

AN EQUINOX WATCH STATION IN COTTONWOOD CANYON  
AS A POSSIBLE MARKER FOR ANNUAL SPRING HUNTING RITUAL  
by V. Garth Norman

(Paper presented at the Third Annual Symposium  
on the Rock Art of Utah, 1982)

PREFACE

In a previous paper given at the 1980 Great Basin Conference and at the 1981 URARA Symposium (published in this volume), I identified a calendar marker at a petroglyph site at Sheep Wash on the Green River in the Uintah Basin. This petroglyph was studied in 1978 and 1979 through initial analysis of composition of the solar spiral petroglyphs and by taking compass readings with the prospect of finding shadows that might dissect spirals on the equinox or solstice days. Confirmation was made during an on-site inspection at the winter solstice sunset of 1979, and again at the Spring equinox sunrise of 1980 when a right angle of a shadow traversed a spiral with three turns precisely along two knobs pecked on either side of the inner turn of the spiral. Ethnographic data from the Southwest provided a clue to interpretation of a pole ladder directly above a spiral that apparently could have marked the winter solstice sunset annual observations. A step could have been added to the ladder each year, just as Pueblo Indians mark the wall with a line each year of their calendar watch.

An adjacent panel at Sheep Wash contains a scene with cranes around a supernatural anthropomorph. It can be hypothesized that the winter and spring calendar watches at this site functioned in part in connection with the timing of large migratory game birds, and ritual associated with hunting them.

PRELIMINARY STUDY

I have made it a practice to conduct preliminary interpretations of petroglyph sites, and set up testable hypotheses that will hopefully prove or disprove the interpretation so as to reduce speculations.

During the Spring of 1981 I inspected the petroglyph site of a well known hunting scene in the Cottonwood Canyon area of Nine Mile Canyon which faces east. An adjacent panel to the right has the same style vertical pole ladder as at Sheep Wash. It rises from a circle with cross lines and a dot. I immediately recognized it as a potential calendar marker. A cross in a circle is a widespread and well known sun symbol. The cross has a distinct irregularity. The horizontal line

curves upward from the middle to the right, with a prominent dot placed below it. A line continues beyond the right side of the circle to the upper right. I recognized from my prior studies in Sheep Wash that this irregular line could conform to a shadow for marking a significant calendar date. In some areas the quartered circle relates to the four directions and four seasons. In a world view conception of Mexico, the lower right-hand quarter relates to the period from winter solstice to spring equinox (Norman 1980: 56, Fig. 9). If the same view applies here then the irregular line draws the viewer's attention to the spring equinox. Twelve cross bars on the pole ladder may then indicate twelve years that this annual spring calendar watch occurred before the site was abandoned.

Unfortunately, I was unable to conduct an on-site preliminary inspection with compass readings for a possible shadow crossing of the circle. But the shadow from a projecting rock on the left could relate to an equinox or winter solstice observation. The other clues for an equinoctial marker were sufficient to motivate me to travel to the site at the next equinox on September 21, 1982.

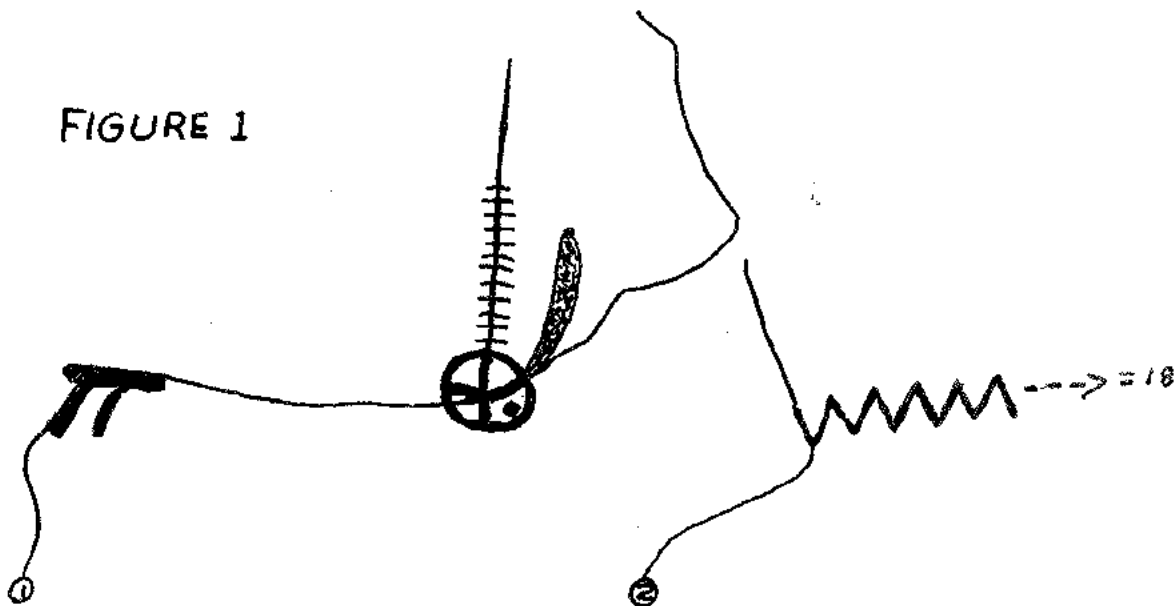
## FIELD INVESTIGATION

My excitement on the 1982 autumn equinox was heightened by a race with the sun as I burned rubber down Nine Mile Canyon to reach the Cottonwood Canyon site before sunrise. I arrived at the site in mid morning only minutes before sunrise. I proceeded to observe and photograph an event that had not been seen by man for perhaps a thousand years or more as it was played out with the annual equinoxes.

Just as the sunlight entered the narrow canyon and illuminated the petroglyphs, a shadow remained on the upper part of the panel. The shadow line came into horizontal contact with the left side of the sun circle at its line. At the same time the shadow conformed to the upward curving line to the right of the circle. I then observed a right angle shadow at the left conforming to horizontal and vertical bars. As it came into exact contact, the shadow in the circle to the right simultaneously advanced to a precise alignment with the upward curving line to the right from the center of the circle.

The right point of the shadow then progressed downward toward a saw-tooth serpent panel to the lower right. The right side came into perfect alignment with the fourth jog from the left, with the point of the shadow's curvature at the point of the serpent's undulation shift. This reference clearly suggests to me that the extended undulations of the serpent almost certainly conform to successive days, four to the left and approximately ten to the right. The right shadows permit

FIGURE 1



sufficient observation days before the spring equinox to allow for pinpointing the equinox in the case of cloudy weather. It is a simple matter of counting days from the earliest observation. Further observations are planned to try to confirm this interpretation function. (See Appendix.)

Following this episode, I photographed the rock projection that aligns with the horizon to create the shadow at sunrise. What was the functional purpose of this apparent spring equinox calendar watch station? I believe the adjacent hunting scene panel tells the story.

On this impressive panel, the season of the year of its setting appears to be revealed in the depiction of thirteen female sheep with small lambs. The annual lambing season of sheep and goats occurs by nature only in the spring. The depiction, as the figures face, shows hunters ambushing the herd as it may have come down Cottonwood Canyon. Large herds frequent these lower elevations from winter through early spring. I observed a herd of 30 deer in the bottom of Jack Creek Canyon, located just southeast of Cottonwood Canyon, in early April of 1982. As warm weather advances the herds migrate to higher elevations to the southwest, where I found lithic remains this past summer from seasonal hunting activity. Artifacts included an Elko corner notch point and an Archaic atlatl dart point from the same site.

The hunting scene depicted on this petroglyph may be ritualistic. The path of the sheep seem to be directed down

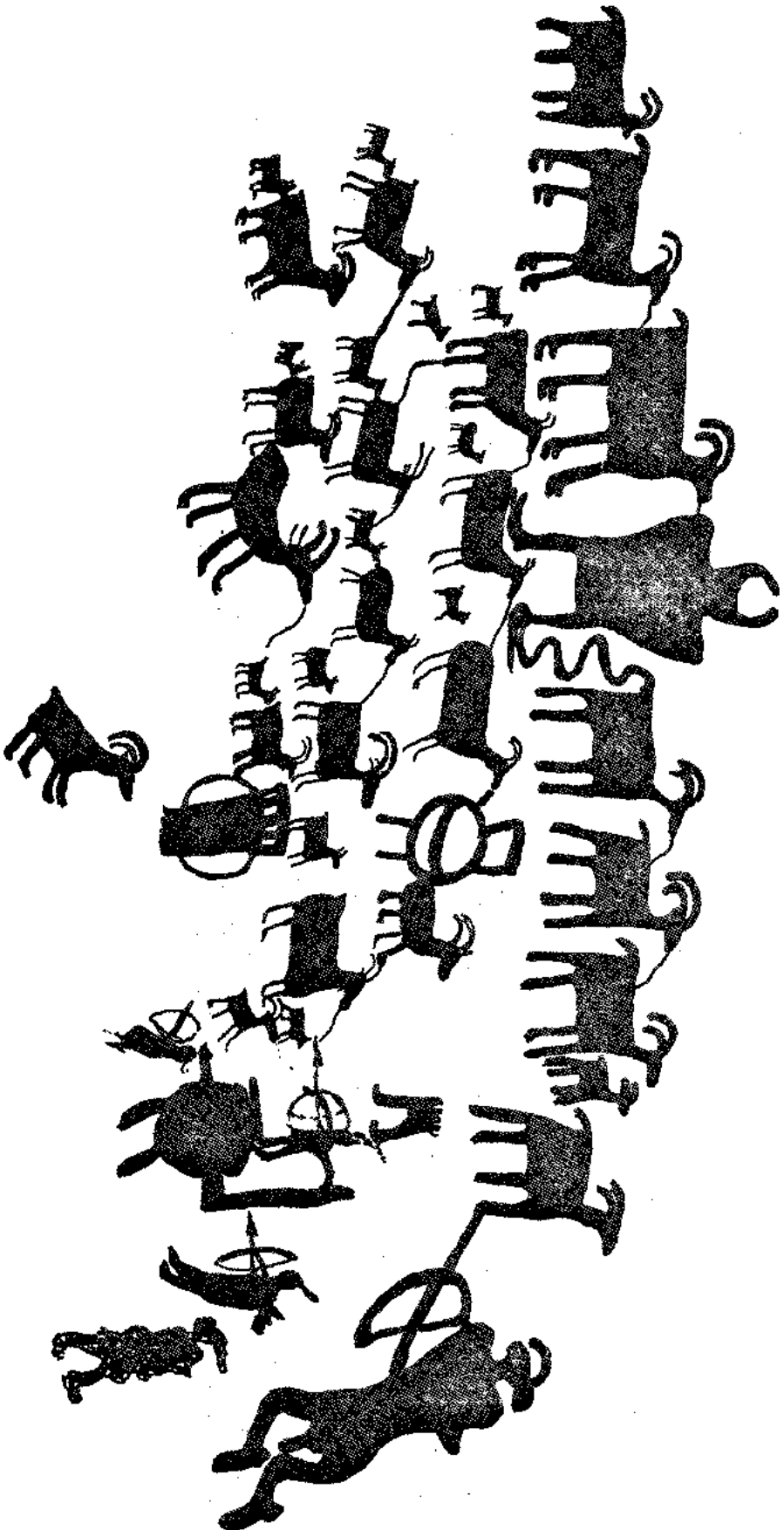


FIGURE 2

the canyon by the horned anthropomorphic god in the midst of the upper row of male sheep that lead the herd. A meandering "pathway" line that suggests the meandering course of the canyon connects his foot to the back of the adjacent sheep down canyon from him. Fertility of the herd is implied by the round anthropomorph in the midst of the female sheep. A crescent across the body implies a moon goddess aspect, suggesting fertility symbolism attributed to the moon in many tribal societies (Eliade 1959: 156-157). The perpetuation of the herd in the many young is her apparent function. A second circular anthropomorph directly below the other one separates a fallen sheep from the herd that has presumably been killed by the hunters. There is a prominent death aspect in moon goddess symbolism in Mexico that could be expressed here. This aspect may also be portrayed in the fourth supernatural in the midst of three hunters, also round, and in direct contact with all three. Its left arm touches the head of a bowman. Its exaggerated right arm is raised upward to the back of another hunter, and an arrow point of the third hunter contacts the same arm. It takes no stretch of the imagination to see the supernatural power being supplicated here for a successful hunt.

The large figure at the right appears to represent the chief who leads the ritual and hunt. His legs are in motion as though he is running toward the herd for the kill. An ambush in this narrow canyon would be from a fixed position at close range. Therefore, I believe a ceremonial dance representing ritual pursuit, rather than chasing sheep, is implied.

From this scene, the full function of the calendar watch station comes into focus. The spring equinox may have been a time for a ceremonial commemoration related to initiating this season of hunting, and in behalf of the fertility of the herds. As among peoples of the Southwest, key calendar days are the most sacred (Ellis 1973). A spring ceremony at the equinox required its accurate marking, that began sufficiently early to pinpoint the day in case of cloudy weather.

If the above interpretations are correct we will have learned more from the calendar function of these petroglyphs about primitive lifeways in this region than from any other single source, including excavation. The annual calendar tabulation of the ritual was kept. The sun disk with cross reveals that the four seasons were conceptualized as they are regulated by the sun. The counting of days for important events with a precise calendar was kept. The most impressive part to me is the reverence shown for the herd, so that the gods direct and preserve the herd, ensure a successful hunt, and also prosper the herd for the future. These primitive people were true conservationists, and their respect for nature is manifest in their ritual beliefs.

## INTERPRETATION INFERENCE

One spring approximately a thousand years ago, a tribe of Indians referred to today as the Fremont, came into Cottonwood Canyon in the Nine Mile Canyon area. Some of them wore their hair tied in a bun behind the head, like some Indians of the Southwest today, with a feather attached. It appears that after locating a rock panel that met their specifications, they began marking a pointed shadow each morning at sunrise, as it advanced along a rock face with the daily shift of the sun (Appendix). This would facilitate accurate calculation of the equinox in succeeding years when there might be cloudy weather, and also facilitate advance planning for groups gathering on the appointed ritual day. The exact day of the equinox could have been predetermined from calculations in previous years. Fixed observation markers aligned on the horizon would have been used to dissect the sun cycle through counting the days between the solstices, and bringing them into two equal parts on either side of the equinox.

On March 23rd at sunrise a circle was drawn on a curvature of the shadow that was created by the projection of a rock in alignment with the eastern horizon. A cross was drawn in the circle with the horizontal line lying along the shadow, which curved upward to the right from center. A dot was pecked below this line in the lower right quarter to mark the spring season, and to draw attention to the shadow line. The vertical line was extended upward some distance beyond the circle, and a short horizontal line was pecked across it just above the circle to mark the calendar equinoctial observation. With this event the ritual activities of the group for the day began. With the onset of Spring the herds of longhorn sheep were multiplying and wandering through out the canyon area with their young. Healthy growing herds would be vital to sustaining life for the people here year by year. Also the seasonal migration of big game herds toward the highlands would soon begin, initiating a shift in the groups annual hunting subsistence cycle. Spring vegetation was producing fatter and healthier herds, and the sheep would be carefully monitored through the farrowing season and weaning of the young. The ritual prayers and dance which followed, and the consecrations of the hunters and their bows and arrows may have all been part of the ritual activity.

The life cycle in Cottonwood Canyon may have continued uninterrupted for twelve years. The length of the vertical line drawn for the annual calendar marking may indicate that they had anticipated returning to this locality for at least another ten years. We do not know why they left or when, but what they did here has significance for us, because of their sense of conservation and reverence for nature. We enjoy this land more today because of the way they lived. They had a sense of destiny in the perpetuation of nature that we would do well to emulate.

## APPENDIX

### COTTONWOOD CANYON PETROGLYPHS Field Trip March 21-22, 1985

#### SAWTOOTH DAY MARKER PRECEDING SPRING EQUINOX

On the mornings of March 21-22, 1985, I observed the sun shadow action on the Cottonwood Canyon calendar petroglyphs. Following the equinoctial shadow marking of the crossed circle, the shadow point progressed downward at 9:30 A.M. to fill the left most groove of a horizontal sawtooth marker extending to the right composed of 18 teeth (Fig. 1). As the sun rose the shadow progressed to the right coming in alignment with the right side of each succeeding vertical tooth about every five minutes. On the following day the sun having moved northward a day caused the shadow to descend to the left of the first notch, and then fill it as it had done the previous day about five minutes later. The shadow then progressed to the right in the same manner as previously observed. Accordingly, we can see that on the day before the equinox the shadow first descends and strikes the second groove from the left, and the day before that the third groove from the left, and doubtless so on to the 18th groove "day" at the far right.

The teeth are three inches high and vary in width from 2 1/2 to 3 inches. This difference results from slight variations in the time of the original marking each day and does not affect accuracy of the day marking sequence. An earlier marking results in a narrower tooth and a later marking widens the tooth. The important point is that the width should average out in a day sequence along a straight line.

This day marker would allow a calendar priest to calculate the exact day of the equinox for presumed religious ritual observance, on any cloudless day up to 18 days before it arrived.

## REFERENCES

- Eliade, Mircea  
1959     The Sacred and the Profane. Harcourt, Brace &  
          World, Inc. New York.
- Ellis, Florence Hawley  
1973     A Thousand Years of the Pueblo Sun-Moon-Star  
          Calendar. In: Archeoastronomy in Pre-Columbian  
          America. Edited by A. Aveni. University of Texas  
          Press, Austin and London.
- Norman, V. Garth  
1980     Astronomical Orientations of Izapa Sculptures.  
          Unpublished Masters Thesis, Brigham Young  
          University, Provo.
- 1980,  
1986     Identifying Solstice and Equinox Petroglyphs in  
          Northeastern Utah and Their Cultural Relations.  
          Paper presented at the 1980 Great Basin Confer-  
          ence, and at the First Annual Symposium of the  
          Utah Rock Art Research Association, 1980.  
          Published 1986 in this volume.
- 1981,  
1986     A Winter Solstice Sun Watch Station at Petroglyph  
          Panel P-17 in Dry Fork Ashley Valley, Uintah  
          Basin; Developing a Methodology for Interpreting  
          Selected Rock Art. Paper presented at the Second  
          Annual Symposium of the Utah Rock Art Research  
          Association, 1981. Published 1986 in this volume.