The Minanha Cave Project (MCP) is one component of an effort to better understand the socio-environmental dynamics in the Vaca Plateau. The project is funded by the Alphawood Foundation under an umbrella grant conceptualized by Gyles Iannone and Jaime J. Awe titled *The Socio-Environmental Dynamics in the North Vaca Plateau, Belize, A Long Term Perspective*. The goal of the larger project is to examine the rise and changes in the ancient communities of the Vaca Plateau in west-central Belize by taking a multifaceted perspective that integrates archaeological and paleoenvironmental data sets. A great deal of archaeological data was collected in previous investigations in and around the site of Minanha and in the study of Chechem Ha cave, and paleoenvironmental proxies have been generated from Reflection Cave and Macal Chasm. These data sets are being supplemented by two field seasons of archaeological and paleoenvironmental research.

The cave arm of the project took a three-pronged approach to aid in establishing the area's chronology and to promote our understanding of the social life of the community. The first of the project goals was to locate and investigate caves closest to the Minanha site core. We are using a proximity model to suggest that elites from the site were most likely to have used the nearest caves, so these were most thoroughly investigated. Secondly, the project embarked on a rigorous radiocarbon dating program. Because all of the known caves in the region have been open for a number of years, we must assume that surface finds were not in primary contexts, and that ceramic dating could not produce reliable results. Additionally, work conducted at nearby Chechem Ha Cave (Moyes 2006a) demonstrated that ceramics were rarely imported into the
cave before the Early Classic period, so they could not date Preclassic use. Finally, the project aimed to map and date cave architecture in an effort to establish when people first began to modify these sites.

Previous research at Chechem Ha cave has been important in understanding when people first begin to be visible in the Macal Valley and has provided evidence for understanding changes in the socio/political environment (Moyes 2006a, 2006b; Moyes et al. 2007). Radiocarbon dates from this cave established that it as one of the earliest ritual caves in the Maya Lowlands, contemporaneous with early settlers of the Belize Valley. Because this was the only cave in the region that dated to the Early Preclassic period (1200–800 B.C.), it was thought that it may have served as a pilgrimage site for the Belize Valley settlers. Based on Iannone’s work at Minanha, there was little evidence to suggest occupations earlier than the Middle Preclassic period (600B.C.-400 B.C.) in the area. But there remained the possibility that settlers invisible to archaeologists may have inhabited the Macal Valley at earlier time periods.

Caves are demonstrated to have better preservation than many surface contexts and have been referred to as “sediment traps,” (Farrand 1985:21; Woodward and Goldberg 2001:328). Therefore, it is not unusual to find cave deposits that predate surface finds. Caves that date earlier than surface sites may suggest that they were pilgrimage places that preceded migrations into an area, or perhaps more realistically, that cave use was contemporaneous with early settlement. It is not unusual to find caves that date earlier than their associated surface contexts, and this pattern has been noted by almost every regional cave study conducted to date (Brady 1997:609-610; Peterson 2006; Prufer 2002:638; Rissolo 2005:351) as well as in case studies (Patel 2005; Moyes and Prufer 2009). Based on these findings, we suggest that cave use is
potentially one of the best indications for early settlement of a given area given the ephemeral nature of early people in the archaeological record.

Activities in caves can also serve as proxies for the development of complexity. In the detailed and well-dated study of changes in ritual practices at Chechem Ha Cave, Moyes (2006a) noted that although the cave was used intensively as early as 1100 BC, it was not until the Preclassic period, somewhere between 410 BC and 200 BC, that modifications requiring organized labor were undertaken. Additionally, in southern Belize at the site of Uxbenká, the cave site Kayuko Naj Tunich underwent considerable modifications including in-filling, levelling, plastering of floors, and the building of steps, walls, and partitions. Monumental construction in the cave began somewhere between 230 AD and 335 AD, coinciding with the first monumental architecture built at the site core (Moyes and Prufer 2009). This study suggests that the cave was part of an overall reorganization of the site coinciding with the rise of elite control. As James Brady (1997) noted years ago, caves are potent symbols of the power of the earth in Mesoamerican religions, and were likely to have been coopted in the Preclassic period by rising elites seeking to legitimate their positions. Therefore, architectural modifications to caves, particularly when they involved earth-moving and terracing, or other labor-intensive activities, suggest that these spaces were used for activities sanctioned and organized by community leaders and employed by this group for both public and private rituals.

Caves can also be good ways to date settlement abandonment. Findings from Chechem Ha indicated that the entrance to the cave was blocked following its final use sometime between A.D. 720 to A.D. 960 (most likely between A.D. 770 and A.D. 900), about the time that surface sites in the area were thought to have been abandoned (Moyes 2006a, 2006b). The advantage to archaeologists is that the cave site can be easily radiocarbon dated using charcoal from ancient
torches whereas Late to Terminal Classic deposits in surface sites are often shallow or in plow zones and are subjected to modern forest fires. Therefore dating of these contexts is often dependent on ceramic chronologies.

Blocking of caves in the Macal Valley sheds light on who may have been using the caves based on when those groups that were mostly likely to have abandoned the area. For instance, at Minanha, the structures of the royal court were buried sometime between A.D. 810 and A.D. 900 and an impoverished group of low-lying platforms with perishable structures was erected in their place (Iannone 2005). In a recent paper, Iannone and his colleagues (ND) have suggested that royals or high elites were the first to abandon the site core although a population was present in the area throughout the Terminal Classic period. We suspect that if cave use was an elite prerogative, it might cease at the time of the elite abandonment of the surface site. Moyes and her colleagues (2009) argue that cave ritual was primarily an elite activity because there virtually no cave use in the Postclassic period in this area though small populations still inhabited the area.

The following is a preliminary report of field work conducted over the 2010 summer field season from May 23rd-Jul 4th. The crew consisted of Co-Principal Investigator Holley Moyes, as well as Josalyn Ferguson, Mark Robinson, Stacia Fine, Erin Schmidt, Marieka Arksey and local assistant Armando Morales. Melissa Eliot joined us for a day at Actun Luubul to make a rendering of one of the vessels. James Hunter, and Jennifer Foote, our technical caver team investigated and mapped Actun Ciego and Siyaj Ch'en (Birthday Pit), and conducted preliminary reconnaissance on Three Rivers Cave, Cueva de Nada, Jaguar Tooth and Gibnut Ha. The project mapped and conducted excavations in Actun Isabella, Actun Luubul (translated Fall Down Cave), Moth Cave (aka Possum Cave), U Mehen Tsek' (translated Son of Skull formally Actun...
Chan) and Numyaj Naj (translated House of Pain) (Figure 1). Isabella, Luubul, Moth, Actun Ciego and Siyaj Ch'en are the caves closest to the site core.

Excavations were conducted by Josalyn Ferguson with the exception of the test pit in Actun Isabella, Subterranean Chamber 1, Room 2 that was supervised by Mark Robinson and the looter’s pit profile in U Mehen Tsek' supervised by Moyes. All dates reported here were run at the Keck Carbon Cycle AMS Facility, UC Irvine by Douglass Kennett and Brendon Culleton. They were calibrated using OxCal 3.1 and reported at the $2\sigma$ range. In this report there is a brief description of the sites, a summary of the excavations, a chronology for each cave excavated, and preliminary conclusions.

**Actun Isabella**

The MCP spent seven field days at Actun Isabella mapping, sampling, and excavating. It is located near the site core in UTM Zone 16, 278399m north and 1877800m east and 442masl. The cave was named in honor of Gyles Iannone’s grandmother and was reported by Jenifer Birch and Simone Philpot (2002). It sits at the base of a hill and the entrance is surrounded by ridges that form a plaza-like area in front of the cave. There is a small structure reminiscent of the “ticket booth” at Actun Tunichil Muknal perched on the ridge west of the cave entrance.

The cave is easily accessible and has a large north-facing entrance that spans 50m. The cave is heavily modified with architectural features including 1) retaining walls for terraces, 2) a platform, 3) stone blockages, 4) walls, 5) partitions, and 6) stone circles (Figure 2). Because the entrance is large and open, there has been considerable destruction of the architecture and at least three looter’s pits are present. Iannone (personal communication 2010) reported that in his infrequent visits to the site he has noticed artifact movement as well, so we assume that surface
finds are not in their original contexts. Five test units were placed throughout the cave so that we could begin to establish the site’s chronology. AMS dates indicate that cave use dates possibly as early as 1401 B.C. and it was used throughout the Preclassic and Classic periods until as late as A.D. 860 (See Table 2). The early dates make this one of the oldest dated caves in the Maya Lowlands if not the oldest.

Isabella is very well decorated with dark gray speleothems that appear to have been inactive for some time. The gray color is likely oxidization from air admitted from the large entrance. It is considered a “dry” cave because there is no interior water source. Rocks, boulders, and broken speleothems cover the floor of the cave. In plan view, the entire space measures 53 m on its N/S axis and 72 m at its widest point E/W. It is partitioned on its N/S axis by a linear configuration of stalagmitic columns and breakdown splitting the cave into distinct east (Chamber 1) and west areas (Chamber 2). Rocks were stacked in the holes between stalagmites creating a partition just over head height. These would not have prevented anyone from climbing over them with relative ease and may have functioned to block site lines between the two areas. A large stalagmitic column separates the cave mouth into two entrances. The west side of the cave is darker overall than the east, and contains a dark zone in the south end farthest from the entrance. Most of the east side is in twilight.

On the east side the dripline is decorated with stalactites giving the cave entrance the appearance of a large open mouth with teeth (Figure 3). These protrude from the cave suggesting that the cave “breathes;” in other words air circulates so that it flows out of the mouth. The east entrance descends at an approximately 30° slope to the floor below. Although badly collapsed, there appear to be three terrace levels and possibly the remnants of a staircase near the center.
The third or basal terrace located at the base of the slope is still in very good condition and extends approximately 36m across the east area on the E/W axis (Figure 4).

Near the center of the terraces, between Terrace 2 and Terrace 3 is a stone circle (Stone Circle 2) measuring 1.3m in diameter constructed of large cobbles and small boulders. A stalagmite measuring 75cm high and 3cm wide is positioned in the center of the circle. Bright green moss grows in the interior of the circle but not outside of the stone boundary (Figure 5). Without excavation, it is unclear whether the stones are an ancient or modern feature and we did not wish to disturb the delicate moss surrounding it by excavating. It is likely that this is a natural feature created by drip water splattering off of the stalagmite in a circular pattern keeping the area damp so that the moss can grow there. The stones around the green mossy area appear to be placed there, perhaps to mark the feature.

Two large stalacto-stalagmitic draperies hang in the center of the chamber partitioning it on the N/S axis and creating an entryway to the back of the cave (Figure 6). Considerable breakage can be noted on the speleothems, which may be intentional (Figure 7). It appears as if someone struck the formations with a hard object though there is no indication of when this may have occurred and no regrowth is evident. The breakage is in a U or C shape and the pattern can also be found at Moth Cave and Lubuul.

To the east of the entrance, on the floor below the terraces, is a cleared area surrounded by a circle of stones (Stone Circle 1). More accurately it is a stone “oval” because it measures 4.3m on its E/W axis and 2.3 on its N/S axis. The feature consists of a single course of medium to large cobbles and small boulders that are arranged in this pattern. The interior of the arrangement is cleared of rock. Unit 4 (See below) was placed so that it began inside of the circle and ended
exterior to it. AMS dates from the excavation suggest that it was constructed during the Early Classic period.

Moving along the eastern wall, adjacent to SC1 is a U-shaped area cleared of stone. Natural boulders forming the feature are filled in with cobbles. To the east of this feature abutting the east wall of the cave is a stalacto-stalagmitic formation with a hollow center that forms a large alcove (Alcove 1) measuring 5.4m on its E/W axis and 3m at its widest N/S, with a ceiling height of 1.6-2m. The alcove was constructed using dry-laid small boulders, cobbles, and broken speleothems placed in “windows” between the natural stalagmitic formations on the north side (Figure 8). The area is entered on the west side and a stone wall creates a constricted doorway. This may have been completely blocked at one time as evidenced by a pile of jumbled rock next to the wall. The blockages may have served to block site lines, block access, or create a dark zone within the alcove. There is little cultural material on the surface to suggest heavy usage.

Continuing along the east wall there is a circular area that has been cleared of debris. Rocks are piled up near the clearing. Just to the west of the clearing is an area covered by soft flowstone that has been chipped out in a square configuration. Unit 5, a small test unit was placed adjacent to this to determine the nature of the feature, but little was discovered. Moving along the east wall into the southern area of the cave farthest from the entrance there is a similar but larger feature that forms a pool during heavy rains. The edges appear to be chinked, but this may be a natural erosion.

Beneath a white stalagmite in the rear of Chamber 1 is a 2.3m stone enclosure constructed of small bounders that may have functioned as an altar. There is a great deal of burning around the column and two small looter’s pits were dug into the matrix. Looter’s Pit 2
(LP2) was cleaned and charcoal samples collected. The sediment is a very light reddish brown (10YR5/4) sandy loam mixed with about 50% marl. Charcoal collected from the base of the pit (CS 216) produced a Late Preclassic date of 45BC- AD55.

On the west side of the cave there is a large jumble of boulders that extends from the north-facing entrance to the floor. There are five terrace walls that descend from the entrance on a 30° slope to the floor below. A collapsed wall once constricted the entrance and today there is a 1m “doorway” that abuts the large boulder at the cave’s mouth separating the east and west entrances. At the base of the terraces is a U-shaped enclosure of stones 2-3 courses high with a stalagmite as the fourth wall in the center of the basal terrace. It has an altar-like appearance, though there is no evidence of burning or other activity on the interior surface.

A large area of breakdown abuts the north wall creating a passageway along the west wall that is in total darkness. Against the west wall is a constructed platform standing 1.6m in height, 1-2m in width and 3.5m in length. Atop of the platform on the south side is a niche formed by a natural stalacto-stalagmitic formation that has been modified to create an entrance into the small room that measures 1.5m from front to back and 1.71m across the front with a ceiling height of 1m. The space could hold 2-3 people but there is no evidence of burning on the interior so it is unclear how it was used. The northern part of the platform has been damaged by looters allowing us to view the construction (Figure 9). The backdirt and rocks from the damage are piled next to the platform. The feature was constructed by erecting a retaining wall of 2-3 courses of boulders held together by a mortar of mud. The wall was in-filled with cobbles, small boulders and sediment from the cave. The top of the platform is a smoothed tamped clay floor that has been turned a grayish color from intensive burning. A charcoal sample collected from
the profile wall of the looter’s pit (CS-129) dated the construction to 40BC-AD80, the Late Preclassic period.

Moving along the west wall there is an alcove (Alcove 2) that has been constructed using dry-layed boulders and cobbles. It measures 2.1m from front to back and 1.6m across the entrance. There is just enough room for one person to sit in the space. Charcoal covers the floor of the room and a sample was collected. An AMS date (CS 132) places the alcove’s use to the Terminal Preclassic period 80AD-230AD. A rock wall held together by a mortar made from mud was built across the entrance blocking it. On the floor surrounding the feature there are rocks with mud still adhering to them indicating that it was broken in to.

There are two subterranean chambers on the west side, Subterranean Chamber 1 (SC1) and Subterranean Chamber 2 (SC2). SC1 is a crawl space entered through a hole in the breakdown in Chamber 2. It consists of four lobes that all contain ceramic sherds. The northern lobe has a large concentration of small sherds and larger partial jars dating to the Late to Terminal Classic period. The southern lobe is partitioned into two rooms by a rock wall made of small to medium-sized cobbles held together by a mud mortar containing charcoal flecks (Figure 10). The westernmost room is Room 1 and eastern, Room 2. Both of these rooms appear to have been sealed off in antiquity and rocks can be found on the chamber floor in front of them suggesting that they have been broken in to. Room 1 measures 1.4m x .9m with a ceiling height of 1m. Room 2 measure 2.15m x 1.7m and has a ceiling height of 1.35. Two or five people could squeeze into these spaces. Units 1 and 2 were excavated inside of each room respectively. Room 1 dates to the Late Preclassic/Terminal Preclassic and Room 2 to the Late Classic (though this probably dates its final use).
Subterranean Chamber 2 is entered from the Chamber 2 floor in the N/W darkzone area of the cave. The entrance was constructed with boulders and speleothems to create a restricted “manhole” sized opening. The chamber is entered through a crawl and measures 5.5m on its N/S axis and 2.7m E/W. The ceiling height is 60cm and up to 8-10 people could fit into the space. At the entrance are sherds, cobbles, and a charcoal scatter. The ceiling above this area is burned. An AMS date obtained from the charcoal scatter (CS-133) suggests that the chamber was in use during the Late Classic period from 680-860AD.

Excavations

Unit 1- The .5 x .5m unit was placed inside of Subterranean Chamber 1 in the Room 1 in the southernmost lobe of the chamber to date the Room’s usage. It was excavated in 4 levels to bedrock. The surface is a 1-2 cm layer of dark grayish brown silty loam containing sherds, and showing signs of burning. Level 2a and b contains a 5cm thick mixed sediment matrix of light reddish brown (10YR6/4), dark grayish brown (10YR4/2), very pale brown (10YR8/2), and reddish yellow (7.5YR6/6) soil, with marl, and cobble inclusions. A charcoal concentration was discovered adjacent to the south (rear) wall at this level. Bedrock appeared in Level 3a and b, a 5cm. layer of yellower (7.5YR6/6, 7.5YR5/4, and 7.YR4/4) sediments, pebbles. This level produced one charcoal sample (CS 185) dating to 370BC-190BC, the Late Preclassic period. Charcoal collected from the mortar of the wall construction in front of SC 1 obtained a date range of (CS 131) AD 120-240, the Terminal Preclassic period, suggesting that the area was walled off at this time. More dates need to be obtained from the mortar to determine if the material was collected from cave sediments containing old charcoal deposits.
**Unit 2**- This .5 x .5m unit placed inside of Subterranean Chamber 1 in Room 2. Late Classic sherds were present on the surface of the excavated area. The unit was excavated in two levels. Level 1 consisted of a dark grayish brown silty clay loam (10YR3/2), was 6cm thick, and produced both ceramics and charcoal. Level 2 was 13cm thick and composed of the same matrix as Level 1 but with looser compaction. The level produced a small amount of charcoal, no ceramic sherds, and a small shell. Charcoal (CS-190), collected from the base of Level 1, produced a date of AD660-770 suggesting that this chamber was used later than Room 1. It is not clear whether this was broken into at a later date and reused or constructed at a later date. A charcoal sample from the interior wall of the room is being dated.

**Unit 3**- This was a 1 x 1.5m test unit placed on Terrace 3 adjacent to the interior of the basal wall so that we could come down on the wall’s interior without having to deconstruct the feature. The goal was to determine if it was a single construction phase, when it was constructed, and the method of construction. The unit was excavated in 4 cultural levels and sifted through ¼” screen. A single feature was encountered in Level 1, 33cm below the surface. This was a cache of burned ceramics consisting of 18 sherds stacked within a large unslipped jar sherd. The soil was burned beneath the jar sherd suggesting that it was placed on top of a hearth. Ash surrounded the deposit. Charcoal collected from the feature dated to 40BC-70AD (CS-124), the Late Preclassic period. Mid-sized cobbles that appear to be ballast were encountered below the feature. The matrix surrounding the rocks was aged dark brown (10YR3/3) sediment mixed with marl, charcoal and sherds. A concentration of charcoal was found in Level 3 beneath the ballast in contact with a layer of flowstone. Adjacent to the flowstone was a loosely compacted sandy loam (10YR 4/4) soil that when excavated as a pit in Level 4, undercut the flowstone and continued to produce charcoal and ceramic sherds. Sample CS-149 from this level dated to 1200-1010BC, and
most likely dates the cave surface upon which the architecture was built but not the architecture itself. To confirm this, a third date from Level 3a has been sent for AMS dating to obtain a date on the ballast. Our conclusion from this test unit was that this was a single construction phase in which cobbles were used to fill in irregularities in the cave’s natural features and stabilize the terrace. No plaster was used to finish the terrace floors. The feature was in use during the Terminal Preclassic period.

**Unit 4-** This 2.5 x .75 unit was placed so that it encompassed both the interior and exterior areas surrounding the stone boundary of Stone Circle 2. The unit was divided into interior and exterior areas for comparison and the stones from the construction were not disturbed and provided a baulk between the two areas. Both areas produced similar sediment types. The upper 2cm was a dark gray (7.5YR4/1) colored sediment mixed with marl. Below this was a 10cm layer of dark brown sediment (75YR3/2) mixed with marl and containing charcoal and sherds. This layer was thicker at the center of the circle and tapered to about 2cm outside of the circle suggesting more activity occurred inside rather than outside of the stone boundary. The top of this layer dated from AD 440-AD 610 (CS 211), the Early Classic period. The basal layers just above bedrock consisted of 10-15cm of pale brown silty loam (10YR7/4) mixed with 10% limestone inclusions. A charcoal sample (CS 214) from the base of the deposit dated to 1401-1270BC. This date is likely to represent initial cave use but not the circle’s construction which was likely to have been during the Early Classic period.

**Unit 5-** This was a small .50 x .50 test unit placed behind a large stalagmitic column on the east side of Chamber 1. It abutted an area of chipped flowstone. This was a curious feature that was thought to contain a cache. The unit was dug in one 12cm level of yellowish brown (10YR5/4) sandy loam and contained few sherds.
Actun Luubul (Fall Down Cave)

This cave was noted in the 2002 report by Birch and Philpot but was not explored. The cave is in very good condition and surface artifacts appear to be intact although it has been visited by locals exploring and taking in tourists. It is the closest cave to the Minanha site core (See Table 1 for coordinates). One reason this cave has been spared severe looting is that the entrance is via a 10m descent to the bottom of a sinkhole measuring 4m across (hence “Fall Down” Cave). It was discovered by a local who reports that the cave entrance was completely sealed off with a rock plug prior to his opening it. The MCP spent six days (May 28th until June 4th) investigating the cave. We made a sketch map, photographed artifacts and architecture, excavated three units, and recorded the surface charcoal in Unit 4. The north arrow on the map presented here points downward so that the map may be read from left to right to conform with one's movement through the cave.

The two main chambers together that comprise the most intensive area of ancient Maya use measure 41m N/S and 20 E/W. The cave has no interior water source but does support active speleothems and is very well-decorated. It consists of the sinkhole entrance, a small entrance chamber, a large cathedral-like main chamber and a lower area of back passages with few artifacts (Figure 11).

Surface charcoal (CS 005) from the lower passages produced a date of AD 1670-AD 1940. Since this area has active hydrology and is very muddy, we suspect that the charcoal may have leaked in from surface fires. Other dates from the upper chambers, and the presence of Late to Terminal Classic pottery on the surface are consistent with ancient Maya use. AMS dates
suggest the cave was used as early as 420BC and as late as AD780 when the entrance was closed.

At the base of the sinkhole descent there are two terraces held in place by small to medium-sized boulders leading to a rock overhang. Four Late Classic jars sit in upright positions under the overhang (Figure 12). They are all large and the biggest measures 81cm in height with a width of 68cm and a rim diameter of 33cm. Two have kill holes and two are completely intact. On the east wall of the shelter behind an outcrop of bedrock is the entrance squeeze to Chamber 1 (Figure 13). A rock plug that covered the squeeze, was opened recently to a width of about 5cm. Stalagmites positioned over the squeeze appear to have been broken in antiquity. Unit 2 was placed in the squeeze in hopes of obtaining a date for the cave’s closure, and results are pending.

After crawling though the squeeze, the cave is in total dark zone. Chamber 1 measures 12m on its N/S axis and 8m at its widest E/W with a 3m ceiling height. The floor is covered with a meter deposit of mud as evidenced from Unit 1. This unit was placed on the path adjacent to a stalacto-stalagmitic column. Late Classic sherds litter the surface of the chamber. Exiting the chamber to the east is a narrow well-decorated passage that moves along the east wall of the cave culminating in a 3m drop to a muddy floor below. A large Late Classic jar sits upright in a speleothem column and sherds are found in the passage.

There are two paths to Chamber 2. The first is entered from the east wall passage and moves between speleothem formations in the breakdown ending up near the south wall terraces. The second path exits Chamber 1 through a natural entrance in the breakdown leading to a steep 30° sloped path along the west wall of Chamber 2 carpeted with charcoal.

Chamber 2 has a high ceiling 4-5m and measures approximately 20m E/W and 15m N/S.
Moving from Chamber 1 south into the chamber, an area of breakdown on the west path contains two broken shoe pots and Late to Terminal Classic jar sherds. Down slope, perched on bedrock, are at least three artifact clusters of intact and partially intact Late to Terminal Classic vessels (Figure 14). The deposits are propped onto the slope with retaining stones. At the base of the slope is a constructed platform. On top is a cluster of sherds, charcoal and a modified Cowrie shell that is covered with red ochre or hematite (Figure 15). The three holes drilled in the shell suggest that it may have been strung as a pendant.

Five terraces are found in the southernmost area of the cave (Figure 16). Unit 4 was placed in the lowest terrace (T4) to date the construction. We dated this feature to the Early Classic period between AD420-AD540. Downslope to the west of the terraces is an alcove that is littered with sherds and cobbles. At the rear of the alcove is a hole that drops 2m into the lower chambers of the cave. The lower chambers were visited by Mark Robinson who noted few artifacts but was able to collect the charcoal sample mentioned above from the surface near a sherd scatter. Hunter and Foote also visited these passages and noted that there were fissures in the cave walls and that the on the floor was likely washed in. A map of the lower passages is forthcoming.

**Excavations**

**Unit 1**- This unit was placed in the mud floor of Chamber 1 because the deposit appeared to be quite deep and we hoped that good stratigraphy could provide a reliable date as to when the cave came into use. The unit was dug in 10cm arbitrary levels. It was placed on an obvious pathway to collect charcoal from the torches of people walking through, below a surface deposit of sherds, charcoal, wood, and animal bone, which was photographed and mapped and artifacts were
collected. The matrix in Levels 1-8 were uniformly dark brown (7.5YR3/2) highly plastic silty clay containing almost no grit or sand and had the consistency of modeling clay. Levels 9 and 10 contained the same clays, but were mixed with 50% limestone marl. We encountered mudstone in Level 10 suggesting that it was very old. No artifacts were discovered below Level 1, though it was impossible to screen the deposit due to the plasticity of the sediment. Charcoal was found and collected in all levels, including Level 10. Undoubtedly much of the charcoal was anthropogenic, but the lack of artifacts and stratigraphy as well as the lack of grit in the deposit suggested that these sediments may have filtered in from the surface. Therefore, we shut down the unit before reaching bedrock and did not send any of the charcoal for dating.

**Unit 2-** This unit was placed in the entrance squeeze in hopes of directly dating the rock plug that closed the cave or at least establishing a terminus post quem date for the event. It measured 55cm N/S and 45cm E/W and was excavated in 3 cultural levels to flowstone (bedrock). The matrix in Level 1 was the same dark brown silty clay found in Unit 1, but also contained 5-10% 2-5cm limestone pebbles. Fourteen ceramic sherds and 2 charcoal samples were collected. Level 2 was a dark grayish brown (10YR3/2) matrix with 10-20% 2-5cm limestone pebbles. Artifacts consisted of four ceramic sherds, 5 charcoal samples, and 8 soda straws. This is of interest because the straws were likely to have been knocked off by the first people to enter the tight squeeze, so this level likely dates the first cave use. Level 3 was only 3.5cm in thickness and quickly encountered flowstone. Six sherds and 2 charcoal samples were collected at this level. A sample from each level was sent for AMS dating and we are waiting for results.

**Unit 3-** The .5m x .75m unit was placed adjacent to and the long side parallel with the inside wall of Terrace 3 in Chamber 2 in order to date the terrace construction. The unit was dug in 5 levels and the first 4 contained charcoal. No artifacts were present on the surface and only one
artifact was encountered in the excavation, an animal bone in Level 2. Levels 1-3 consisted of heavily compacted dark brown (10YR3/3) to yellowish red (5YR4/6) silty loam to roughly 30cm below the top surface. Below this layer was a 20cm-45cm layer of ballast consisting of a medium compacted very dark brown silty loam (10YR2/2) and 60% limestone inclusions with 5cm-10cm pebbles. This level (L4) also contained a great deal of charcoal and a sample from between the boulders of the terrace’s interior (CS-066) indicates a date for the construction of AD420-AD540, the Early Classic period. Below the ballast was a layer of limestone boulders that were likely to have been the ancient cave floor. When lifted they revealed an orange deposit (7.5YR3/4) with 50-60% .5-5cm pebbles. No charcoal was present in this layer.

**Unit 4-** This unit was not an excavation per se, but a recording of surface charcoal to establish a control unit for an experimental project to estimate the number of people that may have walked across the area with torches leaving charcoal flecks. The 1m x 4m unit was positioned on the pathway on the east side of the pathway on limestone rock to include a carpet of charcoal that could be viewed easily and flecks counted. A charcoal sample (CS-002) collected from the unit produced a date of AD420-AD540, the Early Classic period.

**Moth Cave (aka Opossum Cave)**

Moth cave was reported in 2002 by Moyes and her colleagues. Joe Martinez named it "Moth" because of a large moth that lived inside at the time. Although the cave has many active speleothems, particularly on its north side, it can be considered a dry cave as it has no interior water source. The cave measures 22.3m in length and 19.3m at its widest point with variable ceiling heights, the highest being 4.7m. It has a west-facing entrance that was blocked in antiquity with medium to large boulders. These are best viewed from the cave’s interior (Figure
Part of the blockage was knocked out by looters leaving a 1.7m x .50m crawl space at the entrance. The site is badly looted but there are still ceramic sherds on the surface and some of the architecture remains intact.

The cave is comprised of 2 chambers, 2 alcoves, and an upper level crawl space (Figure 18). Architectural features are found in Chamber 1 near the entrance. These include 3 terraces and 2 platforms. A 14° slope descends from the mouth of the cave to the floor below (Figure 19). This area has 3 levels of terracing. At one time the terraces stood 80cm in height. They were constructed using medium to large boulders and speleothems. Natural bedrock is incorporated into the terrace walls. Terraces 1 and 2 are in poor condition but Terrace 3 (T3) is still somewhat intact (Figure 20). Unit 2 was placed in front of this terrace in hopes of dating the feature.

Two platforms are present in the chamber. One is adjacent to the south wall of Chamber 1 and one at the base of the terraces adjacent to T3. The upper platform is 2m x 1.2m and has a retaining wall that has been heavily damaged. At the back of the platform is a hollow speleothem that has been modified to form an enclosure. This feature is similar to the platform in Chamber 2 at Actun Isabella.

The lower platform is ovoid and measures 2.4m x 1.4m and is .2m in height. It is constructed from small boulders marking the periphery and the interior is a cobble scatter mixed with sherds. Unit 1 was placed in the center of the platform to date its construction. Two samples collected from Level 1 suggest that the feature was constructed in the Terminal Preclassic period. A sample from bedrock indicates that the cave came into use in the Early Preclassic consistent with Chechem Ha and other caves in the area.

Alcove 1 is situated south of the cave entrance. It is entered through a low squeeze beneath a speleothem. The area was blocked at one time with large cobbles and small boulders
that were pushed inside of the room when the looters broke through. The alcove measures 5m x 3.8m with a low ceiling height of .9m. In the S/E area at the back of the space is an altar-like feature. A speleothem creates a natural platform or table and rocks and broken speleothems were placed in the crevices around the feature. No burning was observed however. Unit 4 was place in front of this feature beneath an area on the ceiling that exhibited speleothem breakage suggesting that this was an activity area. The unit produced little charcoal, but two samples collected (CS-108) from the base of the deposit and (CS-093) closer to the surface date the space use to the Late Preclassic period (350BC-50BC) and suggests that the alcove was blocked during or after the Early Classic (AD250-AD390AD).

Ceramics are found in other parts of the cave but the areas near the entrance seem to have had the most use. There are Late Classic sherds on the floor of the north area of Chamber 2 and the upper level crawl space that extends from Chamber 1 to Chamber 2 has sherds and charcoal on the floor. There is also extensive speleothem breakage in the crawl. Alcove 2, and upper level space located in the northeastern area farthest from the cave entrance has sherds and several areas of burning, most notably in front of the niche at the rear.

**Excavations**

**Unit 1**- This unit is a .5m x .5m unit placed within the basal platform in Chamber 1 in hopes of dating the feature. The platform was constructed by laying down an outside layer of large cobbles and small boulders and loose cobbles paved the interior. The unit was excavated in 4 natural levels. The cobbles were removed revealing a layer of dark reddish brown clay (5YR3/3) silty loam, with charcoal and sherds. There is nothing to suggest that the feature extends below this layer, though the unit was continued to bedrock. Charcoal from Level 1 dated the feature to
AD100-AD120, the Terminal Preclassic period. On this level between rocks on the periphery on the interior side was a complete stemmed projectile point made of light brown chert (Figure 21). It measures 10.5cm on its long axis and 5cm at its widest.

Level 2 was a similar clay matrix but 5% marl inclusions and pebbles measuring 5-10 cm. There was more charcoal and a few sherds in this 10cm layer. Level 3 continued for another 6cm. This level had more limestone inclusions, 10-20% as well as pebbles measuring 3-8cm. The excavator noted that there was decreasing frequency of sherds and charcoal with depth. The matrix in Level 4 was an orange brown color (7.5YR4/4). The excavators hit bedrock (flowstone) at 37cm below the surface but still found a few sherds and charcoal in the deposit. A charcoal sample was collected from this level (CS-108) that produced a date of 1120BC-920BC. This most likely dates the cave’s earliest use but is too low in the unit to date the feature’s construction.

**Unit 2**- This unit butted up to the exterior wall of the basal Terrace 3. The unit excavated the deposit exterior to the wall to bedrock in hopes of collecting charcoal adjacent to or within the construction. It was .5m x .5m, and excavated in 4 natural levels to 35cm below the surface. Level 1 consisted of dark reddish brown (5YR3/3) silty loam with limestone inclusions and 2-5cm limestone pebbles. The layer also contained charcoal and sherds. Level 2 was a 10cm layer similar to Level 1 on top and changing color with depth. It also contained charcoal and sherds. The Level 3 matrix was redder (5YR4/4), contacted the bedrock (flowstone layer) and did not contain ceramics or charcoal. Dating of this unit is forthcoming.

**Unit 3**- The unit was placed in the entrance squeeze. It was dug in one level that consisted of a dark reddish brown silty loam before hitting bedrock (flowstone). The unit contained a few unidentifiable sherds but no charcoal.
Unit 4 - The .5m x .5m unit was placed in Alcove 1 in front of the altar-like feature. The headroom in the alcove was low (90cm) and the ceiling showed speleothem breakage, so this area was likely to have been an activity area. The unit was excavated in two levels to bedrock. Level 1 consisted of a very dark brown silty clay (7.5YR2.5/2) with marl inclusions. At 6cm below the surface the excavators noticed a compact layer of soil with charcoal embedded in the matrix suggesting this was a use-surface. Sherds were present in the level as well. An AMS date from this level (CS-093) produced a date range of AD250-AD390, the Early Classic period. Level 2 was less compacted but continued to produce a few sherds and some near bedrock charcoal (CS-115) that date to 350BC-50BC, the Late Preclassic period. Therefore we can conclude that the alcove came into use at this time.

U Mehen Tsek’ (Son of Skull, aka Little Chan)

This small cave was noted by Birch and Philpot in 2002. It is located about 750m from the site core. It was named for it neighboring site located 20m south that was reported as Actun Sukuan or “Big Brother Cave” but locals generally refer to this site as Skull Cave because of the entrance looks unmistakably like a skull cap with eyes. Therefore, we are registering these names as Tsek’ and U Mehen Tsek,’ Yucatecan for Skull and Son of Skull. Skull Cave was reported and a sketch map drawn by Birch and Philpot but the cave has not been properly mapped. In a 2006 visit, Moyes discovered local people digging truckloads of bat guano from the cave, so the deposits are quickly disappearing. We did not map this year because of the intense bat activity and will need to wear masks when mapping to protect ourselves from histoplasmosis and rabies.

Little was mentioned of “Little Chan” Skull’s smaller neighbor to the north in the Birch and Philpot report, but they did note that there was a blocked off chamber behind a “platform” on
the north wall. We found that the blocked area had been opened. This cave is clearly in peril so this year it was mapped, photographed, crawl spaces explored, a looters pit was profiled and a test unit placed within the architecture.

The cave is a dry cave with no interior water source. Although a small site with a single chamber measuring 10.7m at its longest and 9.2 at its widest and a ceiling height of 2m, it has been completely modified and intensely used by the ancient Maya (Figure 22). The cave is entered via a rockshelter that measures 4m in length, 1.7m in width, and ceiling height of 1.5m. The cave opens up into Chamber 1.

The chamber is terraced almost completely across the width and there are remnants of what may have been a stairway on the east side of the cave. There also may have been a platform with a tamped floor at the entrance to the cave, though it is so badly collapsed it is difficult to determine. We noted 4 terraces, on the 30° slope descending onto the cave floor, of which, 2 of the walls (T1 and T2) are still largely intact (Figure 23) despite a large looter’s pit that tore out part of T1. The looter’s pit was cleared and the pit profiled, photographed, and sampled for dating (Figure 24). Note the excellent stratigraphy that shows clearly how the terrace was constructed. Boulders overlaid the bedrock. These were covered by cobble-sized rock on which lies a dark gray burned layer of sediment suggesting that the terrace may have been constructed in two phases. On top of the burnt layer is another layer of cobble ballast. On top of the cobbles is a dark gray silty loam that is clearly a use-surface and has been heavily burned. A date was obtained for the lowest level on bedrock (CS-085) that returned a range of 360BC-170BC that likely dates early cave use occurring before the terrace construction. Another sample from the uppermost level (CS-078) returned a date of AD240-380. This suggests that final construction of the terrace occurred before AD380. Two additional dates from the profile will
help to determine the time of construction more accurately. Unit 1 was placed on the terrace above (T2) and a date of AD330-AD430 suggested that it was constructed at the beginning of the Early Classic period.

At the base of the slope is a flat area littered with cobbles and potsherds. A large pile of boulders torn out from what was clearly a wall blocking the north wall alcove (Alcove 1) lies in front of the entrance (Figure 25). It is roughly circular and measures .93m in diameter. A remnant of the wall is still intact. We lifted (then replaced) a stone from the basal layer to take a charcoal sample (CS-075) from beneath to determine when the wall was placed. It returned a date of AD 420-AD540, toward the end of the Early Classic period. This is the latest of the suite of dates run for the site that ranged between 360BC and 540AD placing the site within the Late Preclassic to Early Classic time frame. The presence of Early Classic ceramics on the surface and in excavations correlate with the later dates. Some Late Classic ceramics were observed in our short visit as well.

On the floor of the north wall of Alcove 1 is a hole that had been blocked (possibly the one reported by Birch and Philpot 2002) that leads to a very tight squeeze .5m wide and .3m in height. The squeeze leads to a subterranean crawl space, Crawl 1. The crawl contained a number of ceramic vessels including a polychrome pitcher (Figure 26) fragment, which is rare for this area and a crenellated unslipped plate that is heavily charred (Figure 27) and two Early Classic basins. All vessels were collected. A charcoal sample collected from the crawl dated to A.D. 240-A. D. 390, prior to the wall that sealed the alcove.

**Excavations**

**Unit 1**- This .5m x .5m unit was placed on the north side of the flat part of T2 in an area with
intense burning on the surface. The surface of the unit was littered with potsherds which were collected. It was excavated in 2 levels to bedrock. The matrix in Level 1 was a burned loose sandy loam with limestone inclusions and 2-10cm pebbles. It also consisted of 50% ceramic sherds in this 15cm level. Many were Peten-style polychromes and some have glyphs painted on them. No charcoal was collected because of the possibility of contamination with modern burning in the area. Level 2 was a reddish brown (7.5YR2.5/1) sandy loam with medium compaction. This dark soil sat directly on top of bedrock and a sample collected from this level (CS-088) obtained a date range of A.D.330-A.D.430, the Early Classic period.

**Numyaj Naj (House of Pain)**

Numyaj Naj (translated House of Pain) is located between Minanha and Chechem Ha further away from the site core that many of the other sites. This cave reported by Moyes and her colleagues in 2006 and is of interest because it shows patterns of cave use consistent with caves in closer proximity to the site core. It was named for the excruciating squeeze at the cave entrance. It is a small dry cave measuring 20m on its E/W axis and 10m N/S, with a 75m and 2.5m ceiling height. It is approached via a rock shelter entrance measuring 5.8m x 2.16m with a ceiling height of 1.2m. The squeeze located at the back of the shelter is very tight and headroom is about 30cm-50cm. The entrance squeeze is littered with pebbles and cobbles used to block the exterior entrance. These are pushed to the side to allow access. Sherds, a pomacea shell and a flake were found in the rockshelter. The squeeze is approximately 3m.

The front of the cave was completely blocked off by a massive plug of boulders much like Moth Cave. These had been broken into and the boulders pushed inside and stacked on both sides of the entrance. The bedrock beneath creates a trough about .5m wide (Figure 28). This is
the only architectural feature at the site and there are few artifacts inside (Figure 29). Once inside the cave there is complete darkness so anyone entering the site would have needed a pine torch, which was certain to leave charcoal scatter. The sparse amount of charcoal suggests that the site was rarely used.

The cave has no doubt been heavily looted, but one Cayo Unslipped jar rim suggests a Late Classic date for the blocking off of the site. A single date from surface charcoal (CS-058) returned a date range of A.D.650-A.D.770 which agrees with the ceramic dating. There were few deep deposits in the cave so a unit was placed beneath the rock pile where the looters broke in. The hope was that surface charcoal beneath the rocks could directly date the caves last use as we did not know the results of our other date at the time. A sample collected from Unit 1 (CS-056) returned a date of 750B.C.-400B.C., the Middle Preclassic period, but does not date the entrance blockage. This AMS dates place the cave’s use between 750B.C.-A.D770, though it was likely to have been sporadic judging from the small amount of burning in the cave. The cave was closed down in the Late Classic period no later than A.D.770 but it is possible that the cave was opened and closed multiple times.

Excavation

**Unit 1-** This .5m x .5m unit was placed beneath rubble from where the wall had been collapsed in by looters. The rocks were removed to place the unit. This was directly on the path from the cave entrance so if there was activity going in or coming out of the cave, it would be possible to obtain charcoal for dating.

The Level 1 matrix was a dark grayish brown sandy loam (10YR3/2) with limestone inclusions and pebbles measuring 1-5cm. Level 2 also had grayish brown (10YR4/2) sediment
but with more ash, and this more loosely compacted matrix had up to 50% limestone pebbles. Bedrock was reached at 34cm below the surface. A carbon sample (CS-056) was collected beneath a small boulder that dated the base of the deposit to 750BC-400BC, the Middle Preclassic period. It is unclear as to whether this is dating the architecture or was sitting on the floor for a long period of time before the stone was set in place, though we know the cave was blocked permanently in the Late Classic period.

**Siyaj Ch'en (Birthday Pit)**

Siyaj Ch'en (translated Birthday Pit) was named by Joe Martinez for a tourist who entered the cave on his birthday. It is a large sinkhole that descends 4.5m to a 6m x 5.5m opening that drops about 30.5m (Figure 30). Jennifer Foote and James Hunter surveyed the cave on June 6, 2011. Reports from local people had noted vessels present on a ledge partway down. According to Hunter, the ledge is ~12m from the top of the vertical part of the pit. He noted that a skilled climber could reach this ledge but would be taking a serious risk to do it without rope. Luubul can be rigged off the high side for a clean drop to the bottom with a ~46m rope and a small rope pad.

Hunter and Foote reported that the ledge containing the vessels was impressive and appeared to have not been disturbed (Figure 31). It contained numerous intact and broken vessels, sherds, and some charcoal. From photographs these appeared to date to the Late Classic period. An unusual sherd (Late Classic Puhui-zibal Composite) was collected to find out if it fit a similar piece from the surface site and a charcoal sample (CS 126) was collected from the surface near the vessels for dating. This returned a date of 720AD-890AD, consistent with the Late Classic vessels types. An interesting side note is that absolutely no artifacts were found
below this point although a nice ledge was located just below the first one.

The bottom of Birthday Pit is a silt floor with some nice drip pits, fried egg formations and a massive (4.5m tall) curtain formation. Hunter and Foote left one lead which will require a 6m climb or traverse to reach and may require rope. They also found the air at the bottom to be marginal (high CO2) that caused heavy breathing and lightheadedness. They warn that it is difficult to judge if this could be worse under different conditions so the bottom of this cave should be approached with extreme caution.

**Actun Ciego**

Actun Ciego was reported to Iannone this year and named in honor of his recently deceased assistant and friend. The cave is near the site core on a platform near a well preserved wall. Jennifer Foote and James Hunter visited the cave on June 6, 2010. Actun Ciego is ~18m deep and is a classic karst pit with a small entry opening up as it descends to a triangular (~6 x4.6m) base (Figure 32). The bottom is filled with debris and rock and there was no evidence of airflow. Although there is some flowstone there are few formations. The pit can be rigged from a tree with ~23m of rope and a small rope pad. It should be noted that a ledge just below the entry first appears to be the floor and could lead one to try to climb down. This ledge is deceptive and is extremely steep and slick and attempting to climb to it could result in falling down the pit.

This is apparently what happened to two jaguars whose skeletons are located at the bottom. The cavers noted claw marks going up the wall as high as 6m in places indicating that at least one of the jaguars attempted to get out. The lack of debris on top of the skeletons suggests they were relatively fresh. They also discovered 2 sherds and a glove that, according to the local
guide, had been dropped by a caver some time before. The sherds were likely to have been thrown into the pit or fell from the surface, but there is otherwise no evidence of ancient Maya use.

Conclusions

One of the most surprising and interesting findings from the MCP 2011 field season is that all of the caves in the vicinity of Minanha exhibit much earlier use than was expected and two date to the Early Preclassic period contemporaneous with Chechem Ha and the early Belize Valley sites. Chechem Ha has been thought of as a pilgrimage site, but these findings invite us to rethink models of early settlement in the area, and encourage the search for elusive Early Preclassic sites.

Not only were the early dates somewhat surprising, but when we looked at the preliminary dates on architectural modifications, we discovered that almost all of the architectural features in caves that have been dated fall into the Late Preclassic to Early Classic periods (See Table 3). This is interesting because we find a dramatic increase in cave use beginning in the Early Classic Chechem Ha but little Late Preclassic usage.

The coordination of labor to create architectural features in caves suggests increased social organization that accompanies the rise of elite power. Moyes argued elsewhere (2006a) that during the first part of the Early Classic increasing or stable amounts of rainfall and its entailing agricultural success served to enhance the power of ritual specialists increasing their social capital. This allowed the group to consolidate and expand their influence.

It has always been thought that Late Classic cave use was robust and that the most intensive cave use was during this period because of the large number of Late Classic vessels
discovered in surface contexts in caves. However, increasing evidence from excavation suggests that this is not the case. Certainly a larger number of caves were utilized during the Late Classic than at any other time period, but the intensity of usage is questionable since little charcoal is on the cave surfaces (Moyes 2006a, Moyes et al. 2009). This pattern seems to hold true with these new investigations as well. For instance, Siyaj Ch’en is not used at all until the Late Classic period. Like Chechem Ha,. Luubul has numerous Late Classic vessels sitting on the surface, and Moth contained Late Classic surface sherds, but the architecture in both sites dates to the Preclassic period.

This study is also interesting in that it establishes a pattern of the blocking off sites in the Late Classic period first noticed at Chechem Ha Cave. Luubul, Moth, and Numyaj Naj were all closed up after their final use and all contained Late Classic vessels, though it has proven difficult to date the entrance blockages directly. Interestingly, caves that could be closed up were-- but those with huge entrances like Actun Isabella were not.

AMS dates from cave surface contexts suggest that there was no cave use in the area after A.D.890, though there may be ephemeral populations in the area. Luubul, the closest to the site core was likely closed by A.D.780. Numyaj Naj was closed by A.D.770 and Isabella could have been used as late as A.D.860 (though this AMS date has a wide range of 200 years). Siyaj Ch’en has possibly the latest usage as it was first used after A.D.720 and could have been used up until A.D. One then has to explain why people living in the area during the Postclassic period did not use these sites, especially when large caves like Actun Isabella were easy to enter. This clearly indicates a change in ritual practice that is likely to be associated with changing ideologies.
This study demonstrates that one of the major contributions of cave archaeology is that the view of ancient Maya life from the cave is very useful in establishing regional chronologies and patterns. The data we have generated calls into question assumptions about the nature of early settlement. It also addresses social issues and suggests that elites were able to harness ideological resources in their rise to power. Finally, it addresses the social changes associated with Late Classic abandonment of the area.

We would like to note in conclusion that much more research needs to be conducted in these sites. Not only do caves contain valuable information for archaeologists but they are the cultural heritage of the Belizean people. The findings from our recent fieldwork confirm that looting is increasing exponentially as people populate these once remote areas. In a recent 2011 visit to Actun Isabella, Moyes discovered that since her last visit in June, the cave has been heavily vandalized and the architecture severely damaged. The documentation that is happening now could become the last record of ancient Maya cave use.

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Table 1. List of caves investigated by the MCP and their locations.

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Table 2. AMS dates run by Keck Carbon Cycle AMS Facility, UC Irvine.

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Table 3.

**Dating of Architecture for the MCP**

**Isabella**
- Stone Circle 1: Early Classic
- Terrace 3: Terminal Preclassic
- Subterranean Chamber Room 1: Late Preclassic/Terminal Preclassic
- Subterranean Chamber Room 2: Late Classic
- Platform: Terminal Preclassic
- Alcove 2: Terminal Preclassic

**Luubul**
- Terrace 3: Early Classic
- Final Entrance Blockage: Late Classic

**Moth**
- Platform: Terminal Preclassic
- Alcove 1 initial use: Late Preclassic
- Final Entrance Blockage: Late Classic

**U Mehen Tsek’**
- Alcove 1 wall: Early Classic
- Crawl 1 blockage: Early Classic
- Terrace 1: Early Classic?
- Terrace 2: Early Classic

**Numyaj Naj**
- Final entrance blockage: Late Classic
Figure 1. Map of the caves in the area of the Minanha site core.
Figure 2. Plan view map of Actun Isabella.
Figure 3. Entrance to Actun Isabella viewed from interior to the north (Photo by Moyes).

Figure 4. Terrace 3, east side Actun Isabella (photo by Moyes).
Figure 5. Stone Circle 1 with moss growing in its interior surrounds a stalagmite (photo by Moyes).

Figure 6. View south from east entrance Actun Isabella (photo by Moyes).
Figure 7. Arrow points to speleothem breakage in the curtain in Chamber 1. (photo by Moyes)

Figure 8. Looking west out of Actun Isabella, Chamber 1, Alcove 1. Note the constructions between columns to block the chamber’s natural “windows.” (photo by Moyes)
Figure 9. Chamber 2 platform construction revealed in looter’s pit. Note burned top surface. (photo by Moyes)

Figure 10. Walled off area in front of Rooms 1 and 2 in Actun Isabella, Subterranean Chamber 2, south lobe. (photo by Moyes)
Figure 11. Plan view of Actun Luubul.
Figure 12. Actun Isabella, overhang in front of entrance to Chamber 1 showing 3 large intact vessels, facing south. (photo by Moyes)

Figure 13. Entrance of Luubul was walled up by the Maya. (photo by Moyes)
Figure 14. Actun Luubul, retaining stones secure vessels on slope adjacent to west wall, Chamber 2. (photo by Moyes)

Figure 15. Modified Cowrie shell, platform west wall. (photo by Moyes)
Figure 16. Actun Luubul south wall terraces. (Photo by Moyes)

Figure 17. Moth Cave entrance blockage viewed from the cave’s interior facing west.
Figure 18. Plan view map of Moth Cave.
Figure 19. View of Moth Cave Chamber 1 Terraces looking down slope (west) from the cave’s entrance.

Figure 20. Moth cave, Chamber 1. Scale bar sits on top of Terrace 3. Platform 1 is on the left. (photo by Moyes)

Figure 21. Chert projectile point from Moth Cave, Chamber 1, Unit 1, Level 1. (photo by Moyes)
Figure 22. Plan view map of U’ Mehen Tsek’.
Figure 23. U’ Mehen Tsek’, view of terraces SE toward entrance. (photo by Moyes)

Figure 24. U’ Mehen Tsek’, profile of looter’s pit sampled for dating. (photo by Moyes)
Figure 25. U’ Mehen Tsek’ entrance to Alcove 1. Note rubble pile in front of entrance.

Figure 26. U’ Mehen Tsek’ spouted polychrome vessel found in Crawl 1. (photo by Moyes)
Figure 27 U’ Mehen Tsek’ crenellated plate in situ Crawl 1. (photo by Armando Morales)

Figure 28. Numyaj Naj entrance blockage viewed from cave’s interior.
Figure 29. Numyaj Naj plan view map.
Figure 29. Plan view and profile maps of Siyaj Ch’en, drawn by James Hunter.

Figure 30. Late Classic vessels on ledge of Siyaj Ch’en. (photo by James Hunter).
Figure 31. Actun Ciego plan view and profile view. Map by James Hunter and Jennifer Foote.