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The Radiocarbon Dating of Public Buildings and Ritual Features in the Ancient Valley of Oaxaca

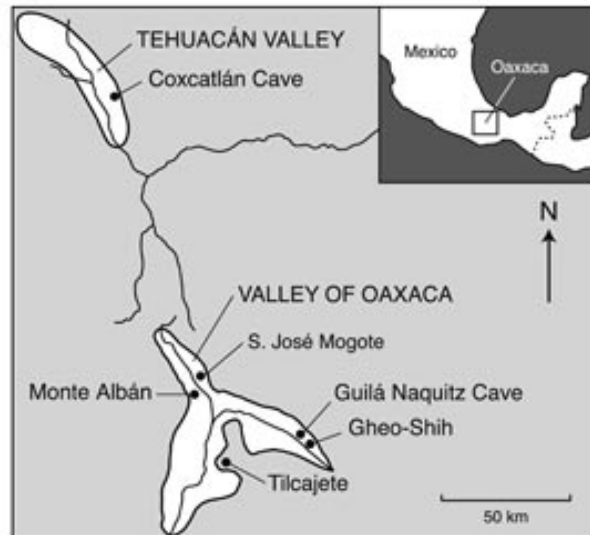


Figure 1a. Diagram of the valleys of Oaxaca and Tehuacán in México, showing the places mentioned.

Research Year: 2004

Culture: Zapotec

Chronology: Pre-Classic

Location: Valley of Oaxaca, México

Site: San José Mogote

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Introduction

In preparation for publishing a three-volume work on our research at San José Mogote, Oaxaca, México, we asked FAMSI for funding to run ten new AMS dates. All those dates have now been run, and the results are very gratifying.

Unexpectedly, we received an additional sum of money from our own university. When combined with the FAMSI grant, it allowed us to run more than the ten proposed dates. The results of all the dates will be presented here, in order to enlarge the context for the FAMSI-sponsored dating.

Perhaps the most exciting result of the expanded 14C series is that we were also able to date the oldest ritual feature ever recovered in Oaxaca (or Mesoamerica, for that matter), the "dance ground" at the Archaic site of Gheo-Shih. When combined with the dates from San José Mogote, this gives us a 7000-year sequence of dated ritual behavior from a single Mesoamerican highland valley. This unique sequence of dates would not have been possible without the support of FAMSI.

All new dates were run by Beta Analytic of Miami, Florida.

A Note on the Presentation of Dates

Radiocarbon dates are presented three ways in this report: "B.P.," "B.C.," and "b.c." "B.P." refers to radiocarbon years before the present. "B.C." refers to "real" (dendrocalibrated) years before the Christian era. "b.c." is used for traditional *uncalibrated dates*, derived by subtracting 1950 from the "B.P." date. (Hundreds of Mesoamerican dates in the older literature are still in the traditional "b.c." format, having yet to be dendrocalibrated.)

Gheo-Shih

Gheo-Shih is an open-air Archaic (preceramic) campsite 4 km west of the famous ruins of Mitla. It lies on an alluvial fan flanked by two dry arroyos near the north bank of the Mitla River at an altitude of 1660 m. Underlying Gheo-Shih is a layer of indurated sand alluvium, apparently the Pleistocene floodplain of the river.

The site occupies an area about 100 by 150 m, or roughly 1.5 ha. The surface and the dry arroyos to either side were littered with *metate* and *mano* fragments, steep denticulate scrapers, bifacial preforms, and atlatl points when the site was discovered (Flannery and Spores 1983:23-25). When excavated by a University of Michigan team under Frank Hole in 1967, Gheo-Shih appeared to have two stratigraphic components. The uppermost component, characterized by Pedernales, La Mina, Trinidad, and San Nicolás atlatl points, is believed to date to 5000-4000 b.c. on typological grounds. Unfortunately, it yielded no usable charcoal.

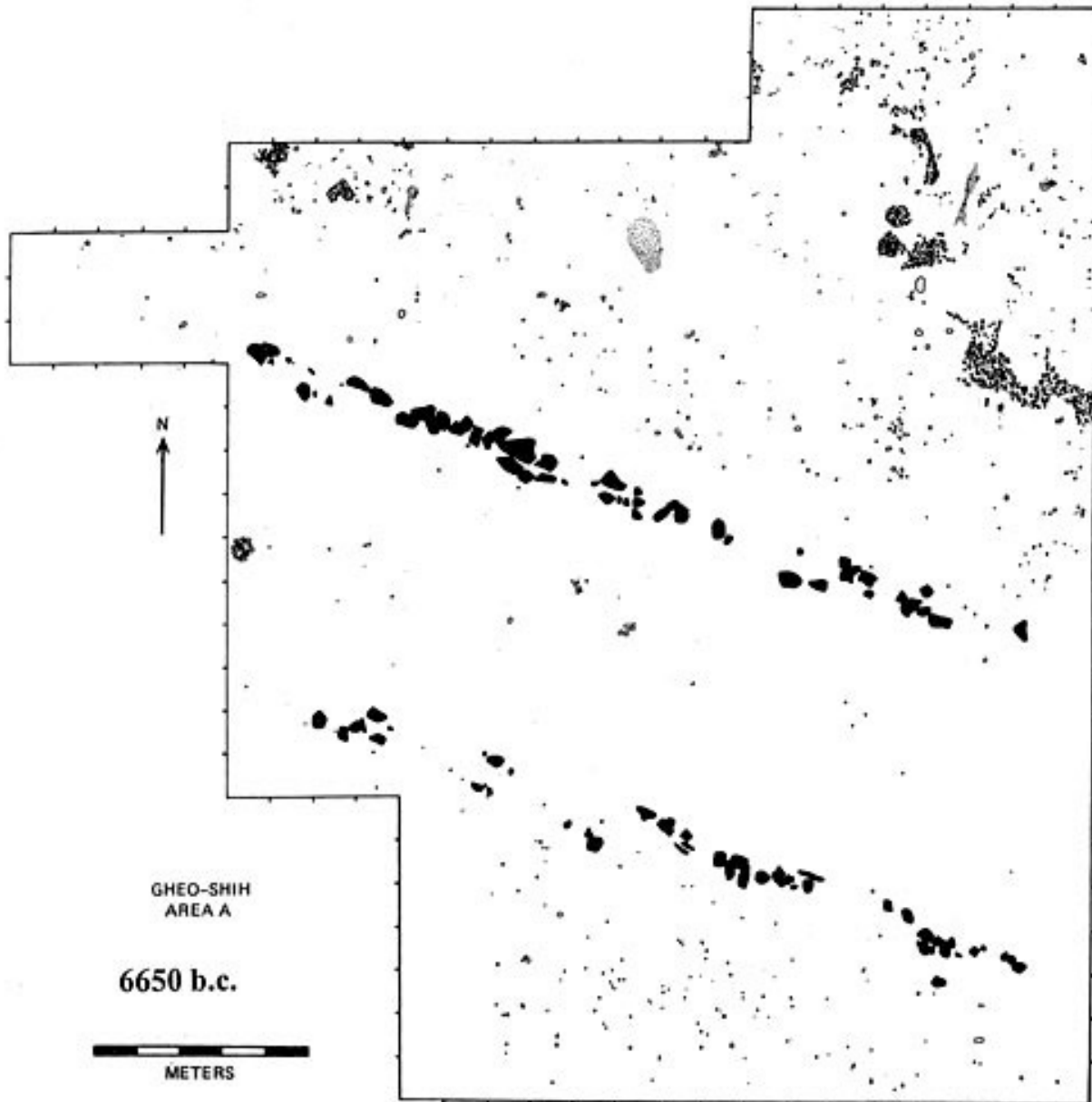


Figure 1. The open-air preceramic site of Gheo-Shih, near Mitla, presents us with the oldest boulder-lined ritual space in México.

The lower component produced an unusual feature: two parallel rows of boulders about 20 m long ([Figure 1](#)). The space between the boulder lines, which was 7 m wide, had been swept clean and contained virtually no artifacts. Outside the area enclosed by boulder lines, however, artifacts were abundant, and there were even dense oval scatters of artifacts and unworked stones that may indicate the presence of shelters or windbreaks.

What the boulder-lined area most resembles is a cleared "dance ground," such as characterized the base camps of some Great Basin hunters and gatherers. Great Basin

groups frequently broke up into small, family-sized bands during lean seasons, then coalesced into larger base camps during seasons of abundant resources. They held virtually all important rituals, such as dances, initiations, and athletic competition, during the seasons when the largest number of people were together in one camp. We suspect that Gheo-Shih was such a camp.

Minute samples of charcoal (mostly burned twigs) were present in the lower component at Gheo-Shih. They were prohibitively small by the standards of ^{14}C dating in 1967, but large enough for today's AMS dating. Two samples were submitted to Beta Analytic. The results were:

Beta-190316	8600±40 B.P.
	6650 b.c. (uncalibrated)
Calibrated 2-sigma range:	7630-7570 B.C.
Beta-191398	8600±50 B.P.
	6650 b.c. (uncalibrated)
Calibrated 2-sigma range:	7720-7560 B.C.

These dates from the lower component of Gheo-Shih are unexpectedly early. They suggest that the "dance ground" is virtually the same age as Zone B2 of nearby Guilá Naquitz Cave, for which we have a conventional ^{14}C date of 6670±160 b.c. (Smithsonian-515) (Flannery and Spores 1983: Table 2.1). One implication is that, just as in the case of the Great Basin Indians already mentioned, Archaic groups in the Valley of Oaxaca broke up into family bands during some seasons (producing Zone B2 of Guilá Naquitz) and coalesced into larger, multifamily base camps in other seasons (producing Gheo-Shih). A second implication is that (as predicted by the Great Basin model) rituals such as dances were indeed held when the largest number of families would have been present.

The Men's Houses of the Tierras Largas Phase (1500-1150 b.c.)

After a long period of hunting and gathering, combined with limited horticulture, sedentary life in villages began in the Valley of Oaxaca. San José Mogote was founded prior to 1600 b.c., and by the Tierras Largas phase (1500-1150 b.c.) had grown to at least 7 ha in extent.

Essential to our understanding of Tierras Largas phase society is the western sector of San José Mogote (Area C), where 300 m² were devoted to non-residential architecture. At any given moment between 1500 and 1150 b.c., this area of the village featured a one-room structure analogous to a "Men's House" in ethnographically documented

egalitarian villages. By 1150 b.c., several residential wards (Areas C and A) maintained separate Men's Houses, which is typical of large villages with diverse descent groups.

Periodically, each of these one-room, stucco-covered buildings was razed, and another built near (or even partially superimposed on) the earlier one. These Men's Houses measured no more than 4 × 6 m, and were oriented 8° N. of true East. Several contained pits full of powdered lime, which the later Zapotec are known to have mixed with powdered tobacco and chewed during rituals. These buildings have previously been discussed and illustrated in Flannery and Marcus (1994:31-34, 123-134) and Marcus and Flannery (1996:87-88).

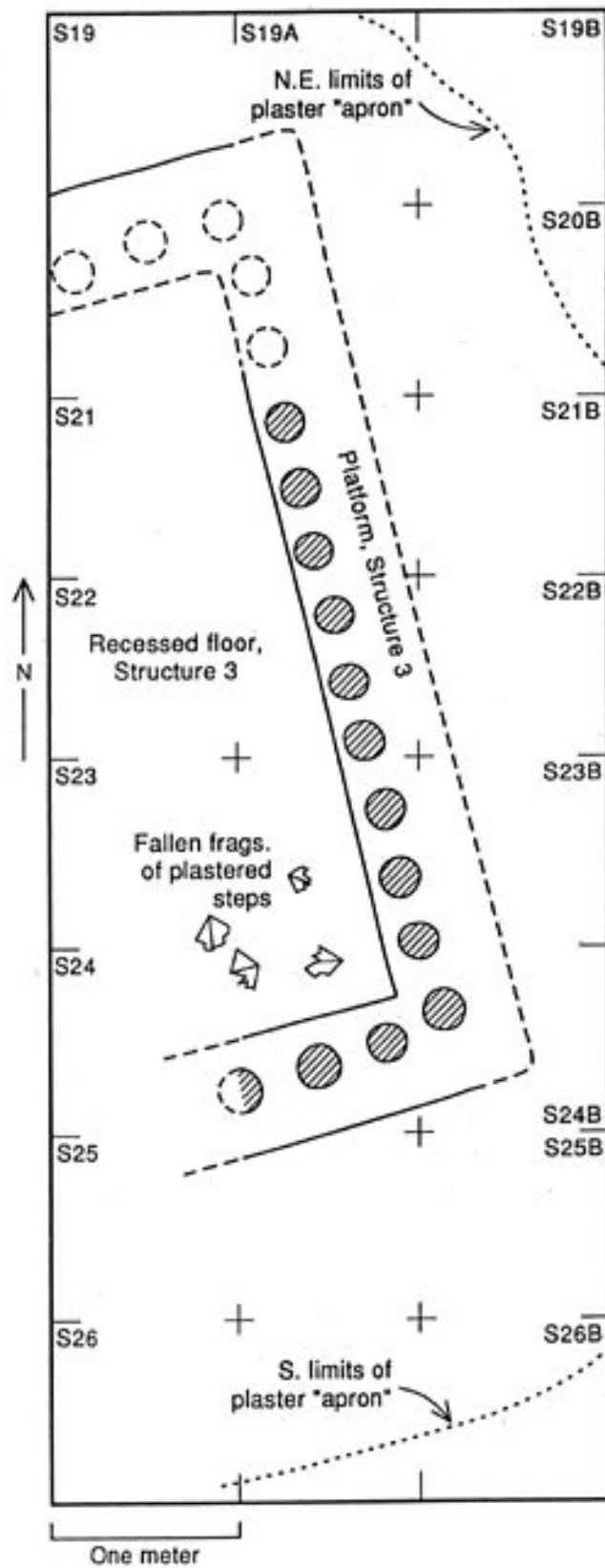


Figure 2. Structure 3, a Tierras Largas phase Men's House, dated to 1400 b.c.

The order in which the six best known Tierras Largas phase Men's Houses were built is as follows. In the Control Section of the Area C Master Stratigraphic Profile (Flannery and Marcus 1994), the first built was Structure 3 (Figure 2). Structure 6, the most complete, was built next (Figure 3, shown below; see also Flannery and Marcus 1994: Fig. 11.5). Then came Structure 5 (Figure 4, shown below). The last Men's House in this sequence was Structure 15, whose lime-filled pit (Feature 55) literally intruded through the floor of Structure 6, so closely were the two buildings superimposed.

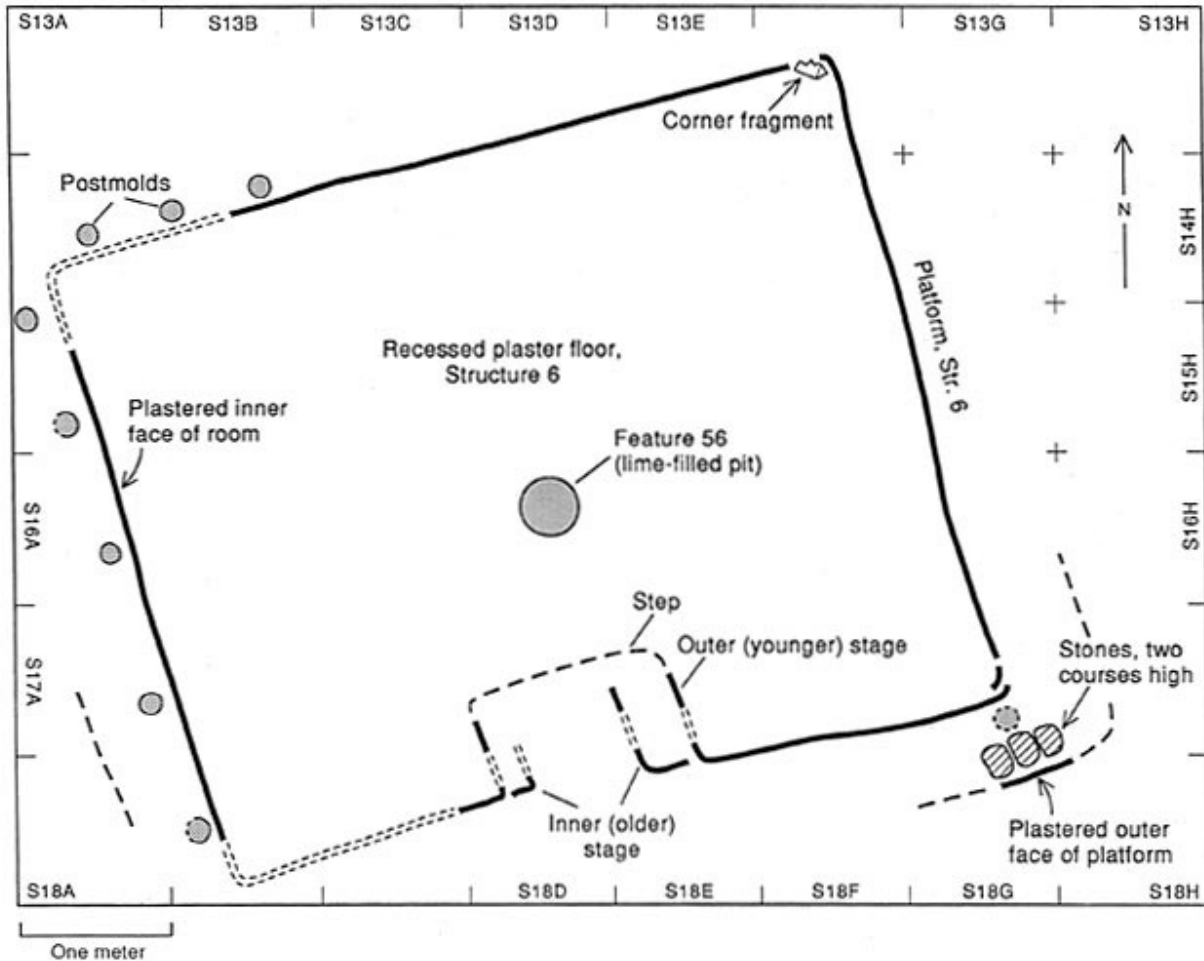


Figure 3. Structure 6, a Tierras Largas phase Men's House, was bracketed by dates of 1400 and 1320 b.c.

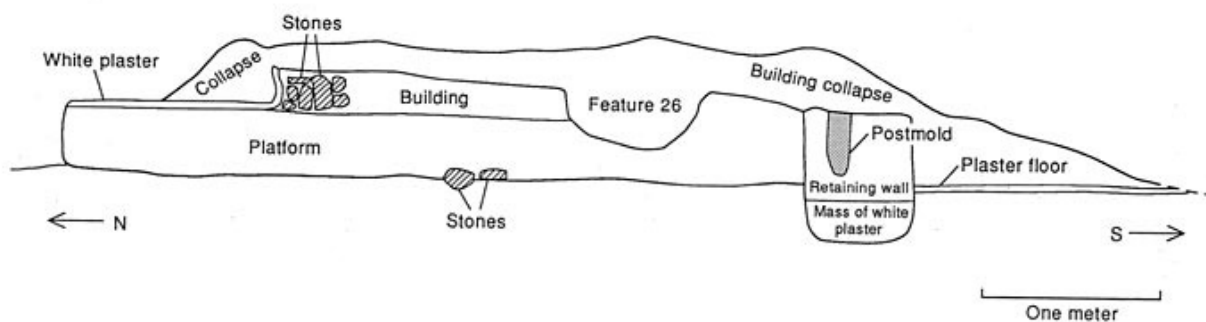


Figure 4. Structure 5, a Tierras Largas phase Men's House, dated to 1320 b.c.

In the Threshing Floor Sector of Area C (Flannery and Marcus 1994), there was a shorter sequence of Men's Houses. In this area the first built was Structure 12, one of whose posts had been burned. Structure 11 was later built so close to the same spot as to be nearly superimposed on Structure 12 (Flannery and Marcus 2005).

Two of these Men's Houses could not be dated, either because no charcoal was preserved (Structure 11) or because the building was consolidated for posterity, making it impossible to recover charcoal from the wall fill (Structure 6). Since Structure 6 fell stratigraphically between Structures 3 and 5, its date can be estimated.

The dates of the remaining Men's Houses are as follows:

Structure 3	
Beta-190313	3350±40 B.P.
	1400 b.c. (uncalibrated)
Calibrated 2-sigma range:	1730-1520 B.C.
Structure 12	
Beta-190314	3340±40 B.P.
	1390 b.c. (uncalibrated)
Calibrated 2-sigma range:	1720-1560 B.C.
Structure 5	
Michigan-2372	3270±160 B.P.
	1320 b.c. (uncalibrated)
Calibrated 2-sigma range:	1940-1140 B.C.

Structure 15	
Beta-190315	3270±40 B.P.
	1320 b.c. (uncalibrated)
Calibrated 2-sigma range:	1630-1440 B.C.

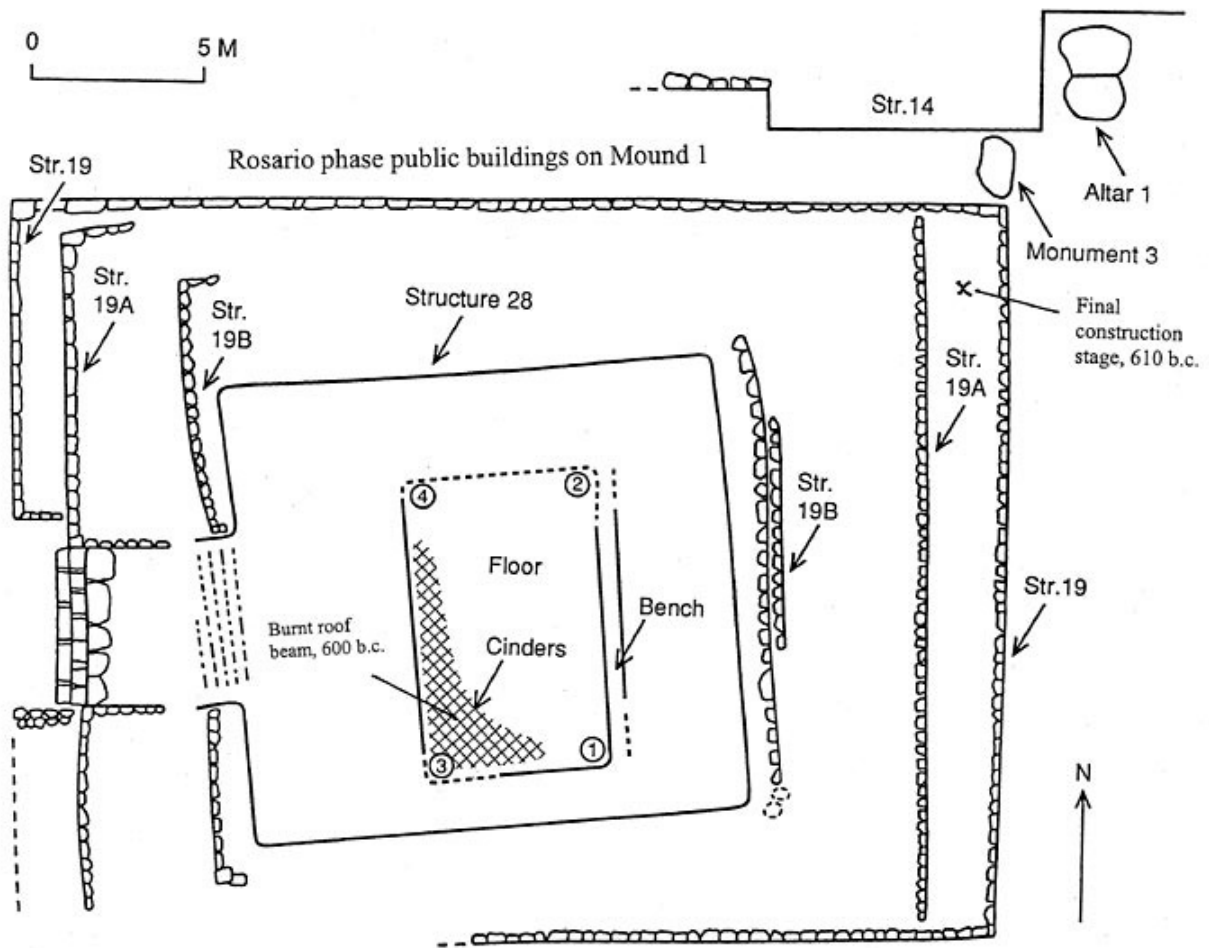


Figure 5. Rosario phase public buildings on Mound 1.

A Temple of the Rosario Phase

During the Rosario phase, San José Mogote was the chiefly center for a group of 18-23 villages in the northern part of the Valley of Oaxaca. The period's most impressive public building stood atop Mound 1, a modified natural hill which is still the most prominent landmark at San José Mogote.

The basal platform for this important Middle Formative temple was built in three stages ([Figure 5](#)). The first stage, called Structure 19B, was a rectangular stone masonry platform 17 m on a side and oriented 8° N. of East. The second stage, called Structure

19A, was even larger – 25.5 × 20 m – and oriented E-W, incorporating the entire earlier stage within its fill. The third and final stage, called Structure 19, was 28.5 × 21.7 m, and incorporated all earlier stages.

In our effort to date this Rosario masonry platform, we made sure not to use charcoal samples from what appeared to be areas of mixed fill with redeposited sherds from earlier periods. We finally found one area of fill, between Stages 19A and 19, that had only Rosario sherds (see [Figure 5](#)). Charcoal from that deposit yielded the following date:

Beta-179876	2560±180 B.P.
	610 b.c. (uncalibrated)
Calibrated 2-sigma range:	1110-350 B.C.

Structure 19 was, of course, only the basal platform for a temple. The temple itself was a massive wattle-and-daub structure whose floor was recessed into an adobe platform which raised the temple an additional 1.5 m above the surface of Structure 19. This adobe platform and its embedded temple were called Structure 28.

Structure 28 measured 14.2 × 13.4 m and rested directly on Structure 19B, the earliest stage of the basal stone masonry platform. It had the same 8° N. of E. orientation as Structure 19B, suggesting that it had been in place since the start of the construction sequence and antedated the Stage 19A and 19 enlargements, with their change of orientation.

Late in its history, the Structure 28 temple was burned in a fire so intense that the clay of its wattle-and-daub walls turned to vitrified cinders. Charcoal from a carbonized roof beam that fell among these cinders (see [Figure 5](#)) yielded the following date:

Beta-177624	2550±60 B.P.
	600 b.c. (uncalibrated)
Calibrated 2-sigma range:	820-550 B.C.

Our conclusion is that the whole construction sequence of this important Rosario phase public building fell within the Rosario phase. (Its first stage, Structure 19B, may even have begun during the Early Rosario phase.) Finally, sometime around 600 b.c. – in the Middle Rosario phase – the Structure 28 temple was destroyed by fire.

Structure 23 and Feature 77: Evidence for a Postabandonment Ritual

At the end of the Rosario phase, an estimated 95% of the population of San José Mogote left to participate in the founding of Monte Albán. The entire 40-hectare

civic/ceremonial part of the site lay essentially abandoned during Period I of Monte Albán (500-100 b.c.).

In Mesoamerica, however, it is frequently the case that when a sacred place is abandoned, someone returns briefly to leave an offering, or put up a shrine on the site's most prominent high point. Such was the case with Mound 1 at San José Mogote. During Early Monte Albán I (500-300 B.C.), someone returned briefly to erect a small shrine or adulatory (Structure 23) over the ruins of the abandoned Rosario phase buildings on Mound 1. Nearby they built a stone-lined hearth (Feature 77), which appears to have been a ritual feature rather than a culinary hearth.

Structure 23 and Feature 77 yielded the only charcoal samples from a Monte Albán I context ever recovered at San José Mogote, so we were happy to have the opportunity to date them.

Carbonized wood from Feature 77, the stone-lined hearth, produced the following AMS date:

Beta-179880	2440±40 B.P.
	490 b.c. (uncalibrated)
Calibrated 2-sigma range:	770-400 B.C.

A small piece of charcoal found in the fill of Structure 23 produced the following AMS date:

Beta-189255	2550±40 B.P.
	600 b.c. (uncalibrated)
Calibrated 2-sigma range:	700-540 B.C.

Our evaluation of these two dates is as follows. The Feature 77 date of 490 b.c. falls well within the expected range for Early Monte Albán I. The date of 600 b.c. for Structure 23 seems too early, and may well have been Rosario-phase charcoal that got redeposited in the fill of the altar when it was built.

No trace of Late Monte Albán I (300-100 b.c.) material has ever come to light during our 15 years of excavation at San José Mogote.

Monte Albán II Temples on Mound 1

After a long hiatus, corresponding to Monte Albán I, the civic/ceremonial center of San José Mogote was reoccupied on a grand scale. At the start of the period known as Monte Albán II (100 B.C.-A.D. 250), San José Mogote went through a kind of renaissance, becoming a secondary-level administrative center below Monte Albán, the capital of the valley.

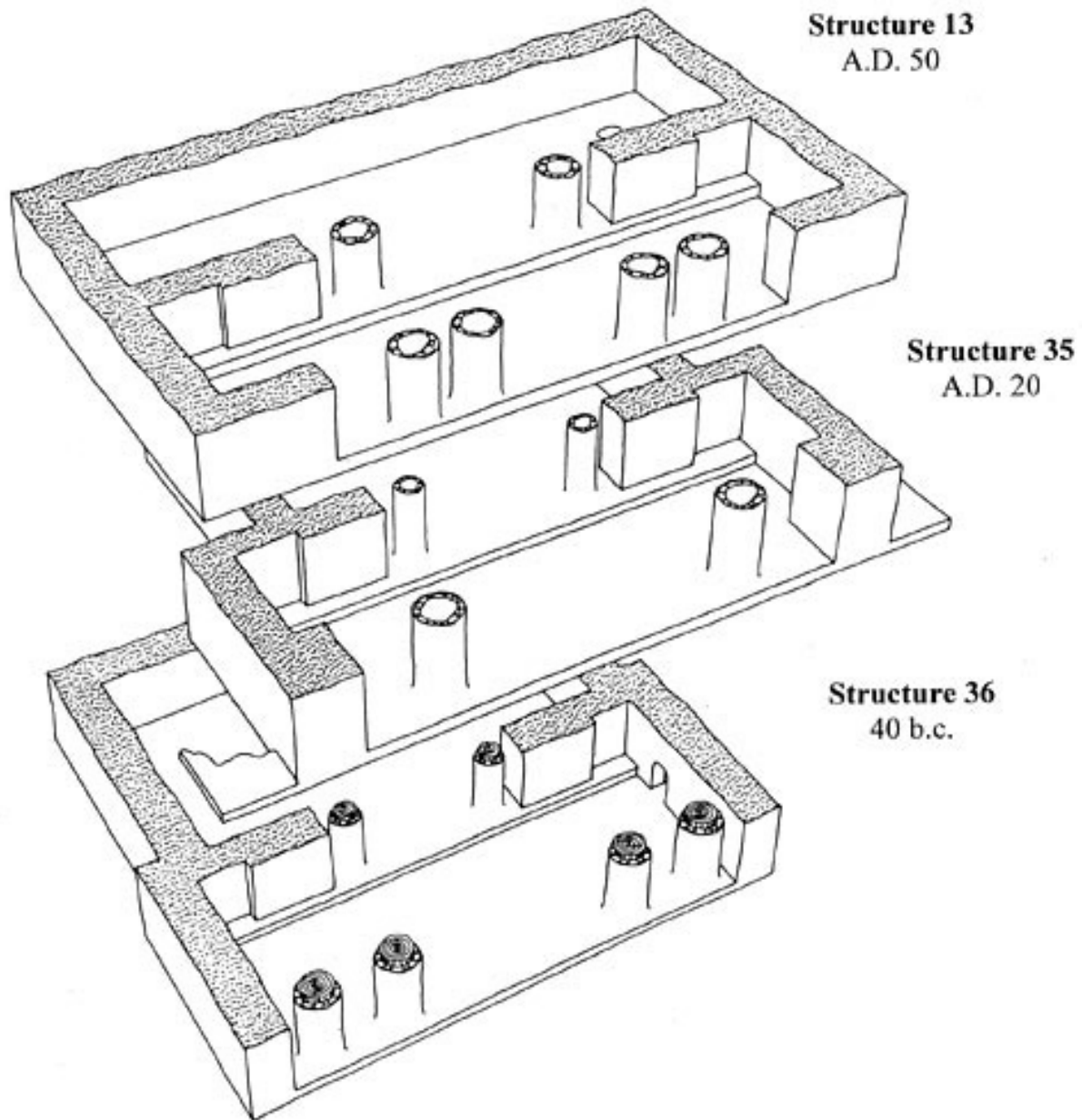


Figure 6. The sequence of Monte Albán II temples above Structure 14, Mound 1, San José Mogote.

During this Monte Albán II renaissance, a series of new temples were built on Mound 1, often directly over the platforms of old Rosario phase public buildings. One of the most interesting is a sequence of three superimposed temples – Structures 36, 35, and 13 – which were built above the ruins of Structure 37, an old Rosario temple. We have published three-dimensional reconstruction drawings of these temples (e.g., Marcus and Flannery 1996: Figure 212), and repeat one drawing here as [Figure 6](#), shown above; [Figure 7](#), shown below. With the help of FAMSI, we were able to date pieces of charcoal from the floor of each temple, charcoal perhaps left behind from the burning of incense in ceramic braziers.

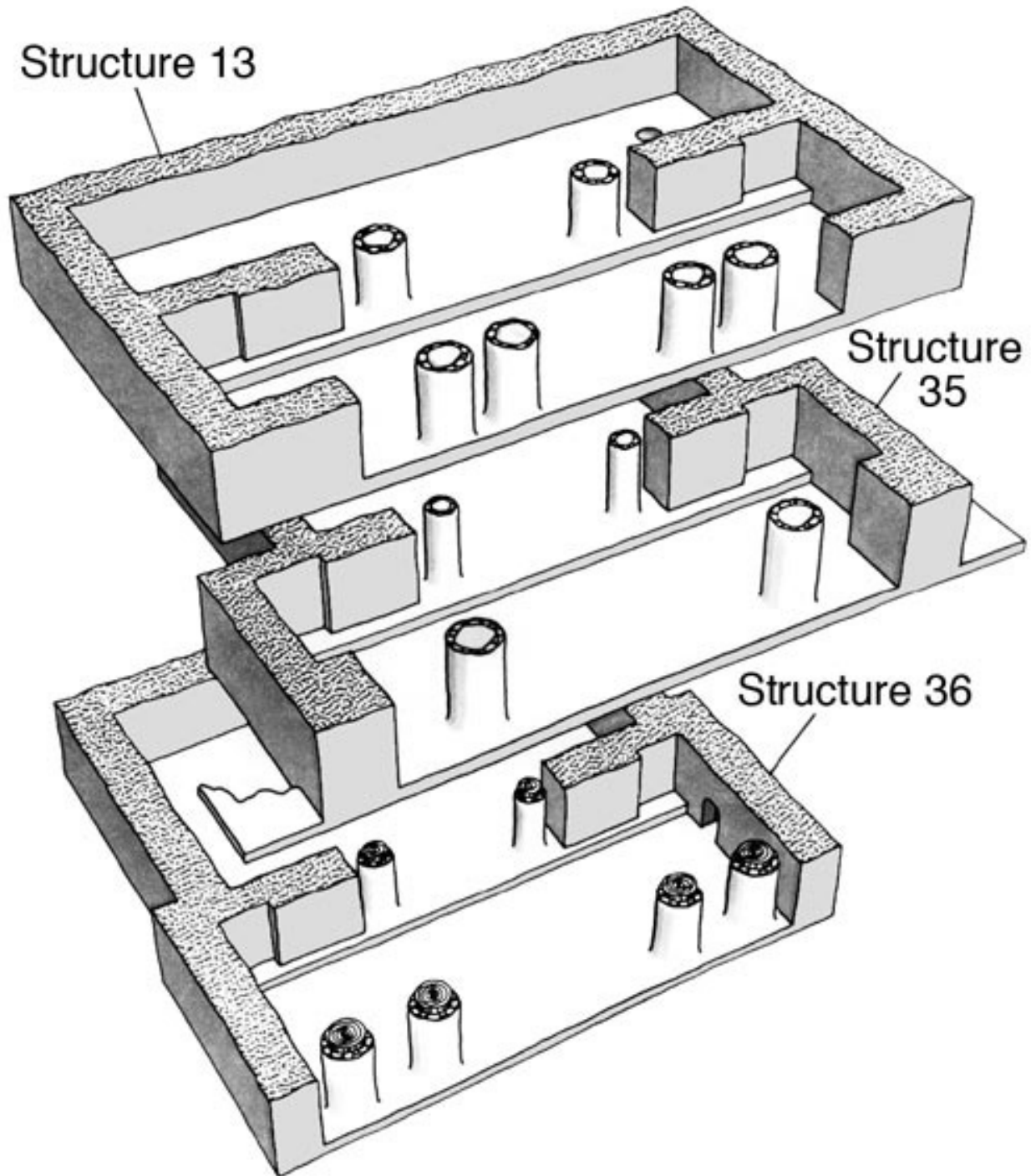


Figure 7. Three superimposed two-room temples of the period 2000-1750 B.P. at San José Mogote. Their 14C dates raise the possibility that old temples were razed and new ones built at the end of each 52-year calendar round.

The lowermost, or oldest temple (Structure 36) measured 11 × 11 meters (Marcus and Flannery 1994). Flanking its outer doorway were pairs of columns made by trimming the trunks of baldcypress trees (*Taxodium* sp.). This temple also had evidence of

multicolored painted designs on its stuccoed interior surface, unfortunately badly deteriorated. Its date was as follows:

Beta-190922	1990±40 B.P.
	40 b.c. (uncalibrated)
Calibrated 2-sigma range:	60 B.C.-A.D. 90

The second Monte Albán II temple built on this spot (Structure 35) was apparently commissioned by a ruler who had the previous temple razed. This temple was larger than Structure 36, measuring 12 × 13.5 meters. Its columns – one to either side of the inner and outer doorways – were not tree trunks; instead, wood had now been replaced by large stones, stacked one above the other and surrounded by stony rubble cemented in place and plastered over with stucco. Under the floor of the inner room, we found offerings which included (a) a jade statue and (b) a scene of royal metamorphosis consisting of seven ceramic sculptures and vessels (Marcus and Flannery 1996: Figs. 215-219). In the construction debris below the floor, we found the remains of quail, a bird the Zapotec often sacrificed in temples.

Charcoal from Structure 35 produced the following AMS date:

Beta-189254	1930±40 B.P.
	A.D. 20 (uncalibrated)
Calibrated 2-sigma range:	10 B.C.-A.D. 140

The uppermost, and latest temple (Structure 13) was built above the razed remains of Structure 35. This temple measured 15 × 8 meters. Its columns – two flanking the inner doorway and four flanking the outer – were of stone masonry, and its inner room had a shallow basin built into the floor.

Charcoal from Structure 13 produced the following AMS date:

Beta-190921	1900±40 B.P.
	A.D. 50 (uncalibrated)
Calibrated 2-sigma range:	A.D. 30-A.D. 220

These three temples and their dedicatory offerings are discussed in Marcus and Flannery (1996:185-188).

Finally, FAMSI enabled us to date charcoal from the fill of Structure 21 – yet another Monte Albán II temple – erected on the western edge of the summit of Mound 1 (Flannery and Marcus 1983: Fig. 4.19). The date was as follows:

Beta-191997	1910±40 B.P.
	A.D. 40 (uncalibrated)
Calibrated 2-sigma range:	A.D. 20-A.D. 220

This date suggests that Structure 21 was built toward the end of the Structure 36-35-13 sequence, and is closest in age to Structure 13. We are pleased to say that all Monte Albán II dates fell within the expected range for that period, making this perhaps the most extensively and convincingly dated stratigraphic sequence of Zapotec temples from the Terminal Formative/Protoclassic. We are extremely grateful to FAMSI for making this possible.

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