

THE POLYCHROME PANEL IN BLACK DRAGON CANYON

BY

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The Polychrome panel in Black Dragon Canyon, Utah has been identified as a possible Chihuahuan Polychrome panel by Schaafsma (1971). Whether this is an extension of that style or an expression of a style indigenous to Utah has not yet been determined. Similar panels also occur in Grand Gulch and Escalante. Because of the two rayed sun symbols on the roof of the overhang, the spiral, two concentric circles and sun symbol on the vertical cliff, we felt this panel would have good potential for interaction with the sun. Also, because of all the hatch marks and what appears to be tabulations or arithmetic notations, this panel could be a very complex solar observation site.

This paper is only a preliminary investigation to review what types of interactions take place and to try to determine if the vast sections of hatch marks have any obvious interactions with light and shadow. At present the ground level is much lower than its original surface. At one time there was a midden below the panel that raised the surface of the ground at various periods to heights within reach of the panel. Because of vandalism, the B.L.M. removed the midden so the panel would be out of reach. But what about the cultural material present? The midden, an invaluable source of information to see who was here and when is now gone.

The several sections of the panel have enough differences in color or tint of color that it is obvious many sections were not done sequentially. The general style and "feel" for panel layout on the other hand seems to suggest that most of the panel is fairly contemporaneous. Whether all the hatch marks in one contiguous unit were made at the same time has not been determined. The uniformity between the tints of the hatch marks within each section indicates the same mixture of paint probably produced the majority of the marks.

Color change raises other interesting questions. There are several problems in determining the exact reason for a change in color. Conclusions, therefore, cannot be definitive.

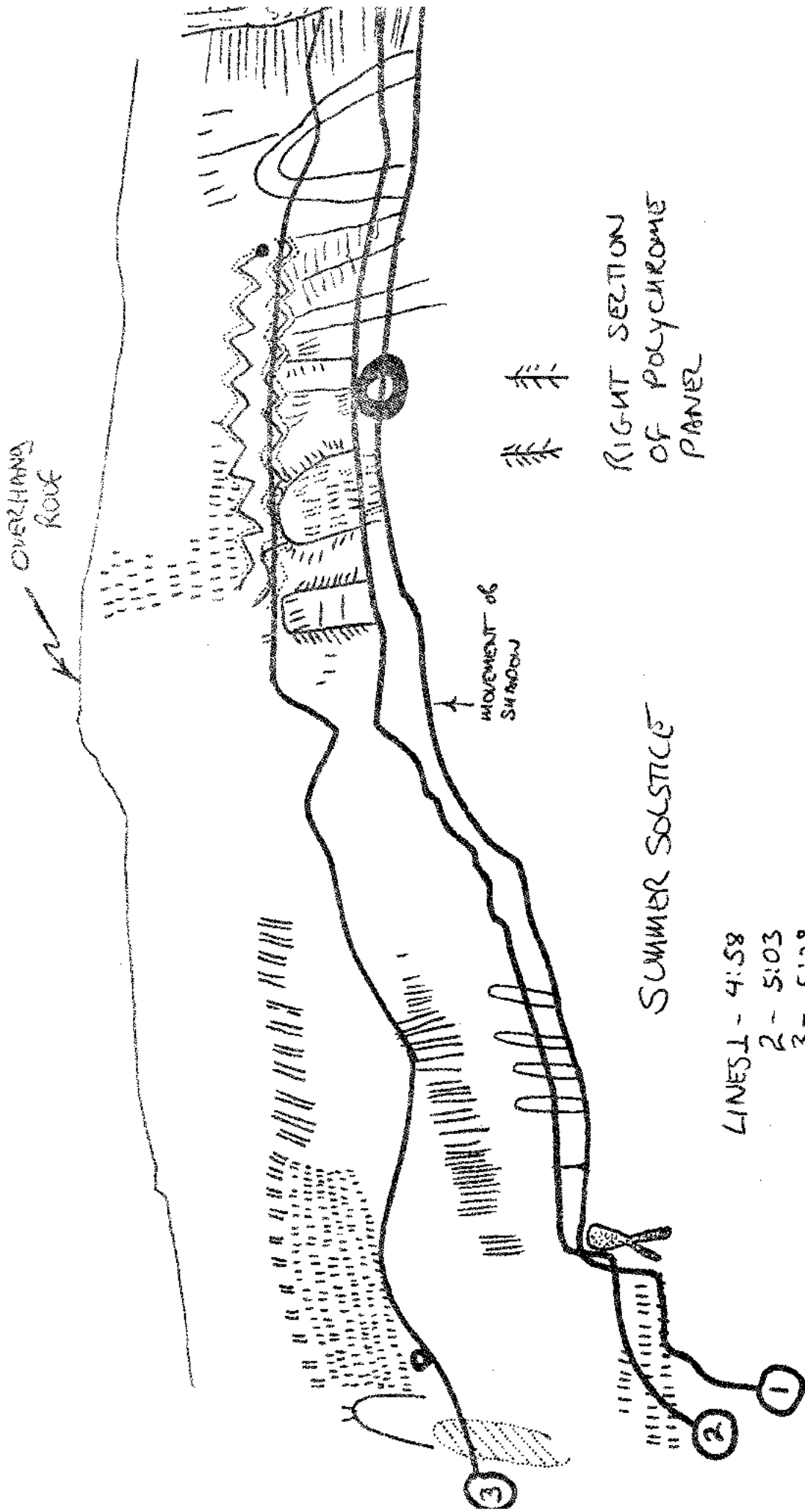


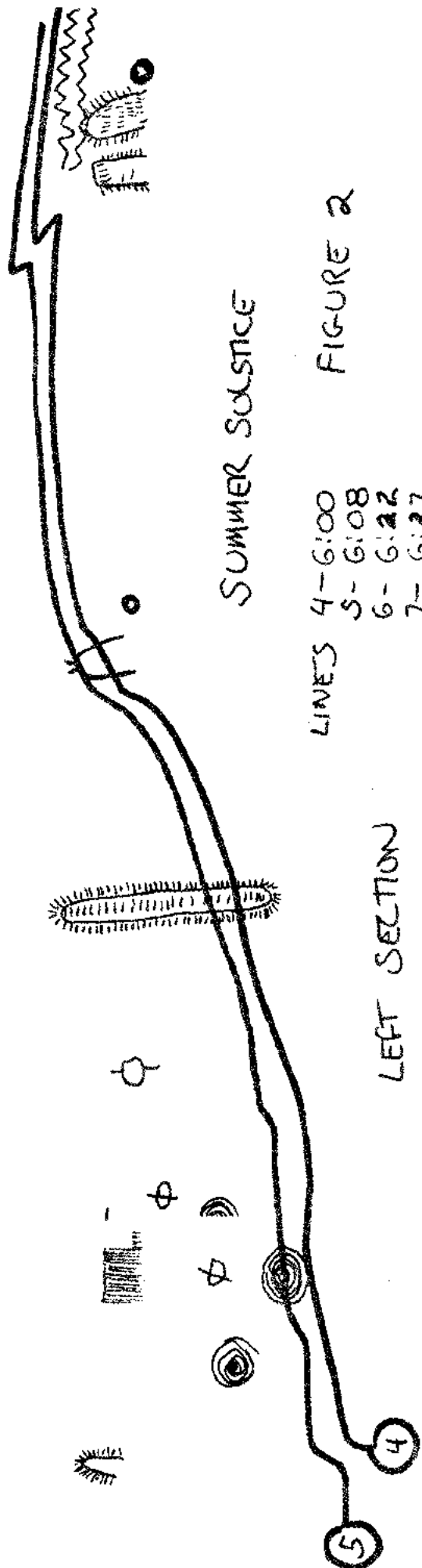
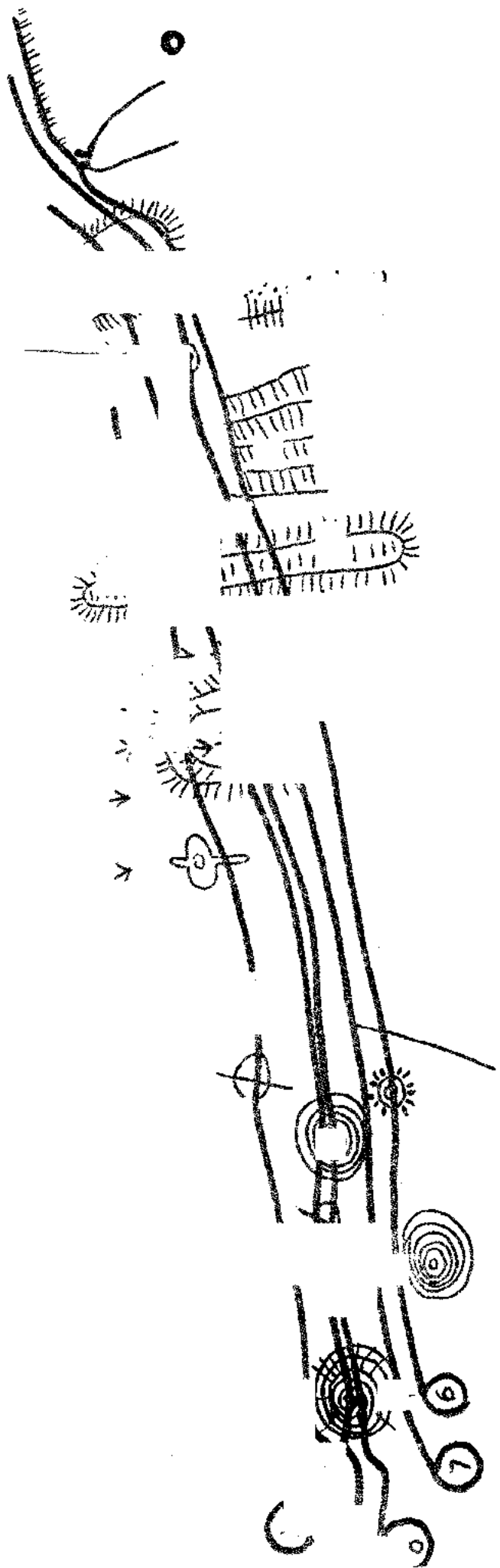
FIGURE 1

Running short of paint before completion, for example, the need to mix new pigment to finish the unit may explain some color changes. Also, the possibility exists that one mark could have been applied during each observation. At present there appears to be no way to determine if the same mixture of pigment could or was used for each different colored section or unit.

Because of the different solar interactions of several sections of hatch marks, it is very possible that there was an intentional relationship between one section and another. At present, however, it will take much more analysis to determine if this was intended. For instance, the fact that during Summer Solstice Line 1 (Fig. 1) touches the three rows of hatch marks at the left, touches the base of four larger lines (mid left), bisects a circle (mid right), and then moves across other elements to the right, may or may not be important. It is also questionable whether any significance was attached to the fact that Line 7 (Fig. 2) touches the bottom of one concentric circle and bisects another dot-centered circle to the right. In other words, is the sequence in the narration of each section of hatch marks determined by the variation in the upward movement of the shadow's edge or is it coincidental? It would take considerable effort by someone with more expertise to make that decision.

The most important part of both Equinox and Summer Solstice interactions that needs to be pointed out at this stage concerns the two concentric circles and spiral (Fig. 3). The kinds of solar interactions observed here were totally unexpected. On Equinox at 3:43 p.m., the edge of the shadow bisected the lower concentric circle and touched the bottom of the rayed sun symbol to the right (Line 1). At 3:50 p.m. (Line 2), the relationship reversed so the center of the sun and the top of the lower concentric circle were aligned. At 4:13 (Line 4), the edge of the shadow bisected the center of the upper right concentric circle and bisected the upper dot within the spiral-looking concentric circle to the left.

On Summer Solstice the only alignment of importance was the bisection of the center of the upper right concentric circle at the same time the lower somewhat indistinct dot within the multiple-line dissected concentric circle to the left was bisected (Line 8, Fig. 3). On both occasions the edge of the shadow stays in the same location, in the center of the concentric circle on the right, while it alternates between two dots, each above and below center within the body of the spiral to the left.



SUMMER SOLSTICE

FIGURE 2
 LINES 4-6:00
 5- 6:08
 6- 6:22
 7- 6:27
 8- 6:40
 9- 6:45

LEFT SECTION
 OF POLYCHROME
 PANEL

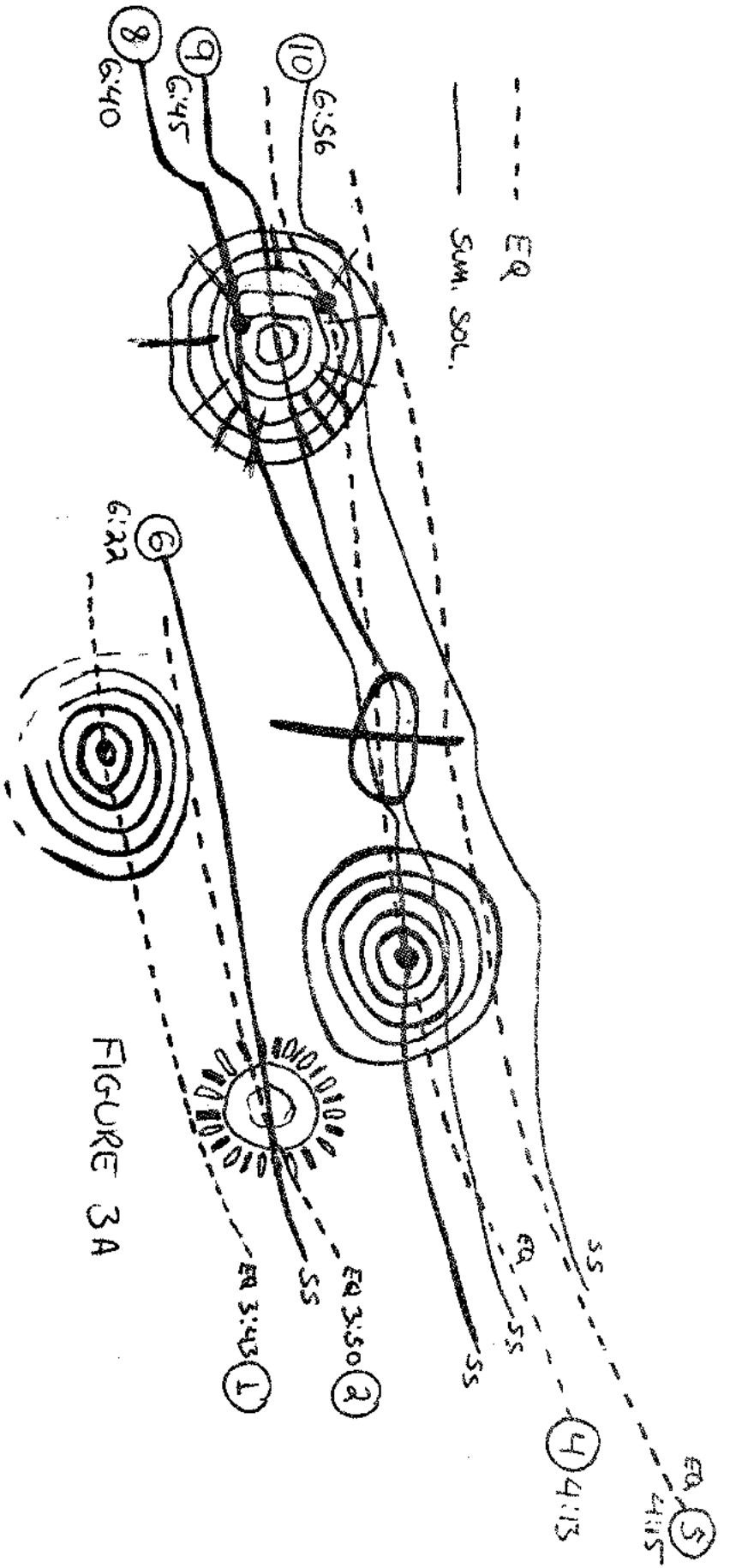


FIGURE 3A

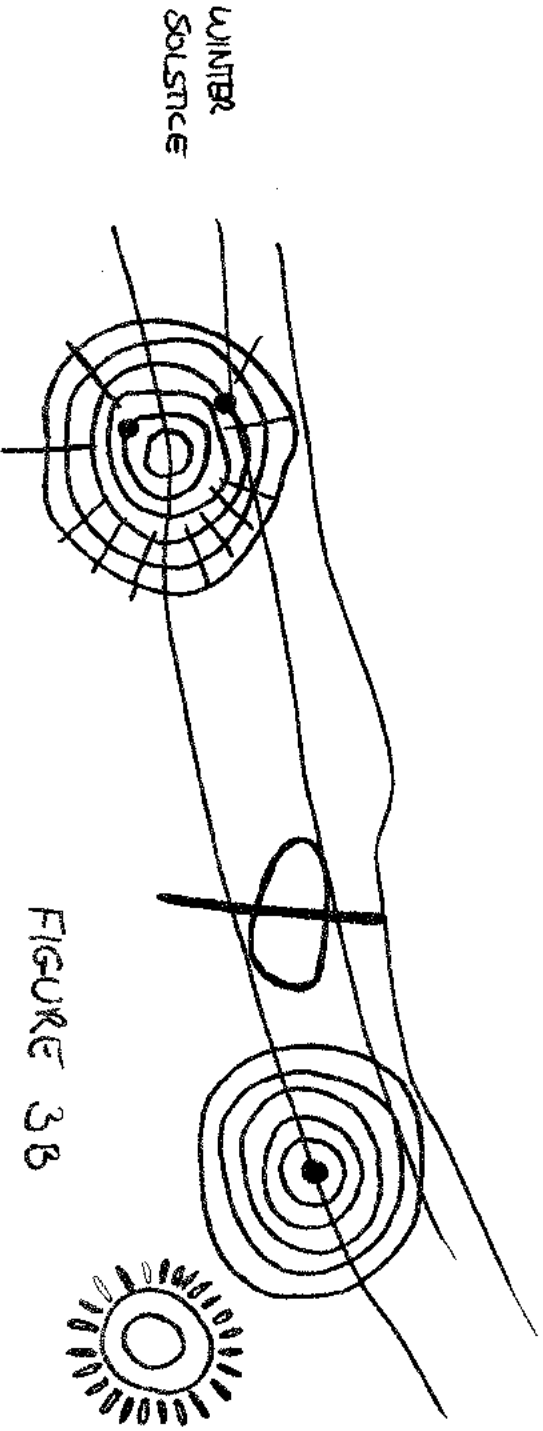
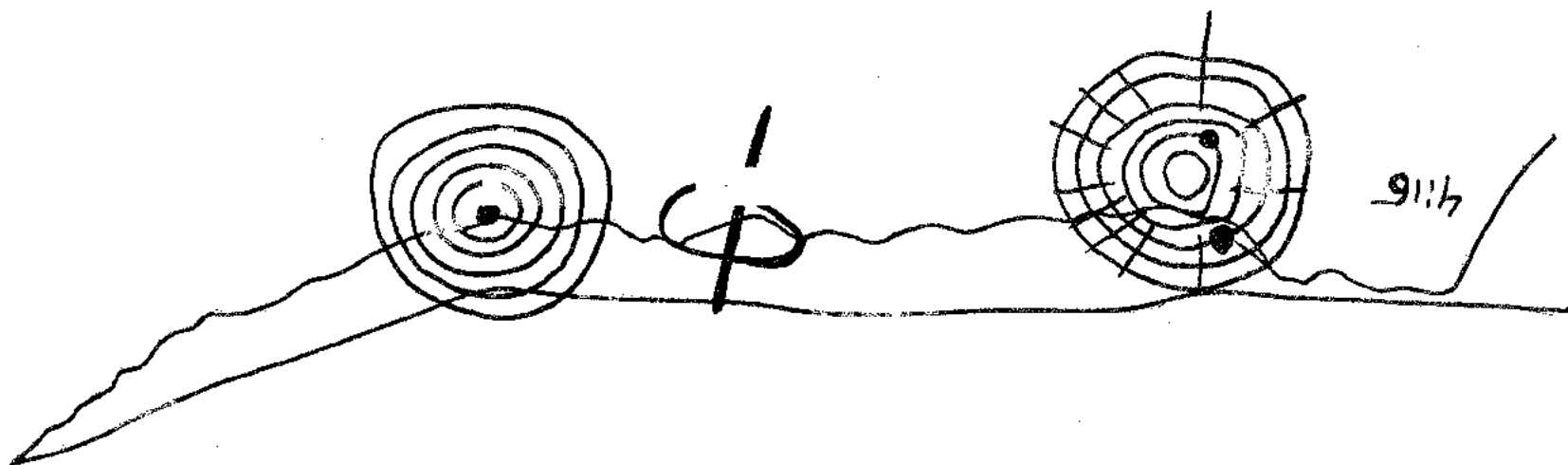
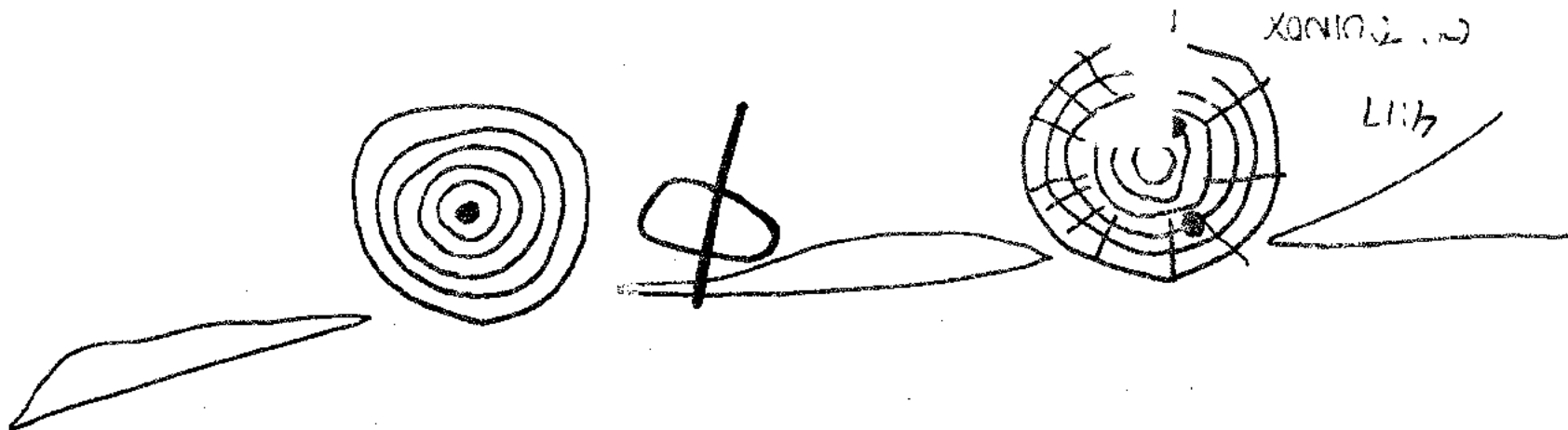


FIGURE 3B

SEPT
 AUG
 JULY
 JUNE
 MAY
 APR
 MARCH
 FEB
 JAN

DEZ
 NOV
 OCT
 SEPT
 AUG
 JULY
 JUNE

SEPT
 OCT
 NOV
 DEC
 JAN
 FEB
 MARCH
 APR
 MAY
 JUNE
 JULY
 AUG
 SEPT



If the edge of the shadow is in the same location on the center of the right concentric circle from March 22 through June 22 to September 22 then it seemed it should also theoretically be there on the cross-quarter dates of May 6 and August 7. On those cross-quarter dates it seems possible that the edge of the shadow would center within the left concentric circle. Since both dots are equal distance from the center of the left concentric circle, and May 6 and Aug. 7 are half way inbetween June 22 and both Equinox's, the shadow should cross the center on those dates. However good this assumption sounds it did not work out that way. The center to center bisection occurred on Winter Solstice (Fig.3b).

One final interesting performance on Equinox took place during the last three minutes of light on the panel. The light that moved through the panel, making the main interactions, came over the top edge of the overhang above the panel. The edge of this light and resulting shadow remained there until the sun had moved across to the other rim of the canyon so by 4:15 p.m., the shadow from the opposite canyon rim had risen to meet to shadow of the overhang. By 4:17, the two shadows joined across the tops of both the upper concentric circles as the light became a thin sliver disappearing in different sections until the cliff face was in total shadow. At the end one sliver of light was on each side of each concentric circle (Fig. 5).

Even though these interactions are unique, I feel confident that there are interactions that should perform at different times of the year within the rest of the panel. However, because of the complicated nature of this site, it will be some time before all the answers are found.

REFERENCES

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