Sampling Cerros' Demise: A Radiometric Check on the Elusive Protoclassic

Research Year: 2004
Culture: Maya
Chronology: Pre-Classic
Location: Corozal Bay, Belize
Site: Cerros

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Abstract

The Maya site of Cerros, a Late Preclassic port city situated on Corozal Bay in northern Belize, has been a temporal puzzle for nearly three decades. Originally investigated in the 1970s for its substantial Postclassic surface remains, most major architecture proved to date to the Late Preclassic, albeit with minimal radiocarbon confirmation. What happened to arrest site expansion was the focus of additional investigations in the 1990s. Both projects produced a series of carbon samples for dating. FAMSI grant #03064 supported testing of six carbon samples collected in the mid-1990s, drawn from three buildings in the site core (6E, 5E, and 4A). These were compared to series of six recalibrated dates processed in the 1970s. The resulting suite of dates refined Cerros' construction sequence, lending new insights into its rapid expansion ca. 50 BCE and its abrupt decline after 150 CE. These new dates correlate well with the northern Petén sequence, particularly El Mirador. Cerros' fortunes were inextricably linked to those of its trading partners, and it did not survive the collapse of the El Mirador network.

Resumen

El sitio maya de Cerros, una ciudad portuaria del Preclásico Tardío, situada en la Bahía de Corozal al norte de Belice, ha sido un enigma, en lo que a su temporalidad se refiere, durante las últimas tres décadas. Investigado originalmente en la década de 1970 por los substanciales restos del Posclásico presentes en superficie, la mayor parte de su arquitectura principal resultó ser del Preclásico Tardío, si bien la confirmación radiocarbónica fue mínima. Qué fue lo que produjo la detención de la expansión del sitio ha sido el foco de distintas investigaciones realizadas en la década de 1990. Ambos proyectos produjeron una serie de muestras carbónicas para su fechamiento. Con la beca FAMSI #03064 se financió el análisis de seis muestras de carbono recolectadas a mediados de la década de 1990, tomadas en tres edificios situados en el corazón del sitio (6E, 5E, y 4A). Las mismas fueron comparadas con una serie de seis fechas recalibradas y procesadas en los años de 1970. El conjunto de datos resultantes permitió refinar la secuencia constructiva de Cerros, posibilitando nuevas perspectivas sobre su rápida expansión ca. 50 a.C. y su abrupta declinación después del 150 d.C. Estas nuevas fechas se correlacionan adecuadamente con la secuencia del norte del Petén, en especial con la de El Mirador. La suerte de Cerros estuvo inextricablemente ligada con la de sus socios comerciales, y no les fue posible sobrevivir al colapso de las redes de comercio de El Mirador.

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Introduction

FAMSI funds for this grant supported radiocarbon assays of samples collected at Cerros, Belize (Figure 1). Six usable radiocarbon samples from the site's monumental center produced a tight suite of dates. In this report, new dates are compared to recalibrated dates reported previously (Freidel and Scarborough 1982); taken together they clarify our understanding of the site chronology.

Cerros was first excavated in the 1970s by David Freidel, and a spate of dissertation research ensued (Carr 1986; Cliff 1982; Cliff and Crane 1989; Garber 1989; Lewenstein 1987; Mitchum 1994; Robertson-Freidel 1980; Scarborough 1991). Freidel originally went to Cerros in search of a Postclassic port-of-trade, but, after the first season, determined the site's major occupation to be Late Preclassic (Figure 2; cf. Freidel 1979). Subsequent finds included monumental masked façades at Str. 5C-2nd (Figure 3) and a cache of royal jewels at Str. 6B (Figure 4). Excavation terminated in 1981 and a summary report was completed (Robertson and Freidel 1986).

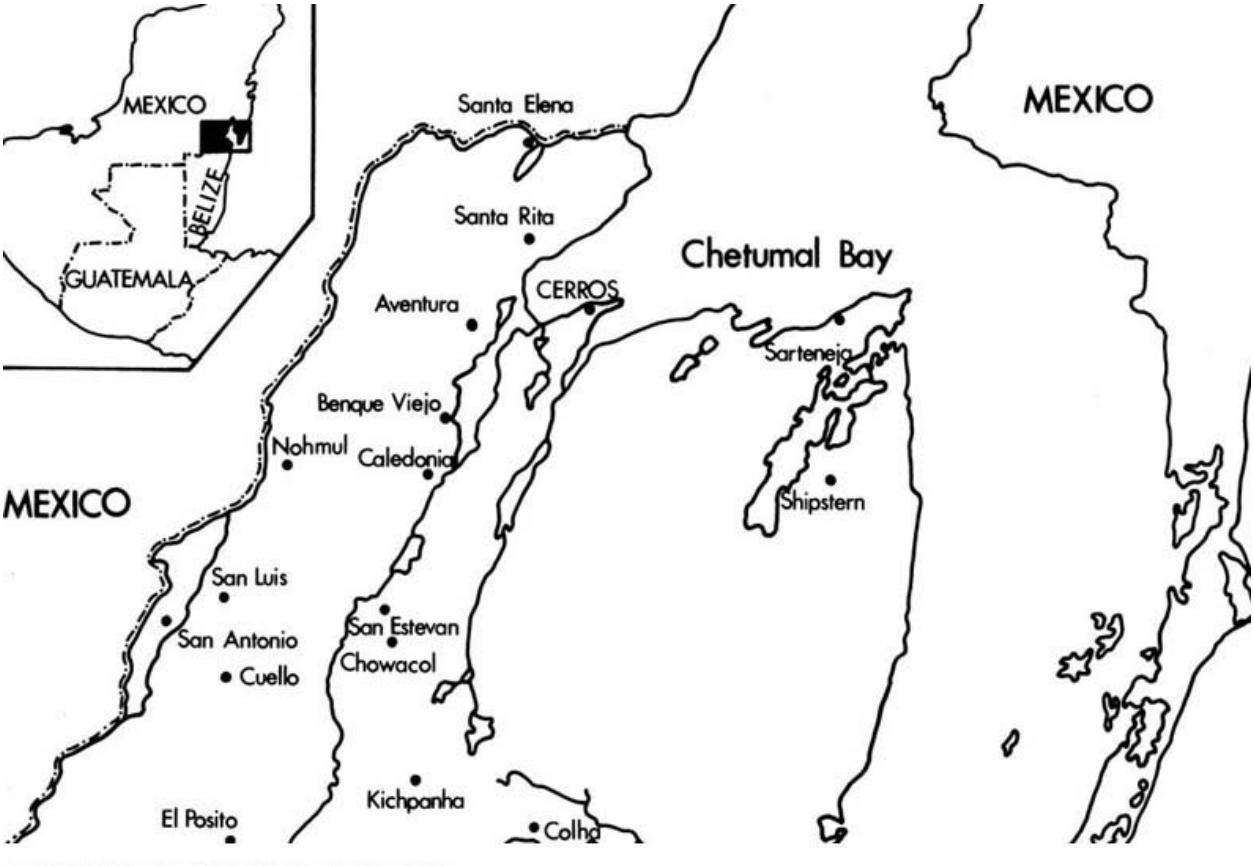

Figure 1. Map of Northern Belize Locating Cerros.

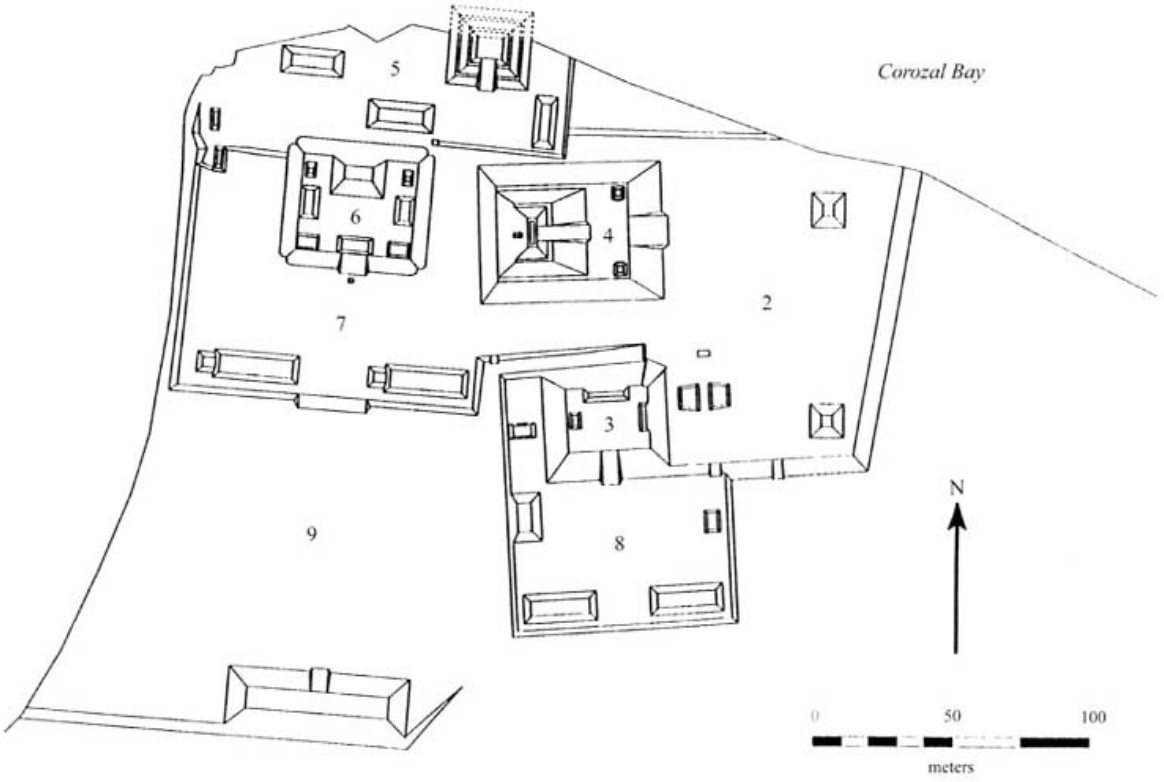

Figure 2. Map of Cerros Site Core.

Figure 3. Structure 5C-2nd.

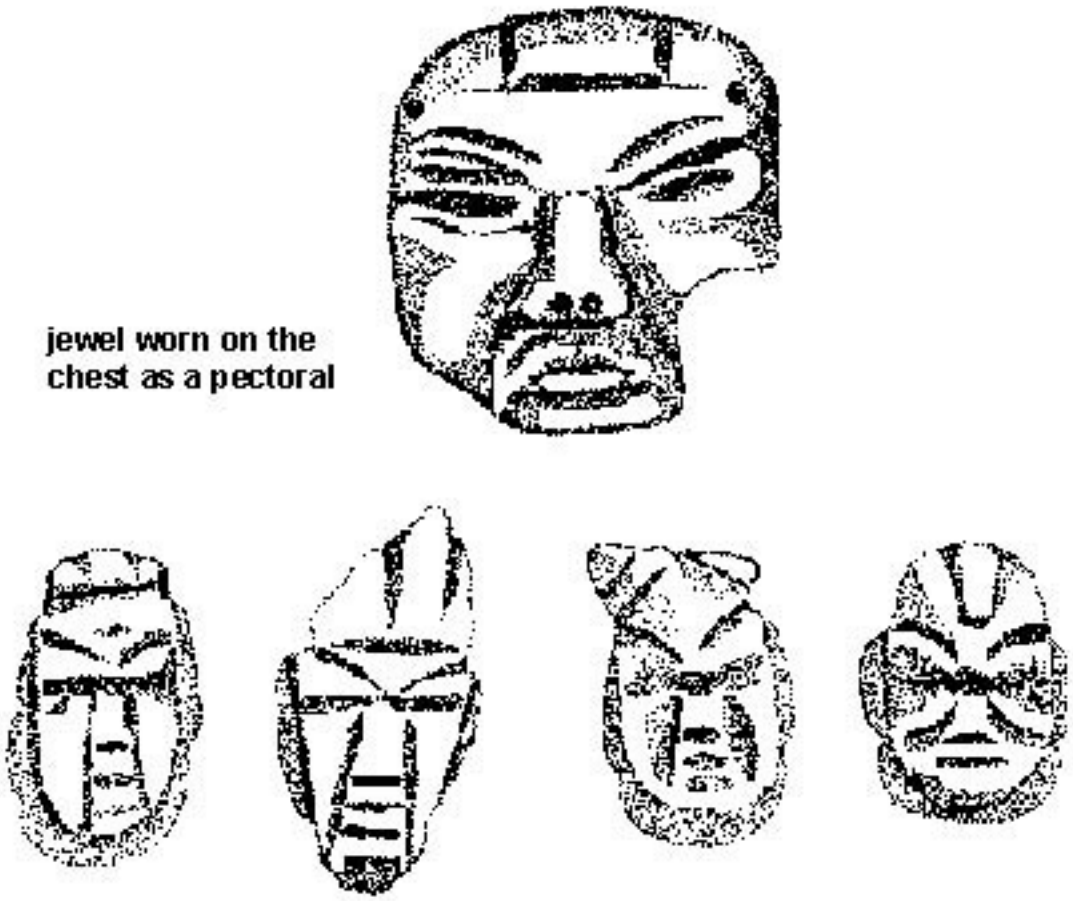

Figure 4. Structure 6B Cache Jewels.

Most research centered on aspects of the Late Preclassic settlement, and later occupations were not documented until Walker (1990) completed research on ceramic collections from Classic and Postclassic contexts. It was the identification of these later occupations (Figure 5) that prompted additional work at Cerros in the 1990s. Invited to return by Belize's Archaeology Commissioner, Walker, along with Kathryn Reese-Taylor and Beverly Mitchum Chiarulli, initiated the Cerros Cooperative Archaeological Development Project (CCADP) in 1992. They returned to Cerros to investigate the site's demise at the end of the Late Preclassic (cf. Walker 1994, 1995; Reese 1996; Walker *et al.* 1997).

CERROS CHRONOLOGY

MAYA ERA	MAYA DATES*	MAJOR MAYA EVENTS	CERROS PHASE	CALENDAR
Late Preclassic	7.0.0.0.0 - 7.15.0.0.0	Agrarian expansion	**Early Facet Tulix**	354 - 58 BCE
	7.15.0.0.0 - 8.6.0.0.0	El Mirador "empire"	**Late Facet Tulix**	58 BCE – 159 CE
"Protoclassic"	8.6.0.0.0 - 8.10.0.0.0	El Mirador collapse/recession	**Early Facet Hubul**	159 – 238 CE
Early Classic	8.10.0.0.0 - 8.17.1.4.12	Tikal's Foliated Jaguar Dynasty	**Late Facet Hubul**	238 – 378 CE
	8.17.1.4.12 - 9.6.3.0.0	Competing Kalomte kings	Tzakol 3 *(abandoned)*	378 – 557 CE
Late Classic	9.6.3.0.0 - 9.13.3.7.18	Caracol/Calakmul expansion	Tepeu 1 *(abandoned)*	557 – 695 CE
	9.13.3.7.18 - 9.17.0.0.0	Tikal revitalization/ Yaxchilan apogee	Tepeu 2	695 – 770 CE
Terminal Classic	9.17.0.0.0 - 10.0.0.0.0	Collapse cycle begins at Dos Pilas	Tepeu 2/3 transition	770 – 830 CE
	10.0.0.0.0 - 10.6.0.0.0	Expansion of Quetzalcoatl Cult	**Early Facet Sihnal**	830 – 948 CE
	10.6.0.0.0 - 10.13.12.0.0	Initial founding of Mayapan *Begins in K'atun 8 Ahaw*	**Late Facet Sihnal**	948 – 1100 CE
Postclassic	10.13.12.0.0 - 11.8.0.0.0	East coast trade expansion	**Early Facet Kanan**	1100 – 1382 CE
	11.8.0.0.0 - 11.15.12.0.0	Mayapan dominates trade *Begins in K'atun 1 Ahaw*	**Late Facet Kanan**	1382 - 1532 CE
Colonial		Spanish entrada/Caste Wars	**Numul Phase**	1532 – 1566 CE

* Dates used in this chronology match Maya period endings rather than Christian decades or centuries.

Figure 5. Cerros Ceramic Chronology.

Methodology

Because the CCADP focused on identifying and dating Protoclassic/Early Classic Hubul Phase deposits, a special effort was made to collect usable carbon samples from these deposits. Unfortunately, most contexts were not sealed by subsequent construction, and few datable samples were extracted; these stemmed primarily from Str. 4. Although systematically sought, no datable samples outside the monumental architectural core were obtained. Excavations did reveal good, sealed samples from earlier contexts. Of the 20+ contexts sampled by the CCADP, 15 were considered for this project (Figure 6) and, after pretreatment, 7 samples were selected for actual radiocarbon assay. At least one sample from every building providing charcoal was included for analysis, although one (Str. 3A) produced a modern date. Good dates were returned from Strs. 4A/B, 5E and 6A/E. Due to small sample size, AMS processing was required on all but one sample, adding expense and reducing the number of samples which ultimately could be tested. Three processed samples remain available for future AMS testing.

Six uncalibrated radiocarbon dates run in SMU's radiocarbon lab in the late 1970s were included in this analysis. Although the original data sheets are now unavailable, details about their reporting and context were drawn from Freidel and Scarborough (1982), Cliff (1982, pers. comm. 2004), Scarborough (1991) and Freidel (pers. comm. 2004). They were recalibrated to better compare with the new dates. Four of the six SMU dates stem from household or canal debris associated with the early village occupation. Of the two remaining, one sample (SMU-906) was drawn from Str. 29, a large pyramid considerably south of the site core. The last (SMU-776) was collected from a small public building within the nucleated village just east of the site core. Prior to the present research, SMU-776 had been the only radiocarbon assessment available for dating monumental construction in the site core itself, despite the fact that it was actually from the nucleated village below Plaza 2A.

Cerros 14C Samples Chosen for Testing

Bag	Date	Excvtı	Str.	OP	SO	Lot	Context	Condition	Cost	Y-Intercept
Structure 3										
93765	7/1 or 2/93	BM	3A	9303	c	5	removal of patchy plaster floor ar	borderline regular	$25	future test
93494	07/26/93	BM	3A	9303	f	2	removal of layer down to inner st	good	$305	Modern
Structure 4										
93361	07/20/93	EM,M	4A	9301	o	5	soil matrix beneath humus and pl	AMS-omit	$25	? context
93484	07/26/93		4A	9301	o	8		no good	$25	bad sample
93999	7/30/1993		4AB	9305	a	15	plaster melt	AMS	$595	**115 CE**
93710	08/05/93	DW	4AB	9305	a	23	concrete plaster melt - next layer	AMS	$25	future test
93726	08/05/93	DW	4AB	9305	b	20	last layer melt to Floor 1	AMS	$595	**80 CE**
94131	07/17/94	DSW,	4AB	9305	c	10	Test into Floor 1	AMS	$25	? Context
95311	07/20/95	KRT,/	4AB	9501	b	8	plaster melt	no good	$25	bad sample
95424	07/27/95	DSW	4AB	9501	g	5	Floor 2 to Floor 3	AMS	$595	**55 CE**
Structure 5										
94282	07/27/94	BAM,	5E	9402	a	7	Above Floor 1	AMS	$595	**60 CE**
94374	08/01/94	BAM	5E	9402	b	10	Charcoal lens above 5A-Floor 4	extended counting	$450	**50 BCE**
94385	08/02/94	KRT	5E	9402	c	4	Floor 1	AMS	$25	future test
Structure 6										
94376	7/?18/94	KRT	6AE	9401	c	3	Marl terrace	AMS	$595	**5 CE**
94377	7/?18/94	KRT	6AE	9401	c	4	plaster melt to top of floor	no good	$25	bad sample
									$3,930	

Figure 6. Cerros Carbon Samples Available for Testing.

Results

CCADP samples were processed by Beta Analytic, Inc., www.radiocarbon.com. Calibrations were calculated using the newest calibration database (Struiver et al. 1998; Talma and Vogel 1993), and C13/C12 ratios were calculated. Results are reported in terms of conventional radiocarbon age, with single or multiple y-intercepts, and 1-Sigma and 2-Sigma ranges (Figure 7). SMU dates were calibrated by Beta Analytic using the same standard, however, no C13/C12 ratio was available; this value was estimated in the calculation. While minor differences may result, recalibration on the same standard dramatically improves comparability between the two data sets. Some recalibrations have led to reinterpretation.

Cerros Radiocarbon Samples Processed and Recalibrated

Sample Number	Context	Conventional Radiocarbon Age	y-Intercept	1-Sigma Calibration (68%)	2-Sigma Calibration (95%)	13C/12C Ratio
New Samples						
Beta-188403	Str. 3A Op 9303f-2	90+/- 50 BP modern				
Beta-188406	Str. 4AB Op 9305a-15	1890 +/- 40 BP	115 CE	75 – 140 CE	45 – 230 CE	-26.4 o/oo
Beta-188408	Str. 4AB Op 9305b-20	1920 +/- 40 BP	80 CE	55 – 120 CE	5 – 155 CE	-24.6 o/oo
Beta-188411	Str. 4AB Op 9501g-5	1960 +/- 40 BP	55 CE	5 – 80 CE	45 BCE – 120 CE	-24.3 o/oo
Beta-188412	Str. 5E Op 9402a-7	1950 +/- 40 BP	60 CE	20 – 85 CE	40 – 130 CE	-25.8 o/oo
Beta-188413	Str. 5E Op 9402b-10	2060 +/- 60 BP	50 BCE	155 BCE – 20 CE	195 BCE – 75 CE	-25.8 o/oo
Beta-188415	Str. 6AE Op 9401c-3	2000 +/- 40 BP	5 BCE	45 BCE - 55 CE	80 BCE – 80 CE	-24.7 o/oo
Recalibrated						
SMU 774	South Canal Op 116	2300 +/- 150 BP	390 BCE	520 - 190 BCE	800 BCE – 10 CE	est. -25 o/oo
SMU 775	Str. 2A-Sub 1-3rd Op 1 Episode E	2210 +/- 80 BP	350 BCE 300 BCE 220 BCE	380 - 170 BCE	400 - 50 BCE	est. -25 o/oo
SMU 776	2A-Sub 4-1st-C under Plaza 2A	2010 +/- 40 BP	10 BCE	50 BCE – 40 CE	100 BCE – 70 CE	est. -25 o/oo
SMU 881	Str. 98A-L3/Op 141a	2140 +/- 140 BP	180 BCE	380 - 10 BCE	420 BCE – 130 CE	est. -25 o/oo
SMU 904	Fea. 1A-L7/Op 1f-47 (square 2p) Episode P	2250 +/- 60 BP	370 BCE	390 - 340 BCE 320 - 210 BCE	400 - 170 BCE	est. -25 o/oo
SMU 906	Str. 29C-E	1960 +/- 60 BP	50 CE	30 BCE - 100 CE	80 BCE – 150 CE	est. -25 o/oo

Figure 7. Cerros Radiocarbon Dates Chart.

Analysis

Having compiled a total of twelve usable radiocarbon dates from Cerros, these were then arranged chronologically showing both y-intercept and intervals (Figure 8). It is immediately obvious that two distinct date ranges are indicated. The earlier component, consisting of the four SMU dates from village and canal domestic debris, is distinct. Cliff (1982), Scarborough (1991) and Freidel (pers. comm. 2004), have questioned the validity of the canal date (SMU-774). With a 2-Sigma span of roughly 800 years, its utility is minimized, and it can be eliminated from the analysis.

The remaining three dates on early domestic debris show a 2-Sigma cluster in the range of 400 - 50 BCE, with some emphasis on the earlier portion of that era. This range best defines Early Tulix as we currently understand it. One date with a large 1-Sigma range (SMU-881) extends later in time, but none extend much earlier than 400 BC. Significantly, there is little overlap between this cluster and the later one.

The later cluster is comprised of the two SMU dates from non-domestic contexts as well as the Beta dates, all drawn from monumental contexts (Figure 9). One date, from Str. 5E-Sub 1 (Beta-188413), has a y-intercept right at 50 BCE, and a larger 1-Sigma range overlapping with the earlier cluster. The 1-Sigma ranges for all other dates in this group are small and fall completely within Late Tulix (50 BCE - 150 CE), clearly defining the later facet.

Of this group, SMU-776 is drawn from Str. 2A-Sub 4-1st, a two-tier stone pyramid situated at village level just east of the site core (Figure 10). The others are from monumental construction episodes, use, or building termination (Garber 1983). Four of the five latest dates within the cluster stem from late use or site abandonment contexts (SMU-906, Str. 29C-E termination; Beta-188412, Str. 5E late use; Beta-188418 Str. 4AB termination; Beta-188406, Str. 4AB termination). Both samples from Str. 4AB termination debris have late y-intercepts (80 CE, 115 CE) and 2-Sigma ranges that extend beyond 150 CE, into Early Classic Hubul Phase.

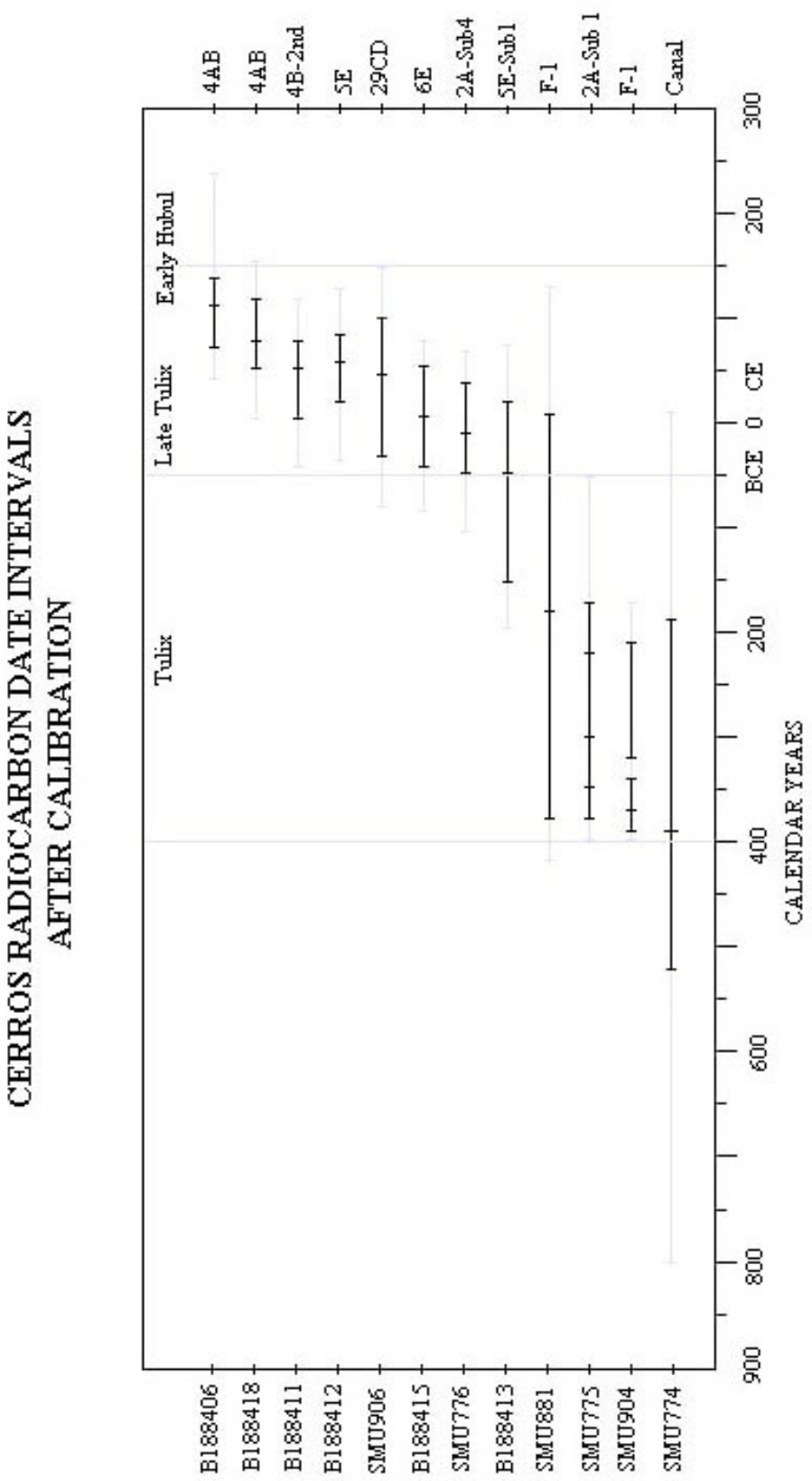

Figure 8. Cerros Radiocarbon Dates Graph.

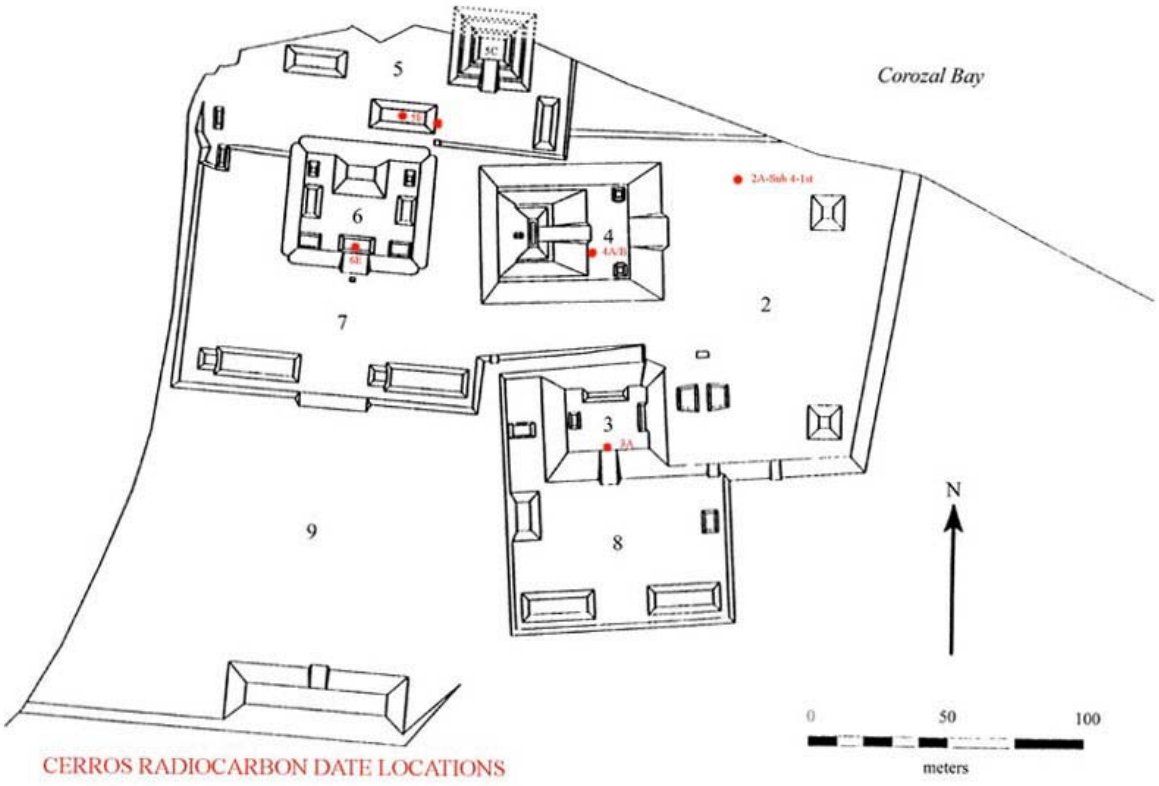

Figure 9. Cerros Site Core Locating Radiocarbon Samples.

The suite of dates now available for Cerros shows a coherent range, conforms to expectations, and mirrors stratigraphic relationships well. It is also clear that both SMU and Beta dates overlap in expected ways, indicative of their validity. Two relevant points should be recognized. (1) The short 1-Sigma ranges on most Beta dates may be attributed to their small sample size; they are AMS (Accelerator Mass Spectrometry) dates, which can provide a more accurate result. The only standard Beta date (Beta-188413) has a wider 1-Sigma range. (2) Early Tulix is dated only by domestic debris and Late Tulix is dated only by non-domestic debris. Robertson-Freidel (1980) defined these contexts. While Late Tulix households were excavated (Scarborough 1991; Walker *et al.* 1997), no datable samples were obtained by either project. This may be due to a settlement shift in Hubul Phase, leaving ruined Late Tulix house mounds exposed to the elements for nearly 2000 years. Even in view of these shortcomings, however, the overall suite of dates is internally consistent and suitable for interpretation.

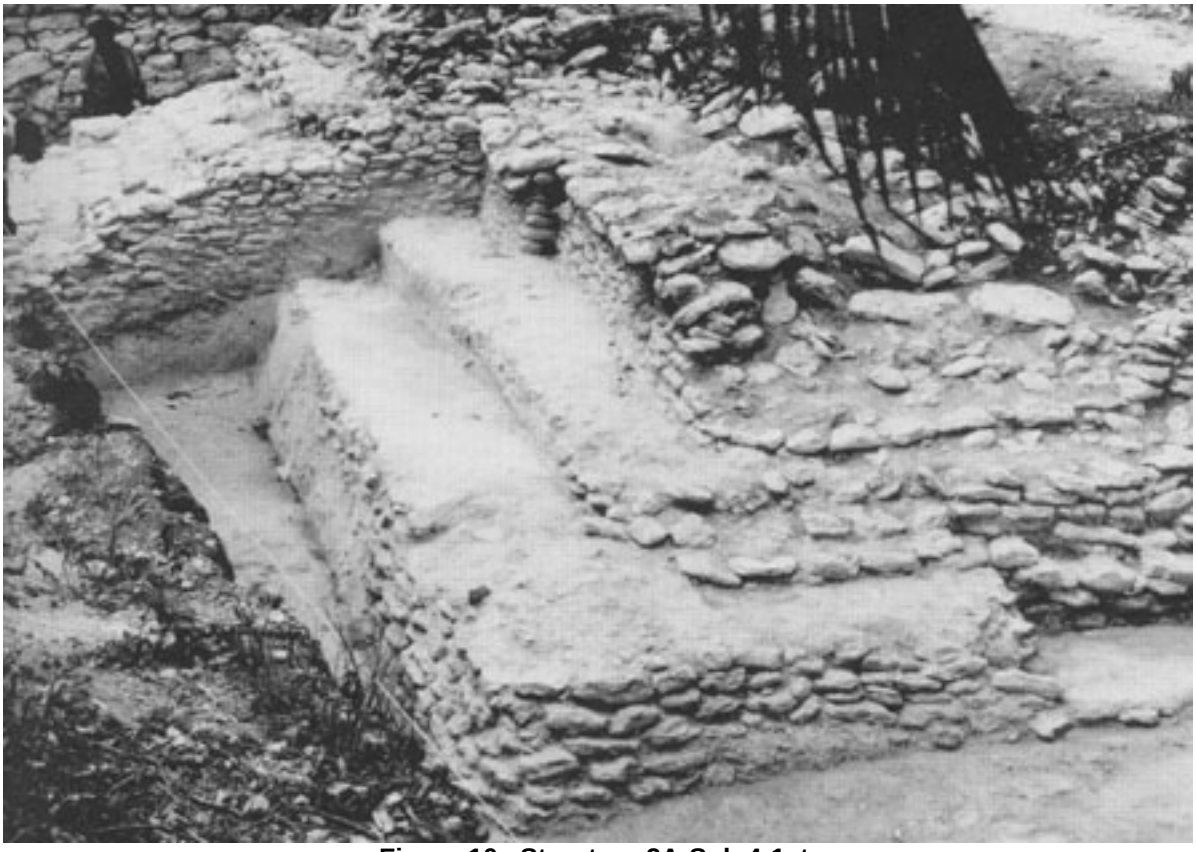

Figure 10. Structure 2A-Sub 4-1st.

General Interpretation of Chronology

While a detailed description of each dated context lies outside the scope of this report, some relevant comments can be made about our general understanding of Cerros in light of these results. In terms of chronology, the data supports Freidel's general sequence. The village seems to have been settled sometime after 400 BCE. It grew accretionally for generations until a shift to rapid expansion occurred around 50 BCE. It is also clear that the site center saw a rapid depopulation ca. 150 CE, and, in fact, there is some indication the site may have been under economic or political stress for a couple of generations before that. Cerros has not produced any usable carbon samples to date later occupations, although Early Classic, Terminal Classic and Postclassic settlement distributions are known (Walker 1990).

A word about ceramic phases is also in order. Robertson-Freidel (1980) analyzed only Late Preclassic ceramics for her dissertation research. Her detailed work identified a three phase sequence for the Late Preclassic (Ixtabai, C'oh, and Tulix). Subsequent work at Cuello (Kosakowsky 1987; Pring 2000) and elsewhere in northern Belize (Valdez 1987; Meskill 1992; Lopez Varela 1996) could not replicate the sequence in such detail. Robertson (pers. comm. 1988) has since indicated that Ixtabai and C'oh Phases should be conflated, and that the ceramic differences noted may be in part functional or status-related, and not necessarily chronological. The paucity of radiocarbon dates available to Robertson at the time precluded unequivocal interpretation. Chronologies reproduced since 1990 have included only C'oh and Tulix Phases for the site.

Current work in progress by the author (Walker, in prep.), in tandem with the new radiocarbon dates, supports an additional conflation of C'oh and Tulix Phases. Rather, two facets of a single Tulix Phase make more sense in terms of dating, ceramic context and function. Such a change makes the Cerros data more accessible to researchers at other sites. This conflation is reflected in the updated chronology provided with this report. Early Tulix at Cerros is represented by what is often called "baseline Chicanel", including such types as Sierra Red, Polvero Black and Flor Cream. For the Late Tulix facet, after Kosakowsky (1987:63), the major red type known as Cabro Red at Cerros will be renamed Sierra Red: Big Pond Variety. This follows ceramic nomenclature practice in the Maya area, ceding the name to the first to publish. Big Pond Variety appears in northern Belize in the latest portion of the Late Preclassic, correlating well with Late Tulix at Cerros (50 BCE - 150 CE). Other ceramic changes to the Tulix Complex are contemplated, but they are beyond the scope of this report.

Figure 11. Structure 4A/B Marl Melt from Masks.

Documenting a date range for Hubul Phase is still difficult. The two best contexts in the present research are the dated termination deposits at Str. 4 (AMS process Beta-188403, Beta-188406). Y-intercept data for these are 115 CE and 80 CE respectively, while their two sigma ranges reach into Hubul Phase (45-230 CE, 5-155 CE). The later date (Beta-188403) was literally carved from a puddle of melted plaster at the base of Str. 4B. We have interpreted this puddle as melt from a plaster façade similar to those known from Str. 5C-2nd (Figure 11). Embedded in the plaster melt are fragments of an Ixcanrio Orange Polychrome bowl with complex polychrome design and mat-style incision. It is difficult to imagine how the charcoal or the pottery could have become embedded at

different times; the concrete-like material was extremely hard to excavate. It is possible; however, that the charcoal may have been introduced into the plaster façade during its production, as other plaster chunks retrieved from the context exhibited charcoal flecks. Thus, the charcoal at earliest dates the production of the masks, at latest the destruction lens which must have accreted over the course of years in a tropical clime. Whatever the case, the 2-Sigma date range includes most of Early Hubul as proposed by Reese-Taylor and Walker (2002), and these dates are maintained in the current chronology.

Interpreting the Construction Sequence

CCADP excavations, in tandem with the new dates, provide some added detail to the sequencing of monumental construction first proposed by Freidel (1986) and modified by Reese (1996). Based on current information most buildings can now be tied directly or indirectly to an absolute chronology (Figure 12). One highlight is the relatively late date on public Str. 2A-Sub 4-1st located in the nucleated village east of the site core. The date is associated with its interment under plaza 2A. Recalibration significantly impacted this date, moving it from 57±40 BCE to a y-intercept of 10 BCE. The tight 1-Sigma range (50 BCE - 40 CE) overlaps with other building construction elsewhere in the monumental center. Freidel was not able to determine conclusively whether Plaza 2A buried the entire village before construction commenced in the monumental core. The revised cluster of dates suggest that at least part of the village was open and in use while monumental construction was underway in other parts of the site.

Excavations and dates obtained from Str. 5E significantly impact the overall site chronology as well. Tests in the vicinity of Plaza 5A anchored Freidel's original construction sequence. CCADP investigations revealed the surface of Str. 5E-Sub 1, which probably constituted part of a triadic group with 5C-2nd and 5B (unexcavated). A sample of this substantial charcoal lens, an early termination deposit, yielded a y-intercept of 50 BCE. While it provides a much clearer association for dating 5C-2nd, ironically it closely aligns with the prior interpretation of the 2A-Sub 4-1st date at 57 BCE. It should also be noted that if in fact 5E is part of a triadic group, the termination rite on 5E-Sub 1 may date the burial of the 5C-2nd façades.

PROPOSED CONSTRUCTION SEQUENCE BASED ON NEW RADIOCARBON DATES
CERROS, BELIZE

Constr. Phase	Y-intercept Radiocarbon Dates	7A	6A	5E	5C	Plaza 5 Floor Sequence	5A	5B	3A	8A	4A	2A
V *Site Termination* EARLY HUBUL 150-2500 CE	115 CE (4B) 80 CE (4B)	9B-1st							3A-1st/B-D	8B-D	4B vault collapse **4B termination** **4B termination**	2B-F
IV *Isolated Construction* LATE TULIX 60-150 CE	60CE (4B) 55 CE (5E use) 50 CE (29C-E) 5 CE (6E addition)	9A-B-2nd **29C-E termination**	6A stair 2nd tread buried 6A Stair 1st tread buried **6E marl block addition**	**5E late use** 5E cache 5E		Floor 1a Floor 1 Floor 2	resurfacing	?5B-cache? ?5B?	3A-2nd	8A 8A-Sub 1	**4B-2nd staircase** 4A-staircase 1 4B-3rd staircase Plaza 4A-6A 4B-Sub 1? 4A-staircase 2	
III *Massive Expansion* LATE TULIX 50 BCE-60 CE	10 BCE (2A-Sub 4)	29B-E 29A-Floor 1 29A-Floor 2 7B-C	6A, B-D; F-H		5C-1st caches 5C-1st	Floor 3	resurfacing				4A-2nd? ?4A-sub?	2A-Floor 2 2A-Floor3 **2A-Sub 4-1st termination**
II *First Civic* EARLY TULIX 100-50 BCE	50 BCE (5E-Sub 1)	7A-Floor 1 7A-Floor 2	6A-Sub 1; Steps from 5A to 6A-Sub 1 ??Earlier 6A sub??	**5E-sub 1 termination** 5E-Sub 1	1 replastering 5C-2nd 5C-2nd	Floor 4 Floor 5	Plaza 5A 5A-Sub 1	??5B-sub 1?				
I *Village* EARLY TULIX 400-100 BCE	180 BCE (F1) 300 BCE (2A-Sub 1-3rd) 370 BCE (F1) 390 BCE (Canal)											2A-Sub 4 **Feature 1** **2A-Sub 1-3rd** **Feature 1 Canal**

Cerros Construction Sequence after Freidel (1986:4 Table 1.2 and 1.3) and Reese-Taylor (1996:203 Table 3.1) with modifications based on Beta Analytic radiocarbon dates and Beta recalibration of SMU dates.
Bold refers to structure which produced usable radiocarbon date on corresponding row.
SMU dates (*Italics*) are recalibrated estimates from uncalibrated dates originally reported by Freidel. No C13/C12 ratios available on SMU dates.
One SMU date (Canal) was deemed too early by the original excavators (Cliff 1982:196; Scarborough 1980:252).

Figure 12. Cerros Proposed Construction Sequence.

Figure 13. Structure 5E Apsidal Building.

A date was obtained on the exterior of Str. 5E from a trench cut into the east wall of Str. 5E (Mitchum and Reese-Taylor 1995). Excavation determined the building to be apsidal in shape with apron molding (Figure 13). Excavators contacted a termination deposit lying atop Plaza 5A, Floor 1, from which the sample was collected (Beta-188412). With a y-intercept of AD 60 and short 1-Sigma range of 20 - 85 CE, this probably dates the end of the building's Late Tulix use. It is virtually identical to the date of a similar context atop Str. 29.

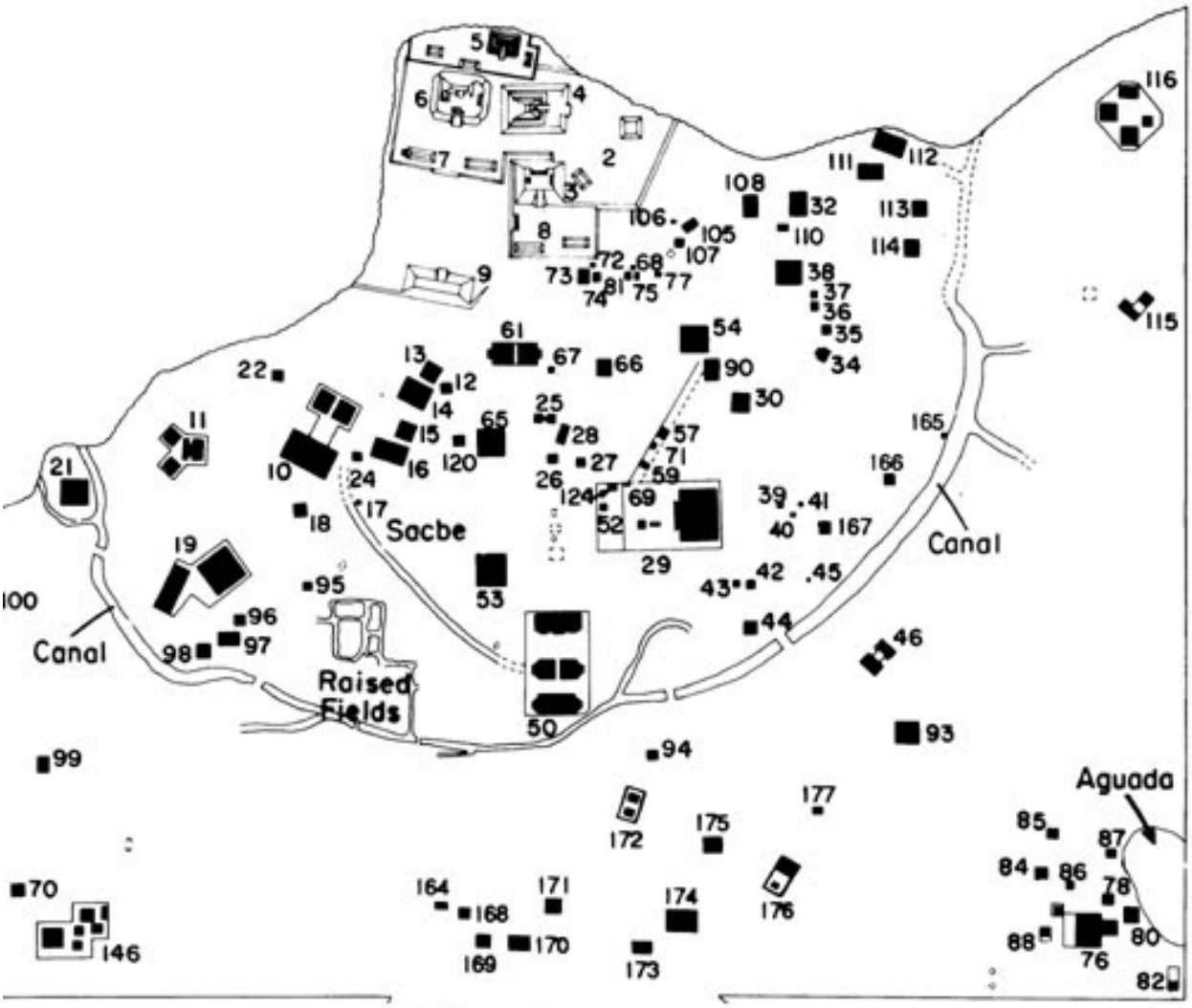

Figure 14. Cerros Dispersed Settlement.

Structure 29 is located about 300 meters south of the site core in the dispersed settlement (Figure 14). It was reported by Freidel (1986). The large pyramidal building supported an oddly configured triadic set of superstructures with only narrow alley-like passages between them. The buildings exhibited polychrome façades described by Freidel and Reese (1996). The termination deposit yielding a carbon date was located along these alleys. Freidel (1986:12) reported the date as 25 BCE±50 for this building termination (SMU-906). Recalibration produced a y-intercept of 50 CE and 1-Sigma range of 30 BCE - 100 CE, considerably later than previously thought. This later date better fits the sequence of construction, use and destruction at the monumental core, linking Str. 29 to a single, unified site-wide building program.

The only date produced from Str. 6A/E was slightly earlier than expected, with a y-intercept of 5 CE and 1-Sigma range 45 BCE - 55 CE. The context at the summit of the 6A staircase (Figure 15) was arguably the latest addition to this building group, as the construction of 6E limited access to the

summit. The group has a total of 8 superstructures atop it in an Eight-House-of-the-North configuration (Reese 1996). Freidel has argued that Str. 6 was constructed earlier than Str. 4. This cannot be confirmed by the present research, although it is apparent that Str. 4 saw later modification than Str. 6. In fact, the building sequence at Str. 6 seems collapsed into even fewer generations than originally anticipated. Apart from tentative evidence for and earlier Str. 6A-Sub 1, it now appears that work began at Str. 6 sometime after 50 BCE and all modification ended within 50 or 60 years. Reese (1996) identified the banner stone which now lies at the base of Str. 6 (Figure 16). She has suggested it may have been pushed off the top of the staircase in a war event. If the 6A/E modification dated by this sample was constructed after the monolith was pushed down, then this date would serve as a *terminus ante quem* for the war event.

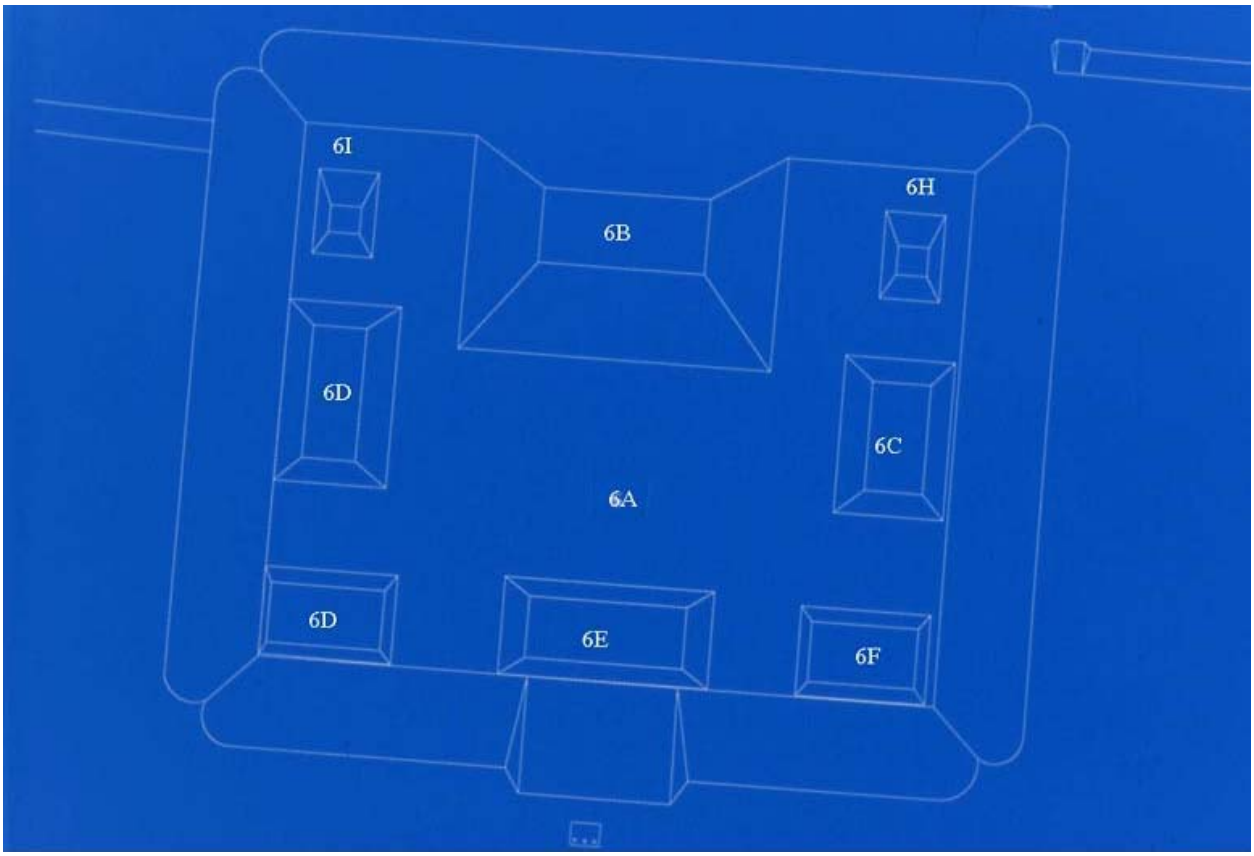

Figure 15. Structure 6 Group.

Figure 16. Base of Structure 6A with Bannerstone.

Figure 17. Structure 4A/B Floor Sequence.

Three of the six Beta dates were drawn from deposits atop Str. 4A, at its juncture with superstructure 4B. The two late dates detailed above stem from unsealed termination debris. The third, Beta-188411 was collected from a sealed construction sequence. The original summit of 4A (Floor 3) had one major renovation (Floor 2) and one minor replastering (Floor 1). Termination deposits were encountered atop Floor 1, and the puddled mound of façade melt lay atop Floor 1, preserving it quite well in places. A test into Floor 1 in this area produced the charcoal sample between Floor 2 and Floor 3, dating the first major modification of the original summit (Figure 17). With a y-intercept at 55 CE and 1-Sigma range of 5-80 CE, this is the latest securely dated construction context at Cerros.

Figure 18. Structure 4B, Chamber 1 Interior.

Figure 19. Structure 4B, Summit of Staircase.

The summit of 4B is comprised of a semi-subterranean vaulted building (Figure 18; Chamber 1) investigated by Freidel (1986) and discussed by Walker (1990) and Reese (1996). Hubul ceramics found below its collapsed vault were likely deposited well after its original intended use, although probably not as late as proposed by Walker (1998). Original construction of the chamber may be tentatively linked, as a *terminus post quem*, to the major modification of the 4A summit ca. 55 CE, making Chamber 1 the latest construction in the monumental sequence. As its cut-block style (Figure 19) differs from other Cerros buildings, and it appears to have had an intact vault at one time, a late date fits well.

A Summary Chronology

Early Tulix (400 - 50 BCE)

Cliff and Crane (1989) detailed a five-part developmental sequence for the Cerros economy, most of which dealt with the early facet village. They noted the small agrarian village began to grow accretionally after construction of a dock facility (Str. 2A-Sub 2) and the appearance of reef fish in the faunal remains. Both data sets indicate the existence of an outward-focused community with sufficient ocean-going marine technology to take advantage of their protected coastal locale. Economic evidence indicates that they integrated fairly well into the regional economy, importing even foodstuffs later on. Eventually material indications of wealth appeared in household remains

and burial goods. Toward the end of the era, stone block buildings first appeared, including Str. 2A-Sub 4-1st. The public dock went unused at that time, as elites began to control access to labor and services. It was at the very end of the era, around 100 BCE, that the work program at the Structure 5 triadic group was initiated. This portion of the site core may have contained multiple smaller civic buildings, such as 6A-Sub 1, which is now buried below plaza level.

Late Tulix (50 BCE - 150 CE)

After 50 BCE, the dramatic and rapid construction of several monumental-scale pyramidal groups happened within a generation or two, so short a time span that one family might have controlled or overseen it all. Structure 6 might have been their seat of power, consecrated by the royal jewels cached under Structure 6B. The data support long-distance trade as the vehicle for expansion (cf. Garber 1989; Mitchum 1994) and perhaps a closer relationship with Petén cities, such as El Mirador (Reese-Taylor and Walker 2002). With the resources of a city the size of El Mirador, Cerros elites would have been able to fund their construction projects much more easily. Structure 4 began to take its present form sometime after 1 CE, about the same time modification ceased on Structure 6. Although it lacks a radiocarbon date, Structure 3A-2nd (Reese 1996) must have been constructed about the same time. Structure 3A-1st, based on a paucity of remains, may have been left unfinished at the end of Late Tulix construction, which seems to have been about 100 CE.

Early Hubul (150 - 250 CE)

Toward the end of Late Facet Tulix, times became quite difficult at Cerros. Perhaps El Mirador's trading partners all suffered as its influence began to wane. There is no evidence for substantial construction at Cerros after 100 CE, and, in fact, some buildings may have been ritually terminated and abandoned before then. By El Mirador's collapse at 150 CE, Cerros had lost most of its population, and new construction was limited to small buildings in the peripheral settlement (Scarborough 1991; Walker 1990). No dates are available from these constructions.

Late Hubul (250 - 400 CE)

While no radiocarbon dates were obtained, occupation dating to this era has been documented within and outside the canal perimeter at Cerros. Households were more dispersed across the landscape in this era, and population was quite low. There are no signs that occupation continued past 400 CE. It appears residents may have moved across the bay to Santa Rita, which saw substantial Early Classic growth (Chase and Chase 1988), or off into the forest further removed from Cerros. After this, Cerros lay unoccupied until the end of the Classic era.

Summary Comments

A radiometric check at Cerros confirmed some of our beliefs and filtered out some of the dissonance in competing interpretations. This new suite of dates will anchor future publications in a systematic way, permitting greater intersite comparability for the Cerros materials. New dating also sheds light on several past studies on the Cerros data, allowing a more comprehensive view of site development to be outlined. Since work began at Cerros 30 years ago, much has been learned about the Maya, and about Cerros' ancient inhabitants. FAMSI's support contributes directly to the quality of the data to be produced in final monographs on Cerros' architecture and ceramics. It also contributes to our understanding of the dynamic Late Preclassic Maya era.

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