

THE END OF THE WORLD (OR PROBABLY NOT)

Some archaeological views on the Maya '2012' prophecies

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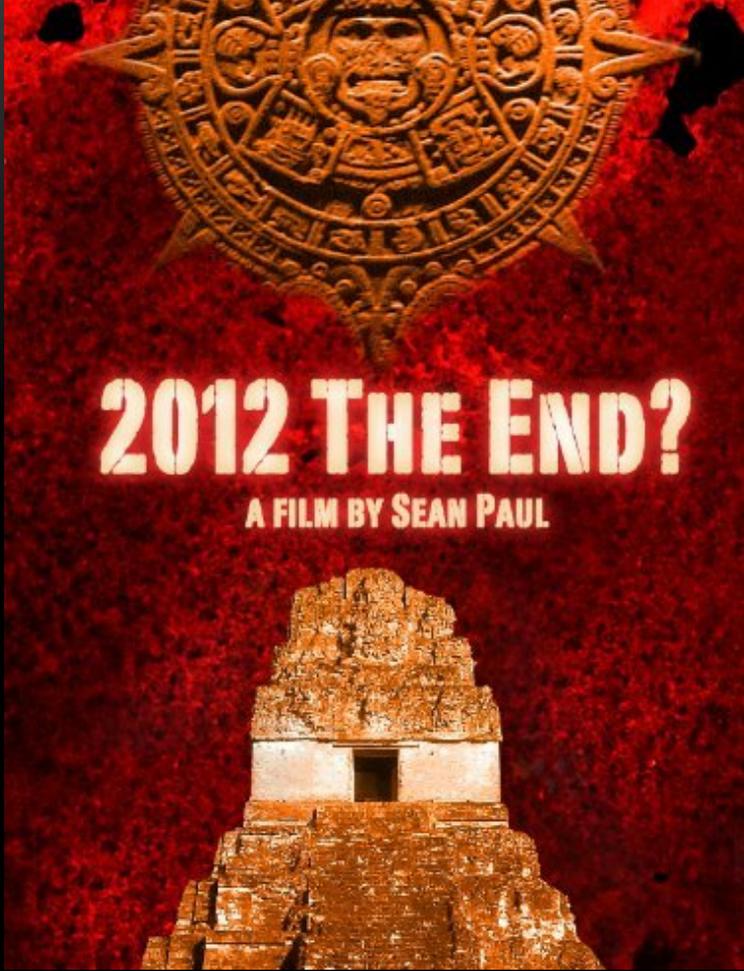
12.19.19.17.19/12.20.2012

ACKNOWLEDGEMENTS

- Thanks to DIS for the use of the conference room and to DIS and the HLC for promoting this talk
- Thanks to all of you for attending! The last day on earth and you're here?

2012: WHAT HAVE YOU HEARD?

- Book Titles:
 - Mayan Prophecy: the truth about 2012 Maya Prophecy - The end of the world?
 - Maya Cosmogenesis 2012: The True Meaning of the Maya Calendar End-Date
 - Mayan Calendar Prophecies: The Complete Collection of 2012 Predictions and Prophecies
 - 2012 The Proof. The Mounting Evidence of Our Impending Doom [Kindle Edition]
- TV:
 - 2012: Mayan Prophecy and The Shift of the Ages
 - Etc.



2012 THE END?

A FILM BY SEAN PAUL



2012

WE WERE WARNED
NOVEMBER

MEANS OF WORLD DESTRUCTION, E.G.

- Sunspots
- Mysterious Rogue Planets
- Pole Shift (Crust and/or Magnetic Pole)
- Climate Change
- Etc?



Overview

- ❖ Who were the Maya?
- ❖ Where does the 'December 21st, 2012' date come from?
 - ❖ Maya Math
 - ❖ Maya Calendars
 - ❖ Maya Astronomy
- ❖ Maya History
- ❖ Archaeologists' Views on '2012'

Look smart, part I:

Maya

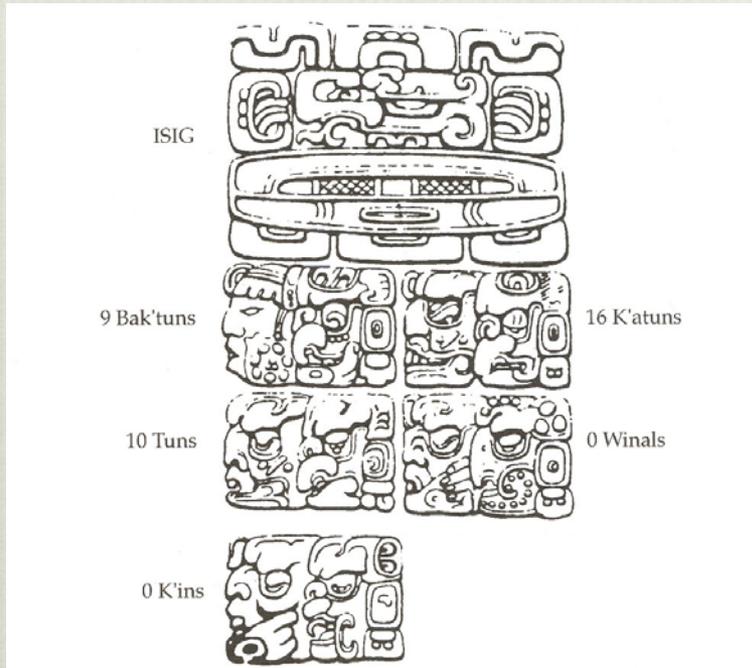
~~*“Mayan”*~~

~~*“Mayans”*~~

WRONG!

Look smart, part II:

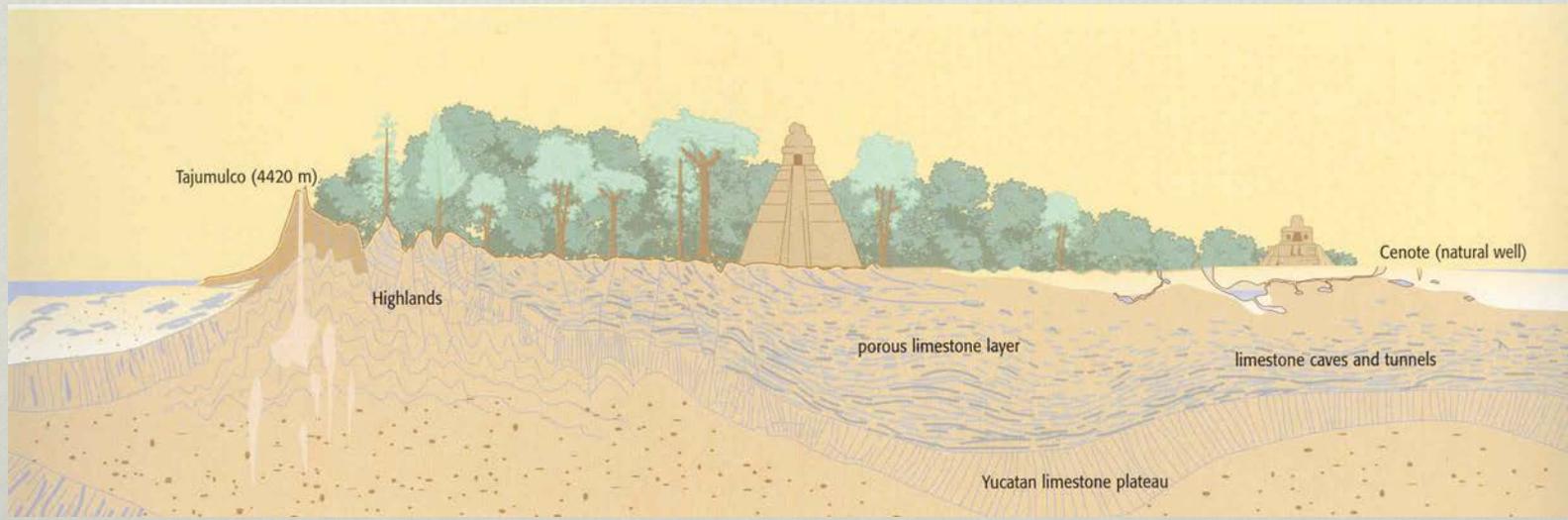
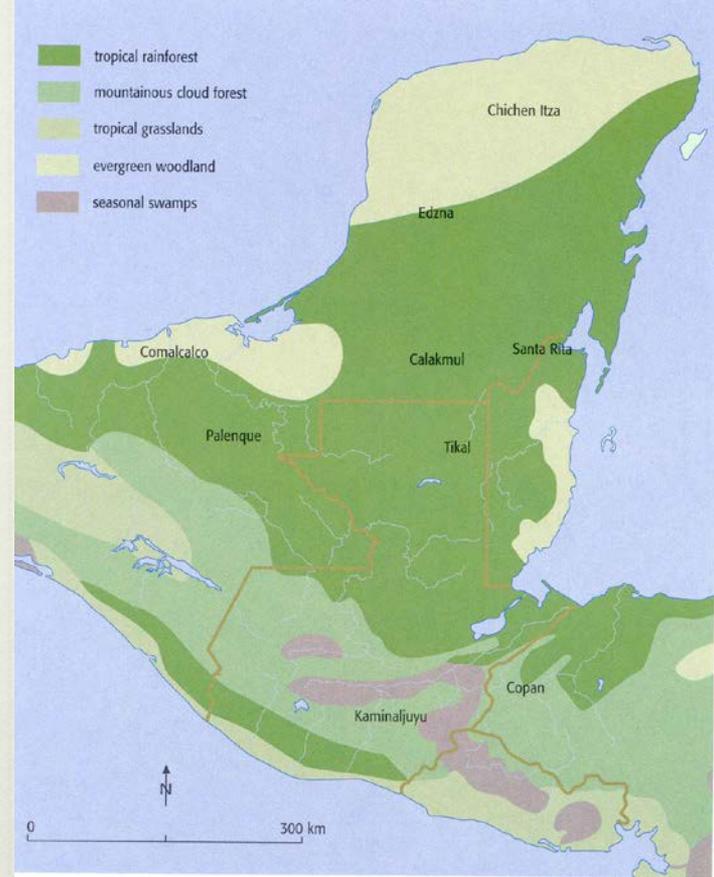
Maya



Aztec

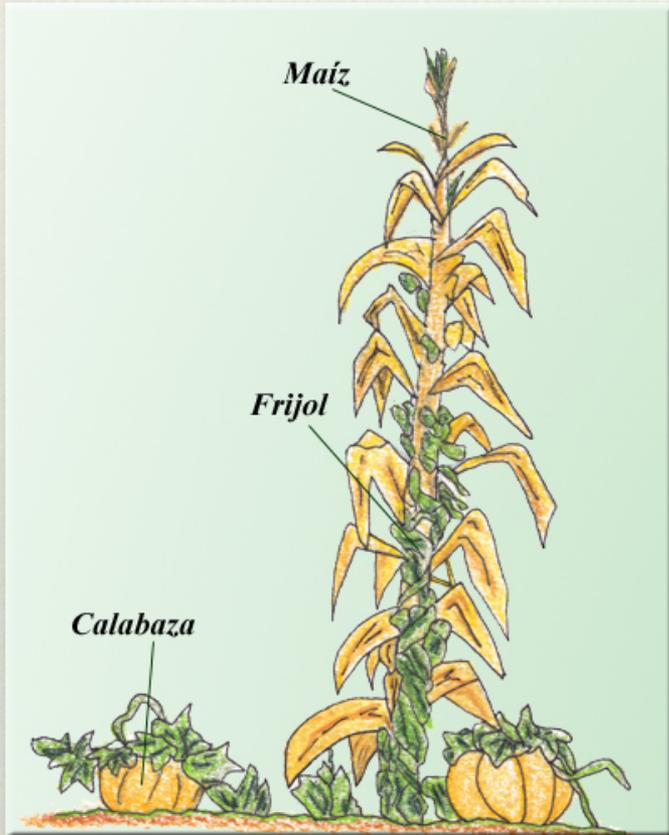








Maya Agriculture





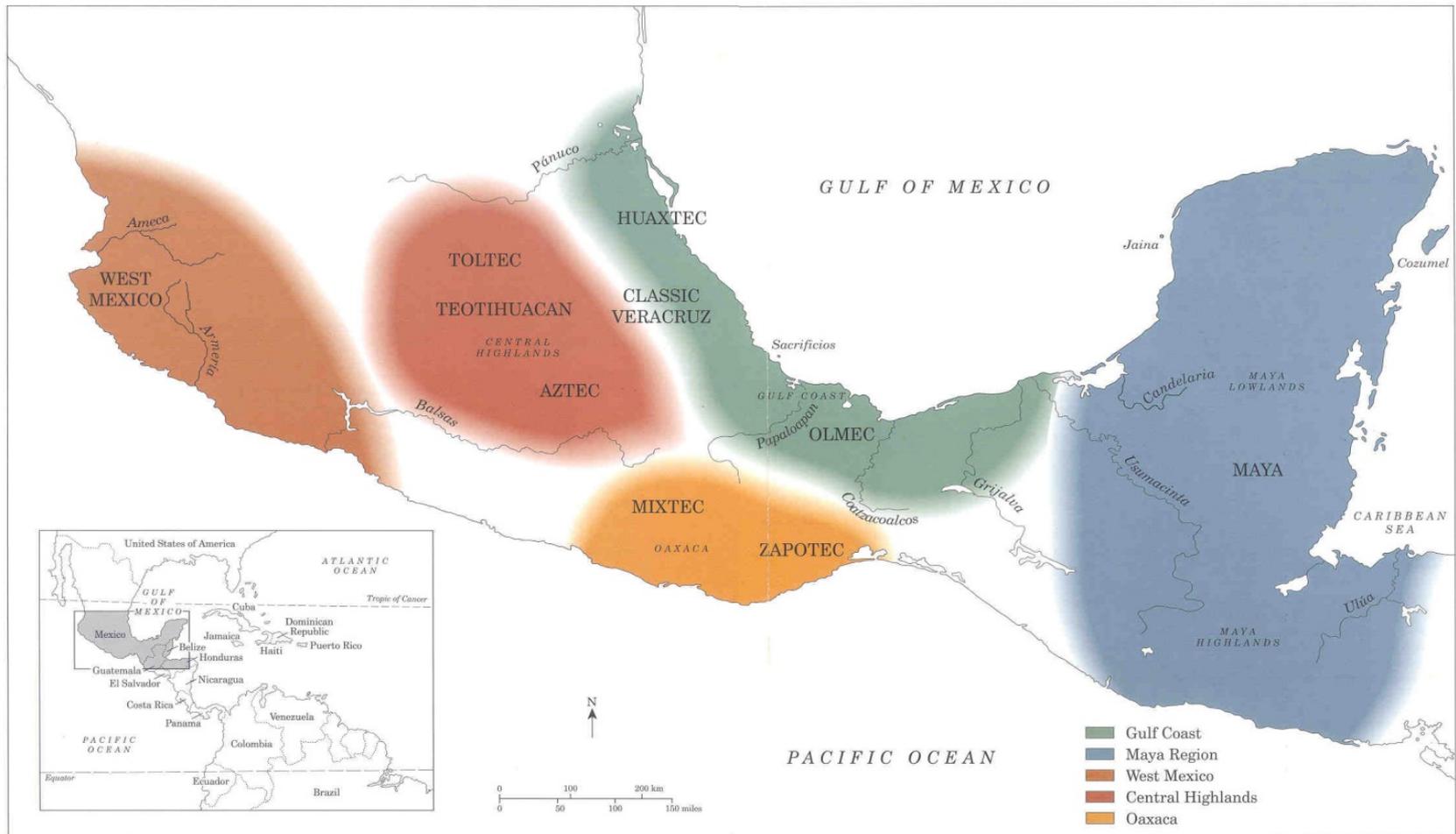
Few Domesticated
Animals (left):
Turkey, Hairless Dog,
Muscovy Duck



Commonly hunted:
Deer, Peccary (wild
boar),
Tepezcuintle/Gibnut,
Iguana

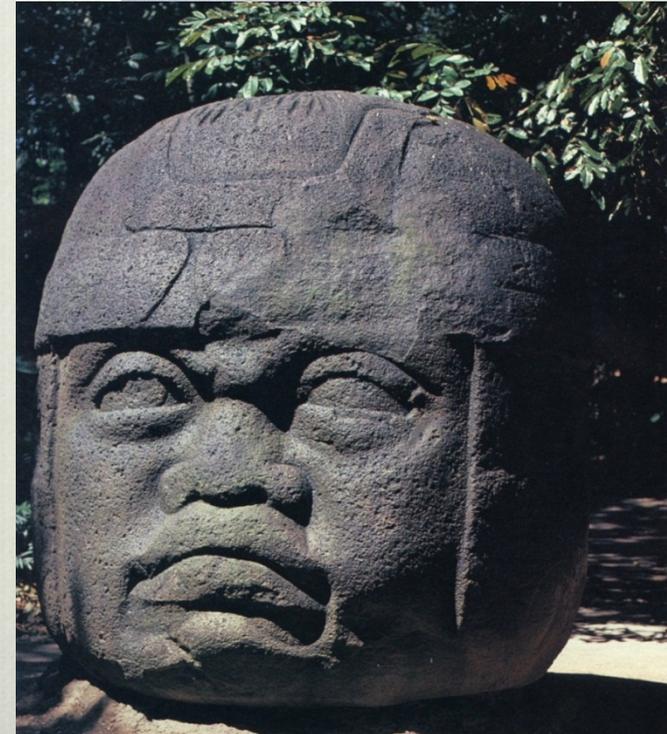
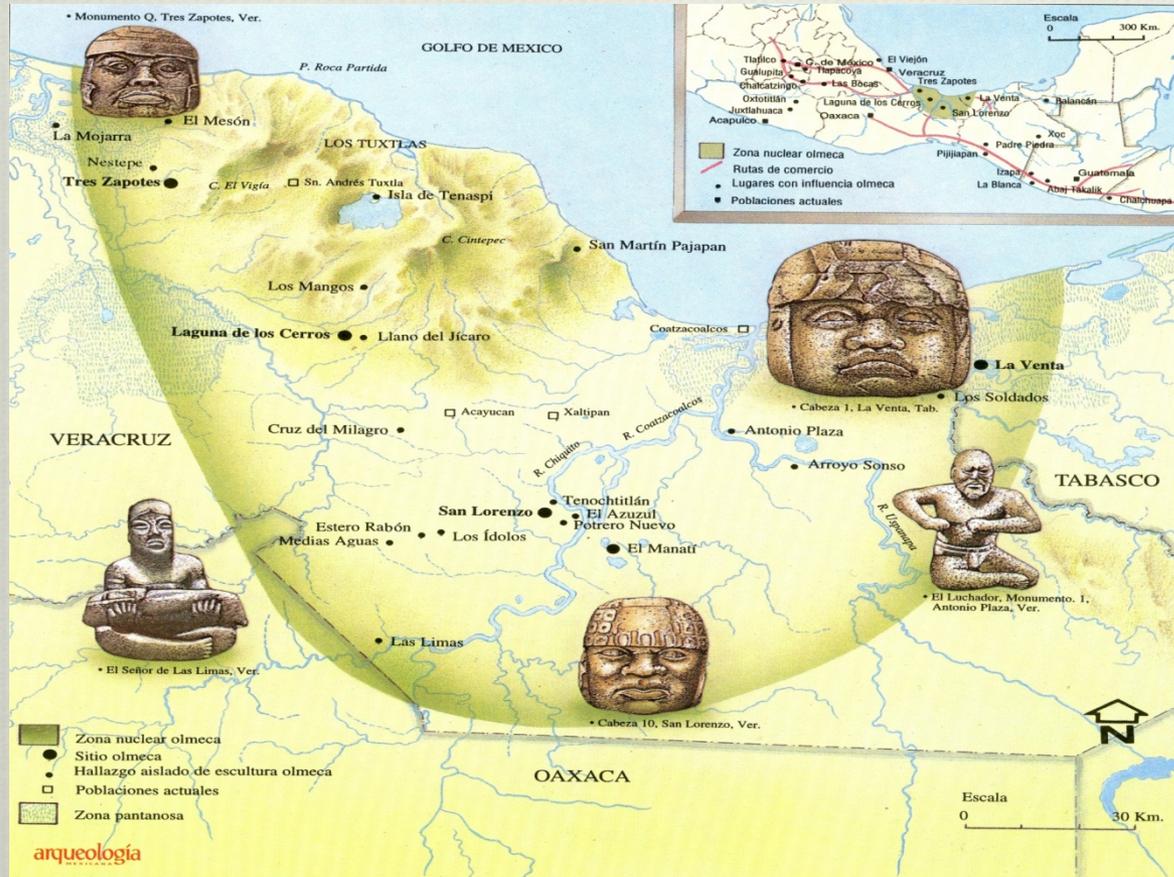
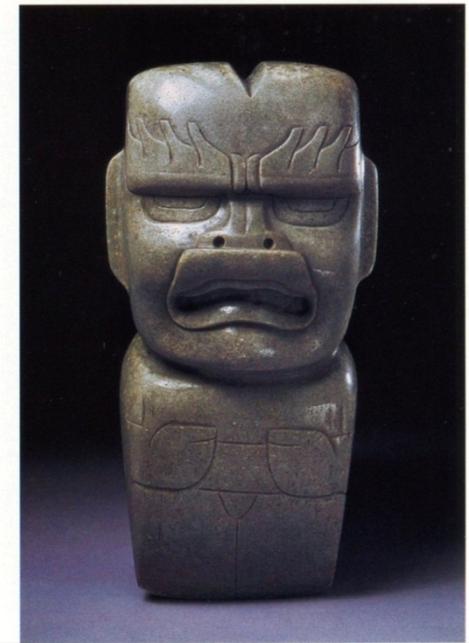


MAP OF CULTURAL AREAS OF MESOAMERICA



The Olmec: 1200-600 b.c.

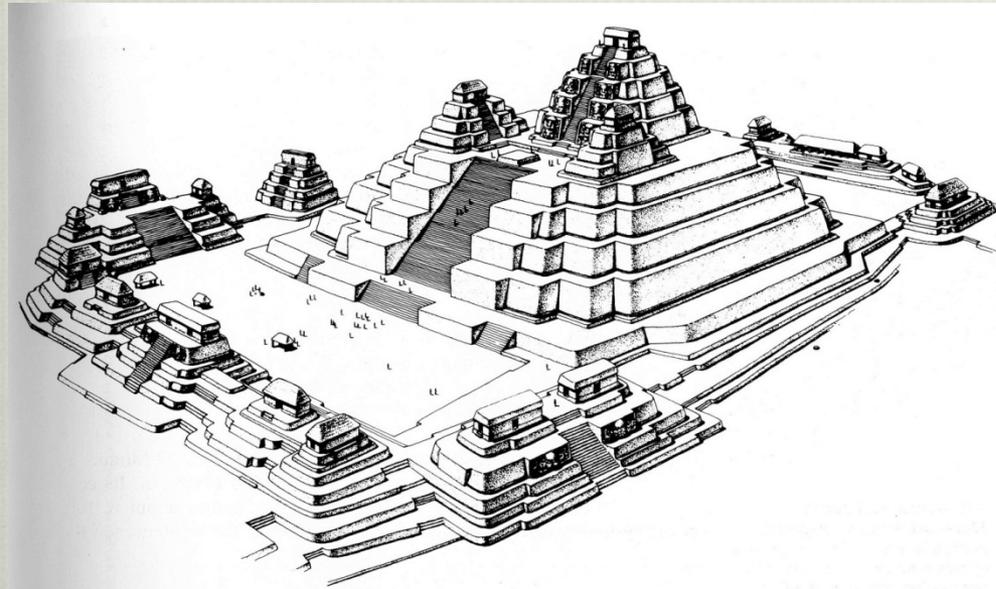
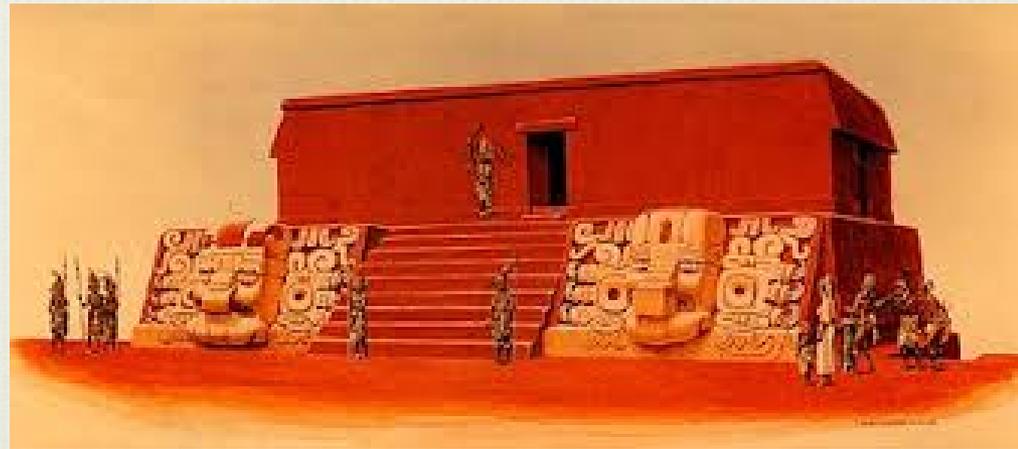
Early Preclassic/Formative



Monte Albán, Oaxaca, Mexico 600–300
b.c.
Middle Preclassic/Formative



Late and Terminal Preclassic/Formativ e 300 b.c. – a.d. 300



Early Maya Cities: Uaxactún, El Mirador, Nakbé, and Calakmul

Teotihuacán, Mexico

Early Classic a.d. 300–600

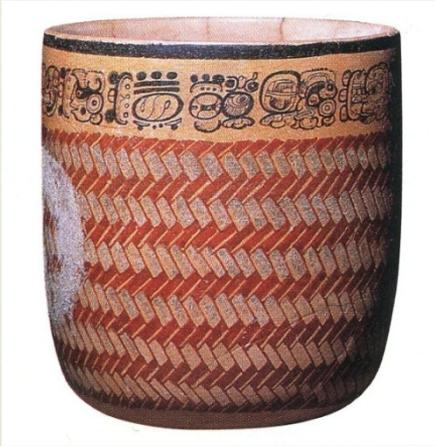




Tikal, Petén, Guatemala

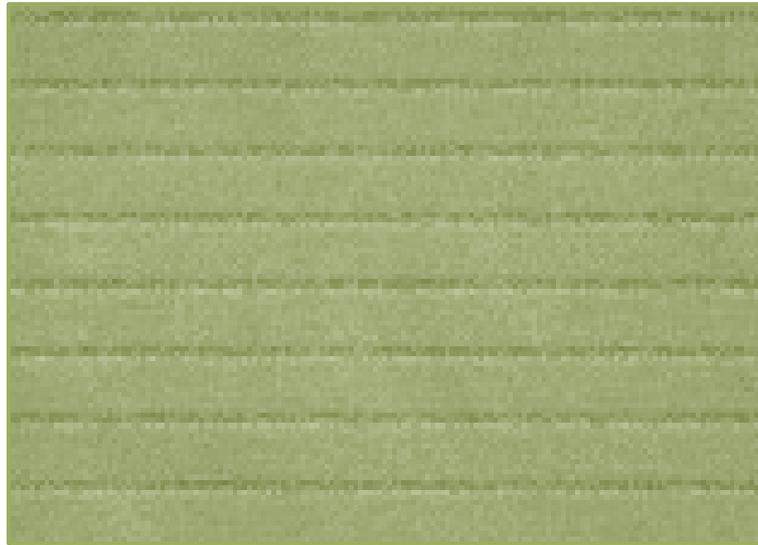


Late Classic a.d. 600–900



Math

$$\begin{array}{r} 792 \\ \times 941 \\ \hline \end{array}$$



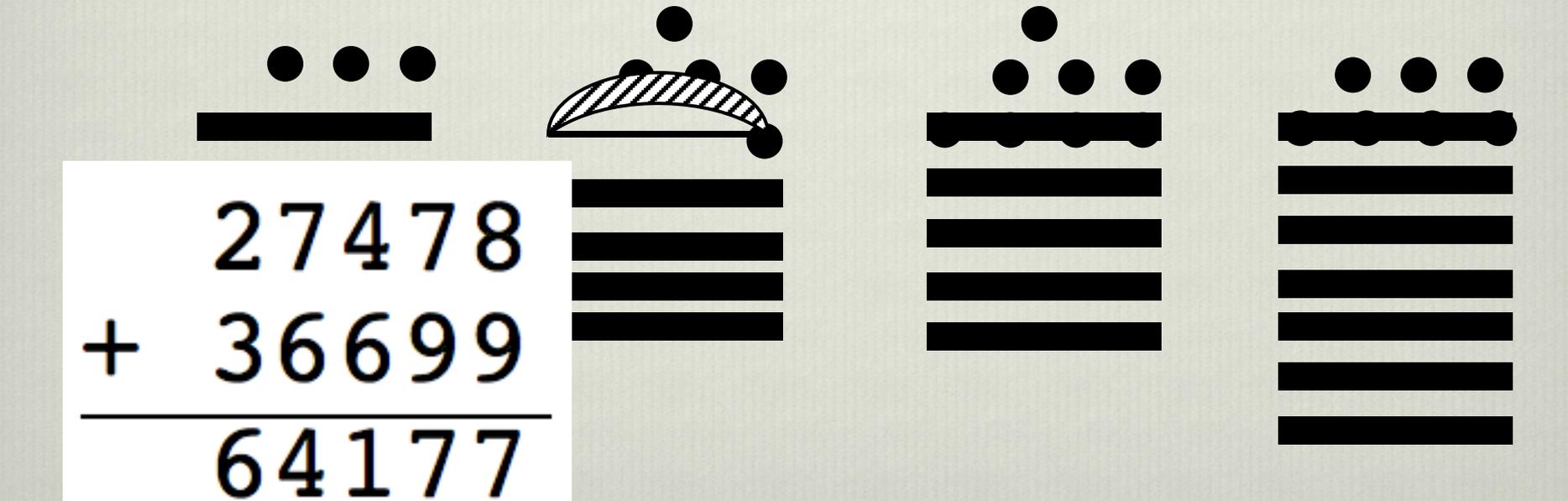
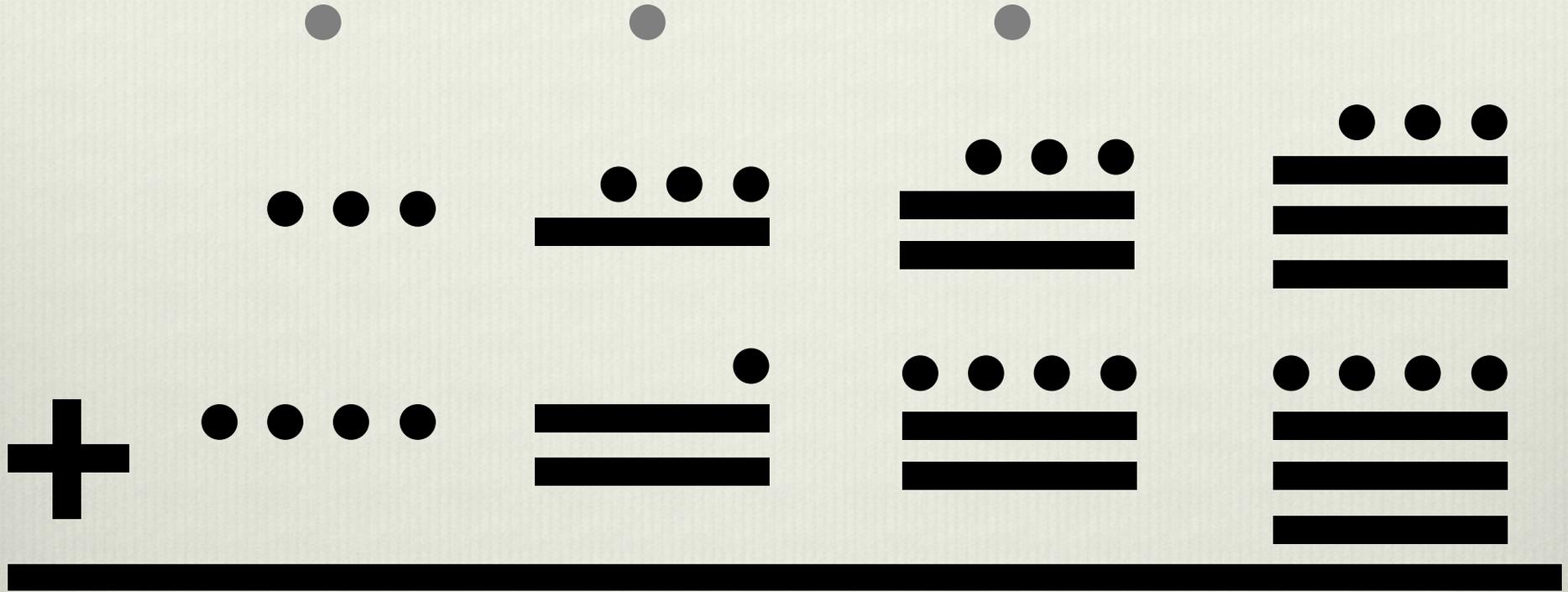
Math

$$\begin{array}{r} \text{MCMLXIX} \\ + \text{DCCLXXIV} \\ \hline \text{??????????} \end{array}$$



Zero!

- ❖ The Maya used a base-20 system
- ❖ AND
- ❖ The Maya used 'zero' as a placeholder, **making it easy and practical to do calculations involving very large numbers**



$$\begin{array}{r}
 27478 \\
 + 36699 \\
 \hline
 64177
 \end{array}$$

Maya Numerals

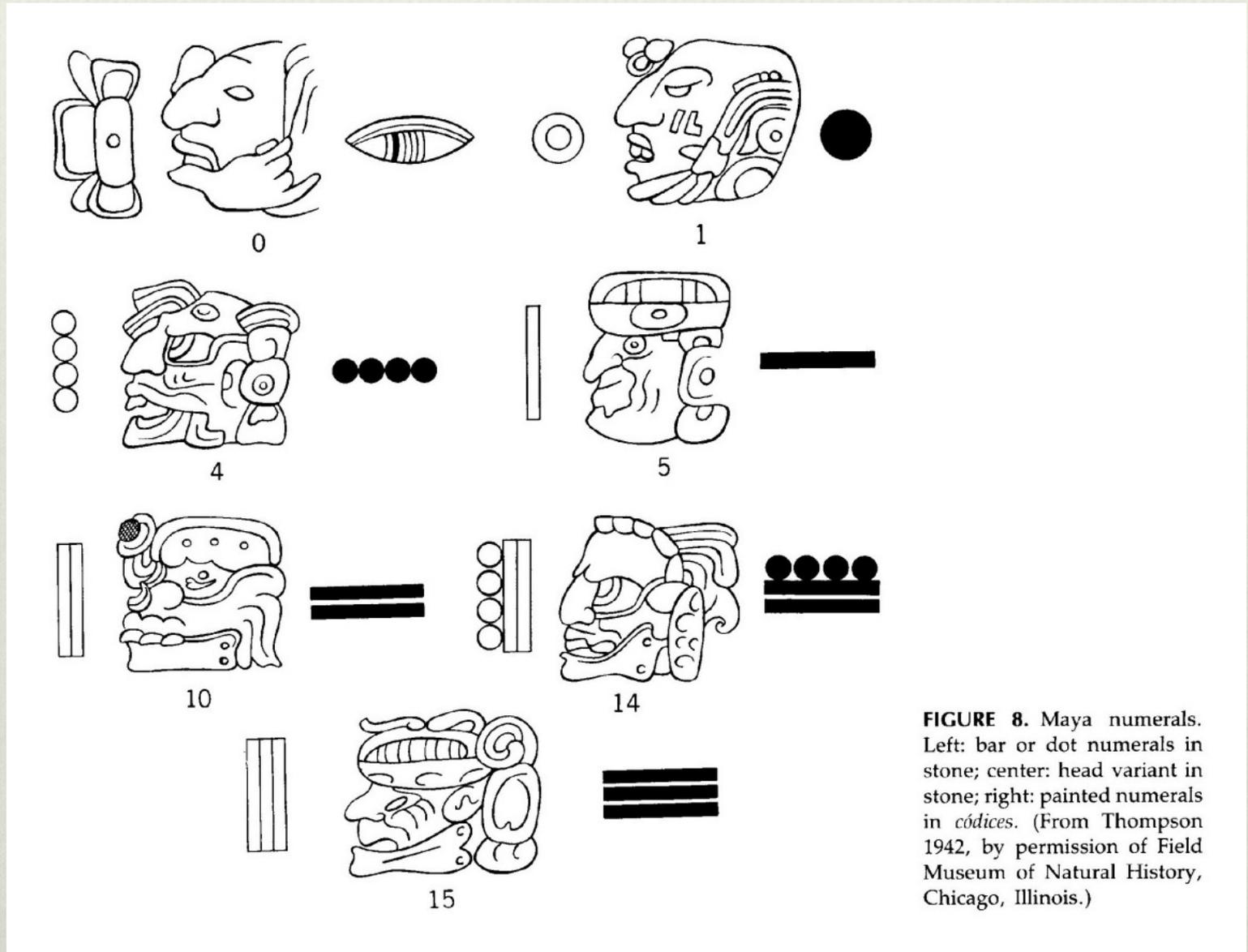


FIGURE 8. Maya numerals. Left: bar or dot numerals in stone; center: head variant in stone; right: painted numerals in *códices*. (From Thompson 1942, by permission of Field Museum of Natural History, Chicago, Illinois.)



0



1



2



3



4



5



6



7



8



9



10



11



12



13



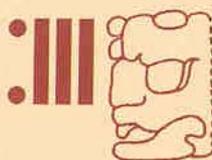
14



15



16



17



18



19



20

What were they counting?

Lots of things, probably.

But, mostly, time.



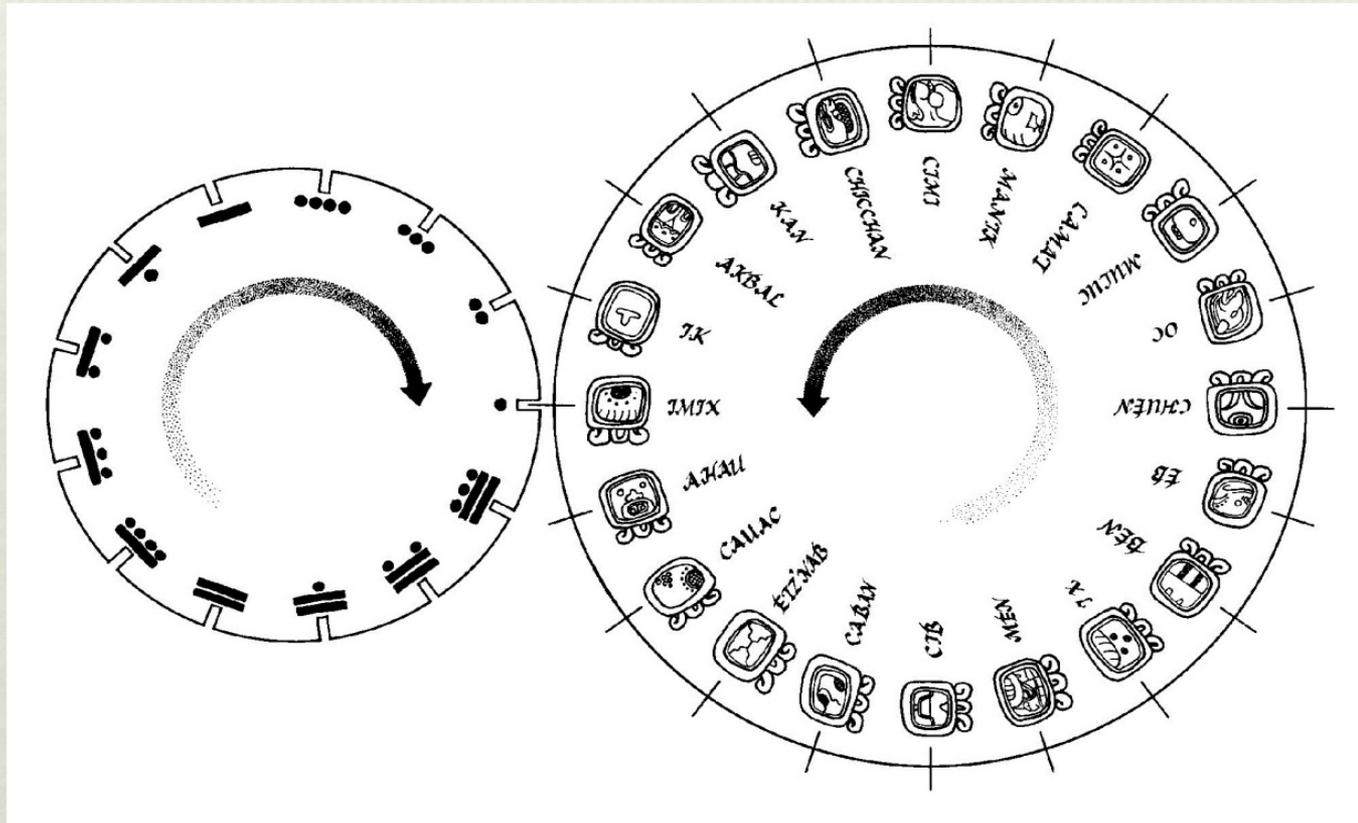
Crazy calendars?

- 12 Months of 31, 28 (or 29), 31, 30, 31, 30, 31, 31, 30, 31, 30 and 31 days
- The 9th, 10th, 11th and 12th months are named after the numbers 7, 8, 9, and 10
- 7-day cycle is independent of months

English	Meaning	Spanish	Meaning
Sunday	Sun	Domingo	“Lord’s Day”
Monday	Moon	Lunes	Moon
Tuesday	‘Tiu’ (War god)	Martes	Mars
Wednesday	Woden (Odin)	Miercoles	Mercury
Thursday	Thor	Jueves	Jove (Jupiter)
Friday	Frigga (Love)	Viernes	Venus
Saturday	Saturn	Sabado	“Sabbath”

- But certain combinations are significant (Friday the 13th)
- Astrological Signs? (John = Libra, Kerry = Aquarius- seems to work out...)

The 260-day Ritual Calendar



13 Numbers x 20 Day Names = 260 unique days

Day Names (7.7)*

Order	Aztec of Tenochtitlan	Zapotec	Lowland Maya
1st	Cipactli (crocodile)	Chilla (crocodile)	Imix (earth monster)
2nd	Ehecatl (wind)	Quiy (wind)	Ik (wind)
3rd	Calli (house)	Guela (night)	Akbal (darkness)
4th	Cuetzpallin (lizard)	Achi (lizard)	Kan (ripe maize)
5th	Coatl (serpent)	Zee (serpent)	Chicchan (serpent)
6th	Miquiztl (death)	Lana (black)	Cimi (death)
7th	Mazatl (deer)	China (deer)	Manik (hand)
8th	Tochtli (rabbit)	Lapa (rabbit)	Lamat (planet Venus)
9th	Atl (water)	Niça (water)	Muluc (water)
10th	Escuintli (dog)	Tella (dog)	Oc (dog)
11th	Ozomatli (monkey)	Loo (monkey)	Chuen (monkey)
12th	Malinalli (grass)	Piya (drought)	Eb (bad rain)
13th	Acatl (reed)	Quiy (reed)	Ben (growing maize)
14th	Ocelotl (jaguar)	Gueche (jaguar)	Ix (jaguar)
15th	Cuauhtli (eagle)	Naa (eagle)	Men (moon/eagle)
16th	Cozcaquauhtil (vulture)	Loo (crow)	Cib (wax)
17th	Ollin (earthquake)	Guiloo (earthquake)	Caban (earth)
18th	Tecpatl (knife)	Opa (cold)	Etz'nab (knife)
19th	Quiauitl (rain)	Ape (cloudy)	Cauac (storm)
20th	Xochitl (flower)	Lao (flower)	Ahau (lord)

The 365-day Solar Calendar

18 months x 20 days per month = 360 days + 5 unlucky extra days



Pop



Uo



Zip



Zotz



Tzec



Xul



Yaxkin



Mol



Chen



Yax



Zac



Ceh



Mac



Kankin



Muan



Pax



Kayab



Cumhu

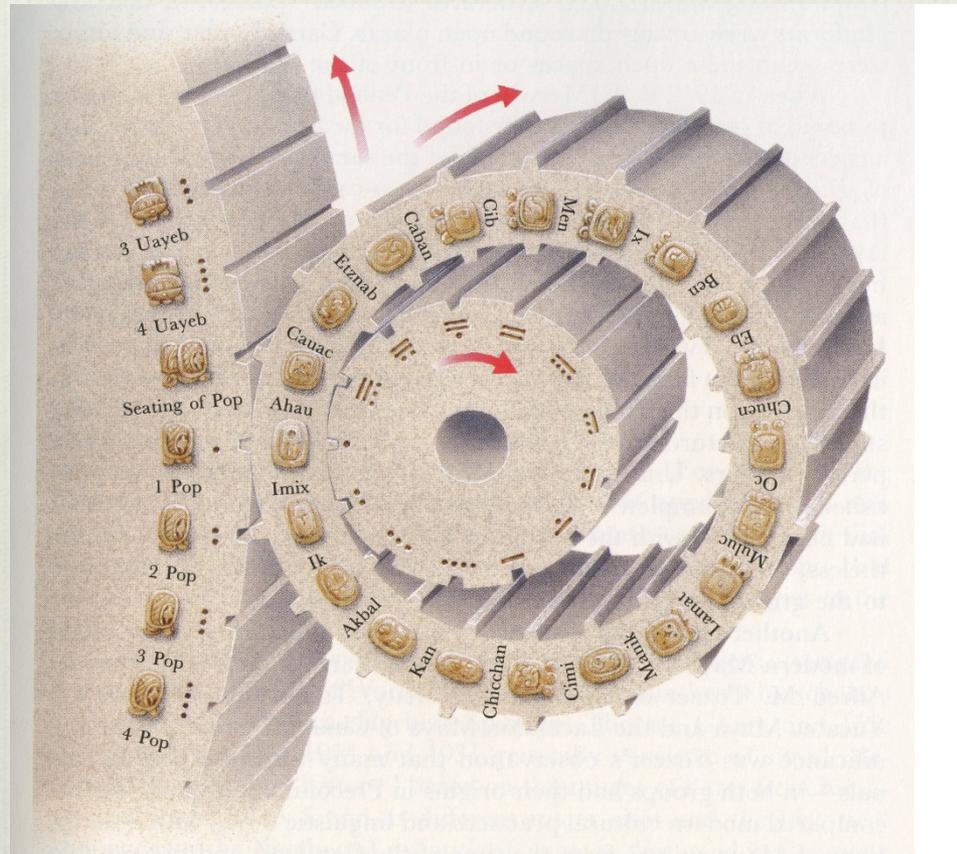


Uayab

In this calendar, days of the month are zero-indexed (first day is 0, second day is 1)

The Calendar Round

The 260-day Ritual Calendar was combined with the 365-day Solar Calendar



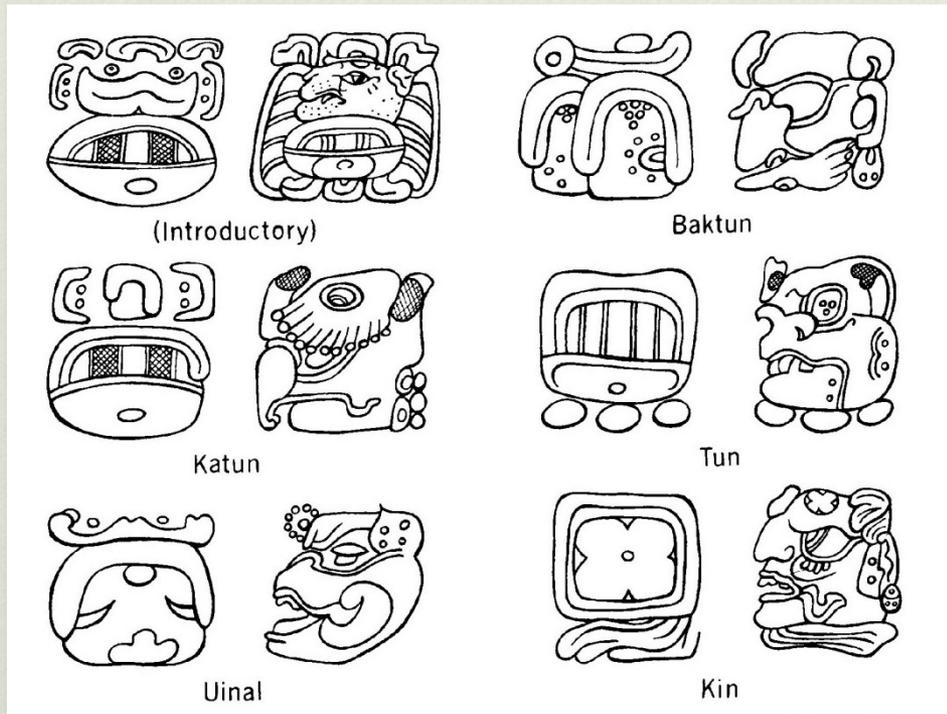
This created a **Calendar Round: 18,980 uniquely named days** that only repeat every **52 years**

Many Calendars

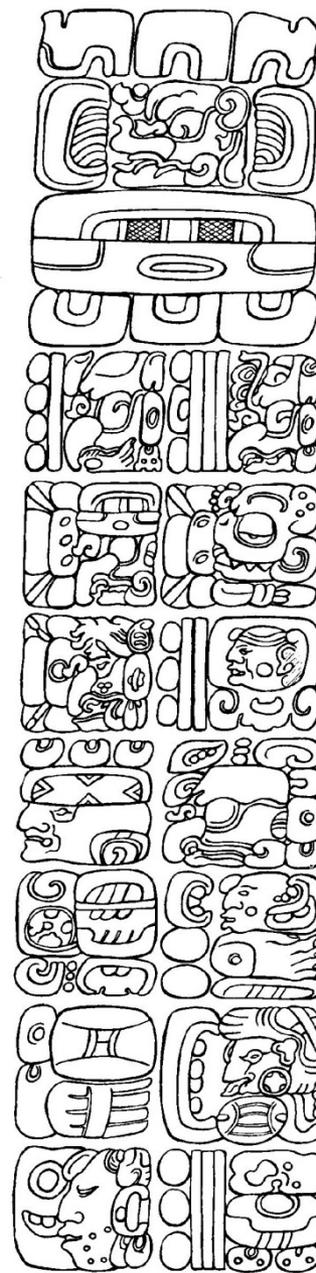
- ❖ 260 – Day Ritual Calendar
- ❖ 365 – Day Solar Calendar
- ❖ Unknown sequence of 819 days ($819 = 7 * 9 * 13$)
- ❖ **The “Long Count”**

The Long Count

Count of years, months, days since the beginning of the current creation on August 13, 3114 b.c.



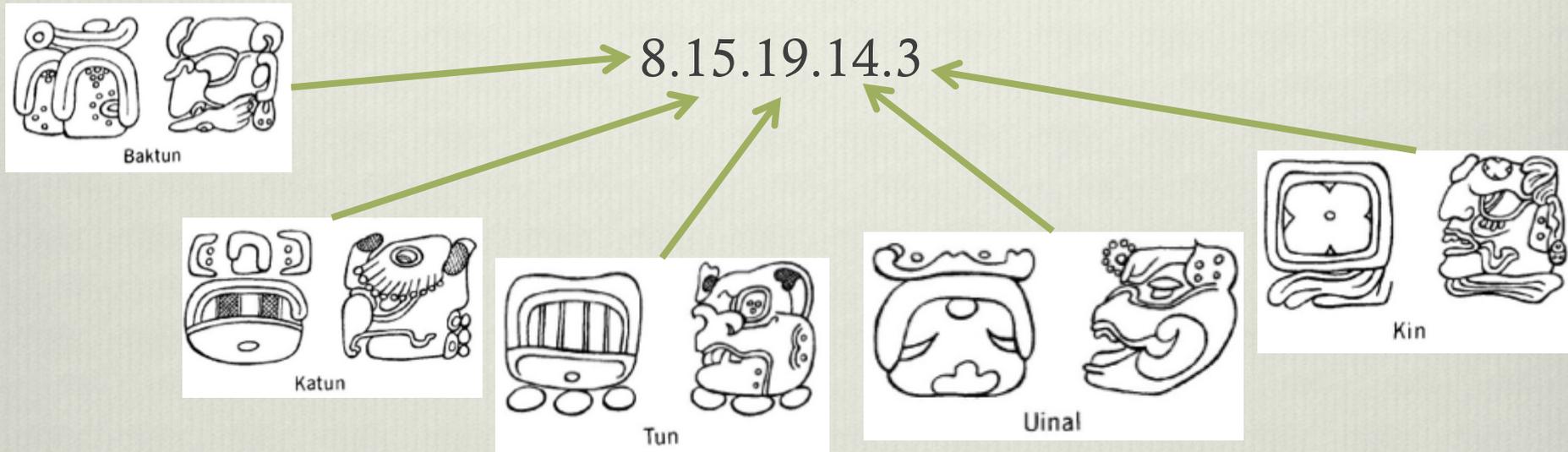
Maya Calendrical Glyphs



INITIAL SERIES
Stela E, Quiriguá

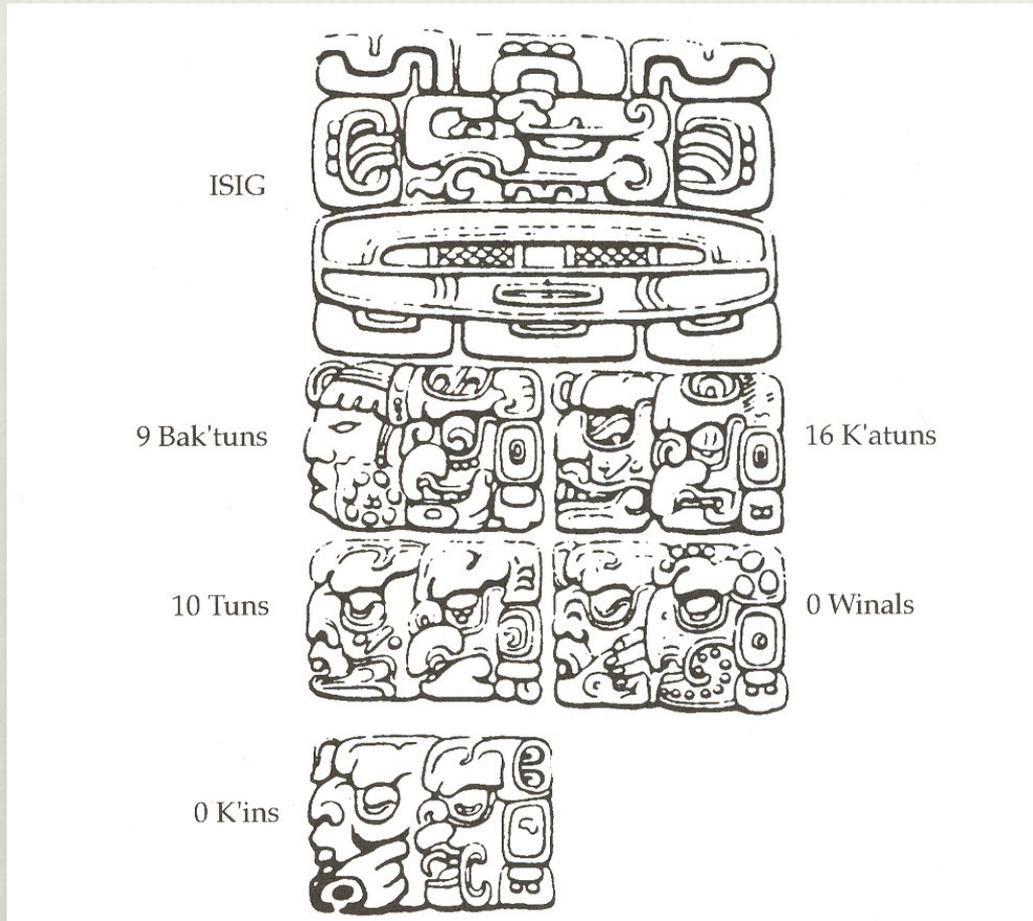
The Long Count

- ❖ The long count was always represented using 5 numbers in a modified 'Base-20' system:



- ❖ The 2nd term was not base 20, it was base 18
 - ❖ $18 \times 20 = 360$ days

9.16.10.0.0 (2 Ahau 13 Zec)



The long count major units are also zero-indexed:
This date is the beginning of the 11th Tun of the 17th
Katun of the 10th Baktun

But when? Correlation

- ❖ Originally the Maya dates were 'floating': we knew how they all related to each other, but **not** how they related to our calendar.
- ❖ 7.10.0.0.0 = ?
- ❖ Radiocarbon dating helped with this

More than just day counts

- Introductory Glyph
- Which of the 9 Lords of the Underworld/Night are presiding
- Lunar Series/Phase of the Moon
- Venus Calendar/Phase of Venus

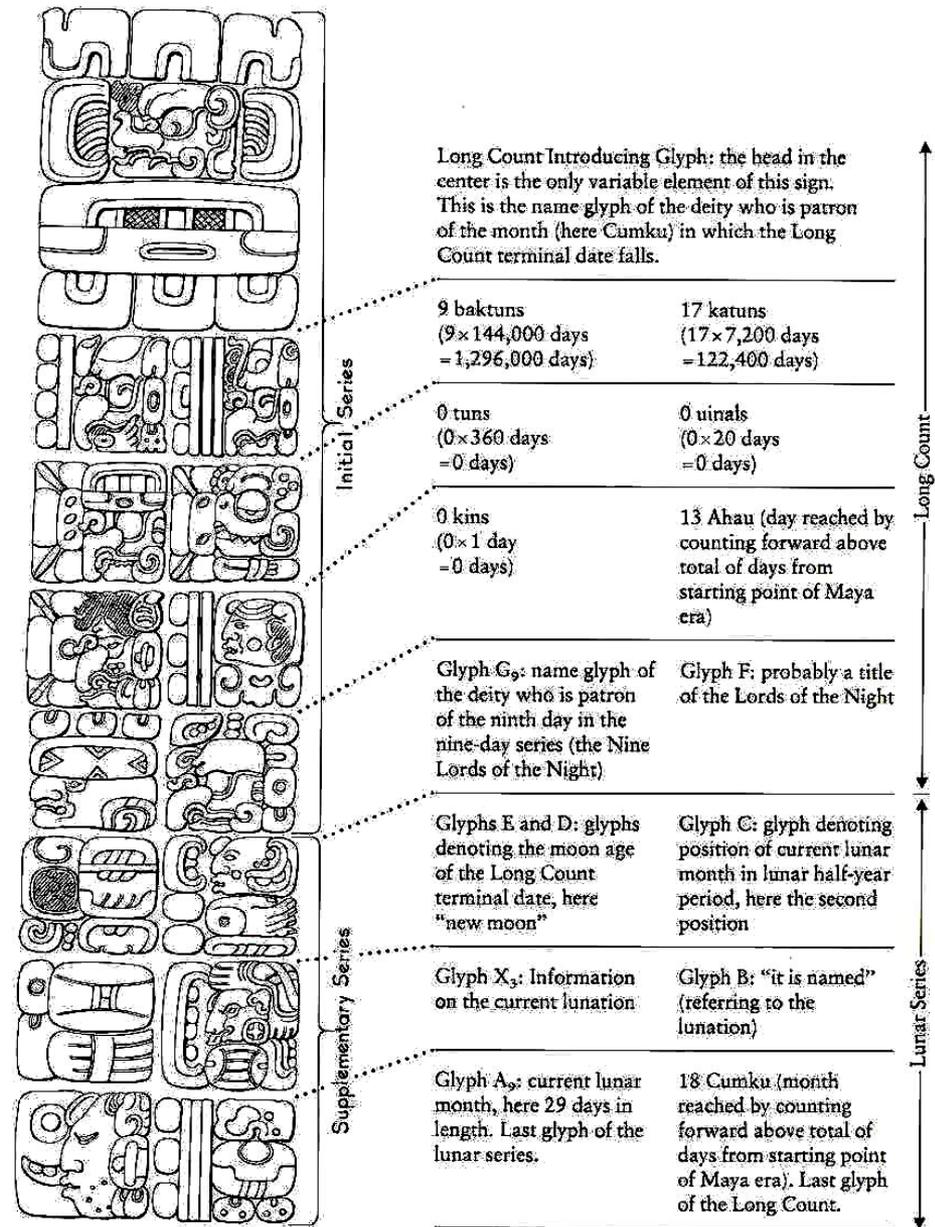
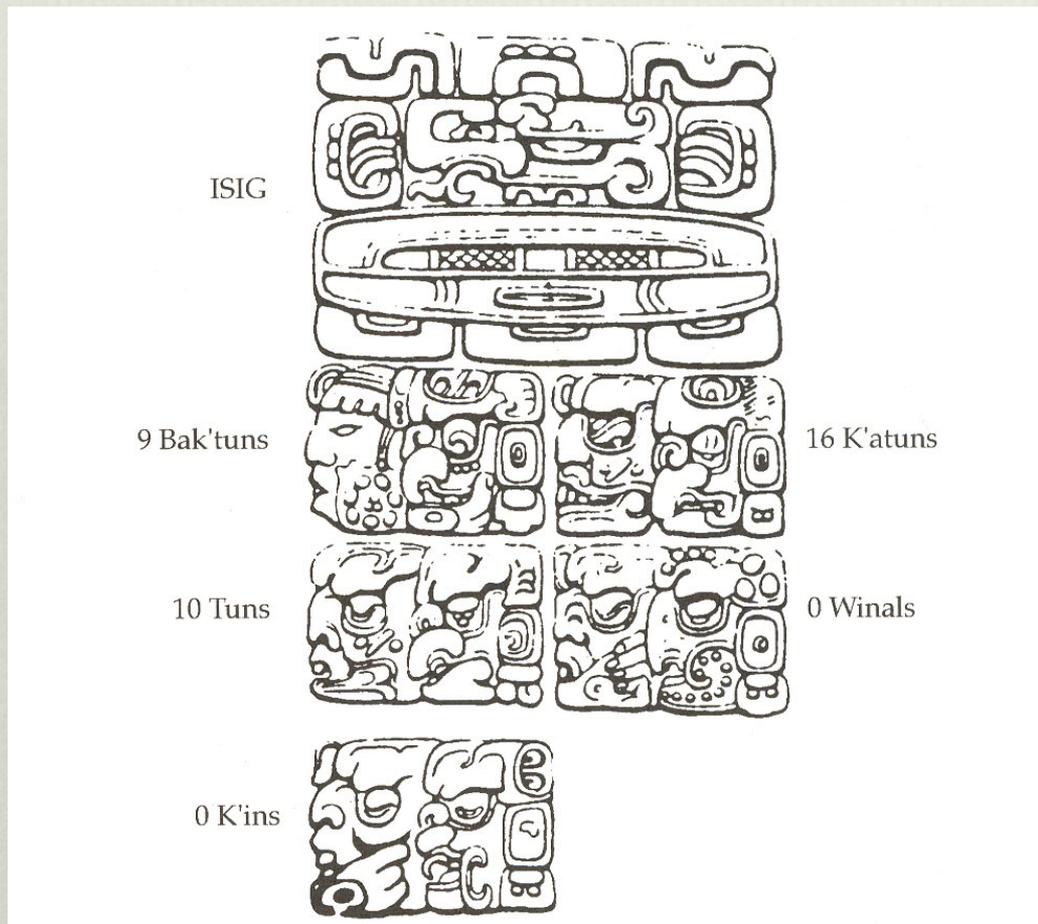


Fig. 12.8. Example of a Maya Long Count date, from the inscription on the east side of Monument 6, Quirigua, Guatemala.

9.16.10.0.0 (2 Ahau 13 Zec) = May 7th, 751 AD



The Long Count is very old: this fragment dates to 31 BC:

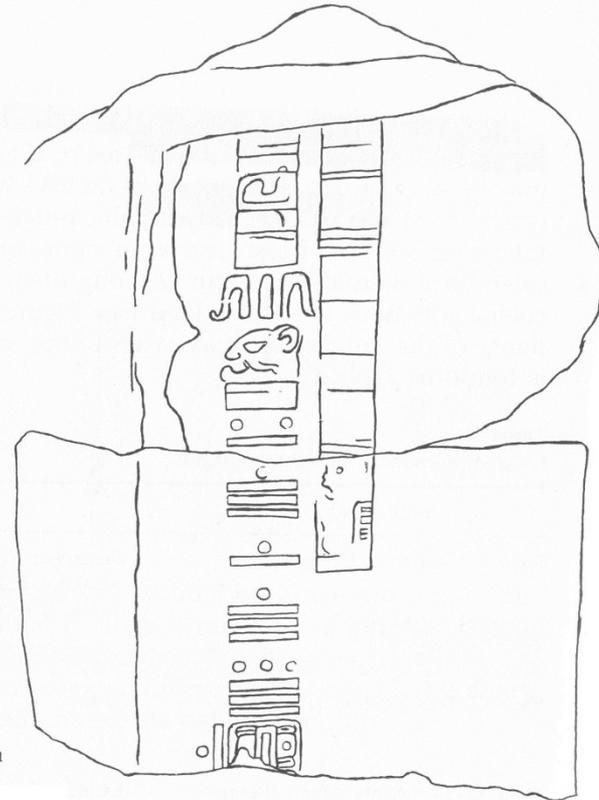


PLATE 6. Stone stelae with hieroglyphic texts.

a. Stela C (rear view) from Tres Zapotes, Veracruz, one of the earliest dated monuments in the New World, 31 B.C. Left: lower part of stela with partial inscription. (Courtesy of Museo Nacional de Antropología, Mexico.) Right: drawing of completed Initial Series date, following recovery of upper part of stela in 1972. (Courtesy of M. D. Coe.)

Tikal Stela 29

a.d. 292

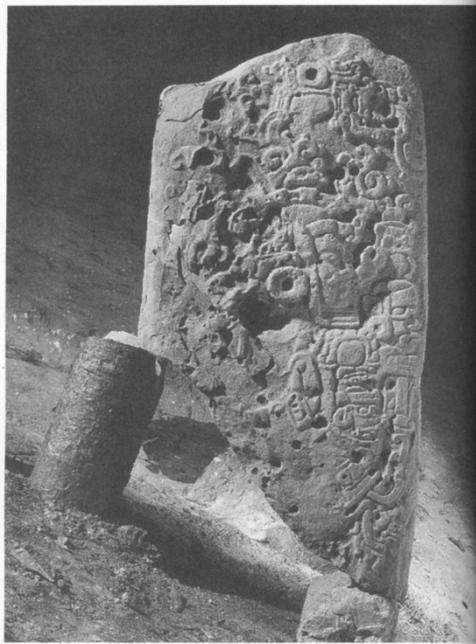
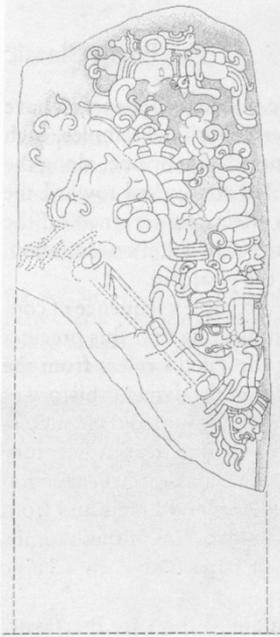
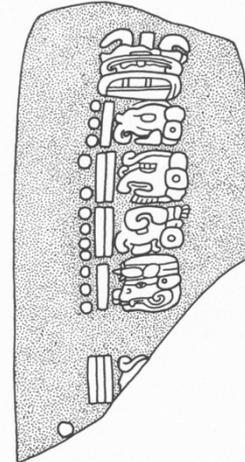
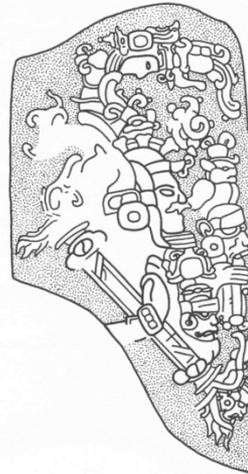
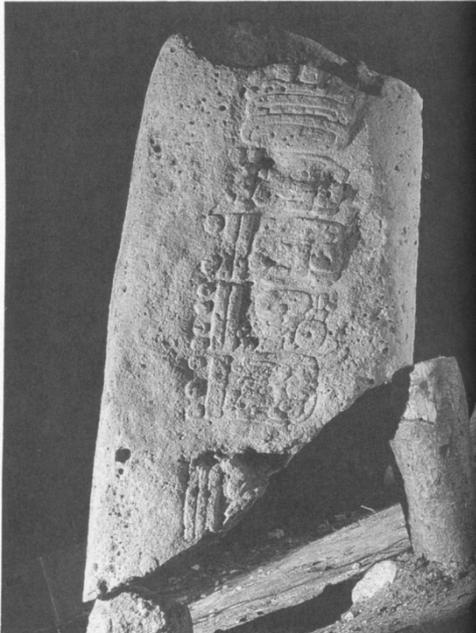
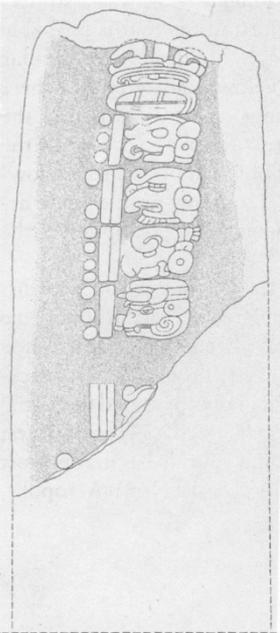


Fig. 4.8. Tikal Stela 29 with the earliest Long Count date yet known from the Maya lowlands (above) drawing and photo of the front, showing the carved portrait of the early Tikal ruler Scorpion Aha'u Jaguar carrying a two-headed ceremonial bar; (below) the back, showing the Long Count date 8.12.14.8.15 (A.D. 292).



43. Stela 29, Tikal. The Long Count position, 8.12.14.8.15, is the earliest known from the Maya lowlands, corresponding to A.D. 292. The date is arranged in a single column, like the earlier Cycle 7 inscriptions, but the numbers are now written vertically as coefficients of glyphs representing the periods of the Long Count, as in later typical Initial Series dates (see Figs. 15, 29, 30). The introducing glyph includes the patron of the month (Zip). The dot just above the break is all that remains of the ritual almanac notation. The other side of the monument bears the portrait of a richly dressed noble with a scepter tucked under his right arm. As on many Izapán and early Maya monuments, the head of a deity or deified ancestor peers down from above. The headdress element on the head just in front of the noble's right hand is identical to Tikal's emblem glyph (see Figs. 30, 45); this is the first known use of this symbol. The monument, found broken in an ancient rubbish heap, must originally have been erected before an Early Classic public building, as were later Tikal stelae. (Adapted from M. Coe 1976:Fig. 15; W. Coe 1967:95; Marcus 1976b:Fig. 10.)

Earliest Long Count Date from the Maya Lowlands

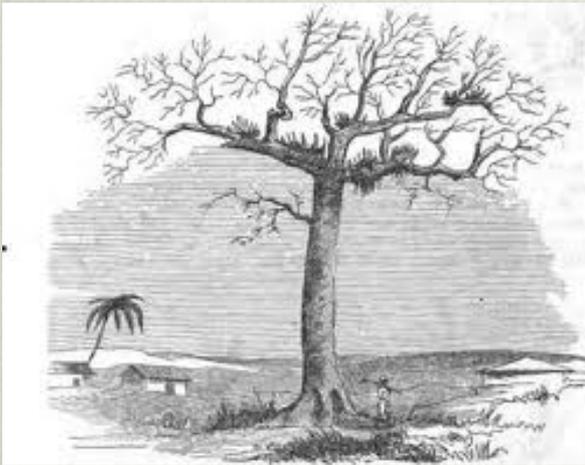
- ❖ The Maya would erect monuments on significant Long Count dates- like 9.16.0.0.0
- ❖ From 7.12.0.0.0 to 7.13.0.0.0 \approx 20 years
- ❖ From 7.0.0.0.0 to 7.5.0.0.0 \approx 100 years

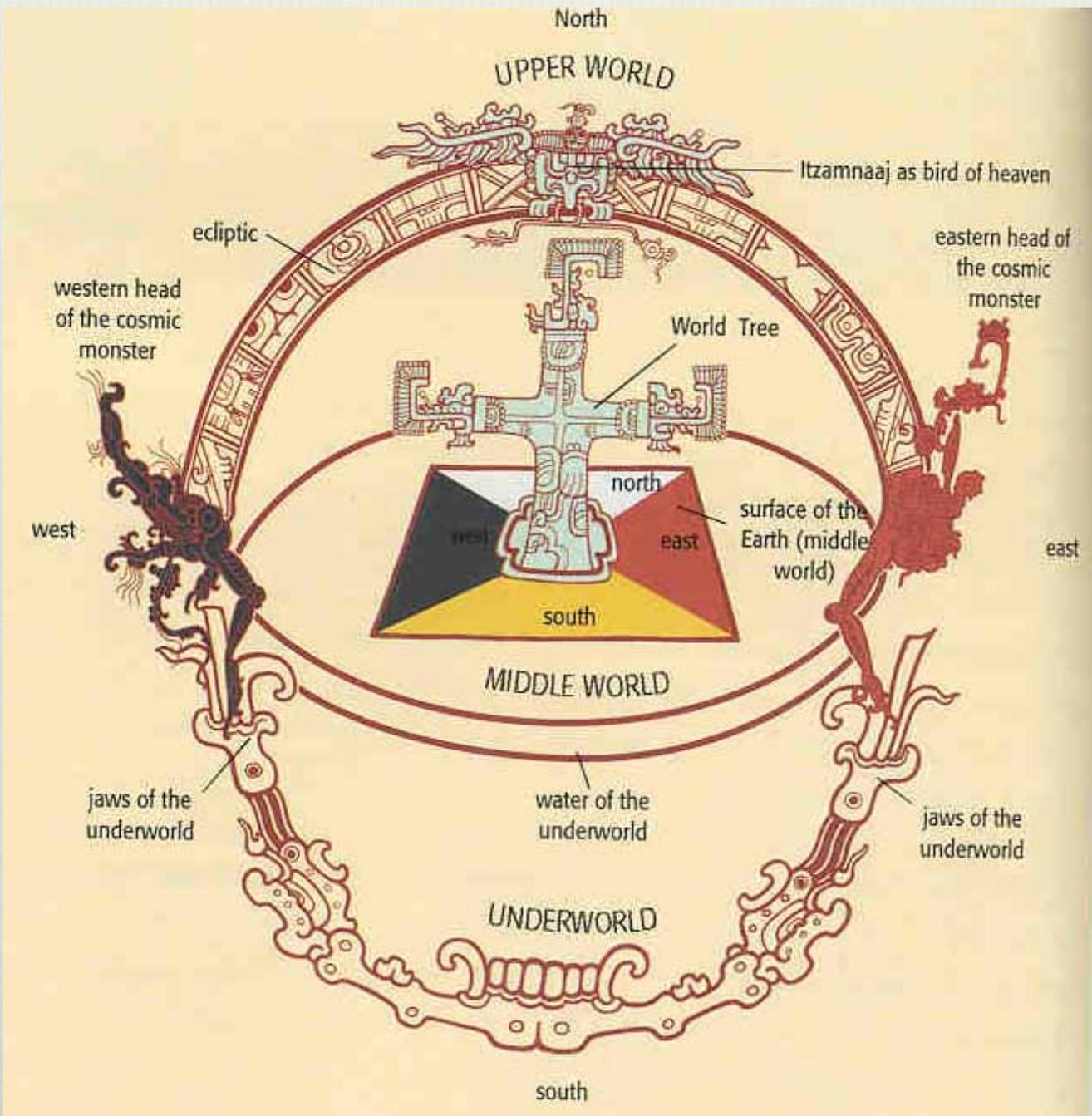
- ❖ When the Maya wanted to talk about a day far in the future- maybe even a day “At the end of time,” they picked a very specific date.
- ❖ The day they picked is **12.19.19.17.19**
- ❖ If you add 1 to **12.19.19.17.19**, you get:
 - ❖ **13.0.0.0.0 ? No- Because there are only 13 Baktuns (numbered 0 – 12)**
 - ❖ **1.0.0.0.0.0 ?**
 - ❖ **5.0.0.0.0.0 ? Because we’re already in the 5th cycle?**
 - ❖ **0.0.0.0.0 ? Maybe we just start over?**

12.19.19.17.19 = 20 December, 2012 AD

The Maya Cosmos

- The world is on the back of a caiman (alligator) or turtle that swims in the primordial sea.
- At the center of the world is the World Tree (ceiba tree) that holds up the sky.
- The heavens have 13 layers, often depicted as a serpent.
- The underworld/Xibalba has 9 layers.
- Earth is in the middle.





Maya Writing



de las partes otro, y assi viene a hacer un infinitum como se podria ver en el siguiente exemplo. Lo, quiere decir loco y cacac con el, para escribirle con sus caracteres aniendo los nosotros se ha entendido que son dos letras lo escribió ellos con tres, poniendo a la aspiracion de la h, la vocale, que antes de si tales, y en esto no hareran ningun osens el si quisieren ellos de su curiosidad. Exemplo.

despues al cabo le pegan la parte junta. ha que quiere decir agna porq la baebé tiene a. h. ante de si lo ponen ellos al principio con a. y al cabo desta manera Tambie lo escriben a partes, de la una y otra ma merayo no pusiera aqui ni tratara dello sino pa dar cuenta entera de las cosas desta gente. Mamkati quiere decir no quiero, ellos lo escriben a partes desta manera

Signese en a, b, c

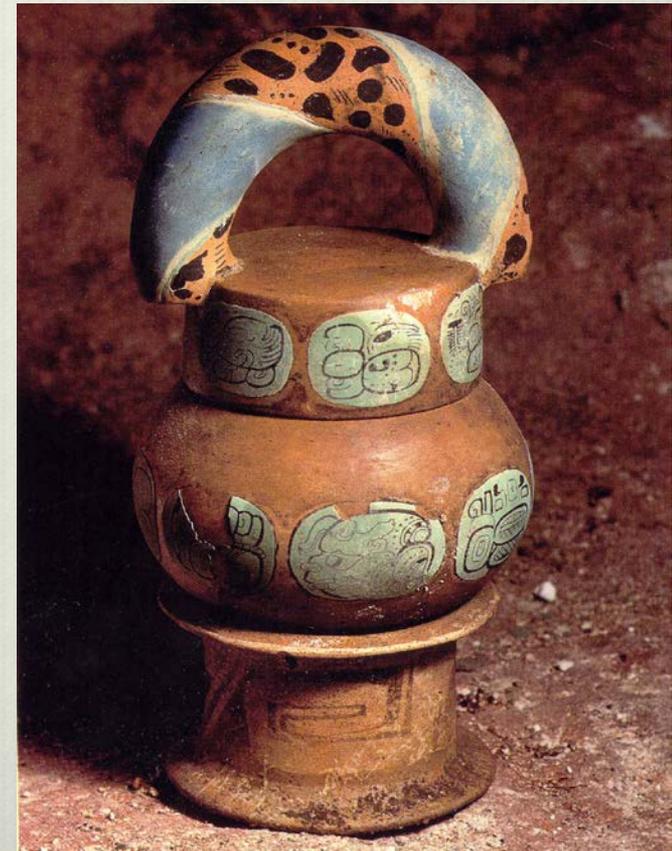
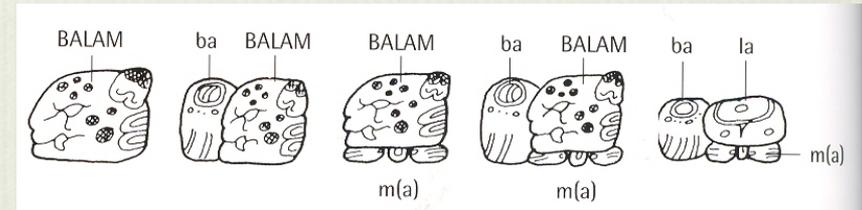
De las letras que aqui faltan carece esta lengua y tiene otras añadidas de la nuestra para otras cosas q las ha menester, y ya no usan para nada destos sus caracteres especialmente la gente moça q an aprendido los usos

- Fray Diego de Landa (Spanish bishop) burned many Maya books, but he sat down with a Maya scribe and had him write down what de Landa thought was the Maya alphabet (actually syllabic)

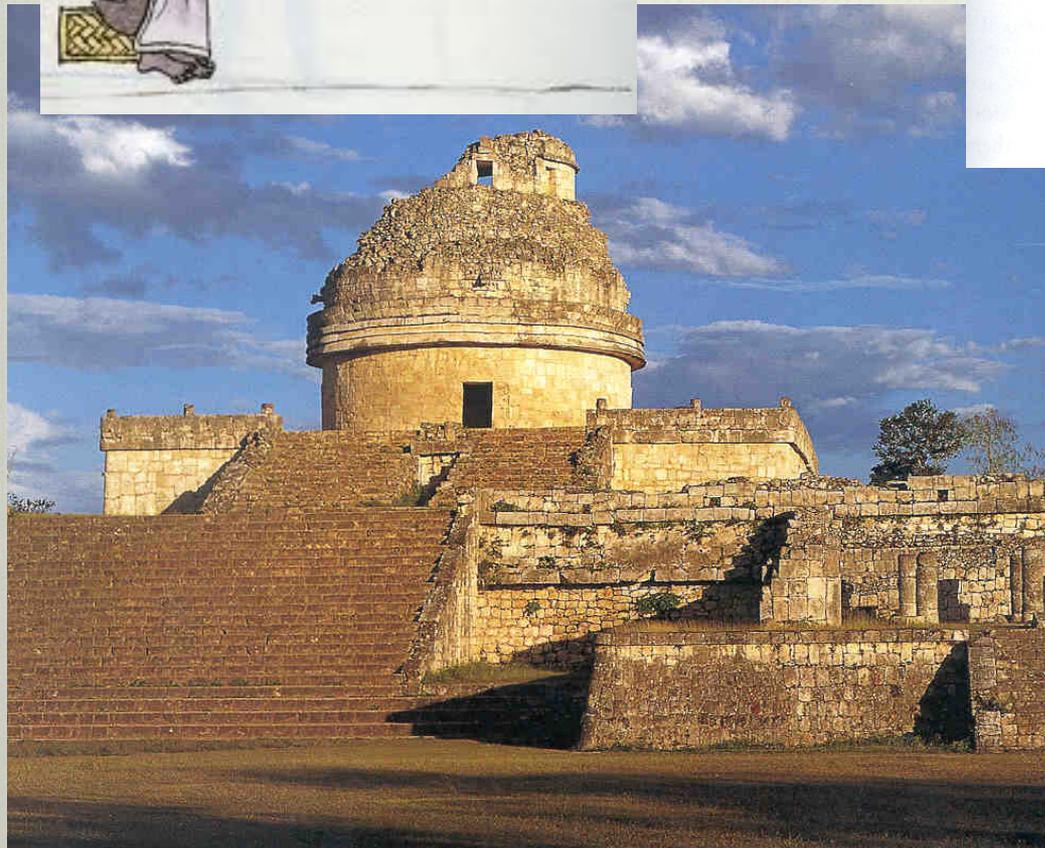
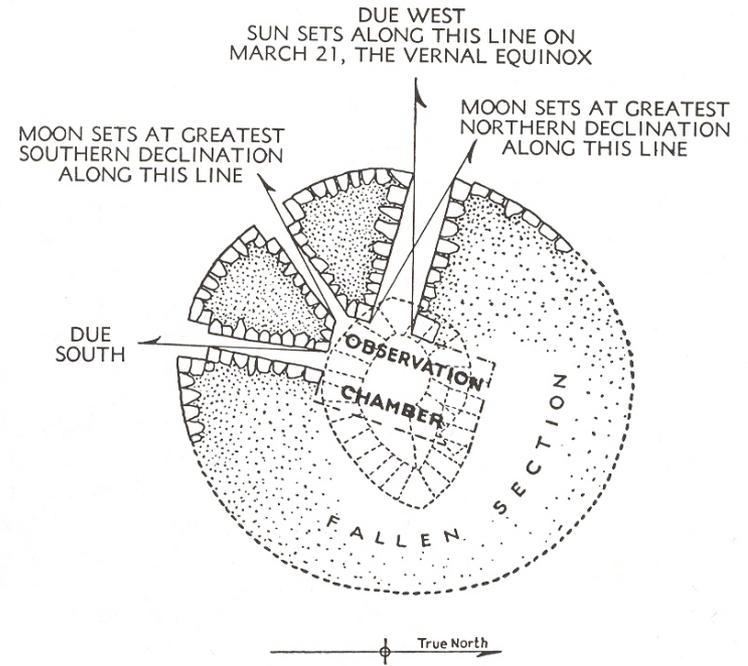
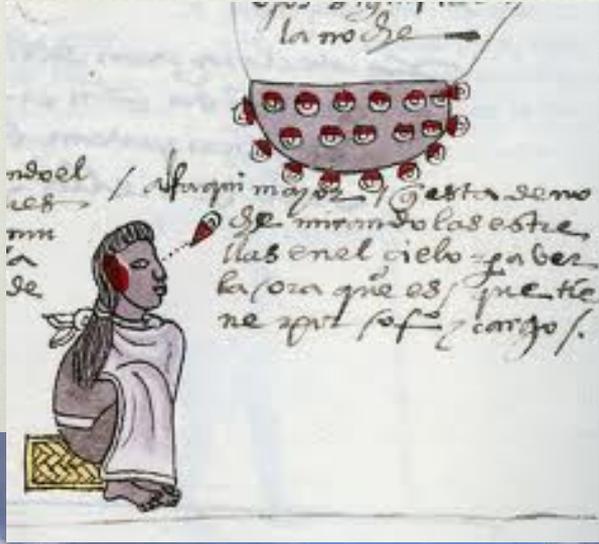
Maya Writing

Writing

- About 800 known glyphs
- About 80-85% have been deciphered
- Glyphs are read left to right
- Mostly phonetic rather than ideographic/pictographic
- The writing is logosyllabic—each glyph stands for a syllable
- But also get glyphs that stand for whole words
- This means there are many “spellings” of a word using a mixture of full signs and/or syllables
- Syllables added to make clear which meaning a glyph had, if it had more than one meaning
- There is also a lot of artistic variation, making them difficult to read



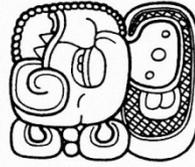
Maya Astronomy



Tatiana Proskouriakoff



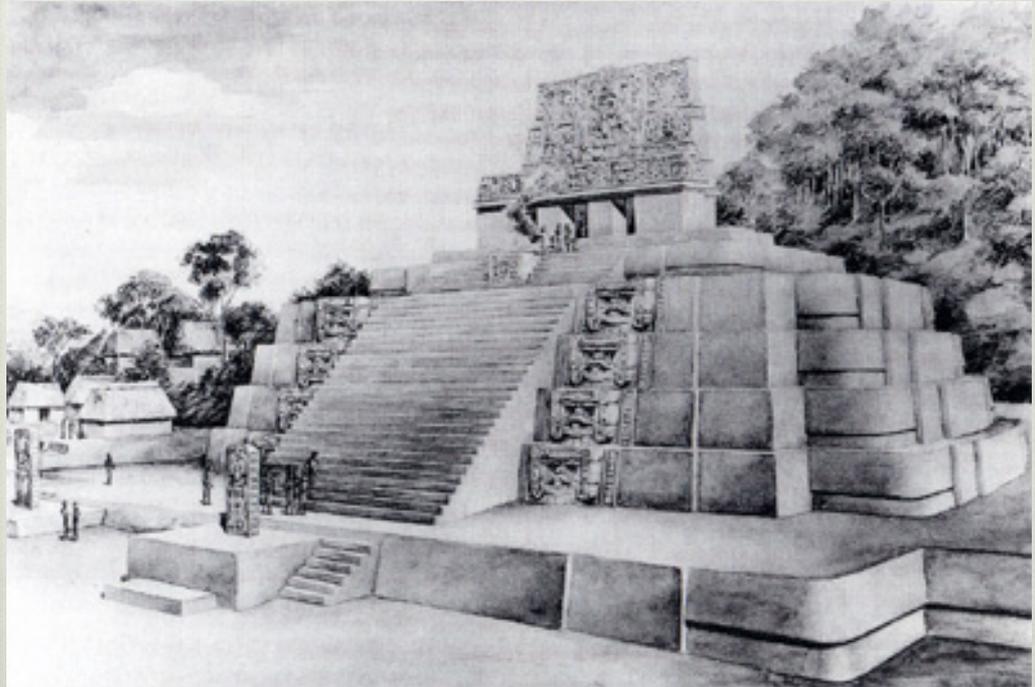
37 Dynastic event glyphs
identified by Proskouriakoff.
a. Birth ("upended frog").
b. Accession ("toothache").



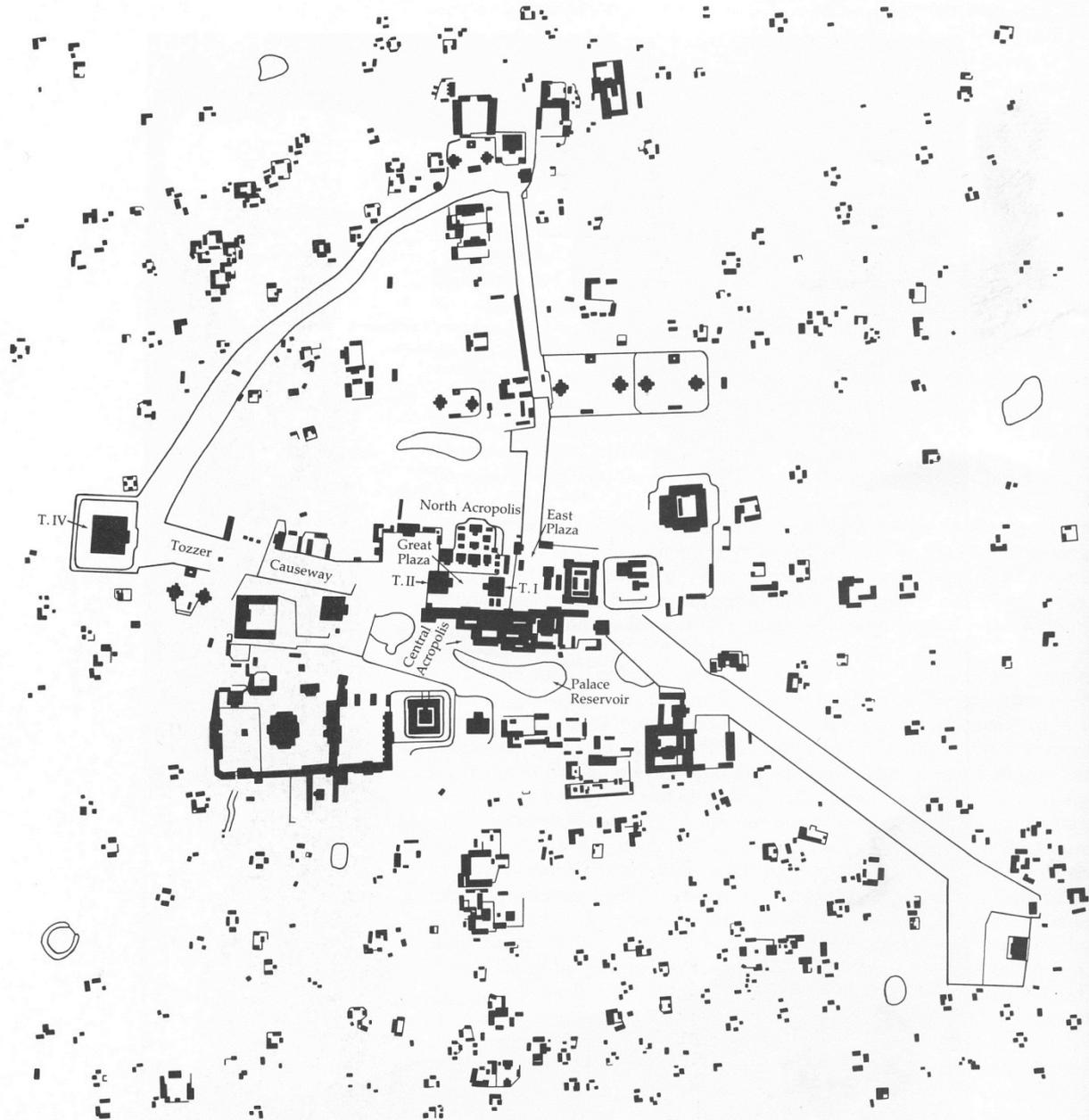
a.



b.



Tikal Settlement Survey



51. Plan of central Tikal. The area shown is slightly more than 2 km. on a side. (Adapted from Carr and Hazard 1961.)

Maya Kingship and Ideology

Monuments, such as stelae, documented:

- Genealogies/ancestry (some fictional)
- Birth
- Marriage
- Accession to the throne
- Designation of an heir
- Rituals (calendric, coming of age, autosacrifice)
- Conquest
- Taking of captives
- Sacrifice of captives
- Meetings with foreign dignitaries
- Building dedications
- Death
- Apotheosis (turning into a god)

	P	Q	R	S	
. . . on July 23, 690, GII and GIII were in conjunction. [L1–M4]					1
On the next day, the Mah-Kina-Bahlum-Kuk Building was dedicated in the house of Lord Chan-Bahlum, Divine Palenque Lord. [L6–L9]					2
On the third day Lord Chan-Bahlum, Divine Palenque Lord, he let blood with an obsidian blade; he took the bundle after it had come to pass at the Waterlily Place. Wac-Chan-Chac Ox-Waxac-Chac acted there. [L10–L17]					3
					4
					5
					6
					7
					8
49 years, 6 months, 4 days after he had been born and then he crowned himself, Lord Chan-Bahlum, Divine Palenque Lord on January 10, 692. [M17–P5]					9
					10
6 years, 11 months, 6 days after he had been seated as <i>ahau</i> and then GI, GII, GIII and their companion gods came into conjunction. Lord Chan-Bahlum enacted a ritual.					11
					12
					13
In 1 year, 12 months, 4 days it will happen, the end of the 13th katun on March 17, 692. And then it came to pass July 23, 690 and then they were in conjunction the gods, who are the chereished-ones of, Lord Chan-Bahlum, Divine Palenque Lord.					14
					15
					16
					17

Gods give corn/maize



People eat corn to live



Gods need blood as sustenance



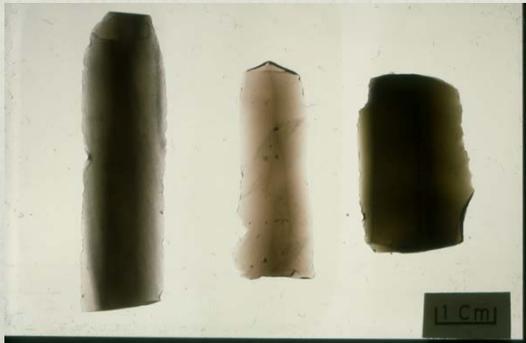
Humans give blood via sacrifice to feed the gods



Gods thank humans through rain and good crops, especially corn



Lintel 24

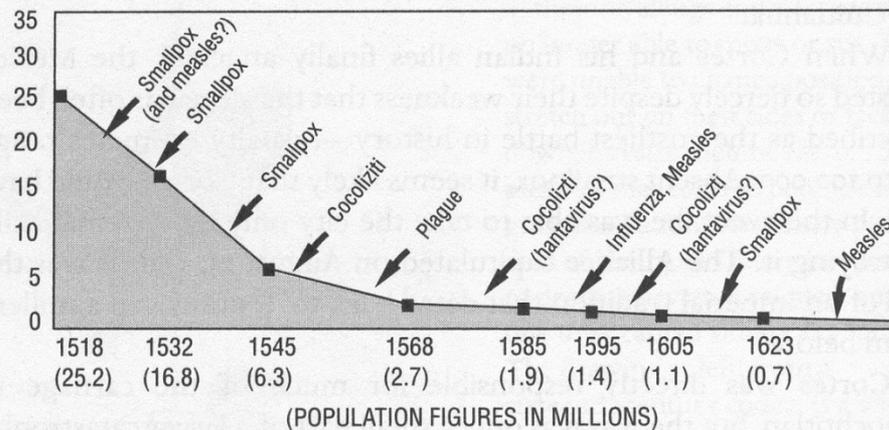


Postclassic
a.d. 900–1521

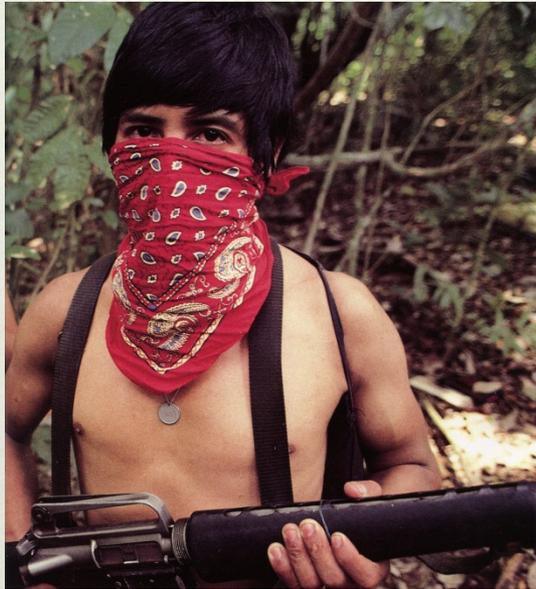
Chichen Itzá



POPULATION LOSSES IN CENTRAL MEXICO



Berkeley researchers Cook and Borah spent decades reconstructing the population of the former Triple Alliance realm in the wake of the Spanish conquest. By combining colonial-era data from many sources, the two men estimated that the number of people in the region fell from 25.2 million in 1518, just before Cortés arrived, to about 700,000 in 1623—a 97 percent drop in little more than a century. (Each marked date is one for which they presented a population estimate.) Using parish records, Mexican demographer Elsa Malvido calculated the sequence of epidemics in the region, portions of which are shown here. Dates are approximate, because epidemics would last several years. The identification of some diseases is uncertain as well; for example, sixteenth-century Spaniards lumped together what today are seen as distinct maladies under the rubric “plague.” In addition, native populations were repeatedly struck by “cocoliztli,” a disease the Spanish did not know but that scientists have suggested might be a rat-borne hantavirus—spread, in part, by the postconquest collapse of Indian sanitation measures. Both reconstructions are tentative, but the combined picture of catastrophic depopulation has convinced most researchers in the field.



It's not the end of the world!

- ❖ Only two references exist to 12.19.19.17.19- and both are kings trying to say that they are so powerful they will be remembered for a long time
- ❖ Other Maya 'prophesies' and myths talk about destruction, but aren't tied to the calendar
- ❖ There are also references in the Maya to dates before 0.0.0.0.0 and dates after 12.19.19.17.19- using different 'extra' digits
- ❖ Neither the calendar nor the myths are always consistent! (So, if you think the world will end tomorrow, you're picking and choosing!)
- ❖ And it's always possible the correlation is wrong (!)

The Archaeologists' View

- ❖ Treat the Maya with respect
 - ❖ They were very good at many things- including things we're not good at
 - ❖ They did not need aliens to help build their civilization!
 - ❖ They knew things that we don't know; but they did not possess 'esoteric knowledge'

CHARIOTS OF THE GODS?

This world-famous best seller examines scientific evidence from five continents that proves that Earth has been visited repeatedly by advanced aliens from other worlds. They left their mark in ancient ruins, lost cities and spaceports, and most amazingly of all, on your own face in the mirror: for von Däniken's most startling conclusion is that we ourselves are descendants of these alien astronauts!

THE PROOF IS IN THIS VOLUME!

Sophisticated batteries found in Bronze Age cities!

The alien astronaut preserved in a pyramid!

The Archaeologists' View

- ❖ Ask the right questions
 - ❖ We have a lot to learn about (from) the Maya:
 - ❖ Economics
 - ❖ Politics
 - ❖ Statecraft
 - ❖ Domestic Life
 - ❖ Agriculture/Water Management
 - ❖ Gender Relationships (Yes, there were female rulers!)
 - ❖ Conflict and Cooperation
 - ❖ Ecological Resources/Depletion/Resilience or 'collapse'

Ka'Kabish



What were the Maya best at? **Power.**

They managed power through the control of time, through the idea of esoteric knowledge, and through the representation of these in art and architecture.

How good were they at it?

The stories and art they created 1,400 years ago to inspire fear and wonder and mystery **still work.**

So the real questions aren't about them- they're about us.

Thanks...
Good Luck...
Have Fun...
And Happy 0.0.0.0!



The 260-day Ritual Calendar

- ❖ Tonalpohualli in Aztec; Tzolkin in Maya
- ❖ This is a ritual calendar, there was also a 365-day solar calendar
- ❖ Combines 13 numbers X 20 day names
- ❖ They combine to form 260 unique day names
- ❖ People are named after the day they are born on
- ❖ The day-name also determines the person's personality traits and luck
- ❖ Not surprisingly, real birthdays often lied about
- ❖ The 260 day length most likely is tied to the length of a human pregnancy
- ❖ Although it might also be tied to the length of time between sowing and harvesting maize in some regions
- ❖ Tying pregnancy to growing of corn would make perfect sense to Mesoamerican people

Maya Day Signs

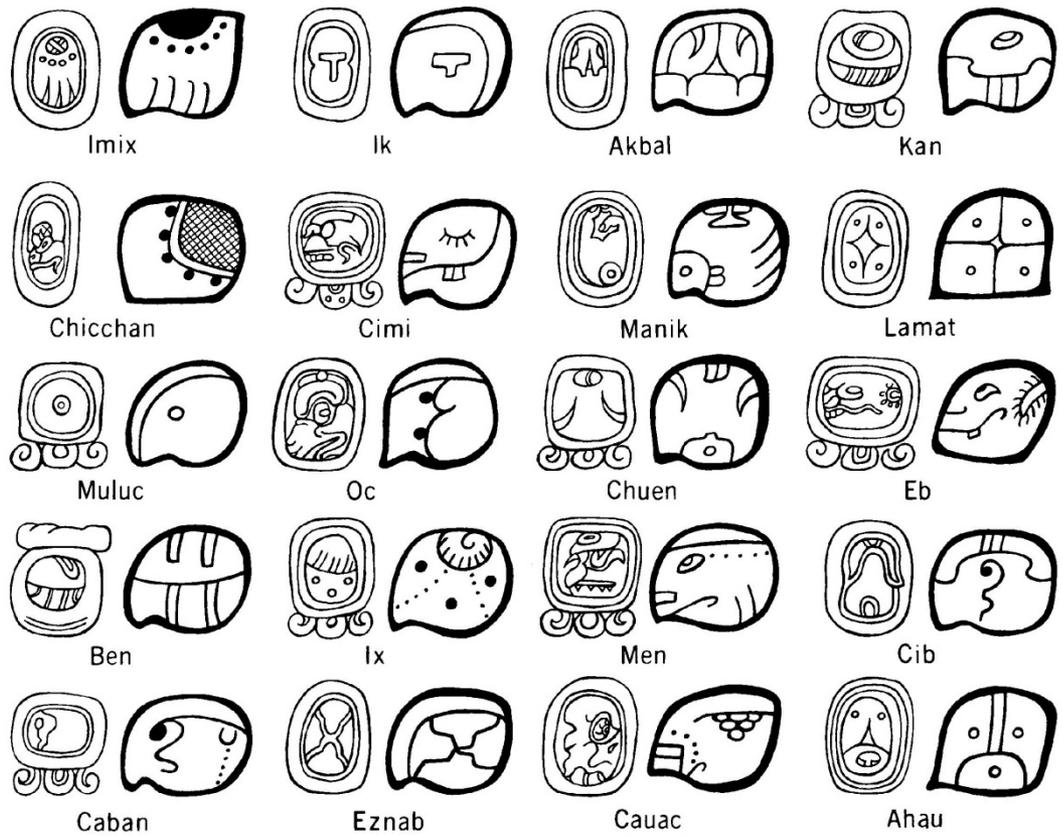


FIGURE 10. (Top) The 20 Maya day signs represented in stone (left) and painted in *códices* (right). (From Codex Dresden 1930; Thompson 1942, by permission of Field Museum of Natural History, Chicago, Illinois.)

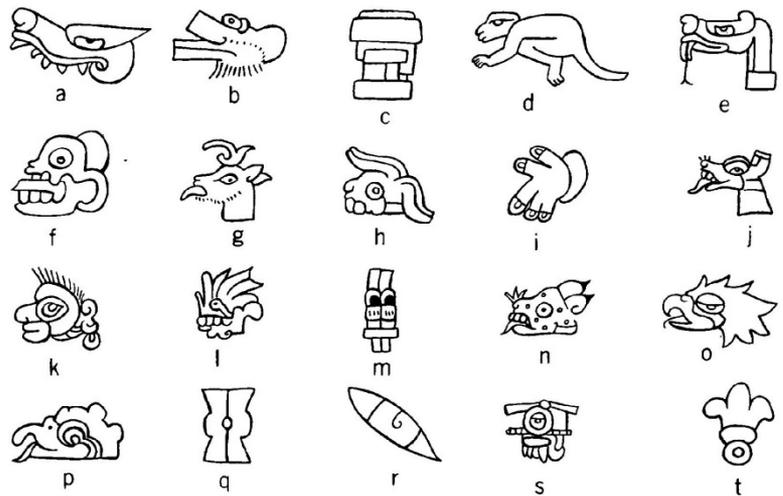


FIGURE 11. (Bottom) The 20 Aztec day signs: (a) Cipactli—crocodile; (b) Ehécatl—wind; (c) Calli—house; (d) Cuetzpallin—lizard; (e) Coatl—serpent; (f) Miquiztli—death; (g) Mazatl—deer; (h) Tochtli—rabbit; (i) Atl—water; (j) Itzcuintli—dog; (k) Ozomatli—monkey; (l) Malinalli—herb; (m) Acatl—reed; (n) Ocelotl—jaguar; (o) Quauhtli—eagle; (p) Cozcaquauhтли—vulture; (q) Ollin—movement or earthquake; (r) Técpatl—flint knife; (s) Quiauitl—rain; (t) Xóchitl—flower. (From Codex Laud 1966.)

Aztec Day Signs

Maya Kingship and Ideology

Monuments, such as stelae, documented:

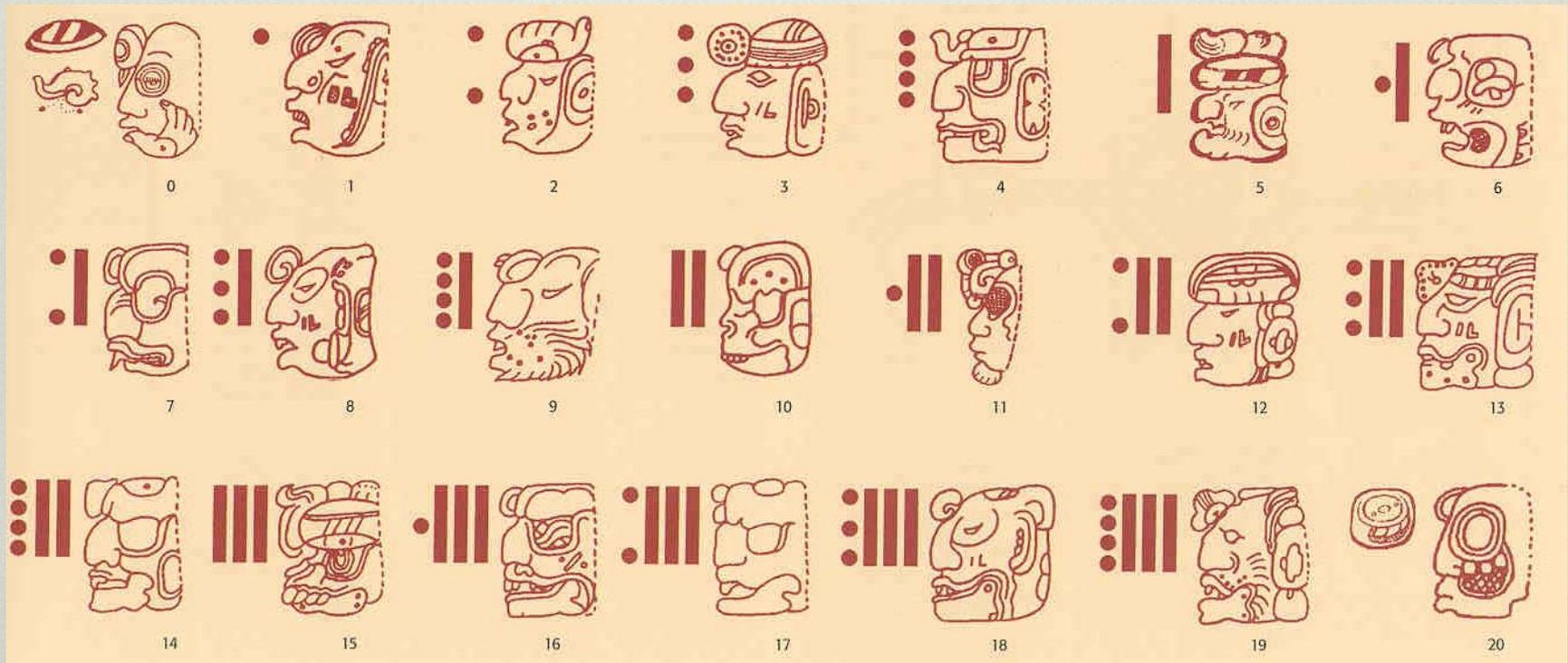
- Genealogies/ancestry (some fictional)
- Birth
- Marriage
- Accession to the throne
- Designation of an heir
- Rituals (calendric, coming of age, autosacrifice)
- Conquest
- Taking of captives
- Sacrifice of captives
- Meetings with foreign dignitaries
- Building dedications
- Death
- Apotheosis (turning into a god)

	P	Q	R	S	
. . . on July 23, 690, GII and GIII were in conjunction. [L1-M4]					1
On the next day, the Mah-Kina-Bahlum-Kuk Building was dedicated in the house of Lord Chan-Bahlum, Divine Palenque Lord. [L6-L9]					2
On the third day Lord Chan-Bahlum, Divine Palenque Lord, he let blood with an obsidian blade; he took the bundle after it had come to pass at the Waterlily Place. Wac-Chan-Chac Ox-Waxac-Chac acted there. [L10-L17]					3
					4
					5
					6
					7
					8
49 years, 6 months, 4 days after he had been born and then he crowned himself, Lord Chan-Bahlum, Divine Palenque Lord on January 10, 692. [M17-P5]					9
					10
6 years, 11 months, 6 days after he had been seated as <i>ahau</i> and then GI, GII, GIII and their companion gods came into conjunction. Lord Chan-Bahlum enacted a ritual.					11
					12
					13
In 1 year, 12 months, 4 days it will happen, the end of the 13th katun on March 17, 692. And then it came to pass July 23, 690 and then they were in conjunction the gods, who are the chereished-ones of, Lord Chan-Bahlum, Divine Palenque Lord.					14
					15
					16
					17

Maya Calendrics

Numbers

- Use bar (5) and dot (1) system
- Base 20 (rather than base 10)
- Head variants can be used for numbers



Maya Calendrics

The Long Count

- K'in = 1 day
- Winal = 20 days (1 Maya month)
- Tun = 360 days (about 1 solar year or 18 months of 20 days)
- Uayab = 5 unlucky days at the end of the solar calendar
- K'atun = 7,200 days (about 20 years or 360 x 20)
- Bak'tun = 144,000 days (about 400 years or 7,200 x 20)

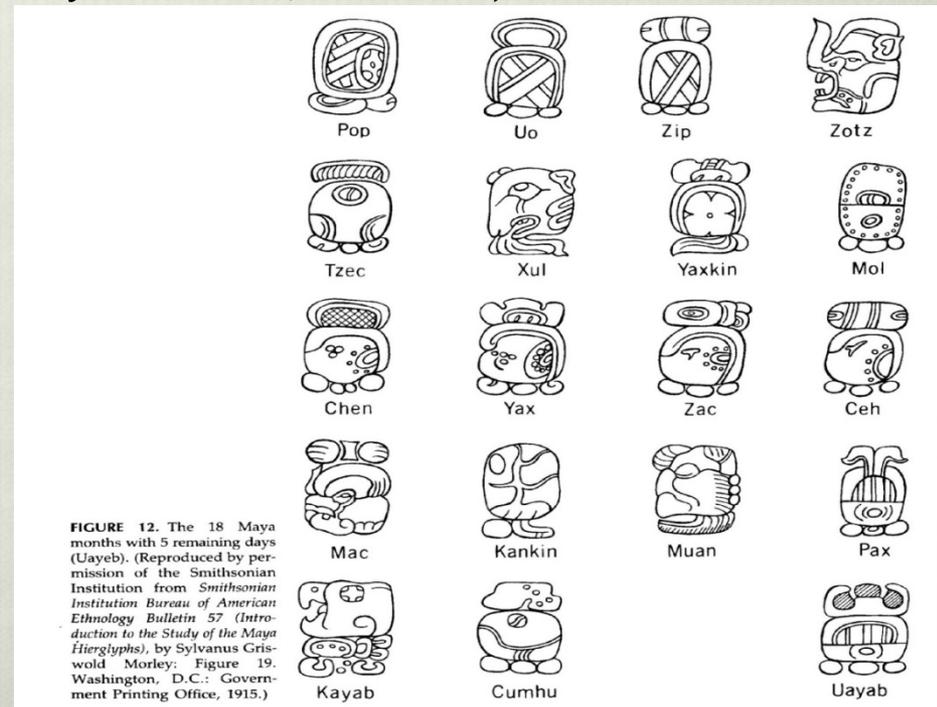
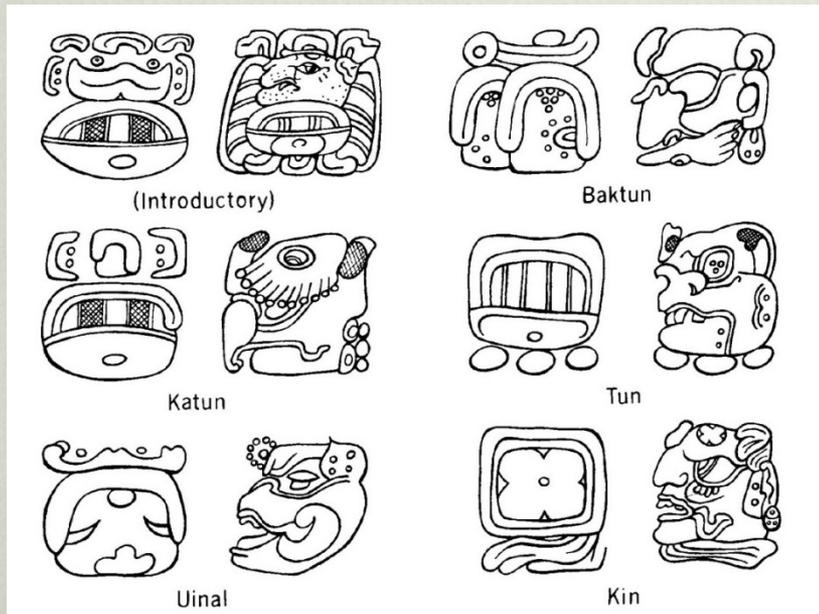


FIGURE 12. The 18 Maya months with 5 remaining days (Uayeb). (Reproduced by permission of the Smithsonian Institution Bureau of American Ethnology Bulletin 57 (Introduction to the Study of the Maya Hieroglyphs), by Sylvanus Griswold Morley; Figure 19, Washington, D.C.: Government Printing Office, 1915.)