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## Biography of Sylvanus Morley

by Chris Ward

Sylvanus Griswold Morley (1883–1948) was perhaps the most influential Mayanist of the first half of the twentieth century. His contributions to epigraphy are embodied in his three masterworks on Maya writing and inscriptions: *An Introduction to the Study of the Maya Hieroglyphics* (1915), *Inscriptions at Copan* (1920) and *The Inscriptions of Peten* (1937–38). *The Ancient Maya*, Morley's final book, has remained through six editions the go-to reference for both students and scholars. Although his expeditions in the jungles of Peten led to the discovery of many new sites, most notably Uaxactun in 1916, perhaps his greatest contribution was his bringing the Carnegie Institution of Washington (CIW) into the Maya field, a decades-long endeavor that, under Morley's leadership, dominated Maya studies from the 1920s to the 1950s.

Morley was born in Chester, Pennsylvania, and when he was ten years old, his father became a part owner of a gold mine and moved the family to Buena Vista, Colorado. Morley became interested in history and archaeology, but his father insisted that he enroll in the civil engineering program at the Pennsylvania Military College (PMC). Obliging, Morley obtained a degree in engineering at that school in 1904.

Demonstrating a persistence that was a hallmark of his personality, Morley never abandoned his dreams of archaeology and enrolled himself at Harvard University immediately upon graduation from the PMC. Under the influence of F.W. Putnam, the director of the Peabody Museum, Morley was convinced to shift his field of focus from Egyptology to the ancient Maya.

At the same time Morley



Together exploring Chichen Itza, Morley (left) and A.V. Kidder stand under a carved stone lintel showing an Initial Series date sequence atop Structure 5C4, located back in what today is termed "Old Chichen". Sourced from: [www.latinamericanstudies.org/morley.htm](http://www.latinamericanstudies.org/morley.htm)

befriended Alfred Tozzer, the 30-year-old newly-appointed lecturer who taught the first formal courses on the Maya at the university. Importantly, Morley also endeared himself to C.P. Bowditch, who funded much of the Peabody Museum's early Central American work. Bowditch agreed to give Morley \$500 to send the young scholar to Yucatan in 1907, a trip that would have a major impact on Maya archaeology

*continued on page 3*

### Inside this issue:

IMS 2022! Get on the Bandwagon! Message from Eric Slazyk, IMS President 2

Biography of Sylvanus Morley, by Chris Ward 3-6  
(continued from pg. 1)

Unbundling the Past for for January, by Zach Lindsey 6

Dominique Rissolo: IMS Zoom Event; Maya Cave Shrines 7-10

In Memoriam: V. Garth Norman 11-12

Jon Spenard: IMS Zoom Event; Rio Frio Caves, Belize 13-16

An Artistic Eye for the Maya, with artist Steve Radzi 16

2022 Mesoamerica Meetings; Membership Application 17

### IMS Streaming:

**Jan. 19, 8 pm ET**

**Subterranean Shrines: Maya Cave Architecture of Coastal Quintana Roo**

with **Dominique Rissolo**

**Jan. 26, 8 pm ET**

**Enlightening the Shadowy Underworld of the Ancient Maya: Archaeology of the Rio Frio Caves, Belize**

with **Jon Spenard**



**Jim Reed,**  
Editor

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# IMS 2022! Get on the Bandwagon!

## Message from Eric Slazyk, the IMS President



Dear Membership,

I hope all of you have had a joyful Holiday Season and the New Year finds you well.

I also want to wish our members a Happy 50th Anniversary. Yes, IMS is celebrating 50 years as an organization this year! We couldn't have achieved this milestone without your support.

In retrospect, these past two years have been quite challenging. Due to the escalation of Covid-19 in March of 2020, IMS suspended its in-person presentations, waiting, like all of us, for life to return to normal. Near the end of 2020 it was clear that a return to normalcy was not in the immediate future. Because of the uncertainty of resuming in-person presentations, the IMS Board of Directors had decided to conclude our partnership with Miami Dade College and present our lectures virtually.

There certainly was a learning curve as we transitioned from live to virtual presentations, but we improved each month and decided to start our typical presentations in January of 2021. We soon realized there were many benefits by going virtual.

We were able to reach our membership safely and were able to expand our reach to potential new members across the globe.

We could now host speakers from anywhere in the world without the added expense of flying them to Miami. In 2021, presentations were hosted from around the U.S., and also Guatemala.

With the enthusiasm exhibited by the speakers we contacted, we were able to reinstate 4th Wednesday Explorer meetings back into our schedule. This additional speaking opportunity will be shared by leading professionals in the field of Mesoamerican studies, graduate students, and guest speakers. All presentations will begin at our usual start time of 8:00 pm ET.

Another major item for 2022 is that the newsletter will no longer be available by mail. The newsletter was previously limited in size and format based on cost of printing and postage. A cost that was a significant part of our yearly budget. Instead, IMS will be offering an expanded digital newsletter. The benefit is a newsletter that covers more subjects, more comprehensively, at no direct cost.

Due to the elimination of travel and hotel expenses for speakers, and printing and postage costs for the newsletter, IMS has reduced the membership fee to \$25.00. We look to add a student membership category this new year as well.

Our website has been improved with the ability to pay for new memberships and renewals via PayPal. Website amenities such as presentation videos, articles, and a growing newsletter

archive have been expanded for the convenience of our members. Facebook has been very busy, with several new individuals requesting to participate daily. We will be working to develop these individuals into new members.

Our fundraising efforts have been deeply affected by Covid these past two years and any improvement will depend strictly on the status of Covid and protocol guidelines. We hope to be able to award student scholarships again in the future.

The organization's structure has remained efficient and focused on its essential committees. This year, an advisory committee was formed for the purpose of initiating an academic connection to the next generation of archaeologists, anthropologists, graduate students, and Maya enthusiasts. We look forward to a better understanding on how to connect with the next generation. Advisory Committee Members include: Kaitlin Ahern, PhD, Research Associate, University at Buffalo; Ken Seligson, PhD, Asst. Prof., California State University Dominguez Hills, Dept. of Anthropology; Evan Parker, PhD Candidate, Tulane University, Department of Anthropology; and Elaine Schele, PhD, Professor, Texas State University.

Overall, IMS has had a successful year, but there is still much work to do. Our commitment to members in 2022 continues with the following:

- Providing quality lectures from top scholars in the field for our presentations.
- Fine tune presentation technologies.
- Provide an expanded and informative monthly newsletter.
- Maintain and improve our website for the convenience of the membership by expanding lecture video, articles, and newsletter archives.
- Interact with our membership via social media and develop new participants into members.
- Build and strengthen our relationships with leading professionals in the field of Mesoamerican studies.

In closing, I want to congratulate the Institute of Maya Studies on its 50th anniversary. I want to thank all board members, past and present, for the creation of our organization and the outstanding work in maintaining it for the past 50 years.

Lastly, I thank you, our membership, for your loyal support during the past 50 years. I trust in your continued support of the Institute of Maya Studies.

Salute! Eric T. Slazyk, President of the IMS

### 2022 IMS Board of Directors:

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# Biography of Sylvanus Morley

by Chris Ward *continued from page 1*

for years to come, for on this trip Morley made his first visit to Chichen Itza. In his 1907 diaries, Morley recounts climbing Chichen Itza's great pyramid, at the top of which he saw his first live snake. As he gazed across the jungle-encrusted ruins from his high vantage point, he determined then and there that his life's work would be the excavation and restoration of this important Maya site. It was a dream that would come to fruition in the decades ahead, despite many stalls and interruptions, a goal obtained only because of Morley's persistence. The result was the most important archaeological undertaking in the Maya area prior to World War II.

While on his 1907 trip, Morley was awarded his Harvard degree in absentia. During his years at Harvard, Morley courted and married his first wife, Alice, with whom he had his only child, also named Alice, but known affectionately as "True."

Morley now needed field experience and he found it in spades when he was given a fellowship with Edgar Lee Hewett's newly formed School of American Archaeology in Santa Fe, New Mexico. The focus of the School was on Southwestern archaeology, although Hewett had dreams of undertaking some Central America work (which might be one of the reasons Morley got his fellowship). Morley undertook fieldwork at several Southwest sites, most notably at Cannonball Run, Mesa Verde, and Spruce Tree House. Morley's association with the school lasted until 1914, when he joined the CIW, during which time he was instrumental in assisting Hewett launch work in Central America. Morley argued strongly for undertaking a project at Chichen Itza, and the School actively considered purchasing

the site from its then owner, Edward Thompson.

However, conditions in revolutionary Mexico were such that Hewett turned his attention to the Guatemala site of Quirigua, where the School began a multi-year excavation of the acropolis. Morley led the project in both 1911 and 1912, his first major foray into fieldwork in Central America.

Morley's plan for the CIW was the excavation and reconstruction of Chichen Itza, but the unsettled political climate in Yucatan delayed the start of the project for several years. Morley, however, convinced the CIW to allow him to undertake a series of expeditions to compile as many Maya date inscriptions as possible, an endeavor which led to three years of tramping through the Peten forests on muleback to discover and record new

hieroglyphic dates. His interest was narrowly focused on dates because his fieldwork occurred during a time (well before radiocarbon dating) in early American archaeology when there was significant uncertainty about the time frames when various civilizations, including the Maya, flourished. The Maya aided the resolution of this problem with their dated hieroglyphic inscriptions carved on stone slabs (called stelae) and on architectural structural elements such as door jambs, lintels, and stairways. These inscriptions began with a complex series of glyphs giving the date, called "Initial Series" by archaeologists. These inscribed dates captivated Morley as one of his primary goals was to determine the chronology of Maya civilization.

The years 1914–1916 were fast-paced (including a trip to then-remote Tulum) culminating in the tragic expedition of 1916. Accompanied by Harvard's Arthur Carpenter and a young doctor, Moise Lafleur from Louisiana, Morley triumphantly discovered Uaxactun and its Cycle 8 stela, at the time the oldest dated monument yet discovered. On the return trip out of the jungle the expedition was ambushed by Guatemalan soldiers, who were on the lookout for local insurrectionists. Morley and Carpenter barely escaped, but Lafleur was shot dead and beheaded. The circumstances of this horrific event would haunt Morley for years to come.

When the United States entered World War I

*continued on page 5, after map on page 4*



*Morley (center) at the Ballcourt at Chichen Itza during the early 1930s. Courtesy of the Smithsonian Institution Archives, Accession 90-105, Science Service Records, Image No. SIA2008-0835.*



*Uaxactun Stela 9 with Cycle 8 date. Gift of Ian Graham, 2004. ©President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, 2004.15.1.3286.2.*



*Morley (far right) and his crew at one of their make-shift camps in the bush, 1916. Gift of Ian Graham, 2004. Courtesy of the Peabody Museum of Archaeology and Ethnology, Harvard University, 2004.15.4.5380.*





# Biography of Sylvanus Morley

by Chris Ward *continued from page 3*

in the spring of 1917, Morley, ever the patriot, formed a Central America spy network for the Office of Naval Intelligence composed of various undercover archaeologists. Instead of archaeological field notes, Morley wrote hundreds of pages of reports focused particularly on possible locations for potential German submarine bases along the coasts of Central America. He also detailed the activities of Germans along the coasts. During this period his first wife filed for divorce, citing Morley's long absences as desertion. Perhaps not coincidentally, she remarried almost immediately after the divorce was granted. Morley's relationship with his daughter suffered for many years as a result of this acrimonious separation, something he frequently addressed in his diaries with unrestrained bitterness.

After the war, Morley returned to full-time archaeology. In 1919, he spent a final season at Quirigua to finish up the excavations of the acropolis. In 1920, he published *Inscriptions At Copan*, a massive volume still relevant today. Morley's primary wish during this period was to begin the project at Chichen Itza, but political conditions in Mexico were still so unsettled that the CIW was unwilling to launch such a major undertaking. Accordingly, during the next years leading up to 1924, Morley continued his explorations in Peten.

In 1923, Morley negotiated an agreement between the CIW and the Mexican Government (a ten-year concession) to begin work at Chichen Itza, the first season of which began in 1924. The site was divided between Mexican and CIW teams (CIW working mainly on the Temple of the Warriors and the Caracol; the Mexican team excavating and restoring the Ballcourt and the El Castillo pyramid). Activity continued until the mid 1930s, with Morley not only at the helm, but also in residence, living at the Hacienda Chichen.

A highpoint of Morley's personal life occurred at Chichen Itza in 1926 when he met and fell in love with photographer Frances Rhoads while on a brief visit to Santa Fe, New Mexico. The next year he brought Frances to Chichen Itza and on March 19th – two days short of the Spring equinox, but exactly 19 years to the day after he first climbed El Castillo at Chichen in 1907 – he walked her up the steep steps between the feathered serpent balustrades and proposed to her. She accepted and remained his wife until his death.

The CIW expanded its work to additional sites throughout the region and decided to replace Morley as administrative head of its Historical Division with Alfred Kidder in 1929, leaving Morley to head up just the Chichen operation. From his base at Chichen Itza, Morley undertook expeditions to Coba and was a frequent visitor to Uxmal and other Puuc sites. On occasion, he made trips to the Peten gathering more information for his study of Maya inscriptions.

Shortly after Morley's work at Chichen drew to a close in the early 1930s, he published his most important study – the five-volume *Inscriptions of Peten*, which remains one of the most important early studies in Maya epigraphy. With this publication, Morley joined Maudslay and Maler in presenting accurate drawings and photographs of inscriptions, providing easy access to hundreds of texts for future scholars to study. Sadly, however, Morley's contribution was severely



Excavation of the Temple of the Warriors at Chichen Itza, circa 1926. Gift of the Carnegie Institution of Washington, 1958. ©President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, 58-34-20/30330.



Morley with Juan Martinez Hernandez (of the GMT Maya/Christian correlation fame) in Merida with Morley (on the left). Sourced from ExploreYucatan.com.

limited by his singular focus on calendrical inscriptions. He felt that others were unreadable and, therefore, not worth attention. Accordingly, his *Inscription of Peten* presents only calendrical matters; other texts were ignored.

Morley's final contribution to Maya studies was his 1946 *The Ancient Maya*, which was one of the first general texts covering all aspects of Maya civilization. Subsequent editions were periodically revised with new information and new co-authors. As recently as 2006, Robert Sharer and his wife, Loa Traxler, revised Morley's book in its sixth edition, a version that remains a principal source in use today. By 2006, Morley's original *The Ancient Maya* had become so outdated that Sharer and Traxler rewrote the entire text from scratch and Morley's name as the original author was dropped. Morley's views as presented in the original edition were influential, for better or worse, and his "traditional" approach, which saw the Maya as a largely peaceful people led by calendar-centric priest/scholars who presided over unpopulated ceremonial centers, held near total sway during his lifetime. His unchallenged views – along with those of Eric Thompson – outlasted their usefulness and indeed hindered modern scholarship:

*continued on page 6*

# Biography of Sylvanus Morley

by Chris Ward *continued from page 5*

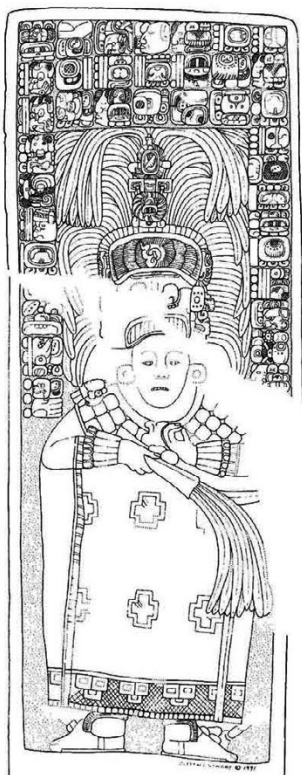
not until the decades after the 1960s did modern scholarship break through traditional dogma.

In his role at the apex of the Mayanist scholarly community, Morley inspired an entire generation of students, launching the careers of luminaries such as Eric Thompson and Tatiana Proskouriakoff. But Morley did not just influence his own profession: Through his enthusiastic popular magazine articles and numerous public lectures, Morley, more than anyone since John Lloyd Stephens, brought world-wide attention to the ancient Maya. He obviously wanted to excavate Chichen Itza to discover its secrets, but he really wanted to reconstruct the ancient city so that the modern world could discover the glories of the ancient Maya. Perhaps the popularization of Maya civilization is Morley's most important and lasting legacy.

Morley died in 1949 after a series of heart attacks resulting from cardiovascular disease exacerbated by years suffering from tropical diseases, principally malaria. His wife, Frances, also died at a young age in 1955. Upon her death, Frances donated thousands of pages of Morley's daily journals to the American Philosophical Society (a parallel set of the same diaries is held at the Peabody Museum).

These diaries are currently being edited, annotated, and illustrated for publication at Mesoweb.com by Prudence Rice and Christopher Ward [https://www.mesoweb.com/publications/Morley/Morley\\_Diaries\\_1914-1916.pdf](https://www.mesoweb.com/publications/Morley/Morley_Diaries_1914-1916.pdf)

Sources: Prudence Rice and Christopher Ward, eds. 2021. *The Archaeological Field Diaries of Sylvanus Griswold Morley: 1914-1916*. San Francisco, Mesoweb online publications; Robert L. Brunhouse. 1971. *Sylvanus G. Morley and the World of the Ancient Mayas*. Norman, University of Oklahoma Press.



Stela I is K'inich Yo'nal Ahk II's monument, though here he pictures his wife Lady K'atun Ajaw. Courtesy of [latinamericanstudies.org](http://latinamericanstudies.org)

Before his accession, Yo'nal Ahk married Lady K'atun Ajaw of Namaan.

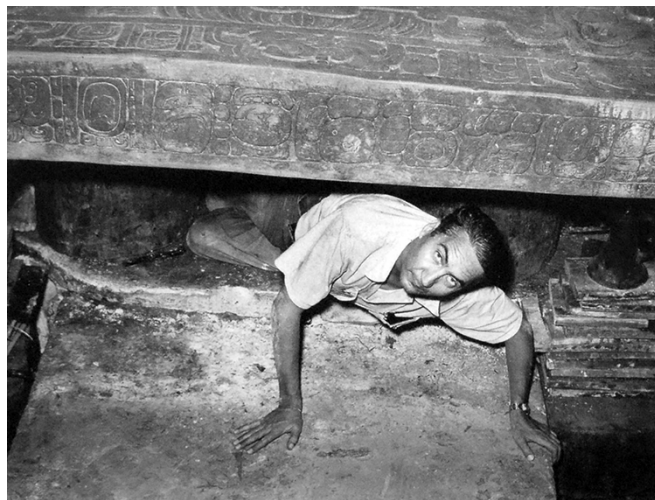
Piedras Negras was extremely influential on Classic Maya society despite its small size, and K'inich Yo'nal Ahk II oversaw a flourishing city that produced high-quality art and trade goods.

## Unbundling the Past: Events in Ancient and Contemporary Maya History for January

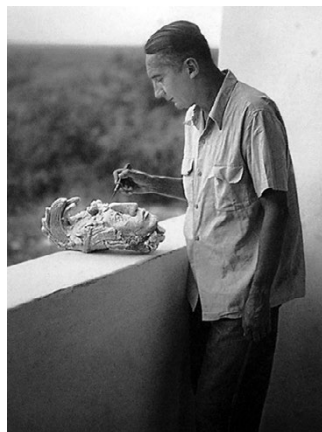
by Zach Lindsey

**3 January 687 CE:** On 9.12.14.13.1 7 Imix 19 Pax G9, K'inich Yo'nal Ahk II received the white headband of rulership and acceded to the throne of Piedras Negras as his father and grandfather had done before him. K'inich Yo'nal Ahk's political propaganda paints a picture of a warmer figure than many other Maya kings: If his stelae are to be believed, he was a loving father and husband who included his wife in royal art. Also, unlike many kings, his inscriptions regularly used his pre-regal name, Kooj (Puma). I can almost imagine him telling a nervous commoner, "Please, Yo'nal Ahk was my grandfather. You can call me Kooj." But propagandists during the stela cult were experts of molding public perception. Perhaps that warmth was just an illusion. Still, I like to call him Kooj.

**27 January 1906 CE:** On 12.14.11.9.15 11 Men 13 K'ank'in G6, Alberto Ruz Lhuillier was born. I try not to include many non-Maya folks on this list. But, of course, there are a number of archaeologists without whom we wouldn't understand the ancient Maya culture nearly as well as we think we do. (And let's face it, even that's an incomplete picture.)



Alberto Ruz, inside Pacal's tomb, June 20, 1952.



L) Ruz with Pacal mask. R) Tomb and Temple of the Inscriptions.

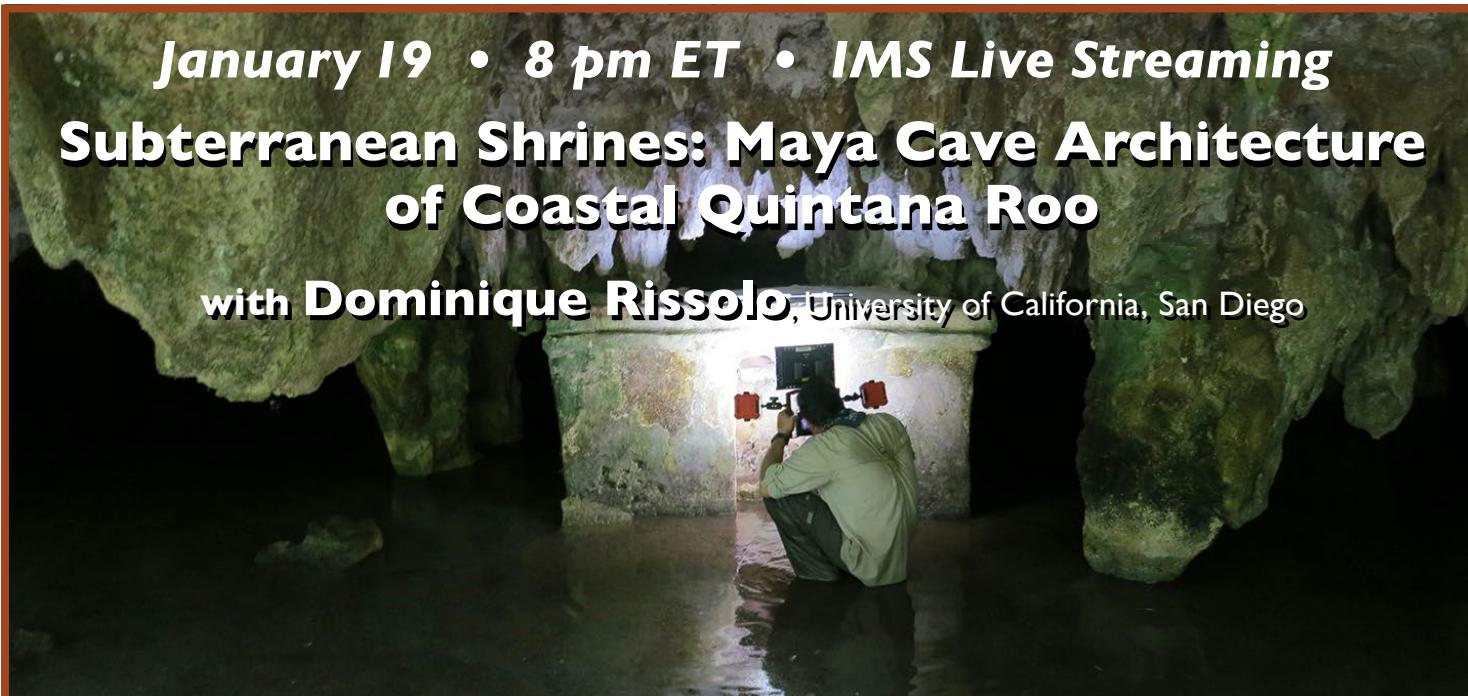
All photos courtesy of [latinamericanstudies.org](http://latinamericanstudies.org)

Ruz was one of the best, and his tenacity and expertise in the field was rewarded with the discovery of the tomb of Palenque king K'inich Janaab Pakal. Much like Howard Carter's discovery of King Tutankhamen in Egypt, it's a discovery that lives on in legend.



**January 19 • 8 pm ET • IMS Live Streaming**  
**Subterranean Shrines: Maya Cave Architecture  
of Coastal Quintana Roo**

**with Dominique Rissolo**, University of California, San Diego



*Access, download, or bookmark this active zoom link:*  
<https://us02web.zoom.us/j/86086402943>

Found in caves along the central coast of Quintana Roo are small shrines that closely resemble the region's enigmatic Postclassic temples. The presence of shrines and altars in caves serves as compelling and unambiguous evidence for ancient Maya religious practice in these underground spaces. Detailed study of masonry architecture in the caves reveals a strong stylistic and likely functional correspondence between these structures and their terrestrial counterparts at Postclassic sites such as Xamanha, Xcaret, Xelha, Tancah, and Tulum. The Proyecto Arquitectura Subterranea de Quintana Roo (coordinated by the Cultural Heritage Engineering Initiative at UC San Diego) is conducting a survey and program of digital documentation of cave shrines in the region. Comparative analyses across terrestrial and subterranean environments provide insights into the form, function, and meaning of Postclassic cave architecture in the northeastern Maya lowlands.

**Dr. Dominique Rissolo** has been conducting archaeological cave investigations in Mexico since 1995 with a focus on how the ancient Maya conceptualized, transformed, and interacted with subterranean environments. In addition to his recent and ongoing research on cave architecture in Quintana Roo, Dominique's interests include Paleoamerican cenote use as well as Pre-Columbian coastal human ecology on the Yucatan Peninsula. After receiving his Ph.D. in Anthropology from UC Riverside, Dominique went on to teach at San Diego State University and later directed research and grant programs at the Waitt Institute and with the National Geographic Society. Dominique is currently an associate research scientist with the Cultural Heritage Engineering Initiative at the Qualcomm Institute at UC San Diego and is a co-director of the Hoyo Negro Project and the Costa Escondida Project.



# Digital Preservation of Ancient Maya Cave Architecture: Recent Field Efforts in Quintana Roo, Mexico

with **Dominique Rissolo** Center of Interdisciplinary Science for Art, Architecture, and Archaeology (CISA3), University of California, San Diego, CA

*The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XLII-2/W5, 2017. 26th International CIPA Symposium, 28 August–01 September 2017, Ottawa, Canada, with accompanying authors E. Lo, M.R. Hess, D.E. Meyer, and F.E. Amador

The presence of ancient Maya shrines in caves serves as unequivocal evidence for the ritual appropriation of these subterranean spaces and their significance with respect to Maya religious practice. Detailed study of the miniature masonry temples and altar features in the caves of Quintana Roo, Mexico reveals a strong stylistic and likely functional correspondence between these structures and their terrestrial counterparts at Postclassic sites. The Proyecto Arquitectura Subterranea de Quintana Roo (coordinated by the Center of Interdisciplinary Science for Art, Architecture, and Archaeology, or CISA3, at the University of California, San Diego and in collaboration with the Instituto Nacional de Antropología e Historia in Mexico) is conducting a survey and program of digital documentation of both the pristine and impacted cave shrines of the region.

Once an area is developed and populated, and access is opened to caves containing ancient architectural features, they are soon vandalized – often resulting in the complete obliteration of these rare miniature buildings and their diagnostic architectural elements. This emergent situation necessitates the use of rapid reality-capture tools; however, the physical challenges of working in caves requires researchers to adapt common architectural documentation methodologies to more adverse field conditions. Miniature versions of Postclassic Maya temples are commonly referred to as shrines, and the siting of these shrines inside caves was a tradition unique to the central east coast of the Yucatan Peninsula. For the ancient Maya, caves were an integral part of the sacred landscape, and were associated with the concepts of emergence and fertility. The Chacs, or rain gods, dwelled within watery caves and cenotes, and the Maya appealed to them through rites and rituals.

The presence of ancient Maya shrines in caves serves as unequivocal evidence for the ritual appropriation of these subterranean spaces and their significance with respect to Maya religious practices. Detailed study of the miniature masonry temples and altar features in the caves of Quintana Roo, Mexico reveals a strong stylistic and likely functional correspondence between these structures and their terrestrial counterparts at Postclassic sites such as Xaman Ha, Xcaret, Xelha, Tancah, and Tulum.

The smaller enigmatic temples of these coastal sites are often characterized by out-of-plumb, thickly stuccoed and painted walls supporting a roughly corbelled or beam-and-mortar roof, which enclose a single room typically containing a masonry altar or bench. Most readily identifiable



Well preserved shrine in a partially inundated cave known as “Aluxes”. Photo by D. Rissolo.



Point cloud (via SfM photogrammetry) of the shrine in the cave known as “Aluxes”.

are the mouldings that crown the temple buildings as well as the inset panels above temple doorways.

## Past Studies

Despite the region’s enigmatic cave shrine tradition, surprisingly little has been done in terms of detailed investigations of cave sites within and around Xcaret and Xamanha. Andrews and Andrews (1975) recorded and described one cave altar and four cave shrines in the Punta Piedra area between the Xcaret site-center and Xamanha (see also Rissolo 2003:31-34 for a discussion). Leira and Terrones (1986) recorded an additional shine in this area, in a cave known as Aktun Na Kan. The cave survey of the CALICA property conducted by Martos López (2002:212-214) led to a discovery of a shrine in Cueva de Satachannah and an altar in Cueva de La Rosita.

One of the best preserved Maya caves shrines yet reported is located in a cave called Ocho Balas (also known as Oratorio) and is described in some detail by Rissolo et al. (2016). A related category

*continued on page 9*



# Digital Preservation of Ancient Maya Cave Architecture: Recent Field Efforts in Quintana Roo, Mexico

with **Dominique Rissolo** *cont. from page 8*

of masonry features includes more open structures or platforms which served as altars. These are quite common in the caves of the central east coast region of Quintana Roo and have been documented and discussed by Rissolo (2004) and Martos López (2010). Interestingly, these altars, and the miniature “thrones” which rest upon them, closely resemble such features found in temples and shrines at surface sites like Xamanha and Xel Ha.

## Recent Field Efforts

The project draws from a range of imaging capabilities including terrestrial laser scanning (TLS), structure-from-motion (SfM) photogrammetry, and stereo spherical giga-pixel photography. The latter produces navigable 3D point-of-view panoramas that can capture and allow for seamless and uninterrupted visual movement within and between light and dark areas, entrances, speleothems, and other subterranean features. These images complement the trusted geometry of the TLS point clouds and the photorealistic textured meshes produced via SfM.

The primary limitations, with respect to field operations, are lack of natural light and extraordinary high humidity, as well as the difficulty of packing ample



Shrine X-1. Note natural light from karst window in front of doorway. Photo by D. Rissolo.



Point cloud (via SfM photogrammetry) of Shrine X-1.



Point cloud (via SfM photogrammetry) of cave shrine XH-1, frontal view (note intact altar and “throne”).

power and gear into the forest and across rugged terrain. SfM photogrammetry has emerged as a preferred technique, although appropriate cameras, lenses, and portable lights are essential.

The cave shrine XH-1 is located above the edge of a cenote in an open rock shelter environment. There is abundant natural daylight, which allowed for less artificial lighting to be used in the imaging of the shrine. However, the shadows produced by dappled sunlight are not optimal for SfM photogrammetry. In such instances, fill lighting (onboard the camera rig) is used. The Shine XH-1 incorporates the back wall of the cave and the low cave ceiling into the structure itself. As is common among many cave shrines and altars in Quintana Roo, there is evidence of more recent reconstruction and reuse.

Cave shrines X-1 and X-2 are located in relatively close proximity to one another. These shrines are in twilight or near total darkness, which allows for better control of lighting. Shrine X-1 is located in a low room and proved challenging for manipulating the camera and lighting rig. Unique to X-1 is the positioning of the doorway of the structure directly below a karst window, which illuminates the interior space of the shrine. The side walls meet the roof of the chamber, concentrating the daylight through the doorway and onto the altar within the shrine.

The cave shrine X-2 is similar in morphology to XH-1, making use of a low cave ceiling and a cluster of speleothems to create a more enclosed environment. This shrine has been significantly damaged as a result of looting. The entire back wall and the back of the altar were ripped out. Interestingly, this damage to the structure exposed evidence that the enclosed shrine was at one time an unenclosed altar platform (with the walls and ceiling added later). Again, such modifications and reuse of these structures by the Maya over time were common. What these practices might reveal about Maya ceremonial cave use during the Postclassic would be a potential topic of study.

Perhaps the greatest single challenge to digitally preserving these rapidly disappearing cave

*continued on page 10*

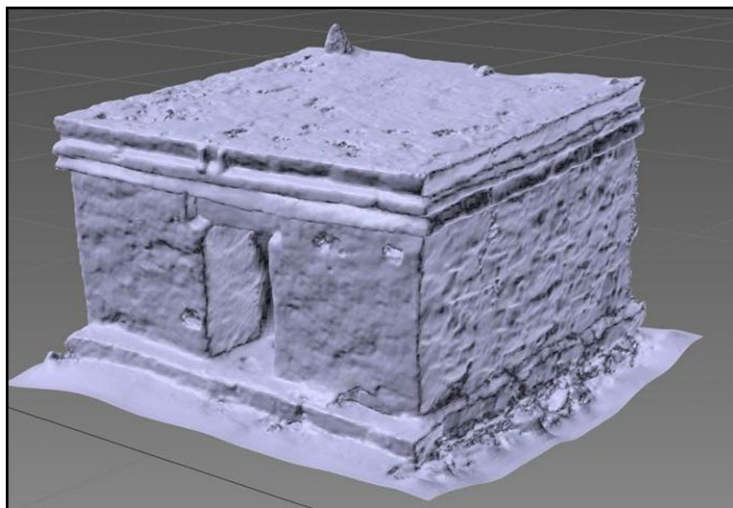


# Digital Preservation of Ancient Maya Cave Architecture: Recent Field Efforts in Quintana Roo, Mexico

with **Dominique Rissolo** *cont. from page 9*

shrines is access. Complex and ever-changing land tenure realities – involving a range of actors, from indigenous communities to international real estate investors – often determine whether or not Maya cave shrines can be recorded in advance of impending vandalism or looting. Xcaret and Xamanha were the ports of embarkation for one of the most important pilgrimage destinations and centers of commerce during the lowland Maya Postclassic: Cozumel. Following the hundreds of years of isolation and relative obscurity that befell the region after its decline during the 15th and 16th centuries, Xcaret and Xamanha have recently reemerged to once again assume what can be argued as functionally identical roles.

The city of Playa del Carmen, which sits atop ancient Xamanha, is one of the fastest growing urban zones in Mexico. The site of Xcaret – including the entire surrounding landscape and shoreline – has been completely



Mesh of the shrine in Cueva de Oratorio.

transformed to accommodate a successful theme park. To further complicate matters for the archaeologists and cultural heritage practitioners, this section of the Riviera Maya has witnessed a proliferation of all-inclusive mega-resorts along the coast and the creation of the massive CALICA limestone gravel quarry.

More traditional approaches to archaeological survey are often ineffective along the central east coast of Quintana Roo. Much time and effort are spent interacting with real estate developers, land surveyors, tourism entrepreneurs, and the like. Efforts to document vulnerable cave architecture in the region not only requires access to the few remaining parcels of undeveloped land, but we need to visit and re-evaluate those caves currently below or surrounded by luxury hotels, golf courses, shopping malls, and housing developments.

## Conclusions

Longstanding federal legislation regarding cultural heritage protections in Mexico combined with

active measures undertaken by the Instituto Nacional de Antropología e Historia to safeguard at-risk sites has gone a long way towards mitigating impacts to cave sites in Quintana Roo. Nevertheless, the sheer scope and scale of landscape transformation in the region has proven to be a challenge. The difficulties inherent in digital documentation of cave sites – such as inundation, physical restrictions, heat, humidity, and darkness – combined with a myriad of ever-changing access issues, and the sense of urgency brought on by accelerated development, makes for an atypical digital heritage survey in the Maya area. Nevertheless, the Proyecto Arquitectura Subterránea de Quintana Roo is committed to rapid digitization, curation, and dissemination involving these once hidden heritage sites of Mexico.

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Be sure to join us January 19 at 8 pm ET!

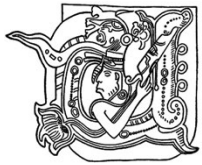
**Subterranean Shrines**  
with **Dominique Rissolo**



# Pioneer in Maya Studies: V. Garth Norman

*In Memoriam compiled by Jim Reed*

Garth and Cheryl Norman are center-stage after an important K'iche' Maya ceremony in Momostenango on behalf of The Maya Conservancy (TMC). TMC participants include Mary Lou Ridinger, Georgeann Johnson, Robert & June Sitler, Belizean flutist Pablo Collado, and Jim Reed (far left).



**V. Garth Norman** was the leading authority on iconographic research of the early Izapan-Mayan culture. He worked with the New World Archaeological Foundation at the site of Izapa from 1965 to 1980 and has published books and papers on that culture. He began his professional archaeology career in 1965 as a research associate with the BYU-New World Archaeological Foundation's Izapa, Mexico, project. Norman has primarily researched antiquities in Mesoamerica, North America, and Peru, South America over the past 50 years.

## Obituary

Vernal Garth Norman, 87, passed onto the road to Xibalba on December 1, 2021, in American Fork, UT. He was born June 30, 1934, in Paradise, UT to Vernal and Mildred Norman. He grew up on a farm milking cows and baling hay. He learned to be a finish carpenter with his father. He served in the Army during the Korean War, and soon after he served a Mission for the Church of Jesus Christ of Latter Day Saints in Japan for 3 years. Following his Mission, he attended Brigham Young University where he earned a BA in Recreational Management and later, an MA in Ancient Scripture.



Garth Norman receives gifts from the mayor of Tapachula, Chiapas, Mexico. The TMC had facilitated the way to bring 13 Maya spiritual elders from Momostenango to re-ignite the sacred fire at Izapa. No one had performed ceremony at Izapa in more than 900 years. The mayor was so enthralled that we pulled it off in spite of the desires of state officials that he invited our whole entourage to lunch and called for a major press conference to commemorate the event. Left to right: Mary Lou Ridinger, Rodolfo Juan, John Major Jenkins, the mayor, Garth, Georgeann Johnson, and Jim Reed.

He married Cheryl Peterson in 1965 in the Los Angeles Temple. Soon after, he was hired as a Seminary Instructor during the school year on Native American Reservations: 1965–1967 on the Washoe Reservation in Nevada, and 1967–1976 on the Navajo Reservation in Window Rock, AZ. His family loved living with the Native American people. During summer breaks, he worked in Southern Mexico at several archaeological sites.

While attending BYU in 1962, great archaeological discoveries were being made in Central America. He hopped on a bus and made his way down to Chiapas, Mexico to see the excavations that were taking place.

When he saw the Izapa Stela 5 "Tree of Life" monument, he was captivated. He returned in 1965 to photograph and study all the Izapa carved stone monuments. As a result, he was hired to be on the staff of the New World Archaeological Foundation where he meticulously outlined renderings of each of the many stelae, which continue to be widely used today. He became the leading expert on the Izapa Temple Observatory with his major publications in 1973, 1976, and 1980 and received his second MA in Archaeology/Anthropology at BYU in 1980. After moving in 1976 to American Fork, Utah, his continued research led him to connect the 260-Day sacred Maya calendar to Izapa at 15 degrees north latitude.



Garth and Cheryl Norman at Izapa, standing by a banner gifted by the Maya showing the four sacred directional colors of the Maya cosmogram.



Izapa's Stela 5 "Tree of Life" monument. Photo by Garth Norman, 1962

continued on next page



## Pioneer in Maya Studies:

## V. Garth Norman

### In Memoriam by Jim Reed *continued*

Through precision in his studies, he determined that the art and architecture at Izapa and related ancient sites were constructed using the Babylonian and Egyptian cubits, indicating a connection between the Middle East and Central America. He published seven more books on his findings including one on the Parowan Gap, UT petroglyph calendar site, and the Nazca, Peru observatory at 15° south latitude (opposite Izapa, Mexico's 15° north latitude.)

Throughout his life, Garth was dedicated to the gospel of Jesus Christ and had an unwavering testimony of the Book of Mormon. He led his family as a devoted father and grandfather which included 3 foster children: Rochelle Seeyouma and Emi Aoshima, and Daniel Millett and Abinadi Navas. Life was full of adventures with family members frequently tagging along on his archaeological quests. He was our "Indiana Jones", but he never hesitated to drop what he was doing to help his family or friends with their needs or projects. As a lifelong friend said: "Garth was an immense source of kindness, gentle wisdom and passionate scholarship."

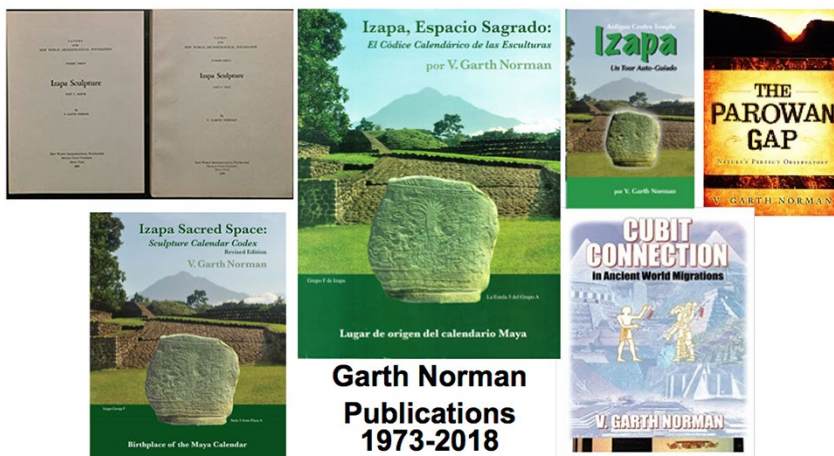
Garth is survived by his wife Cheryl Norman, his children: Anne (Tim) Law, of Pleasant Grove, Rachel (Winston) Williams of Lindon, Christina "Tina" (Greg) Cooper of Highland, 14 grandsons, 2 granddaughters, 8 great-grandchildren, his brother Bruce (Trudy) Norman, his sisters Mary Jean (Ray) Garrison, Kathleen (Joe) Borich, and Christine (David) Hale. He was preceded in death by his son, Daniel Garth Norman, and his sister Diane Parker.

### Accomplishments and publications

In 2007, he published his contract research on the natural temple center at the Parowan Gap in the Western U.S.: *Parowan Gap—Nature's Perfect Observatory* (2007-CFI), where in southwestern Utah, he had discovered an observatory and calendar link to Mesoamerica.

He published *Izapa Self-Guided Tour* in 2010 (Arcon, Inc.). In September 2011, Garth was the keynote speaker in the State of Chiapas lectures on Izapa titled "Chiapas, Corazón de Mesoamerica" held in Tapachula, Mexico.

In 2012, Garth published his ongoing research on ancient Mesoamerican calendars that have their foundation in the Izapa Temple Center in his book titled: *Izapa Sacred Space: Sculpture Calendar Codex* (translated into Spanish: *Izapa Espacio Sagrado, El Codice Calendarico*, 2016). In August 2012, Garth presented his most significant research in a lecture at the Museo Nacional de Antropología in Mexico City. He shared Izapa's Calendars based on 15° north latitude where the sacred Maya 260-day calendar originated (1500 BC/500 BCE), and that he found the 15° south latitude at Nazca, Peru, has the same Izapa 260-day Calendar (100 BCE).



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- *The Cubit Connection* (Geometry and Measure in Ancient World Migrations) 2018.

In 2018, Norman published the *Cubit Connection in Ancient World Migrations* which focuses on how antiquities were constructed in Middle America, North and South America, Asia, and the Pacific Islands using Middle Eastern cubits.

About *Cubit Connection*, Allen J. Christenson notes "Garth Norman's discovery of a massive calendar observatory system with astronomical alignments of mounds and monuments convincingly demonstrates that the Izapa monuments must be studied and interpreted as a whole, rather than try to read them individually or out of context. In addition, he masterfully demonstrates that Izapan artistic symbolism is just as highly developed a system of communication as the later hieroglyphic texts of the Maya, and a precursor to their development.

"Norman's profound understanding of the underlying Mesoamerican theology of Izapa and related cultures uses the myth narratives of the *Popol Vuh*, sacred book of the K'iche' Maya, and ethnographic sources creatively, showing that the Izapans were not just interested in the dance of planets and stars in the heavens, but also in what these movements say about the cycles of life itself. This book will surely prove to be of great interest to anyone interested in the art, science, and culture of ancient Mesoamerica."

Garth Norman was President of Archaeological Research Consultants (ARCON, Inc.) and the Ancient America Foundation (AAF). He was affiliated with many research organizations and had participated internationally with numerous professional symposiums. Garth Norman was a Century member of the IMS. May he rest in peace. 🏠



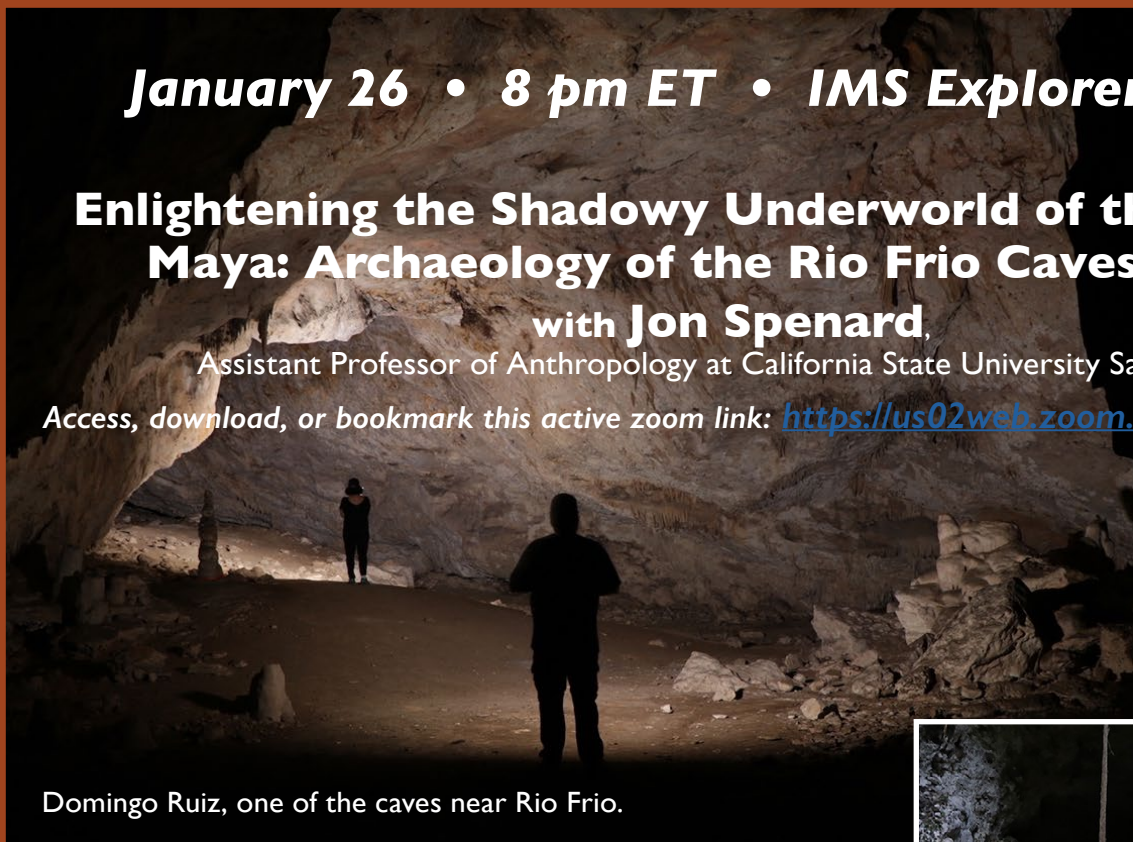
**January 26 • 8 pm ET • IMS Explorer Session**

## **Enlightening the Shadowy Underworld of the Ancient Maya: Archaeology of the Rio Frio Caves, Belize**

**with Jon Spenard,**

Assistant Professor of Anthropology at California State University San Marcos

Access, download, or bookmark this active zoom link: <https://us02web.zoom.us/j/89595049887>



Domingo Ruiz, one of the caves near Rio Frio.

First documented and excavated in 1928 by Gregory Mason, the Rio Frio Caves were among the earliest studied caverns in Belize. He called the three caves A, B, and C, although today they are known locally as “Twin Cave,” and Rio Frio Cave respectively. In his study, Mason noted several

architectural features including an altar, walls, and a zoomorphic cave formation that baffled him because he believed it was made by the ancient Maya. Working under what was later

termed a paleolithic paradigm, he believed that past people were living in the caves and that the architecture was primarily defensive in nature used to keep debris from tumbling down into the caverns and to hide and protect the inhabitants from invaders. In 2018, I began the Rio Frio Regional Archaeological Project (RiFRAP), the second ever study of the Rio Frio caves. Combining traditional archaeology with an array of emerging technology, my team and I have been excavating and digitally documenting the caverns. In this talk, I will present a multimedia virtual walking tour of two of the largest Rio Frio caverns, Caves A and C. Along the way, we'll revisit the architectural constructions Mason discussed, reevaluate his conclusions about habitation and the nature of the “constructed” formation, and learn more about the RiFRAP's ongoing investigations.

**Jon Spenard** is Assistant Professor of Anthropology at California State University San Marcos. He earned his master's degree from Florida State University in 2006, and his Ph.D. from University of California Riverside in 2014. Both projects were investigations into ancient Maya cave ritual practices at Cancun, Guatemala, and Pacbitun, Belize respectively. He began his current project, the Rio Frio Regional Archaeology Project (RiFRAP) in 2018 as the first long-term investigation of the Mountain Pine Ridge Forest Reserve of which the Rio Frio is a part. The lack of archaeological work in the Mountain Pine Ridge reserve stands in stark contrast to the adjacent Belize Valley and Vaca Plateau, which are among the most intensively studied regions of the entire ancient Maya world. Though currently focused on the Rio Frio caves, the RiFRAP is a landscape archaeology project that aims over the long-term to understand the many ways ancient Maya people and their predecessors lived and interacted with the Mountain Pine Ridge and Rio Frio region. *Join Jon on January 26!*



RiFRAP's 2019 Team in front of Cave C.



Jon in a tight cave passage.



# Enlightening the Shadowy Underworld of the Ancient Maya: Archaeology of the Rio Frio Caves, Belize

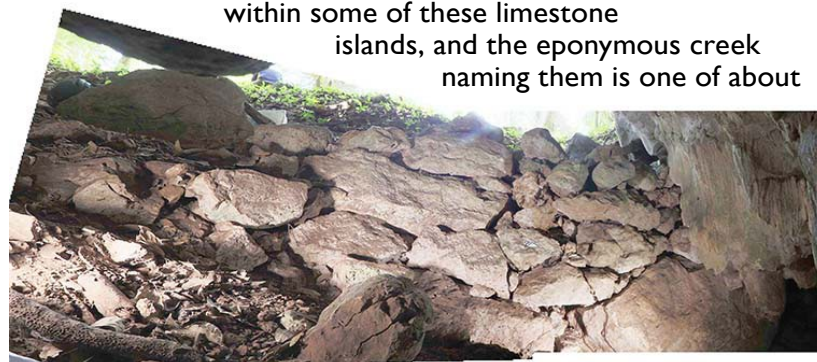
by Jon Spenard California State University San Marcos

From large-scale public events on the tops of pyramids, to silent prayers offered at household shrines, ritual performances were a regular aspect of ancient Maya life. Depictions of ritual scenes in ancient Maya art suggest these could be elaborate, theatrical affairs with heavily costumed participants, raucous music, choreographed dances, the imbibing of fermented beverages, feasting, and more. Many scenes also show the participants of these events interacting with the inhabitants of the supernatural world, from anthropomorphic gods to undulating snake-like beings.

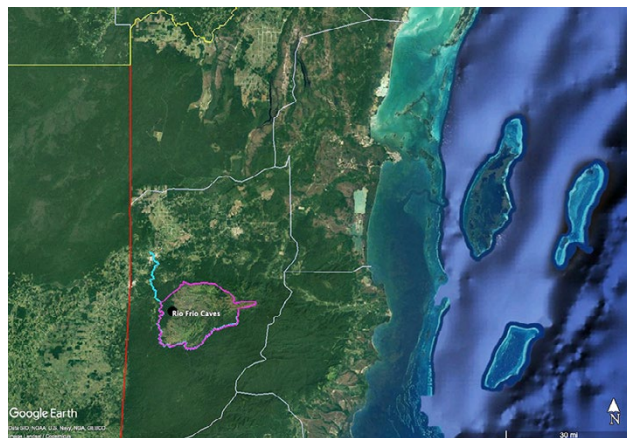
Beyond the immediate environments of daily life, ancient Maya people commonly performed rituals in *ch'eenob*, caves and cave-like places that dotted the landscape of the Maya Lowlands. Such locations were believed to be the emergence places of communities and communication portals to Earth forces vital to agricultural success (Astor-Aguilera 2010; Brady and Prufer 2005). Simply stated, *ch'eenob* were among the most important ritual locations in ancient Maya life. With the need for flickering torches to light the way, the ubiquity of artificial constructions in many cave systems, and pots prominently displayed in them, underground rituals appear to have included a theatrical component as well. In this article, I discuss a group of Maya ritual caverns in Belize collectively called the Rio Frio Caves that contain evidence of ritual theatrical modifications. These cave investigations are a primary focus of my Rio Frio Regional Archaeological Project (RiFRAP) conducted with permission from the Belize Institute of Archaeology.

The Rio Frio Caves are on the edge of the Mountain Pine Ridge (MPR) in western Belize (Fig. 1). The MPR has an unusual geography for the eastern Maya lowlands. It is covered by scrub pine forest rather than the more usual broad-leaf tropical jungle. The difference in vegetation is due to its underlying geology. The basement rock of the MPR is granite with soils ideal for pine forest but inhospitable to tropical broad-leaf forest and agriculture. Unable to support agriculture, the ancient Maya never settled there, and as a result the MPR has largely gone unstudied by archaeologists. Yet, the region is far from geographically homogeneous and culturally sterile. Sitting atop the granite rock on the west side of the MPR are cave filled “islands” of limestone bedrock cut off from their parent formation by the Macal River. The Rio Frio caves are found within some of these limestone

islands, and the eponymous creek naming them is one of about



**Fig. 2:** Composite photograph showing the massive retaining wall at the entrance to the long passage in Rio Frio Cave A.



**Fig. 1:** Map of Belize showing the location of the Rio Frio Caves. The Macal River is represented by the blue line. The pink polygon outlines the Mountain Pine Ridge.

a dozen that drain the MPR and feed the Macal.

The Rio Frio Caves were first reported to science in 1928 by archaeologist and explorer, Gregory Mason as part of the Mason-Blodgett Expedition through the Heye Foundation-Museum of the American Indian. The purpose of the expedition was to collect ethnographic objects for the museum's collections, but when Mason arrived in San Ignacio town, he was informed of caves that were deep in the forest and said to be filled with pots. Excited for the potential to learn more about what he called the “record of man's civilized existence,” in the Americas, he took up the opportunity to visit them.

Mason documented and excavated three caves that he called A, B, and C. His work would be the only archaeological study in the Rio Frio region until 1958 when Belize's Archaeology Commissioner, A.H. Anderson, recorded two new caverns while investigating reports of active pot hunting activities near Mason's caves. Following Mason's naming convention, Anderson called the new caverns Rio Frio Caves D and E, and he conducted salvage excavations in the latter. Mason's and Anderson's projects represent the only archaeological studies of the Rio Frio caves until I initiated the first long-term study of them with my RiFRAP beginning in 2018. Our primary focus of investigations has been Mason's Caves A and C. We have yet to relocate Cave E. A few other caves are now known in the western MPR located by Forest Department staff managing the MPR forests. We have begun preliminary investigations in one named Domingo Ruiz Cave, and they will be a focus of future RiFRAP field seasons.

Regrettably, little was published from the Rio Frio caves projects. Mason produced a short

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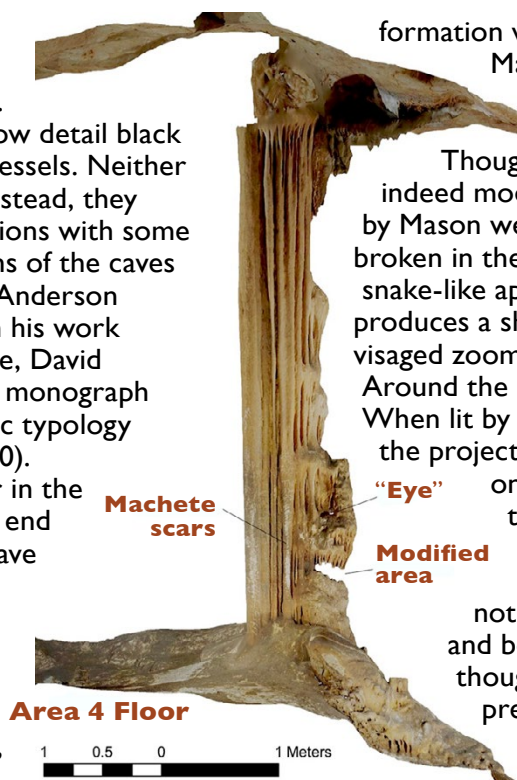
# Enlightening the Shadowy Underworld of the Ancient Maya: Archaeology of the Rio Frio Caves, Belize

by Jon Spenard California State University San Marcos *continued from page 14*

booklet and discussed the expedition as part of a chapter in his autobiography (Mason 1928, 1940). Both are illustrated with the same low detail black and white photographs of ceramic vessels. Neither is a proper archaeological report. Instead, they focus on his adventures and frustrations with some general and disorganized descriptions of the caves and artifacts he collected mixed in. Anderson passed away before he could publish his work in Cave E. Nonetheless, his colleague, David Pendergast published a posthumous monograph on the work. It is primarily a ceramic typology with little synthesis (Pendergast 1970).

Cave A begins as a rockshelter on the side of a hill with branches at either end leading to two short and one long cave passage. RiFRAP excavations in the entrance revealed a thinly plastered floor, extensive burning activities, and immature corn cobs suggesting the area was used for agricultural and other performative ceremonies, possibly including dancing. The entrance to the long passage is partially closed by an artificial wall constructed of massive boulders (Fig. 2). Further into the cave, is a large, high-ceilinged chamber Mason dubbed “the Cathedral.” Two elevated natural windows in the chamber wall that open toward the cave entrance were blocked off with rubble fill. Coupled with the large entrance wall, the two filled windows would have prevented any daylight from entering the cathedral chamber, resulting in it being pitch-black unless lit by artificial light.

Overlooking the Cathedral is a large, natural balcony at the center of which is a columnar cave



**Fig. 3:** Orthomosaic image of modified columnar formation in Rio Frio Cave A.

formation with a bulbous protrusion near its base. Mason noted the formation resembles an open, fanged mouth of a “typical Maya serpent” (Fig. 3).

Though the formation was natural, it was indeed modified. The teeth of the beast noted by Mason were small cave formations purposefully broken in the distant past, giving the column its snake-like appearance. Light raking the column produces a shadow on the cave wall of a fierce visaged zoomorph visible from the chamber below. Around the base of the column are burn piles. When lit by torchlight and the burning offerings, the projected shadow creature would have danced on the cave wall, a visual confirmation to those observers below of a successful conjuring ritual.

Throughout the cavern, Mason noted the presence of large utilitarian jars and bowls, some complete, many broken, though only a few polychrome vessels were present. Collectively the ceramic evidence from the cave suggests it was used throughout the entire Classic period (CE 250-900), with the heaviest usage occurring during the Late to Terminal Classic periods

(700-900/1000 CE).

Mason had little to say about Cave B, noting only that it had a wide opening, no water, and sherds from plain, undecorated vessels. Nevertheless, his report includes a photograph of a Terminal Classic period (800-900/1000 CE) spiked incense burner he collected from it.

Cave C is the most grandiose of the known Rio Frio caves. It is a massive tube through which flows the Rio Frio creek. The passage is roughly 250 m long, averages 40 m wide, and has 40 m-tall openings at both ends that lets in sufficient daylight to light the entire cavern. A large sandy beach area able to easily accommodate several dozen people is at the center of the cavern (Fig. 4). Elevated ledges line the side walls of the cave, and Mason reported finding large quantities of artifacts throughout. Unfortunately, today the cave is an unguarded, popular tourist stop for people visiting the MPR, and only a few handfuls of ceramic sherds remain.

The ceramics Mason encountered in Cave C reveal it was used much differently than the other two caves. Whereas Cave A held vast quantities of unslipped jars, Cave C had none. Instead, he recovered several polychrome vessels, mostly cups and a few plates, and some monochrome and plainware bowls. Due to a lack of contextual information in Mason’s report, it is currently difficult to understand how these vessels were used. Based on the published photographs,



**Fig. 4:** Sandy beach in center of Rio Frio Cave C. Photograph taken from area around platform excavated by Mason.

*continued on next page*

# Enlightening the Shadowy Underworld of the Ancient Maya: Archaeology of the Rio Frio Caves, Belize

by **Jon Spenard** California State University San Marcos *continued from page 15*

the polychrome vessels date to the Late Classic period.

At one of the entrances was a large platform approximately 10 m long, 3 m wide and 1 m tall. His description implies it overlooks the beach area below, suggesting it was a public ritual platform. Unfortunately, he excavated the entire structure, destroying it in the process. No evidence of it can be seen in the cave today, but he recovered large quantities of ceramics, piles of ash, and jade body ornaments. Excavations in a few small side passages revealed jade-adorned burials. Overall Cave C appears to have been a setting for large-scale public rituals and perhaps a burial location for individuals with elevated status.

With the RiFRAP being a young project in an understudied region of Belize, many questions about the Rio Frio Caves and the MPR in general remain. Topping the list is refining the cave chronologies and developing an overall one for the region. In upcoming field seasons we hope to learn who was using the caves. Many of the ceramics reveal close stylistic ties with the Belize Valley. Were the caves long distance pilgrimage destinations, or perhaps there are heretofore unknown settlements in the region. How do the other caves in the region fit the emerging pattern of ritual theatrics seen in the Rio Frio caves? Though the ancient Maya never displayed underground ritual scenes in their art, the archaeology of these shadowy underworld places is helping to shed light on the intricate theatricality of those events.

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Be sure to join us January 26 at 8 pm ET!  
**Rio Frio Caves, Belize**  
with **Jon Spenard**



## An Artistic Eye for the Maya with artist Steve Radzi

Steve Radzi has been illustrating Maya sites for many years. In 1995, his original black & white illustrations were exhibited at the IMS Conference at the Science Museum in Miami. In recent times, Steve has colored them, bringing them to life. These illustrations have not been published before. We shall feature his work in this and upcoming issues. Enjoy. You may visit Steve's site for more of his work. [www.mayavision.com](http://www.mayavision.com)

**XLABPAK:** "Xlapac" or Old Stone Walls (600–900 CE) Xlabpak is a small site and consists mainly of one building known as the "Palace". Located in the heart of the Puuc region, it is about 2.5 miles from the archaeological site of Labna and a similar distance from Sayil, lying directly between the two sites. Xlabpak is found on the "Ruta Puuc" along Highway 261 and is an easy journey from Merida.

**IMS EXPLORER**

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# CULTURES IN COLOR: ANCIENT MESOAMERICAN WORLDS OF PIGMENTS AND HUES

January 11 - 15, 2022

We are pleased to announce that registration is now open for The 2022 Mesoamerica Meetings! Following the digital format of last year's conference, The 2022 Mesoamerica Meetings will again convene entirely online.

As with our last Meetings, we will be using our Pay As You Wish donation model for those interested in helping us balance the budget for this upcoming conference and supporting other activities organized by The Mesoamerica Center at The University of Texas at Austin.

To learn more about the upcoming **2022 Virtual Mesoamerica Meetings**, please visit our conference website at this hyperlink: [The 2022 Mesoamerica Meetings Registration](https://www.instituteofmayastudies.org/registration)

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