

A CASE FOR THE USE OF ABOVE SURFACE STONE CONSTRUCTS IN A NATIVE AMERICAN CEREMONIAL LANDSCAPE IN THE NORTHEAST

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INTRODUCTION

For the past 25 years the authors have documented and recorded the presence and status of various stone constructs on the landscape in the Northeast. We have hypothesized that many of these constructs, whose locations imply an earth-sky connection (Mavor & Dix, 1989; Ballard, 1999; Martin and Martin 2006), were used as a component of Native American ritual activities.

The purpose of this article is to make the case for preservation of places and artifacts in New England, which are deemed by the authors and others, to be important to Native American ceremonial life and increasingly threatened by property development. In addition, we present the case for the use of above ground stonework in pre-contact sacred practice in New England. We will document our observations at a site in Sharon, Massachusetts in the following ways:

- ▶ An analysis of the patterns of modifications to remnant glacial boulders.
- ▶ The placement of a type of U shaped stone construct on the landscape.
- ▶ Clear evidence of a Native American presence at the site.
- ▶ A connection to pre-contact period mythology.

The Sharon site borders upland swamps which are a source of headwater streams for the Taunton and Neponsett rivers, two of the largest river systems in southeastern Massachusetts. The irregular topography was formed from the remains of glaciers. It is comprised of a cluster of small oval hills called drumlins which surround two dumps of very large boulders (locations 1 and 8 on **FIGURE 1**, an enhanced topographic segment of the site), and a wetland area. The site had little or no agricultural or other economic value, except for wood cutting, until the housing boom of the last 15 years. **FIGURE 1** also identifies the locations of the stone features we will be discussing and the azimuths (sight lines to the horizon) from each. We will show that these orientations suggest a ritual use function for these features.

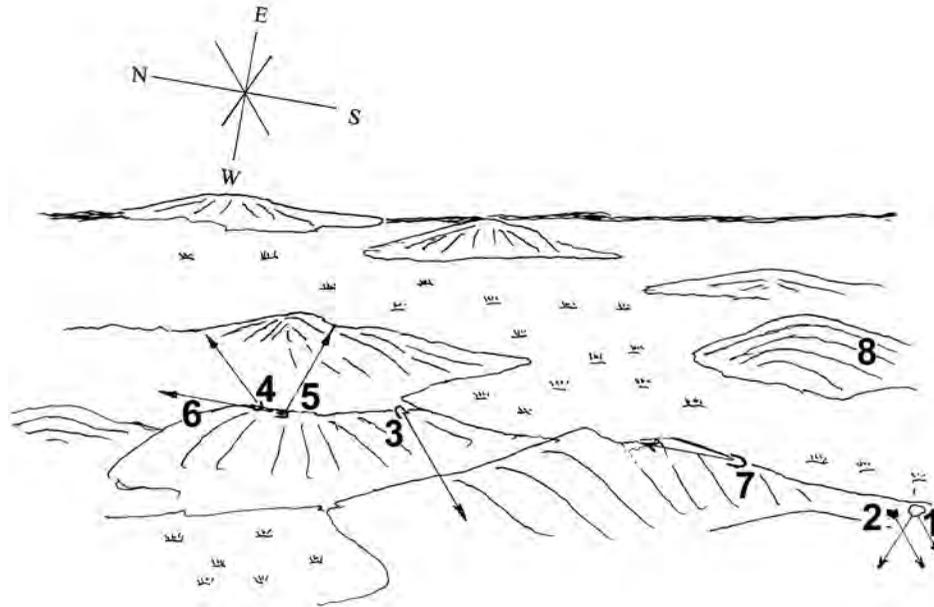


FIGURE 1. SKYWATCH STATIONS AND AZIMUTHS, KING PHILIP'S ROCK SITE.

Documentation of this site has been a subject of our individual and collective efforts since 1980. The final data for this phase of investigation were recorded in the spring of 2006. We propose that the recent documentation of the finding of Native American lithic artifacts on the site (Finneran 2002; Towner 2004), provides a link to our hypothesis of pre-contact origin for the use of these above-ground stone constructs. We will discuss the connection of features similar to the one in **FIGURE 2** (location 3, **FIGURE 1**), horizon oriented U shaped constructs, and the modifications made to the glacial boulder complexes shown in **FIGURES 3 AND 4** (locations 1 and 2, **FIGURE 1**) to historic Native American ritual practice and pre-contact mythology.

These elements and modifications are oriented to face specific sky events, including solstitial sunrise and sunset, and the horizon intercepts of northern constellations. We suggest that these constructs and their selected locations on the landscape are evidence of use for observation of celestial bodies in a ritual context by Native Americans. Data from a site in Sharon, MA supporting the hypothesis follows.

MODIFIED GLACIAL ERRATIC BOULDERS

FIGURE 3 shows a clump of glacial erratic boulders seven meters high and 60 meters in circumference. The boulder clump lies at location 1 on **FIGURE 1**. **FIGURE 5** shows a plan



FIGURE 2. LOCATION 3, KING PHILIP'S ROCK SITE.



FIGURE 3. LOCATION 1, KING PHILIP'S ROCK SITE.



FIGURE 4. LOCATION 2, KING PHILIP'S ROCK SITE.

view of an irregular internal cavity under the boulders about one and a half to two meters high with a floor of about two and a half square meters. As shown in the FIGURE 5 drawing by Fred Martin, the cavity has two openings. One, on the west-northwest side, provides an opening one meter wide by two and a half meters high by six meters long, which can be used to enter the cavity. A slab (FIGURE 6) bisects the entrance to the cavity. A geologist (Thompson 2000) and an archaeologist (Leveillee 2001) indicated that the tip of the slab appeared to have been worked. Another archaeologist (Stewart-Smith 2003) agreed and noted the presence of a significant amount of chippage under the organic debris at the base of the slab.

When viewed from inside the cavity, the worked tip of the slab and the upper sides of the entrance passageway form a small triangular opening above the entrance. FIGURE 7 shows a photo, taken by Elizabeth Martin, from inside of the cavity looking out, of the setting summer solstice sun just prior to sunset at 7:37 P.M. on June 23, 1996. The setting sun is framed by the narrow triangular opening above the worked slab tip. At the same moment a sun dagger, the appearance of a controlled pattern of sunlight on a rock surface (Krupp 1983; Rudolph 1998), formed on the back wall of the cavity. The

other opening, on the southwest side of the boulder clump, has about the same internal size as the entrance aisle but its use as a possible entrance is blocked by several stones, which create an elevated window that controls the view to the west-southwest. Martin and Martin (2006) reported on a winter solstice sunset event at 3:51 P.M. on Dec. 27, 1980, which relates to this window. FIGURE 8 is a photograph of the setting sun that Elizabeth Martin took from inside the cavity through the window. The sun sets on the artificial horizon created by the boulders and is framed by the side wall of the cavity. The stones appear to be positioned for viewing this specific event. A geologist, Schoch (2001), agreed that the stones that create the narrowed aperture and control the observed sunlight event appear to be purposely placed. They assist in capturing the setting sun at its southernmost limit of travel at sunset on the solstice, one of the most significant ceremonial days of the year for contact period local Native Americans (Williams 1643; Pritchard 2002). For many prehistoric societies, the observation that the sun had turned provided assurance that winter would end and that the earth would be bountiful again. Both of the above noted modifications appear to be designed to insure that these observations occur only during the several days of the solstice period thus providing a means to verify that the solstice had occurred.

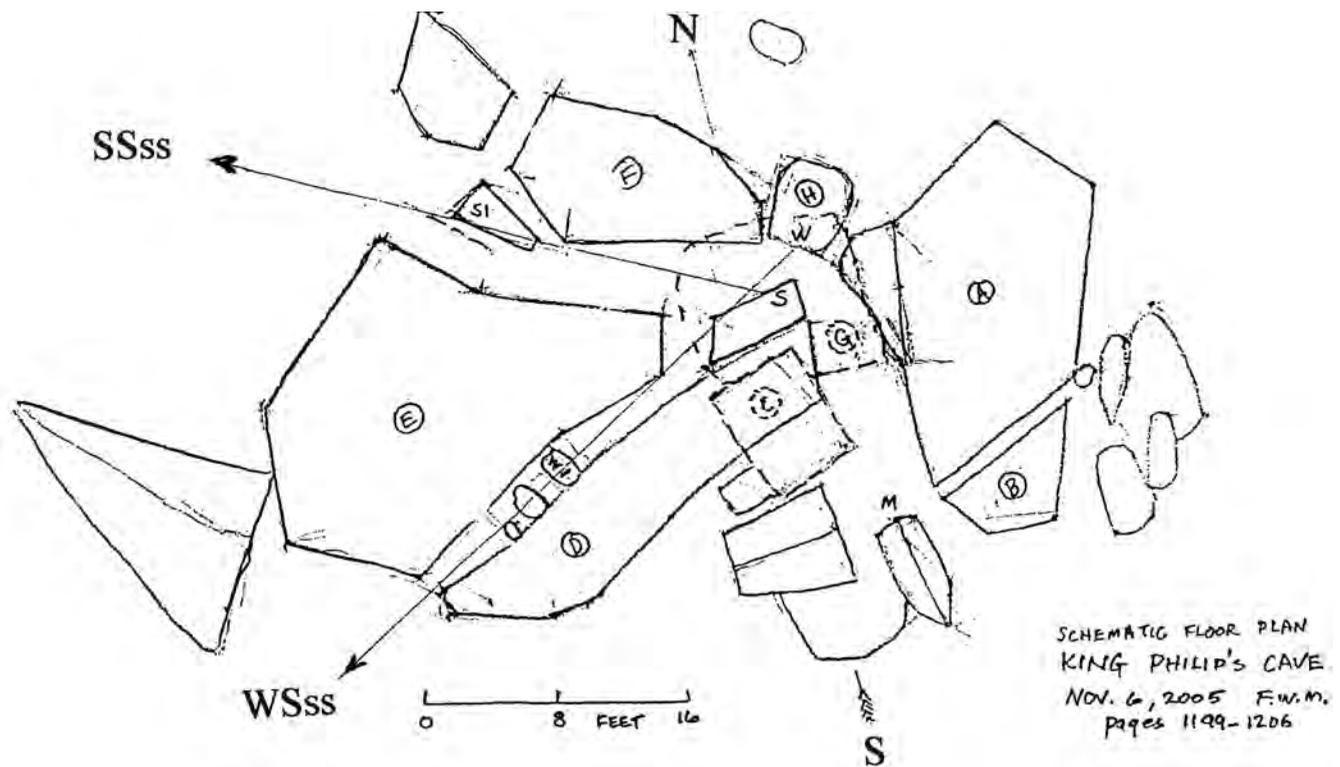


FIGURE 5. MEASURED PLAN OF KING PHILIP'S CAVE, INDICATING PRIMARILY THE OUTLINE OF BOULDERS AT FLOOR LEVEL. A, E, F, D - LARGE BOULDERS. THESE BOULDERS FRAME AN INTERIOR CAVE ROOFED BY THE SLOPING SLAB G AND FURTHER LOADED BY THE BOULDER C. THE SURFACE OF F MATCHES E, AND THE SURFACE OF D MATCHES E. STONE S1 AND THE SURFACE OF E MAKE A SMALL TRIANGULAR OPENING AND FORM A SUNBEAM WHICH PROJECTS SIX METERS DOWN THE PASSAGEWAY BETWEEN E AND F ONTO A SLUMPED RECTANGULAR STONE AT S. STONES AT W1 LIMIT THE BOTTOM EDGE AND THE SURFACES OF E AND D LIMIT THE TWO UPPER EDGES OF A TRIANGULAR SUNBEAM WHICH PROJECTS SIX METERS DOWN THE PASSAGEWAY BETWEEN E AND D ONTO THE VERTICAL SURFACE OF STONE H. M MARKS THE ENTRANCE TO A SOUTHERN PASSAGEWAY.

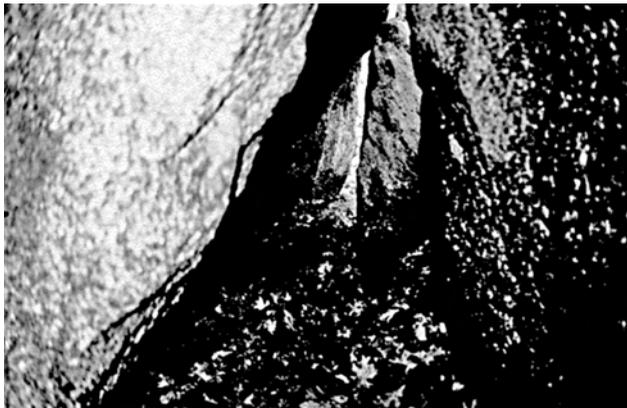


FIGURE 6. SLAB BISECTING THE ENTRANCE TO THE CAVITY.



FIGURE 7. VIEW, FROM INSIDE OF THE CAVITY LOOKING OUT, OF THE SETTING SUMMER SOLSTICE SUN JUST PRIOR TO SUNSET AT 7:37 P.M. ON JUNE 23, 1996 (MARTIN 2006).



FIGURE 8. VIEW OF THE SETTING SUN FROM INSIDE THE CAVITY THROUGH THE WINDOW (MARTIN 2006).

FIGURE 9 is a copy of field notes recorded by Jim Mavor at the other apparently modified boulder set shown in **FIGURE 4**. These boulders are at location 2 on **FIGURE 1**. They are northwest of the boulders discussed above. On December 21, 1980, during a winter solstice sunset, Jim observed the formation of a sun dagger prior to sunset. **FIGURE 10** is a photograph of the near final position of the dagger on the underside of boulder C, taken from inside the small shelter under its overhang, as the solstice period sun set. At sunset, the dagger contracted towards its top and disappeared. Several days later, on December 26th and 30th, during the period from noon to sunset, Jim noted that the vertical slab A appears to have been placed so that its west edge controls the light pattern generated by the southeast vertical edge of the rock table B (Mavor 2006). **FIGURE 11** is a photograph of the near final position of the dagger, taken from outside of the complex by Fred Martin at 3:34 P.M. on December 22, 2005, minutes prior to true horizon sunset.

The beginning of this sequence starts in late fall, when a vertical sunlight stripe, formed by the sun shining through the space between the east edge of rock table B and the west edge of slab A, appears on the underside of boulder C in late afternoon. As the sun approaches sunset, the sunlight stripe

rises and moves toward the south as the sun moves north. As shown in **FIGURE 12**, the edges of A and B may have been worked. Long time exposure to the elements does not fully account for the condition of the surfaces of the edge of table B. Its surface is different than the matching edge of its parent, boulder C. (Permission to excavate is needed to verify the presence of chippage under the vegetation debris at the base). As the days progress toward the solstice, the setting sun is blocked by the large boulder set HB/HD on the near horizon (**FIGURE 13**). As the date of the solstice nears, the interference of the horizon boulders is substantially reduced, and the top of the stripe, now visible on the underside of boulder C, takes on a triangular shape controlled by the upper edges of A and B. About nine days before the solstice, the sun at sunset is mostly free of the influence of boulder HD and the dagger image is clearly visible on the underside of boulder C, as seen in the photograph (**FIGURE 11**). As shown in **FIGURE 13**, when viewed from the area of the dagger, by the day of winter solstice at sunset, about 2/3 of the sun is free of interference from the boulder HD. In the nine days approaching solstice, the time period of the final dagger display, the sun at sunset travels a distance of about 1/3 of a degree on the horizon (2/3 of its diameter). This short distance of movement in the nine

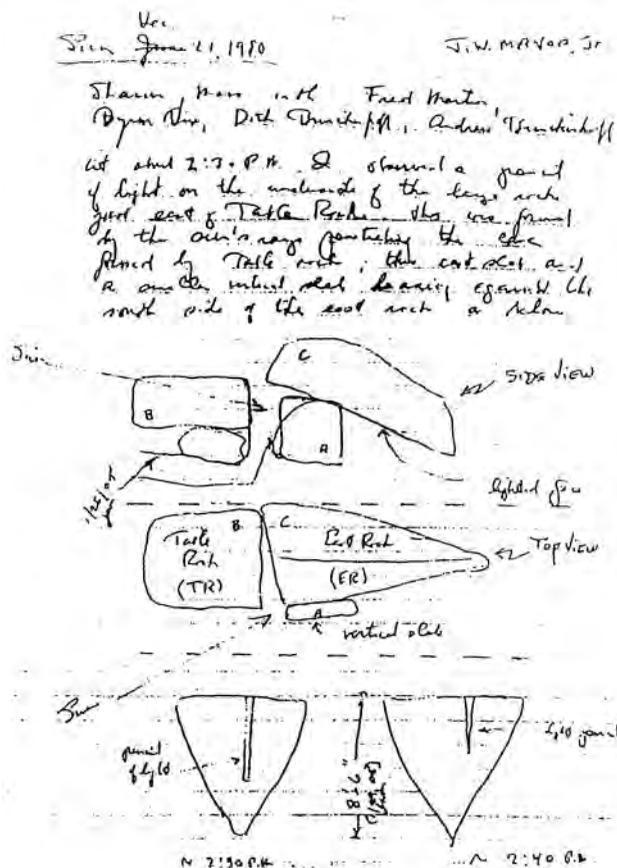


FIGURE 9. COPY OF FIELD NOTES RECORDED BY JIM MAJOR AT THE OTHER APPARENTLY MODIFIED BOULDER SET SHOWN IN **FIGURE 4**.



FIGURE 10. NEAR FINAL POSITION OF THE DAGGER ON THE UNDERSIDE OF BOULDER C, TAKEN FROM INSIDE THE SMALL SHELTER UNDER ITS OVERHANG, AS THE SOLSTICE PERIOD SUN SET.

days before and after solstice, when the view of the sun is minimally blocked by the rock HD and the dagger is in clear view, increases the probability of this boulder complex being used as a simple counting device for determining the correct day for the celebration of winter solstice. Similar day counting practices are rooted in pre-history. Examples include:

The Christian Advent period before and the 12 days of Christmas after winter solstice.

The Zuni day count period Shalako, prior to winter solstice, which is used to determine the actual date of the event (Stevenson 1901).

Jim Mavor, using his and Fred Martin's early field notes and additional data collected in the December, 2005 solstice period, constructed a working model of the **FIGURE 4** boulder set that aided us in deciphering the event sequence. The model can be adjusted to display the daily movement of the sunlight stripe showing the progress of the image over time towards winter solstice.

There are published references to a similar control of sunlight at other prehistoric sites. Krupp (1983: 129, 152-156) discusses three reported instances of Native American use of

sun daggers in association with solstice, one at Fajada Butte in Chaco Canyon New Mexico, another at Hovenweep in the Four Corners area, and one at Burro Flats in the Simi Hills north of Los Angeles. Rudolph (1998) details a solstice sunrise dagger event at the Willow Creek site in northern California, prior to winter solstice.

This type of evidence has been considered irrelevant by many professional archaeologists in the Northeast who are usually not familiar with the universality of pre-contact ritual practices and the connections to the cyclic movements of the sun, moon, and the stars. The subject has therefore been summarily dismissed as not worthy of in-depth investigation, or as in Massachusetts Historical Commission (2003b), been subjectively associated with studies of non-related post-contact period constructs such as discussed in Neudorfer (1979), Cole (1982), or mistakenly associated with the speculative archaeological fantasies discussed in Williams (1991).

The result, to the detriment of the pre-historical record, is that there is little written on the methodology of Native

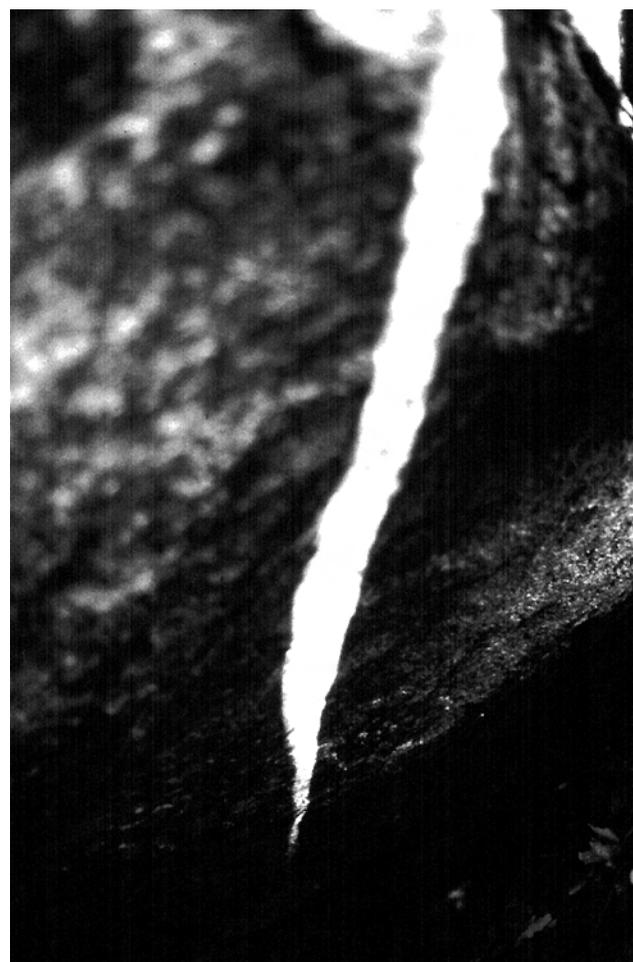


FIGURE 11. NEAR FINAL POSITION OF THE DAGGER, TAKEN FROM OUTSIDE OF THE COMPLEX AT 3:34 P.M. ON DECEMBER 22, 2005, MINUTES PRIOR TO TRUE HORIZON SUNSET (MARTIN 2006).



FIGURE 12. VIEW ILLUSTRATING THAT THE EDGES OF A AND B MAY HAVE BEEN WORKED.

American ritual activity in the Northeast other than that related to the analysis of grave goods. There are, however, several local area references to the use of structures, hilltops and solstice by Native Americans in a ritual context:

- ▶ *A Key into the Language of America*, by Roger Williams (1646) in which he refers to the ritual use by local Native Americans of hilltops for appeal to the gods, the sun at winter solstice (a celebration of “their kind of Christmas”), and the knowledgeable use of stars and the Big Dipper.
- ▶ *The Beachwood Confederacy 1709–1809*, by Leonard (2003), where he notes that just prior to King Philip’s War in 1673, Tispaquin, a Sachem in the region of Lakeville, Massachusetts, took the precaution of having a significantly located viewing hill in the Betty’s Neck area entered into the deed records at Plymouth to document ownership by his kin. Although he was beheaded in 1676 at the end of King Philip’s War, the deed was subsequently upheld, thus preserving the record of its significance. Four acres of the hilltop were taken by order of the Selectmen of Middleboro

in 1690, and then leveled to prevent its use by local Indians. A U construct sky-viewing site is on a summer solstice sunrise line from the top of this hill (Ballard, 1999).

- ▶ *Anthropomorphic Fertility Earthworks of Southeastern New England*, where the former Wampanoag Tribal Historian, Great Moose (Gardiner 1998), discussed the pre-contact ritual use of three hilltops (Dancing Hills) and hilltop effigies in southeastern Massachusetts.
- ▶ *The Voice of the Dawn*, in which Wiseman (2001) touches upon the use of above ground elements in a Native American sky use context in northern New England.
- ▶ *The Native New Yorkers*, where Pritchard (2003) discusses the prehistoric location of Native American burial sites along solstice lines emanating from a hilltop near Montauk on eastern Long Island, NY. (A former site in Rehoboth, MA appears to have been used similarly)

U SHAPED CONSTRUCTS

The second type of construct found on this site is illustrated in FIGURE 2. The back of the structure is a large natural boulder. The front of the structure is built of laid up stone with two arms extending outward, completing the U shaped opening. There are four additional similar U constructs on this site. Constructs of this type are usually one to two meters in diameter, and assembled from local stone. About 100 have been reported at over a dozen other locations in eastern and central New England, including two other locations in Sharon. One site is in a state park two kilometers to the southeast of this site, the other was 4.5 kilometers to the northeast. A third site is located on the Sharon/Foxboro town line about 1.5 kilometers to the west.

All were in remote areas on high ground. Their locations are all chosen so that the opening faces a natural or man-made horizon marker to assist in viewing a sky event like a solstice sunrise or the position of a northern constellation. Many of these sites were found over the years by the authors, using surface walkover and mapping strategies in suspect areas (Mavor & Dix 1989; Ballard 1996). Other sites were found by follow-up of local references.

Chartkoff (1983) discusses the ritual use of similar structures, which he referred to as “prayer seats,” by high ranking Yurok in northern California. Those structures were situated on peaks or high rocky outcrops with little vegetation to restrict the view. The Yurok speak an Algonkian-related language. Reeves (1994) describes the high ground location and ritual use of similar U shaped constructs, which he refers to as “vision quest” structures, in northern Montana and southern

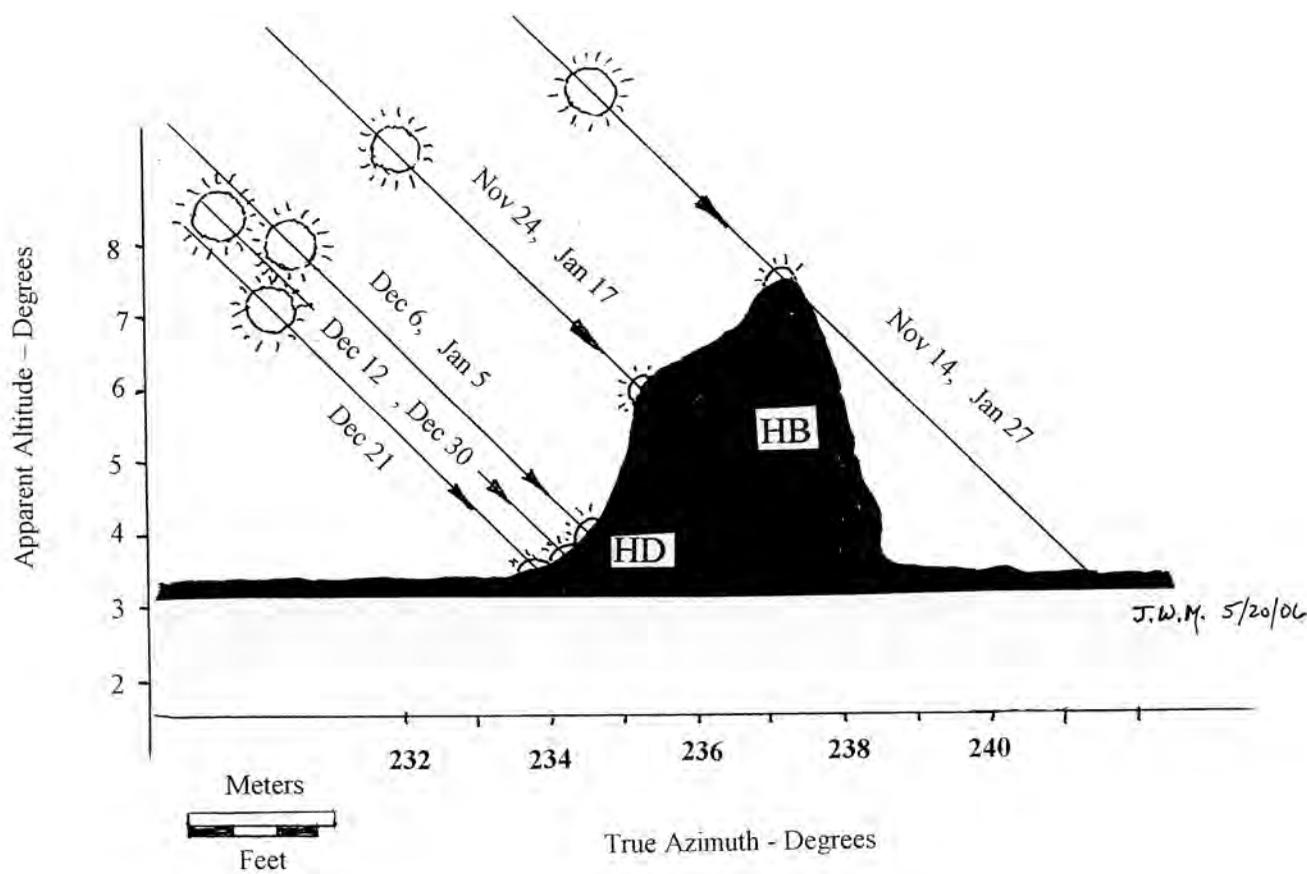


FIGURE 13. SUN'S PATH AND HORIZON AS SEEN FROM SUN DAGGER (NUMBERS ARE APPROXIMATE).

Alberta, Canada. They are used by the Blackfeet, who also use an Algonkian-related language. Those U structures are found on and around Chief Mountain (Ninaistakis), the sacred mountain in the ritual landscape of the Blackfoot tribe. Some of those U's point toward the mountain from locations as far away as 40 to 70 kilometers.

The U shaped sky-viewing constructs in Sharon are located in positions 3, 4, 5, 6 and 7 on two separate drumlins as shown in FIGURE 1. They are north of the two rock clumps, previously discussed, that are located at positions 1 and 2. The U structure shown in FIGURE 2 is at position 3 in FIGURE 1 and faces southwest toward a point on the north slope of the nearby drumlin, which is used as a natural horizon. An observer will see the sun set on winter solstice on this line. The construction of this particular U differs from the four others on this site. In addition to the common U configuration, this construct has a mantel of stones across the face of the supporting boulder, connecting the arms. It is similar to several U constructs that were observed at another site in Groton, Massachusetts, 70 km to the northwest (Ballard 1999). This suggests a shared ritual connection across tribal boundaries. When approached from a distance, the mantel gives this U structure the appearance of being a cave-like opening into the earth, similar to an emergence structure of the Kivas of the southwestern United States (Krupp 1983: 231,233). We suggest

that the U's are places to connect the supplicant on earth with the sky and the gods above. They become symbolic world entrances used as a component of Native American ritual in New England (as noted by Bragdon (1996) and by Hall (1997: 129) for Hopewellian earthen U constructs in Ohio). There are three other U's nearby on this drumlin at locations 4, 5 and 6 on FIGURE 1. Their constructions differ from that of the U shown in FIGURE 2 and from each other. This suggests they were built at different times or by different users. Two are on the drumlin's upper surface about 60 meters north of the U shown in FIGURE 2. The U at position 4 is on the east side near the northern peak and faces east northeast toward summer solstice sunrise. The U at position 5 is located slightly downhill to the southeast. The azimuth from this structure points to the top of another drumlin about 250 meters away. Its function has not been identified. This azimuth is also present at several other sites. We strongly suggest that the solstice oriented constructs discussed above are markers indicating Native American cultural use.

THE BIG DIPPER AND THE HOLE IN THE SKY

At the local latitude, which is about 42 degrees north, the Big Dipper (the northeastern Native American Bear (Williams 1643)) is always above the horizon during its cycle

around the North Pole. At present, the tail of the Dipper is 1.4 degrees above the horizon when it crosses the meridian at its lowest point in the early evening in mid-January. As observed here and at several other sites, the selected location for U shaped constructs that face true north is always below the top of the hilltops chosen as horizons. They therefore provide an observer with a horizon so that the Dipper's tail, when viewed in winter in the early evening, appears to brush the earth, connecting the earth to the sky.

In studying the structures at positions 6 and 7, we observed several differences. Their directional azimuths are the same, true north. They use a high point on their hill as a natural horizon and they are located below the high point facing uphill. However, their constructions and positions on their respective drumlins are significantly different. The U at position 6 (FIGURE 14) has a vertical slab as its backrest and has short laid up stone arms extending outward. It is located slightly above the low point of a shallow saddle 34 meters downslope from the drumlin top and 1.8 meters (3 degrees) lower than the horizon. The U at position 7 (FIGURE 15) is a D shaped solid pile of stones with arms extended outward from the arc of the D. It is 190 meters downslope and 15.8 meters (4.8 degrees) below its facing hilltop. This strongly suggests, that for viewing the northern sky, these structures were used at different times by different observers. The differences in location for these two north facing structures lead us to an interesting set of possibilities. A review of astronomical tables shows that 1000 years ago the Dipper was five degrees higher in the sky at its lowest point. Due to precession—a slow drifting of position in the sky caused by the wobble of the earth on its axis—it has dropped to its present position at a rate of ½ degree per 100 years. This suggests that for an observer lying down in the U and facing the north, the U at 7 is pointed 1.8 degrees higher in the sky than the U at 6. The 1.8 degree difference in viewing angle from these two north facing U's suggests a 350 to 400 year separation in time for the use of structures 6 and 7. If the observers were seated, the



FIGURE 14. U AT POSITION 6, WITH A VERTICAL SLAB AS ITS BACKREST AND SHORT LAID UP STONE ARMS EXTENDING OUTWARD. BALLARD



FIGURE 15. D SHAPED SOLID PILE OF STONES WITH ARMS EXTENDED OUTWARD FROM THE ARC OF THE D.

eye level angular difference increases to about 2.7 degrees. This implies a use time difference of about 540 years. Without excavation, other methods for accurately dating these stone constructs are not available at present.

Literature indicates that for the Native Americans in the Northeast, the Bear and “The Hole in the Sky” (the area within the orbit of the North Star Polaris) were significant sky objects:

- ▶ From the story about creation from the Iroquoian speaking Huron: The pregnant woman from above the stars who, with her dog, fell through the Hole in the Sky while chasing a bear and landed on the back of Turtle. Her daughter subsequently gave birth to the twin creator/transformer gods (Brebeuf 1636). In a fight with his brother one of the twins is wounded in the side by a blow from the horns of a stag used by his brother as a weapon. The blood falls to the ground and becomes flint.
- ▶ The woman who fell from the sky is also a key element in southern Algonkian creation mythology (Gunn-Allen 2003).
- ▶ Turtle is the bearer of the earth who floats on the primal sea in the earth diver myth present in both Asia and North America (Campbell 1959: 274-275; Hall 1997:19).
- ▶ For the Mohawk, the dog became the North Star (Rustig 1988). The Bear becomes the Dipper Bowl (Volmar 1996).
- ▶ The Bear (Dipper) connects the earth to the sky (Speck & Moses 1945).
- ▶ The Munsee/Mahigan (Algonkian) Big House mid-winter renewal ceremony highlights the Bear cycle. (Speck & Moses 1945 re: New York State; Schlesier 1987: 175-176 re: Oklahoma). The Bear (Dipper bowl) leaves his den (Corona Borealis) in the spring. The Bear is followed

by seven hunters (the three stars in the Dipper's tail plus four stars from the constellation Bootes, including the major northern star Arcturus). When the hunters slay the bear in the fall, the bear's blood falls to Earth turning the leaves red. The rendering of the bear's fat is signaled by the first snowfall. The ceremony was performed in mid-January. (As noted above, the tail of the Dipper crosses the meridian about January 15, a prelude to the Bear returning to the sky).

References for the use of structures for sky viewing include:

- ▶ Gunn-Allen (2003), in a discussion about the southeastern Algonkian Creation Ceremony, refers to above ground "vision" structures in the northeast named for the god Hobbomock. He is equivalent to one of the paired southeastern transformer gods, Oke, responsible for illness and the other things that make life difficult. Oke is the god to whom one appealed for assistance in overcoming these obstacles. Other regional Algonkian names for this god may include Mittand, Squantum (Bragdon 1996), Moshop, Cheepi, (Simmons 1986) and Glooskap (Leland 1884).
- ▶ Bragdon (1996) comments on the hierarchical structure from pniese to pau waus, who were responsible for eastern Algonkian ritual conduct and the practice of prayer appeal to one of the twin transformer gods, Hobbomock.
- ▶ Simmons (1986) collected and discussed oral history stories about the primary Native American transformer gods in southeastern New England referencing Moshup and his equivalent, Hobbomock. With the advent and assimilation of the religious beliefs of the English, both were transformed into the devil (Salisbury 1982), and "the devil came from the north in the night" (Simmons 1986).

In addition:

- ▶ Day (Foster & Cowan, 1998:176, 183-194) notes that the Algonkian at St. Francis in Quebec referred to "Obamakuit the wanderer." In prehistory, the "wanderers of the sky"—the planets—are gods, and the stars and constellations are animals (De Santilla & Von Dechend 1969). A significant element of the St. Francis population were Sokokis, originally from the area of the central Connecticut river. This is the area where the sky viewing site at Acworth, NH is located (Ballard 1999). Day also notes that Glooskap "came from an island with his grandmother in a canoe" (stone boat?).
- ▶ Nicolai (1895) reports that Glooskap came from the North and departed to the West, leaving behind the stones for making weapons.

These snippets from oral traditions are remnants from memory which relate to the use of elements of the sky in a ritual context, when viewed from selected locations, by pre-contact Native Americans in the Northeast. Based on the data collected from this Sharon, MA site, and from similar observations from structures we have studied at other sites, we suggest that the constructs on this Sharon site were used in a ritual context related to these stories, and that the use was pre-contact.

OTHER NATIVE AMERICAN CONNECTIONS TO THE SITE

This Sharon, MA site is located about 0.6 km from a documented prehistoric site. Its location on a U.S.G.S. topographic map is identified by a name that connotes a Native American connection: the rock-shelters shown in **FIGURE 17** noted as "King Philip's Rocks." Recent research on the site has identified a past Native American presence. **FIGURE 17** is a photograph of Late to Transitional Archaic (6000 to 2700 B.P.) lithic artifacts reported to have come from the site (Finneran 2002). They were collected by a now deceased local avocational investigator. Also in possession of the Sharon Historical Society is a taped oral interview with a local resident, Mr. Towner, in 2004 (Fred Martin and Ted Ballard were present during taping of the interview). Mr. Towner described visits to the site with a now deceased local antiquarian and historian, Mr. Walter Reeve. Mr. Reeve showed him three locations on the site where similar types of Native American artifacts had been recovered. Two of the locations were adjacent to the glacial deposits shown in **FIGURE 3**, a third was near the rock-shelter shown in **FIGURE 17** (location 8 on **FIGURE 1**). Mr. Towner stated that he had handled a pestle and a small mortar that had come from the area of location 1. In addition he had observed other stone artifacts that had been recovered from adjacent locations by Mr. Reeve. Near the rock shelter (**FIGURE 17**), in the presence of Mr. Towner, Mr. Reeve, a trained geologist, scratched the surface with a digging tool and turned up stone chippage which he stated was not native to the area. At the same time Mr. Reeve indicated the presence of several fire pits about 15 centimeters below surface at that location.



FIGURE 17. KING PHILIP'S ROCKS.

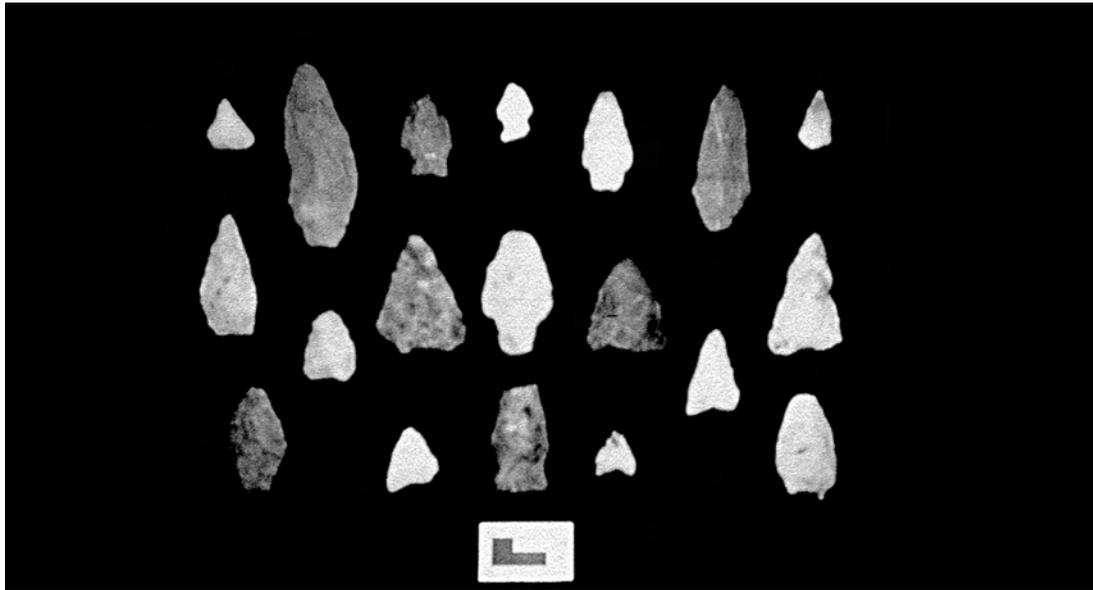


FIGURE 18. LITHICS (LEFT TO RIGHT).

TOP ROW: BEEKMAN TRIANGLE, KNIFE, WAYLAND CORNER NOTCHED, SYLVAN SIDE NOTCHED, NEVILLE, STARK, SMALL TRIANGLE

MIDDLE ROW: JACK'S REEF PENTAGONAL, SQUIBNOCKET TRIANGLE, ATLANTIC SNAPPED BASE, LONG STEMMED ADENA, GENESEE? SNAPPED BASE, DALTON? PREFORM

BOTTOM ROW: STARK, SQUIBNOCKET TRIANGLE, ROSSVILLE, SQUIBNOCKET TRIANGLE, SCRAPER

We do not necessarily suggest that the constructs discussed above are directly related to the time frame associated with the lithics shown in **FIGURE 18**. The artifacts confirm an early Native American presence.

The finding of the mortar and pestle suggests an extensive usage period. The use of a Native American name reference on the local topographic map, other historical documents in Sharon (Wade 1976), and oral traditions of twentieth century use by local Native Americans, suggest a continuity of presence preceding and after the contact period

WHENCE THE PARADIGM ?

The lack of acceptance of a prehistoric context for stone constructs in New England has evolved from the existing paradigmatic belief that "Native Americans in the Northeast did not use stone constructs prior to the contact period." This lack of recognition has severely affected our efforts to encourage preservation. There are many factors which have led to this impasse. In other parts of the continent, prehistoric cultures and belief systems remained intact for an additional 200+ years after the contact period. This provided an opportunity for mid and late nineteenth century travelers and ethnographers to observe and record existing cultural practices, thereby providing a window into the past that was closed in the Northeast by the continuing effects of conflicts of the 1600s. It remains mostly closed to this day since non-New England data has seldom been considered applicable to local studies (Massachusetts Historical

Commission 2003b). The paradigmatic disconnect has deep roots (Mavor & Dix 1989). Part of its legacy is that history is always written by the winner. From 1616 to 1675, the local contact period native social culture was decimated by the effects of disease, war and theocratic edict (Jennings 1975; Lepore 1998). What little information that remains has been garnered from isolated remnants of scattered residual oral traditions, artifacts impervious to rot found in the earth during excavations, and by wading through the theological bias of the historical record.

Another impediment is the bias brought from Europe by our cultural forebears, the Pilgrims and Puritans who, on their arrival in Massachusetts 400 years ago, collided with the sky-based theology of the American Neolithic. They were encumbered by the burden of adherence to the Judeo/Christian belief system, a structure of tenets refined over the 2300 years that had elapsed since their doctrinal predecessor, Josiah, had killed the competing sky priests of Baal. Josiah brought his subjects off the hilltops and down to the reconstructed temple to worship (2 Kings XIV: 20). Our predecessors followed religiously in his footsteps. Native American ritual customs were condemned as devil worship. Edward Winslow, the first governor of the Plymouth Colony, recognized elements of similarity in Native American religious practice to Puritan and Pilgrim Christianity. One of the Native paired gods, Keitan/Michabo, was comparable to the biblical creator. The other, Hobbomock, was responsible for the things that made life difficult (illness, conflict, crooked rivers, moun-

tains etc.). Contact with him required the supplication of a pnoise or pau waus. Winslow suggested a strategy of equating Hobbomock with the devil as a means of undermining the pau waus's authority, in order to gain control over the native population's socio-ritual structure, and thus facilitate conversion and suppression (Salisbury, 1982: 136-139).

John Eliot, not recognizing the depth of Hobbomock's role in native religion, had this strategy backfire during his first attempt at proselytizing at Dorchester Mill in September, 1646. The native Sachem, Cutshamoquin, violently resisted the comparison of Hobbomock to the devil, and Eliot scurried back to Boston (Jennings, 1975). For the Native Americans, the fallout was a Bay Colony General Court edict in November, 1646, which forbade the practice of native religion under pain of death, and authorized the setting up of special "villages" to make it easier to establish theocratic and political control over the local Indians. Their religious activities were condemned as devil worship.

The influence of these edicts still persists. In addition, in the Northeast, increasing population density, the plow, and an ecological environment not friendly to preservation of non-lithic remains, combined to erase most of the contextual record of the prehistoric period. The result is that we are left trying to interpret the past by working with the residual remains of a buried record and a negative mind set about the capabilities of the prehistoric population. This mindset has been reinforced by the narrowness of the methodology of interpretation widely employed in the academic environment: "More often than acknowledged, inference to the best hypothesis is a ranking of probabilities, not certitude" (Kehoe 1992).

Here are some examples of inferences implying certitude regarding use of above ground stone constructs which reinforce the paradigm and deny relevance for other constructs:

- ▶ The continuing use of hearsay to attribute the construction of Queen's Fort in Exeter, RI to the post-contact period. This neglects the clear evidence of sky viewing use at winter solstice (Mavor & Dix 1989) which supports the case for a much older pre-contact use hypothesis.
- ▶ The conclusion of Hall & Woodman (1972) that the "Beehives" (U structures) at Acworth and Swansea, NH were nineteenth century trapping structures was influenced by an apparent transposition error made when recording field notes for a reported azimuth measured at Acworth. The error confounded their horizon observation data, caused them to miss the connections to winter and summer solstice sunrise, and thus limited the scope of their analysis. In addition, no explanation was offered as to why it made sense for

trappers to climb a steep trail to the top of a mountain in Swansea, NH to trap foxes in enclosures oriented to sun and northern constellation horizon events (Ballard 1999). Their trapping use conclusion subsequently became a tenet of the prevailing paradigm. (Snow 1980; Cole 1982).

- ▶ In the midst of an atmosphere of proposed exotic overseas contacts as sources for much of New England's relict stonework, Neudorfer (1979) identified an agricultural storage use for a class of stone chamber constructs in Vermont. With this limited study of one structure class, coupled with the above two citations and a dearth of information on pre-contact Native cultures in New England at that time, the paradigm "Native Americans in the Northeast did not use stone constructs prior to the contact period" was reinforced and accepted as a tenet by much of the professional archaeological community in New England.
- ▶ Cole (1982) reported on stonework similar in context to that discussed by Neudorfer, and cites the Hall and Woodman report conclusions when comparing structures that have little or no commonality in location or construction.

In documenting our hypothesis, we have used the guidelines noted by Neudorfer for minimizing the excesses inherent in relying on "repeating past anecdotal, pre-paradigmatic investigations". We have:

- ▶ Collected a body of facts based on observation and measurement.
- ▶ Used an analytic methodology.
- ▶ Made an attachment to the norms of a culture.

In addition, we have followed the admonition in the last paragraph of Fitzhugh's foreword to Neudorfer (1979), "Professional scholars must also do a better job at working together with local societies and amateur groups in identifying, clarifying and preserving the remarkable traditions of our pioneers and native predecessors." We have worked with other avocationalists, representatives of the Native American community and a few professional archaeologists on this and other projects. For the most part, professional scholars have declined involvement.

In addition to our observations discussed above, there are several subsequent published reports of pre-contact stone constructs that provide evidence of early Native American use of stone structures in New England. These strongly suggest that the paradigm needs to be revised. Some examples follow:

- ▶ Late Archaic lithics were found at the base of a drip-line stone wall at the Flag Swamp rock-shelter in

Marlboro, Massachusetts (Huntington 1982). In addition, Blancke (2006) discusses the apparent ritual burial of a bear associated with the Archaic level at this site.

- ▶ A pair of C-14 dates, 790 +/- 150 B.P. (GX 9684) and 875 +/- 160 B.P. (GX 9685), were obtained from charcoal samples found during the excavation of a stone mound in Freetown, Massachusetts. The mound was located in an area of approximately 1000 stone pile constructs in a non-agricultural context. The charcoal deposits were found below surface in front of an internal stone U construct that framed an area that contained 120 chunks (totaling 4.5 kg) of red ochre, a white quartz horned effigy, an anvil and a standing slab (Mavor & Dix 1989).
- ▶ A 1.7 centimeter square potsherd of low fired earthenware, Woodland Period pottery (Vandiver 1978), was found seven cm below ground surface under one of a group of 70 stone piles on a ridge spur at an altitude of 500 m in South Royalton, VT (Mavor & Dix 1989).
- ▶ An extensive stone prehistoric fish weir in central Maine (Peterson et al 1994).
- ▶ Four U shaped stone constructs with significant horizon azimuths, two with C-14 dates from charcoal, 800 +/- 150 B.P. (Beta 54901), 860 +/- 50 B.P. (Beta 62401), were excavated at a site in Barrington, RI. The constructs intruded into a Late Archaic to Middle Woodland locus adjacent to a known Native American burial site (Ballard 1999).

CONCLUDING REMARKS

Over the past quarter century the authors have studied above surface, horizon oriented, man-made stone constructs in the Northeast. We have observed their structure, location and interrelationships. Thomas (1978), while noting the significant benefits of using statistics in evaluating archaeological data, discusses problems inherent in the use of significance tests. Recognizing that for many of our observations, due to the horizon being obstructed by the growth of vegetation, we are unable to obtain precisely verifiable data. This, coupled with small sample sizes, led us to follow the suggestions of Romain (1992), for dealing with similar types of archaeo-astronomical data. Based on two clear data subsets, sun cycle and northern constellations, we have relied on the use of the probability of occurrence and logic-congruency testing for evaluating the data collected at this site.

- ▶ There are multiple alignments on this site, some of which have been verified.
- ▶ There are similar patterns of alignments at other sites, some of which have been able to be verified.

- ▶ The alignments are consistent with elements of local Native American culture.

We conclude that the constructs on this site relate to use of ceremonial landscapes by pre-contact period Native Americans. These landscapes were part of a fundamental, widespread belief system present across North America. Due to the continuing denial of relevance to pre-contact culture for above ground stone constructs by the professional community, a significant number of the sites we had previously identified have been lost to housing developments without an opportunity to conduct salvage operations:

- ▶ Groton, MA mid to late 1990s.
- ▶ Rehoboth, MA 1998/2001 (Including evidence of burials on a Solstice sunset line).
- ▶ Sharon, MA 2001/2003.

In addition, formal denial of applicability (MHC 2003a and MHC 2003b), severely limited the options available to the town of Sharon to protect the integrity of this site. We have also observed "enhancements" to above ground structures at nearby state parks.

Recognizing the need for a higher level of protection, we strongly advocate that this particular site, and others with similar elements, be recognized as Native American sacred sites. In addition, we ask that the paradigm "Native Americans in the Northeast did not use stone constructs prior to the contact period" be revised, and that all appropriate actions be taken to preserve identified sites, and that such efforts receive the support of the professional archaeological community.

Edwin C. Ballard
James W. Mavor, Jr.

ILLUSTRATIONS

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