

# Earthquake!

David Stuart  
Peabody Museum, Harvard University

Temple XVIII at Palenque once was adorned with a remarkable stucco inscription, originally placed on the back wall of the temple's inner sanctuary, but now completely fallen away. Blom and La Farge (1926-7) recorded a few glyphs of the text still adhering to the wall in the 1920s, but soon thereafter nothing remained. The inscription was not a complete loss, however. Blom and later Ruz (1958) recovered a great many stucco glyphs during excavations just below the wall. The inscription has been studied by several epigraphers (Schele and Mathews 1979), and most completely by Ringle (1993). In this note I would like to call attention to just one hieroglyph that looks to be read *yuk-(u)l-aj kab*, "the earth was shaken," and propose that this is a unique Pre-Columbian Maya record of an earthquake.

The glyph (Figure 1) appears as no. 439 in the Schele and Mathews (1979) catalog of Palenque's *bodega* and consists of the signs **yu-ku-la-ja KAB-?**. The final element (if indeed there was a distinct suffix) is missing but occupied a small space after the **KAB** logogram, written here in its personified form.

The suffix **-la-ja** strongly suggests that the first half of this glyph, before **KAB**, spells a positional verb. Positionals are an important verb class in Mayan languages describing the physical state, orientation or placement of a person or thing (Knowles 1986). Macleod (1984) was the first to discover positional verbs in the Classic inscriptions, and a good many are similarly spelled with the **-la-ja** ending. Certainly the most common positional verb in Maya texts is **CHUM-la-ja**, for *chum-(u)l-aj*, "he sits," where the positional stem is *chum-ul*, "sitting." The positional stem in the Palenque glyph ought then to be *yuk-ul*, giving the full form *yuk-(u)l-aj*.

The **KAB** sign would necessarily serve as the subject of this verb, with the well-established meaning of "earth, land" (*kab*, incidentally, was certainly its pronunciation at Palenque, as indicated by several cases where the logogram is replaced by **ka-ba**). Looking for a verb root *yuk* in Ch'olan languages, we find the following:

Proto-Mayan (Kaufman and Norman 1984):

\**yuk*, temblar

Colonial Yucatec (Martinez Hernandez 1929):  
*yukba*, temblar la tierra, y temblor o terremoto

Proto-Ch'olan (Kaufman and Norman 1984):  
\**yuhk*, shake (passive stem)

Ch'ol (Tumbala) (Aulie and Aulie 1978):  
*yujcun*, sacudir (planta, arbol)  
*yujquel*, temblor

Ch'orti (Wisdom 1950):  
*yuki*, to shake something  
*yuhk*, shaking or trembling, spasm, convulsion  
*yuhku bah*, spasm or convulsion of the body, general convulsion  
*yuhkrem*, shaking, swaying  
*yuhkremah*, rock back and forth, sway  
*yuhku*, shake a thing, rock a thing back and forth  
*yuhkur*, shaking, trembling, rippling, convulsing

Before moving on, one important linguistic point needs to be addressed. Whereas the Palenque glyph looks to be a positional derivation, most of the Ch'olan forms listed above are not. The infix *-h-* in proto-Ch'olan \**yuhk* and its descendant forms in Ch'ol and Ch'orti mark it as a passive stem. This was presumably derived from a transitive root \**yuk*, “to shake something,” that is no longer attested in many Ch'olan languages. It does seem to exist in Ch'orti, however (*yuki*), and is likely reconstructable for proto-Mayan (note Yuc. *yukba*, “manearse,” a reflexive construction derived from a transitive root *yuk*). Since there is considerable overlap among transitive roots and positionals (Kaufman and Norman 1984), it is reasonable to suppose *yuk-ul*, “shaking,” was once a positional stem in Classic times. The semantics of *yuk*, referring to a physical state of being, is fitting for a positional derivation even if not presently attested.

The Palenque glyph thus looks to read *yuk(u)l-aj kab* and can be reasonably translated as “the earth is shaken,” a clear reference to an earthquake (note Colonial Yucatec *yukba*, “terremoto,” and Ch'ol *yujquel*, “temblor”). Unfortunately, due to the jumbled state of the Temple XVIII inscription, we lack a date to go with this intriguing verb and therefore cannot place the episode in the larger framework of Palenque's history.

As noted earlier, the **KAB** logogram is anthropomorphized as a human profile. Glyphic signs very often are animated in this way—particularly in this inscription—but one may wonder if the profile **KAB** sign subtly indicates the Maya concept of the earth as a living entity capable of violent movement.

As many know, Palenque lies in a geological zone that continues to be seismically active. Three tectonic plates (the North American, Caribbean, and Cocos) converge in southern Mesoamerica near Chiapas, and their movements with respect to one another have shaped the mountainous terrain over many millions of years. Earthquakes were surely commonplace in Classic times as well.

If this decipherment is tenable, it reminds us that earthquakes were noteworthy events of record during Classic times, and that they may have affected history in ways not otherwise seen in the standard dynastic accounts. Violent tremors have left their clear mark in the archaeological record, perhaps the best example from the Maya area being the slumped Hieroglyphic Stairway of Copan (Gordon 1902), which in all likelihood came as the result of a powerful earthquake. We can therefore easily imagine that a tremor contributed to the destruction of this beautiful text from Temple XVIII, with its “earthquake” hieroglyph.

## References

AULIE, H. WILBUR, and EVELYN W. DE AULIE

1978 *Diccionario Ch'ol*. Vocabularios indigenas 21. Mexico, D.F.: Instituto Lingüístico de Verano.

BLOM, FRANZ, and OLIVER LA FARGE

1926-7 *Tribes and Temples*. New Orleans: Middle American Research Institute, Tulane University.

FERNANDEZ, MIGUEL ANGEL, and HEINRICH BERLIN

1954 *Drawings of Glyphs of Structure XVIII, Palenque*. Notes on Middle American Archaeology and Ethnology, no. 119. Cambridge: Carnegie Institution of Washington.

GORDON, GEORGE B.

1902 *The Hieroglyphic Stairway, Ruins at Copan*. Memoirs of the Peabody Museum. Vol. 1, no. 6. Cambridge: Peabody Museum, Harvard University.

KAUFMAN, TERRENCE S., and WILLIAM M. NORMAN

1984 An Outline of Proto-Cholan Phonology, Morphology, and Vocabulary. In *Phoneticism in Maya Hieroglyphic Writing*, edited by J.S. Justeson and L. Campbell, pp. 77-166. Institute of Mesoamerican Studies, Pub. No. 9. Albany: SUNY-Albany.

KNOWLES, SUSAN

1984 Chontal Mayan Positionals. *Journal of Mayan Linguistics* 4(2):7-33.

MACLEOD, BARBARA

1984 Cholan and Yucatecan Verb Morphology and Verbal Affixes in the Inscriptions. In *Phoneticism in Maya Hieroglyphic Writing*, edited by J.S. Justeson and L. Campbell, pp. 233-262. Institute of Mesoamerican Studies, Pub. No. 9. Albany: SUNY-Albany.

MARTINEZ HERNANDEZ, JUAN

1929 *Diccionario de Motul, Maya-Español*. Mérida: Talleres de la Compañía Tipográfica Yucateca.

RINGLE, WILLIAM M.

1996 Birds of a Feather: The Fallen Stucco Inscription of Temple XVIII, Palenque, Chiapas. In *Eighth Palenque Round Table, 1993*, pp. 45-61. San Francisco: Pre-Columbian Art Research Institute.

RUZ LHUILLIER, ALBERT

1958 Exploraciones arqueológicas en Palenque, 1955. *Anales del Instituto Nacional de Antropología e Historia*. 10(39):185-240.

SCHELE, LINDA, and PETER MATHEWS

1979 *The Bodega of Palenque, Chiapas, Mexico*. Washington, D.C.: Dumbarton Oaks.

WISDOM, CHARLES

1950 *Materials in the Chorti Language*. University of Chicago Microfilm Collection of Manuscript Materials in American Indian Cultural Anthropology, #28. Chicago: University of Chicago.

Figure 1. The glyph **yu-ku-la-ja KAB-?** from Palenque, Temple XVIII. Photograph by Linda Schele.

