

DEMARCATING SPACE AND CREATING PLACE:
EXAMINING THE PROCESSES FOR CREATING SACRED LANDSCAPES BY
THE ANCIENT MAYA OF WESTERN BELIZE

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ABSTRACT

DEMARCATING SPACE AND CREATING PLACE: EXAMINING THE PROCESSES FOR CREATING SACRED LANDSCAPES BY THE ANCIENT MAYA OF WESTERN BELIZE

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In Xunantunich during the Late Classic period (AD 600-900), the Maya created a sacred space that grew to embody the wealth and power of Xunantunich's rulership. The central Plazas presented this concept through the myriad symbols— stelae, altars, tombs, and cache deposits— that were incorporated into the space. Although Maya religious symbology has been a popular subject of study in Maya Archaeology for decades, there is still much to be discovered about how these expressions of Maya cultural identity determined a sacred space. During the field season in 2022, I conducted architectural analysis in Xunantunich and used photogrammetry to build a 3D model of the site center. I conducted my observations of the site using a phenomenological approach to explore the ways movement, sight, and sound are controlled by architecture, and synthesized these observations with the historical and cultural chronology of the site. This method underscores the importance of spatial context in ancient Maya architecture, as urban layouts are direct reflections of Maya religious symbolism and ideology. The objective of this research is 1) to expand the Maya archaeological record and provide a deeper understanding of how pre-contact civilizations prospered and evolved over centuries while maintaining a sense of veneration for deities associated with nature, and 2) to demonstrate the usefulness of Photogrammetry 3D Modeling in archeological research.

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Introduction

The reverence the Ancient Maya maintained for their sacred landscape presents itself in many forms, the most prominent of which exists in the layout of their built environment. Structures within sacred spaces and the symbols attached to them reflect Ancient Maya architectural expression and ritual practice, which aligned to form a safe and balanced space in a chaotic world. Every temple, stela, altar, cache deposit, stucco image, and tomb in Xunantunich— a Maya city in western Belize that reached its height around 800 AD— was brought to life and placed within the plaza as part of ritual actions (Ashmore 2002; Garber and Awe; Taube 2004; Stuart 1997, 2010). These rituals served to create the sacred space, and these symbols served as markers of these events.

“Ritual charging” is the term assigned to materials associated with rituals. These objects energize space with spiritual energy wherever they are permanently placed (Fogelin; Taube; Stuart; Bassie-Sweet). They range from materials often found in cache deposits, or buried offerings, to erected stone monuments like stelae, to expressions of art and iconography found in stucco imagery (Bassie-Sweet; Garber; Feely; Fogelin; Taube; Stuart; Sullivan; Slocum).

The objective of this research project was to catalog the ways in which the Maya incorporated sacred symbols from the natural environment into the built environment during the Late and Terminal Classic Periods. The Late Classic archeological site of Xunantunich is the primary focus of this thesis, though brief regional comparisons are made to analyze Xunantunich’s traditions within a larger temporal and spatial context, though the primary focus is the spatial and temporal context of Plazas AI and AII in Xunantunich.

Archaic	Before 2000 BC	Initial Foragers
Early Preclassic	2000 BC - 1000 BC	Pioneer Farming Settlements
Middle Preclassic	1000 BC - 300 BC	Expansion Across Lowlands
Late Preclassic	300 BC - 250 AD	N. Belize Centers Reach Height
Early Classic	250 AD - 600 AD	Power Shifts to the Interior
Late Classic	600 AD - 900 AD	Height of Maya Civilization
Terminal Classic	900 AD - 1000 AD	Collapse of the Classic Maya
Early Postclassic	1000 AD - 1250 AD	Re-focus of Populations
Late Postclassic	1250 AD - 1521 AD	Competition among Centers
Spanish Invasion	1521	Disease and Depopulation

Figure 1: Maya Chronology from Early Preclassic to the Spanish Invasion (Awe).

The research questions that guided this investigation were

1. In what ways did the Maya of the Belize River Valley ritually charge their built environment?
2. In what ways does Xunantunich define a sacred space in the Late Classic Period?
3. Does the form and layout of architecture in Xunantunich inform us about Maya rulership and authority?

To answer these questions, I observed how Xunantunich's urban layout and the cultural expressions placed strategically throughout it came together to ritually charge the site. The results of this analysis revealed that the religious relics stationed throughout the central Plazas came together to create a sacred space. They mirrored sacred geographical features on the landscape, where the Maya believed the boundaries between worlds thinned, where they could pay homage to the deities and ancestors that occupied the spirit worlds (LeCount and Yaeger 2010; Leventhal 2010; Stuart 1997, 2010; Taube 2004). They also served as statements of divine authority, commemorating the Maya rulers who legitimized their rulership by claiming to

possess the power to communicate with Gods. To find evidence of religious symbolism in Xunantunich, I examined the final construction efforts that resulted in the establishment of two central plazas in the city-center, Plazas AI and AII (Feely 2019; Santasilla 2017; Slocum 2018; Zelenik 1993). The architectural features within these plazas characterized a period of major growth in the city during the Hats Chaak phase of the Late Classic Period, and characterize the site today, in that these were the final transformations made to the site before it started to decline (Awe; LeCount and Yaeger 2010). Examining monumental architecture this way not only supports understanding of Maya cultural and religious practices, it also provides insight into the influence of divine rulership and how it transforms into political, regional power. This approach to analyzing monumental architecture not only supports understanding of Maya cultural and religious practices, it can also provide insight into the evolution of architecture that directly reflects changes in the socio-political landscape.

The methods used to answer these questions was guided by several anthropological theories. These theories are all founded in a phenomenological approach to archaeological analysis. They include Phenomenology, Ritual Theory, Architectural Communication Theory, and Entanglement Theory (Fogelin 2007; Fogelin and Schiffer 2015; Hodder 2012; Ingold 1993; Rapaport 1976, 1998; Tacon 2010; Tilley 1994, 2008). They each guided my observations of the architecture in Xunantunich, which brought together two primary forms of analysis: spatial and temporal. The spatial analysis was based on the locations of structures within the site center and in relation to one another. It includes movement through space and the activities performed within it (Ingold 1993; Rapaport 1976, 1998; Tilley 1994, 2008). Temporal analysis is concerned with chronology and requires examining the history of the site, as well as cultural influences on

architectural styles and ritual behaviors that are performed within the site (Fogelin 2007; Fogelin and Schiffer 2015; Hodder 2012; Tacon 2010).

My methodology was rooted in phenomenology and the ways it can be applied to the study of constructed sacred spaces. They include 1) extensive literary review of historical, epigraphic, and ethnographic accounts of ancient and contemporary Maya ritual behaviors and belief systems, 2) Cataloging sacred and symbolic objects in Plazas AI and AII from personal observations based on viewshed and bodily movement, and 3) Photogrammetry and 3D modeling to create a visual and dynamic 3D representation of Xunantunich's main plazas.

Drawing on literature about Maya sacred symbology, religious practices, and ideology, as well as excavation reports provided by BVAR and XAP Archeological Projects, I amassed a dataset of cases of ritual charging in Xunantunich. For each of the six structures that surround Plazas A1 and A2, I documented their relative locations, their cardinal directionality, the numerology in their architectural features, and whether cache deposits and/or stone monuments—namely stelae and altars—were associated with them. I approached my data collection by examining the central plazas with a phenomenological lens via viewshed analysis and bodily movement.

A part of this data collection included analyzing eccentrics, which are carved pieces of chert or obsidian often found in cache deposits at Xunantunich. Two caches of eccentrics were found during the 2022 field season: Cache 6—excavated from the center of Ball Court 2—and Cache 7, found under a buried altar in front of Structure A4. Cache 6 contained 55 eccentrics made from chert and obsidian. Cache 7 contained 9 eccentrics made of chert. In this thesis, I analyzed the spatial and temporal contexts of each cache to examine specific cases of the role caches played in ritual charging sacred space.

Finally, I used photogrammetry and 3D modeling to construct a 3D model of the city center in Xunantunich. I used a DJI MAVIC 2 Drone to capture aerial images of the site, which I processed in Agisoft MetaShape Pro. I published the model in Sketchfab and added markers to explain the various symbols and use of space. Although I was successful in creating a 3D model of the site by using the drone, which supported my ability to analyze the sacred space in totality and from multiple perspectives after the field season ended-- the model is missing some significant features— including Structure A8— due to tree cover and the fact that parts of the Plaza are still not excavated.

Each of the methods I used to answer my research questions provided a spatial and temporal approach to understanding sacred spaces and underscore the fact that archeological sites like Xunantunich are not only gateways into the past, but also active agents in the present. By analyzing the architectural layout through bodily movement and viewshed from the foundational context of ethnographic, epigraphic, and chronological accounts of Maya religion, I was able to provide substantial evidence that Xunantunich's central Plazas demarcated a sacred space in their built environment.

Chapter 2: Literature Review

Introduction

Several Maya archaeologists (see e.g., Ashmore, Awe 2008; Houston 1998, Prudence Rice 2017, 2017; Stuart 1997, 2010) have explored the connection between the Maya built environment and Maya ideology, and the idea that cache deposits and organization of architecture were used to ritually charge Maya communities with elements of the sacred natural landscape. The purpose of my research was to explore whether these concepts are also reflected in Xunantunich.

In the Maya area, both ethnographers (McGee 1990; Palka 2014; Vogt 1969) and archaeologists (Awe et al. 2005; Houston 1998; Moyes 2006; 2020) have noted that the Maya religious practices and beliefs are closely related to natural phenomena and sacred locations in the natural landscape, and that these were all connected with creation and agricultural fertility and therefore the sustenance and continuation of Maya civilization (Bassie-Sweet 2010; Chase et al 2017; Milbrath 2017; Rice 2017; Rice and Pugh 2017; Stuart 2010). Ceremonial centers in the built environment became loci for rituals honoring the universe's cycles, as well as celebrating the various feats and divine authority of rulers (Ashmore 1999; Rice 2017). This extensive research into Maya symbolism has yet to be extended into a comprehensive catalog or visual representation of sacred space in the built environment, which lays a solid foundation for my research project.

The Maya also created ritual cache deposits that display the belief that sacred materials and objects could imbue landscapes with sacrality (Ashmore 1999; Porter 2020; Rice 2017; 2018). The symbolic significance of colors, materials, shapes, numerology, and purposeful

location of objects indicates that the Maya had a relatively uniform system of ritual practice involving caches in the Belize River Valley (Ashmore 1999; 2002; Feely 2019; Houston 1998; 2019; Porter 2020; Stuart 1997). At Xunantunich, several BVAR research projects in recent years have focused on the sacred symbolism associated with cache deposits (Feely 2019; Lee 2021; Santasilla 2016; Sullivan 2017; Slocum 2018). The data collected by these researchers is quite comprehensive and provided a resourceful catalog of cache locations and materials. However, when it comes to the many layers of symbolism present in cache deposits and interpreting their myriad symbols, there is still much information that we can glean from these deposits (Lee 2012; Sullivan 2017; Slocum 2018). My research project expands on the archeological record of eccentrics by examining past reports of cache contexts and comparing them to the two caches of eccentrics that were excavated by BVAR archaeologists in the site center of Xunantunich during the field season of 2022.

The literature provided by dozens of archeologists who studied Maya beliefs gave me substantial information to use to answer my research questions about sacred space. Synthesizing broad topics about ritual behaviors with specific and narrow archeological reports from Xunantunich resulted in an in-depth analysis of ritual charging in the Plazas AI and AII.

Chapter 3: A Brief History of Xunantunich

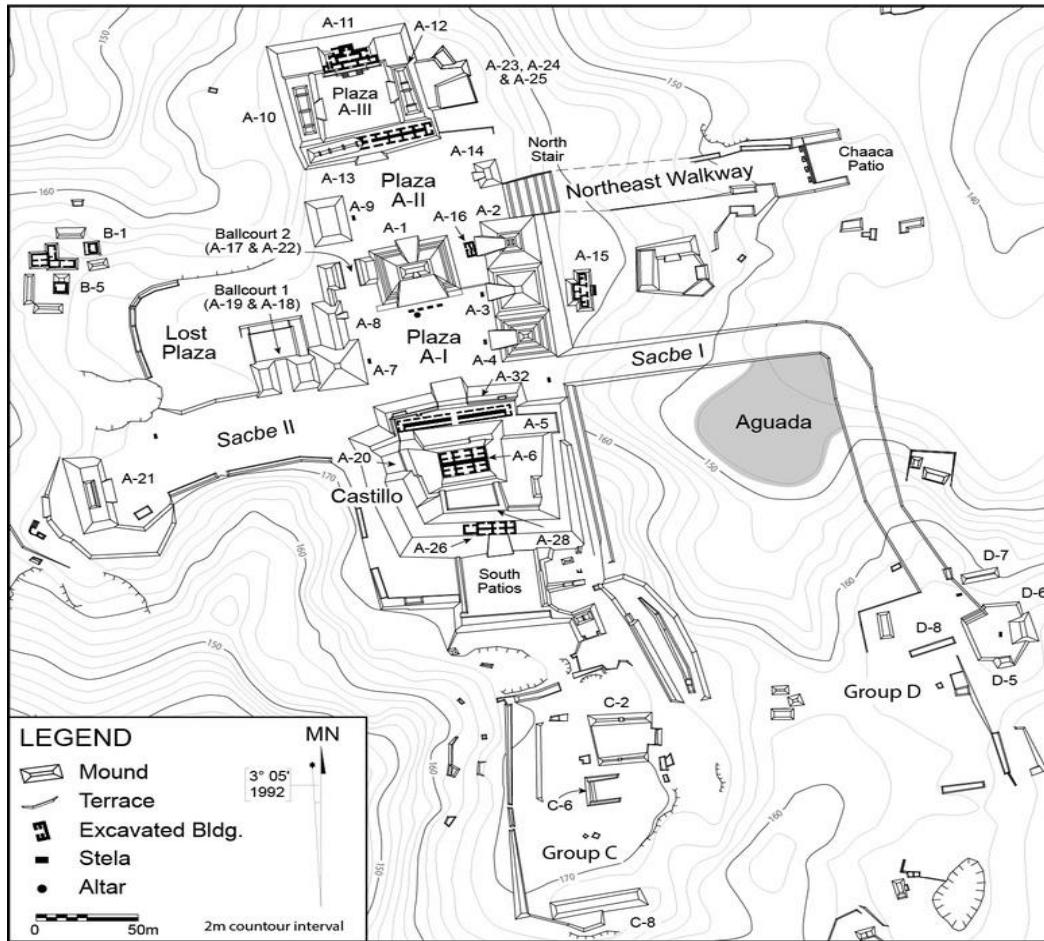


Figure 2: Xunantunich Site Core (LeCount and Yaeger 2010).

Xunantunich began its rise as a regional capital during the Samal Phase, around 600-670 AD (Late Classic), and reached its apogee during the Hats' Chaak (670-780 AD) and Tsak' (780-890 AD) Phases. Wendy Ashmore and LeCount and Yaeger originally argued that Naranjo, a city in modern-day Guatemala, maintained power over Xunantunich during the Samal and Hats' Chaak phases. However, Awe et al. (2020) more recently demonstrated that Xunantunich was more likely an independent ally of Naranjo, based on stela inscriptions, ceramic comparisons, and radiocarbon dating. Awe and his colleagues (2020) also argued that Xunantunich was

influenced by regional powers—reflected in architecture, urban layout and design, and artistic expression in stucco imagery— but maintained relative political autonomy, and became entirely politically independent during the Tsak Phase before it rapidly declined (LeCount).

The Late Classic rise of Xunantunich was relatively rapid but the onset of decline at the end of the Tsak Phase was even faster, a mere 110 years after the site's growth spurt (Feely; Lecount). The era was marked with some major architectural feats that expanded the site and— more significantly— made it a visible mark on the landscape (LeCount).

During the Hat Chaak phase, the structures and plaza spaces that comprised the city center were transformed. The new layout of Xunantunich reflected a symbol of a giant cross following the construction of Structure A1, a temple placed right in the center of the city (LeCount; Keller 1995). The structure was erected hastily and without the same regard for structural integrity as the surrounding structures (Zelevnik 1993). It had the familiar pyramidal shape characteristic of Maya temples, but featured four terraces and staircases on the southern and northern flanks.

Around this same time, a second ballcourt (Ballcourt 1) was constructed northwest of El Castillo. The court replaced the smaller Ballcourt 2 in the site center and converted it into a pathway between Plazas AI and AII that were separated by the new central temple Structure A1. El Castillo was also transformed dramatically during this phase; elaborate staircases, throne rooms, and decorative stucco friezes were added to the structure (LeCount). Other additions to the site core included an enlarged palace complex for the elites at the northern end of the central precinct in Plaza AIII.

The Hats' Chaak phase ended with the onset of the Tsak' phase, when Xunantunich's rulers dedicated at least three stelae extolling their political stature. Hieroglyphic inscriptions on one of these monuments also feature valedictory ceremonies which might have been attended by the ruler of neighboring Naranjo (Awe et al. 2020; Helmke et al. 2010). In many ways, these events represent some of the last manifestations of grandeur at Xunantunich because towards the end of the Tsak' phase, several residential groups became abandoned, the city shrank in size; sacbeob that had ushered movement into the site from the north fell into disrepair, and walls were erected between Plazas AI and AII that prevented free flowing movement into the ceremonial center. The more effort that was put into securing a private, protected space in the main Plaza (AI), the more the city seemed to fade away. By the end of the ninth century and the start of the tenth century, the city's decline was almost complete.

The regional influence and authority that Xunantunich enjoyed may have only lasted a little over a century, but its origin still requires a lot of further research, as ceramic and architectural analysis and radiocarbon dating have all provided evidence that the hilltop was occupied during the Preclassic era, long before the Hats' Chaak phase (Feely; Ramirez). After it was abandoned, it continued to be a major influence on social memory in the Belize River Valley. El Castillo became a silent, stoic mountaintop, a place of remembrance, a shrine to the strength and determination— or hubris and alienation, depending on how you look at it— of the ruling elites who once sat on the thrones at the top of the pyramid.

Chapter 4: The Maya Sacred Landscape

In order to examine the methods used to imbue spiritual images and elements of the landscape into the built environment one must first explore which natural features on the landscape were considered sacred. For example, many sacred Maya symbols are associated with Maya creation myths and with their view of the cosmos, both of which were recorded in Landa's *Relacion de las Cosas de Yucatan*, and in the sacred book of the Ki'che Maya known as the *Popol Vuh* (Christensen 2007; Thompson 1950). The narratives in these myths also underscore a sense of reciprocity between humans and gods, referring to the balance humans learned to maintain between themselves and the deities—personifications of nature's dynamic forces—who gifted them with life (Awe; Bassie; Christenson). Below, I summarize key elements of the story that represented this balance between humans and nature, which is a foundational theme in the architecture found in the Maya built environment. I also examine the Maya creation story and cosmology within the context of the Maya landscape and point to various sacred natural features that are copied into the built environment.

The Popol Vuh Creation Story: Reciprocity Between Creator Gods and Humans

The *Popol Vuh*, which was first transcribed from K'iche to Spanish by Dominican friar Francisco Jimenez in the early 1700s, was recently translated from K'iche into English by Allan Christenson (Christenson 2007). The stories within it explain the Maya world view, a concept regarding how people perceive and create order within their landscape (Bassie-Sweet 2010). The theme of this ancient text is reciprocity, balance between humans and deities that created them, and deities that personify various and dynamic elements of nature (Bassie; Stuart). This harmonious relationship is only achieved through organized and continuous

worship of these Creator Gods; violations of this balance upset the natural order of the universe and ultimately results in rejection and destruction (Ashmore; Awe; Bassie; Christenson).

In the beginning— as the story goes— there was nothing. “This is the account of when all is still silent and placid. All is silent and calm. Hushed and empty is the womb of the sky” (Christenson 67). All that existed were the Former and Shaper, also referred to as Sovereign and Quetzal Serpent, or They Who have Borne Children They Who Have Begotten Sons (Bassie; Christenson). These Gods formed and shaped the four corners of the universe (Christenson). Then they called on a group of three gods— called Heart of Sky— who united with a group of Earth Gods— Heart of Earth— to build the material world. The first feature they create are mountains that rise out of the primordial seas, which they decorate with cypress groves and pine forests (Christenson 61).

The narrative continues on to describe the attempts to create living beings that recognize and pay homage to the Creators (Christenson). “There can be no worship, no reverence given by what we have framed and what we have shaped, until humanity has been created, until people have been made” (Christenson 61). This is based on beings’ ability to communicate, to formulate prayers and rituals that can then be passed down through generations. The Former and Shaper explained, “It shall be found, it shall be discovered how we are to create shaped and framed people who will be our providers and sustainers. May we be called upon, and may we be remembered. For it is with words that we are sustained” (Christenson 68). The theme of reciprocity is clear in this passage: the Former and Shaper created humans to worship them. The balance between these Gods and humans can only be maintained if humans hold up their side of the deal; otherwise, the Gods will not allow their survival, for the Gods need humans to honor them if they too are to survive.

The first attempts to create living beings with the power of organized speech failed. The first humans—made of mud—could speak, but “had no knowledge,” and dissolved quickly in water (Christenson 67). The Gods moved on quickly and tried making people out of wood, but they were not cognizant of the roles assigned to them (Christenson). The Gods wiped out these wooden effigies with a cataclysmic flood. They were unable to be the “providers and sustainers;” they could not worship the Gods (Christenson 67). The Creators’ third and final attempt to create their ideal humankind occurred after a long saga of events that take place in Xibalba, the Maya underworld (Awe; Christenson 2007). The episodes focus on Hunahpu and Xbalanque, the Hero Twins. They are the sons of the Hun Hunahpu, the Maize God, who had been killed by the underworld deities for disturbing them (Awe; Christenson; Feely). The story is about the Twins’ excursions through the nine layers of Xibalba, facing various trials from the underworld deities along the way in order to bring the Maize God back to life. Upon resurrecting their father, Hun Hunahpu, he plants four stalks of corn that grow into the first Maya people (Awe; Christenson; Sullivan). The image below depicts this resurrection scene, with the Maize God emerging from the underworld as one of the twins waters him. The Twins then complete their journey by traversing through the thirteen layers of heaven, where they become the sun and moon (Awe; Bassie-Sweet 2010; Taube 2004).



Figure 3: Codex-Style Plate (Museum of Fine Arts, Boston).

Esoteric Meaning in the Popol Vuh Creation Story

Several significant esoteric themes appear in the Popol Vuh narrative. These include Animism, Dualism, and the Maya conceptualized universe, which includes their Pantheon of Gods and sacred numerology. Each of these concepts, and their associated motifs, relate to the Maya world view, and their perception of space and time (Bassie-Sweet 2010; Milbrath 2017). They are all manifested in the architecture found in Maya cities throughout the Maya region, including Xunantunich (Awe 2008; Keller 2010; LeCount and Yaeger 2010).

Animism: The Maya doctrine of Animism posits that every living and nonliving thing in the universe has a soul (Bassie-Sweet 2010; Friedel et al 1995; Feely 2019). This concept is vital to understanding the Maya world view; it is the basis of their entire religion and culture (Thompson 1950). Animism is also foundational in ritual behavior (Feely 2019; Slocum 2018). For example, the Maya believed that everything manmade— from temples to ceramic vessels—

required special rituals to imbue them with souls, which effectively brought these structures and objects to life (Freidel et al. 1993; Thompson 1950). Fogelin referred to this type of ritual as a dedication or inauguration ritual, with the objective being to “confer holiness on an object” (Fogelin 2015). These manmade objects also needed to be destroyed– terminated– to signify the end of their lives and release the spirits they’d been granted (Feely 2019; Fogelin, Schiffer 2015). Fogelin referred to termination rituals as commemorating the end of an object or building’s “use period” (Fogelin, Schiffer 2015). Animism was the core of all Maya ritual activities, especially regarding transformations in architecture; these transformations were commemorated by the termination of earlier structures and the inauguration of new temples, which are usually built right on top of these earlier temples (Feely; LeCount; Santasilla; Slocum; Sullivan).

Dualism: Dualism in Maya religion refers to the balance between polarities that can be perceived in nature and the cosmos (Bassie-Sweet 2010; Freidel et al 2017). The Former and Shaper presented an example of dualism; they represented male and female energies, the cycle of creation and destruction necessary to maintain the universe (Christenson). The Hero Twins served as another example of duality as their story explained the origins of the sun and moon (Cite). The resurrection of their father presents the duality of death and rebirth, the miracle of water in its ability to bring life. Dualism is also demonstrated in the expectation that humans participate in a reciprocal relationship with the powers that created them. Each of these examples display the foundational belief in dualism that informed Maya ritual behaviors associated with natural and celestial cycles (cite).

The Maya Conceptualized Universe

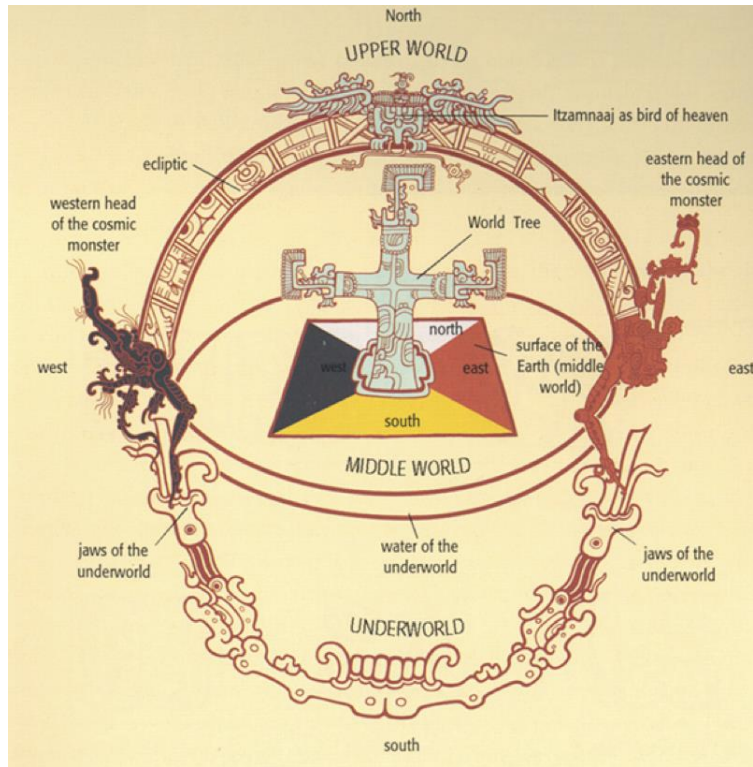


Figure 4: The Maya Universe

The Maya believed three worlds existed in their universe: the Heavens (sometimes referred to as Flower World or Upper World), the Earth (The Middle World) and Xibalba (The Underworld) (Taube 2010). This framework is referred to as a Tripartite Universe (Awe). The material world was believed to be floating on the surface of the watery depths of Xibalba, and the Upper World was housed in the skies above. The Maya believed the heavens and underworld were connected, encircling the material world (Martin 2018).

The Maya perceived the universe and the middle world as being quadrilateral, or four-sided. The middle world was flat, surrounded by the layers of the spirit worlds. They believed Xibalba was composed of nine layers and the heavens were composed of thirteen levels (Bassie-

Sweet 2010; Christenson 2007; Taube 2010). The center of the universe was symbolized by the World Tree, Wacah Chan, which united all three worlds (Freidel et al. 2017).

This brings up the concept of cardinal directionality, which is a central aspect of the Maya universe. Each of the cardinal directions— East, West, North, and South— held sacred value to the ancient Maya, as they are associated with the four corners of the universe, and the movements of the planets, sun, and moon (Ashmore; Awe; Freidel et al). The cardinal directions were foundational in architectural layout and urban planning from the Preclassic to Terminal Classic periods in the Belize River Valley and were reflected in urban layouts oriented around East-West axial alignments like Cahal Pech, or North-South, like Xunantunich (Ashmore; Awe et al; Inomata; Rice).

Nature Personified

The many deities that the Maya worshiped all represented elements of nature and cosmology, and the Maya world view, which—as previously stated--- revolves around a reciprocal relationship between Gods and humans. These deities subsequently informed the organization of their calendar system (Bassie- Sweet 2008). According to Bassie-Sweet, “the Maya believed that each of the intervals within such units of time as the day, the night, the solar year, the k’atun, the lunar cycle and the greater Venus cycle was ruled by a different deity or set of deities” (Bassie-Sweet 1). The calendar system was rooted in the concept of reciprocity; the Maya used this system of tracking time to ascertain which God to worship throughout each year to ensure they brought bountiful harvests (Bassie-Sweet). I will now discuss a handful of these deities, specifically the gods that were frequently depicted in the art and iconography that decorated the ancient Maya temples in cities like Xunantunich during the Late Classic Period (Frieze article).

Gods of the Flower Mountain: The three Gods I will examine in this section are the Sun God–Kinich Ahau– the Maize God– Hun Hunahpu– and the Wind God–Huracan, or God H (Awe; Freidel et al). These deities reside in the 13 layers of Heaven and are most commonly affiliated with the paradisiacal gardens of Flower Mountain, believed to be the point of convergence between the heavens and earth (Taube). According to Taube, this distinction relates dualistic cycles of death and rebirth, with “the sun god being reborn at dawn on a daily basis and the corn deity each year in the cycle of the planting and maturation of growing maize” (Taube p_). Separately, the Wind God is affiliated with music and incense, ephemeral qualities of the sacred landscape believed to have originated from the Heavens (Taube).

Gods of the Underworld: The deities residing in the bowels of Xibalba that are evoked in Maya rituals are the Rain God– Chaak– and Earth God–Itzamna? (Miller and Taube 1993). Both Gods symbolize natural phenomena associated with caves, where water carves its eternal path through limestone (Stuart). They are both commemorated in cyclical rituals and sacred monuments found in ceremonial spaces (Stuart). Specifically, stone monuments in the form of stelae and altars honor these Gods and the elements they represent (Stuart).

The Maize God maintains a special significance when examining Maya ritual behaviors and practices in the Late and Terminal Classic Periods. This deity embodied the notion of reciprocity and was evoked in rituals that involved sacrifice. The Maya believed humans were made from corn; sacrificing humans and planting their remains represented giving up their bodies to stimulate the growth of corn (Awe correspondence). As entire civilizations decline across the region, there appears to be a noteworthy uptick in rituals dedicated to Chaak taking place in caves (Awe 2012; Moyes 2014). These rituals often and increasingly involved the sacrifice of children, whose remains were placed in the areas of caves where water was

supposed to run through, emulating the resurrection of the Maize God depicted in the Popol Vuh (Christenson; Awe). This ritual displayed the attempt to rebalance the reciprocal relationship with Chaak in order to bring rain (Awe; Moyes; Brown).

Gods of Divine Rulers: The Late and Terminal Classic Periods were characterized by a rise in images of Quetzalcoatl, the Feathered Serpent Deity. The deity is evoked in the Popol Vuh as Quetzal Serpent, one of the deities who converge with the Former and Shaper to create the universe (Christenson). He appears to be a combination of a bird and a snake, which may represent the transcendental qualities we also find in mountains and ceiba trees in combining the earth-bound snake with heaven-bound birds (Sheets). Unlike the other deities I have described here, worship of the Feathered Serpent was the product of religious and cultural influence from northern Mexico and the Yucatan region (Awe, Ringle et al.). He is featured prominently in stucco images in sacred sites such as those found on the east and western facades of El Castillo (Leventhal 2010).

K'awil is the God of Lightning (Christenson; Martin 2018; Sheets 2014). K'awil was first associated with Chaak, as iconography featuring the Rain God often pictured him holding an ax (Sheets, Taube). Axes connoted the sacred element of lightning; the sparks generated when an ax's blade struck stone reflected the effect of lightning strikes (Sheets; Taube). At some point in the Late Classic, images of an independent K'awil started to emerge, no longer tethered to the Rain God. He was increasingly associated with the power of elite rulers who had the ability to petition him for rain. In Guatemala and Belize, eccentrics that depicted prominent ancestors were carved with representations of K'awil, who was represented as a helmet with an ax protruding from it. The example below from Copan shows an eccentric that features two elite rulers both hooded by the Lightning God (Sheets). At Xunantunich, the

caches that have been excavated often include eccentrics that represent the facial profiles of ancestors that feature a similar representation of K'awil.

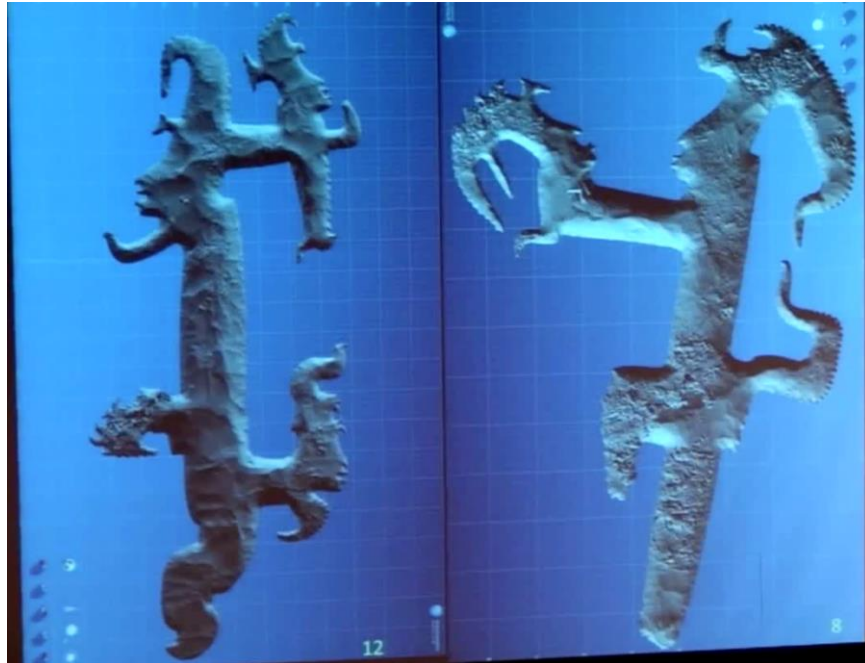


Figure 5: Copan Eccentrics (Sheets 2014).



Figure 6: Ancestor Profile Eccentrics from Cache 6 (Ratcliffe 2022).

Personification of nature's dynamic cycles further demonstrates that the Maya maintained a relationship with the land that was founded on mandatory ritual practice and

ceremonies to satisfy the Gods (Bassie- Sweet; Fogelin 2007; Rice 2017). This was a relationship defined by reciprocity, a give-and-take between the humans that inhabit the material world and the deities that control the universe. Furthermore, examining these deities provides further evidence that religious symbols that originated from this reciprocal relationship with nature were appropriated by rulers to solidify their connection to the supernatural, and to legitimize their divine right to rule, which was founded on their supernatural ability to communicate with the Gods.

Numerology

The numbers found in the Popol Vuh connect the story with the Maya world view with their tracking of astrological cycles, which formed the basis of their calendrical system (Bassie-Sweet; Inomata 2017). The numbers 3,4,5,9,7, 13, and 20 are found in architecture, artwork, and offerings throughout the Belize River Valley and Maya lowlands (Awe 2017; Feely 2019; Sullivan 2017). Where each of these numbers appear provides insight into their esoteric meanings, which recall themes from the Popol Vuh, the Maya cosmogram, and the Maya world view (Bassie-Sweet; Christenson; Taube). Ultimately, numerological symbolism emphasizes the fact that sacred space in the built environment represents the convergence between the spirit and material worlds. In this chapter, I will provide brief explanations of each of these numbers in the context of Maya religion.

Three: In the Popol Vuh, we see evocations of Heart of Sky and Heart of Earth, supernatural groups each composed of three gods that are called upon by the Former and Shaper to create the material world (Bassie; Christenson). Three is also associated with the Wind God, a deity who resides in the heavens. The Deity brings with air, breath, and life, three concepts that are also one in the same, all personified by the Wind God (Taube).

Susan Milbrath interpreted the number as a reference to Orion's Belt, as the three-starred constellation's traverse across the night sky may have correlated with annual planting and harvest seasons (Inomata). "At dusk in late April, just before planting season, the three stars in the belt were aligned in a row just above the horizon in the west, resembling a row of seeds about to be planted in the earth" (Milbrath 97). When the constellation appeared again in the east, its position had rotated to a vertical alignment, and was visible at dawn in the east at the same time as the first sprouts of corn began to grow (Milbrath). Orion's Belt is also related to the notion of "Three Hearthstone," which links divine rulership with the constellation's patterns (Milbrath). In the Popul Vuh, the Maize God resurrected and rose to the three hearthstone place, a symbol and place of creation and birth. It is at the three hearthstone place that the Maize God creates the first four human ancestors (Awe et al; Christenson).

Four: Number four recalls the quadrilateral universe and the sacred cardinal directions (Awe; Ashmore 1991, 1999; Christenson). The number is affiliated with the demarcation of the Maya universe (Christenson). Recall too that the first human ancestors were created by the Maize God in a group of four.

Nine: Nine symbolizes the levels of the underworld. The Maya believed there were Nine levels in Xibalba.

Five: Five has two possible interpretations. It may represent the deepest level of Xibalba. It also may represent the material world, where the four corners of the Maya cosmogram converge around a single axis mundi, the Ceiba Tree, at its center.

Seven and Thirteen: Seven and Thirteen symbolize the Heavens. There are thirteen layers in the Upper World, and number 7 represents the highest point or apex reached before descending back to earth (Bassie; Christenson; Stuart; Taube; Rice) .

Twenty: Twenty is associated with the Maya calendar. Each of the 18 months in the Solar Calendar has 20 days, excluding the final month which consists of five days of celebrations to commemorate the transition into a new cycle (Milbrath). According to Milbrath, “The number 20 ultimately may have originated as a count of human digits but very soon a count of 20-day periods developed in relation to the agricultural cycle” (Milbrath 99). This numeral presents another example of the connection between sacred numerology and the agricultural cycle. During the Middle Preclassic period, 20-day periods may have been associated with the maize cycle (Milbrath). This theory showcases another example of the foundational significance of the maize harvest season in Maya culture and symbolism.

The numerology discussed here played a vital role in my analysis of Late Classic Maya architecture at Xunantunich. Each number can be linked to architectural features on each of the temples in the city center, including the number of doorways, rooms, benches, and stairs that can be observed on each structure. Moreover, numerology represents movement between worlds—descent into the underworld and ascent into the heavens (cite). This notion is strongly depicted in architecture; at Xunantunich, for example, the central staircase on El Castillo has seven stairs leading to its first platform, symbolizing ascent to the apex of the Upper World (cite).

Beasties and Troglodytes: Animals of the Spirit World

The belief in co-essence showcases another level of Maya religion and ritual practices; Taube’s examination of epigraphy and artwork that depicted this belief revealed the notion that souls have several layers that each can be evoked either on purpose or accidentally (Bassie; Taube). Co-essences could be animalistic and primal, associated with beasties of the forest that exhibited wild, uncontrollable behavior (Taube). According to ethnographic records from a few contemporary Maya communities, “the human soul simultaneously exists in the body of the

individual and in the body of several supernatural co-essences who live within a sacred mountain cave” (Bassie; Houston and Stuart 1999). A person could contain as many as thirteen co-essences, which can take the form of animals or natural phenomena, such as “lightning bolts, meteors, and whirlwinds” (Bassie 2). Co-essence demonstrates another example of the connection between people and their landscape; the soul was perceived to be tethered directly to the wild (Taube; Bassie).

Many eccentrics found in caches in built environments across the Maya region had been carved into relics of sacred animals. Often these creatures and critters were found residing around cave entrances, strengthening their spiritual connection to the underworld (Martin 2018). These include centipedes, beetles, and scorpions, as well as the jaguar, crocodile, and harpy eagle. They are often featured in architectural designs; for example, the roof combs mounted at temple summits may symbolize the harpy eagle headdress (Awe correspondence).



Figure 7: Harpy Eagle

Reflections of Ideology in the Natural Environment

The Popol Vuh mentions several key geographical features that present themselves in the natural environment across the Maya region (Bassie-Sweet; Rice 2017; Stuart 2010).

Sacred natural elements are associated with locations on the landscape from which they were perceived to originate and their ability to transcend between worlds, which made these locations destinations of worship.

The natural features I will discuss in this section include water sources, caves, mountains, and the Ceiba Tree. There exist many others— including the Cedar tree— but I have chosen to evaluate the aspects of the environment that most directly informed the Popol Vuh origin stories and are emulated in the built environment of Late Classic sites such as Xunantunich (Christenson; LeCount and Yaeger; Leventhal).

Water: Water was/is seen as the essence of life to the ancient and modern Maya. It symbolizes fertility, purity, and the cycle of life and death (Awe 2012; Bassie-Sweet; Stuart; Taube). In the Popol Vuh, the creation story begins with water. Water preceded the creation of the universe; without water, the universe could not exist (Bassie-Sweet). “This act irrevocably established the sea and its deities as the initial source of life and its water as a fundamental element in the life process. This is a concept shared by many cultures, based on the role that water plays in the annual renewal of life” (Bassie 5). Water’s sacrality was evoked in the built environment in many ways, such as in cache deposits containing jute (freshwater snail) shells, in sunken four-sided courtyards evoking the primordial seas from which all life rose, and in the smoothed reflective surfaces of stelae (Feely; Stuart; Taube).

Caves: Caves were loci for ritual worship across the Maya region that date back to the Early Preclassic in several regions of Mesoamerica (Awe 2012; Moyes 2014). In the Maya region, water carved its way through limestone caves on its journey to the surface. Caves were believed to be portals into the underworld, where deities of the underworld—the Earth and Rain Gods— resided (Awe; Moyes; Martin 2018). Cave entrances were depicted in Maya

iconography in the Late Classic Period as gaping mouths of giant monsters. According to James Garber and Jaime Awe, “The gaping maw is a portal between the supernatural and natural worlds.” (Garber and Awe). Caves were also related to fertility and growth; they represented the womb of the earth, where water was born (Awe; Sheets). The Maya imbued the sacredness of caves into the built environment in dozens of ways, ranging from sweat baths and elaborate tombs that are impossible to miss, to cache deposits buried under layers of limestone Plaza floors (Feely; Slocum; Sullivan; Sheets).

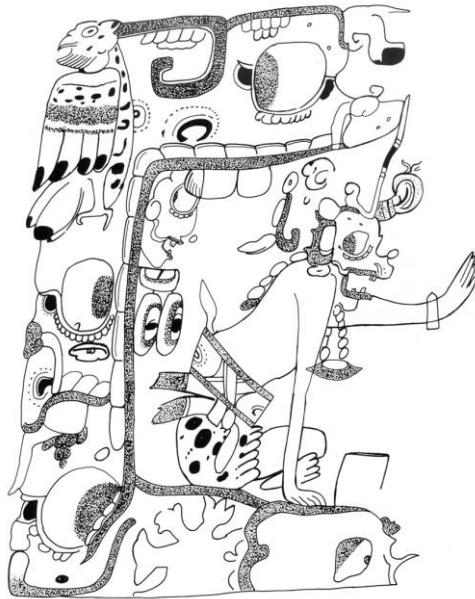


Figure 8: Illustration of art found on Late Classic Vase depicting the Maize God sitting in the mouth of the cave (Coe 1978).

Mountains: Mountains represented the convergence of all worlds and all sacred elements (Bassie-Sweet; Stuart; Taube). In the creation story, mountains were first to rise out of the watery depths of the primordial sea (Bassie-Sweet; Christenson). Mountains were embodiments of sacred mother earth, referred to as Piedra Madre (Stuart). These solid, permanent features were connected to water, as waterways flowed through them and into

surrounding recessed valleys where the Maya grew crops (Stuart; Taube). Finally, mountains were connected with thunderstorms; when the “Strike of Chaak” would hit these natural stone monuments, the Maya believed the incredibly sacred element of obsidian, and chert, was produced from these lightning strikes, solidifying the connection between obsidian, chert, lightning, and mountains (Stuart; Taube).

During the Preclassic Period, mountaintops—like caves—were destinations of worship, where the Maya would pay homage to their ancestors, as mountaintops were perceived to be connected to the heavens (Stuart). Similar to how caves were conduits between the material world and Xibalba, mountains were symbolic of Flower Mountain, the location of celestial ascent where spirits would launch into the heavens (Stuart; Taube). By the Late Preclassic Period, mountains had become associated with the power and divinity of divine rulers who claimed to have ancestral connections to these sacred sites that legitimized their right to rule (Stuart; Taube). For example, in Piedras Negras, archeologists discovered a bench with elaborate carvings of deities that communicated that the ruler who would have sat there was supported and held up by the gods (Stuart).

In the built environment, mountains are represented by pyramid temples that tethered the spirit world to material world. Temples were essentially man-made Flower Mountains, absolutely stuffed with spiritual symbols of transcendence, ascension, and supernaturality. For example, El Castillo at Xunantunich features numerology that represents continuous movement between worlds, and both stucco friezes that flank the east and west facades are comprised of images of celestial gods and the heavens (Garber; LeCount and Yaeger; Frank correspondence).



Figure 9: Piedras Negras, Throne 1 (Stuart).

World Tree: The Ceiba Tree is the axis mundi of the universe. Similar to mountains, its sacrality stems from its ability to transcend between worlds and to exist simultaneously in all of them. Its branches connect the heavens to the earth, its roots draw up from the underworld.

The Ceiba Tree grew in sacred spaces in the natural landscape across the Maya region. The tree's status as the ultimate point of convergence— the axis mundi— may be manifested in the built environment in city layouts, where the Maya purposely built temples in the center of their four-sided plazas (Ashmore; LeCount and Yaeger; Rice). Xunantuich's layout provides substantial evidence for this interpretation, as structure A1 occupies the center of the site, dividing the central Plazas into two distinct spaces (LeCount).

Chapter 5: Reflections of Nature and Ideology in the Maya Built Environment

Urban Layout, Cardinal Directionality, and Centering

The concepts of cardinal directionality and cosmological alignment are easily detected in urban development across the Maya area. In the Belize River Valley, the earliest cities to emerge were oriented around an East-West axis, underscoring the influence of cardinal directionality on architectural planning (Ashmore). The most prominent structures were situated on the east and west boundaries of city centers (Awe et al. 2017; Ebert et al. 2021). Cahal Pech, a Maya city that dates to the Early Preclassic, serves as an example of this layout.

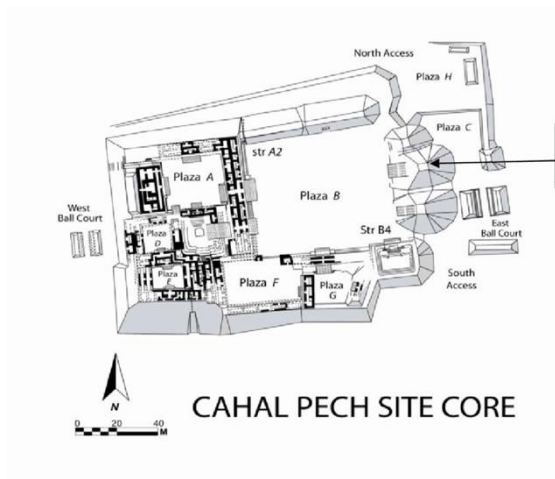


Figure 10: Cahal Pech Site Core

Wendy Ashmore's exploration of shifts in axial dominance from the Preclassic to Classic era provides evidence for changes in social structures that emphasized divine authority; she determined that Maya cities were reoriented from an east-west axis that was prevalent in Preclassic urban design to a north-south axis later in the Classic period (Ashmore 2002). Changes in architectural designs reflected the transition from religious to secular (socio-political) authority, as the latter axis mundi symbolized kingship and dynasties, while the east-west axis aligned Preclassic cities with the rising and setting sun (Ashmore; Rice). It is

important to note that Xunantunich is not perfectly aligned with these cardinal directions. The northern portion of the site veers slightly northwest, perhaps indicating that Xunantunich's site plan was more of an impression of a North-South axis alignment.

Finally, the Maya incorporated the act of "centering" into their built environment by constructing temples or shrines in the middle of sacred space, which represented the concept of axis mundi, the convergence of the three worlds (Garber and Awe). At Xunantunich, Structure A1 occupies the center of the site, representing the concept of axis mundi. Its position, the dual staircases situated on the north and south facades, and the four terraces climbing up each of the exterior walls communicate that the temple unites the four cardinal directions.

E-Groups and Eastern Triadic Assemblages

Maya sites commonly feature evidence of E-Groups, Eastern Triadic Assemblages, and Eastern Triadic Structures. E-Groups were aligned with solar cycles, used for ceremonies commemorating solstices and equinoxes (Friedel et al; Rice 2018). E-Groups were among the first ceremonial structures erected in the Maya landscape, and the first monumental architecture to appear in general (Inomata). As this research paper focuses on architecture in the Late to Terminal Classic periods, I will briefly discuss the original purpose of these structures before explaining how they transform into symbols of political authority and Maya cultural history (Awe et al; Chase et al).

E-Groups, first built in the Middle Preclassic period (900 – 300 BCE), were subsequently transformed into Triadic Groups as early as 350 BCE (Friedel et al, 2017). During the Middle Preclassic, the Maya tracked time, particularly the solstices and equinox, by studying the patterns of the cosmos. This practice appears to have been phased out by the start of the Late Preclassic period (300 BCE) as the intricate Maya calendrical system was

established. Milbrath noted that E-Groups seemed to decline in ritual significance around the same time that the Long Count Calendar System had appeared around the Maya Lowlands (Milbrath). According to Milbrath, as the focus on astronomical phenomena phased out, the alignments of structures changed too. E-Groups that functioned to plot solstices and equinoxes were retired across the Maya region, and either destroyed or transformed over time into East Triadic Assemblages or Eastern Triadic Structures (Milbrath). In contrast to Milbrath, Awe et al. (2017; 2021) suggest Eastern Triadic Shrines replaced E-Groups at the time when elites successfully appropriated ritual to legitimized their divine right to rule. Whatever the case may be, by Late Preclassic times Eastern Triadic Shrines were no longer associated with Western radial platforms— a defining feature of E-Groups— which may indicate that these structures no longer played the same role in the commemoration of celestial cycles.

Eastern Triadic Assemblages may have served as reminders of social memory and reinforcements of cultural identity, commemorating the ritual practices of the Preclassic Maya civilizations (Awe; Chase et al; Milbrath). They may also have retained their function in annual rituals, but instead of celebrating celestial events, ETAs may have been settings for “valedictory ceremonies” or for celebrating divine hereditary rulership (Awe et al). East Triadic Assemblages have been discovered in prominent Late Classic sites, including Xunantunich.

Ball Courts

The cycle of creation featured in the Popol Vuh was evident in the Mesoamerican ballgame; the game reflected the cycles of agricultural seasons, the revolution of time, the duality between life and death, and resurrection (Friedel et al; Feely 2019). In the Popol Vuh, the game is alluded to several times, as the Maize God and the Hero Twins both engage in

games with the denizens of the underworld (Christenson). Like E-Groups, ball courts were erected from early in the Preclassic Period, and are pervasive across the Maya region (Feely 2019). Their locations are associated with cardinal directions and appear to be constructed on the east and west boundaries/entrances of city centers, further indicating their connection to nature's cycles.

Like Eastern Triadic Structures, some of these arenas may have been transformed, or decommissioned, of their primary function and served to influence social memory. Ball court 2 in Xunantunich may provide an example of this, as the court may have been decommissioned and used as a passageway between the two main public plazas of the site (Feely 2019; LeCount and Yaeger 2010).

Conclusion

The Belize River Valley is a sacred landscape from which Maya civilization developed. The narratives of the Popol Vuh and the megalithic temples that characterized the Maya built landscape were borne from the land; nature's cycles and cosmological events maintained spiritual and symbolic significance in Maya cultural identity, ritual practice, and social organization from the Preclassic to Terminal Classic Periods.

Chapter 6: Ritual Charging

“By replicating the mountains of the horizon in their towns and designating sites in the natural landscape, the Maya created locations where offerings could be made to the deities to ensure the safe continuation of life.” (Bassie-Sweet 2010).

The “safe continuation of life” that Bassie-Sweet referred to in the article “Creator Gods,” an exploration of epigraphic depictions of Maya deities, leads us to examine the various objects and materials used in rituals, and their deposition within the built landscapes of the Maya world (Bassie-Sweet; Feely 2019; Stuart 1997; Sullivan 2017). In addition to the incorporation of cardinal directionality and the demarcation of ritual centers, the Maya used ritual offerings to charge the built environment with the spiritual energy the Maya perceived in nature.

“Ritual Charging” is a term assigned to offerings and ritual objects placed in permanence in the built environment (Fogelin and Schiffer; Tacon). They are the material remnants of ritual behavior, the tools necessary to complete certain rituals (Fogelin; Tacon). The forms of ritual charging that I evaluate below include cache deposits, stone monuments, and stucco iconography.

Throughout the 20th century, archeologists have discovered dozens of symbolic objects in Xunantunich that all suggest a uniform practice existed throughout the time that was flourishing. The placement of these objects are predictable in a sense; for instance, the discovery of stelae is often followed by the discovery of an altar, cache deposit, or tomb, as stelae often marked where ritual charging was present (Sullivan, Audet).

Stone Monuments Stelae and altars are pervasive forms of ritual charging throughout the Belize River Valley, and the Maya lowlands in general (Stuart; Taube). Stelae served as visual representations of both political power and ritual activity, signaling and demarcating sacred space (Stuart; Slocum). Altars were stone slabs upon which ritual activities were performed (Stuart). Stelae functioned as markers of abstract time in the built environment, similar to how gravestones function as a means of communicating messages about past lives (Stuart). Stelae also indicate direction and movement; for example, LeCount and Yaeger argued the stelae standing in front of structure A7 delineated a pitstop on a ceremonial processual unit that funneled movement through and around the sacred monuments in Plaza A1 in Xunantunich (Feely; Keller). As was stated in the previous chapter, stelae may also symbolize *piedra madre*, sacred mother earth. They were also known as *Te tunob*, stone trees, with clear associations with the sacred tree at the center of the quadripartite earth. As sacred stone trees, these megalithic monuments were also associated with caves and mountains and the convergence of sacred elements; the reflective qualities of water are evoked in the stelae's smooth, hard surface (Stuart). In effect, stelae functioned as "portable bedrock," embodying the spiritual power of the Earth God and Rain Gods, the deities of Xibalba (Stuart; Taube). Caches and altars are sometimes discovered buried underneath stelae, implying some stelae were associated with termination rituals and/or yearly ceremonies characterized by burying or terminating objects associated with the previous era (Slocum).

Cache Deposits

Cache deposits are offerings composed of various artifacts made of sacred materials, that were then buried as part of rituals in ceremonial plazas and other significant architectural features. I elaborate on these forms of rituals in chapter 6, where I discuss how ritual theory

can be applied to the central plaza spaces in Xunantunich. Caches usually include some combination of broken ceramic vessels, eccentrics, and human and faunal remains (Porter 2020; Feely 2019; Sullivan 2017). Common materials discovered in caches in the Belize River Valley include chert, obsidian, ceramics, and freshwater and marine shell (Porter). Chert and obsidian symbolized lightning and rain, while shells were associated with caves, water, and fertility (Porter, Stuart).

Cache deposits in the Belize River Valley were deposited in specific locations to commemorate transitions between eras (Feely 2019; Sullivan 2021), or as part of dedicatory offerings that imbued places with sacredness. They were arranged symbolically, sometimes reflecting the Maya cosmogram or the Maya world view (Feely 2019; Sullivan 2017). In addition to being associated with stelae, caching rituals are part of architectural construction phases; whenever a new construction phase was initiated, caches were constructed and deposited within or above the penultimate structure to commemorate or decommission their use (Feely 2019; Fogelin; Sullivan 2017).

Caches may contain a certain number of objects that represent sacred numerology (Feely 2019; Sullivan 2017). For example, several caches have been discovered in Xunantunich containing nine (9) eccentrics, including the cache that was discovered this summer at the western base of Structure A4 (Feely 2018; Ramirez 2022; Sullivan 2017).

While excavating Ball Court 2 in Xunantunich in 2018, Cassandra Feely discovered five caches containing dozens of eccentric lithics (Feely, 2019; Lee 2021). Eccentrics are deeply symbolic objects; they are produced from sacred materials into symbols of Maya religion, cultural identity, and political ideology (Feely; Sullivan; Sheets). Their colors were associated with the four cardinal directions; red represented east, black was west, north was

white, and south yellow. The surrounding landscape was embedded into caches through symbols that brought in the sacred spiritual energy of their surroundings (Hopkins, Josserand, Feely 2019, Porter). During the Classic period, eccentrics became one of the predominant caching objects in the Belize River Valley region (Feely). This is especially prevalent at Xunantunich, where more eccentrics have been found than in any other site in the region (Sullivan 2017).

The interesting piece about these artifact assemblages is that they are not visible in the built environment. Eccentrics required real craftsmanship and refined skill to carve, yet their only intended purpose— as far as archaeologists know— was to be buried or deposited in special/sacred locations.

Burials and Tombs

If a temple represents Flower Mountain—the access point to the Heavens— then a tomb symbolizes the cave, the portal to the Underworld. In the Creation Story, the Maize God is brought back to life by his sons, the Hero Twins, after they place their father's body in water (Awe; Christenson; Stuart; Taube). This event occurs in Xibalba, the watery underworld. This leads me to infer tombs in the Maya built environment represented caves, and the individuals placed within them would be symbolically resurrected, endowing the temples enclosing them with their spirits (Slocum 2018).

Human and faunal remains are also used in offerings; for instance, a cache deposit containing five human skulls and a series of other cache materials was excavated from the summit of Structure A4 in Xunantunich (Audet; Awe). The use of remains in offerings may correlate with beliefs in resurrection and sacrifice, or with termination rituals that mark

transitions from one era to another (Fogelin; Sullivan 2017). Offerings containing remains should not be confused with tombs or burials, which generally contain individuals surrounded by an arrangement of grave goods (Awe; Slocum).

Buried Stucco Iconography Similarly, the Maya developed intricate stucco images featuring images of the Gods that appeared to be covered with limestone, rendering the images invisible. At sites across the Maya lowlands, friezes and mosaics featuring massive stucco imagery were intentionally covered up by layers of plaster (cite; Awe). At Xunantunich, a stucco image of the Sun God was placed within the wall of a terrace flanking the central stairway of El Castillo (Awe; etc) These examples bring up the concept of visible and invisible meaning in the built environment; it is worth considering why certain forms of ritual charging were not meant to be seen by humans.

Conclusion: The forms of ritual charging discussed in this chapter were significant factors in demarcating sacred space in the built environment during the Late Classic Period. The layers of symbolism associated with stelae, cache deposits, and buried stucco iconography provide a strong basis for my observations of Plazas A1 and A2.

Chapter 7: The Theoretical Framework for Researching Sacred Space

Introduction: Foundations in Phenomenology

The theories that inspired this exploration of sacred and symbolic space in Xunantunich all align with Phenomenology, an archeological theory and method concerned with human activities and behaviors that create cultural materials to better understand social practices (Ingold 1993; Tilley 1994). The philosophy also underscores the significance of the surrounding landscape in these routines and behaviors, and is concerned with examining social identities, artistic expression, religious beliefs, and sacred space. In *Phenomenology of the Landscape*, Christopher Tilley described how phenomenological thinking was necessary to understand how people experience their world, the relationship between the individual state of “being” and the multi-layered experience of “being in the world” (Tilley 1994). Tilley proposed that the landscape is experienced through routines that show movement from one station to another. This foundational mindset is key to analyzing monumental architecture and ceremonial spaces in the built environment, as it leads to contemporary methods in archaeology based on analyzing artifacts in their spatial and temporal contexts (Erickson, Tilley, Basso, Ingold). This is why phenomenology is fundamental in my analysis of sacred space. “...spaces, as social productions, are always centered in relation to human agency and are amenable to reproduction or change because their constitution takes place as part of the day-to-day praxis or practical activity of individuals and groups in the world” (Tilley 1994). There is no “space,” only spaces, which come into existence when humans designate the space as part of their cultural narrative. In essence, humans create their cultural landscape through the activities they perform within it (Basso, Ingold, Tilley).

As a theory, phenomenology is concerned with the individual and social experience of humans and their relationship with the land through which they socially and culturally evolve (Basso; Abram; Tilley). Space is experienced through temporalities, as spaces are constantly created and recreated, transforming from one temporality to another, building on “previously constructed spaces provided and established from the past” (Ingold 1993; Tilley 1994). This idea underscores the necessity of examining historical and cultural records when researching sacred space. As a method, a phenomenological approach requires interpreting a combination of ethnographic, epigraphic, and historical records that describe cultural practices from the perspective of the subjects in question or from historical figures who documented interactions with them. It also requires analyzing objects in their spatial and temporal contexts, as there is more value in examining artifacts in situ, especially when researching sacred and ceremonial spaces. The archeological site Xunantunich is an ideal site for applying phenomenological theory and methods to the study of sacred spaces; below, I will discuss key anthropological theories that guided my observations of Plazas AI and AII.

Ritual Theory: Religious rituals that reoccur in certain spaces define them as sacred (Tacon, Fogelin). Rituals imbue spiritual energy into spaces when they are repeated within them, designating them as sacred in comparison to profane or worldly areas where ceremonial rituals are not performed (Tacon, Fogelin; Golden, Borgstede 2010). Rituals that are performed consistently in the same places bring a special energy to those places, informing cultural memory and practice (Tacon). Rituals bind people together and connect them to the natural landscape, a connection that is ultimately expressed and solidified through religious practice (Tacon). “When practices continue at the same locations over many generations these places and their surrounding landscapes become increasingly symbolically charged, patterned, and

contextualized....” (Tacon, 82). This symbolic “charging”--or ritual charging-- occurs in spiritual locations both within the natural and built environments. Often rituals performed in the built environment imbue the sacredness of their natural surroundings into the space, thus projecting the spiritual energy that exists organically in nature into constructed arenas (Freidel et al; Fogelin, Schiffer; Tacon). In city-centers like Xunantunich, temples reminiscent of sacred mountains outlined Plazas within which ceremonies were performed, repeated, eventually made permanent through physical representations of their performance that serve as markers of the passage of time, especially the transitions between periods (Bassie-Sweet; Stuart; Taube).

Fogelin and Schiffler examined five forms of indigenous rituals, all of which can be examined in the archeological, historical, and epigraphic records of Maya civilizations (Fogelin, Schiffler; Fogelin). They are consecration, dedication, termination, decommission, and continuation (Fogelin, Schiffler). There is significant material and epigraphic evidence that posits that each of these rituals were performed in Xunantunich (Audet 2006; Garber and Awe; Keller 2010; Feely; Santasilia, Tilden 2016).

The first form of ritual associated with sacred objects is consecration, which refers to the commemoration of bringing an object, structure, or area into being, its figurative conception (Fogelin, etc). For example, in a Maya village in Guatemala, consecration ceremonies accompany construction of new homes; the builders sacrifice four chickens, consume them, then bury their heads under the new structure (Fogelin, Vogt 1968). Dedication-- or inauguration-- rituals among the Maya aim to “confer holiness on an object,” bringing it to life, imbuing it with a soul (Fogelin). As I explained in Chapter 4, the Maya believed in and practiced Animism, every object, structure, or space that was brought into existence required a soul; dedication rituals commemorated this belief. Conversely, termination rituals occurred when an object,

structure, or space had reached the end of its “use period,” and was destroyed and/or buried. This ritual symbolized the end of an object’s life, its soul released from its corporeal bonds (Fogelin, Awe, etc). Termination is sometimes bypassed at first if an object is decommissioned, which repurposes the object in its retirement, and usually includes a change of ownership; the object no longer serves its primary function, and becomes a symbol of its former use (Fogelin, Yost). Finally, continuity rites are a different form of ritual concerned with a continuation of a role rather than the transitions between functions of objects (Fogelin, Schiffler). Continuity rituals preserve and maintain the role of an object, structure, or space, rather than altering its social role (Fogelin, Schiffler). This practice is associated with risky behaviors that have no guaranteed outcome, like hunting or farming (Fogelin, etc).

The incorporation of ideological symbols in architecture of Xunantunich were all physical manifestations of these rituals, rituals that were central in upholding reciprocity with the Gods. The Maya performed these rituals to please the deities responsible for bringing annual rainfalls, which the Maya relied on heavily to support their agricultural production (Awe et al).

Variants of Space: Christopher Tilley described five variants of space to which phenomenological methods apply. These forms of space build upon one another, starting with the individual lived experience and culminating in the communal experience. Tilley coined each form of space as either somatic, perceptual, existential, architectural, and cognitive (Tilley 1994).

Somatic space refers to the sensory experience of the individual and the habits they form within the space to survive. The space is experienced through bodily movement (Tilley). Understanding how this space works is founded in understanding how the upright body perceives the world. This form of space is also related to where, how, and why the individual body moves

through the world. Somatic space inspired my examination of bodily movement through Xunantunich, as I examined how my the architecture manipulated the way my body moved through the central plazas.

Perceptual space is egocentric; it is experienced by groups through daily practices, routines, and rituals. This space is based on the individual's perception of distance, direction, natural and unnatural objects (Tilley). It is concerned with relative, quantified space, the intention behind bodily movement and perception. Essentially, perceptual space accounts for human agency and decision making, and verifies that human activity is not random, it is set into routine and defined by the land in which they reside.

Both somatic and perceptual space lay the foundation for existential space, which transcends past the individual experience. Existential space is constantly in flux; it is defined through the production and reproduction of movements and activities of a group, and changes depending on the activities performed by the group. Sacred and symbolic space can be examined as existential space, as sacred spaces are defined by communal activities— repeated rituals— and visual representations of social memory— such as symbolic objects or artistic expressions— that serve as emblems of cultural identity (Tacon, Tilley; Fogelin). These forms of existential space are constructed through the social meaning embedded in buildings, sacred or symbolic objects, or in elements of the surrounding natural landscape. These visual representations become reference points for “emotional orientation for human attachment” (Tilley). Existential space connects to sacred space, in that the concept relies on repeated activities— in this case, rituals— performed in a specific location— Xunantunich's city center.

Architectural space is the culmination of all three forms of space. Each form of space describes one element of how humans experience the world around them as they explore their

relationship between “being” and “being-in-the-world” (Tilley 1994). Humans experience individuality, familiarity, community, and society; architectural space is concerned with communal and social spaces that convey social meaning through monuments and other forms of cultural expression that uphold a certain social narrative and identity that becomes social memory (Fogelin; Golden and Borgstede 2010). Architectural space refers to a group’s deliberate attempt to create and demarcate space, segregating inside space from outside space, delineating boundaries between public and private areas, dictating and restricting movement. Architectural space is a deliberate creation of tangible, visible, sensible space that conveys meaning to those who perceive it. The central plazas in Xunantunich should be examined through this lens, as Late Classic architecture demarcated ceremonial centers and processual units in order to define a sacred space for conducting rituals.

Finally, all variants of space are perceived through cognitive space, which provides the basis for reflection and theorizing about the other forms of space. Cognitive space further acknowledges that space is a human construct that only can exist as a set of relations between people, things, and places. It is created by social relations and interactions between people, things, and places (Tilley). This defines space as a societal achievement, not a guarantee in human development (Tilley).

In *The Temporality of the Landscape*, Tim Ingold expanded on Tilley’s theories by emphasizing the need to redefine what the landscape means to archaeologists who study indigenous materials and lifeways. The core tenant of Ingold’s Landscape Theory was human temporality in space, which he coined “taskscape” (Ingold, 158). Like Tilley, Ingold argued that the landscape was a human construct designed through human movement, labors, rituals, and other activities (Ingold). Ingold’s arguments about temporality underscore the importance of

accepting that history and the landscape evolve together and are a part of one another (Ingold).

Architectural Communication Theory: Similar to Tilley and Ingold, Rapaport examined space as a social construct, and explored the messages that architecture communicated about the architects responsible for their construction.. Rapaport examined the nonverbal communication techniques in monumental architecture. Slocum drew on Rapaport's theoretical framework in her examination of Structure A9 in Plaza AII in Xunantunich, which was one of the two tombs discovered in the site center (Slocum). Slocum addressed the cognitive and social psychological impacts of hieroglyphs and stucco imagery, the impact of monumental architecture on social memory and identity, and the meaning behind the styles and designs that characterize Maya architecture in the Belize River Valley (Slocum; Van Dyke; Joyce; Rapaport).

Architectural Communication Theory is founded on three fundamental questions (Rapaport). What characteristics of humans as members of a species and of various groups, and individuals, influence how built environments are shaped? What are the effects of the built environment on human behavior? What mechanisms link humans and the built environment? Answering each of these questions is critical to understanding that architecture has meaning that is a part of— never separate from— its function (Slocum, Rapaport; Van Dyke).

Rapaport's most significant contribution to anthropological theory was to analyze the levels of meaning in the built environment (Rapaport 1998). According to Rapaport, there are three levels of meaning present in monumental architecture: high, middle, and low (Rapaport 1998). The tallest, most visible structures from the surrounding landscape— or structures that convey a "high" level of meaning— are generally where sacred ceremonies take place, and are associated with religion and spirituality (Rapaport 1998). The middle level of meaning represents

community identity, political power, wealth and elitism. Finally, the smallest structures are associated with the lowest level of meaning in architecture, used for practical purposes rather than discursive; they embody everyday functions instead of projecting an intentional message about the past (Rapaport, Van Dyke).

The Maya archeological sites in the Belize River Valley can be categorized into high, middle, and low levels of meaning based on their interpreted functions (Slocum; Driver; Garber 2004; Walden et al. 2023). The lowest level of meaning is associated with discrete clusters of settlements composed of five to ten house mounds. The second, or middle level meaning refers to minor centers that may have one or two temples, but do not exhibit evidence of stone monuments such as stelae or altars that may have delivered specific messages about these structures (Driver; Garber). Archeological sites in the Belize River Valley that are aligned with Rapaport's theory of high levels of meaning are monumental centers with multiple plazas, secure and private elite palaces, ballcourts, and stone monuments (Slocum, Garber, Driver).

In Xunantunich, the structures in the central plazas all exert a higher level of meaning associated with sacred spaces where annual rituals occur (Rapaport; Slocum; Tacon). The tallest structure in Xunantunich, El Castillo, sits at the southern tip of the site. The Castillo was a dual purpose structure, which served as the primary residence for the site's rulers, but was also used by the elite for both private and public ceremonies and rituals during the Late Classic Period (Awe 2008; Awe et al. 2020 Garber? Field Reports?). The palace/temple complex is visible from miles around Xunantunich, further demonstrating its discursive function as a representation of the city's regional influence as a ceremonial center during the Late Classic period.

Another foundational aspect of Architectural Communication Theory is the way in which physical movement is impacted, and how restricted access to areas designated for elite, political, or religious functions can provide more insight into the meaning behind high, middle, and low forms of architecture (Tilley; Slocum 2019; Rapaport 1998; Van Dyke). This emphasis on bodily movement also supports the methods I used to observe the site, which are founded in viewshed analysis and bodily movement. Slocum discussed the restriction and allowance of movement in her analysis of structure A9, a tomb stationed on the west side of Plaza A2 in the city-center. Her analysis of architectural communication is a foundation for my exploration of movement, as what defines space can be understood through bodily movement in and around architecture. The architectural transformations that resulted in the decommissioning of Ball Court 2 and the erection of Structure A1 should be examined based on how they manipulate movement.

Entanglement Theory: The reciprocal relationship between humans and Gods that is physically manifested in the architecture in Maya cities is best evaluated through Entanglement and Thing Theory (Hodder, Moyes). Entanglement Theory posits that humans become so reliant on inventions that solve certain problems or sources of inconvenience that they cannot envision a reality where those things do not exist (Hodder, Moyes). The things we create, create us (Hodder, Moyes). “Things” can be material, tools, or forms of practice, but they all align with the same notion: social organization and survival is contingent on the relevance of things, and cannot function without them (Hodder). When these things are no longer relevant or do not seem to work anymore, they threaten the backbone of society and can cause collapse if people do not find alternative pathways to social organization.

In regards to the Maya during the decline of their civilization at the end of the Terminal Classic period— around 900 AD— evidence of increased rituals in sacred places suggests that

Maya rulership was too entangled with divine authority and power to be able or willing to find alternative solutions to the drought and famine that likely caused their demise (Awe 2012; Moyes). The rituals taking place at Xunantunich, and the increased segregation of Plaza A1, may also represent entanglement, as elites increased ritual practice and revitalized previously abandoned practices during Terminal Classic Phase (Moyes, Awe, Hodder).

The Self-In-Situ, the Archeologist as the Artifact

The theories that I've discussed here lead me to posit the following question: how do humans embody "being in the world," and can examining one's own bodily experience- one's own journey through "Being" further this understanding of phenomenological practices in archaeology? At the core of phenomenological research is the researcher's observations that are conducted through their body. What one sees, hears, and moves through dictate the observations one can make about space, and impacts the conclusions one draws about an area's function. This somatic experience of the archaeologist applies the same thought process of examining movement through the built environment to the researcher's own sensory experience. When special attention is paid to the archeologist's bodily experience, they expand their analyses to include ephemeral, non-material artifacts, which is vital for archaeological research into rituals and religion (Tilley; Tacon; Rock Art Podcast). This idea can be referred to as the "Self-in-Situ," as it expresses the notion that the body is itself an artifact, its sensory input a source of data, its experience moving through the world a legitimate means of procuring information.

My sensory experience as an archeologist and a researcher- what I see, hear, smell, taste, feel, and what my body moves through- impacts how I approach answering my research

questions and how I interpret and draw conclusions about my observations. In fact, I believe I couldn't adequately answer my research questions without acknowledging my own bodily movement through, around, and on top of the architecture and urban layout of Plaza AI and AII. I will also acknowledge how anecdotal this all may sound and I would never advocate for this approach as a singular method of study. It is inherently problematic in a scientific field, as it relies on observers to observe themselves observing the subject, and report objectively on each of these layers of observation. However, if this approach is part of a series of other methods, especially extensive literary review into epigraphic, ethnographic, and historical records, it can further archaeological research in some truly unexpected and unique ways, which I will explain more in the next chapter.

Finally, the reader will notice that I have chosen to write about my research methods in present tense. I decided to write this way because the way the Maya tell stories about their past and themselves, the stories that create their cultural narrative, are expressed in the present tense, told in a way that brings the story to life by presenting the setting to the audience as if the story were unfolding in front of them (Christenson 2007). "The opening chapters of the Popol Vuh describe the creation of all things as if it were occurring in the immediate present, time folding back upon itself to transport the reader into the primordial waters of chaos at the very moment the first land emerged ..." (Christenson). By writing about my experiences— my Self-in-Situ— in the present tense, I may be able to underscore the temporality of the landscape even further, as my research and writing is about the site as it exists today as much as it is about the substantial and bustling city-center that existed in the past. Because Xunantunich is not merely a relic of the past. The site is currently in the process of being revitalized after lying dormant for centuries under the thick jungle brush that still coats the vast majority of Maya sites today. Contemporary

archeological research, the many visitors who are drawn to these monuments, and the strengthening connection to the local community are all aspects of this revitalization process; by resurrecting Xunantunich in the present, we all become a part of its history.

Conclusion

Xunantunich is an excellent location to examine ritualistic activities and behaviors that provide insight into Maya religious and ideological practices. Approaching this research through a phenomenological lens that requires a synthesis of cross-disciplinary methods opens up the non-material world in the archaeological record, where spatial and temporal context is revealed through human activities that define cultural identity. The landscape in which Xunantunich is located and the evolving relationship its inhabitants have with it would be incomprehensible without understanding the myths and legends of those inhabitants, which all, in some way, originate from what they perceived. These perceptions are born from the sensory experience of the body (Balee; Erikson). Only by recognizing the necessity of temporality and the self-in-situ while studying indigenous perspectives of the landscape can the divide between an “a-temporalized,” processual approach to archaeology and the study of a “dematerialized history” be bridged (Ingold). Only when we acknowledge that we as archeologists are characters playing a vital role in a story can we attempt to decode the past.

Chapter 8: Phenomenology and 3D Modeling

The methods I used to answer my research question are rooted in phenomenological theory and how it can be applied to the study of constructed sacred spaces. They include 1) extensive literature review of ethnohistorical and epigraphic accounts of Maya ritual behaviors, 2) Data collection and analysis for cataloging sacred and symbolic objects, and 3) 3D modeling and photogrammetry. Each of these methods provides a spatial and temporal approach to understanding sacred spaces.

To find out how the Maya who occupied Xunantunich constructed and ritually charged a sacred space in their built environment, I needed to learn about the various projects that had taken place at the site and how previous archeologists approached answering their research questions. Excavation reports from projects sponsored by the Belize Valley Archaeological Reconnaissance Project provided vital information and substantial evidence of the discursive function of features in Plazas A1 and AII (Awe; Feely 2019; Lee 2022; Santasilla 1997; Slocum 2018; Zelenik 1993; 2017; Tilden and Watkins 2018;). But before I could compile evidence of sacred objects that were used to ritually charge the ceremonial center, I first had to know what those sacred objects were. The writings of various epigraphers and ethnographers who conducted the painstaking work of translating Mayan glyphs and language into English significantly informed my interpretation of the layers upon layers of religious symbols sanctifying the city.

Another overall objective was to demonstrate how 3D modeling can provide avenues for further analysis of artifacts, monuments, and architecture that are only accessible during field seasons. In regards to sacred spaces, these methods demonstrate the importance of studying symbolic objects in situ, in spatial and temporal contexts, and in relation to one another

(Richards-Rissetto 2017; Moyes and Awe 2000). By recreating the site center of Xunantunich as a Digital 3D model, I was able to continue my analysis of the Plaza in its entirety, rather than having to rely solely on pictures that isolate individual monuments and make spatial synthesis difficult.

Most significantly, photogrammetry methods are vital for communication and outreach, not just within the field of archaeology but to the public; 3D modeling is a major factor in making archeological research accessible. Moreover, my foundational method of photogrammetry resulted in a 3D Model representation of the Xunantunich site center; it provides a means of verifying my observations and a means of examining the sacred space without having to visit the site. 3D Modeling is a powerful tool in architectural analysis, and aligns well with my phenomenological approach to observing sacred space by being able to provide a detailed and dynamic digital rendition of the site, highlighting the various forms of ritual charging, both large and small. "3D modeling and visualization offer a ground-based perspective with a sense of mass and scale as well as aesthetic details such as sculptural facades or painted doorways" (Richards-Rissetto 2017, 16).

This implies that future researchers would not have to visit the site to verify my observations on bodily movement through it, as the 3D Model I created of the site can be navigated easily by the user. It mimics the pathways taken into, around, and out of the Plaza, and highlights the various sacred imbuelements within the space to draw the viewer's attention to the artifacts and monuments that ritually charge the space.

The Self in Situ

To begin, I want to take the reader on a journey through the city-center of Xunantunich. I will describe my experience applying this notion of “self-in-situ” by treating my body as a vessel constantly taking in and processing information as I move through space. The following recount may be considered my “taskscape” while conducting archeological research in Xunantunich (Ingold). I discuss what I am able to see, hear, and move through, then evaluate how these observations may provide nonmaterial evidence that Plaza A1 is ritually charged with Maya sacred symbolism.

Arrival: We arrive early in the morning at the site. I pick up my red backpack from the car and walk up the steep, slippery hill towards the bodega, where all the archeologists and students working at the site convene at the beginning of the day. It must have rained the night before. When I reach the bodega, I move past the lab where students ready their cleaning stations on the makeshift benches hugging the exterior of the building. I gaze north. I do this most days. Xunantunich is situated on a hilltop, which means views from all around the site are pretty spectacular. From my position, looking north/ northwest, I see a shaggy, luscious green carpet of trees, undulating into the distance. Steamy mist rises from hidden caverns rooted deep below the canopy. I hear a crackling and throaty howl coming from the jungle— howler monkeys. They howl when rain is coming. And oh, they are howling now.

The Plazas: The Plazas are four-sided, near perfect squares or rectangles. This shape is pervasive here in the Belize River Valley; Cahal Pech and Caracol, among others, also exhibit four sided, angular public spaces (Awe 2008; etc). This shape represents the cardinal directions; the boundaries of the ceremonial space are demarcated by grand stone structures on the East,

West, South, and North (Awe). It may also represent the origins of the material world as depicted in the Popol Vuh, as 4-sided spaces that appear sunken in relation to their surroundings have been interpreted as the primordial seas from which all life originated (Keller 2010; Feely 2019).

I am walking across Plaza AII towards the western side of structure A1, where I stop at the ballcourt, named “Ballcourt 2.” It takes me a couple minutes to move from the bodega to the ballcourt. It always takes longer to move through these spaces than I anticipate. The towering temples surrounding each Plaza have this effect of making these grassy open spaces appear smaller than they are. I have this impression that I am too small, as well. I am made to feel like an insignificant and impermanent visitor in this archaic center.

The discursive function of this space is apparent; I am supposed to feel insignificant by design. My body’s sensory input generated by the massive space that I navigate through communicates that I am insignificant and impermanent, especially when placed next to the behemoth ever-lasting structures of Xunantunich. My movement through space is not convenient, as the space is not designated for human routines. The intention is the opposite, in fact, as it was designed for spiritual reflection that perhaps required this feeling of inferiority.

Ballcourt Two: The ballcourt is in front of me now. I stand on the northern end, facing south. Structure A1 is to my left, its western wall is also the wall of the ball court. They fit together. The walls of the ball court rise meters high, enclosing the arena. It is clear that I cannot choose my own path into Plaza A1. Technically I have two options, because the wall to the east of Structure A1 no longer serves its function, and I can easily walk over the remnants. However, the Maya who occupied Xunantunich after this wall was constructed may have had only one option when approaching the Plaza from the North: enter through the ballcourt.

I am now walking through the ballcourt. The arena is relatively small, almost six meters wide and about 18 meters long (Feely 2019; Jamison and Wolff 1994). As the ballcourt is quite narrow, peripheral views are restricted so that I can only see out in front of and behind me. A staircase climbs from the southwest corner of the court up to the top platform on Structure A1. As I move forward— heading south—, the view of Plaza AII disappears, blocked by the western wall of Structure A1 and the southern wall of structure A9, which is a pyramidal tomb sitting at the entrance of the ballcourt that houses one of the only tombs in Xunantunich (Slocum 2017). Plaza A1 stretches out in front of me, lapping up against the monumental structures surrounding the sacred center.

Sacbes I and II: Gazing east, then west, I take note of the two sacbes, or ancient roads, that lead into Plaza AI. Sacbe I is still covered in dense jungle growth; it trails up towards El Castillo from the east of the structure, leading into the main plaza. Sacbe II connects Plaza AI to the western features of the site, where structure A-21 resides. These sacbes reflect how social and political networks united that Maya cities were honored in rituals in Plaza AI. The funneling of movement through the sacbes may be part of a processual unit that aimed to instill a sense of reverence and veneration in visitors of the site as they are trafficked through it, as what they were able to see and move through were dictated by the higher-level meaning architecture.

Structure A1: I round the southwestern corner of Structure A1. The structure sits in the center of Xunantunich, separating two main plazas, which may be a reference to sacred cardinal directions. I notice a row of three short, round altars stationed along the southern face of the temple. The structure features four terraces on the southern wall; due to heavy erosion, it is unclear whether the other three facades featured the same number (Zelevnik 1993). There appears to be a heavily eroded staircase along the central axis of the southern wall; as this

structure reflects Yucatan architectural expression, it featured stairways on the north and south (Awe personal correspondence). However, due to Thomas Gann's liberal use of dynamite on the structure's northern stairway during the early 20th century, the remnants of the north wall have suffered structural damage in addition to that caused by environmental decay (Audet 2008; Slocum 2018).

I pass by the three altars, walking east, and reach the remnants of the southeastern wall that would have segregated the space from the adjacent plaza. Following the wall, it looks like it is connected to structure A3, which sits at the center of the East Triadic Assemblage on the east of the Plaza. The wall's construction may have entirely changed the discursive function of the Triadic, which likely existed as symbols of the yearly ceremonies associated with agricultural cycles. But this wall may have severed the northernmost structure from the triadic and from the ceremonial center. What could this imply about the meaning of these structures, when two remained connected to Plaza A1 after the wall was built?

Eastern Triadic Assemblage: The Eastern Triadic Assemblage encloses the plaza from the east, a symbol of this cardinal direction and the practices associated with commemorating the cycles of creation (Awe et al; Freidel et al 2017). . It is debated whether the Assemblage was originally an E-Group where annual rituals associated with rain cycles took place, a cultural practice that spans back through the earliest Preclassic phases (Friedel et al). The inline, triadically arranged, structures may never have been an E-Group, alternatively; they may have been a representation of Maya identity and ritual practice. Likely this group served as a symbol of religious identity, a representation of the three-hearth place of creation, or the burial places of the site's elite (Awe).

The Space Between: I walk around the east wall of Structure A1, moving north towards structure A2. This view to the north focuses in on Structure A14, a small temple. Upon turning around, my gaze is once again captured by the towering Castillo. The temple is magnetic; it captures my whole attention and imagination. This makes moving north feel like exiting rather than entering a space, which may further indicate that Plaza AI is the primary focus of the city, with El Castillo being the ultimate, main event.

Structure A2: The temple has four terraces. A16 sits directly in front of A2, a small structure that may have been a shrine built shortly before, or shortly after the site had declined (LeCount and Yaeger). The small structure features a prominent stela on its central axis, four rectangular rooms, and a small square compartment containing a plain altar on the floor of the entryway. I turn south and trace my way along to the next structure, the center of this Triadic Assemblage.

Structure A3: The wall extending from Structure A1 disappears, then reappears at the northwestern corner of Structure A3. The center of the triadic has five terraces. A staircase along the central axis leads up to a platform at the summit of the pyramid. A stela stands in front of the staircase. It is a near-perfect rectangle about two meters tall, smoothed from *piedra madre*, testimony to the skilled craftsmanship necessary to carve the stone monument. Stelae have been said to give the impression of reflection, their shiny surfaces acting almost like mirrors. The colliding of water and earth illicit visions of caves, where the deities that embody these elements live, and where water and earth are most intimately engaged, hidden from view, invisible to the surface. These *te tun*, or “stone trees,” in Yucatec Maya featured images of rulers that were carved on them to symbolically associate the ruler with the axis mundi (Awe, personal communication 2023; Miller and Taube 1993).

In front of this impressive monument is an altar, similar in size to the altars resting on the ground by Structure A1. Around the monuments, cobbled foundations sprout up from the grass, implying a structure may have existed in front of A3. Scanning up, I notice the only bench found on the east side of the Triadic Assemblage close to the southeastern corner of the temple. I turn right and walk south until I'm in front of the central axis of Structure A4.

Structure A4:A4 is the southernmost structure in the East Triadic Assemblage. It features three terraces running up the temple and a central staircase on its central axis. Directly in front of the staircase is a fragment of a stela standing about one meter high. An ongoing excavation unit is in front of the stela, exposing a buried altar protruding from the unit wall closest to the stela. I go around the structure heading east. I jump over a small drainage ditch and head up the staircase situated on the southern wall. I count 33 stairs climbing up to the top. At the top, I see three platforms stacked on top of each other, the smallest of which is set farthest back on the conserved part of the rooftop. A4 is excavated and unpreserved on the east side of the structure, behind these platforms.

The structure connects to its neighbor A3 via a cobblestone wall. A small staircase leads from the first terrace into the wall, making me wonder if it served as a means of moving between A3 and A4, or if it led somewhere before the wall was constructed. I notice that the wall is made of different construction materials than the construction materials on A4's northern wall. I turn around and climb back down the steps, but not before I take in the view; El Castillo looms impossibly large to my left, bordering the entire southern side of the plaza. Structure A7 is directly across the plaza, appearing to be aligned with the structure I'm standing on.



Figure 11 : The view of El Castillo from A4 (Ratcliffe 2022).

Structure A6 (El Castillo): I walk west, turning towards El Castillo. My eyes trace up the structure, taking in its multiple platforms, doorways, terraces, and sheer size, I am suddenly reminded of the feeling that overwhelms me whenever I see the San Francisco Peaks in Flagstaff, AZ. The temple, like the Peaks, rises from the ground, and shoots up into a point. Its summit pierces the heavens, connecting the earth to the skies above. It manifests a similar power to these mountains, though the majesty derives from the fact that it was constructed by this city's previous occupants rather than the land's magical natural architecture. Similar, but not the same.

The temple stretches across the entire southern side of the plaza and faces north. The majority of the lower portion of the facade is taken up by an impressive staircase, leading to a substantial platform, known as an *audiencia*, lined with 13 doorways. Flanking both sides of the staircase are the site's largest stair side terraces, seven on each side. There is a small stucco replica of the Sun God's head on the west side's fourth terrace, lying on its side so the top of the

head is pointing east. The figure's familiar crossed eyes point up to the sky and down to the earth. This may be a reflection of the iconic cross symbol, which relates to the theme of centering within the Maya cosmogram.

I mount the first stair. There are seven knee-high steps to the first platform. I am out of breath when I reach it. 26 steps proceed up to the next platform, where I pause to regain composure and adjust my heavy pack. Climbing these stairs is no easy feat; I am again reminded of my insignificance in this sacred space as my bodily movement is hindered by the obstacles presented in moving up these stairs. I have a flashback to hiking the Franconia Notch Trail in New Hampshire, an endless and exhausting scramble up 2,000 feet of raggedy boulders that made me wonder if I even enjoyed hiking. Perhaps, then, these stairs reflect the journey up sacred mountains in the natural landscape where rituals were once performed, before they were systematized in the built environment.

Three more stairs lead to the next platform. I count 13 doorways on the northside of the platform. I walk through the central doorway, past solid walls of limestone that restrict my view. Several small rooms hide behind the wall west of the central doorway; they each contain raised steps facing north, which allow me to see over the wall when I climb up. On the other side of the central axis there is a raised walkway leading up to a staircase that appears to be part of a conservation effort from when the structure was excavated, as there is a wider, heavily eroded set of stairs—rendered inaccessible from decay—adjacent to this smaller staircase. I count seven doorways between the small rooms and the drainage ditch that lies right under three cobbled terraces leading up to the structure's penultimate floor.

I now climb this narrow, accessible staircase. I see a small, square structure with four small rooms; I move through each of them and observe the view of the Plaza below and the valley surrounding the site. I realize I can actually see in each direction for miles, especially to the north, northeast, and east. There is something remarkably calming about high vantage points like these, situated high above the plaza– the material world– below. I turn around and climb up a level to what is now a grassy overlook. Featured on the wall to my right is a replica of the iconic stucco frieze, decorated with symbols of the heavens and images of Maya deities, including Chaak, the Maize God, and the Feathered Serpent Deity (Leventhal; Sanchez 1993). Cross-like symbols wrap around the top and bottom sections of the frieze, representing the heavens and cosmos (Tzab direct communication). A staircase leads up to the decoration, allowing tourists to take their pictures next to the iconic mural. I climb it and turn right towards the north of the structure.



Figure 12: Stucco Frieze (Ratcliffe 2022).

A pathway leads me to three doorways in front of three rooms. The center is notably larger than its neighbors. Each room features a stone bench. I shrug off my pack and plop down in the

center, gazing out over the view of the site. The walls encasing this room block peripheral views, so my views are fixed north. It's quiet here. Peaceful.

I pick up my pack and walk east, back to the stucco frieze, and climb down the stairs. I turn to face south and notice a small mound about the same size as the four-roomed structure behind me now. I move towards the mound and turn west, facing the southern facade of El Castillo. There is a rectangular recessed courtyard occupying the space adjacent to the facade. It has staircases, each with four steps leading into it from on the west and east, and another staircase on the northwest corner with five stairs connected to the temple. I look up at the structure's dual staircases that mirror the triangular shape of the temple by converging to a point underneath the structure's summit. I walk towards the staircase on the east. I climb the stairs, counting two sets of nine, then one set of five. The stairs are slick; I have to watch my step carefully. I walk into one of the enclosed rooms, noticing the corbelled vault ceiling rising high above me, a common architectural feature in this region. A narrow, winding staircase leads me to the top of the temple, where five sections of a roof comb lining the center of the platform greet me. Views are completely unobstructed; I can see the entire site and the surrounding valley for miles. The effect is breathtaking.

I wonder what it means to feel "on top of the world." Here, where heaven and earth assemble, I have a profound sense that I do not belong here, that I can't stay here. I belong below with the other archaeologists, with the bustling evanescence of the present. But visiting here has reminded me how vast the world below is, the way the valleys and mountains interconnect with streets and houses, all deeply interwoven, all part of this magical tapestry that is the present and past Maya landscape. To see all this is to see what the Gods see. Perhaps that's what it means to feel on top of the world.

I begin my descent. I turn west and walk down the stairs, and head down the west side of the temple. Another frieze decorates the western facade. West of this replica is another four-roomed structure, structure A20. Its two round pillars flanking the doorway are unique, singular monuments in this site, and represent an external influence on architectural style in Xunantunich during the Terminal Classic Phase (Awe 2023). I walk down the stairs and arrive at the bottom of El Castillo. After ascending to the highest vantage point in the site, I find myself again grounded to the Plaza floor, where my corporeal form belongs.

Ball Court 1: I am now walking northwest, away from El Castillo and towards Ball Court 1, directly west of Structure A7. I reach the center of the court and spin around. Similar to Ball Court 2, El Castillo dominates most of my views to the south. This court is notably larger than Ball Court 2 and has an entirely different architectural style; while Ball Court 2 is enclosed with stepped walls, the walls enclosing Ball Court 1 are smooth and straight, and once featured a hoop, another reflection of external regional influence (Awe 2023; Feely).

Structure A7: I retreat back into the Plaza, rounding the southwest corner. I'm standing in front of Structure A7, still largely unexcavated on the outside. It is the same height as the structures across the plaza. A single stela stands slightly south of the centerline of the building. Yet the exterior of this structure is not its defining feature as it stands today. On the central axis of the temple is an aluminum roof, designed to keep out the sun's piercing rays and to protect the building from the erosive powers of rain. What lies underneath provides significant insight into Xunantunich's chronology; there are four exposed construction phases, the earliest of which dates to the Middle Preclassic (Tilden and Watkins 2016). The temple was erected before most of the structures in Xunantunich and was reconstructed several times as the city evolved and expanded.

Structure A8: Moving north along the western edge of Plaza A1, I reach Structure A8. A thick canopy hides it from view; it is still completely unconserved. It appears to be the same height as its neighbor. The mound sits directly across from Structure A3, the center of the Eastern Triadic Assemblage.

Structure A9: I make my way back through Ball Court 2, approaching Structure A9, situated on the western edge of Plaza A2. I approach the central axis; a megalithic stela lies on the ground, broken apart from its original rooted position. I have a hard time imagining the sheer force capable of breaking an object that otherwise had remained intact after having survived for centuries under the jungle brush. Two more monuments, Panels 3 and 4, these ones clearly replicas, flank the central axis. They are much smaller than the stone monument resting on the Plaza floor and both feature Maya glyphs that describe the elite individual housed inside. I move towards the temple, climbing several small steps leading to a recession in the wall face. I peer down and into a small pit, covered with plexiglass to protect the contents inside. Though this pit appears empty now, it once housed the only royal tomb yet discovered in Xunantunich (Slocum). The remains of an elite female ruler were discovered here, with several dedicatory caches commemorating the individual (Awe et al. 2019; Slocum).

Structures 10-13 (North Palace Complex): Turning north, I am now walking towards Structure A13, the entrance to the North Palace Complex. I count 10 steps leading to the summit of the structure, and 9 doorways across the front the building. Like El Castillo, these steps are impossibly high and difficult to traverse, which was likely the intention of building them this way. Considering this area was primarily residential, the high steps may have functioned as a method of connecting the accessibility of the elite residences with accessibility of the heavens. Stairs like this restricts movement, also perhaps making them a method of keeping unwanted

visitors from accessing the private space beyond. I'm on a journey to document the ceremonial space receding south, so I move on from this residential space and move west, towards Structure A14.

Structure A14: The structure occupies a small space of the northeastern corner of Plaza A2. It was once a small temple, with a central staircase on its west facade. This building is the last structure on my list of monuments to observe. Behind it extends the remnants of a sacbe (causeway) that channeled visitors up the hillside over a thousand years ago. It is the same pathway that channels visitors to the site today. It is where I started my exploration of the concept of self-in-situ at Xunantunich, and it is where my data collection ends.

Photogrammetry and 3D Modeling

With the first part of my methods complete, I turned to tackling the question of how to document and share my observations. At first, I attempted to create a comprehensive dataset of all the forms of ritual charging that I observed in Plazas A1 and A2, but realized that my phenomenological methods required a visual representation of Xunantunich's city center in order to underscore that sacred spaces require spatial and temporal context be examined in a meaningful way (Doyle et al 2012; Richards-Rissetto 2017). 3D modeling is a similar method to GIS mapping; they're all involved in presenting a holistic view of sites and are concerned with pathways, networks, and spatial organization (Doyle et al 2012). "Aside from its cartographic functions, GIS technology offers novel approaches to the human experience of past landscapes, notably studies of visibility and pedestrian movement" (Doyle et al, 792). This supported my decision to create a 3D model of Xunantunich using photogrammetry, as visibility and

movement are the cornerstones of my analysis. I set out to create a public-facing and accessible 3D model of Xunantunich using photogrammetry.



Figure 11: Photogrammetry (Ratcliffe 2022)

At first, I tried capturing images of Xunantunich using a Nikon Camera and tripod. This method didn't work for several reasons; the site was too big, the structures too tall, and the weather too volatile to render any usable pictures. This process is too vulnerable to human error, and I was unable to process images at site, which made troubleshooting these errors in real time impossible. My positioning was a crucial factor in capturing single images, and due to the size of the site, I was not able to maintain a uniform positioning. I would have needed to place markers throughout each Plaza to ensure I returned to the correct position to get my pictures to line up successfully.

I then upgraded from the Nikon and replaced it with the MAVIC PRO 2 Drone, which I pre-programmed to capture aerial images of Xunantunich using a combination of Google Earth and Drone Deploy. I designed three flight plans in Drone Deploy with the intention of capturing

low, medium, and high aerial views. I wanted to capture as much detail of each structure as possible. However, due to the dense vegetation, the drone was able to complete only one of the flight plans before almost encountering a tree. This meant the drone was unable to capture high resolution images of areas of the site that were covered with tree growth or recessed within temples. For example, the three throne rooms in El Castillo and the tomb in A9 are not very visible in the model. However, the images rendered from this flight plan were able to create a relatively clear 3D model of the entire site center.

I processed these images using MetaShape Pro, a 3D modeling software, provided by the Anthropology Department at Northern Arizona University, that spliced the pictures of the site together to build a 3D model. The software allowed me to create a Digital Elevation Model (DEM) and an ortho-mosaic model, which rendered a detailed 3D image of Xunantunich within its local context, showing where the site was built in relation to the valley below. This resulted in a 3D model of Xunantunich as it looks today, with much of it still hidden under jungle brush.

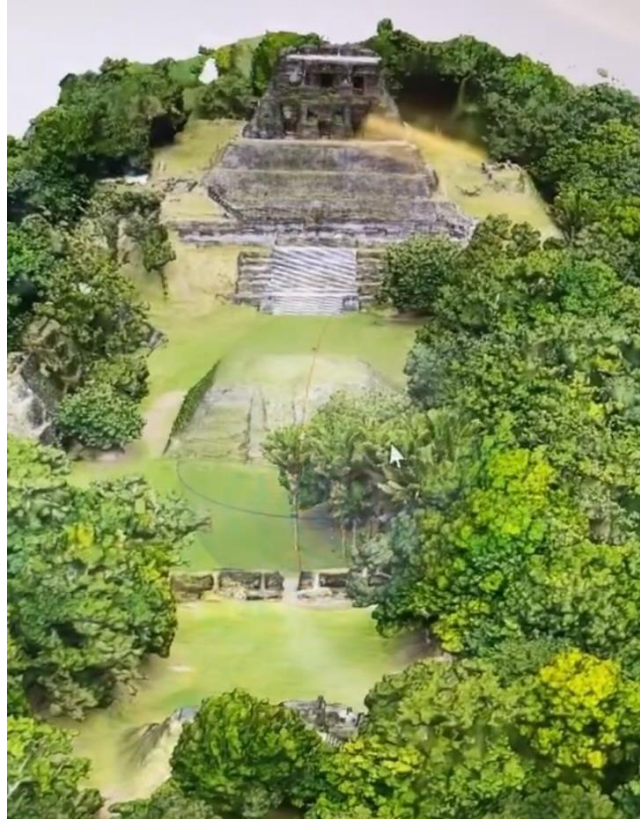


Figure 13: MetaShape Pro 3D Model of Xunantunich Site Center (Ratcliffe 2023).

The most significant issue with producing a 3D model that highlighted the forms of ritual charging throughout the site center proved to be the excavated architecture. I attempted to refine the model by removing some of the vegetation, as I wanted to build a clean but realistic depiction of the Plazas. Although aspects of the site center became much more visible from this process, unexcavated structures covered in vegetation -- Structure A8, A7, and the west facades of A2, A3, and A4 -- did not show up in the model. I reverted to the original model as to not leave out essential aspects of my architectural analysis, and because the original model aligned with my theoretical framework that required examining architecture in the context of the space that surrounded it.



Figure 14: 3D Model, removed vegetation (Ratcliffe 2022) .

I then uploaded the final product of the model to SketchFab, a public website used for showcasing 3D models. The website does not support uploads of Orthomosaic or DEM models, so I had to make do with a lower resolution model without spatial context provided by the DEM and Orthomosaic. I edited the model by adding “annotations” that signaled where and how ritual charging took place throughout the site.

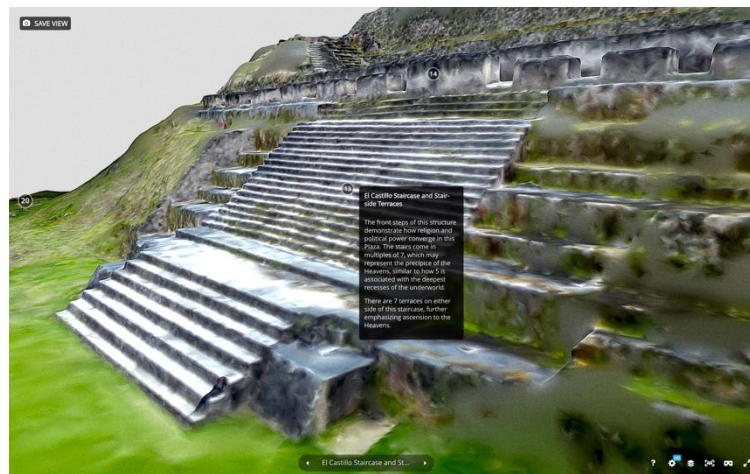


Figure 15: Example of the Annotations Tool, Central Staircase of El Castillo (Ratcliffe 2022).

To address how I would remove vegetation without removing architecture, I would overlay my 3D model on to the LIDAR data collected by the Belize Archeological Reconnaissance Project in 2013 (Chase et al 2014). The survey resulted in a comprehensive LIDAR data of west-central Belize and was essential in recent discoveries of ancient city-centers and settlements across the region (Chase et al 2013). The data may provide adequate depictions of the unvacated structures, which would allow me to remove the vegetation without changing the structures underneath.

Eccentric Data Collection

Two cache deposits containing eccentric lithics were excavated during the field season of 2022. The first one— designated Cache 6— was discovered in the relative center of Ball Court 2, in a hole in a limestone wall of an earlier structure (Ramirez 2022). The cache contained 55 eccentrics that were arranged in a circular pattern around an obsidian core, from which the other obsidian eccentrics— 18 in total— were carved. The other eccentrics were carved from a variety of forms of chert. They were placed on top of a layer of jute shells.



Figure 16: Cache 7 in Ball Court 2 (Ramirez 2022).

The second cache was discovered under a buried altar in front of Structure A4. The altar covered a circular depression that appeared to be carved into an earlier Plaza floor. It contained nine eccentrics that were stacked tightly next to each other on their sides. The eccentric in the middle of the arrangement— a stylized symbol of a weapon— pointed east. I examined each eccentric for their ritual and symbolic significance and created a dataset, which expands on previous documentation of eccentrics conducted by Kelsey Sullivan, Jordan Lee, and Cassandra Feely (Feely 2019; Lee 2021; Sullivan 2017). The dataset can be found in the appendix of this thesis.

Finally, I captured a 3D model of Cache 7 upon its discovery using a smart device application named PolyCam. The figures below depict the cache in-situ. This model helped my analysis considerably, as I was able to revisit the cache in its original position and evaluate its

positioning and arrangement. From the model, I was able to explore the possible intentions behind stacking the eccentrics on their sides, as this arrangement may be part of a specific ritual practice. I was also able to recognize symbolic connections to cardinal directionality, as mentioned above.



Figure 17: Polycam 3D model of A4 altar (Ramirez 2022).



Figure 18: Polycam 3D Model of Cache 7 from central axis of Structure A4 (Ramirez 2022)

Chapter 9: Methods Discussion

Introduction

The results of this research project provided significant evidence to support my initial hypotheses regarding the functionality of structures and space in Plazas A1 and A2 at Xunantunich. Conducting viewshed analysis from various vantage points across the site and examining bodily movement throughout the site was relatively successful in aligning my phenomenological theoretical framework with my methodology. Below, I return to my three research questions. I evaluate my observations of the structures and their individual functions in more detail and explain whether viewshed analysis and bodily movement provided more insight into structures and space. Then I explain how I approached documenting Cache 6 and Cache 7.

Initially, I wanted to find out whether Plaza A1 construction efforts indicated an attempt to create a safe, sacred space in Xunantunich. The construction efforts that characterized the Hats' Chaak and Tsak' Phases may have had the opposite effect of connecting its citizens to ancient practices and rituals. Instead, by segregating the space, these rulers may have further severed their connection to the outside world (LeCount, Leventhal). This argument is supported by the historical record of Xunantunich, as the Tsak's phase was characterized by abandonment of residential groups, cutting off passageways into the center of the city, and boundaries that block free movement into Plaza A1 (LeCount, Yaeger). Below, I synthesize the historical and political chronology of Xunantunich with architectural practices, ritual behaviors, and religious symbolism stemming from the Popol Vuh and the Maya world view to address my argument about the discursive function of the site center. I analyze my observations to support my argument that religious symbols were used to legitimize divine rulership during the Late Classic

Period to align their political power with the infinite power of the Gods. I discuss my observations into visibility and bodily movement and examine these observations in their spatial and temporal contexts. Finally, I examine the invisible forms of ritually charging Xunantunich, the aspects of the sacred space that I could not evaluate in my observations of viewshed and bodily movement.

I will now return to my three research questions.

1. In what ways did the Maya of the Belize River Valley ritually charge their built environment?

To answer this question, I delved into literature about Maya religious symbolism and iconography, as well as historical chronology of Xunantunich that was provided by excavation reports about the site. I evaluated the various esoteric symbols presented in the Popol Vuh, then examined how the Maya sacred natural landscape was copied into the built environment. Most of this literature was based on analyses of epigraphic and ethnographic interpretations of Maya glyphs, artwork, and ritual behavior (Bassie; Stuart; Taube; Martin; Sheets; Garber). I explored all these concepts in the context of phenomenological theory, architectural communication theory, ritual theory, and entanglement theory (Tilley; Fogelin; Ingold; Moyes).

The results of this research indicate that the Maya incorporated ideological symbols into their built spaces in order to safely practice rituals that aimed to satisfy the Gods. The purpose of ritual spaces was to ensure that reciprocal relationship between humans and their Creators was honored and maintained. Sacred spaces are created by repeated ritual practices that charge the space with spiritual energy. The longer these rituals are practiced in the same location, the more sacred the space. These repeated rituals are manifested physically in the Maya built environment

to define sacred space separate from areas designated for daily routines and activities (LeCount and Yaeger; Leventhal; Tacon; Fogelin). The Maya created sacred spaces by reflecting sacred elements from the surrounding landscape in architecture and confining ceremonial centers into areas that represented the Maya universe and creation story; four-sided square plazas that represented the four-sided material world were demarcated by temples mirroring the holy mountains that first rose out of the primordial seas at the beginning of creation. Temple summits mirrored mountaintops, and tombs reflected caves, showing how architecture symbolized features in the natural landscape where the spirit world intersected with the material world. These sacred spaces, therefore, represented the convergence between worlds, where humans and deities could communicate with one another.

Reflecting these features in the built environment was accomplished horizontally and vertically. These site layouts incorporated the cardinal directions, the four boundaries demarcating the flat plane of the material world. Some Maya cities featured temples in the center of their cities, reflecting the unifying power of Ceiba Tree, the sacred symbol of the axis mundi that tethered the material world with the heavens above and the underworld below. Considering these factors, the Maya ritually charged their built environment by creating ritual centers that embodied the transcendental powers of sacred geographical features in the landscape and the Maya cosmogram in order to create a safe and secure environment dedicated to honoring the Gods and upholding reciprocity.

2. In what ways does Xunantunich define a sacred space in the Late Classic Period?

To address this question, I conducted observations on the architectural layout of Xunantunich. I focused these observations on Plazas A1 and A2, which revealed evidence of

high-level meaning structures organized around a North-South axial alignment (Ashmore). I based my observations in phenomenological theory and described my process as addressing the “self-in-situ,” where I gathered data on viewshed and visibility from various vantage points and combined it with my sensory experience as I moved through the site. I cataloged the forms of ritual charging in both Plazas provided by these forms of analysis.

Xunantunich defined a sacred space in the Late Classic Period in the center of their city. The ceremonial center where the Maya honored their reciprocal relationship with the Gods was made sacred through the site’s location, architecture, cache deposits, burials, stone monuments, and in numerological symbolism in stairways, doorways, and other architectural features. Each of these symbolic factors contributes to the idea that Xunantunich’s sacred site center symbolized the convergence of worlds, where rulers of Xunantunich could hold counsel with and demonstrate their service to the Gods.

The city of Xunantunich was built on a hilltop, a feature on the landscape associated with communing with deities. It was likely a center for conducting rituals long before it was settled. This suggests the very foundation of the site was an important factor in defining sacred space within the site, as it occupies a place on the landscape that was already perceived to be ritually charged.

The sacred spaces of Plazas AI and AII were created by repeated ritual practice; these rituals were commemorated by ritual objects or transformations in architecture that served as lasting tokens of ritual behaviors. These objects are interconnected; where offerings were buried— rendered invisible to those occupying the middle world— stone monuments were placed to signal their presence. This interconnectedness of sacred objects creates an invisible network of

spiritual energy, continuously charging the space by keeping these rituals alive and present in time.

The temples at Xunantunich emphasize the sheer power of architecture over human emotions, drawing in this fundamental factor of sacred space. The power of these temples is their size and shape. The way bodily movement and views are dictated by these structures shows how sacred spaces impact the emotions of those who move through it. While conducting my observations of the site, I was often aware of feeling insignificant and small in relation to the ancient temples surrounding me. Rapaport proposed that instilling feelings of inferiority is one of the functions of structures associated with higher level meaning, which is reserved primarily for structures associated with spirituality and religion (Rapaport). The resounding feeling of unworthiness perhaps plays into the notion that the space is designed for appeasing the Gods. The emotional reaction of humility and insignificance may be an aspect of reciprocity, in that the human ego— connected to having control over daily routines— is basically silenced and replaced with the mindset of a humble servant.

The feeling of insignificance was only reinforced by moving through the site. For example, the stairs leading up El Castillo are built in such a way that it was impossible to move quickly up them, as the first seven steps are knee-high, and are followed by another 26 steps before one reaches the first platform. It takes quite a lot of physical effort to get to this platform which is still quite far from the structure's summit. Perhaps this exertion of energy was another method of instilling the feeling of unworthiness in navigating a space designated for honoring the Gods, where humans who traversed into this space were made to feel physically and emotionally inferior.

Sacred spaces, as stated, are defined by repeated ritual practice in the same location. This implies that temporal analysis of sacred sites is just as significant as spatial analysis, as culture and history inform the types of ritual practices that take place in sacred spaces. These rituals have an impact on social memory, which is reinforced by the ritual objects left in permanence that represent where these ritual activities took place. The renewal and reconstruction of sacred buildings in Xunantunich is one example of how social memory that is tethered to these structures is fundamental in ritually charging the site. I will discuss several examples of this theory in regards to structures and spaces in Xunantunich that exhibit multiple construction phases and/or reinforce social memory through their connection to Maya cultural history. Each of these examples also represent how reciprocity is maintained between humans and the Creator Gods and provide further evidence that the sacred center in Xunantunich represents the convergence between worlds.

Below, I discuss several significant examples of ritual charging in Xunantunich, including Ball Court 2, the East Triadic Assemblage, Structures A7 and A9, and El Castillo.

Ballcourt Two: The ballcourt is perhaps the most interesting part of the Plaza when considering how bodies move through it. As discussed in Chapter 4, the ballcourt is a pervasive symbol of Maya religion and cosmology. The ballgame associated with the arena has been said to represent the cycle of creation and destruction, birth and resurrection, the beginning and end of agricultural cycles (Feely 2019; Stuart; Taube, etc). But was this particular ballcourt exclusively used for this game, or did it offer an alternative or dual function as a passageway connecting the plazas? The ballcourt's original use may have changed to that of a walkway, an event that may have correlated with the construction of Structure A1 (Fogelin, Fogelin, Zelenik, Feely, Ramirez). Ball Court 1 was constructed during the Hats' Chaak Phase, which was much later than Ball

Court 2's consecration (Feely 2019; Fogelin; Ramirez 2023). This may provide further evidence that Ball Court 2 had been decommissioned and converted into a passage that correlated with renovations that characterized the Hats Chaak phase as the space for the ceremonial game was revitalized in a larger court to the northwest of El Castillo (Feely 2019; LeCount and Yaeger; Leventhal).

This conversion leads to at least two possible interpretations of the ball court's symbolic function. First, due to its size, location, architectural style, the way in which it channels bodily movement, and the construction of Ballcourt 1 in the Late Classic Phase may make Ballcourt 2 a landmark of social memory, a symbol of cultural longevity rooted in Maya history. The fact that it was not terminated, but decommissioned, when Ball Court 1 was built implies that its new purpose in public life was to serve as a representation of collective memory (Feely 2019; Keller 2010). Second, the space may symbolize a portal into Xibalba, the watery underworld, and possibly a reference to the ballgame played in the Popol Vuh creation story. As such, it marks a liminal place, a place of transition. This interpretation is supported by the idea that Plazas are meant to symbolize the primordial sea from which the Maya universe emerged, making the ballcourt the connection between the surface and the supernatural worlds. Peripheral views are completely restricted when moving through the court, which had this effect of transitioning between areas, leaving the previous space behind and entering into the ceremonial space. The view of El Castillo in front, with smaller yet still massive temples wrapping around the perimeter of the Plaza capture and contain the witness's sensory input. One cannot see out from ground level. The experience is slightly disorienting, like being cut off from the real world, which may further contribute to the argument that the ballcourt acts as a portal between worlds (Feely 2019; etc).

When Cassandra Feely excavated the ballcourt in 2018, she discovered something truly remarkable about the arena that could provide evidence of a ritual— or rituals— that may have marked its transition from arena to walkway (Feely 2019; Lee 2020). Although finding cache deposits buried along the central axis of ballcourts is relatively common in the Belize River Valley, the number of caches discovered by Feely’s excavation is rather unusual (Feely 2019; Lee 2020). The four caches, each containing chert eccentrics among other cache objects, contained a total of 86 lithic objects(Feely 2019; Lee 2020). Other cached objects included ceramics vessels, stingray spines, and marine and freshwater snails (Feely 2019). Jordan Lee compiled a dataset of these eccentrics, where she analyzed their symbolic shapes, colors, and positioning to expand the archaeological record of eccentric caches in the Belize River Valley (Lee 2021).

The cache containing 55 eccentrics that was excavated during the 2022 field season was found underneath a previously excavated burial of a small child (Awe correspondence). The burial may represent a key example of reciprocity in practice. Children are the ultimate symbol of purity according to the Maya. As the Maya believed the Gods made them from corn, the child burial may represent an offering of corn in its purest form to the Rain God to allow the agricultural cycle to commence.

Burials and Tombs hold cultural and historic meaning. The individuals housed in A9 and A4 were likely elite rulers, buried in the site to commemorate their place in regional history and in Xunantunich’s cultural narrative. These tombs ritually charge the site with the spirit of the dead, symbolically resurrecting their divine powers in the sacred space.

Iconographic images of Maya deities and numerological references to the Maya universe and creation story ritually charge the site by emphasizing that the space unites the three worlds.

As stated, temples and tombs embody the spiritual energy and transversal abilities of mountains and caves; the numerological symbolism and stucco iconography that decorate these structures underscore this symbolism.

East Triadic Assemblage

The East Triadic Assemblage served as a marker of social memory, aligning rulers' powers with the supernatural powers the Gods possessed, as well as the agricultural cycles in which E-Groups once played a vital ceremonial role (Friedel et al). The oldest structure in the Triadic is Structure A4; it is the only structure in this group with multiple construction phases, and housed one of the two elite burials discovered in Xunantunich to date (Awe 2008; Slocum 2018). The fact that this structure predates the others provides evidence that the Assemblage never functioned as an E-Group. The temples were probably locations associated with valedictory ceremonies that honored and celebrated the various feats of rulers (Awe et al.).

Structure A4 is one of two temples in Xunantunich associated with an elite burial (Audet; Slocum; Sullivan). The burial was discovered in a crypt buried deep within the temple. The individual was "oriented in an extended supine position with the head to the south" (Slocum page number). This position is pervasive in the Belize River Valley, although its spiritual symbolism requires a more thorough investigation (Welsh 1987). It was surrounded by grave goods comprised of ceramics, chert eccentrics, obsidian eccentrics (including an obsidian core) and jade (Audet; Slocum).

In chapter 4, where I discussed cases of ritual charging, I examined how tombs ritually charge the built environment. Sacred burials such as those discovered in structures A4 and A9—designated only for those belonging to a higher social class—may represent the spiritual belief

of resurrection, an important theme found in the Popol Vuh (Christenson; etc). The tombs discovered in Structure A4 and A9 provide examples of symbolic resurrection of divine ancestors, whose power was made permanent in the central plazas in the temples that their tombs occupied.

Additionally, Audet asserted that the grave goods and the location of Structure A4—stationed east of the colossal Castillo-- determined it was an elite burial (Audet; Slocum). Thus, this particular tomb provides another example of the ways rulers aligned their political power with the Gods' omnipotence, as the notion of resurrection became a powerful symbol of continuous rule, of infinite and regenerative power. A rather significant cache containing four human skulls was discovered at the summit of Structure A4 (Sullivan 2017). This is another form of ritual charging altogether and likely does not commemorate the individuals to whom the skulls once belonged.



Figure 19: A4 Summit Cache (Slocum 2018).

The most interesting method of ritual charging that I examined in the ETA was related to numerology. Each of the three adjoining temples featured different numbers of terraces and stairs. A4 had 3 terraces, A3 had 5 terraces, and A2 had 4 terraces. Each of these numbers connect to Maya numerology and the Creation Story, as was discussed in chapter 2. The combination of sacred numbers may relate to convergence of the spirit and material worlds. A4's numerology likely refers to birth and creation; A3 may allude to the 5th layer of Xibalba or alternatively, may serve as a reference to centering in the material world; A2 may refer to the four corners of the universe and the four sacred cardinal directions. The only other structure in Xunantunich with four terraces is Structure A1 which, significantly, is located in the center of the quadripartite courtyard. As each number of terraces aligns with a sacred numeral relating to each layer of the Maya universe, the ETA may serve as a symbol of convergence as well as a relic of Maya cultural history.

Structure A6 (El Castillo): Structure A6 is the main feature of Xunantunich. Its size and shape are reminiscent of the mountains located on the site's southern orizon. The entire structure may also be symbolic of a complicated journey through the Maya cosmogram (Garber and Awe; Leventhal; Sanchez; LeCount and Yaeger). The structure changed functions several times during its lifetime— operating both as ritual center and residential settlement and private shrine for elites— and is probably the oldest structure consecrated at Xunantunich (Garber; LeCount; Leventhal). Evidence suggests that El Castillo functioned as the ritual center long before Xunantunich's rise to power, as ceramics found in the earliest phase of the structure date back to the Cunil Phase (1200 – 900 BC), one of the earliest Preclassic phases (Garber; Leventhal) recorded in the Belize Valley. Its longevity shows how ritual charging occurs when ritual

activities are consistently performed within a space, and indicates that the hilltop where Xunantunich was built was a location of ritual performance long before the Late Classic Period. Therefore, I argue that Xunantunich was originally a sacred space, and El Castillo was likely a spiritual destination, a ceremonial center for yearly rituals that traces its origins back to the earliest known era of Maya history (Leventhal; Garber).

When conducting viewshed analysis from a phenomenological approach, considering how the environment impacts the senses, and how this impact on the senses influences behaviors and experience, the view from the top of the Castillo becomes representative of power and prestige, security and stability, of divine rulers' sense of superiority over the turbulent world below. El Castillo is an "imposing and visible symbol, not only to people at the site but also for the people miles around it" (Sanchez 1993, 57). Considering its symbolic function, the temple's summit likely represents the precipices of sacred mountaintops believed to be where the barrier between worlds thins. The temple's visibility from the surrounding valley made it a prominent marker of social memory during the city's short-lived success as a regional power and long after the city's decline (LeCount and Yaeger).

When it comes to numerology symbolism, I believe the temple's stairways, doorways, and roof combs may represent the convergence of the spirit and material worlds. The main staircase, the seven terraces rising to the 13 doorway *audiencia* and the first set of doorways are grouped into numbers of 7 and 13, perhaps all indicating ascent into the heavens from the world below. The five roof combs at the summit of the structure may also represent the intertwining of the heavens and the material world, as the number relates to the concept of centering and alignment of all three worlds.

The Frieze is an excellent example of the methods that divine rulership used to deify themselves and justify their divine right to rule. The stucco iconography features images of the Feathered Serpent Deity, which became a pervasive religious symbol in this region during the Late Classic period, one that embodies social and cultural influences stemming from the northern Maya region (Awe et al. 2023; Ringle et al. 1998). Images of the Rain God are also featured in the frieze, linking the deity's power with the cosmological cycles represented by the east and west. The cross-like symbols on the top and bottom sections of the frieze are common celestial representations, symbolizing the heavens (Frank Tzib correspondence; Stuart; Taube). The three throne rooms on the penultimate floor of the temple's north face were constructed in alignment with these friezes, perhaps as a method of symbolically aligning the iconographic deities with the ruling class (Leventhal). This notion further underscores how sacred symbols were appropriated by rulers to connect their political power with the supernatural.

Finally, El Castillo represents the conversion of spiritual symbols into metaphors for divine power through the various construction phases that change the structure's function; the structure fluctuates combines two primary purposes, the first being a ceremonial center and the second being a residential area for elites (Leventhal 2010). As stated, the structure's original purpose may have been as a ceremonial shrine that dated to the Earliest Preclassic Phase, the Cunil Phase, but by the Late Classic Period, it was being used to house Xunantunich's ruling class. The penultimate construction phase of El Castillo contains between 14 and 18 residential rooms, all buried by the final phase of construction, representing this transition from residential area back to a ceremonial center (Leventhal). The rapid architectural expansion of Xunantunich during the Hat Chaak Phase included Plaza AIII, which was where the ruling classes resided another elite residential space. Yet royalty also continued to live in El Castillo during the Tsak

Phase, while the city was already in a state of decline. Leventhal argued that this return was an attempt to reconnect the royal family with the ritual space in Plaza A1 and realign themselves with supernatural power (Leventhal). His argument aligns with the idea of Entanglement Theory, which I mentioned in Chapter 6 (Ingold; Moyes). Elites may have attempted to regain control over the rapidly declining city-center by revitalizing their connection to the spirit world instead of adapting to the disastrous environmental changes that may have led to the city's decline (Moyes).

The Tsak Phase was also characterized by increased segregation of Plaza A1, as access points into the Plaza were either blocked or restricted (Awe et al. 2020; LeCount and Yaeger). The segregation of the Plaza may provide further evidence of Entanglement as elites removed themselves from the public and tried to reassert power and control through their perceived divine abilities, despite the reality of drought, crop failures, and disease taking hold throughout the region. Ritual behaviors-- namely sacrifice, termination deposits, and ritual performance in caves -- increased dramatically during this era, demonstrating how the Maya were unable to disentangle themselves from their world view to find alternative solutions to changing environmental conditions (Awe; Moyes). The Gods to whom they dedicated these rituals had forsaken them despite their desperate, last-ditch efforts to rebalance reciprocity. The elites had already forsaken the Gods by idolizing themselves and claiming ownership over the archaic symbols meant to be reserved for their Creators. There was no going back.

Structure A7: This temple was one of the earliest structures built in Plaza A1. Its four construction phases provide insight into Xunantunich's chronology and the function of Plaza A1.

Like El Castillo, the way in which the structure ritually charges the site may be in its longevity (Fogelin; Tacon; Leventhal). This temple, El Castillo, and Structure A4 are the only structures in Xunantunich that experienced multiple construction phases. Perhaps these three structures were all part of the shrine—oriented around the first construction phase of El Castillo—before the rest of Xunantunich was established. The argument presented by Leventhal that El Castillo was primarily a destination for public celebration and rituals may justify this interpretation of the way structure A7 ritually charging the site center (Leventhal).

In addition, several caches that commemorated reconstruction of this temple have been excavated from this structure (Watson; Tilden). One example included ceramic vessels that had been placed with their rims touching, or in a “lip-to-lip” style (Sullivan 2017). It is worth noting the ritual significance of this caching style, as it symbolizes the Maya conceptualized universe: the material world encased in the spirit world (Feely 2019; Sullivan 2017).

Structure A8: This structure has been the focus of excavation projects in the past but remains a central aspect of future excavation and conservation efforts in Xunantunich. In 2016, Zanotto lead an excavation project into the structure to find out whether it aligned with the East Triadic Assemblage across the Plaza, and whether evidence of a western platform existed, which would have supported the argument that the East Triadic Assemblage once functioned as an E-Group (Zanotto 2017). However, results of this investigation were inconclusive, as no sign of a western platform was uncovered, although the archaeologists were able to determine that the structure had undergone a replastering event as part of the city’s makeover at the onset of the Hat Chaak Phase (Zanotto 2017).

Structure A9: In addition to Structure A4, Structure A9 contains one of only two elite burials that have been discovered in Xunantunich (Slocum). Diane Slocum led the excavation of the pyramid in 2016, and was not expecting to find a substantial discovery: one of the largest burial chambers excavated in Belize (Awe; Slocum). Slocum’s objective was to examine how the Maya created monumental architecture that reflected cultural ideologies in order to further prove that public architecture within the site was “built to project local and regional power” (Slocum 2018).

Slocum’s research revealed that Structure A9 was built in one construction phase around the tomb that occupies its center. This implies the structure was built for one purpose only: to enclose the tomb within it (Awe et al. 20; Slocum). This type of tomb is a rarity in the Maya region, perhaps indicating that the person housed inside enjoyed a superior elite status (Slocum).

Another signal of this individual’s high status came from the dedicatory cache grave goods surrounding the burial. It contained materials that integrated religious symbolism with signs of wealth and authority (Slocum). 6 jade beads, 13 obsidian blades, 2 shell pendants, a collection of ceramics, jaguar, and deer remains were arranged around the individual. These objects—especially jade—were symbols of wealth and status (cite). The individual was laying in the supine position with their head oriented south, similar to the individual discovered in the tomb in A4 (Slocum). As stated in Chapter 4, this position appears over and over again in burials discovered in this region, and does not appear to be associated exclusively with elite burials, as burials excavated from residential groups exhibit similar patterns (Welsh 1987).

3. Does the form and layout of architecture in Xunantunich inform us about Maya rulership and authority?

I have covered how humans used architecture to manifest the spirit world in the material world in order to conduct rituals that upheld reciprocity between humans and the Gods. How I will discuss the humans responsible for managing these projects, elites who aligned their power with the supernatural abilities of the Gods. Here again lies the fundamental theme of convergence; these authorities embodied the alignment between the sacred and profane, the ephemeral and the material. Their purpose was to hold counsel with the Gods and carry out their will, bargain with them on behalf of the common folk who believed they were given these powers because of their connection to the spiritual centers on the landscape. This connection to the Gods and sacred spaces on the natural landscape was made permanent through architecture that aligned rulers' powers with the sacred space. These human embodiments of convergence were seen as directly connected to the powers of ascension associated with sacred spaces. Their ability to communicate with the Gods was tethered to the spaces where the Gods would hear them. These rulers, therefore, were essential mediators between the Gods and humans, central in maintaining harmony between worlds. This may provide insight into the connection between Structure A1 and the Royal Palace Complex and the rulers of the Hats Chaak Phase. These structures, like these rulers, embody symbols of the Maya conceptualized universe and their role within it. They represent their powerful role as mediators between the Gods' desires and the needs of humanity, and their methods of connecting their leadership with the divine. Below, I address the symbolic significance of Structures A1 and A10, which both feature architecture that aligns the elites with the Gods. I also examine how the elite burials in A4 and A9 play a vital role in legitimizing divine rule.

Structure A1 Structure A1, which is located in the center of a previously large courtyard, represents the concept of axis mundi and centering (Awe and Garber). The structure also represents the growing regional power of Xunantunich. It was one of the last structures built in the site center (Slocum, Audet, Zelenik 1993). Its placement split the original plaza into two smaller courtyards, while the later addition of the low protruding from its southeastern corner served to deliberately cut off access from Plaza AII to Plaza A1, and rerouted traffic between the two newly formed courtyards through Ballcourt 2.

The viewshed from the top of Structure A1 underscores its function as axis mundi, as 360-degree views are unrestricted from the summit. However, the view of El Castillo indicates that Structure A1 was not intended to block the view of the Castillo, as the three throne rooms occupying the penultimate floor of the latter are higher than the summit of A1, giving the impression that occupants of these rooms could look down on all the other structures. Despite its prominent position in Xunantunich's urban layout and its function as axis mundi, the structure was probably not intended to be the focal point of the site.

It is still unknown whether a previous small structure existed in the location of Structure A1 before the latter was built, and whether it had the same discursive function as Structure A1 (Slocum; Zeleznik). Structure A1 was built in one construction phase. When Zelenik excavated the structure in the early 1990s, he noticed that the core of the structure did not appear to follow the same construction protocols as the surrounding buildings (Zeleznik 1993). According to his report, the foundation of structure A1 had been damaged significantly by natural elements, and appeared more heavily eroded than its neighbors' foundations. Although it appears to be the same on the outside, the temple is lacking fundamental structural integrity. Perhaps this indicates

that the temple was constructed hastily without as much concern for the structural integrity that keeps these structures intact despite the centuries of jungle growth that buries them (Zelevnik 1993).

The construction of Structure A1 was part of the Hat Chaak “major growth spurt” witnessed at Xunantunich during the Late Classic period, around 670-780 AD (Feely 2019; LeCount and Yaeger 2010). This construction may have coincided with a resurgence of power in Naranjo, an ancient city-center in modern-day Guatemala that many archeologists believe held political power in the region and influenced Xunantunich’s architectural style (Ashmore 2010; Rice__; Feely 2019). However, further research into this theory is necessary to support this argument, as Xunantunich architecture does not entirely parallel Naranjo, despite some similarities in architectural layout (Awe et al. 2020).

The theoretical “growth spurt” that led to its construction may indicate why the foundation of the temple appeared hastily constructed, as rulership may have seized the opportunity to show off their wealth and power (Zelenik 1993). This hasty construction of the temple does not adhere to the same building protocols found in Structures A2-A8 and may explain why A1 suffered so much environmental damage compared to these older buildings. This leads me to believe that the erection of this temple was about embedding the elites and rulers of Xunantunich into the social memory of the city and linking them to the center of the universe (LeCount and Yaeger; Leventhal).

Structures A4 and A9: A9 occupies the northwest corner of Xunantunich’s city-center. This positioning draws on the sacred cardinal directions. The temple’s position can be examined within the site as a whole, especially in relation to the orientation of Structure A4 at the

southwest, or opposite, corner of the site. The locations of these burials— diagonally intersected by the axis mundi (Structure A1) may have symbolic significance. Perhaps the invisible line drawn from A9 to A4 aligns their divine spiritual presence with the divine elites associated with Structure A1. Perhaps this architectural layout communicated another method of legitimizing the right to rule, which revolved around their connection to elite ancestors.

Structure A10: Another noteworthy architectural feature of Xunantunich that reflects the superior status of divine authority is structure A10. There are nine doorways at the top of the stairway, the numerological symbol of Xibalba. Perhaps these doorways that mark the entrance into Plaza AIII are made to represent transcendence into the underworld, or to align the rulers who resided in Plaza AIII with the powerful deities that occupied Xibalba. This is an interesting comparison of symbolism to El Castillo at the opposite end of the site, as the structure's main stairway and doorways all appear to reflect heavenly numbers. Perhaps this numerological symbolism is another representation of the Maya conceptualized universe, as the layers of heaven and the underworld are symbolically imbued into the site's southernmost and northernmost structures. Like A4 and A9, A10 and A6 are also intersected by A1, showing how axis mundi tethers together the heavens, earth, and underworld. This spatial analysis may provide more insight into how elites manifested their connection to the spirit worlds in architecture.

To summarize, divine rulers reflected their power and authority in architecture that made permanent their perceived central role in the universe, in the cycles of creation. These rulers claimed to be central in communication between the Gods and humans, which they exploited to legitimize their rule in Xunantunich. This authority was the authority to speak for the Gods, to act as central conduits in aligning the spirit and material worlds, and in maintaining balance between humans and the omnipotent beings that created them.

Conclusion

The results of this analysis revealed that each structure in Plaza A1 served to confine and create a ritually charged ceremonial center that reflected Xunantunich's growing regional authority in a variety of ways. Each temple was associated with a cardinal direction linked to Maya religion and ideology. The terraces, staircases, and doorways on each excavated building reflected multiples of 3,5,7, 9, and 13, all numbers associated with the underworld and heavens. Stelae, altars, and cache deposits have been excavated from most of the structures. Finally, public access into the Plaza appeared restricted, and two of the entryways— both ball courts— may have symbolized the transition from a public, secular world into the sacred ceremonial space.

My observations revealed that each structure in Plazas A1 and A2 functioned as a prominent marker of social memory, intertwining the ancient wisdom and supernatural powers of the gods with wealth and prosperity of the elite rulers. The dramatic architectural transformations of El Castillo during the Hats' Chaak phase represent Xunantunich's growth and expansion as a regional power during this time. The segregation of sacred space in Plaza A1 and the rulership's appropriation of sacred symbols rooted in Maya cosmology further demonstrate how rulers justified their power and showcased the belief that they were manifestations of divine power and central conduits of communication between the Gods and humans. Finally, the 3D model proved successful in providing an interactive, educational, public-facing virtual experience that allows users to access the space and learn about Maya architecture without having to access the site itself.

Final Analyses, Future Research

This thesis set out to address three major questions to examine whether the Maya in Xunantunich incorporated ideological symbols into their built environment during the Late Classic Period. The results of this analysis demonstrate that the Maya ritually charged their built environment in many ways, all stemming from their conceptualized universe and world view (Awe; Bassie-Sweet). The intention of building sacred space was to be able to replicate the sacredness of the surrounding environment, to create a safe and controlled area for rituals and ceremonies. These rituals were the manifestation of the reciprocal relationship between humans and the Gods who created them, who required consistent and continuous worship to allow for the continuation of life.

This research demonstrated how spatial and temporal context are foundational to examining sacred space in the built environment. Each structure, passageway, stone monument, and cache deposit all came together to create a network of spiritual energy. This energy comes from repeated ritual practices occurring within the same locations and the social memory that was tethered to the space (Fogelin; Tacon).

The results of this thesis revealed that Xunantunich was an ideal case study for analyzing and interpreting sacred space, as the site experienced a significant growth spurt that transformed the site into its current layout. The construction efforts of the Hats' Chaak phase likely indicate that the architecture in Xunantunich was more of an impression or imitation of Maya sacred built environment; for example, the Eastern Triadic Assemblage likely never functioned the same as an E-Group, as the chronology of A4 predates A2 and A3, but retained its impact on social memory as a symbol of Maya history and culture.

The research methods explored in this project demonstrate how 3D modeling provides avenues for further analysis of artifacts, monuments, and architecture that are only accessible during field seasons. These methods demonstrate the importance of studying symbolic objects in situ, in spatial and temporal contexts, and in relation to one another. By recreating Plazas AI and AII in the site center of Xunantunich as a Digital 3D model, I was able to continue my analysis of the site in its entirety, rather than having to rely solely on pictures that isolate individual monuments and make spatial synthesis difficult. These methods are vital for communication and outreach, not just within the field of archaeology but to the public; 3D modeling is a major factor in making archeological research accessible.

Future Research

Future research into Xunantunich's sacred space requires excavating the rest of the site. For instance, further research is needed into A2's construction phases, chronology, and most significantly, Structure A16, which was built in front of the structure. Moreover, more research is necessary to find out if a structure like A16 existed in front of A3. Excavation around these foundations may reveal more evidence of adjoining structures, which would provide more insight into the function of A3. In addition, structure A8 remains a significant candidate for future research at Xunantunich, as its function is still to be determined.

The images below depict the New Fire Ritual that took place during the summer solstice of 2011. The ritual included burning incense and leaving offerings. I include these images here to underscore the fact that the site is still very much alive, still charged with a sacred, spiritual energy created by the rituals that took place—take place—there. The modern day Maya people who conducted this ritual are vital in keeping the site alive as a token of cultural identity. After

centuries of disconnection to their rich heritage caused by colonialism, these rituals can revitalize this connection, creating pathways into the past that unearth significant lessons about the nature of existence. Perhaps by viewing these sacred spaces as living, breathing, timeless testaments to the Maya civilization, true balance can be restored.



Figure 20 and 21: New Fire Ritual at Xunantunich, 2011 (Awe).

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Appendices

3D Model Figures

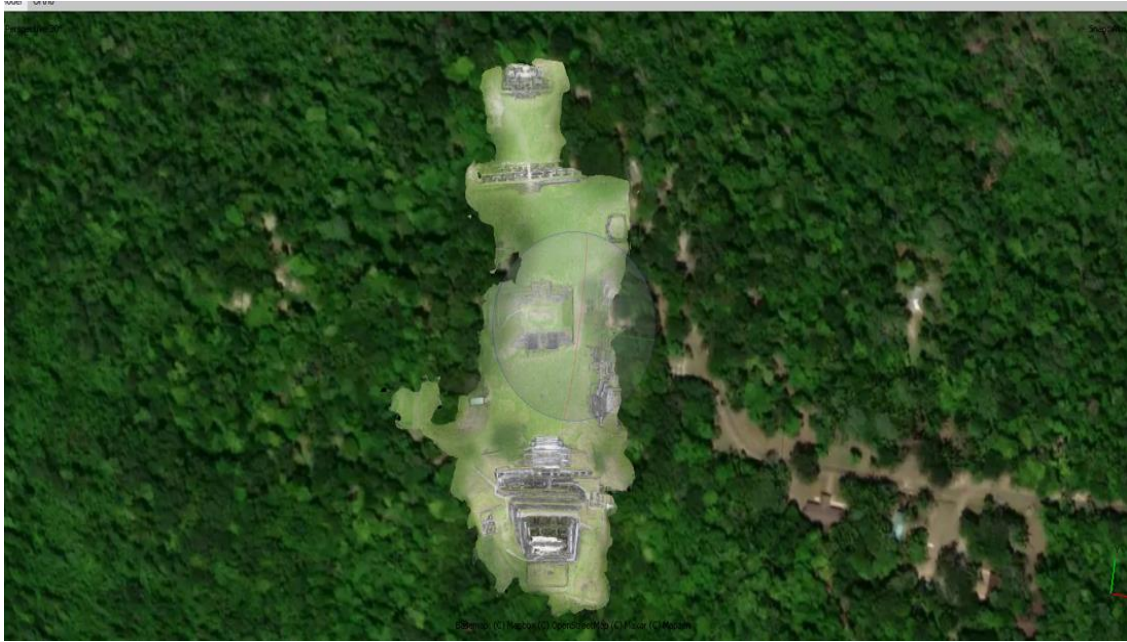


Figure 22: 3D Model of Xunantunich with trees removed (Ratcliffe 2023).

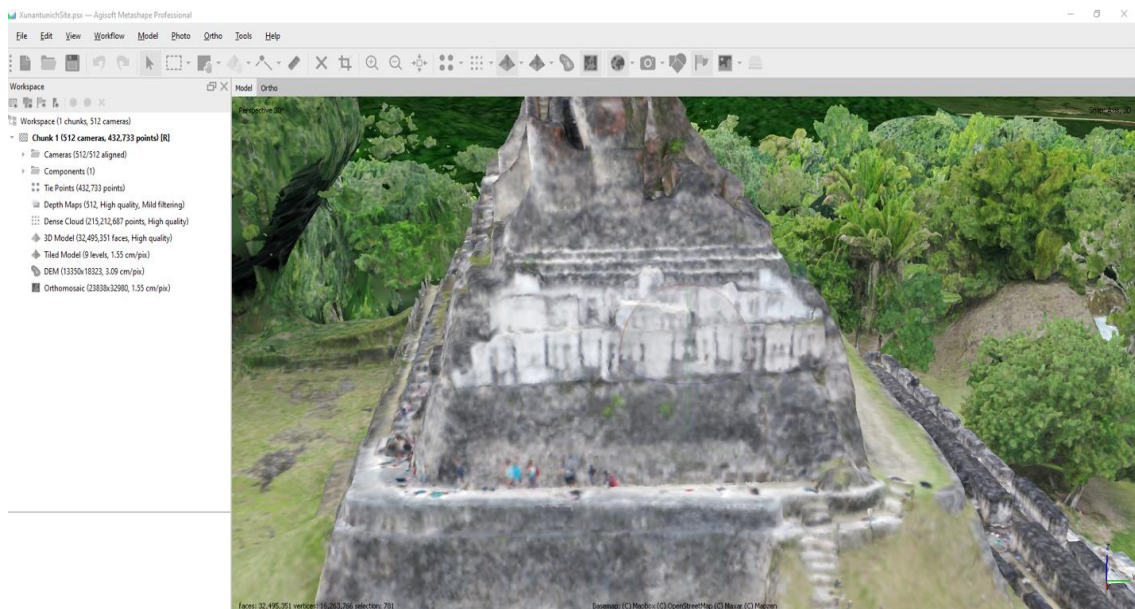


Figure 23: Textured Model showing poor depiction of East Frieze (Ratcliffe 2023).

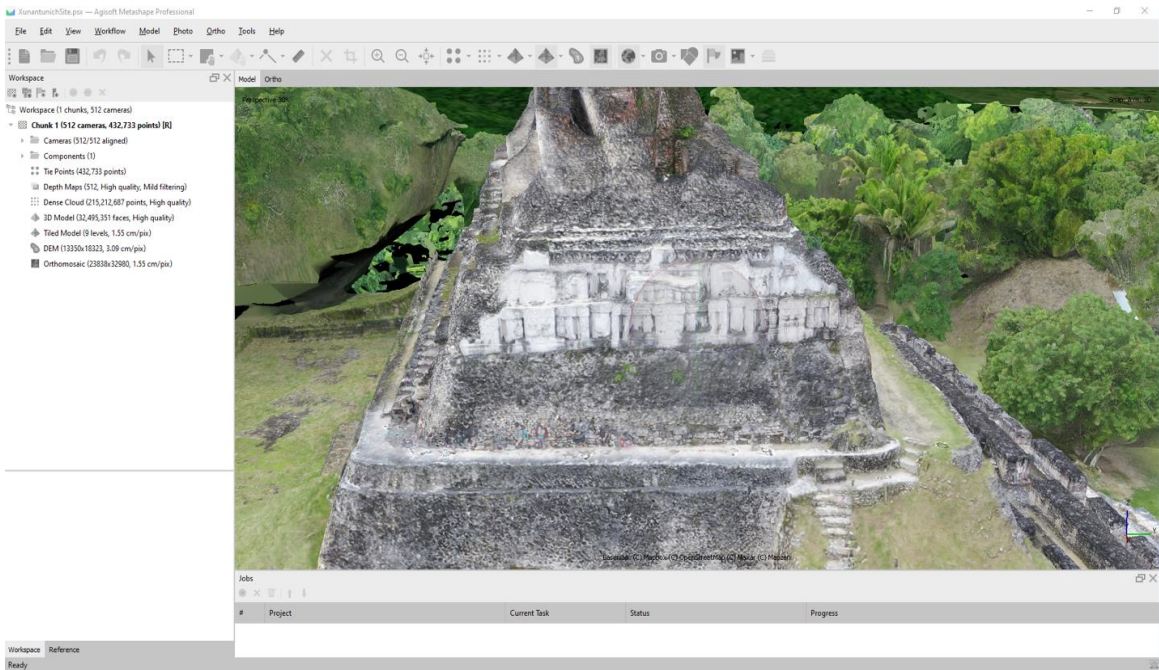


Figure 24: Tiled Model showing the Frieze with more detail (Ratcliffe 2023).

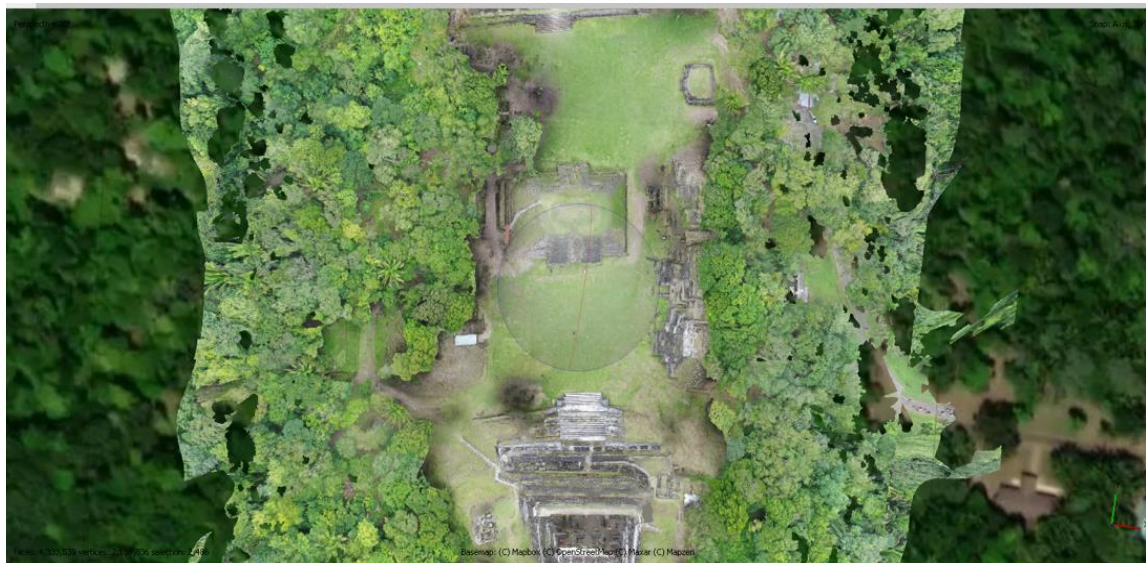


Figure 25: 3D model with trees removed, increased visibility of Ball Courts 1 and 2

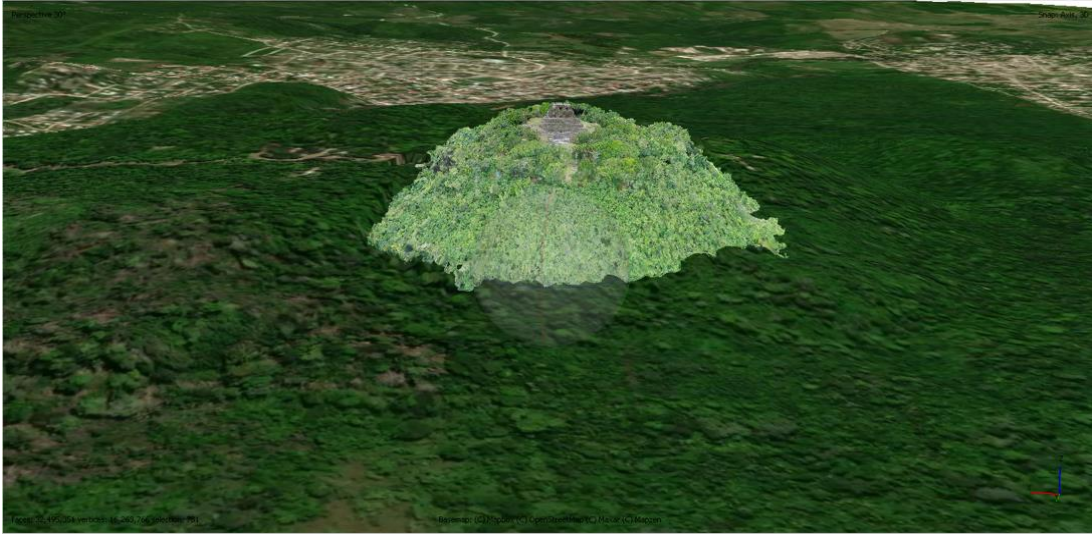


Figure 26: 3D model Northern Perspective (Ratcliffe 2023).

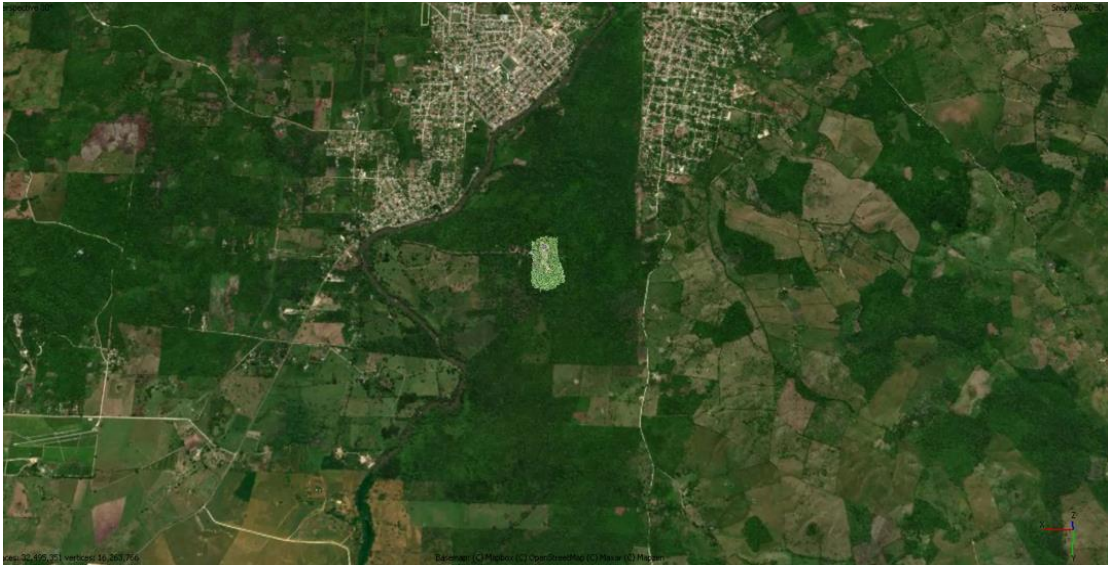


Figure 27: Birdseye View of Xunantunich 3D Model (Ratcliffe 2023).

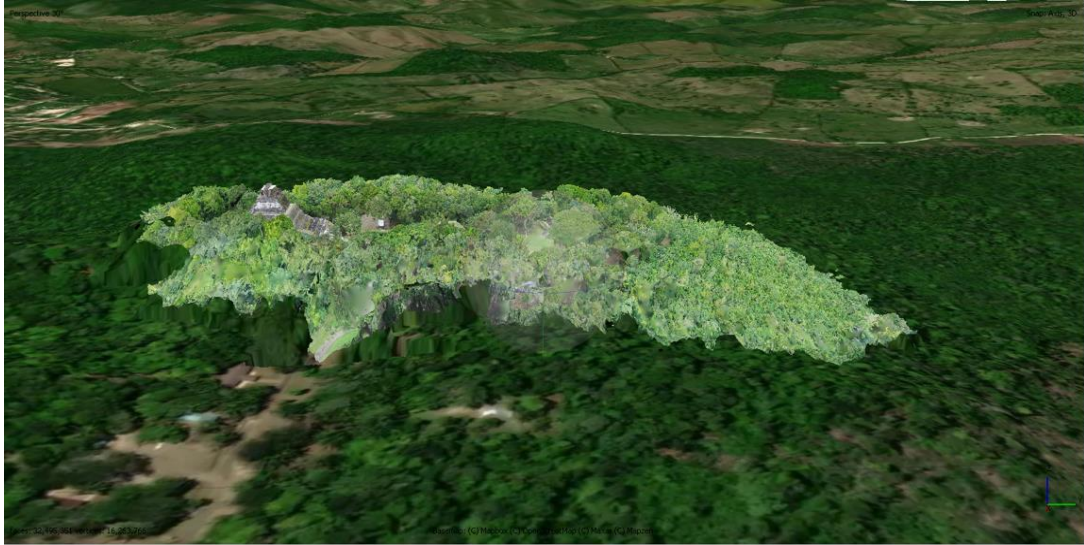


Figure 28: Xunantunich Eastern Perspective (Ratcliffe 2023).

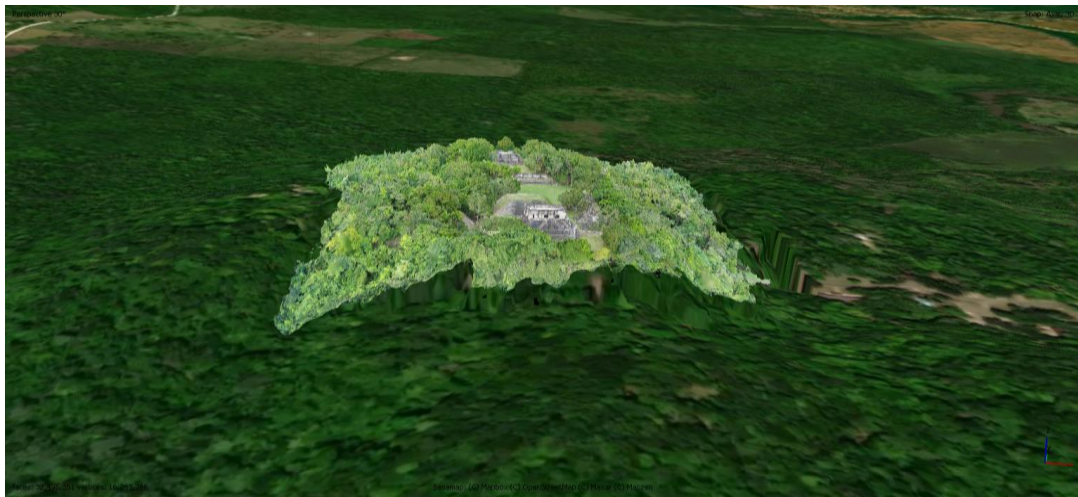


Figure 29: Xunantunich Southern Perspective (Ratcliffe 2023).

Cache 6 and 7 Datasets									
Object ID	CACHE ID	Color	Material	Shape	Striated Edges	Micro Context	Macro Context	Macro Context 2	Non-eccentric
Total # Eccentrics in Cache									
U68	AA_1	XUN-2022-18 XUN-2022-18							
E1	AA_1	White	Chart	Semited Crescent	Yes	Under Alar	AA	Ground Level	
E2	AA_1	White	Chart	Blade or Lightning	No	Under Alar	AA	Ground Level	
E3	AA_1	White	Chart	Unidentified	Yes	Under Alar	AA	Ground Level	
E4	AA_1	Red	Chart	Abstract Tripartite Universe	Yes	Under Alar	AA	Ground Level	
E5	AA_1	Black	Chart	Cave	Yes	Under Alar	AA	Ground Level	
E6	AA_1	Black	Chart	Abstract Tripartite Universe	Yes	Under Alar	AA	Ground Level	
E7	AA_1	Yellow	Chart	Semited Circle	Yes	Under Alar	AA	Ground Level	
E8	AA_1	Yellow	Chart	Semited Crescent	Yes	Under Alar	AA	Ground Level	
E9	AA_1	Unidentified	Chart	Abstract Quadrifurca Universe	No	Under Alar	AA	Ground Level	
U69	BC_1	XUN-2022-7							
Total # Eccentrics in Cache									
E10	BC_1	Red	Chart	Anamorphic Unknown	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E11	BC_1	Red	Chart	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E12	BC_1	Red	Chart	Anamorphic Unknown	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E13	BC_1	Red	Chart	Unidentified	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E14	BC_1	Red	Chart	Stringy	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E15	BC_1	Red	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E16	BC_1	Red	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E17	BC_1	Red	Chart	Anamorphic Unknown	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E18	BC_1	Red	Chart	Anamorphic Unknown	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E19	BC_1	Black	Obsidian	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E20	BC_1	Black	Obsidian	Campsite	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E21	BC_1	Black	Obsidian	Semited Circle	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E22	BC_1	Black	Obsidian	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E23	BC_1	Black	Obsidian	Anamorphic Unknown	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E24	BC_1	Black	Obsidian	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E25	BC_1	Black	Obsidian	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E26	BC_1	Black	Obsidian	Spent Core	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E27	BC_1	Black	Obsidian	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E28	BC_1	Black	Obsidian	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E29	BC_1	Black	Obsidian	Abstract Quilam	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E30	BC_1	Black	Obsidian	Unidentified	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E31	BC_1	Black	Obsidian	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E32	BC_1	Black	Obsidian	Unidentified	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E33	BC_1	Black	Obsidian	Stringy	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E34	BC_1	Black	Obsidian	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E35	BC_1	Black	Obsidian	Campsite	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E36	BC_1	Black	Obsidian	Unidentified	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E37	BC_1	Yellow	Chart	Semited Crescent	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E38	BC_1	Yellow	Chart	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E39	BC_1	Yellow	Chart	Blade or Lightning	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E40	BC_1	Yellow	Chart	Abstract Quilam	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E41	BC_1	Yellow	Chart	Semited Crescent	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E42	BC_1	Yellow	Chart	Semited Crescent	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E43	BC_1	Yellow	Chart	Abstract Tripartite Universe	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E44	BC_1	Yellow	Chart	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E45	BC_1	Yellow	Chart	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E46	BC_1	Yellow	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E47	BC_1	Yellow	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E48	BC_1	Yellow	Chart	Abstract Tripartite Universe	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E49	BC_1	Yellow	Chart	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E50	BC_1	White	Chart	Abstract Quadrifurca Universe	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E51	BC_1	White	Chart	Abstract World Tree	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E52	BC_1	White	Chart	Campsite	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E53	BC_1	White	Chart	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E54	BC_1	White	Calvesony	Blade or Lightning	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E55	BC_1	White	Obsidian	Cave	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E56	BC_1	White	Obsidian	Blade	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E57	BC_1	Unidentified	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E58	BC_1	Unidentified	Chart	Anticor Profile	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E59	BC_1	Unidentified	Chart	Scorpion	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E60	BC_1	Unidentified	Chart	Blade	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E71	BC_1	Unidentified	Chart	Stringy	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E72	BC_1	Unidentified	Chart	Anamorphic Unknown	No	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E73	BC_1	Unidentified	Chart	Abstract Quadrifurca Universe	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	
E74	BC_1	Unidentified	Chart	Anticor Profile	Yes	Removed section of Buried Wall, Under Burial	BC2	Ground Level	

Figure 31: Eccentrics from Cache 6 and 7 Dataset (Ratcliffe 2023).