Exploring Old Holes on a Treasure Island*

Whose hole this is I think I know
He died a hundred years ago -
He will not mind me digging here
To dredge his works up from below.

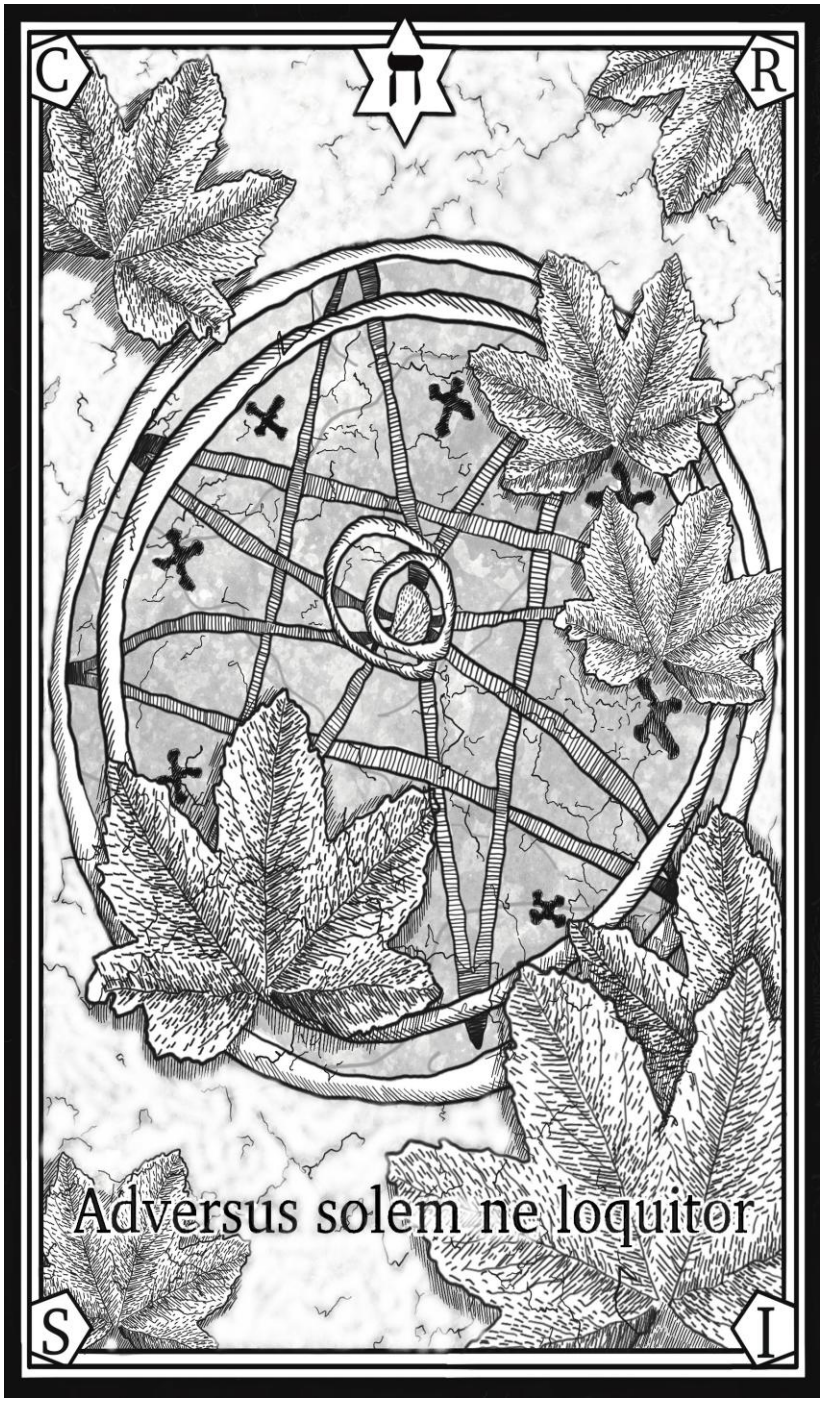
My partners think it very queer
They're skeptical, and greatly fear -
To throw good money after bad
On barren holes from yesteryear.

They tell me that I must be mad
To think that treasure can be had -
From holes that other men have dug
And came up empty, broke, and sad.

But I just take another slug
From Hope's eternal moonshine jug -
I'm bitten by the Treasure Bug
I'm bitten by the Treasure Bug.

*(with apologies to Robert Frost)

Joe Urbanski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Adversus solem ne loquitor
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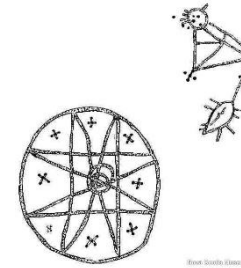
Chapter Eight

POINTS IN TIME

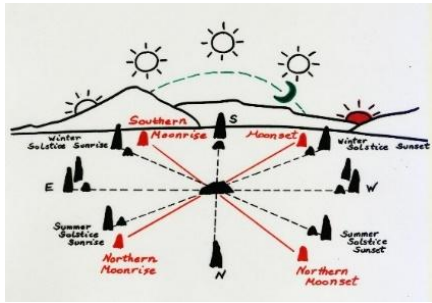
By Christopher L. Boze and Brent "Sally" Sallans

A question to ask: is the 8-point star of Nova Scotia a solar calendar?

In the early 1980's a man was walking through the Bedford Barrens in Bedford, Nova Scotia. During his walk he discovered many petroglyphs carved in the exposed bedrock. To date, over 450 glyphs have been documented in the area depicting everything from ships to people.



Source: NS Nat. Archives



They have, for the most part, been attributed to the Mi'kmaw, (also Lnu'k - The People), a tribe who had coexisted with the land for millennia until Europeans arrived. By 1760's, they had lost all and were forced away from their traditional heritage lands like those around Halifax Bay; and their early culture was all but destroyed (Dept. Astronomy Univ. Mass.).

One of the most prominent of these petroglyphs in the Barrens is known as the "*8-Pointed Star"* and its small partner, the *copulating couple*. The petroglyphs have been dated to pre-European contact and the colonial invasion and according to researchers are over 500 years old. The stone (boulder) itself is believed to have been engraved using stone tools. This would suggest they were carved before the arrival of Europeans. If so, the petroglyphs predate any other known petroglyph site in Atlantic Canada. This 8- Point Star is used today by the Mi'kmaw not only as a cultural symbol, but also as an emblem of pride, of culture and decoration.

Variations of this symbol exist not only in North and South America but across many continents and throughout recorded millennia.

Source: Mi`Kmaw People

Source: Authors

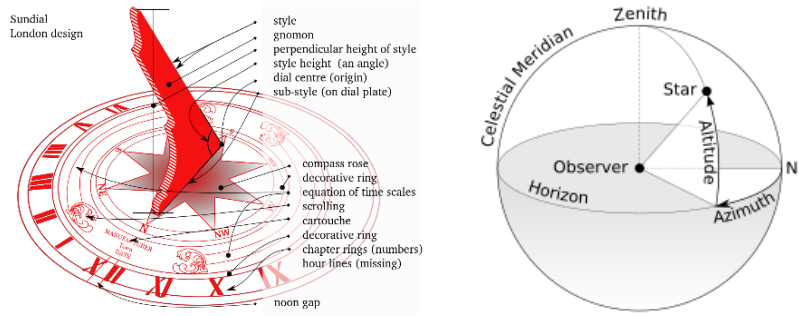
How Does This Carving Fit Into The Oak Island Mystery?

The stone's connection to the Oak Island treasure story and the History Channel's cable show "*Curse of Oak Island*," is an early one for viewers. Back in Season Two Episode Three (SE02/EP03), treasure hunter and author, J. Hutton Pulitzer, took the shows Fellowship members to the Bedford Barrens to view the engraved boulder as part of his overall presentation. In a nutshell, Pulitzer's theory connected Oak Island to Phoenician or possibly even Egyptian or Hebrew sailors based in part on the engraved design. This is perhaps when the boulders carving became the "*8-point Stone*" and received world recognition. And, it is largely through the Bedford Barrens Stone that the whole Ark of the Covenant theory as well as other similar theories received their legs. Even the design could be construed as a Templar Cross if one so desired. This makes an *8-Point Stone* Discussion, fair game as an Oak Island topic. In the case of this study project, my partner and I have concentrated on the possible functions of the *8-Point Stone's* design as a solar calendar for the reasons contained herein.

I am a hobbyist researcher at heart. Any free time during my career as an independent owner/operator of a golf course, where I benefited from understanding and investigating natures' environment, I dedicated my time to research projects like this and co-author books searching for answers. Therefore, one can say most of my life has been spent at the mercy of Nature's elements.

For most modern civilization (at least since the creation of common calendars and mechanized timekeeping), there has not been much of a reason to care about the seasons other than if it is hot or cold and possible clothing selection. Yet to someone in the agriculture or outdoor-related entertainment business… we notice the world a little differently as weather can have a serious impact on ones' livelihood. At that point it becomes a major factor affecting your daily life. As a kid I had no interest in the weather or celestial mechanics short of affecting my swimming or sledding. In fact, the first sundial I can remember seeing was on the courthouse lawn of my little town. The memory of my grandmother as she explained its functions to my cousin and me is still stuck in my mind and I guess that is when I first became aware of the sun's motions and its relation to time.

As an adult, I understood the solar system, but I never made any real note of the constellations or celestial patterns. I was too busy running a business and raising a family. However, I did a lot of irrigation at night and had a better than average understanding of the night sky. I thought it was cool when Haley's Comet came around again and of course the appearance of Hale-Bopp was important. Over the years I have experienced supersized moons and red moons, blue moons, etc. as well as a good share of eclipses and special planetary alignments like the Maya Long Count of 2012. But generally, whatever was making the news was the limit of my astronomy-related interest. However, outside "under the sun" well, that was a completely different thing altogether. It did not take long for me to notice the sun's movement over the seasons or its shadows moving around the flagsticks and bases of trees.



Basic Diagram of a Common Sun Dial and Common Terms.

Courtesy: Wikipedia

The clubhouse and back porch, where I enjoyed my morning coffee, formed its own solar calendar of sorts. Through the eastern window a beam of light slowly made its way across the carpet over the course of the year; I began to note its relation to the seasons. I never made a big deal about it but after a long summer, I began to await the beam to approach a certain spot in the room. When the beam finally touched, I knew the first frost was not far away. For me it was often a celebratory time, a time to take things easy - *that is if we had a good golf season*. As the winter progressed the beam of light retreated, and the process began to repeat in preparation for spring. This room had become my personal solar clock; my own mini-Stonehenge and I watched this scene unfold continuously for over two decades.

After retirement from the golf business, I began to miss what I called my personal sundial, and I began to think about installing a "real" one in the backyard near the pool. I made a search online and within about 2 minutes I'm looking at an image from space of the *Quitsato Sundial* in Ecuador and my mouth drops open - What the heck am I seeing here? My first thought was this image resembled the *8-Point Stone* as it matched the pattern almost to a "T" - *but why?* This was over three years ago, and I was at a complete loss of what to do with this information. The one thing I did know was that I felt like this was something special and I had to research it more.

Courtesy: Google Earth

QUIT SATO SUNDIAL

The Quit Sato Sundial is the first and only Monument in the Middle of the world, located exactly on the *Equatorial Line* or "*Parallel Zero*." It constitutes a large Sun clock 54 meters in diameter, made with a large stone mosaic that indicates the different lines of the solstices and equinoxes, as well as the hours of the day. These are marked by the projection of the shadow of a large 10-meter-high pole which stands exactly in the center of this large circular mosaic. The monument functions as a large calendar and as a sundial, thus becoming the best place in the world to understand the apparent movements of the Sun, how the seasons work, the history of the calendar, the agricultural calendar and different astronomical geographical aspects (Cobo).

Less than three decades old the Quitsato sundial is a working history and tourist attraction located in Quito, Ecuador. Its creator Cristobal Cobo Arizaga designed the structure based on studies of the area's archaeology. This sundial was constructed to learn about these patterns and promote local tourism.

From the Quit Sato website:

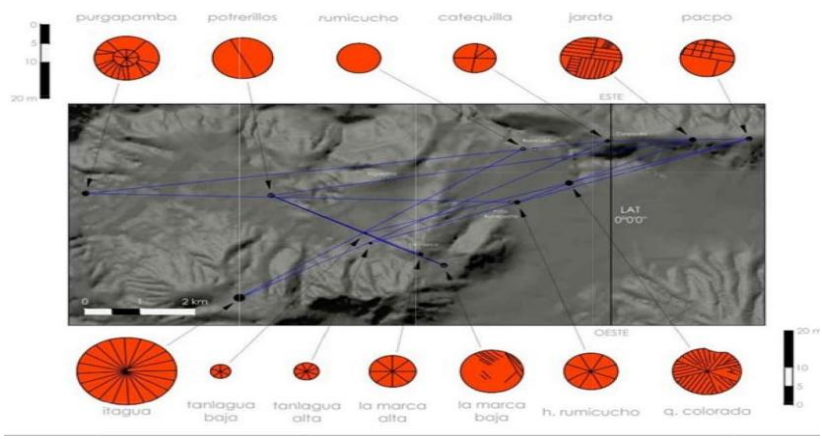
> "*The angles that form the geometric design of the eight-pointed star are given by the tilt of the Earth with respect to the ecliptic of the Earth, thus the platform itself also presents a reading of the celestial mechanics. Detailed positions of the solstices and equinoxes, as well as their respective axes, are presented."*

Source: Quitsato/Cobo

The site's design and construction is the brainchild of archaeologist Cristobal Cobo Arizaga. The design is based on a series of 13 lithic disks discovered in the Catequilla Mountain region of Ecuador. This valley and mountain top lie in a unique position which is right on the equator and maintains a full 360-degree view of sunrises and sunsets. The habitation of the area goes back to 2000 BC with the *Quito-Cara* People developing around AD 800. In 1480 the site was absorbed by the Inca who built a secondary capital there called '*Tawantinsuyu*.' This was on the site of the now modern-day Quito, capital of Ecuador. This city was later burned to the ground by the Inca themselves to prevent it from being used by the Spanish. According to Cobo's Team there is evidence cultural astronomy has been practiced by the Quito-Cara culture into Incan times and on through to the French Geodesic Mission of the 18th century.

THE LITHIC DISKS OF MOUNT CATEQUILLA

Cobo's work illustrated some of the known disks that have been studied to date. These disks, originally thought to be threshing floors for wheat, are now believed to be studies of celestial alignments. Some of the disks are very large and contain multiple alignments. Some have colored or upright stones which mark the azimuths of celestial events, and it is likely there are more disks to be discovered. The design of Cobo's *8-Pointed Sun Dial* located at Quitsato, is a matrix of multiple disks from the Cataquilla region.



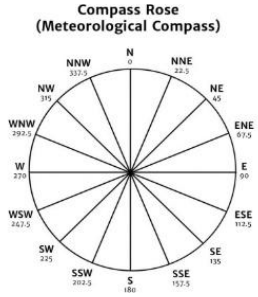
Source: Quitsato/Cobo

Catequilla means '*the one who follows the moon*;' yet whether the name related to the studies once performed in the area is unknown. The territory of the disks cover a large area and has for the most part, been hardly touched by archaeologists. The location lies on the equator at 0.0. latitude and between mountain ranges which makes for perfect viewing and recording of sunsets and sunrises - completely and in their totality. While Cobo and his team believe the site predates the Quito-Cara culture, one thing *IS* for certain, people have been studying the sky at Catequilla for a very long time.

Source: Quitsato/Cobo

After studying the site Cobo's group of astronomers and archaeologists identified representative archaeological sites aligned with solstices, equinoxes, as well as the North-South axis and the Axes of the Ecliptic (Cobo 2004). Of special note at the site of Rumicucho (hilltop fortress) there are three disks in particular which interested the team and are believed to have been viewed in tandem from one central location.

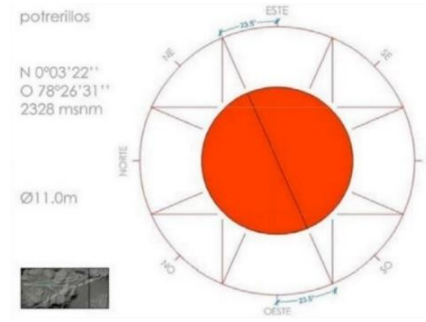
Source: Quitsato/Cobo



Source: Wikipedia

It is from this research that Cobo determined his Quitsato Sun Dial design. I call this the *Ecuadorian Star* or *90-degree Star* for my alignment purposes. It is lined up on an east-west/North – South alignment exactly as the compass rose. Its primary function appears to be the recording of the equinoxes with complete detail as well as solstice recordings. Cobo also points out there is much more to learn at the site, and they have barely scratched the surface of this huge area. The team also suspects there could be a lunar component, however this aspect has not been studied with any detail as of the date of his 2017 article. However, the moon, stars and many other planets all move either above or below the ecliptic line. There is a possibility these "points" could mark other details in yet unknown ways.

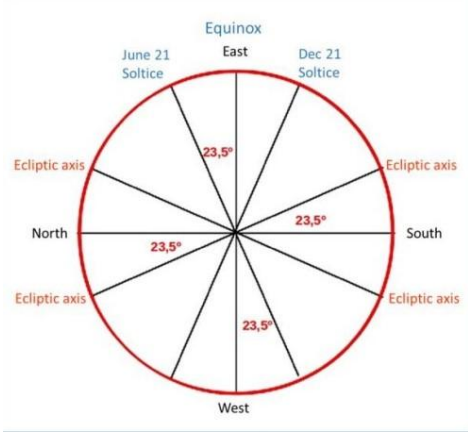
Source: Quitsato/Cobo



Above we see the disk at the center of Ecuadorian Star showing the summer solstice sunrise. This sight line or azimuth lies 23.5 degrees north of east (Este) at solstice sunrise, at 66.5 degrees. Ecuador.

After 16 years of extensive work Cobo's Team produced their version or Matix of the *8-Pointed Star* to promote Ecuador's cultural heritage and grow tourism. They found a site nearby, also on the equator, and constructed what is known as the Quitsato Sun Dial. Its position lies EXACTLY on an east-west/north-south axis. Since opening, the site has continued to expand and grow as it promotes the importance of Ecuador's ancient celestial heritage.

Source: Quitsato/Cobo



This diagram is found in Cristobal Cobo's 2017 paper. Cobo recorded the Ecuadorian azimuths (sight lines) of the Summer Solstice at 66.5 degrees, the Equinox at 90 degrees, and the Winter Solstice at 113 degrees. His disk is aligned due East at 90 degrees and due North at 0 degrees. From the 0.0 latitude they are making precise measurements on a certain part of the globe. Compared to their northern neighbors, summer and winter solstice held a different relevance to South American cultures due to their lives in the tropics. But while many over the millennia have measured time by the sun, the early Ecuadorian's measured the passage of time very precisely and this was further expanded upon by the Inca. Their planet position gave them an unparalleled view of the night sky. which also included the southern hemisphere.

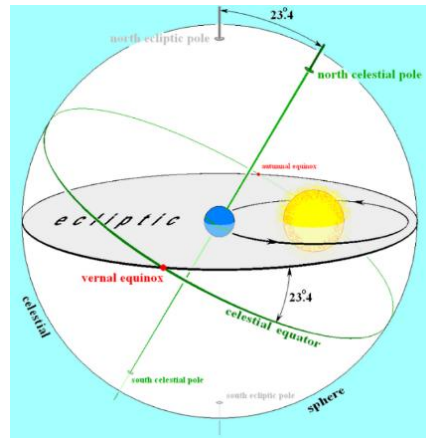
At this point we must ask - if the pattern Cobo created was designed by a matrix of these Lithic Disks in Catequilla, what do those disks have to do with the 8 – Point Star in the Bedford Barrens of Nova Scotia? However, before we go there, we need to know what the solstices and equinoxes are and how to measure them for the purposes of reading the 8 - Pointed Star at the Bedford Basin.

ARCHEOASTRONOMY & CELESTIAL MECHANICS

The following will be a few points about some mighty complex subjects, so please give me some leeway here and inject some Wikipedia. Celestial Mechanics are the perpetual motions of the sun, moon and stars. The motion and measurement of these objects over time is a complex dance and only with the advent of the computer has some alignments at ancient sites been proven. However, for us today there is a basic shorthand test that every site must pass to even be considered as a possible archeoastronomy site. The number we are looking for is 23 ½ degrees and refers to the ecliptic plane and the progression of our seasons.

THE ECLIPTIC PLANE

Source: Wikipedia



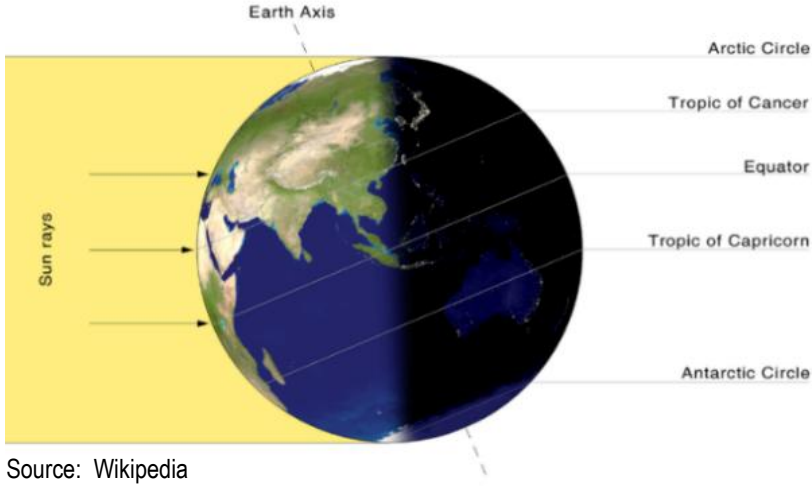
The plane of Earth's orbit projected in all directions forms the reference plane known as the ecliptic. Here, it is shown projected outward (**gray**) to the celestial sphere, along with Earth's equator and polar axis (**green**). The plane of the ecliptic intersects the celestial sphere along a great circle (**black**), the same circle on which the Sun seems to move as Earth orbits it. The intersections of the ecliptic and the equator on the celestial sphere are the vernal and autumnal equinoxes (**red**), where the Sun seems to cross the celestial equator.

As you notice from previous picture, we see the earth and its apparent motions from our ground-based viewpoint. For our purposes let's begin with Earth on the spring equinox. On that day, the sun's solar point rises due East at 90 degrees and sets due west at 270 degrees - day and night are at equal length across the globe for 4 days.

Source: Wikipedia

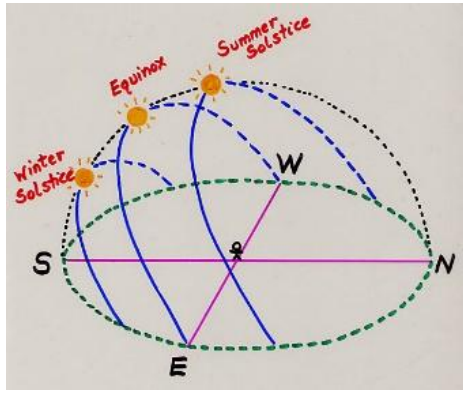
As we progress into summer the sun warms the northern half of the planet and the days get longer. From earth's surface we see the sun heading to its furthest northern position from the equator at 23.5 degrees to the Tropic of Cancer. Once there in June on the longest day of the year, the sun hits the summer solstice, stops, then turns around and heads for the equator. The sun will be back at the equator by late September for another equinox once again rising due East and setting due West.

At this point, the sun begins moving to its furthest southern position as we approach our winter solstice. This is once again 23.5 degrees south of the equator at the Tropic of Capricorn. That climax is met during the December solstice, the shortest day of the year where the sun once again stops, turns around and heads toward the equator. The equinox and solstices record a narrow band at the bulge of the earth, but by using these events as a benchmark, precise measurements about the sun, moon, and time could be produced.



Source: Wikipedia

Sources:
Dept. of Astronomy Univ. of Mass.

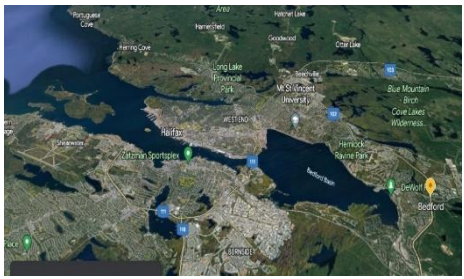


That behind us - let's get back to the 'Belle of the Ball,' the *8-point Star* of the Bedford Barrens.

By the New Year of 2023, I knew it was possible for the *8-Point Star* design to function as a calendar, but I could not find any published measurements of the Beford Barrens Stone or of the site. Being in the continental U.S. I was limited to online resources for information concerning the Stone. Looking at the Barrens from Google earth the first thing that stands out to me is its location at the headwaters of Halifax Harbor. The second important point is it is very near to Ft. Sackville. This was a strategic military site built shortly after Halifax was founded in 1749 and manned for well over 100 years. The hill the Stone is located on faces the east and in the picture below left, of the Sackville River.

The Mi'kmaw Heritage Site is now a patch of forest surrounded by houses. The white striations are exposed bedrock containing the hand carved glyphs.

Source: Halifax Military Heritage Society – Ft. Sackville



Sources: Google Earth

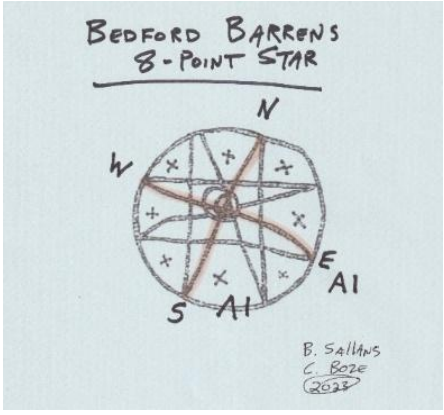
Above photos are Halifax Harbor N.S. leading to headwaters of the Bedford Basin.

THE BEDFORD BARRENS EIGHT POINT STAR

Measurements of the Stone would be needed to move this study any further. I began reaching out to contact various researchers I knew online who lived in Nova Scotia. All who kindly returned my emails saw no connection between the Stone and celestial movements of any kind. However, remember at that time I knew nothing I know now. And really, the idea does sound kinda sketchy - especially coming from a hillbilly in Arkansas with an accent like *Foghorn Leghorn*.

Source: Authors

Anyway, many people over the years have noticed some of the points align toward celestial events but also that some do not. At first glance, compass readings mean little at first. What we know now is the pattern is read much like a clock or the spokes on a wheel – from the center outwards.



I began making posts online to some of my favorite Oak Island sites touting the possibility of the Stone being a solar calendar. These posts were popular and promoted some interest in the project. One of the people interested was Brent Sallans, a retired mariner now living in Halifax. Of all the people to have responded, I got one who spent most of his adult life reading a compass. Brent and I could not have had more vastly different careers. Where my life had been spent in one location, Brent was a soul of the sea who had quite literally sailed the world for over forty years.

Brent Sallans or '*Sally*' if you will, has done it all from Seaman to Deck Officer and on a variety of vessels hundreds of feet in length. Brent retired after spending years on the research vessel **C.C.G.S. Hudson** and is what I would term a true mariner, a great partner and a good friend.

Sally had never been to the Bedford Barrens site before, so his interest was up for a day to get some exercise and check it out. His first trip was to document the site with photos and take a few compass readings. The most important of these being the cardinal points- N-S/E-W. Using Sally's photos and measurements we created our model pictured above. From this first trip to the site Brent gathered enough information to show the Bedford Star matched Cobo's Ecuadorian Star - only the Bedford Star is offset in the neighborhood of 25 to 30 degrees. Passing this first test, I was excited to move on with the project and thankfully Sally wished to continue as well.

Unfortunately, due to weather and other issues we missed the Spring Equinox, and the trees at the site began to leaf out. This compounded the difficulties in attempting to use the Stone for what we think is its true purpose, which is recording the sun's movements. While the site is wooded today, the ecology of the hillside is nothing like it was before the 1750's. But way before the British this region was scraped clean to bedrock by glacial action and that bedrock is what the Mi'kmaq used as their canvas. We believe the site around the stone was… well, more barren in the past and faced openly towards the Bedford Basin and Halifax Harbor. The Bedford Basin itself could have acted as a mirror of the night sky.

The technique of using a bowl of water to reflect the night sky has been used by several cultures over time – ***as above, so below.***

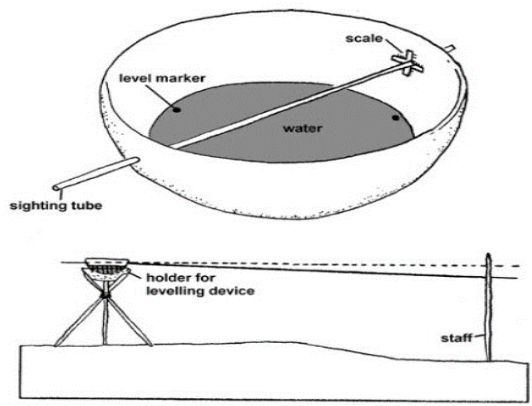
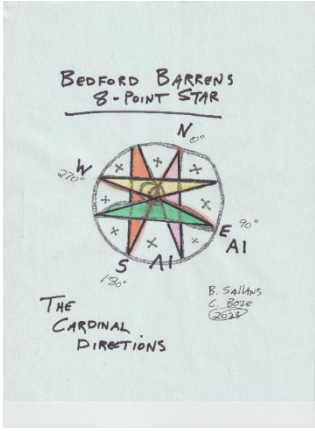


FIGURE 14.26. A pre-Columbian instrument, possibly used for surveying and astronomical observation. Drawing by Sharon Hanna.

Unfortunately, at this point in the Stones' long history, the site has become a thicket and is quite brushy. A subdivision pushes right up to within yards of the Stone and the Heritage Area is surrounded by neighborhoods. There is an unmarked parking lot close by and a modern walking path leads to the Stone and around the site. The photos below shows the entire base Stone with banners hanging from the trees as signs of respect or for prayers. The bowls may be difficult to see but are left for small personal offerings.

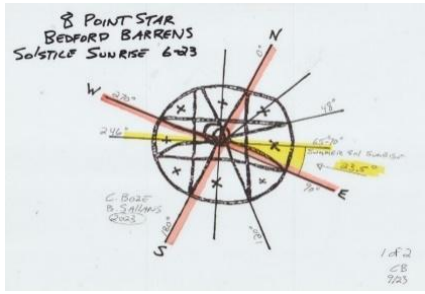
Source: Authors

The location of the Bedford Stone is a known ceremonial place and considered very old to the Mi'kmaq culture. There is a history carved here with over 400 other engravings which can be dated by their content as several hundred years old. General dating of the *8-Point Star* at present puts the carving at over 400 years old. The design on the Stone is believed to have been carved using stone tools. The drawing is very crude, yet delicate and appears to bend towards certain points. This gives the appearance of being designed on site, over time and focused on certain events - most notably the summer and winter solstices. It is possibly for this reason that the axis of the pattern would be advanced 23.5 degrees. Yet, we just do not know.



DIMENSIONS AND STUDIES

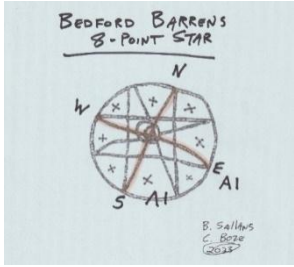
The Stone is 235 ft above sea level and the outer circle of the star-pattern measures between 19.5 to 20 inches across its uneven surface. This dimension is about the size of an old fashion galvanized trash can lid. We believe it is possible the stone could have been planned without a compass just like in Ecuador or in Cahokia, Ohio. It is likely this was not someone's 1st attempt at something like this. We believe the two solstices are used as the primary timing mechanism for the *8-Point Stone* in the Bedford Barrens.

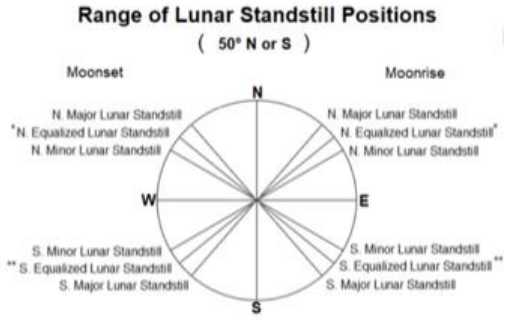


The Cardinal Directions are represented on the Stone by four triangular designs. Whether this is intentional and or part of the measuring process is unknown. Unfortunately, many functions of the eight stars circling the design are unknown. The general 23.4 degree spacing of them suggests they are used in reference to the Earth's Ecliptic Plane and are part of the disk's measuring system – But there is a variance which suggests other stuff is going on as well only our measuring system and abilities are too infantile to understand it.

It could even be suggested that they were included because the disk is off by 23. 4 degrees. At this point in our study, it appears most of the stars generally mark solar events. That said some do not. It is possible some of these stars reflect lunar events as well but that of course is a completely different thing… we believe a lunar aspect is in the realm of possibilities and current modeling suggests this. However, the moon has a complicated range of motions, and we have our hands full already. But you can see that if one knew the moon's ranges beforehand, the Stone's *8-Point Star* pattern could be used as a guide.

Source: Authors

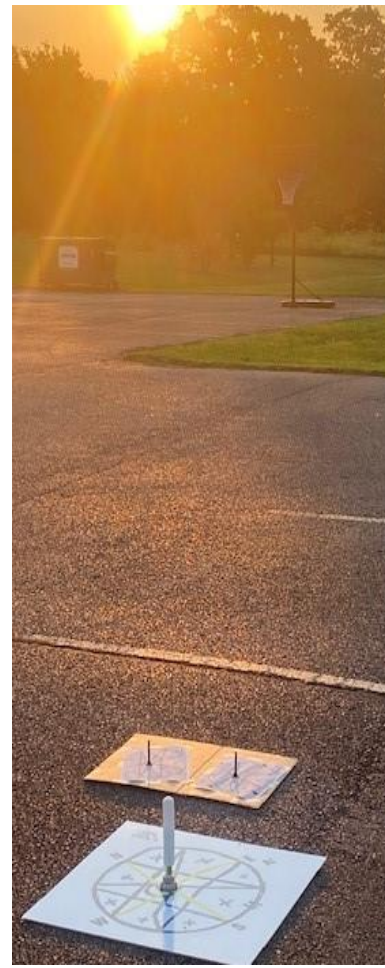




Source: Dept. of Astronomy Univ. of Mass.

JUNE SOLSTICE 2023

Unfortunately, on that fateful day in the Bedford Barrens last June 2023, we did not get the awesome shot of the sunrise shadow on the Stone - *it just was not possible*. In fact, it was hard to find a shaft of light that would penetrate the canopy until sometime later in the day. Brent's shot of the site with the sun peeking around the trees was the best documentation we could have achieved, considering the situation.



Of note, during Sally's occupation there were no other visitors, and the solstice sunset was not observed mainly due to large trees and a house which would likely block that view. It had been a long day and we had passed a major milestone towards proving this thing.

MODELING THE STAR

Modeling the event proved our premise for the most part. Unfortunately, the sun was blocked from earlier viewing which would have put it more in the neighborhood of 60-65 degrees. It also must be stated we are unsure of the true focal point of the designer's sightline which could easily be miles away across the bay.

We are still looking for a centerfold shot of a solar event and our plans are to document the coming equinox and winter solstice. This September will mark the equinox which does not appear to be represented in this Stones' design other than possibly by one or more of the smaller stars. We will soon see for ourselves… that is if we can see the sun on the week of the equinox. Currently we have our doubts due to the Information Sign installed at the site – which appears to be in line to impact that event. Regardless, we're sure we will learn something new.

Modeling shows that the solstice hits its mark pretty closely using our crude methods of measuring. The following photos show modeling done during the summer solstice of 2023 as recorded in

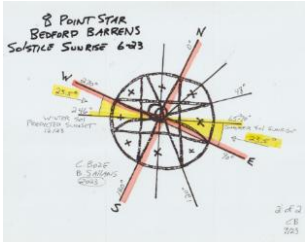
the mid - continental U.S. (4 degrees from NS). These photos illustrate the approximate 24/30-degree differential between the Ecuadorian Pattern and the Bedford Pattern.

Ecuadorian Star, 6:30 a.m. Sol Sunrise

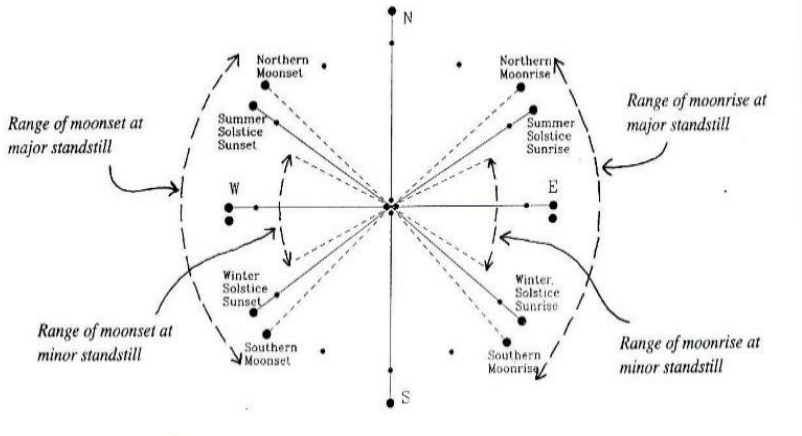
Bedford Star, 6:30 a.m. Sol Sunrise Source: Authors

CONCLUSIONS AND PREDICTIONS

While we are in the early stages of discovery concerning the functions of the Stone, we can make some early observations and perhaps a prediction. The Stones' primary use, we believe, is to record and mark the summer and winter solstice. Once those positions were marked on the Stone, one could begin to plot the moon and other celestial events which occur within those primary ranges of sunrises and sunsets.



Source: Dept. of Astronomy Univ. of Mass.



The hill itself is in a good location for such a place and its designer obviously had a very good understanding of the mechanics of the sun and the moon before the project started. The designers would have known everything they wanted to view would fit in this site before they began the project. It could be very possible the Stone is the centerpiece of a much bigger device or instrument, which the full dimensions are yet to be known.

It is possible in the past, the Stone had a system of wood posts or rocks and possibly glyphs to assist in predictions, but proving this aspect will require considerable mapping of the site.

The Image below shows a representation of what we believe the viewers of the Stone were looking for during the June Solstice – a shadow to pass through the center of the "jaws" of the design from the East.

We believe the evidence is strongly leaning towards the *8-Point Star* being a solar calendar and will continue to test this hypothesis in the coming months. With the loss of leaf cover we hope to better document the Stone at the site with drones and further modeling. As suggested by the Photo above: we are predicting a shadow to enter the "jaws" during a winter solstice sunset from the West. If this occurs, it will complete a cycle that began in June with a shadow coming from the opposite direction. This azimuth will be about 24-30 degrees from the patterns east-west line at 246 degrees. If so, this Event may form a loop that could be considered a representation of the Cycle of Life.

Brent and I are just two guys with a love of history brought together by a Stone and modern technology. We are not archeologists, scientists or even hobbyist astronomers but we do feel a responsibility to this artifact. We are sure we have made mistakes and admittedly our abilities are crude, but it is our hope by getting our findings out, we attract skilled people to further these studies.

We believe we have barely scratched the surface of the Stone if you will pardon the pun. These are but the first steps of what we know will be a difficult journey… but we believe the *8-Point Stone* is pointing the way.

- ***Chris Boze*** & ***Brent Sallans***

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