Introduction

There is a growing interest in the establishment of polities within the Maya region. This has been kindled partially from work at Copan that has focused on the early time periods and founding of the royal dynasty (Fash 1993; Bell et al. 2004). The discovery that the founder was from the central Petén and most likely from Tikal (Buikstra et al. 2004) has highlighted the connections that existed between Classic Period sites. Epigraphic evidence from the site of Uxbenká suggests that its founding ruler may have had a similar connection (Wanyerka 2003:3). Ethnohistoric models (Garcia-Zambrano 1994) suggest that caves played an important role in the establishment of rulership by providing the cosmological referent that legitimized the leader's relationship with deities associated with the sacred earth. This has yet to be established archaeologically.
The goal of this project is to determine if Kayuko Naj Tunich is a "foundational" shrine. The chronologies for both the cave and the site core will be instrumental in making this determination. We reason that the best argument for this is if the cave was modified either before or at the same time as the earliest constructions in the site core. If so, this suggests that the cave played a role in early displays of power and authority.

2007 Field Season

The following is a report on salvage operations conducted at Kayuko Naj Tunich (Kayuko Cave) by the Uxbenká Cave Project (UCP). The cave was reported in 1996 by the Uxbenká Archaeological Project (UAP). Based on a brief reconnaissance the site proved to be heavily looted but contained a carved wooden canoe-like object, stone architecture, and a masonry feature thought to be a tomb. Reconnaissance of the site occurred in June 2006. Locals reported that there was a canoe inside the cave. At the time, the site was difficult to access and could only be reached via a 60m climb by rope. Upon entry the UAP confirmed the presence of the canoe-like object and found that it had been broken into two fragments. They also found that the cave contained a large masonry structure that had also been destroyed.

The 2007 six-week season of salvage operations investigated cave features, assessed the damage to the site, determined the potential for reconstruction, and collected material for further analyses. The project was funded by the Foundation for the Advancement of Mesoamerican Studies, Inc. A brief interim report (Moyes 2007) can be found on their web site at http://www.famsi.org/reports/07068/index.html. The report is somewhat outdated because recently acquired radiocarbon dates negated many of our previous models.

The crew consisted of Mark Aldenderfer and myself. We were also temporarily assisted by Mark Robinson and a number of field students from Wichita State University. We began on May 8 and worked until June 20th.

Access to the site proved even more difficult than originally anticipated. To ensure the safety of the crew and allow us to carry equipment back and forth, Maya community members constructed a system of ropes and hand-made ladders across the cliff face leading up to the cave entrance (Figure 1). The construction took approximately one week from start to finish.

Methods

The nature of the site precluded using most standard excavation methods. The central area of the cave had been so badly destroyed by looters that conventional excavation methods could not be used. We elected to 1) map the cave as we found it, 2) make a thorough photographic documentation, and 3) remove as much rubble as possible in order to search for any in situ material that would provide information about how the site was constructed.
Unfortunately, there was little storage space to which we could move or stack materials. We did not wish to remove all the construction material from the cave in the event that anyone should attempt to reconstruct the site in the future, but in order to investigate the rubble pile we had to remove some of the rubble. We elected to remove only natural limestone boulders from the cave and use the limited storage area on a small landing at the top of the stairs to stack tabular stones. We hired workers to do this. Five to six men from the community were hired for two days. They formed a line and we passed the stones out of the cave dropping them on the hillside below the entrance.

**The Site, The Salvage**

It is located in southern Belize 16° 12.495 N. and 89°04.363 W., just 2.3km due south of the site of Uxbenká. It is a dry cave situated within a cliff face over 200m above the valley floor at 368masl (Figure 2). There were areas that the Maya used within the cliff face on the climb to the cave. Alcove 1 was west of the cave entrance. Twenty-nine sherds were collected from the ledge below the alcove and a fragment of a copal cake from collected from the alcove's interior. This was sent for radiocarbon dating.

The site itself is highly unusual in that it is lined with crystalline speleothems. These are yellowish in color and are somewhat transparent. Almost all of the stalactites have been broken either intentionally or by natural causes. It is likely that they were broken by the ancient Maya and may have been collected to be used in other ritual settings such as caches or alters. Because we know this is the case, excavators can look for these objects in surface contexts. These would be easily identifiable because of their clear crystalline appearance and yellowish color. These would be referred to as spars if they were fragmentary and found in other contexts. When they break they display angular fractures.

The Main Chamber (Chamber 1) is accessed by a stairway constructed by the ancient Maya people. The stairs negotiate an upward slope of 48° leading to the Main Chamber (Figure 3). The stairway is constructed of tabular blocks that are not modified but were clearly chosen for their flat surfaces from the Rio Blanco River located over 2 km from the cave (Figure 4). The importation of these building materials attests to the human labor costs involved in the construction of the site. Twenty-three sherds were collected from the stairway. Some of these may have been thrown out of the cave by looters but some were found in niches in the wall suggesting that they were offerings.

The site measures 19m from the terminus to the entrance. It is 2.5m at its widest point. Plaza A, the Stela Plaza of Uxbenká can be seen from the north facing entrance. There are two chambers in the cave, Chambers 1 and 2. Chamber 1 is the largest and has the most architectural modification. The chamber had been badly looted probably as recently as five years ago (Figure 5) as evidenced by the rubble pile in the center of the floor. Some Maya community members claimed to have seen it before its destruction. According to our consultants, there was a masonry "tomb" structure built against the south wall of the cave. An ancient wooden object that many described as a "canoe" sat on top of the structure. Our investigations demonstrated that there was in fact such a structure-- Structure 1, that did in fact appear tomb-like (Figure 6). It was placed at the
southern terminus of Chamber 1 built into the sloping wall. The cave walls formed three sides of the roughly rectangular structure and 14 courses of stone blocks were stacked in front to create the forth wall. It measured 1.3m to 2m in its n/s axis and spanned the width of the cave of 2.25m on its e/w axis. The structure was plastered on top and on the exterior of the stone wall, but no plaster was present inside. Handprints are visible in the mortar. There were at least 4 layers of plaster on this top portion. A sample was collected for analysis. There was no visible evidence of a beam supporting the top so the structure may have been completely filled at one time.

There was a white stain outlining the feature on the west wall, but it is unclear what caused it. We excavated into the loose sediment found inside of the structure walls but found little cultural material. The absence of human bone, even in the looted context, suggests that this was not a tomb but rather may have functioned as a focal point in the cave, possibly an altar. The wooden object clearly sat on top of the structure for a prolonged period of time. A stain in the shape of the object was noted on the surface of the remnant plaster and small wood fragments were found in the matrix of the stain.

Data from the salvage operations enabled us to investigate construction techniques, analyze building materials, and will help to establish an absolute chronology. Chamber 1 was filled with limestone blocks and river stones. These were shored up with wood and stone retaining walls some of which are still in position. The stone fill was covered by smaller cobbles and topped with a thick 10cm layer of plaster (Figure 7). A fragment of wood (unburned) was recovered from the base of the fill at 1.42mbd. This was the deepest wood deposit in the rubble and was sent for radiocarbon dating in hopes of attaining an initial construction date for the cave.

The chamber was partitioned into two to three rooms. These had plaster floors and in Room 2 the walls were also plastered. Eight vertical posts were set in the floor adjacent to the cave walls and corresponding to in situ stone alignments suggesting that these were constructed wall partitions. In three instances the plaster abutted the posts and still adheres to the cave wall (Figure 8). The tallest post was 2.2m high. Remnant wood was found at bases of the five of the posts (Figure 9). Three of these were radiocarbon dated, Post 1, Post 5, and Post 8. Post 5 was found during excavations. It was burned and appeared to have fallen from its plaster post mould onto the floor.

Although the cave was recently looted, we noted evidence of catastrophic burning within the site suggesting that it was terminated or sacked in antiquity as well. Aside from discovering the burned Post 5, burning was noted on cave walls, and charcoal and ash deposits were found in the excavated areas around the peripheries of the rubble. Heavy charring can be seen on the cave wall adjacent to the platform at the entrance to Chamber 1 (Figure 10). Rubble on this small platform contained thousands of crystals or spar from broken stalactites located throughout the site. These were discolored and friable indicating that they were burnt. A charcoal fragment collected from the base of the pile was radiocarbon dated.

**The Wooden Object**
Because the cave was now accessible to vandals in consultation with the local Maya community, we elected to export it to the United States for study and preservation. The wooden canoe-like object was removed from the cave and was intended to be housed at the Arizona State Museum at the University of Arizona in Tucson for analyses and conservation. Because of the poor state of preservation it may not be possible to determine exactly what the object was meant to represent. It is likely that the object functioned as an altarpiece or container for offerings. By obtaining a species identification and analyzing the manufacturing techniques it may be possible to infer its function. Testing for residues is also planned because the presence of organic residues may prove to be some of the only remaining evidence as to the sites overall function and provide clues as to the rituals that were performed there.

**Dating**

A total of 143 sherds were removed from the cave's interior and the adjacent Alcove 1. Sherds were also found in niches in the cliff walls along the climb up to the site. Using ceramic cross-dating, styles include Sierra Red slips and Late Preclassic forms consistent with those of the Barton Creek phase at Barton Ramie and with Late Preclassic examples from the Peten (Figure 10). A single radiocarbon date from the wooden canoe-like object returned a date of 1845±20 rcybp, which calibrates using Calib 5.0.1 at 2σ to A.D. 90-A.D. 235. There is a 98% chance that the date falls between A.D. 124-A.D. 235. These data coupled with the absence of Late Classic ceramics suggested that the site was used solely during the Late Preclassic period. However, radiocarbon dating confirmed that this was not the case.

Five additional dates were obtained from features within the cave and a single date from the copal cake found in Alcove 1 (Table 1). The wooden beam found in situ at the base of the rubble pile in Chamber 1 dated to A.D. 241-A.D. 338. This is the earliest date for the construction of the cave site. The wood beam, Post 5, and the charcoal fragment from the base of the step, all fall into date ranges between A.D. 230-A.D. 392. Because the beam dates with certainty between A.D. 241-A.D. 338 this is credible date range for the initial construction fitting comfortably with the other early dates.

Interestingly, Posts 1 and 8 are not contemporaneous despite the fact that they are located directly across the cave from one another. Closer agreement in the dates would be imperative if the cave had been modified at a particular time or had been built in one construction. The non-overlapping dates suggest that the cave underwent maintenance and posts were replaced when needed. The copal was contemporaneous with Post 8.

According to these dates, the last possible use of the cave would have occurred by A.D. 601. The evidence for burning suggests that the cave may have undergone a termination rite or possible sacking sometime prior to this time. The absence of Late Classic ceramics or radiocarbon dates suggest that it was used at all after this time.
By establishing good chronology for the site, we can conclude that this was an Early Classic cave shrine. Clearly the Preclassic styles of ceramics are not indicative of an earlier time period in this region, but carry over into the Early Classic period.

The Preclassic date derived for the wooden canoe-like object suggests that it may be some kind of heirloom placed in the cave for ritual or possibly political purposes. The object has clearly survived because of the dry conditions of the cave and because it is constructed of a hard wood. Two additional dates from the interior and exterior of the object are being conducted to insure that there is no old wood problem.

**Kayuko Triad Group**

Finally, while searching for looter's debris on the slope directly below the cave entrance, the project discovered a small architectural group approximately 150m below the site. The group consists of three mounds (Figure 11). Structure 1 is a flat platform-like construction oriented on a N/S axis that measures 7m x 10m. Structure 2 is upslope from Structure 1. It is oriented on an E/W axis and measures 9m x 11m and is the tallest structure standing 2.5-3m in height. There is a large looter's pit in the top of the structure. A tree grows in the pit suggesting that the site was looted quite some time ago. Structure 3 is upslope from Structure 2. It is oriented on a NE/SW axis and measures 8m x 11m. Both Structures 1 and 3 do not show signs of looting.

The group warrants further testing but its presence and proximity suggests that the site is related to the cave. It is unlikely the structures are a residential group due to the poor soils on the karst tower on which it sits. Additionally, if the steeply sloped surface was farmed, it would have had to have been heavily modified to accommodate fields, but there is no evidence of terracing of the area other than around the structures themselves. Finally, the closest water source to the site is the Rio Blanco River, a rigorous 2km hike descending into the valley.

It is only with excavation that we will be able to determine if the site is contemporaneous with the cave's Early Classic use, but if so this suggests that the cave and accompanying structures comprise an Early Classic mountain shrine complex. Although mountain shrines are well-known ethnographically, this would be the first complex of its type to have been discovered archaeologically.

**Conclusions**

Dates from the cave suggest that it was constructed within the same time frame as the monumental architecture at the site core in the middle of the third century A.D. (See Prufer this volume). It appears to have been maintained and used more or less continuously throughout the Early Classic period until no later than A.D. 601.
The construction effort and labor investment within the cave suggests that not only was it an important ritual site, but one constructed and controlled by the local elites. The addition of a surface component to the complex strengthens this argument.

We argue that we may comfortably call the Kayuko site a "foundational" shrine. The site was clearly incorporated into the initial building program of the site core. Although there were people living in and around the area prior to this time, they did not use the cave. This may have implications for ethnicity if and could help demonstrate that a ruling elite may have come from elsewhere if we assume a "cave-user" vs. "non caver-user" dichotomy.

The political nature of caves is slowly coming into focus and there is accumulating evidence, which indicates that caves were not only sacred space but functioned in political arenas as well. As excavations continue at the site of Uxbenká and more is known of the site's history, it will be possible to link the data obtained from this season's salvage work to a broader context. It is only through this kind of research that cave archaeologists can hope to understand the true function and meaning of archaeological caves and that those investigating surface sites may obtain a complete picture of both the ritual and political life of the cities they study.

Acknowledgements

We would like to thank the Institute of Archaeology for granting the permits to conduct this research and particularly thanks go to Drs. John Morris and Jaime Awe for all of their help and support. Also, thanks to the Foundation for the Advancement of Mesoamerican Research, Inc. for funding the research. Finally, our thanks to the Maya community of Uxbenká and especially to Ben Canti who engineered and built the scaffolding that saved our lives more than once.

References Cited

Bell, Ellen E., Marcello A. Canuto, and Robert J. Sharer

Buikstra, Jane E., T. Douglas Price, Lori E. Wright, and James H. Burton

Fash, William L.
García-Zambrano, Angel J. 

Moyes, Holley 

Wanyerka, Phillip J. 
Table 1. Dates for Kayuko Naj Tunich. Calibrated using Calib 5.0.1.

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Figure 1. Aerial photograph of the karst cliff containing Kayuko Naj Tunich. Locals refer to the tower in Mopan as *Suk Tunich* or White Rock.

Figure 2. On the left, Maya community members construct the ladder system. On right, Holley Moyes is shown negotiating the slope near the cave entrance.
Figure 3. Profile of Kayuko Naj Tunich.
Figure 4. Top: Stone steps leading to the cave's main chamber. Below: Mark Aldenderfer holds a similar stone from the Rio Blanco.
Figure 5. Holley Moyes and Mark Robinson inspect the pile of rubble left by looters in the center of Chamber 1 at Kayuko Naj Tunich.

Figure 6. Structure 1 abuts the northern terminus of the cave. The feature has been destroyed but remnant plaster can be seen around the edges and on the exterior of the front wall.
Figure 7. Illustration of remnant plaster floor illustrating construction technique.

Figure 8. This post was placed in a natural depression in the cave wall. Plaster abutted both sides.
Figure 9. Close-up plan-view map of Chamber 1 showing locations of postholes and features.
Figure 10. Charred wall adjacent to platform near entrance to Chamber 1. The platform surface was covered with burned spar.

Figure 11. Examples of Sierra Red ceramics from Kayuko excavations. These may be cross dated with the Late Preclassic examples from the Belize Valley and in the Peten.
Figure 12. Copal cake found in a secluded alcove.

Figure 13. Map of Kayuko Mound Group.
Atmospheric data from Stuiver et al. (1998); OxCal v3.9 Bronk Ramsey (2003); cub r:4 sd:12 prob usp[chron]

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200CalBC/CalBC/CalAD 200CalAD 400CalAD 600CalAD 800CalAD

Calibrated date

Figure 14. Radiocarbon dates calibrated using OxCal 3.9.