

The Age of Things: Sticks, Stones and the Universe

Lecture 1: Introduction,
the time scales of the universe
and the calendars of the Maya

<http://cfcp.uchicago.edu/~mmhedman/compton1.html>

The plan

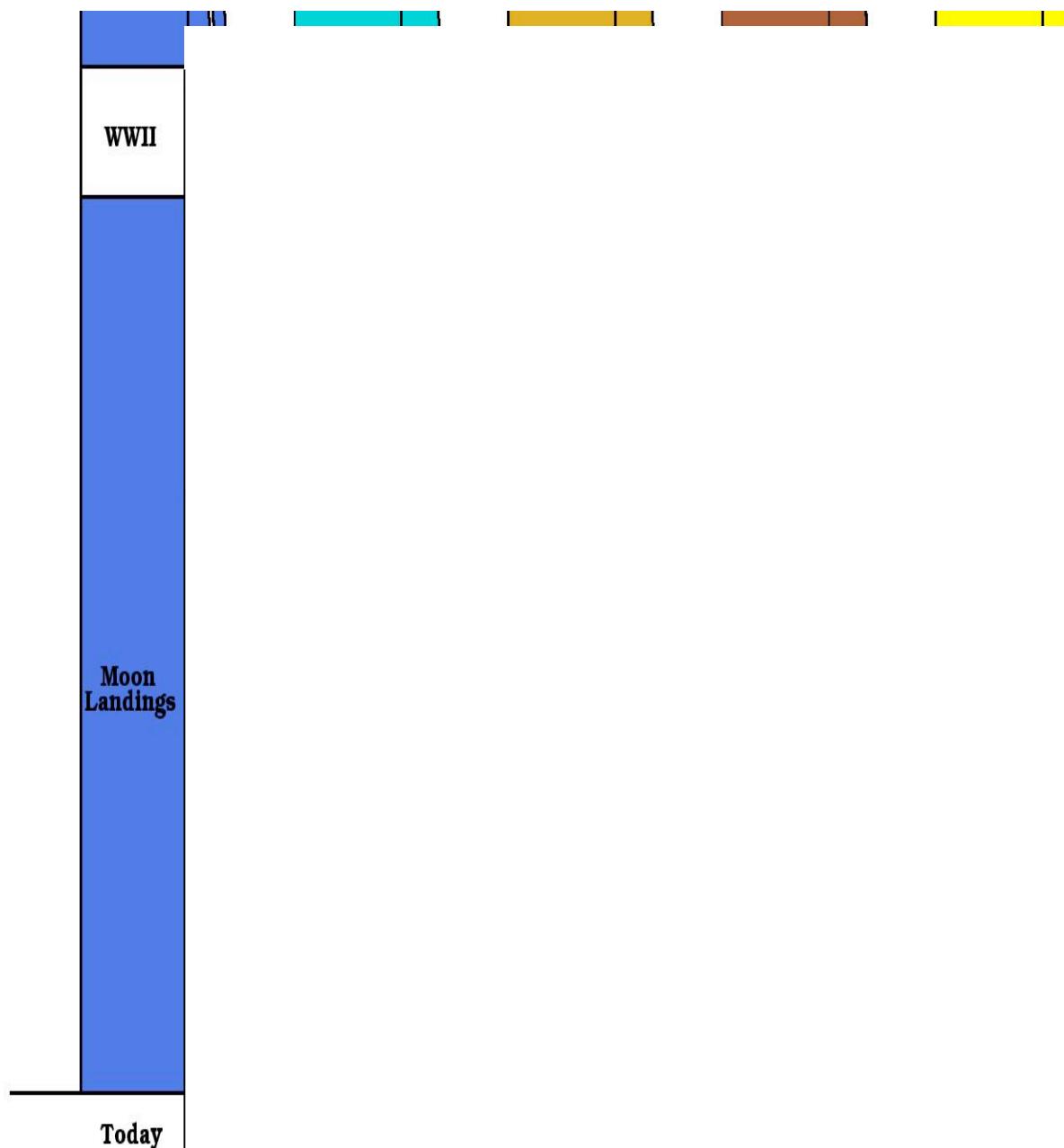
- 1. Introduction; the time scales of the Universe and the calendars of the Maya**
- 2. Precession, Polaris and the Pyramids of Egypt**
- 3. The Quantum Physics Principles of Carbon 14 Dating**
- 4. The Archeaological Reality of Carbon 14 Dating**
- 5. Potassium, Argon and Walking Upright**
- 6. Molecular Dating and the Many Different Types of Mammals**
- 7. Meteorites and the Origin of the Solar System**
- 8. Colors, Brightness and the Age of Stars**
- 9. The Age of the Universe, Part I**
- 10. The Age of the Universe and Concluding Remarks**



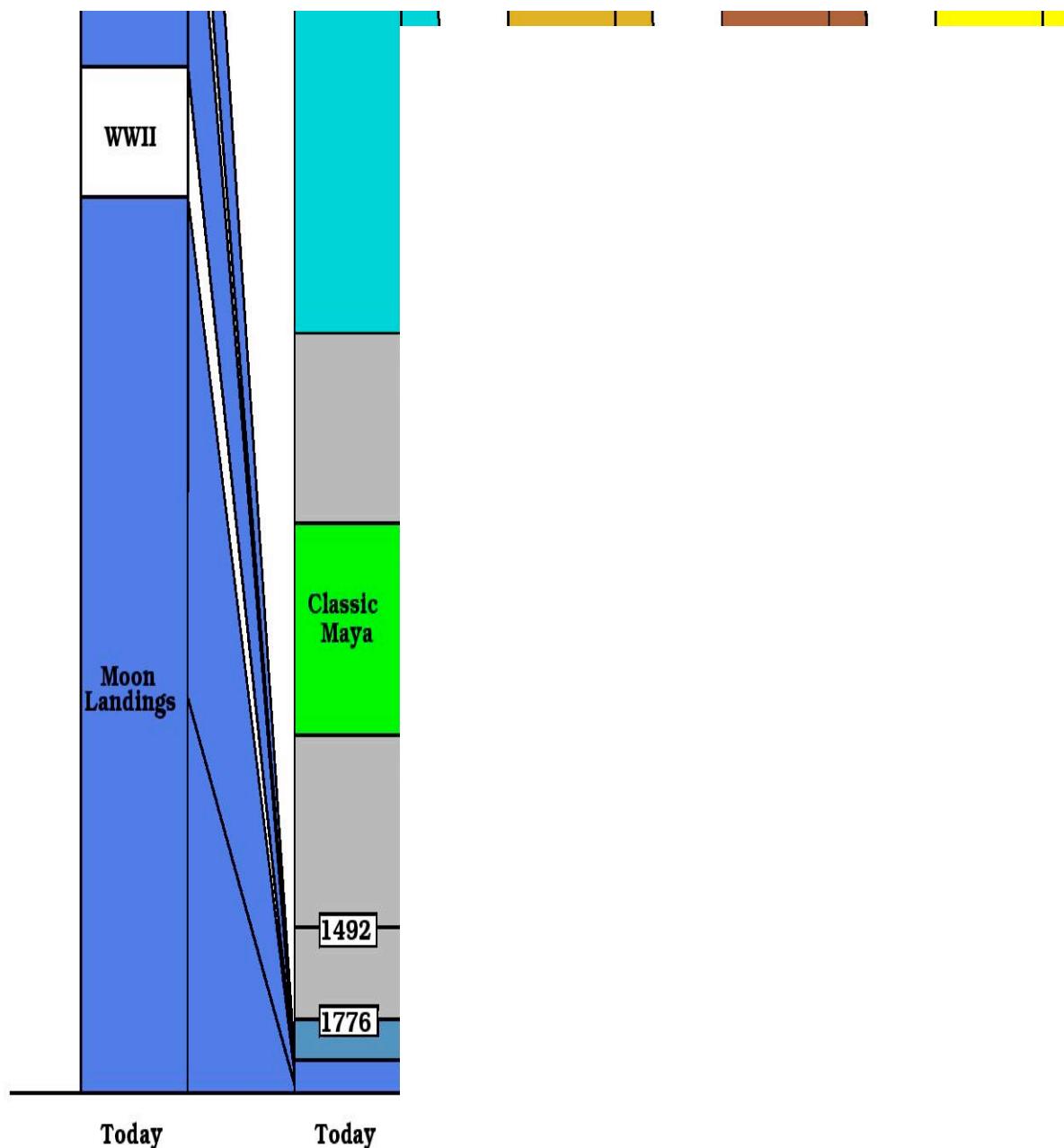
Warning!

**Astrophysicist
Juggling
Too Many
Subjects!**

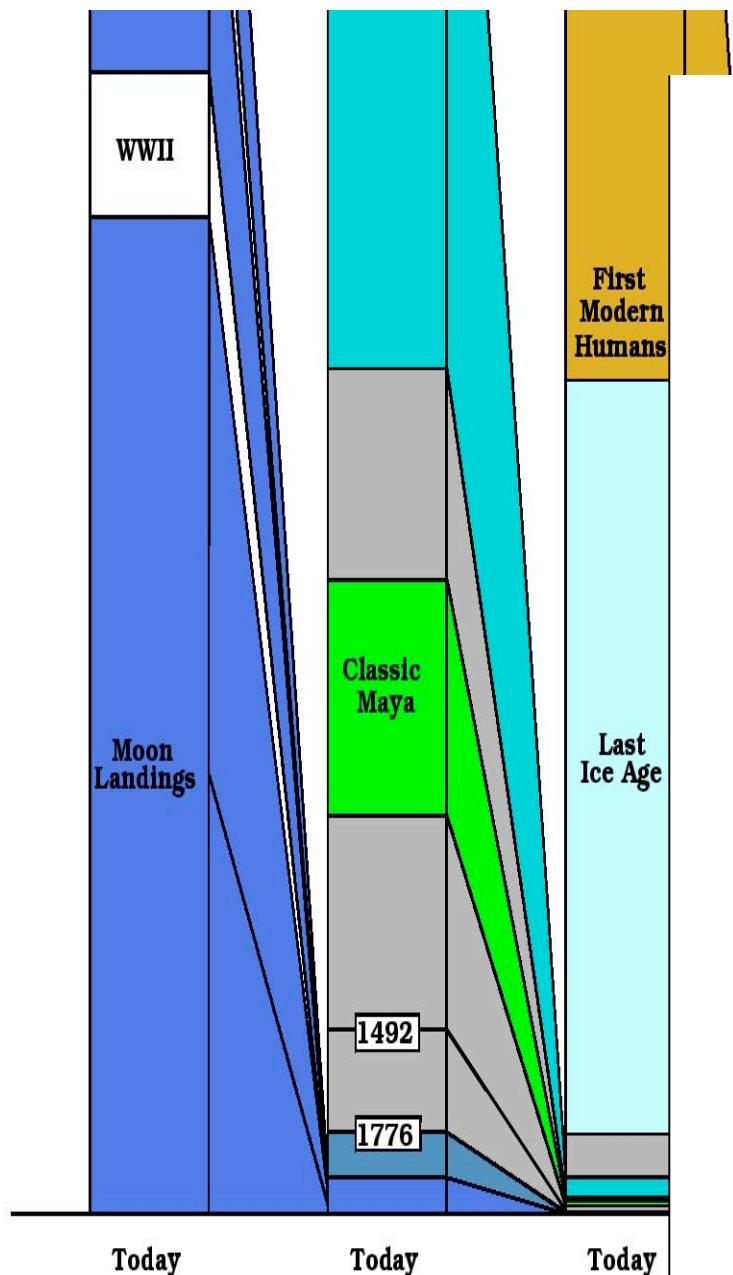
The Timescales of the Universe



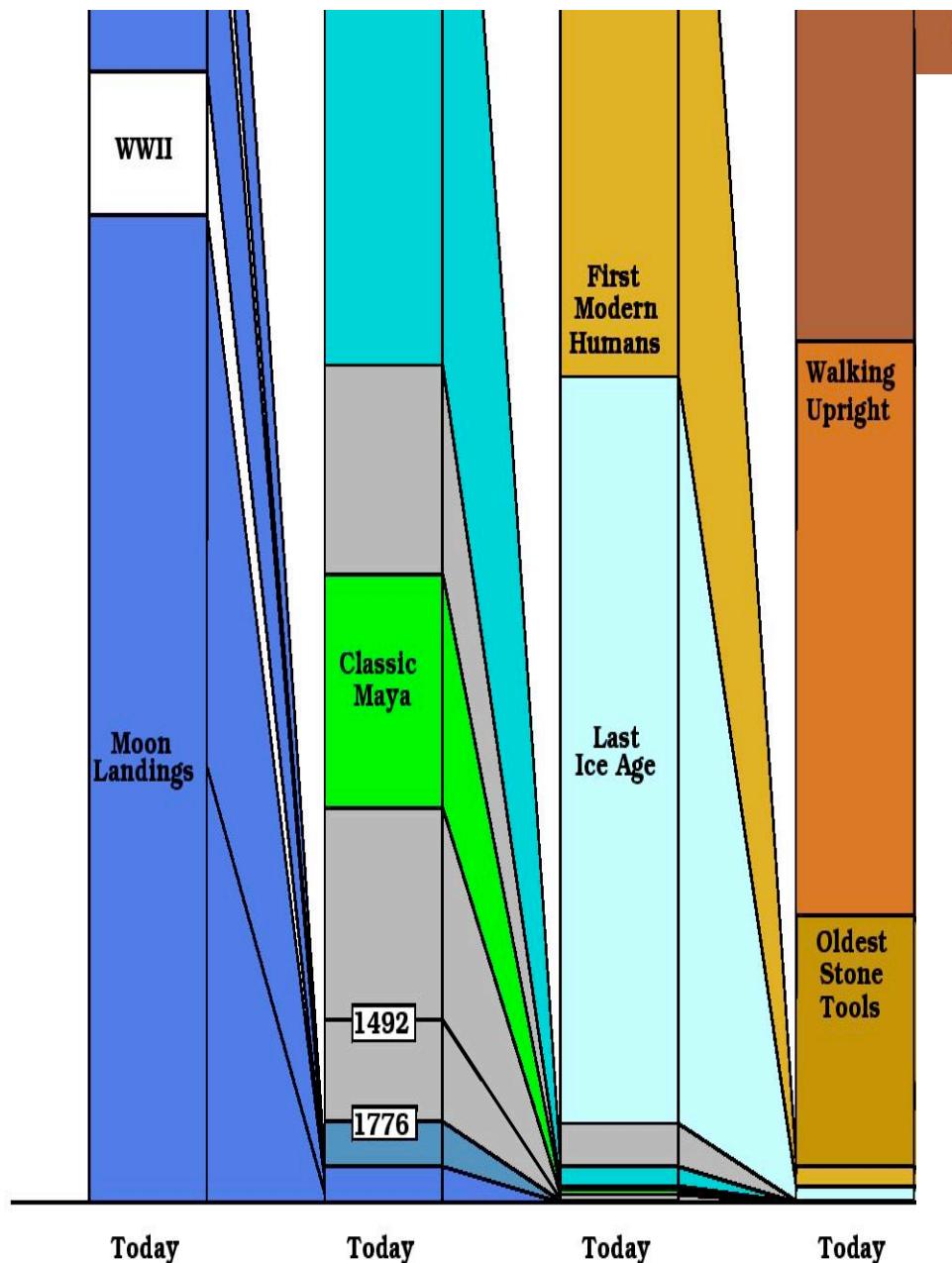
The Timescales of the Universe



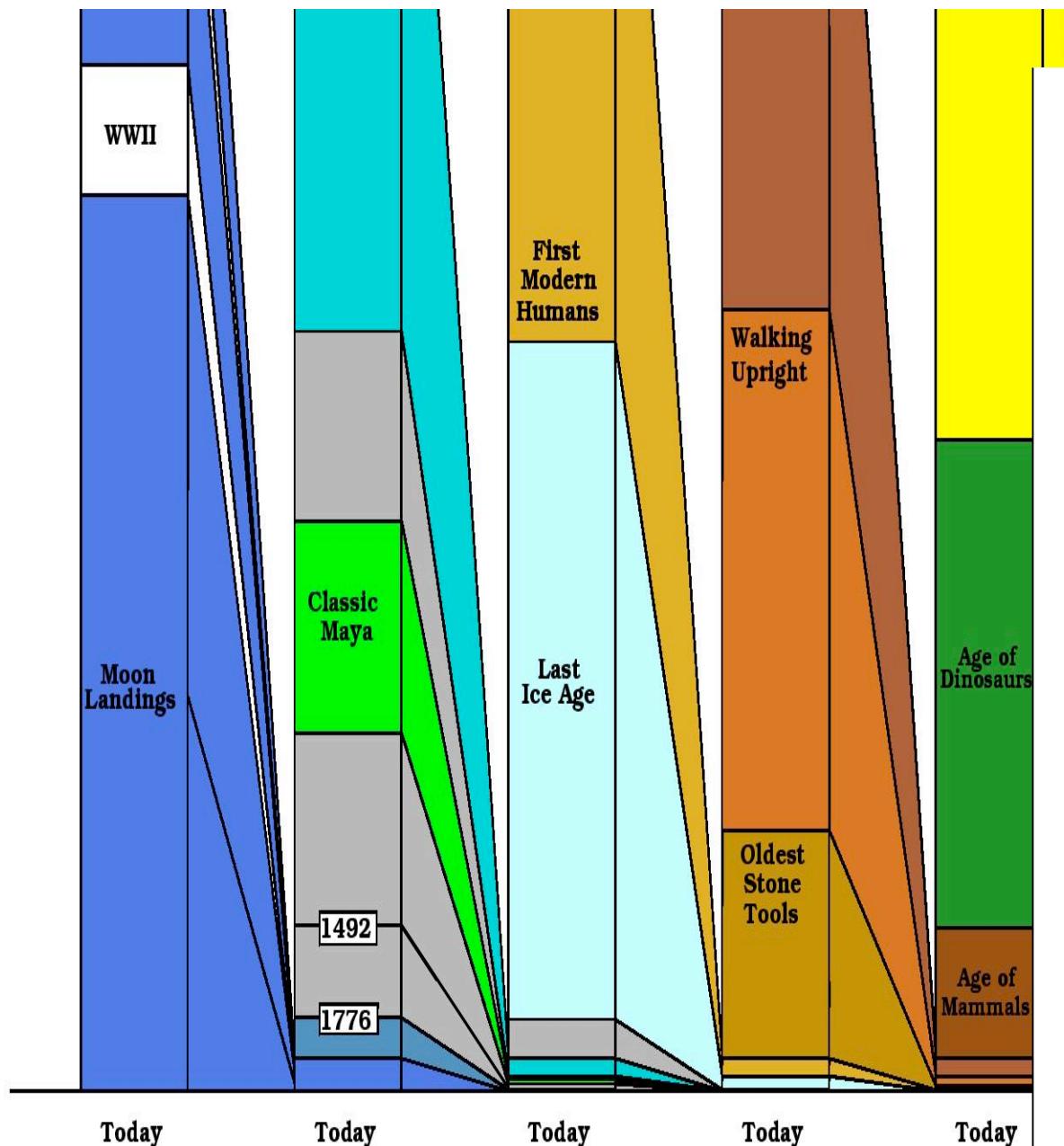
The Timescales of the Universe



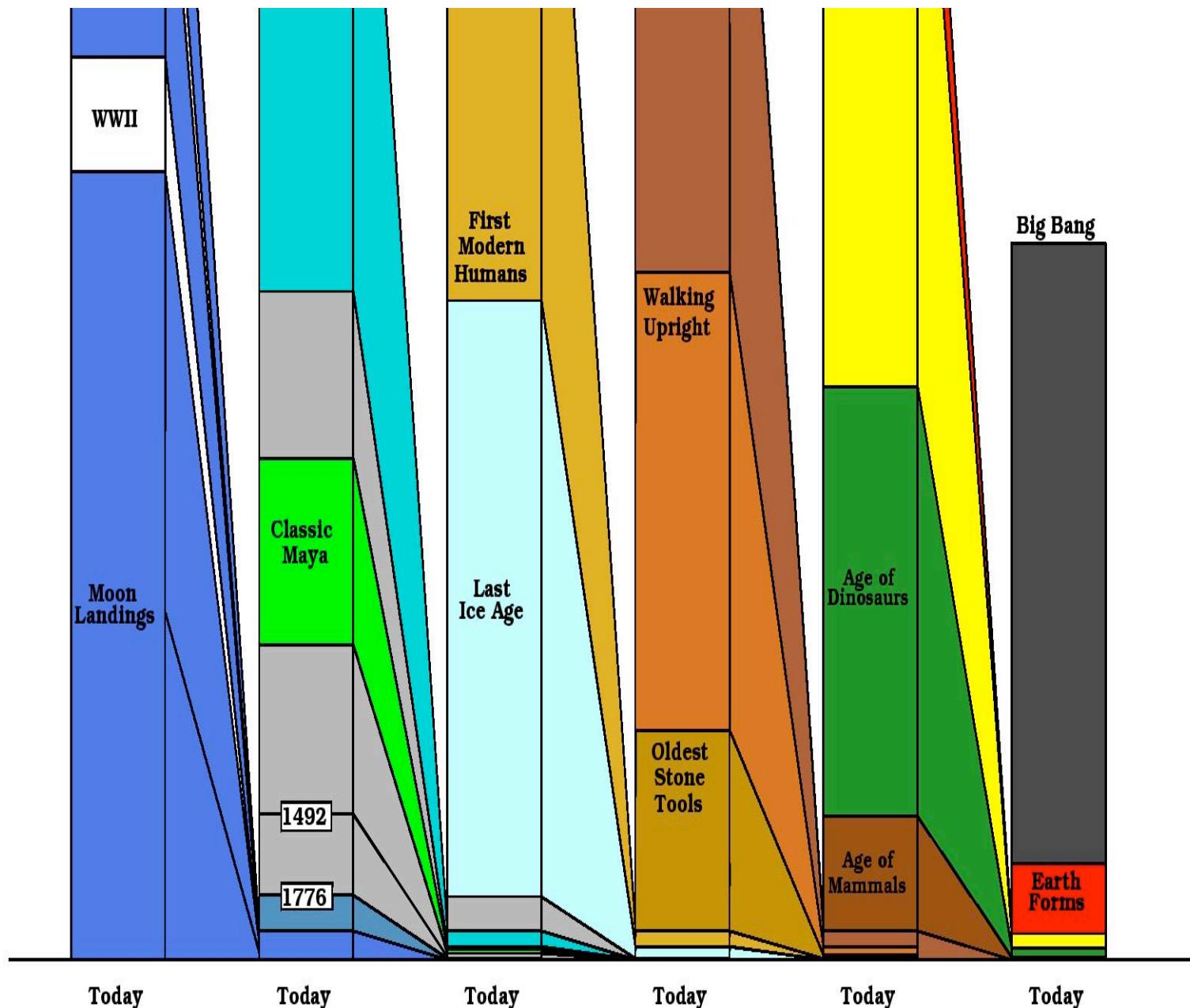
The Timescales of the Universe



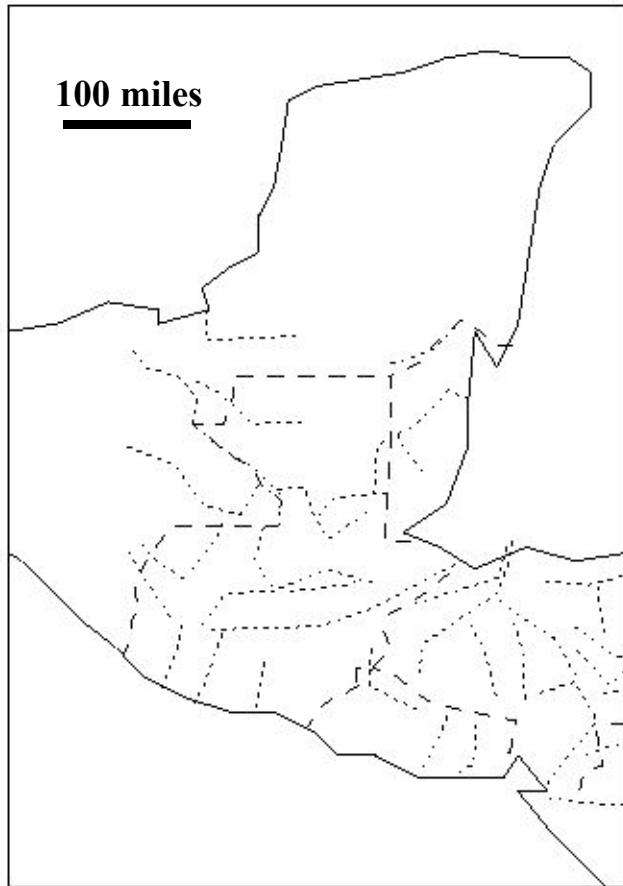
The Timescales of the Universe



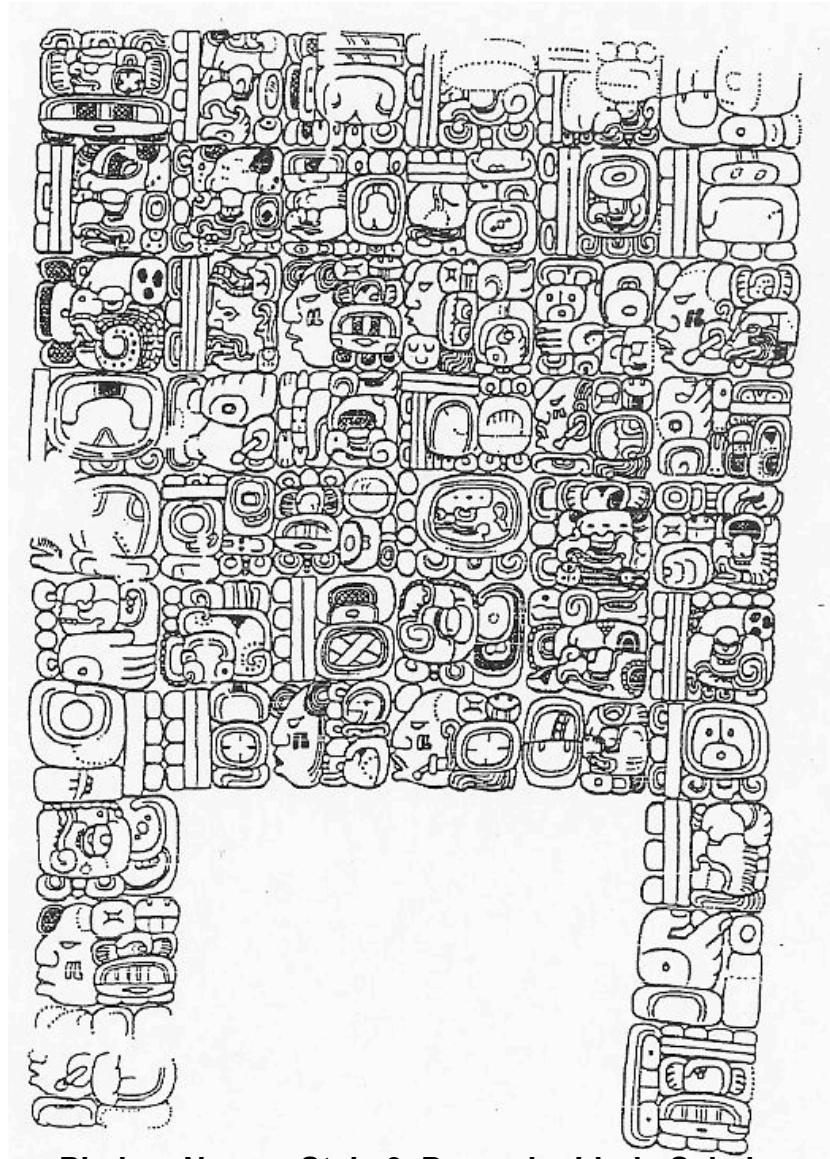
The Timescales of the Universe



The Calendars of the Classic Maya



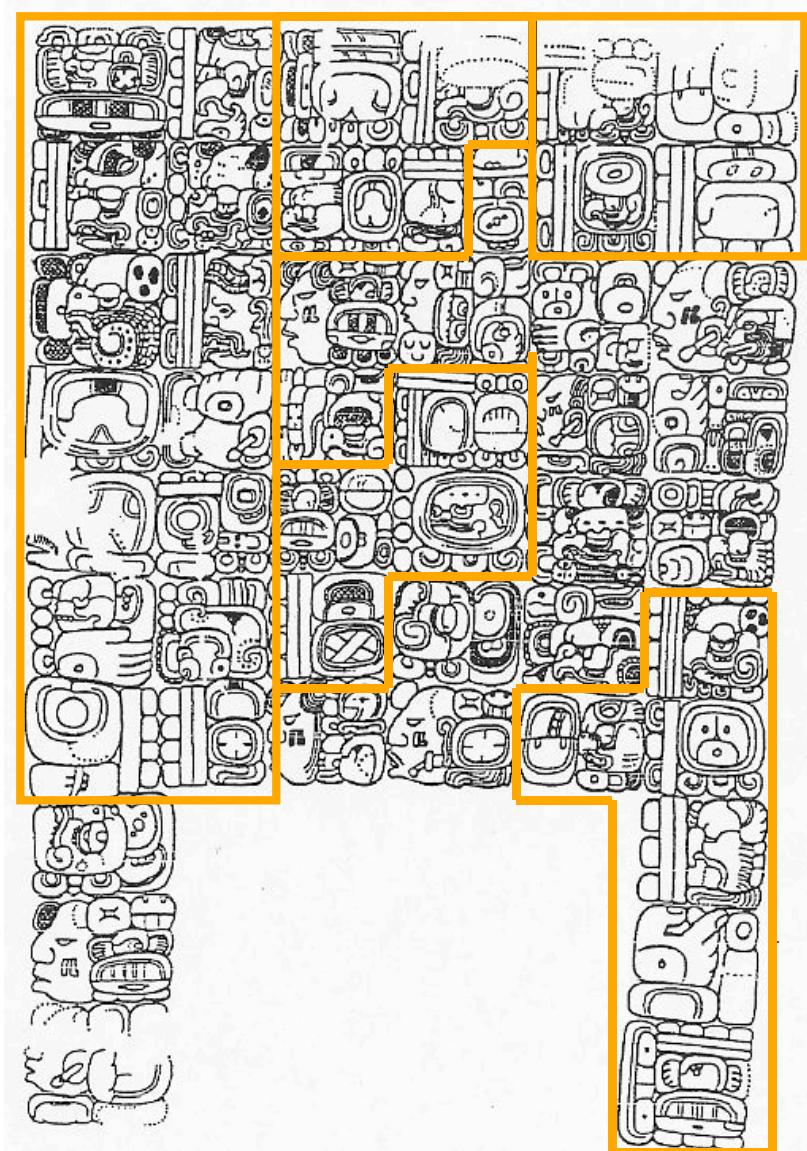
~300-900 CE



Piedras Negras Stela 3, Drawn by Linda Schele

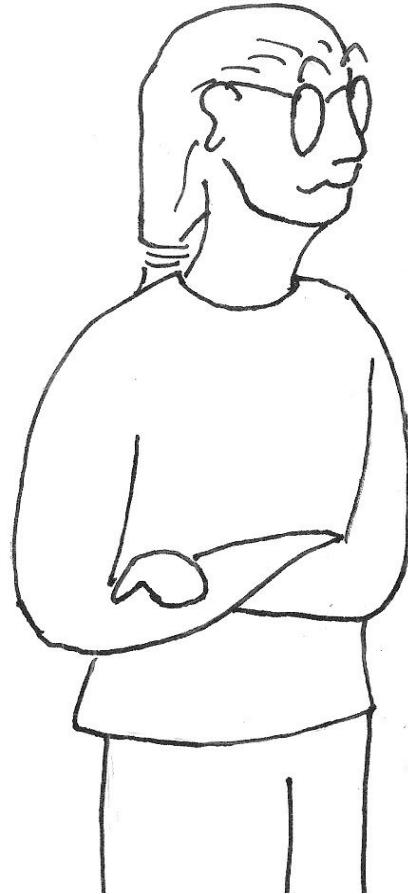
Calendars are the Key to Mayan History

Mayan Texts provide
dating information
for nearly every event
they record

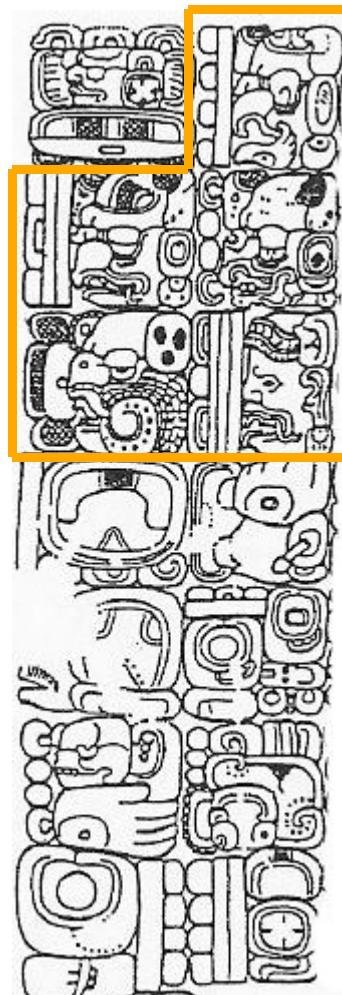


Piedras Negras Stela 3, Drawn by Linda Schele

Warning! Astrophysicist talking about Mayan Hieroglyphs!



The Calendar of the Maya: The Long Count



9 . 12 . 2 . 0 . 16

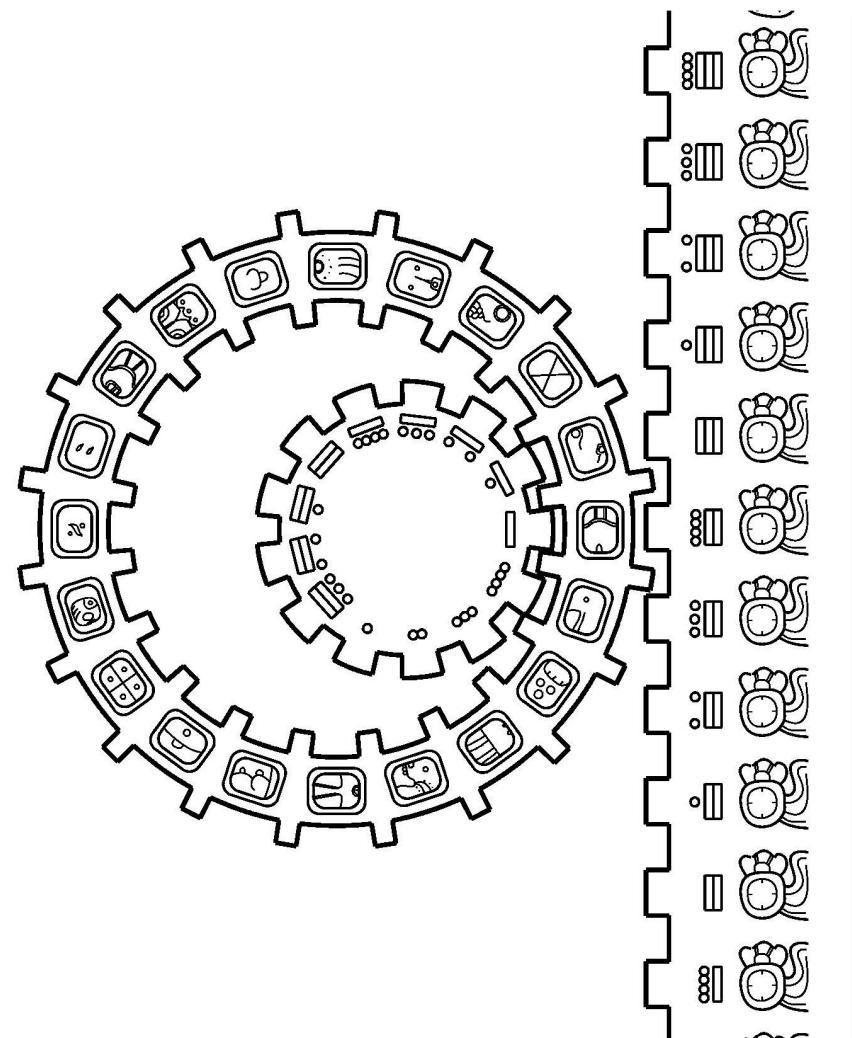
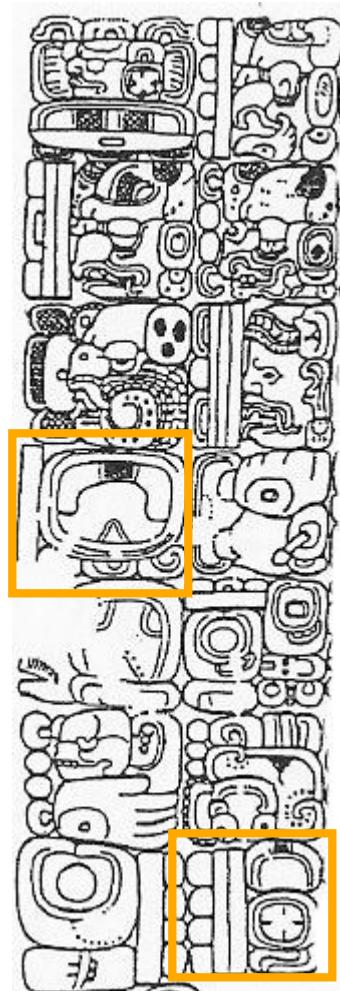
$$9 * 144000 + 12 * 7200 + 2 * 360 + 0 * 20 + 16 \text{ days}$$

$$= 1,383,136 \text{ Days since August 3114 BCE}$$

The Long Count is the number of days that have elapsed since some event long ago (in 3114 BCE)

The Calendar of the Maya: The Calendar Round

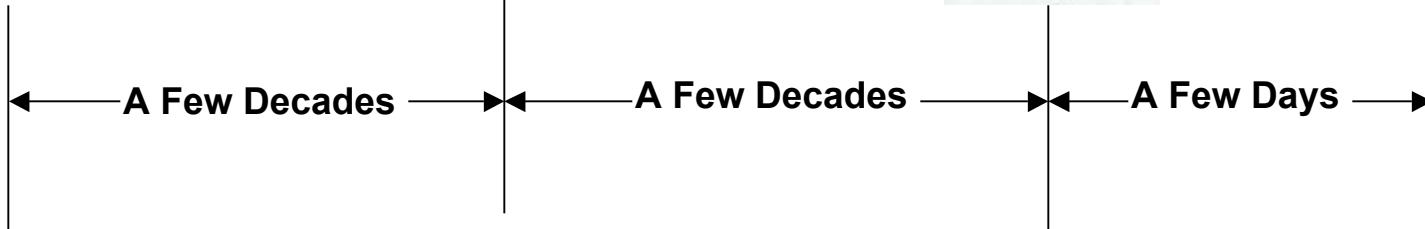
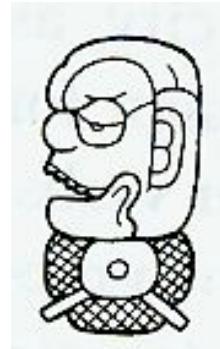
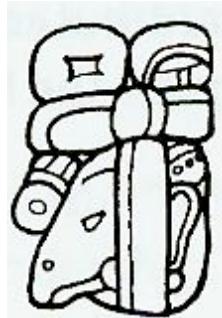
The Calendar Round is a combination of 260 day cycle (the *Tzolkin*) and a 365 day cycle (the *Haab*), which together make a cycle of 18,980 days (about 52 years)



Using the Mayan Calendar to Translate Mayan Texts

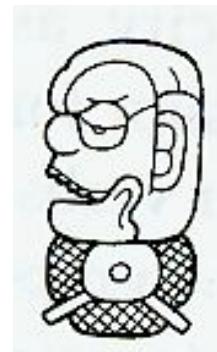
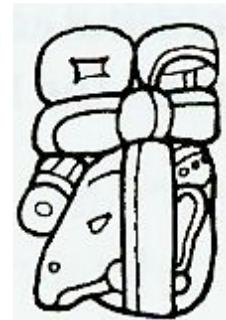
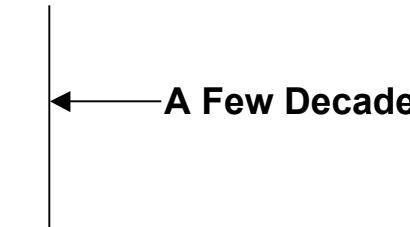
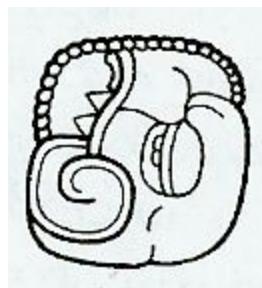
In 1960, Tatiana Proskouriakoff found that in related collections of texts, there were four texts that always occurred in a fixed sequence.

Drawings by J. Montgomery



Using the Mayan Calendar to Translate Mayan Texts

Using the dates of these events, she interpreted these as important events in one person's history. This proved Mayan texts contained historical information and was instrumental in the translation of these texts.



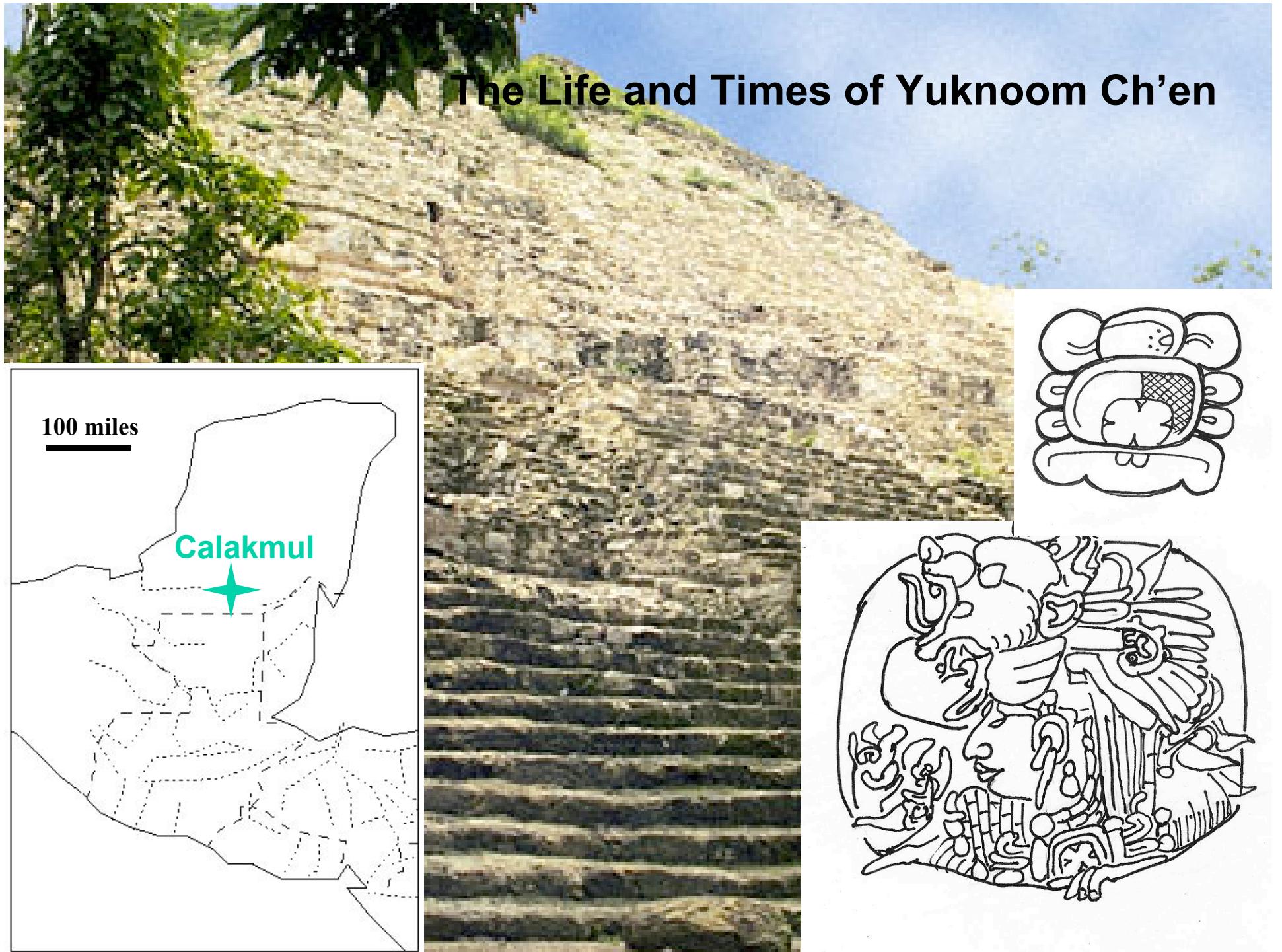
Birth
Sih

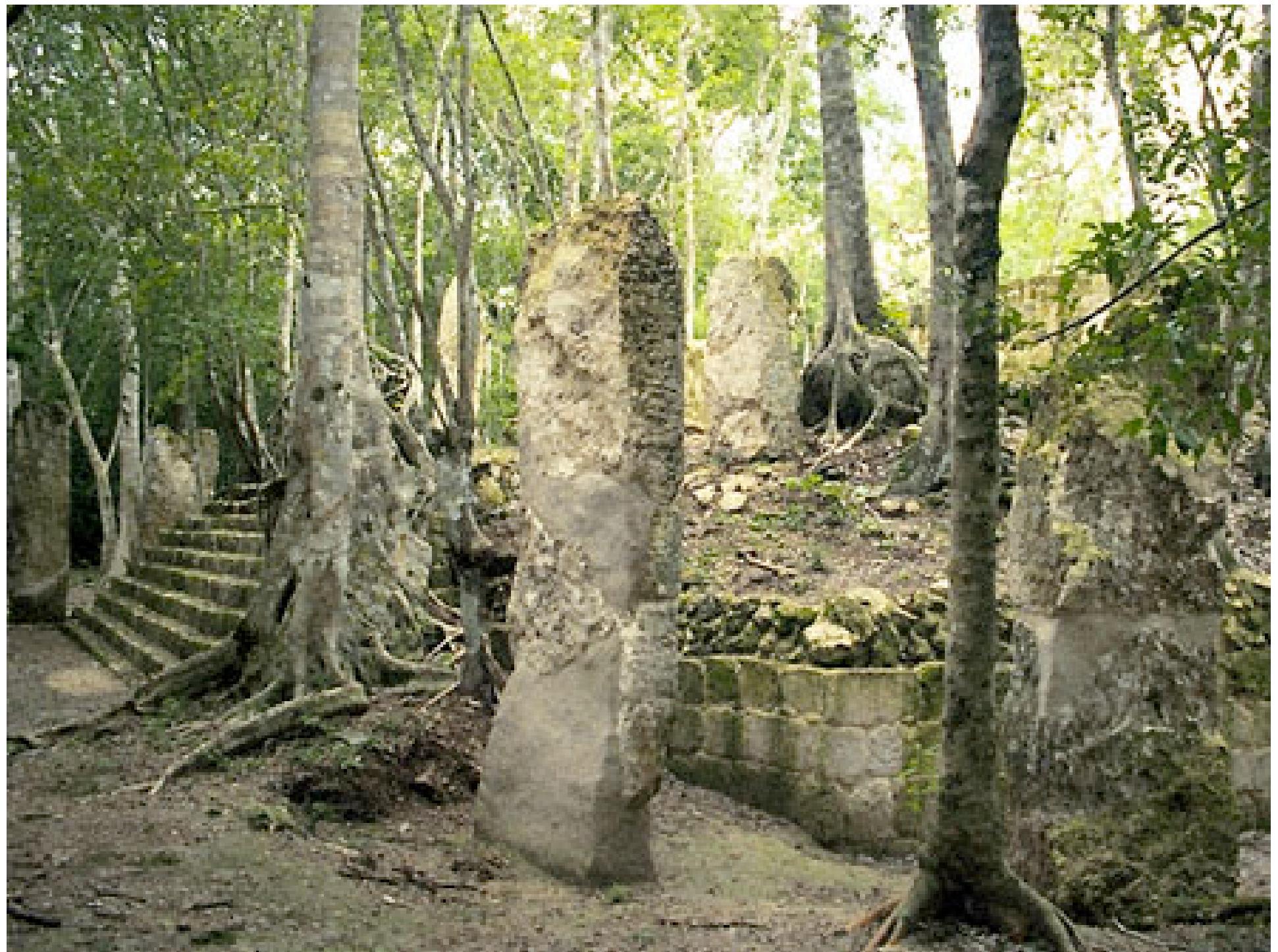
Becoming Ruler
Hohya Ahawlel

Death
Kimi

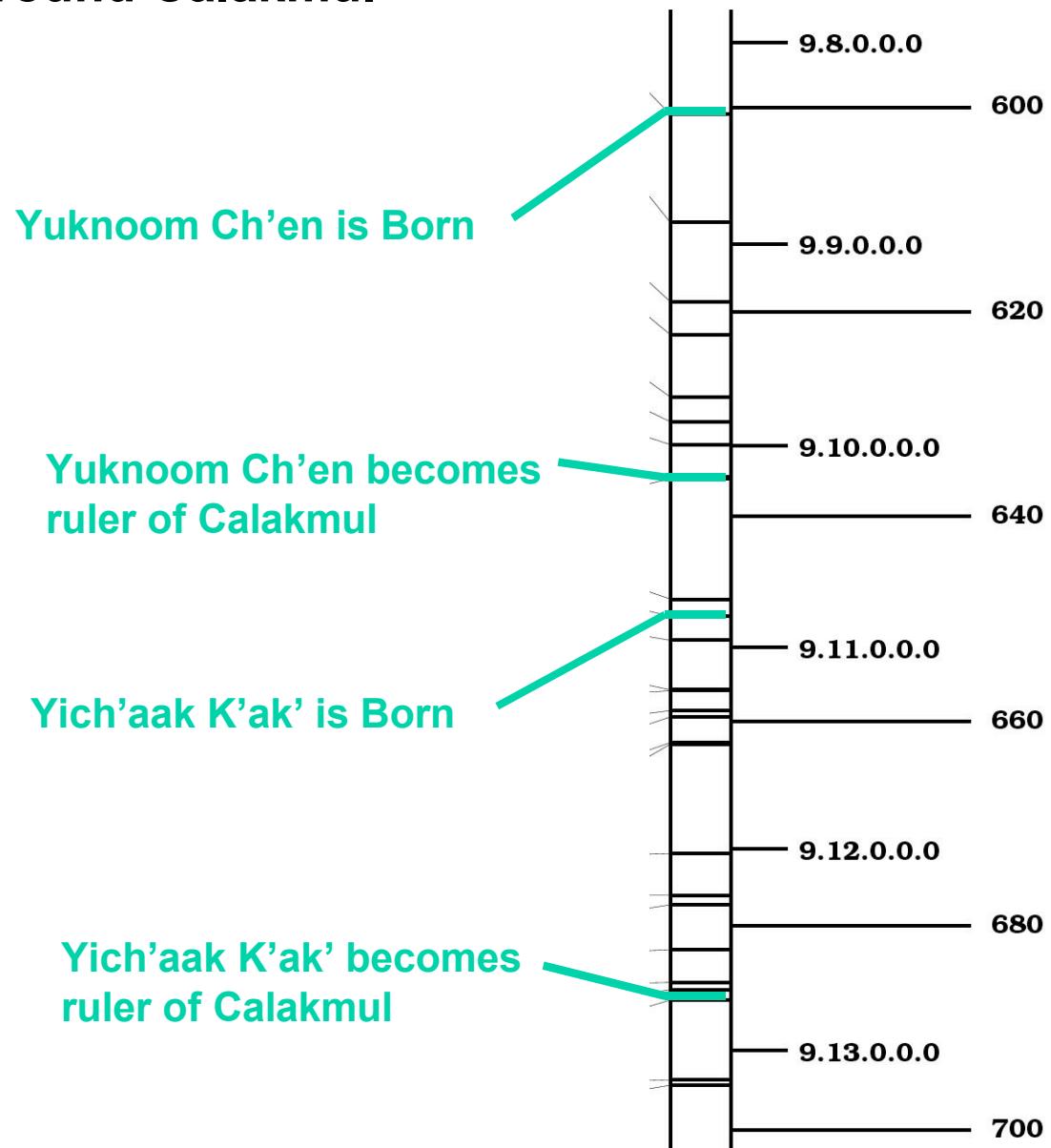
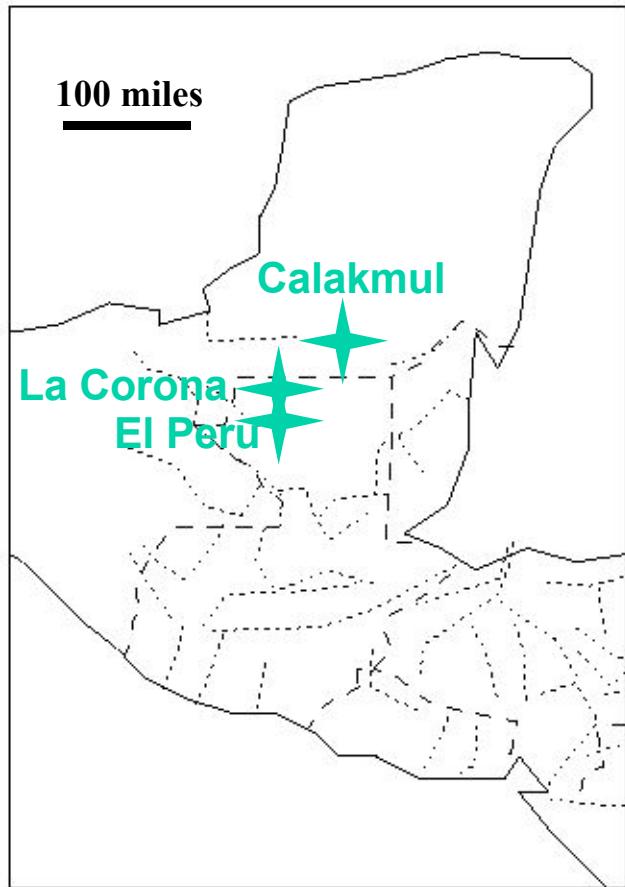
Burial
Mukah

The Life and Times of Yuknoom Ch'en

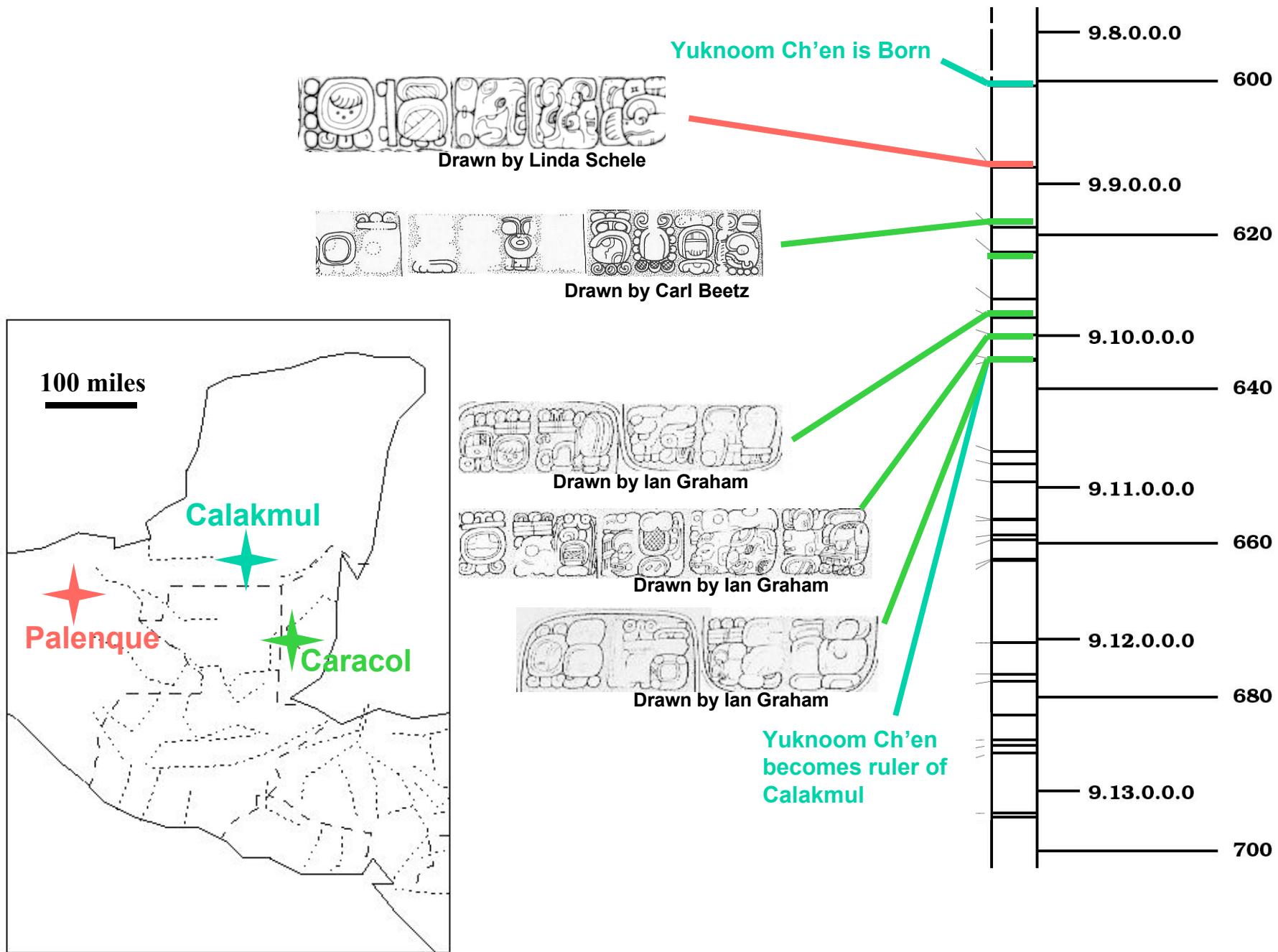




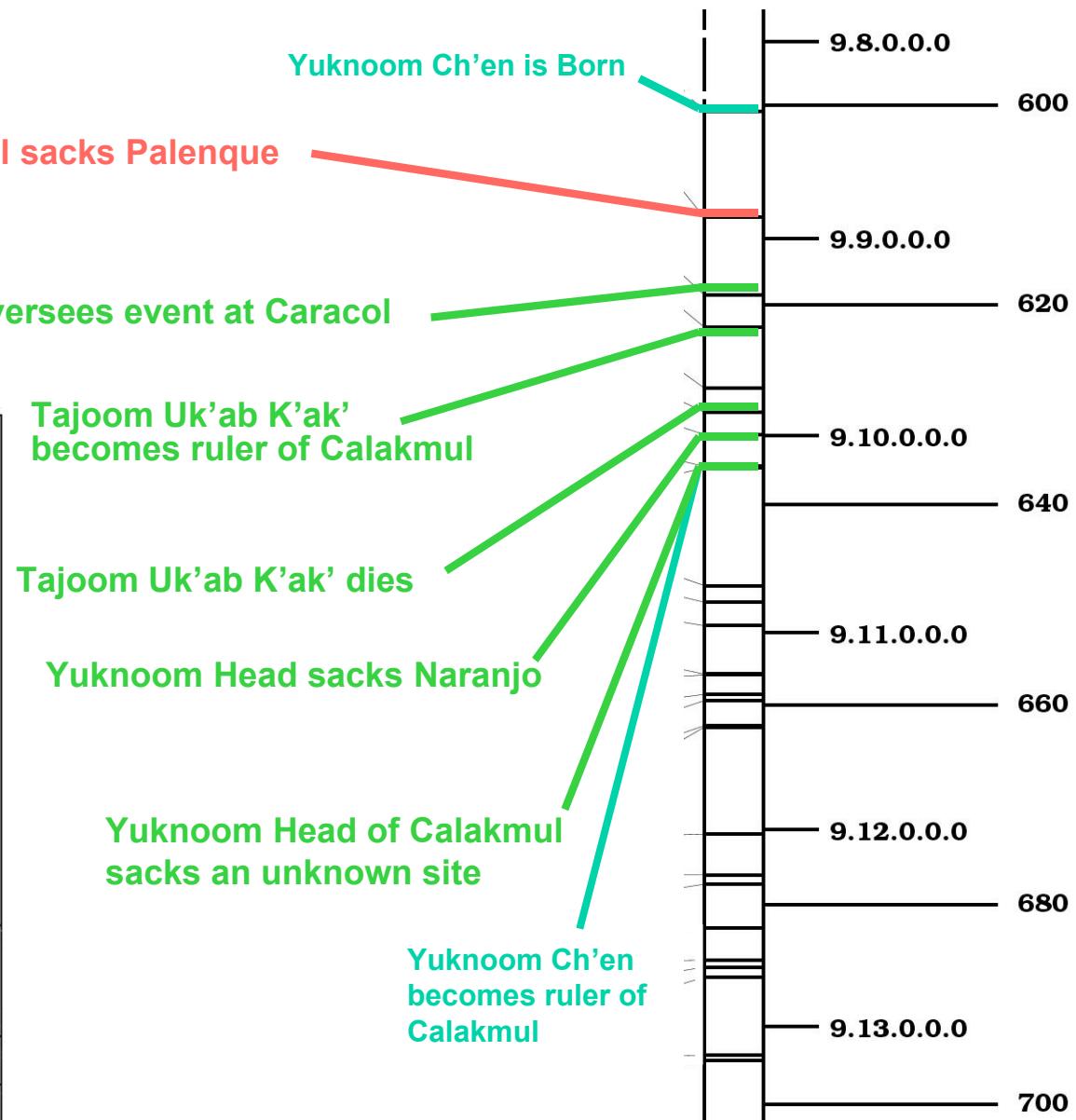
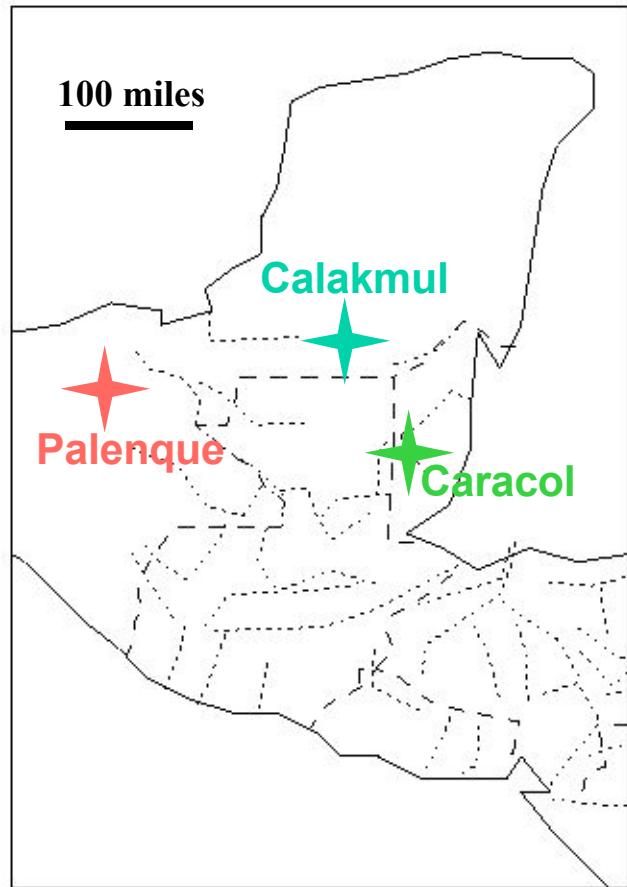
Events Recorded in and around Calakmul



Events before Yuknoom Ch'en Became ruler

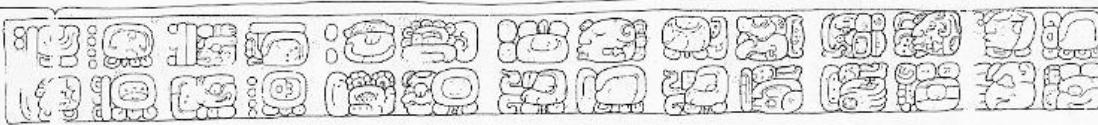


Events before Yuknoom Ch'en Became ruler



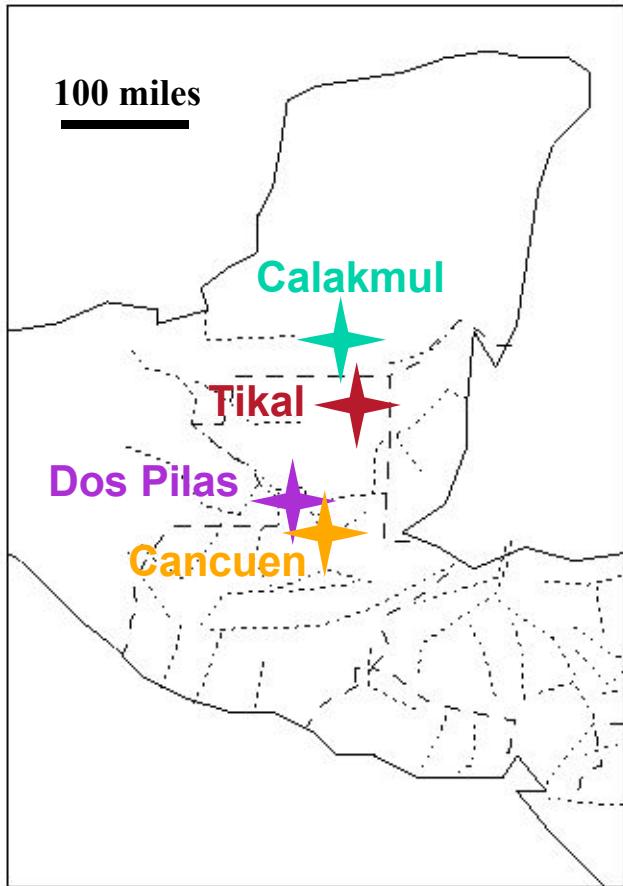
Yuknoom Ch'en's early activities in the South

Drawn by Stephen Houston



Yuknoom Ch'en is Born

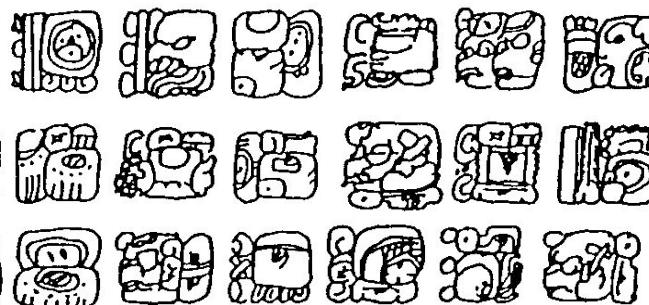
Yuknoom Ch'en becomes
ruler of Calakmul



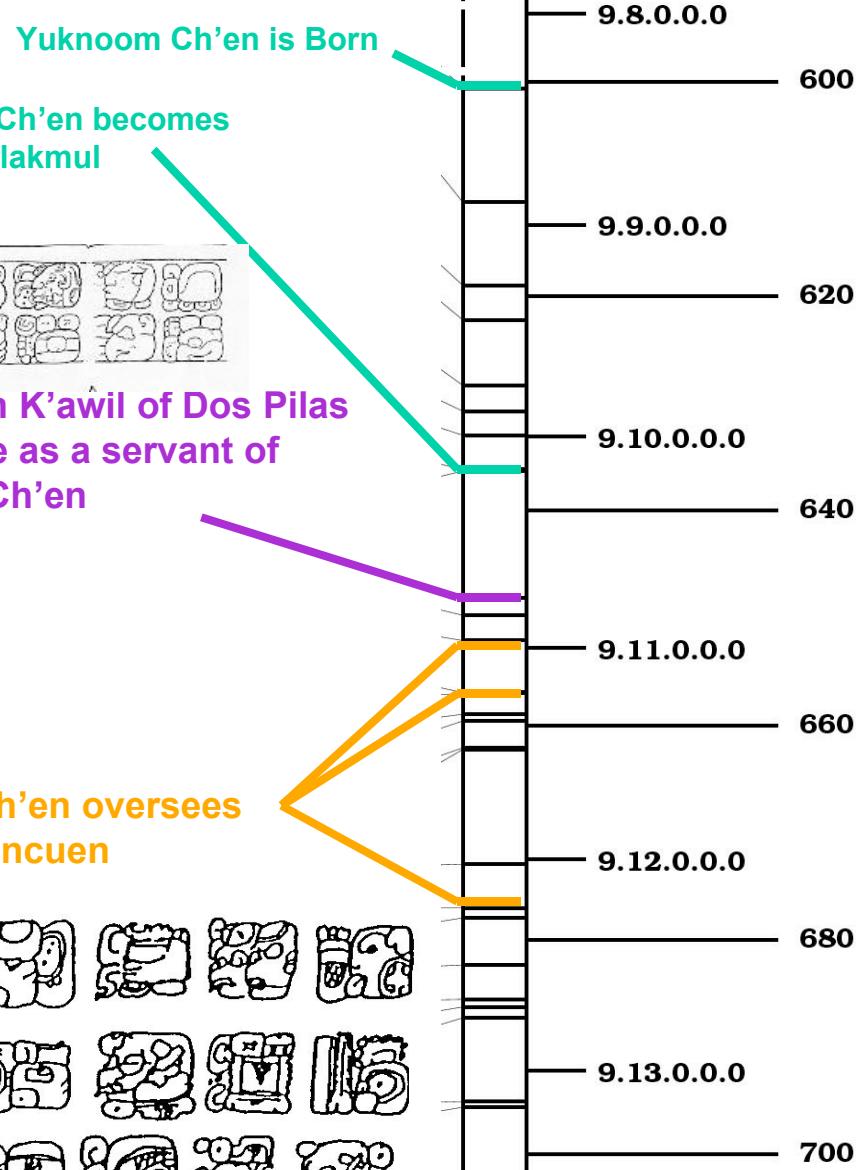
100 miles

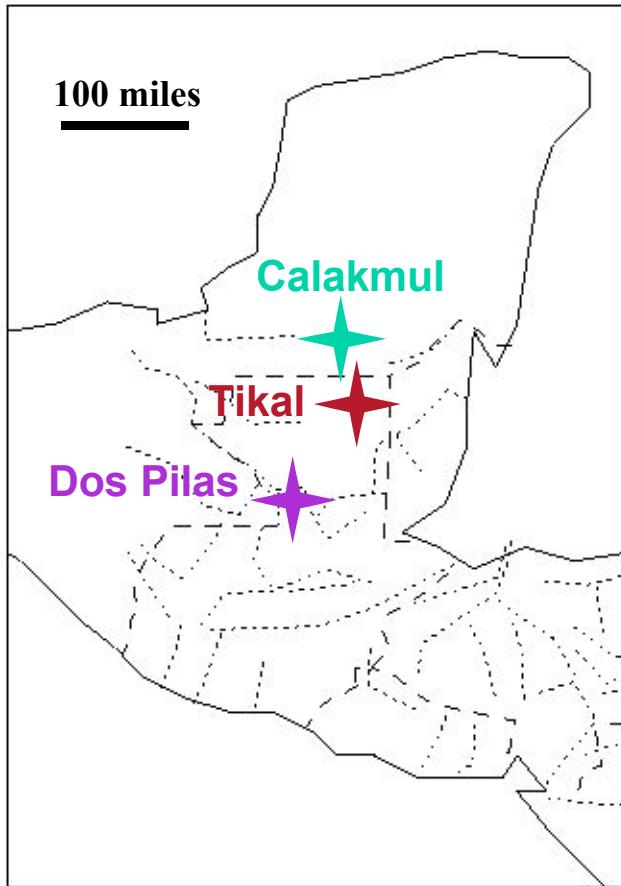
Balah Chan K'awil of Dos Pilas
Does Battle as a servant of
Yuknoom Ch'en

Yuknoom Ch'en oversees
rituals at Cancuen



Drawn by Linda Schele





Conflict with the lords of Mutul

Yuknoom Ch'en sacks Tikal, drives Nuun Ujol Chaak into exile

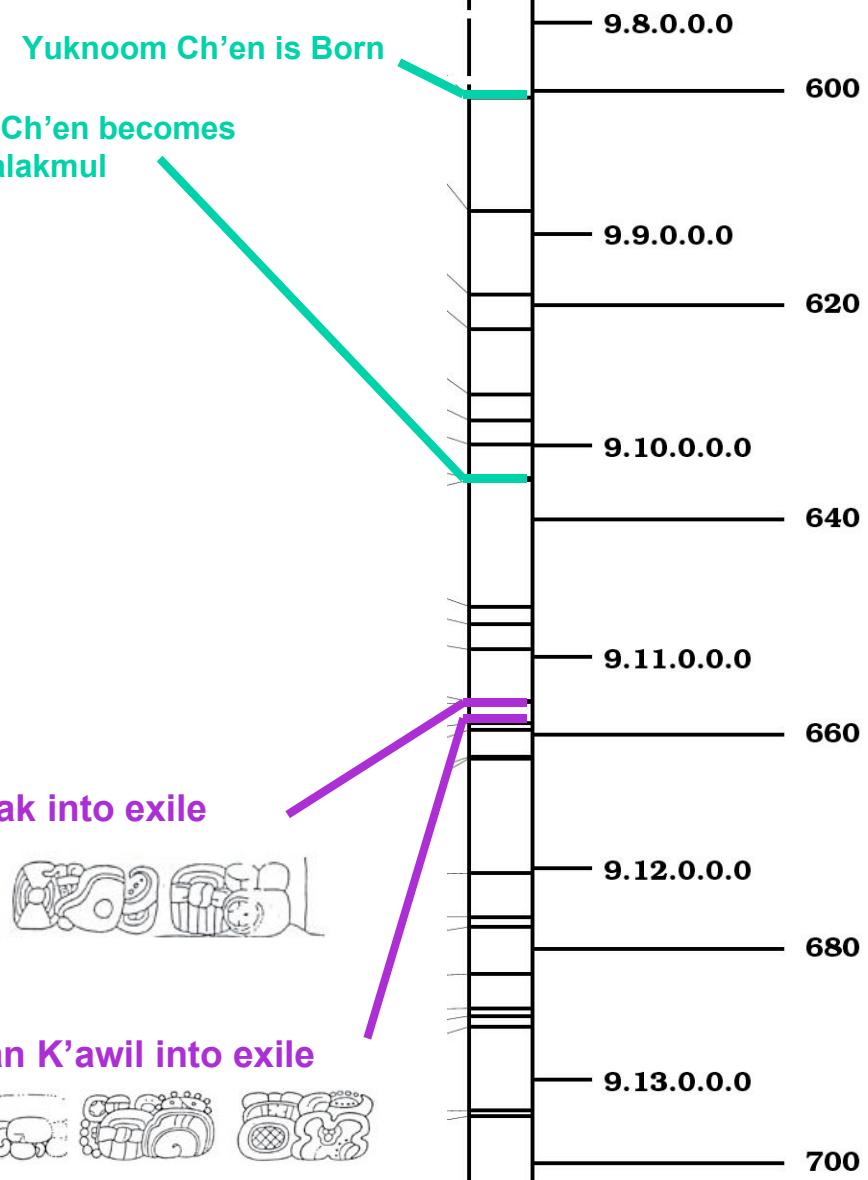


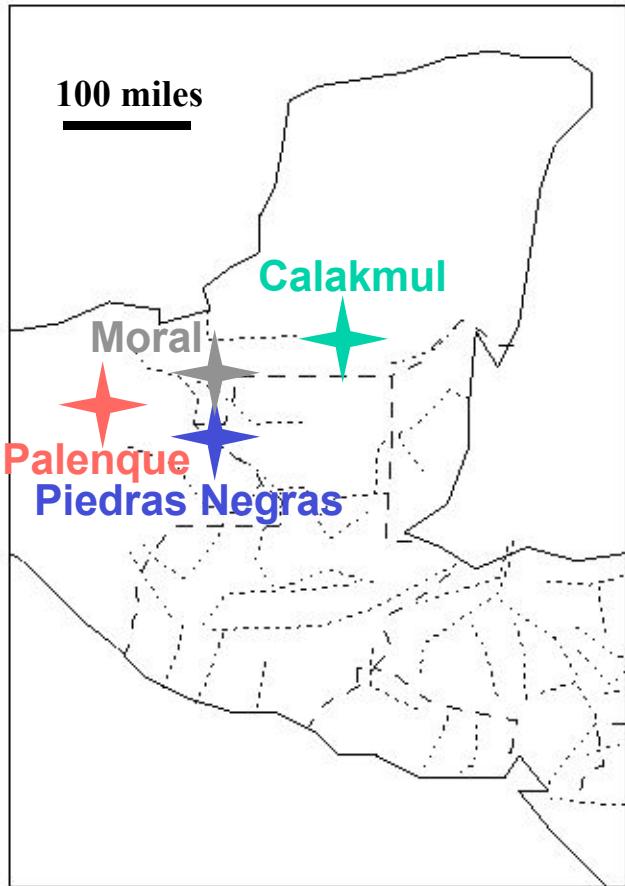
Yuknoom Ch'en sacks Dos Pilas, drives Balah Chan K'awil into exile



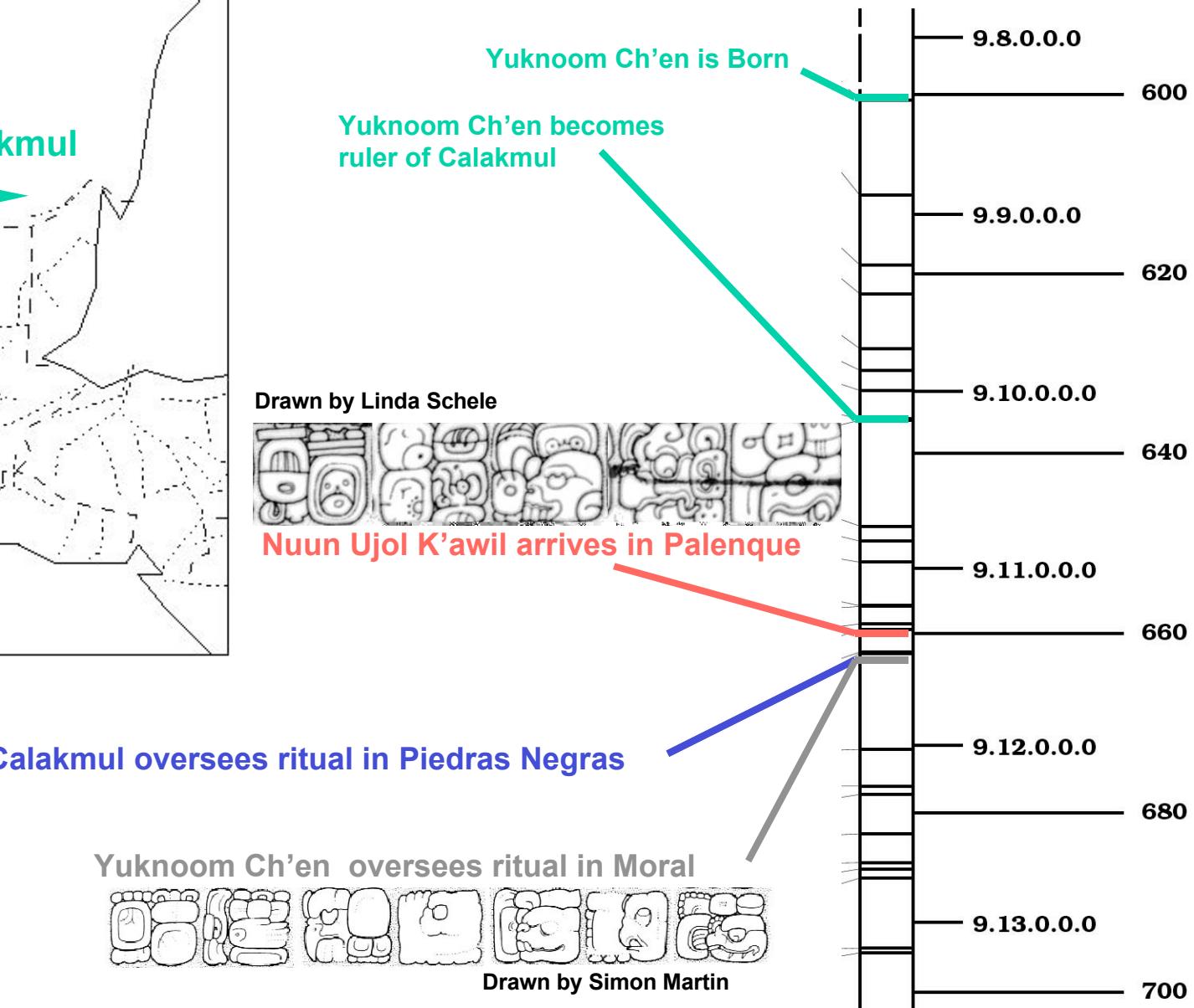
Yuknoom Ch'en is Born

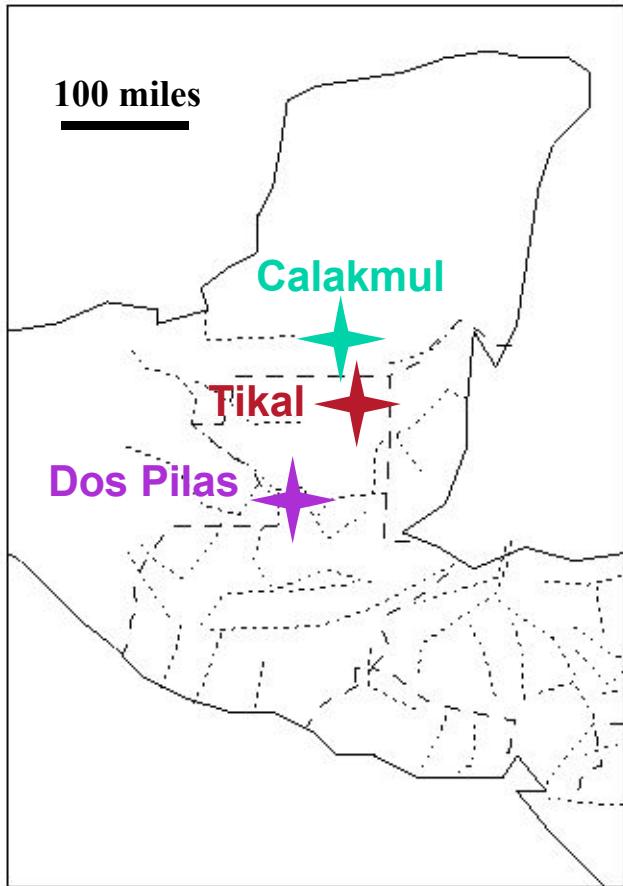
Yuknoom Ch'en becomes ruler of Calakmul



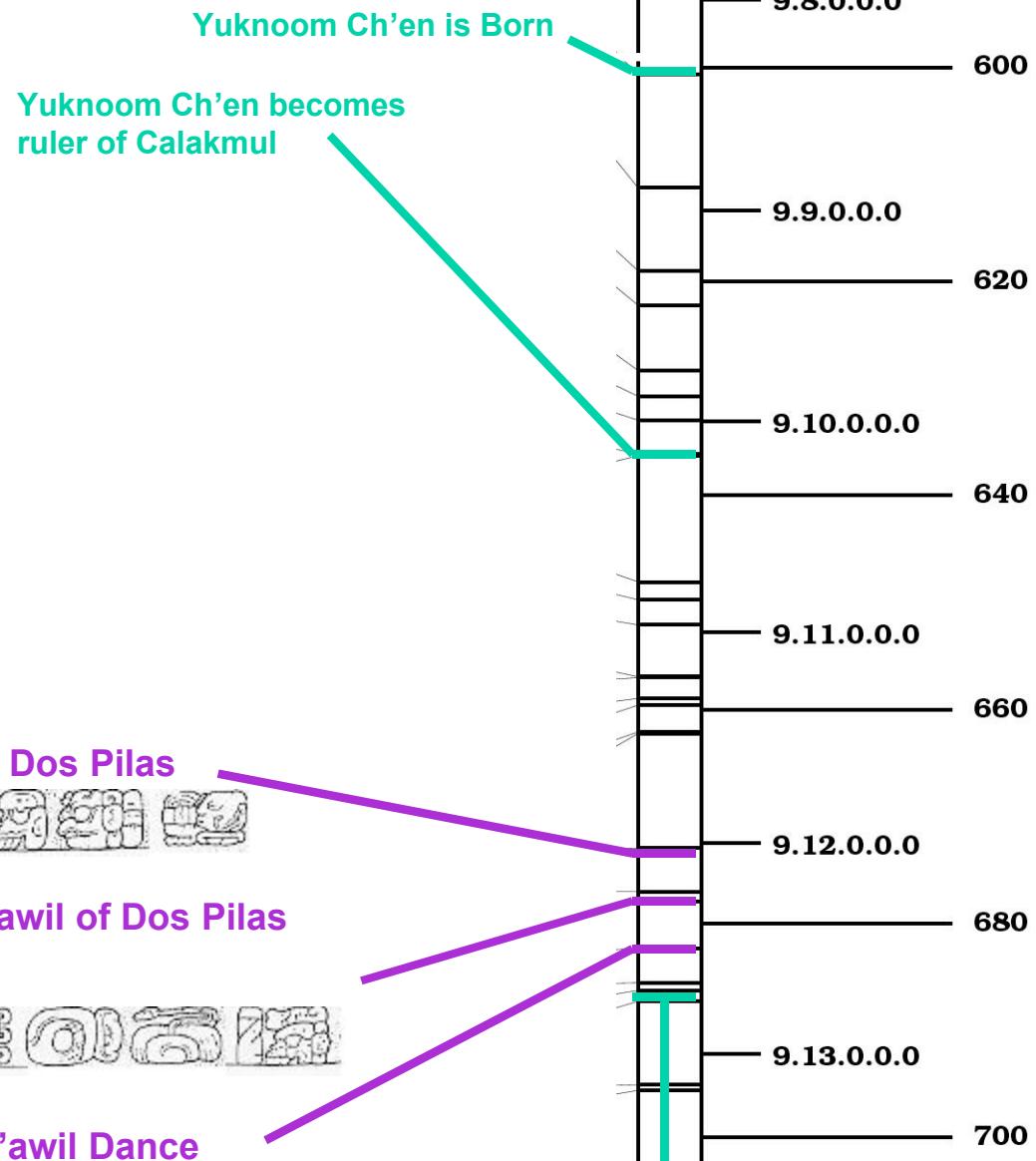


Attention turns Westwards





The end of the conflict with the Lord of Tikal



Nuun Ujol Chaak of Tikal sacks Dos Pilas



Yuknoom Ch'en and Balah Chan K'awil of Dos Pilas
battle and defeat Nuun Ujol Chaak



Yuknoom Ch'en and Balah Chan K'awil Dance



Next Time:

Precession, Polaris and the Pyramids