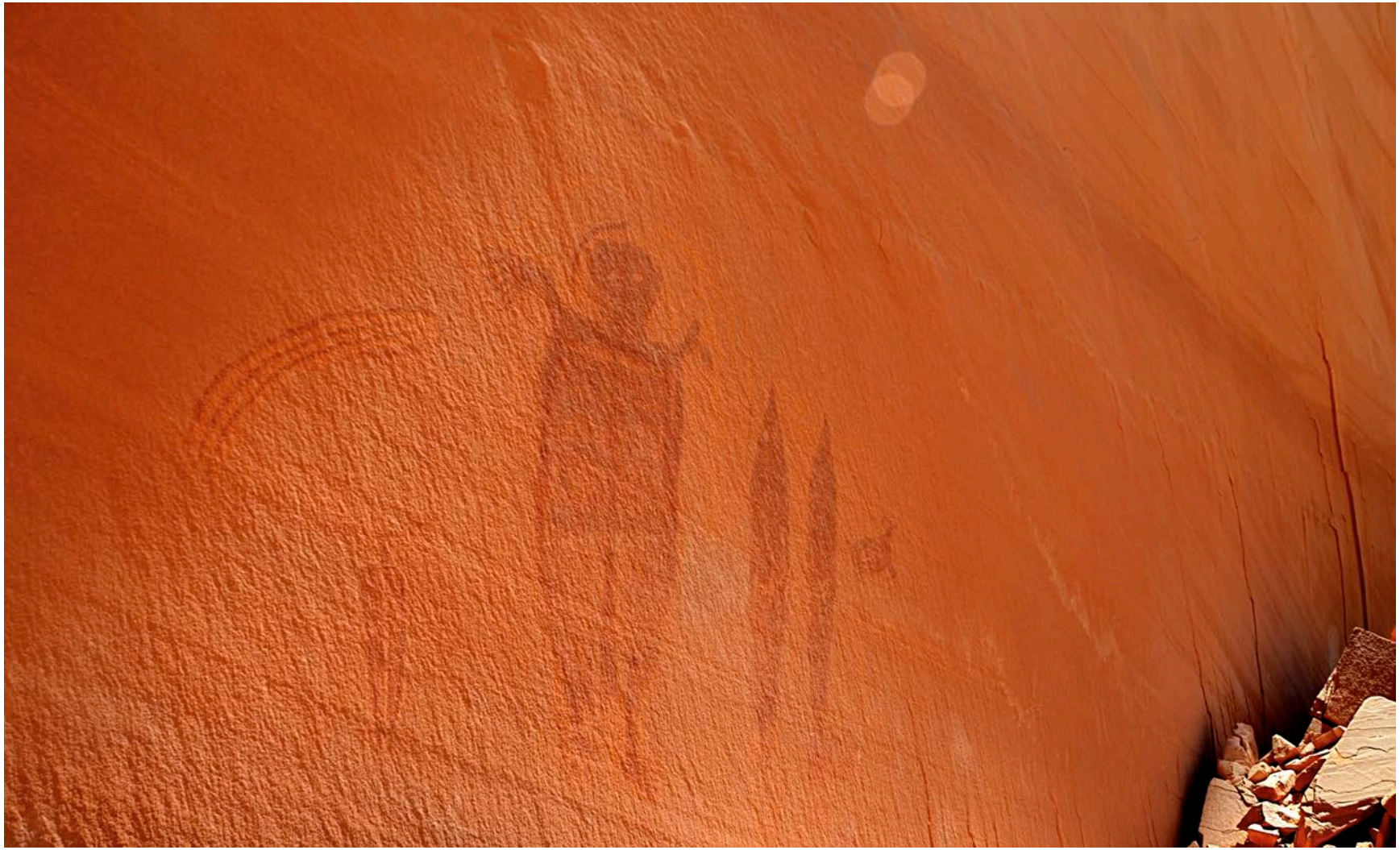


Figure 289. Hellroaring Canyon. *Comet Man* display, 11:10 MDT, July 13, 2015. The triangle of light moves to the right.

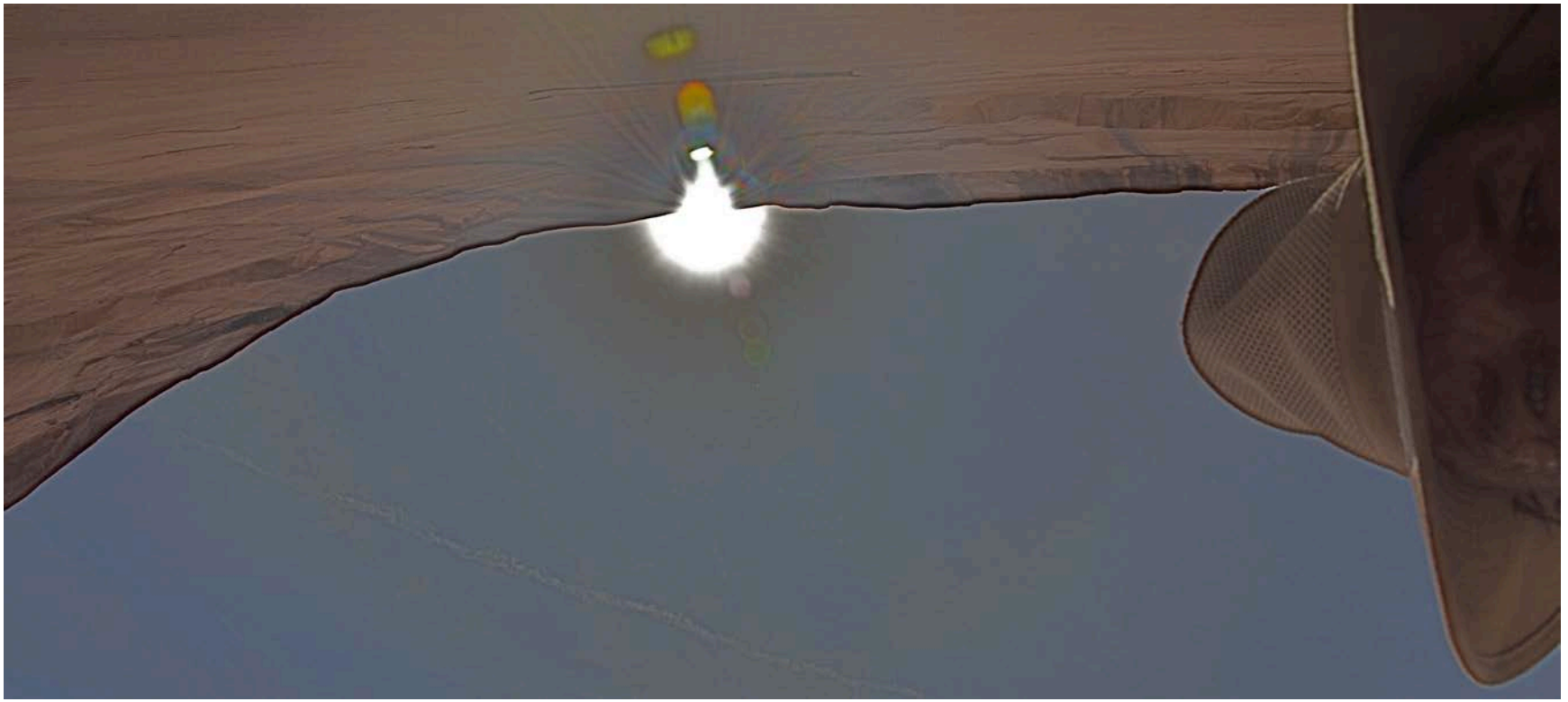


Figure 290. Hellroaring Canyon. *Comet Man* display, 10:34 MDT, July 13, 2015. This photo of the rim above the Comet Man Panel shows the triangular shape of the aperture that creates the *Comet Man* display, Figures 249 and 286. I have seen astronomical displays elsewhere that were created by triangular notches in a cliff's rim.

It was twenty two days after the Summer Solstice that the first sunlight touched the Comet Man Panel. I reasoned that the next opportunity to observe the display would be twenty two days before the next Summer Solstice, on or about May 30, 2016. I watched the site on May 19, May 25, and May 27 as the sun climbed above the rim and the wall was increasingly shaded. May 30 was that the last day the light hit the Comet Man Panel.

Figure 291. Hellroaring Canyon. *Comet Man* display, 11:01 MDT, May 30, 2016. On May 30, as predicted, the *Comet Man* display hit its target. The next day this triangle was gone, the last glimmer of sunlight on the panel for forty four days.

Figure 292. Hellroaring Canyon. *Comet Man* display, 11:02 MDT, July 14, 2016. I was able to find a place on the canyon's rim where I could observe this display with a telephoto lens. The triangle display is clear. To the triangle's left is another small swatch of light. Fifteen minutes after the *Comet Man* display, this small patch crosses the same area, but not in such a distinct in form. It reminds me of a comet's tail following the comet's head. See Figure 250.

Thoughts on Hellroaring Canyon

I first made the connection between Archaic art and astronomy at Hidden Valley's Ray Panel in March, 2009. See Figure 188. This did not prepare me, however, for the Archaic astronomical displays in Hellroaring Canyon. *Purple Haze* is the kind of display you might expect, but what, after all, could prepare a person for *South Katchina Sees You*? You had to be there. And who would dream that the *Comet Man* display would sandwich the Summer Solstice and appear twice in a season? Not me.

A Timely Digression: As noted before, the dates for Archaic occupation of the region are wide-ranging and debatable. I prefer, without recourse to a hard date, to focus on the cultures, their overlaps, and order of succession. We know that Archaics were here before Basketmakers. We know that Basketmakers were here before Anasazi and Fremont. We know Anasazi and Fremont were here before Ute and Navajo. We know the Ute and Navajo were here before the Europeans. What interests me is not so much *When* but *What.* What was it like inside each culture? In what ways did these cultures affect each other?

I have made the case for a relatively benign Archaic/Basketmaker transition. The Basketmaker/Fremont relationship seems less cordial. The first 'Fremont' cultural expressions appear a hundred miles north of Moab about 200 AD at Steinaker Gap in the Uinta Basin. These settlements are identical in structure and layout to Basketmaker settlements further south. As these pioneers became successful they developed cultural autonomy and regional hegemony. However, the evolution of certain rock art motifs, necklaces and Rake Head headdresses for example, testify to their Basketmaker origins. Around 900 AD, seven hundred years after Steinaker Gap, the Fremont culture expanded into the Moab area, probably with little awareness of their ancient connections.

This was about the same time that the Anasazi culture reached its northernmost expansion. The Anasazi went through a major cultural change around 700 AD, going from Basketmaker ways to Anasazi ways that included bean agriculture, pot making, pueblo building, and cannibal practices - cultural traits common to people from the Mexican Plateau of that era. This suggests an invasion and cultural imposition from the south onto the San Juan Basketmaker matrix. And so, around 900 AD, the expanding Fremont and Anasazi met in Moab and eradicated the last Basketmaker culture...or so it may have been. Its complicated.

A large drought held the Four Corners in its grip from about 1200 AD to 1275 AD. The agriculturally dependent Anasazi and Fremont cultures both seemed to disintegrate as a result. The Hopi, and groups of similarly antique origin, may have

roots going back to this time. If so, how much of their current culture might be of Basketmaker, Anasazi, or Fremont origin? A comparison of Hopi rituals to Basketmaker art might tell us something.

When the drought ended, the Ute and and Navaho occupation began. The Ute, Paiute, and Shoshone came from the Mojave region, the Navajo and Apache from Canada. It was probably a fairly smooth example of folk migration into a region recently emptied by the drought of much of its population and culture.

My Hellroaring Fantasia: The Archaic culture evolved, as far as we know, from Paleo-Indian cultures that lived in the West during the last part of the last Ice Age. They adapted and survived during the ensuing five thousand year dry period. By the time the climate became more like today's, around 4000 BC, they were expert at using vegetal matter in their survival strategy. The Basketmakers show up in the southeast corner of the Colorado Plateau around 1000 BC. They were the region first agriculturalists, growing corn and squash but not beans. Were they from a migrating Mexican population that grew corn? Did they arise from indiginous Archaic people who adopted corn agriculture? Was there some combination of these or other factors? Whatever happened, by 500 BC the Basketmaker culture dominated the Colorado Plateau. The amount of Basketmaker art suggests that those segments of the culture that adopted a semi-sedentary agricultural subsistence model used a great deal of their time and energy to create ritual and art.

What if a local biome was not conducive to growing corn, but still provided ample opportunity to use the hunting and gathering methods that had been successful over the preceding thousands of years? I think we may be seeing this model play out in Hellroaring Canyon. It may be too dry and hot in the canyon for reliable corn growing without irrigation and the springs in the canyon are not large enough to do that. What if an Archaic cultural enclave maintained itself along the ancestral transportation corridor that led from Moab to points west? This might explain recent datings that suggest an Archaic presence along this route as late as 500 AD.[50] If Basketmaker ways didn't work well in Hellroaring Canyon, maybe those people maintained the Archaic ways. This would indicate a long-term coexistence between the Archaics and some of their old ways and Basketmaker adherents of the new subsistence strategy with its accompanying social and metaphysical innovations.

I admit to making the supposition that the etched Archaic figure on the Ray Panel, and perhaps the etched lines and scallops on top of Hellroaring Alcove, appear to be of significant antiquity, probably predating surviving Archaic paintings such as the Comet Man and Sego Canyon. If true, this suggests that astronomical knowledge was part of the early Desert Archaic Culture, as well as its later Barrier Canyon manifestation. The knowledge was adopted by the Basketmakers, if

[50] An unreliable date, by the way. However, because dates for Archaic art are so variable, any plausible supposition deserves consideration.

they were immigrants, or simply passed on as lore for the new culture as it grew out of its Archaic medium. Either option makes sense if there was an amicable long-term relationship between the cultures.[51]

How did Archaic people come by this knowledge? Perhaps they developed it independently, but I doubt it. I think it more likely that it was part of the Paleo-Indian culture that was at the root of the Desert Archaic Culture. I don't know of any Paleo-Indian astronomical sites, but it wouldn't surprise if some are still extant, especially in the northwest corner of the Great Basin, cradle of the ancient lake culture. Evidence of Desert Culture exists into Central America so there is an argument to be made that the astronomical knowledge of the later Olmec, Mayan, Aztecs, Anasazi, et. al. has its roots in Great Basin Paleo-Indian culture. Maybe this knowledge came with the Ice Age immigrants of Asia. There may even be a connection to the astronomers of Paleolithic Europe. Finding traces of such a thread of cultural continuity could provide an interesting challenge for an obsessive rock art student addicted to perpetual disappointment and frustration. I would do it myself if I had another lifetime to spare.

[51] A much more amicable era than the San Juan Basketmaker>Anasazi revolution of 700 AD or the Anasazi>Moab Basketmaker<Fremont squeeze that I posit above.

CHAPTER 7: MISSES AND MAYBES

Studying ancient astronomy has its problems. First, the weather. Second, simple failure. Third, finding time to study one site while another beckons. Writing about what I have learned may give others the tools to learn more about topics I wish I could pursue. I hope so and i hope they do. In this chapter I will write about some things I looked for and didn't find, and a few things that still might be found - Misses and Maybes.

Misses and Maybes mentioned in the Text

Maybe: Figure 22. Snake Site. Second facet at Warrior Panel.*
Maybe: Figure 23. Snake Site. Warrior Panel AM. Dot of light.*
Miss: Figure 46. Snake Site. Stone Table
Maybe: Figure 49. Snake Site. Door into Winter.*
Maybe: Figure 50. Snake Site. High Shield Panel.*
Maybe: Figure 90. Goose Panel. Basketmaker transfer on Goose Panel.*
Maybe: Figure 136. Goose Panel. Niche figure among Walking Sheep.*
Maybe: Figure 226. Hidden Valley. East Point Panel, Three Horn.
Maybe: Figure 213. Hidden Valley. Ruin upslope on Inner Wall from White Temple.
Maybe: Figure 213. Hidden Valley. Sunrise from inside rock shelter.
Miss: Figure 227. Hidden Valley. Stony Point Ruin.
Maybe: Figure 232. Hidden Valley. Lower Ruin on top of Inner Wall.
Maybe: Figure 237. Hidden Valley. Upper Ruin on top of Inner Wall.
Miss: Figure 254. Hellroaring Canyon. Equinox at Comet Man Panel.
Maybe: Figure 242. Inside Hellroaring Canyon at Winter Solstice. Haven't been there. Haven't done that.

Three Misses and a dozen Maybes.[52]

* indicates illustrations in this chapter.

[52] As I write this, I think the the Lower Ruin on the Inner Wall in Hidden Valley may be the lowest-hanging fruit.

Figure 293. Maybe. Snake Site. 2nd facet at Warrior Panel. I resist the temptation to call this the Embryo Panel, but I fail. The curtain wall that forms the *Warrior Panel PM* display has at least one hole through it. If the Equinox light came through an aperture in the curtain and lit up something on the second facet it might constitute an Equinox display.

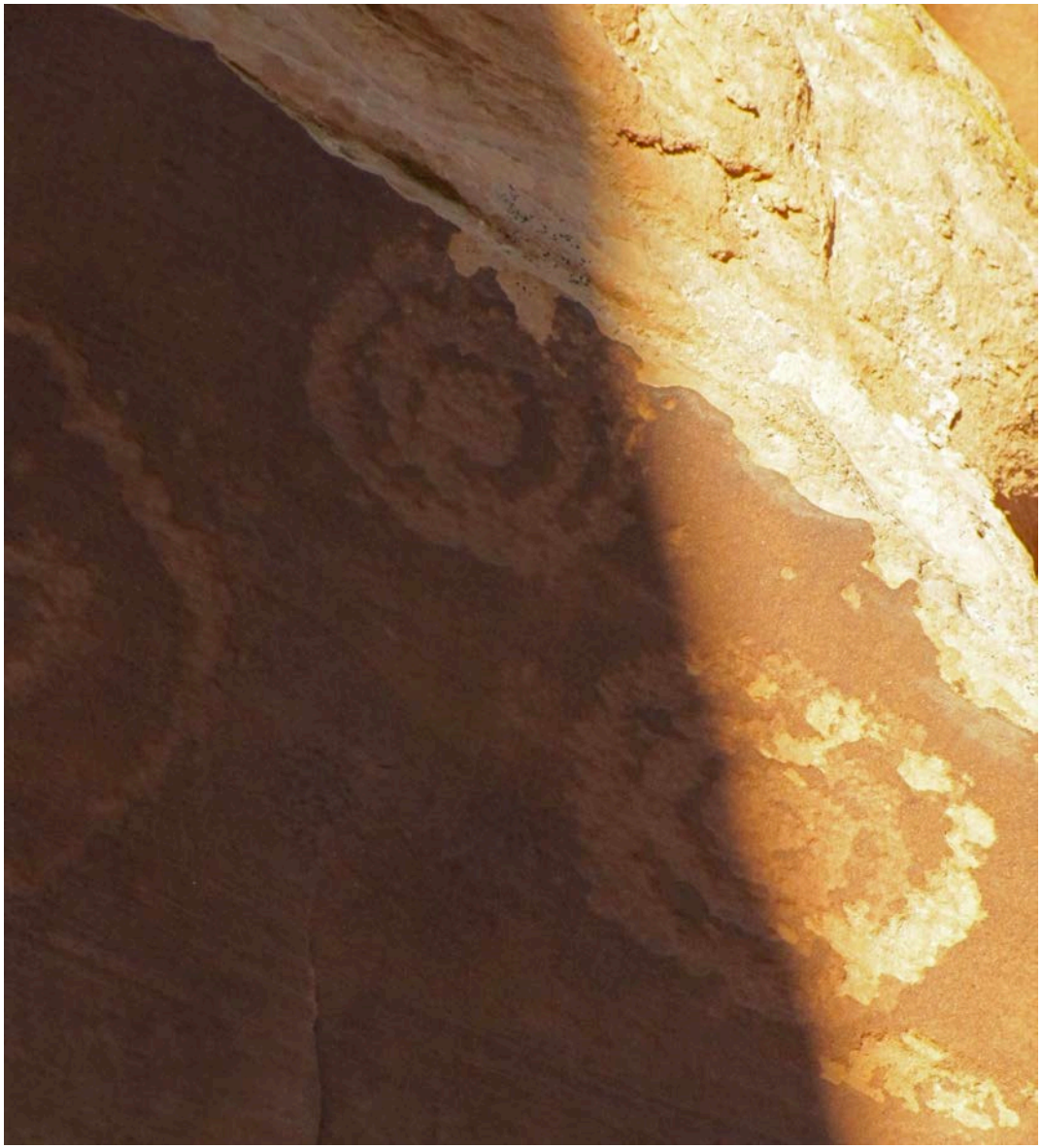


Figure 294. Maybe. Snake Site, Warrior Panel, 17:05 MDT, September 22, 2010. These two circles are on the right side of the previous photo. Connie Massingale noticed this alignment. It could be a transference display. Is this the last part of the Warrior Panel narrative, an isolated artistic incidence, or nothing at all?

I doubt the last option. Given the preponderance of astronomical markers at the Snake Site I tend to give the benefit of the doubt to anything that *might* be an astronomical display.

Figure 295. Maybe. Snake Site. *Warrior Panel AM* display, 8:32 MDT September 22, 209. A small dot of light appears in front of the meandering line, center. Below, faint etchings can be seen to the left of the pecked half-circle, comprising a full circle. It's likely that the etched area was painted at some time. This all *seems* like it might be related to the Equinox light-triangle, above, but how?

Figure 296. Looks good. Snake Site, Warrior Panel. *Wilsey's Circle* display, September 23, 2009. Seth Wilsey noticed this alignment a few feet to the right of the Warrior Panel. It may be part of a motif, another example of a form-fitting display on this panel.

Figure 297. Snake Site, Warrior Panel. Wilsey's Circle, September 23, 2009. A few minutes later.

Figure 298. Likely. Snake Site, Upper Ruin. The Door into Winter. The line starts at the approximate center of the Upper Ruin, Figure 51. The green node shows the location of the Door into Winter structure, Figure 49. The line ends at the approximate position of the Winter Solstice sunset, Figure 45. If there were an opening in the structure at the green node it is easy to see how it could be used to create an astronomical display inside the structure.

Figure 299. Maybe, but far-fetched. Snake Site, High Shield Panel. The High Shield Panel, right, has a circular body with four circular forms inside of it. About thirty feet to the west, a small pinnacle stands apart from the cliff face forming a gap. The Mighty One is to the pinnacle's left. Is it possible that the gap and glyph form an astronomical display? I give it a low probability, but I could be wrong.

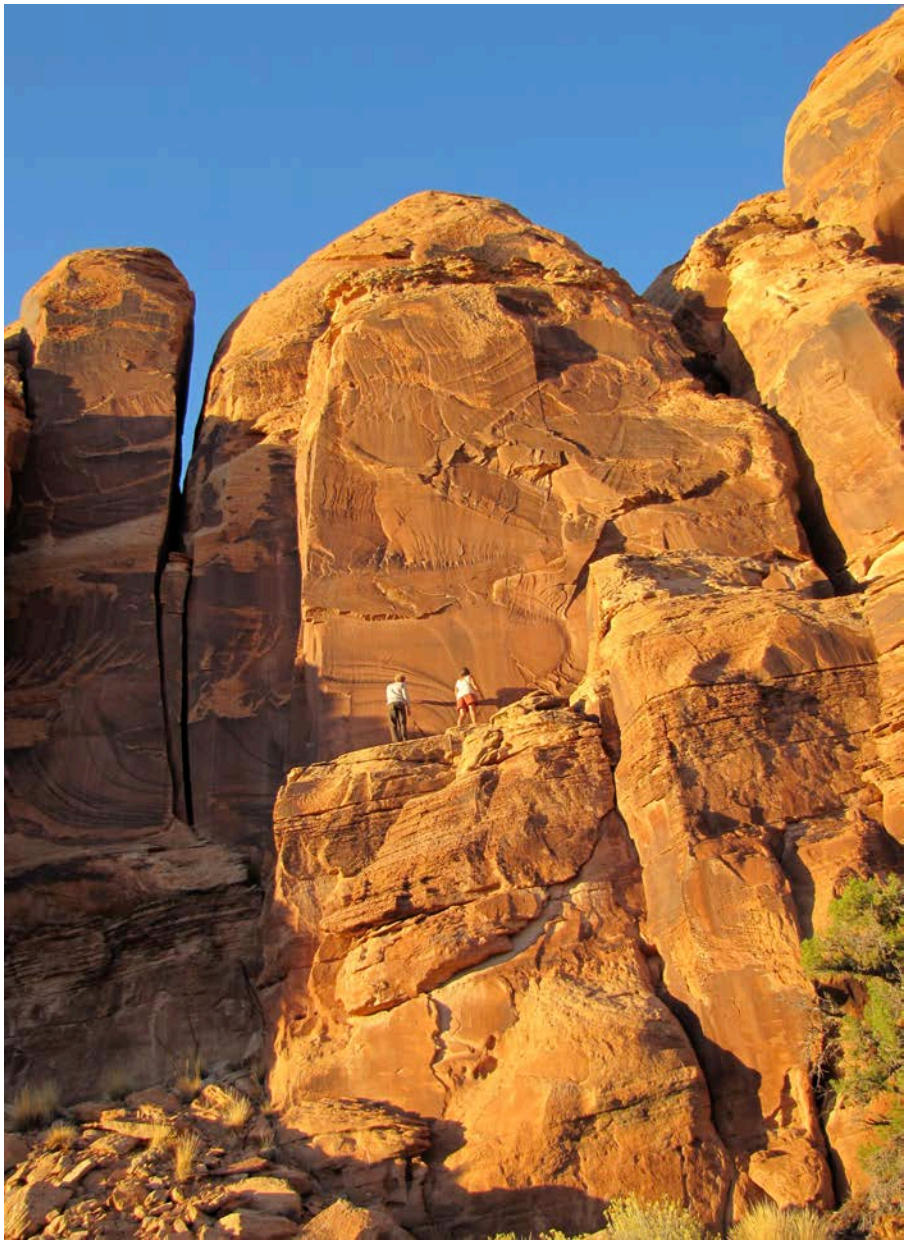


Figure 300. Snake Site. High Shield Panel. Seth Wilsey and Connie Massingale looking at the High Shield Panel. Access to the top of this pedestal is up the debris slope, bottom left, then behind the rock fin.

The pedestal Seth and Connie are on is only a few feet away from the main cliff. There is an easy passage to the right that goes down a crevice to the Warrior Panel, behind the juniper. lower right.

The easy, but hidden passage from the Upper Ruin to the High Shield Panel, and down to the Warrior Panel, lower right, might lend itself to dramatic effect in a rite or ceremony.

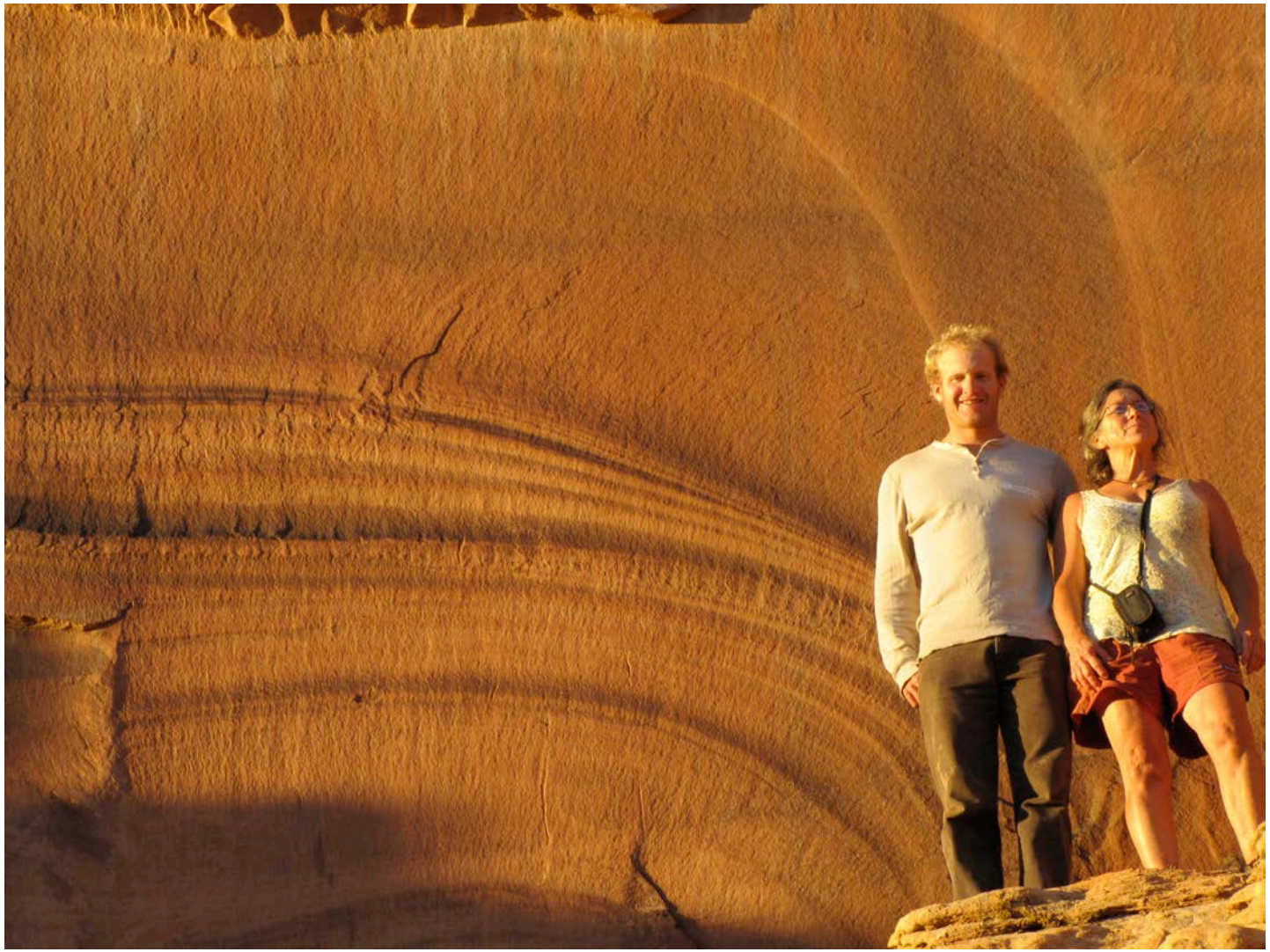


Figure 301. Seth Wilsey and Connie Massingale next to the barely discernible High Shield Panel. The panel was probably painted when it was made.

Figure 302. Miss. Goose Panel. *Kneeling Sheep* display, 7:47 MDT, September 23, 2005. The glyph to the right is a common Basketmaker necklace design. For this design, Basketmaker artists pecked in a necklace, often a belt,and sometimes a Cat-in-the-Hat headdress. The rest of the figure was probably painted. If so, the paint is gone now. Whether or not the necklace is involved in an astronomical display is impossible to tell now.

Figure 303. Maybe. Old Folks Home. Basketmaker necklaces. The Old Folks Home is about a mile from the Hidden Valley Observatory. It has a high concentration of Basketmaker necklaces. In this photo the necklaces are accompanied by belts and Cat-in-the-Hat headdresses. Given its proximity to the Hidden Valley Observatory it would make sense to look for astronomical displays at the Old Folks Home.

Figure 304. Maybe. Goose Panel. Walking Sheep, 9:43 MDT, September 22, 2010. This sheep, from the Walking Sheep - Top, may be an astronomical display on the left side of the Light Box. This alignment occurs about an hour after the *Walking Sheep - Top* display, Figure 108. I suspect this is more accidental than intentional, but I'm no genius.[53]

[53] But I am and I don't know either. *The Boss*.

Misses and Maybes not in the Text

In this section I'll mention a few of the ideas I've had and places I've looked. Some didn't pan out. Some might. Some did. Most of this art is in the Moab area but four panels are from elsewhere.

Figure 305. Miss. Moab, Seven Mile Canyon, Supplication Panel. An Archaic panel between Moab and Hellroaring Canyon. It was probably along a major route from Moab to points West.

Figure 306. Seven Mile Canyon, Supplication Panel. I noticed this V-shaped notch in the rimrock above the panel. I had seen a notch like this elsewhere create an astronomical display. Years later I saw the V-shaped notch that creates the *Comet Man* display.

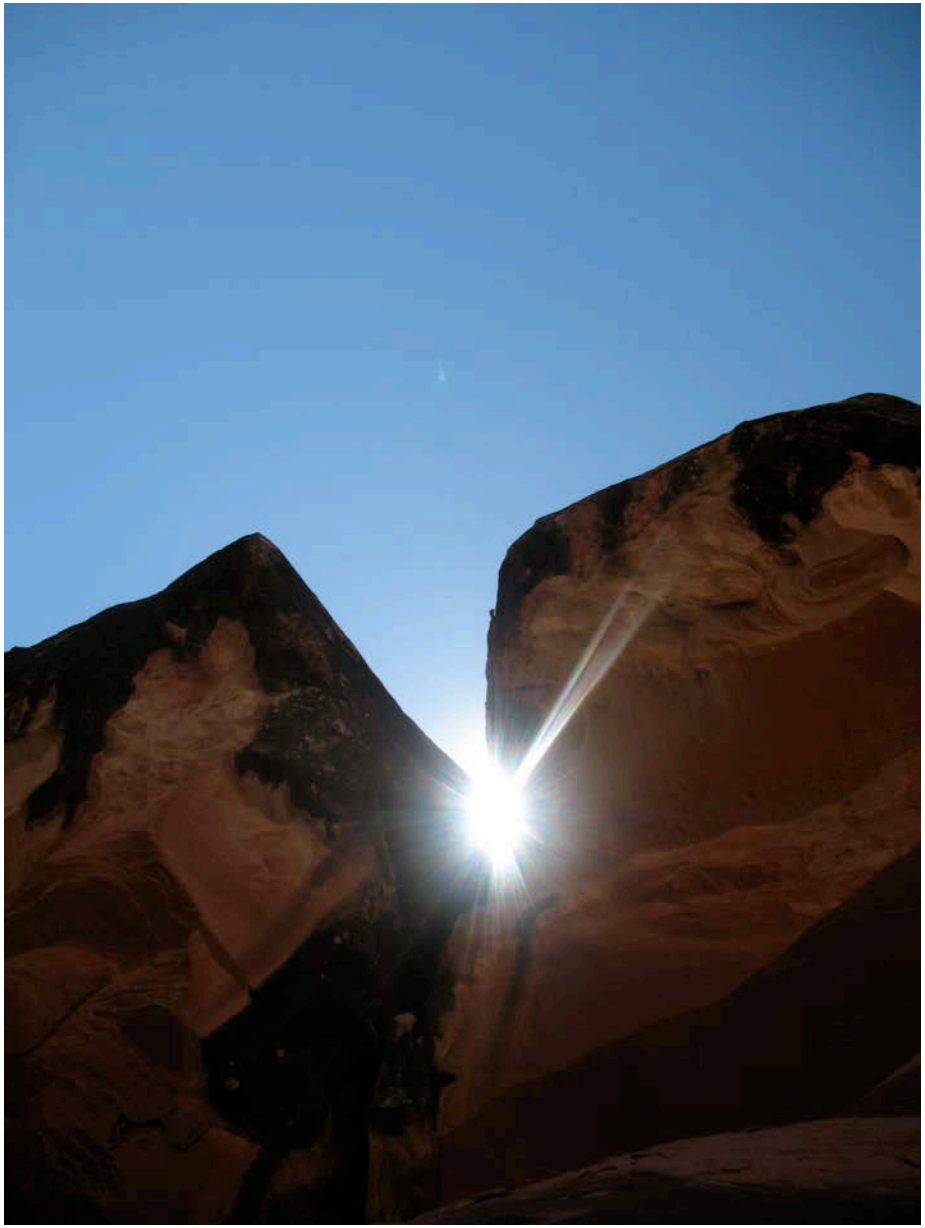


Figure 307. Seven Mile Canyon, Supplication Panel, 11:36 MDT, June 22, 2009. Just before noon the Sun filled the apex of the triangle.

Figure 308. Miss. Seven Mile Canyon, Supplication Panel, 11:53 MDT. June 22, 2009. The light from the notch falls on the cliff below and to the right of the panel, upper left. At the time the panel was made there was probably a large alluvial deposit against this cliff face, about where the rough, eroded stone below the panel is. This alluvial deposit was probably destroyed by cattle during the late nineteenth and early twentieth century, the Cowassic Age. How much did the change in topography change the character of this site? As it is, it's a Miss.

Figure 309. Miss. Bartlett Wash. Bartlett Wash Panel, Moab.. This Archaic panel is on an ancient travel route from Moab to the San Rafael Swell, roughly half-way between the Supplication Panel and Hellroaring Canyon. It faces north. There is some distinct topography on the horizon to the northwest. This made me wonder if the Bartlett Panel lined up with any of these topographical features during the Summer Solstice.

Figure 310. From the Bartlett Wash Panel, 7:42 MDT, June 17, 2015. There are several distinct formations that break the horizon line from the vantage of the Bartlett Wash Panel.

Figure 311. Moab, Bartlett Wash. 7:56 MDT, June 17, 2015. This picture was taken three days before the Summer Solstice. The sun is moving very slowly to the north/right. I thought it might reach the small pinnacle on the Solstice.

Figure 312. Bartlett Wash, 8:51, June 21, 2015. This picture, taken on the Summer Solstice, shows that the setting sun does not reach the horizon-breaking pinnacle, far right. Close but no cigar. A Miss.

Figure 313. Miss. Winter Camp Panel, Pritchett Canyon. The panel is in the shaded area, left.

Pritchett Canyon is the main trail to the Snake site. This part of the canyon, about two miles from the mouth, is relatively open. In this photo the lowest part of the canyon is ESE of the panel, the direction of the Winter Solstice sunrise. I thought it might create a display on the panel when the Winter sun rose, but I saw nothing that I considered a possible astronomical display.

Figure 314. Pritchett Canyon, Winter Camp Panel. This panel has several astronomically evocative glyphs, but none of them revealed, to my eye, a Winter Solstice astronomical display.

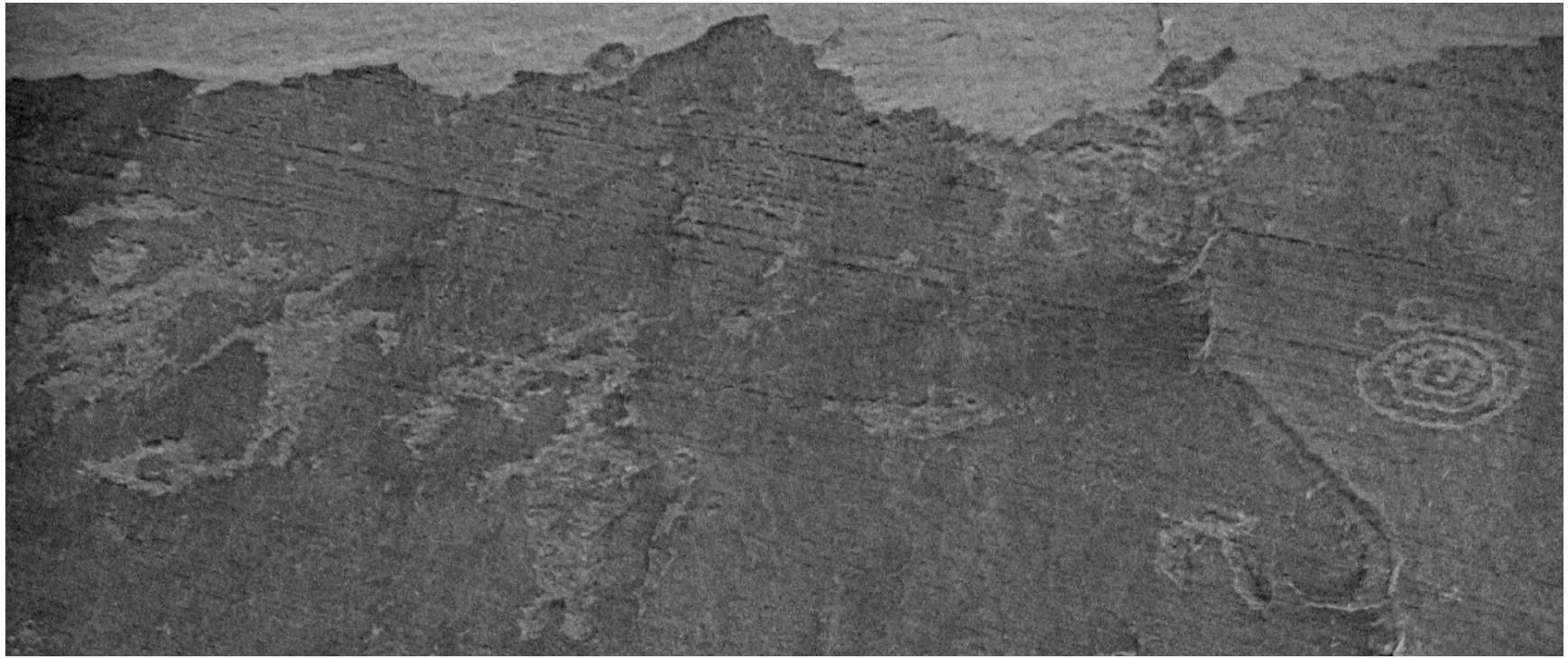


Figure 315. Pritchett Canyon, Winter Camp Panel. This part of this large panel does not appear in the previous photo. The two-horned spiral, right, makes you hope. Sorry, no soap.

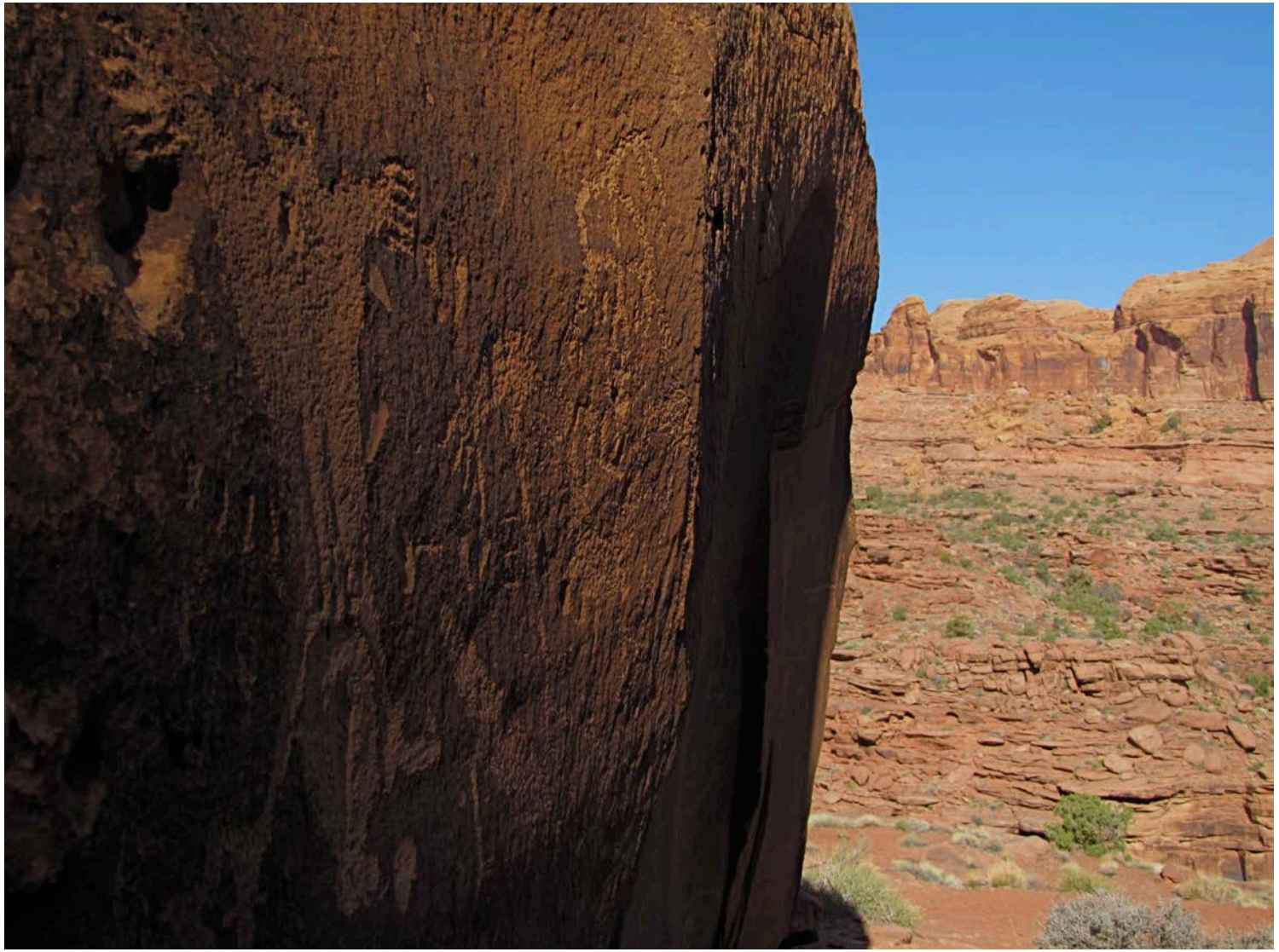


Figure 316. Miss. Birthing Rock, Kane Creek, Moab. I have looked for astronomical markers at this well-known site several times to no avail.

Figure 317. Maybe. Castle Valley, Moab. There are a number of petroglyph in Castle Valley along the base of the Porcupine Rim. So far, I have not been able to match the shadow of Castleton Tower or any other gnomon with any of the panels I've looked at during the Equinox or Solstice. These observations haven't been completed by a long shot.

Figure 318. South Fork of Mill Creek, Moab. This section of Mill Creek has hundreds of panels and thousands of glyphs. It is the topic of *Game Drive*. I have looked at two panels here for astronomical displays with some interesting results.

Oliver, Mollie's dog, another noble being, was my hiking partner after Girlfriend's hips gave out. He moved and I miss him.

Figure 319. Likely. Mill Creek, High Life Panel. This is one of the most intense panels in the region. There is a reclining Flute Player in front of the large zoomorph on the right. It may be part of an Equinox display.

Figure 320. High Life Panel, Mill Creek. 14:05, MDT March 19, 2017. The shadow first touches the Flute Player at 13:42 MDT. Rather than descend, it appears to ‘slide’ to the right and, although in contact with the shadow, the Flute Player remains in light. Meanwhile, the point of the light-dagger comes closer.

Figure 321. High Life Panel, Mill Creek. 14:10 MDT, March 19, 2017. Nearly a half hour after the shadow touches the Flute Player it finally occludes him, perhaps in a variation of the I See the Light motif. If this is a marker, it is as unexpected as the *South Katchina Sees You* display. A definitive display in this canyon, something like the *Silver Egg*, or *Snake* would bolster this glyph's claim to be an astronomical display.

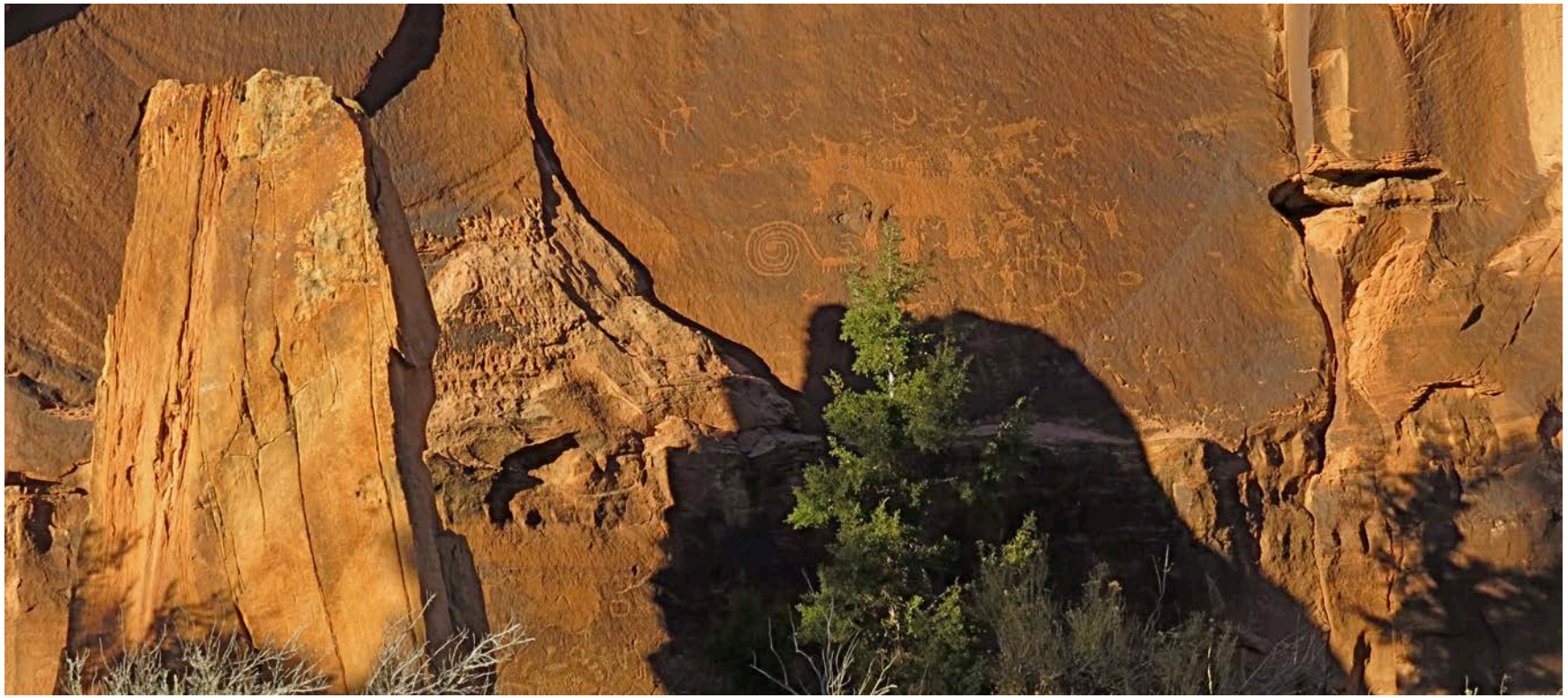


Figure 322. Maybe. Big Cat Panel, Mill Creek. 9:13 MST, December 20, 2018. The phallic boulder, left, may act as a Winter Solstice gnomon for the large panel to its right.

Figure 323. Big Cat Panel, Right Hand, 9:06 MST, December 20, 2018. The sunrise from across the canyon has reached the panel, but not the gnomon.

Figure 323. Big Cat Panel, Mill Creek. 9:07 MST, December 20, 2018. One minute later the sun touches the top of the gnomon, which creates a striking display with one of the more elaborate glyphs among this canyon’s thousands.

Figure 324. Big Cat Panel, Mill Creek. 9:06 MST, December 20, 2018. The first shade from the gnomon underlines the Spirit Sheep/Spiral conflation with a ‘Walking on Shadow’ motif.

Both the Big Cat Panel and High Life Panel have alignments that suggest astronomical observations, but I am not completely convinced. If an undeniably overt display is found in this canyon it would do a lot of convincing.

Figure 325. Maybe. Big Cat Panel, Mill Creek, 9:08 MST, December 20, 2018. I discuss other aspects of this panel in the *Codicon* and *Game Drive*.

Figure 326. Likely. *Sun Hunter Panell* display. 12:03 MDT, September 22, 2011. An Archaic pictograph resembling an owl is connected by a net to a facet that creates a ‘fang’ of light on the Equinox.The owl is a night symbol. The fang is all light. The net connects them. Any guesses? Sorry, can’t tell you where it is.

The vertical slot to on the right may have had sexual implications.

There is not another area north of Moab where Basketmaker art prevails. South of Moab, Basketmaker art appears in the San Juan River Basin, Canyon de Chelly, then west to the Little Colorado Basin and Petrified Forest National Park. All of this territory was occupied by the Basketmaker culture over 2,000 years ago. The next three sites are farther afield from Moab, perhaps far-fetched and, perhaps, inapt for comparisons to Moab Basketmaker astronomy. Maybe not.

Ekkahart Malotki's books introduced me to Basketmaker art on the southern periphery of the Colorado Plateau. In *Tapamveni: Rock Art Galleries of the Southwest,* Malotki mentions numerous astronomical observations in the region made by Robert and Ann Preston. Although I could not find the Preston's work, it would not surprise me if astronomy is one of the hallmarks of Basketmaker culture from, Tapamveni to Moab, et.al., etc.[54]

[54] *Tapamveni: Rock Art Galleries of the Southwest*, McCreery, Patricia and Ekkehart Malotki, Petrified Forest Museum Association, Petrified Forest, AZ, Page 133 -135, 1994. According to Malotki, The Prestons also recorded something similar to the Summer Solstice 'sandwiching' display I observed on t the Comet Man Panel.

Figure 327. Maybe. Petrified Forest National Park, 18:04 MDT, March 18, 2016. This is very close to being an indisputable astronomical marker. But not close enough.

Note the segmented tracks with distinct claw marks. I interpret this as a predator, usually a cat. These design elements appear at many places between Flagstaff and Moab. Hidden Valley's Pounce Panel and Big Track Panel , Figures 196 and 203, are two of many in the region. I discuss this interpretation in the *Codicon.*

Figure 328. Petrified Forest National Park. 18:05 MDT, March 18, 2016. I'd like to watch this for a few days but my Moab dance card is full.

Figure 329. Long shot. Long Lake, Adel, Oregon. Long Lake contains thousands of glyphs. It is one of many sites in the northwest Great Basin that is associated with Pleistocene cultures at the end of the last Ice Age. It would be interesting if this ancient art includes astronomical markers, pushing the North American cultural horizon for astronomical observation and commemoration back. If those people were astronomers, when and how did they learn about astronomy?

Figure 330. Long Lake, Adel, Oregon. A Maybe.

This glyph appears in the previous photo, top right, and shares a design with several glyphs in this area. Similar designs appear in many other cultures' art throughout western North America. I interpret this as a hunting/ trapping symbol. I call it Trapman. I discuss this in the *Codicon.*[55]

I suspect that the crack in the rock may align with the Winter Solstice afternoon sun, but I didn't have a compass to take readings to encourage or disparage this idea.

I discuss Long Lake as a hunting/trapping site in *Game Drive.*

Figure 331. Long Lake, Adel, Oregon. This basalt rim is

[55] A common interpretation is 'centipede'. Pfah!

nearly two miles long. There is a seasonally-filled lake bed to the left. These east-facing cliffs collect snow drifts as high as themselves, blown in by the prevailing west wind of the winter. This waters many plants through the summer. In the fall, when the sheep met for the annual rut, they came here for the feed. The Indians would trap the sheep between the mire and these basalt cliffs. Similar landscapes occur throughout the area and region. They contain glyphs from the last Ice Age into the era of the European invasion.

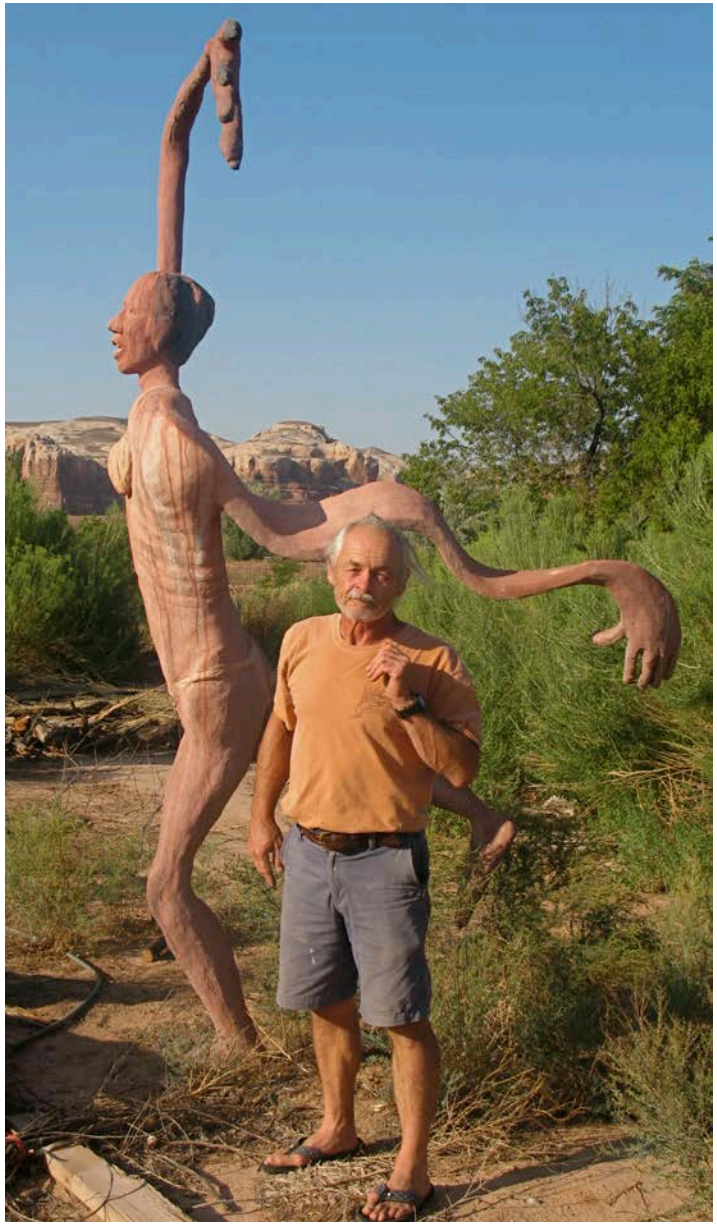


Figure 332. Joe Pachak; Artist, Archeologist, Teacher. Bluff, Utah.
I learned a lot from Joe Pachak. He created the paintings and sculptures that adorn the Edge of the Cedars Museum in Blanding, Utah.

I saw Joe a few years ago when he was fiddling with paper towel tubes that he had torn along the seams to form spiral shapes. He used them as a template for an astronomical sculpture at the Edge of the Cedars.

Figure 333. Edge of the Cedars Museum, Blanding, Utah. An unrolled cardboard tube was the template for Joe's sculpture. The small figures that perforate the tube are modeled after local petroglyphs. During the Equinox they create some interesting displays.

Figure 334. Edge of the Cedars Museum, Bluff, Utah. 7:40 MDT, March 19, 2016. During the Equinox morning, Joe's sculpture displays a number of interesting and attractive configurations.

Figure 335. Rory Tyler, Edge of the Cedars Museum, Blanding, Utah. 8:52 MDT, March 19, 2015. Joe Pachak is the kind of person who, two thousand years ago, would have created the Goose Panel or Warrior Panel. I think I would have been the kind of person who travelled far to see his work. As Joe Pachak shows us here, honoring the Seasons of the Sacred Sky is not a lost art.

Conclusion

In *Chapter 1: The Astronomers,* I gave a brief history of the Desert Archaic Culture and Basketmaker Culture. These two cultures dominated the Colorado Plateau for 5,000 years and made most of the rock art in the Moab area. When I started studying Moab astronomical art, I was looking mostly at Basketmaker art. The discovery of Archaic astronomical art at Hidden Valley's Ray Panel and in Hellroaring Canyon came as a revelation. Adding to my astonishment was the 'sandwich' effect of the *Comet Man* display. I had been amazed for some time by the complexity and imagination that went into creating the Goose Panel. The Hellroaring Canyon displays not only pushed the temporal horizon of astronomical awareness back, the *Comet Man* display demonstrated a subtle and patient frame of mind, the kind that the creator of the Goose Panel must have also had.

Archaic displays at some locations are sometimes overlain by seemingly emulative Basketmaker art, a factor suggesting a relatively peaceful transfer and adoption of esteemed and venerable concepts, including astronomy. Where, when, and how it all began are topics that need further study.

Moab is a veritable type-site of Basketmaker art and culture. Art from other cultures exists, Anasazi, Fremont, and Ute, but the amount is dwarfed by the preponderance of Basketmaker art, with Archaic stylings taking second place. Further south on the Colorado Plateau, Basketmaker art often shares wall-space with Archaic, Anasazi, Sinagua, Hohokam, Gallego, Hopi, Navajo, etc. This further muddies the already muddy waters of prehistoric population movement, interplay, succession, and displacement in a fluid and changing world. Comprehensive regional maps of rock art styles and locations, geographically and temporally, might address some aspects of these interesting anthropological expressions.

I believe that the astronomers and artists who created these sites created them for their people, society, and culture. They did not make them for the edification of an exclusive priestly elite. It is unlikely that a secretive cabal could muster and maintain the social support necessary to sustain the physical needs of a complex, long-term effort in such a rough and remote place as, for example, The Snake. If these artists and priests were like our artists and priests they wanted people to see what they were doing and were rewarded for their efforts. To honor these astronomers and artists today, our job is to learn and teach their lessons. I think they would approve.