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**Politics and Economics: Motul de San José, Petén**



**Research Year:** 2003

**Culture:** Maya

**Chronology:** Classic

**Location:** Petén, Guatemala

**Site:** Motul de San José

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## **Abstract**

The Motul de San José Archaeological Project has directed excavations, mapping and survey at the Classic center of Motul de San José and its environs since 1998. During the summer laboratory season of 2003, the ceramic, lithic, figural and spindle whorls collections were analyzed by Guatemalan and foreign students under the direction of Dr. Antonia Foias, in Salon 3, the storage facility of IDAEH in Guatemala City. The ceramic analysis discovered pre-Mamom pottery (probably pertaining to the early Middle Preclassic between 900/1000 and 600 B.C.) at the secondary site of Buenavista, located approximately 3 km southeast of Motul and near the north shore of Lake Petén Itzá. Furthermore, we were able to better define the types characteristic of the Terminal Classic at this site, based on the extensive excavations of several palaces in the major Groups D and E. The lithic analysis explored the different technologies used at the site to manufacture chert tools. The frequent use of thermal alteration to soften the chert suggests a sophisticated knowledge of this technology by the craftsmen of Motul. Several areas of production (divided into steps) were identified, such as the operations MSJ 15 and MSJ 23 in the epicenter and north zone, respectively, and the secondary sites of Buenavista and Trinidad. The study of the spindle whorls suggests the production of a variety of threads for textile weaving, although in their majority of fine quality. The examination of figurines demonstrated the use of several different technologies, including molds. Various residential groups were also identified as areas of production because of the high density of figurines and/or the presence of manufacturing debris or wasters.

## **Resumen**

El Proyecto Arqueológico Motul de San José ha venido llevando a cabo excavaciones, mapeos, y reconocimientos en el sitio Clásico de Motul de San José y sus periferias desde 1998. Durante la temporada de laboratorio del año 2003, la colección cerámica, lítica, y de figuritas y malacates fue analizada por estudiantes guatemaltecos y extranjeros bajo la dirección de la Dra. Antonia Foias en el Salón 3 de la bodega del IDAEH, en Guatemala. Con el análisis cerámico se logró identificar cerámica pre-Mamom (probablemente del principio del Preclásico Medio: 900/1000-600 a.C.) en el sitio secundario de Buenavista, ubicado tres km al sureste de Motul, cerca de la orilla norte del Lago Petén Itzá. Además, pudimos definir mejor los tipos pertenecientes al Clásico Terminal en el sitio, basándonos en las excavaciones extensivas de los palacios de élite de los Grupos D y E. El análisis lítico exploró las tecnologías usadas en el sitio para la manufactura de herramientas de pedernal. El uso frecuente de fuego para suavizar el pedernal sugiere un conocimiento sofisticado de la tecnología por parte de los artesanos de Motul. Varias áreas de producción por etapas fueron identificadas, como las operaciones MSJ 15 y 23 en el epicentro y la zona norte, y los sitios secundarios como Buenavista y Trinidad. El análisis de los malacates sugiere la producción de una variedad de hilos en el sitio, aunque en su mayoría de calidad fina. El análisis de las figuritas puso en evidencia el uso de distintos métodos de manufactura, entre ellos los moldes. Varios grupos residenciales fueron identificados

como áreas de producción de figurillas por la alta frecuencia de éstas y/o por la presencia de desechos de manufactura.

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## **Introduction**

Perhaps the most controversial aspect of ancient Maya civilization remains the nature of Classic Maya polities, with views ranging on a continuum between decentralized small-scale city-states to regional centralized states (Adams and Smith 1981; Ball and Taschek 1991; Chase and Chase 1992, 1996; Demarest 1992, 1996; Fox *et al.* 1996; Gillespie 2000; Grube 2000; Houston 1993; Iannone 2002; Marcus 1993, 1998; Martin and Grube 1995, 2000; Montmollin 1989; Sharer 1993; Stuart 1993). However, as several scholars have emphasized more recently, Maya polities were dynamic, characterized by variability both across space and through time (e.g., Marcus 1993, 1998; Iannone 2002). A more valuable approach to reconstructing political structure is examining each case individually, with attention paid to the important features of their internal political organization (such as centralization, hierarchy, stratification, integration, factionalism and competition, etc.) and the human actors involved within the broader cultural and historical settings (cf. Blanton 1998).

The degree of control over the economy is an important variable of political structure in all complex societies. Control over the economy provides an important power source to ancient elites, allowing them to centralize political power in their hands. Thus, in centralized polities, the relationship between political and economic power is direct and strong: the elites control all or important economic aspects, such as basic resources including agricultural land or water. In decentralized polities, political authority is based on non-economic factors, such as ideology and social relations, and the elites control little of the economy, generally only the production and/or distribution of prestige items. State economic control is therefore an important variable in the internal political dynamics of states, and deserves careful examination in each polity of the Classic Maya civilization.

Begun in 1998, the Motul de San José Archaeological-Ecological Project is a long-term interdisciplinary endeavor between archaeologists, ecologists, chemists, soil specialists, and the local communities, with the central aim to explore economic state control at the small Classic Maya center of Motul de San José in northern Guatemala (Foias 1998, 1999, 2000, 2001; Foias and Castellanos 2000) ([Figure 1](#)). Motul de San José is the ideal site for this research for a number of reasons. Secondary Maya sites may have

been the crucial actors in the international Classic Maya politics as they switched allegiances or seceded from the control of the primary centers, or as they specialized in economic production of particular items (e.g. Colha) (Marcus 1983; Ball and Taschek 1991).

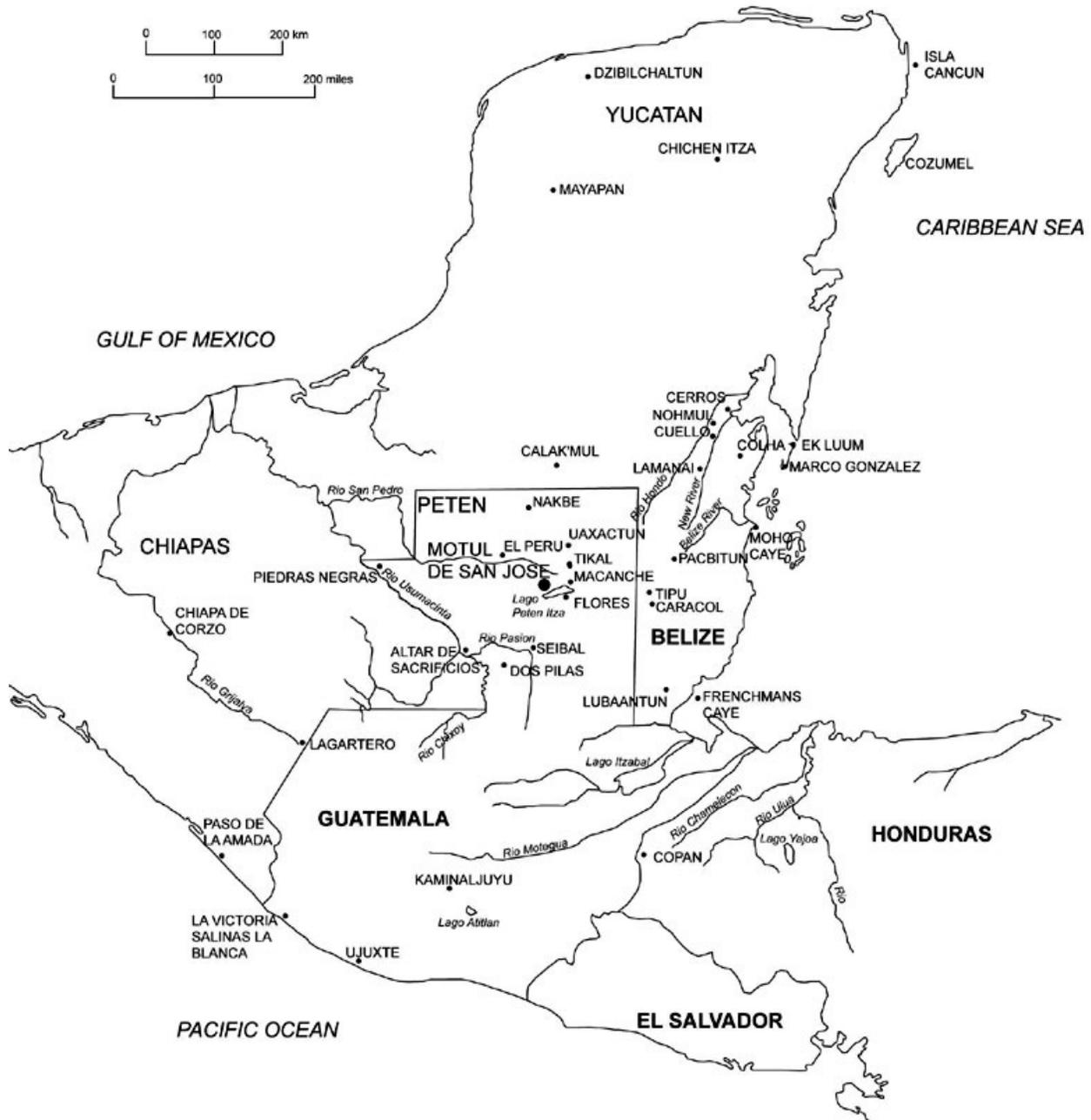


Figure 1. Location of Motul de San José, Petén, Guatemala. (Map courtesy of K. Emery.)

Located approximately three kilometers from the north shore of Lake Petén Itzá in Central Petén, Motul de San José ([Figure 1](#)) was one of these secondary-tier economic centers, as several lines of evidence suggest that it produced the well-known Ik-Style polychrome pottery. Named for the Emblem Glyph that appears often in the hieroglyphic texts on these vessels, the Ik style is characterized by pink slipped glyphs, historical texts, fine figural painting, frequent mention of the same two rulers, and dance or palace scenes (Reents-Budet *et al.* 1994). The Ik Emblem Glyph appears in the monuments of Bejucal (to the north of Motul de San José) during the Early Classic, and at Motul de San José during the Late Classic. However, the names Itsa and Kan Ek, which appear in the Motul de San José stelae, also associate the latter site with the Ik Emblem Glyph at least during the Late Classic. Chemical sourcing analyses of the Ik Style vessels by Bishop and Reents-Budet have shown that they were produced in the Motul de San José area, as they match archaeological ceramics from the site (Reents-Budet and Bishop 1989; Reents-Budet *et al.* 1994). Nevertheless, there is sufficient chemical variation to indicate the existence of several Ik polychrome workshops over the region to the west and northwest of Lake Petén Itzá (Reents-Budet *et al.* 1994). As both an economic and political center, Motul de San José has the potential to provide crucial data about the interaction of these two spheres during the Late Classic, the time period when Motul reached its apogee. Furthermore, Motul flourished and perished in the shadow of Tikal as it was under its influence at least until the early eighth century, and as such can provide clues to the relationship between the super-power and its client or vassal states.

### **The Motul de San José Project: 1998-2002 Research**

Funded by NSF and Williams College<sup>1</sup>, the Motul de San José Archaeological Project has conducted field research at this site on several fronts. As Motul had not been investigated previously, basic chronological and settlement issues had to be addressed first. Project members mapped 2 sq km of the epicenter of Motul de San José to document settlement design and distribution, and surveyed three 250-400 m wide and 2-3 km long transects exploring the northeastern, eastern and southern peripheries of the center, with special emphasis placed on the relationship between natural resources (such as soil type and quality) and prehispanic human settlement. (See [Figure 2](#), map of Motul de San José.) Small-scale excavations involving test pits and shovel tests in areas behind domestic structures were employed to answer chronological questions and to locate refuse deposits which can provide crucial data on consumption patterns, socioeconomic status, economic activities (such as manufacturing) in 90% of the epicenter groups and 50% of the periphery plazuelas. Finally, we undertook large-scale horizontal excavations of five elite groups to document elite architecture, possible activity areas (through artifact distribution and chemical analyses of floor stucco samples) and to close large looting damage in the epicenter, north periphery, and at a secondary satellite center south of Motul, called Buenavista (see Foias 2000, 2001).

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<sup>1</sup> Other members of the project, such as Matthew Moriarty, Andrew Wyatt, Dr. Kitty Emery, and Dr. Richard Terry, also obtained funding from their home institutions: Tulane University, UIC, SUNY-Potsdam and FMNH, and Brigham Young respectively.

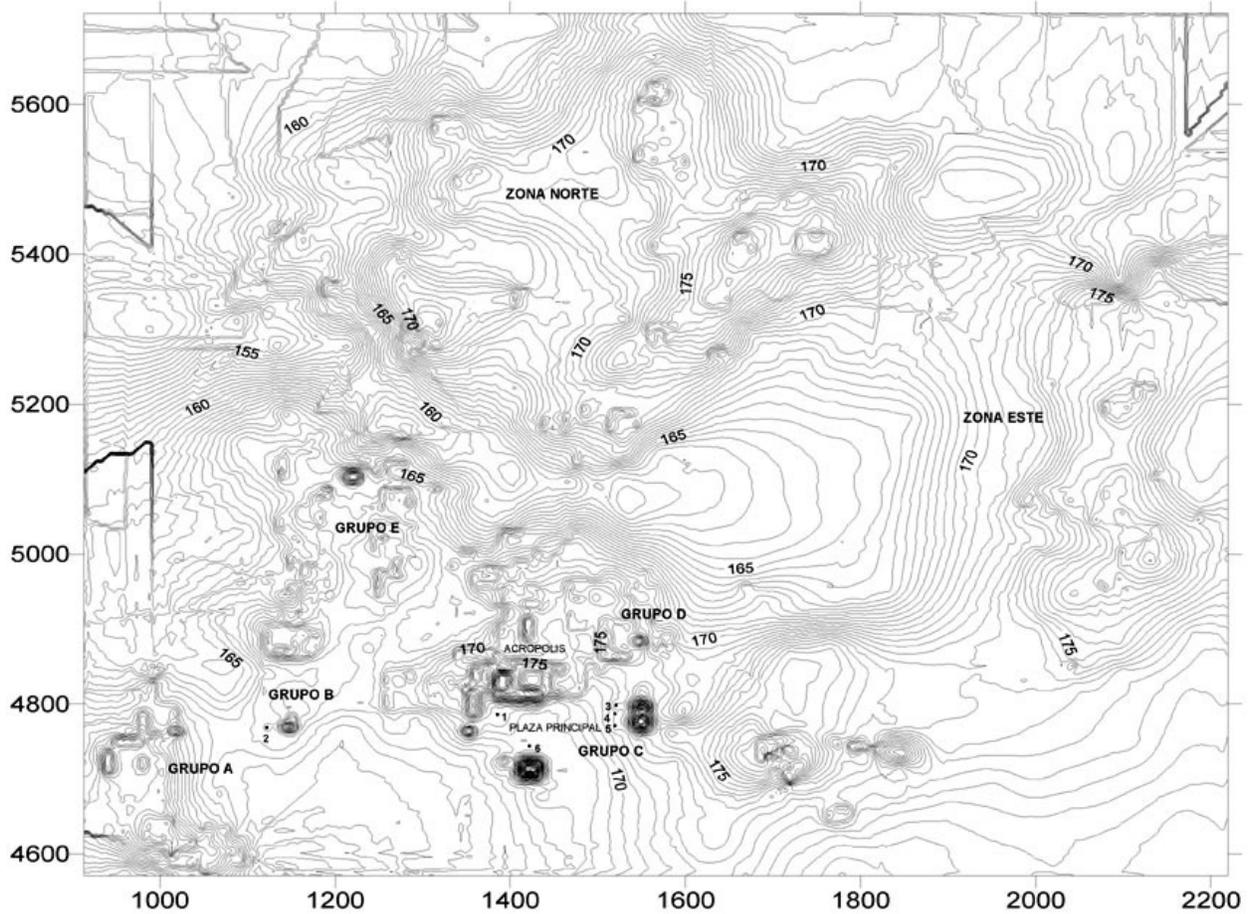


Figure 2. Map of Motul de San José, Petén, Guatemala.

The archaeological investigations have provided important new data and some fascinating insights into the nature of state economic control. A basic chronology has been formulated: first occupied during the late Middle Preclassic (600-300 B.C.), Motul thrived during the Late Preclassic (300 B.C.–A.D. 300) and Early Classic (A.D. 300-600), reaching its apogee during the Late Classic (A.D. 600-830), and declined during the Terminal Classic (A.D. 830-950) and Postclassic (A.D. 950-1200?)<sup>2</sup>. Of greater interest is the discovery that Motul is larger than originally believed, with over 200 structures mapped within its core. Five major groups have monumental architecture with temples reaching 20 m in height and range structures reaching 8 m in height. Remains of manufacturing activities have been discovered at a number of loci at Motul and in its environs. The richest and deepest midden at Motul was found in association with the largest complex of multi-room range structures, called the Acropolis in Group C, which

<sup>2</sup> All dates are preliminary and approximate, and are based on inter-site ceramic comparisons. However, four AMS radiocarbon dates submitted to Beta Analytic Laboratories have confirmed this preliminary chronology (Foias, in press).

may have functioned as the royal residence during the Late Classic. This midden consists almost entirely of pottery (some burnt), and includes quantities of ashy soil, several manufacturing wasters, an unfinished vase, and clay lumps. This is the only loci indicating pottery manufacture within the site. Lithic production is much more common, but away from Motul proper: within Motul, possible chert tool production was found in only one secondary elite group in the northern zone of the site, located half a kilometer away from the Main Plaza (see below). Stone tool production was much more important in several small satellite sites located south of Motul along the north shore of Lake Petén Itzá (such as Buenavista and La Trinidad): here, large chert cores and primary flakes litter the surface and abound in archaeological contexts (see below). Finally, bone tool manufacture was most important in a middle status group located in the major Group E in the Motul core.

### **Laboratory Analysis Funded by FAMSI**

FAMSI funding was sought to finish the analysis of the archaeological collection excavated during the last field seasons at Motul, all of which is now stored in Salon 3, the storage facility of the Institute of Anthropology and History in Guatemala City.

### ***Lithic Analysis***

Of utmost importance was the analysis of the lithic material, both chert and obsidian, as the collection is significantly large (over 10,000 lithic pieces made of chert, obsidian, quartz, quartzite, and limestone). Scott Brian, graduate student at BYU, began the lithic analysis under the supervision of Dr. John Clark. After a preliminary survey of the variety of lithics found at Motul, Brian and Clark formulated a general typology for the MSJ material, defining basic categories such as flakes, biface flakes, cores, bifaces, unifaces, and so on. Because of earlier commitments to assist in a BYU field school in México, Scott Brian was able to devote only 1.5 months of the needed 3 months to finish the analysis. He plans to finish the analysis the summer of 2004. He was able to analyze approximately half of the chert lithic material. The collection has several complete and identifiable broken tools, but is dominated by flakes. The flakes and tools vary in size and shape, but were most numerous with dimensions between 3 and 6 cm (Brian 2003). Two different technologies dominated the assemblage: flake and bifacial technologies (ibid). The typology created is largely a technological one with several crosscutting elements such as description of the cortex and use wear if present (ibid). This typology will facilitate the analysis of the Motul assemblage in several ways by identifying technologies, materials, types of lithic object, and selected artifact characteristics (ibid).

The analysis of the assemblage began with the satellite site of Akte, that had been investigated by Matthew Moriarty in the 2002 field season. Akte has several material and artifact types present. The next group of artifacts analyzed was MSJ 15A, which

was located in the major Group D north of the Main Plaza, and represents the high elite or possible royal stratum of Motul society. As this operation was the most intensive of the excavations undertaken at Motul up to now, there were hundreds of lithic artifacts and materials. After MSJ 15A, several other smaller operations were examined with the goal of obtaining a wide spectrum of the socioeconomic strata present at the site. These operations included: MSJ 15B, MSJ 15C, MSJ 15D, MSJ 15E, MSJ 7A, MSJ 7B, MSJ 13A, MSJ 13B, MSJ 13C, MSJ 19A, MSJ 19B, MSJ 22A, MSJ 22B, MSJ 23A, MSJ 23B, MSJ 23C, MSJ 23D, MSJ 23E, MSJ 24A, MSJ 24B, MSJ 25A, MSJ 26A, MSJ 26B, MSJ 26C, MSJ 26D, MSJ 34A, MSJ 36A, MSJ 36C, MSJ 36D, MSJ 36E, MSJ 38B, MSJ 38D, MSJ 39C, MSJ 39E, MSJ 39F, MSJ 39G, MSJ 42A, MSJ 42B, MSJ 42C, MSJ 42D, MSJ 42E, MSJ 42F, MSJ 43B, MSJ 43C, MSJ 43D, MSJ 43E, MSJ 43F, MSJ 45C, and MSJ 45D (ibid).

This initial analysis of approximately 50% of the MSJ lithic assemblage has yielded a number of important results. First of all, several production zones have been identified. One of these is located in operation MSJ15, although this is clearly a high-elite, if not royal residential group (ibid). Operation MSJ23 also had clear evidence for a lithic workshop (ibid). A second important discovery is that lithic manufacture at Motul involves significant thermal alteration (ibid). This process makes certain types of stone, such as chert, more malleable and therefore, more easily worked into tools. Identifying thermal alteration within an assemblage is an important characteristic of production and an indicator of knapping skill (Brian 2003). Preliminary analysis of the lithics from Buenavista, a small secondary site located some 3 km southeast of Motul, in the outskirts of the modern village Nuevo San José, showed that this is a chert extraction and first-level production center, where large chert nodules were first transformed into blanks for later further manufacture into stone tools.

### ***Ceramic Analysis***

All the pottery excavated during the last field season sponsored by NSF and Williams College (2001) was analyzed between June and September 2003, by Foias, two Guatemalan graduate students (Jeanette Castellanos and Nancy Monterroso) and a Williams undergraduate sponsored by a Williams College Summer Research Assistantship (Jonathan Cartagena). Although the final statistical analyses remain to be done, a number of preliminary results can be put forth here. First of all, the small center of Buenavista located some 3 km south of Motul de San José, was built mostly in the Preclassic period. The two large platforms that our project investigated were only used superficially during the Late Classic and Terminal Classic periods. Although we didn't reach the deepest layers of the larger of the two platforms explored at Buenavista, the lower deposit excavated produced pre-Mamom pottery. Comparison has to be made with the Eb material from Tikal and Xe pottery encountered in the Pasión region. Overlying this very early material from probably 1,000/900 to 600 B.C. (approximately) was a deep layer of Mamom fill, indicating that the occupation at Buenavista is quite early.

Pottery analyzed from operations MSJ15, MSJ29, and small test-pitting operations in the plaza groups of the northern zone of Motul mostly date to the Late Classic period, as expected. However, one group had a substantial Early Postclassic component in the midden located behind one structure. We were also able to better define the Terminal Classic ceramic assemblage at Motul de San José through the latest excavations of Group D and the analysis of its pottery. Typical of the Terminal Classic at Motul are: rare polychromy, accompanied by an increase in the use of incised and carved-incised orange- or red-slipped serving ware; red-slipped large jars with everted rims; red-slipped jars with bulging, tall and relatively vertical necks.



**Figure 3. Sherds in Ik style.**

The final preliminary result of the ceramic analysis is that we encountered a number of sherds that are similar or pertain to the traditions of the Ixchel Polychrome School ([Figure 3](#),

shown above). These have been sampled for INAA, together with over 100 other polychrome vessels, and are under analysis by Dr. Ronald L. Bishop at the Smithsonian Institution in Washington, D.C.

### ***Analysis of Spindle Whorls and Figurines***

Christina Halperin, graduate student at UC-Davis, is analyzing the figurines and spindle whorls of Motul as part of her Ph.D. dissertation research on manufacturing activities at this Classic Maya center (Halperin 2003a, 2003b). Halperin (2003b) defines four types of spindle whorls at Motul: large centrally perforated sherd discs, small centrally perforated sherd discs, disc whorls, and small bead-shaped whorls. Based on extensive ethnographic, ethnohistoric and archaeological comparison, Halperin can correlate the first category of whorls with the likely production of looser and thicker thread, and the other three types of smaller whorls with finer cotton or silkier thread (ibid). Only a few examples from Motul are large enough and heavy enough to suggest the production of cordage rather than thread for textile production, but their presence indicate the variety of threads that was spun by the Maya females resident at Motul (ibid). Furthermore, spindle whorls were restricted in distribution to the prominent residential groups within Motul and its secondary centers, suggesting that spinning was restricted to these elite groups, and supporting a more centralized model for this stage of textile production (ibid). However, we need to explore the minor architectural groups of Motul and its environs in more detail before presenting our final results.

Halperin (2003a) began the analysis of the Motul de San José figurines (totaling over 1,500 fragments) in 2002 with the support of Sigma Xi and the Motul de San José Archaeological Project. She finished her analysis during the summer of 2003 lab season supported by FAMSI. With the primary purpose of testing two alternative models of figurine production (dispersed, decentralized versus centralized), Halperin undertook a labor investment and skill analysis of the figurines, supplemented by the identification of refuse from the figurine production process (Halperin 2003a). Two basic techniques of figurine manufacture, modeling and molding, were identified, and based on these, Halperin established four principal types based on relative differences in labor investment and skill: (1) completely molded; (2) partially molded; (3) crudely modeled; (4) finely modeled (ibid). The first type was the most common, representing almost half of the head and almost complete figurine fragments (ibid). These completely molded figurines, though, involve the least amount of labor and skill, if we exclude the production of the mold itself (Halperin 2003a). The second type, the partially molded figurine, represents approximately 25% of the Motul collection, and consists of a molded head attached to a modeled body. The third and fourth types of figurines, representing the remaining 25% of the Motul collection, involved low levels of labor and skill (for the crudely modeled figurines) and the highest levels of labor and skill (for the finest modeled examples) (ibid). However, the finely modeled figurines were the rarest, representing 4% of the head and almost complete figurines, and only 1.5% of the body fragments (ibid). When labor investment is compared between the figurines associated with the major core groups (Groups A-E) in contrast with non-core groups, the site core

exhibits slightly higher levels of labor investment in having more figurines with more applique parts (ibid).

Halperin was also able to identify several loci with figurine manufacturing debris. The largest of such deposits was a midden (probably secondary, redeposited as fill to raise the level of a platform) associated with the northwest plaza of the Acropolis (the likely residence of the royal court of Motul during the Late and Terminal Classic). The high density of pottery, large quantities of ash, polychrome pottery wasters, an unfinished vase, clay lumps, and a paint miniature pot (with remains of specular hematite) suggest that this midden was associated with elaborate polychrome production, probably by attached specialists and an elite scribe. Evidence from this midden, though, also suggests that this same workshop produced high-quality figurines: the high density of figurine fragments (11% of the entire figurine collection), one figurine mold fragment, and the high frequency of finely modeled and partly molded figurines with high numbers of applique elements (comprising 50% of the figurines found in this midden) (Halperin 2003a). However, three other operations also exhibited evidence for figurine manufacture, such as waster fragments or defective fragments, or high figurine density: operation 12 and operation 29 (located in the major Groups C and E, respectively); operation 39 located in the northern zone of Motul (Halperin 2003a). The overall picture that we can reconstruct of figurine production at Motul is one of dispersed specialized production (as mold production through its rapid creation of highly standardized products) implies specialization, with some production of the most elaborate figurines under centralized control by elite groups in a domestic context.

## Conclusion

The analysis of the Motul pottery, lithics, figurines, and spindle whorls during the summer of 2003 has advanced our understanding of the organization of Classic Maya economy, and of the relationship between economy and politics at this political center. Manufacturing activities were identified in many of the elite households excavated at this site, and ranged from spinning for the weaving of fine to coarse textiles, chert tool production, to elaborate polychromy production and molded to modeled figurine manufacture. This crucial laboratory analysis has brought to completion the first stage of the Motul de San José Project and now allows us to propose a more intensive second stage focusing on the regional political and economic organization of the Motul polity.

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