CMGG0: Syllabograms (Part 0)
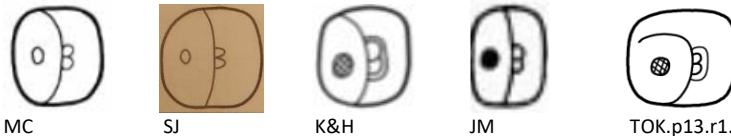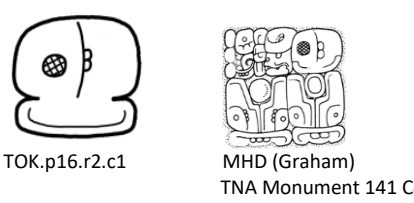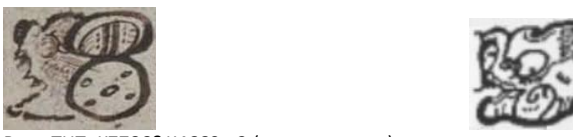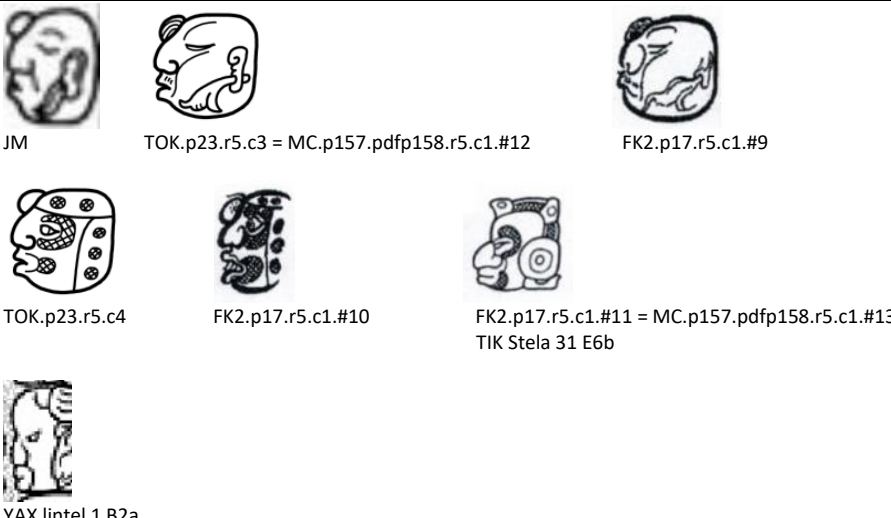
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Last updated: 2024-03-05

Syllabogram	Variant Name	Glyph examples and notes

syllabogram-a	rectangular	
		MC JM K&H
		
		Sub-variants (1)
		• A. Rectangular:
		  ○ Left:
		    ▪ Top: dot.
		    ▪ Middle: a series of horizontal ticks ending the left (after a very small space) with a smaller (or even tiny) dot.
		    ▪ Bottom: dot.
		  ○ Right: vertical bar.
		
		Notes
		• Historically speaking this was **AJ**, but towards the end of the Classic, often **a** as well. (lost reference, perhaps a Tokovinine lecture?).

syllabogram-a	bird head	
		MC JM MC TOK.p26.r5.c1
		
		MC JM MC K&H TOK.p9.r1.c6
		
		MC JM K&H TOK.p8.r1.c4&c5
		
		Graham (Coll-2)
		MQL Structure 4 Stones F.3
		a.<ya:YAX?>
		
		mayavase.com
		K7786 PSS-A
		a.<AL:ya>
		
		Sub-variants (4)
		• A. Full bird-head:
		  ○ Most of glyph is the head, with the narrow beak on the left.
		  ○ Upper and lower beak present.
		  ○ Scroll on the bottom middle or right.
		• B. Slim bird-head:
		  ○ Narrow vertical rectangle.
		  ○ Head reduced to the top part with eye.
		  ○ Upper beak only – inner edge can be reinforced and optionally cross-hatched.
		  ○ Can be vertical or angled.
		• C. Stylized bird-head:
		  ○ Narrow vertical rectangle.
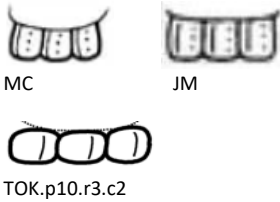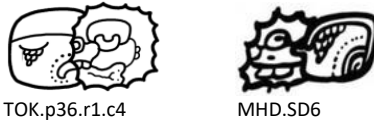
		o The head is reduced. o Lower beak only – inner edge can be reinforced. o Row of 3-4 dots separate the head from the beak (can also be a horizontal line with 3 "bumps", optionally with tiny dots inside the bumps). o A column of vertical dots on the left. • D. Full bird-head plus wing: o The whole wing of the bird is also shown below the head. I've only seen two instances of this (MQL Structure 4 Stones F.3, K7786 PSS-A, shown above), and it's questionable whether this is a sub-variant, or just the one-off whim of the artist.

syllabogram-e	boulder	
		MC / K&H / SJ JM TOK.p12.r1.c3
		
		• Features:
		  o A boulder outline with (optional) bold walls (halfway from the floor) and ceiling
		  o Inside: three dots in a triangular formation (with the triangle pointing down), forming a "face".
		• Not to be confused with the boulder variant of **na**: that variant of **na** has three crescents in triangular formation whereas this variant of **e** has dots (forming a "face").

syllabogram-e	animal head	 MC K&H JM • This is iconographically speaking an aquatic animal, e.g. a frog or a turtle. • See K531, where the toad has three dots in the ear. • Many examples of the head variant of AHK also have three dots in the ear. Note that the frog in K531 doesn't have a spiral while the turtle glyphs generally do. • So perhaps **e** is more a turtle than a frog.
syllabogram-i	boulder	 MC K&H / SJ TOK.p14.r1.c1 MC.131.1 i.<ba:ka>
syllabogram-i	bird biting eye of dog	 MC MC JM ~= MC.2 K&H TOK.p26.r2.c4 JM.92.1 JM.92.2 <u>Sub-variants (2)</u> • A. Bird and dog: for the dog, it's only ever the head; for the bird it's usually including body and legs, but can be bird head only.
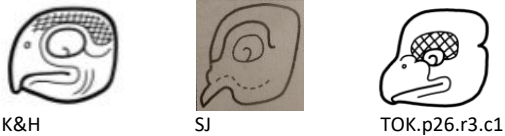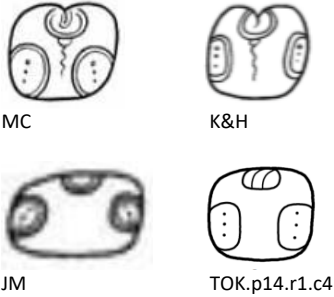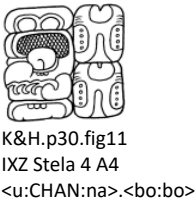
		• B. Bird only – bird facing right (unusual in Mayan iconography), no dog:
		   o Full bird-head: including body and legs.
		   o Bird-head only: can have a dot in the beak (perhaps representing the eye of the dog).

syllabogram-o	feather	MC K&H = JM TOK.p6.r6.c4
		
		MC JM K&H
		
		MC.p22.ex1.1
		o.o
		
		TOK.p7.r1.c2
		
		Sub-variants (2)
		• A. Symmetric: spine down the centre with curved ticks on both sides:
		   o Spine is usually a row of non-touching dots, but can be a single band.
		   o Ticks may be missing.
		   o Always ends in cross-hatched circle.
		• B. Asymmetric:
		   o Spine is usually a row of non-touching dots but can be absent.
		   o Ticks on one side only.
		   o Always ends in cross-hatched circle.
		
		• Optionally, a circle at the opposite end from the cross-hatched circle:
		   o Can be a plain circle within the main part.
		   o Can be an external circle with is a circle of very small (touching) dots, with a small dot in the centre.
		• Later forms can have a small protrusion at the "cross-hatched" end (though the cross-hatching may be absent) – ceramic form?

syllabogram-o	bird head	MC / K&H SJ JM TOK.p26.r3.c2 • A feather on each side of the head • Optionally, cross-hatched protector above the eye (bold outline) • Waves on bottom right (a series of curved, parallel ticks)
syllabogram-u	crescent	MC JM K&H MC TOK.p8.r3.c1&c2
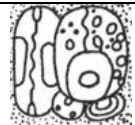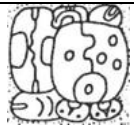
		SJ MC JM JMp.255.#4
syllabogram-u	eyeballs	MC SJ K&H SJ.p37 TOK.p8.r2.c1 TOK.p8.r2.c3 MC = K&H JM.p54.1 JM.p253.#4 JM.p256.#1 • TOK.p8.r2.c1 is a variant which has both "eyeballs" and a skull?
syllabogram-u	stylized fish	JM.p254.#2 TOK.p7.r3.c4 FK2.p17.pdfp17.r5.c1.#5 MC SJ.37.r1.c5.1 Zender-TMMD.p18.fig6 Incised Marine Shell F1 Cleveland Museum of Art u.\<ja:la> Sub-variants (2) • A. Symmetric: o An "eye" on the left (vertical orientation) or top (horizontal orientation), eye with a "feeler" as pupil. o Parallel curved ticks on both ends, representing a fin or tail. o A series of small touching triangles on the right (vertical orientation) or bottom (horizontal orientation), representing the teeth. • B. Asymmetric: o An "eye" on the left (vertical orientation) or top (horizontal orientation), eye with a "feeler" as pupil. o Parallel curved ticks on one end only, representing the tail, the other end has (stylized) mouth of fish, and a small set of parallel ticks distinctly representing the pectoral fin.
syllabogram-u	squid-u	Tokovinine&Beliaev-PotR.p178.fig7.4b BPK Sculptured Stone 5 'A3' u.\<*KAB:[ji]ya> Safronov BPK Sculptured Stone 5 'F1' u.\<KAB:[ji]ya> Gronemeyer-LoTiMHW.p89.fig1f BPK Sculptured Stone 5 'F6' u.USIIJ[WITZ]
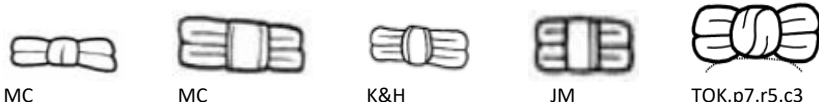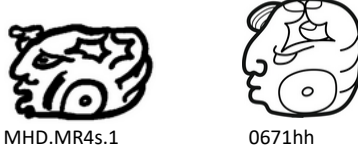
		• This variant is perhaps related to the fish-u variant. • Instead of short, parallel, slightly curved ticks representing the tail, there are wavy "squid arms" at only the top end. All three examples above are from BPK.
syllabogram-u	boulder	MC SJ K&H JM TOK.p13.r1.c4 TOK.p16.r2.c1 MHD (Graham) TNA Monument 141 C4 • This variant is sometimes called "muluk-u" because if looks like the glyph within the blood cartouche for one of the variants of the day name Muluk. • Do not confuse this with **lo**. This one is **lo** rotated 90 degrees clockwise.
syllabogram-u	animal head	K&H SJ JM.p255.#3 PAL TS H4a Boot-THToK7786&K4669.p2 (mayavase.com) mayavase.com K7786 PSS-C K4669 A3 u.<tzi:bi> • In the case of K7786 PSS-C, Boot-THToK7786&K4669.p2.para2: a rare sign to represent the syllabic sign **'u**, namely the opened mouth of a howling dog, probably hinting at the sound "hoo" (or "huuuuuu"; Diego de Landa's second sign for "**u**" may be a related case, cf. Bricker 1987). • In the case of K4669 A3, it is exactly at the spot between *utzihbnajal* and *jawante'*, i.e. between "the painting of" and the word indicating the type of the ceramic object (*lak*, *uk'ib*, etc). Syntactically, that word requires the u for the possessed object, so we know that this glyph is in fact **u**. Furthermore, the "fin" element can be seen on the top right, and the upturned nose is another characteristic feature of the "shark head variant" of u.
syllabogram-u	human head	JM TOK.p23.r5.c3 = MC.p157.pdfp158.r5.c1.#12 FK2.p17.r5.c1.#9 TOK.p23.r5.c4 FK2.p17.r5.c1.#10 FK2.p17.r5.c1.#11 = MC.p157.pdfp158.r5.c1.#13 TIK Stela 31 E6b YAX lintel 1 B2a Sub-variants (3)
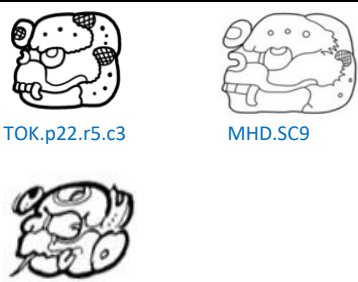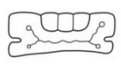
- A. Human-head with ear-cloth.
- B. Human-head with cross-hatched elements – the two elements (top and right) are very suggestive of logogram **JU'**, but **JU'** does not have any cross-hatched areas on the face.
- C. Head of a dwarf (YAX lintel 1 B2a).

Notes:
- The lips are a little bit on the thick side – not extremely so, but a sort of "tendency to thickness".
- FK2.p17.r5.c1.#11 = MC.p157.pdfp158.r5.c1.#13 looks a little bit like RAZ Tomb 7 A8, but there it appears to be the last glyph-block, with a "3" preceding, so is unlikely to be u. Also, the Adams drawing seems to have two "centipede teeth" making it seem even less like this head variant of syllabogram **u**.

| Adams RAZ Tomb 7 A8 | ? RAZ Tomb 7 A8 |

.

| syllabogram-u | skull |

MC.p157.pdfp158.r5.c1.#10

YAX Lintel 3 G1   YAX Lintel 1 |

| syllabogram-ba | boulder |

MC = K&H   JM   TOK.p14.r3.c2

TOK.p23.r5.c1

- The boulder outline has two infixed elements (a "necklace" and "blades of grass") in common with a number of other glyphs. The list below shows the unique element infixed in the top which distinguishes them from one another:
  - **ba**: **LEM**-like element.
  - **ma**: right-side-up AJAW-face.
  - **t'u**: KAWAK.
  - **tz'e**: a slightly curved, bold V with "dot protector" underneath (the "dot protector" replaces the "necklace", and the bold V can sometimes be non-bold).
  - **tz'u**: K'IN.
  - **HA'**: cross-hatched circle.
  - "IMIX": cross-hatched circle or **LEM**-like element (usually distinguished from **HA'** by the blood cartouche).
- Sub-variants (2):
  - Abstract: - vertically elongated rectangle / boulder outline, with:
    - Top: a "LEM"-like element, with a "dot necklace" underneath.
    - Bottom: blades of grass or double blades of grass.
    - Optional arc of touching dots along the bottom, outside of the boulder outline, larger dots than in the case of the "dot necklace".
  Do not confuse this variant of **ba** with the visually similar boulder variant of **HA'** = "water":
    - **ba** has an infixed (round) "LEM"-like element.
    - **HA'** as an infixed cross-hatched circle.
  Part of the confusion arises because the dot necklace and the (double) blades of grass are common between the two of them. |
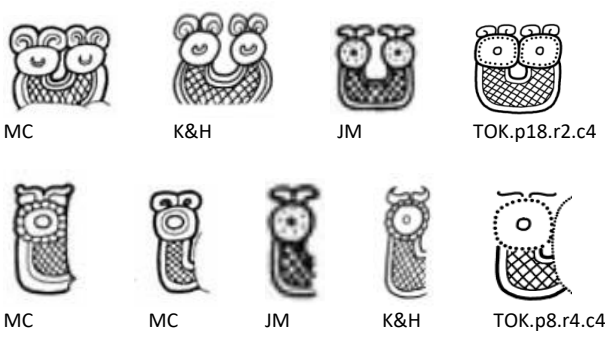
		○ Head: the distinctive elements of the abstract sub-variant enclosed in an anthropomorphic head.
syllabogram-ba	gopher head	MC = K&H JM • This glyph is also logogram **BAAH** = "gopher" (used as a rebus for "image", "head"). The syllabogram usage is obviously derived from the earlier logogram usage.
syllabogram-ba	trilobate	MC JM TOK.p10.r3.c2

syllabogram-ba	KAWAK-based	A.
		
		TOK.p36.r1.c4 MHD.SD6
		
		mayavase.com
		K8393 PSS D-G
		u tz'i{h} ba li
		
		--- 	
		B.
		
		TOK.p36.r2.c3
		
		Boot-OOO.p17.fig2a = MHD (Kerr)
		K530 PSS E-H
		u tz'i{h} ba li
		
		--- 	
		C.
		
		TOK.p36.r2.c4
		
		--- 	
		Sub-variants (3):
		• A. KAWAK with "skull-with-jagged-outline".
		  ○ The order the two components may be somewhat free, as TOK.p36.r1.c4 has KAWAK-skull while MHD.SD6 has skull-KAWAK.
		  ○ K8393 PSS D-G is one real-life example. This is how we know with confidence that it's read as **ba**, as it occurs in a context of the standard formulaic word *utz'ihbal* = "it is the painting of", at the position where **ba** is expected.
		• B. KAWAK with **IX**.

		o K530 PSS E-H is one real-life example. This is how we know with confidence that it's read as **ba**, as it occurs in a context of the standard formulaic word *utz'ihbal* = "it is the painting of", at the position where **ba** is expected. • C. KAWAK with boulder-variant of **ba**.
syllabogram-ba	two-skull	 TOK.p36.r2.c2 1767bh (Bonn) ? ba • TOK (2017) doesn't assign a reading to this glyph. Bonn (>2022) gives the reading **ba** *not in brown*, which implies that it's since been deciphered *with a high degree of confidence*. • TOK.p36.r2.c2 is clearly the equivalent of Bonn's 1767bh, which Bonn reads as **ba**. For this reason, TOK.p36.r2.c3 is included here as an example of **ba**.
syllabogram-be	bird head	 K&H SJ TOK.p26.r3.c1
syllabogram-bi	abstract	 MC - K&H JM TOK.p12.r1.c1
syllabogram-bi	footprint	 MC K&H TOK.p11.r2.c2
syllabogram-bi	animal head	 MC = K&H = SJ JM TOK.p28.r2.c3
syllabogram-bo	boulder	 MC K&H JM TOK.p14.r1.c4 K&H.p30.fig11 IXZ Stela 4 A4 <u:CHAN:na>.<bo:bo> • All sub-variants share the following: o A boulder outline. o Within the boulder, one oval on the lower part of each side, left and right, touching the side.
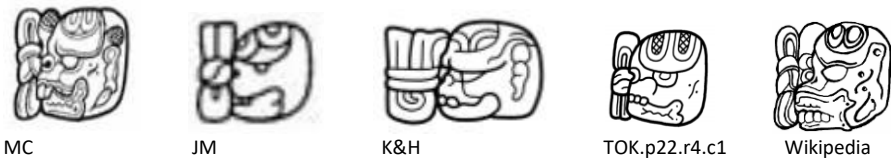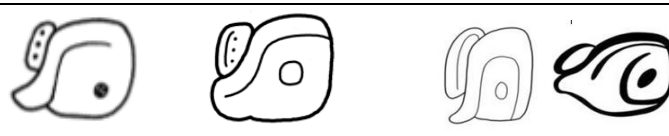
		o Oval can be bold or non-bold.
		o The long axis of the oval is vertical.
		o On the central axis of each oval, is a vertical row of three non-touching dots.
		
		Sub-variants (3)
		• A. Fancier:
		  o Indentation in the middle of the top.
		  o Upside-down feeler hanging from the indentation with protector.
		  o Dot at the bottom of protector with squiggly line.
		• B. Simpler:
		  o No indentation in the middle of the top.
		  o "Grip" or "**LEM**" on the inside of the middle of the top (instead of the feeler, protector, dot, and squiggly line).
		• C. Mix:
		  o Indentation on the top.
		  o No dot and squiggly line.
		  o Inward-curving, upside-down V in the middle of the bottom.
		  o Do not confuse this with **BAAK** when the latter is written with the long-axis vertical:
		
		PAL TFC H3 PAL TS Q9
		BAAK{el}.<way:wa[la]> <BAAK:le>.<wa:WAY:la>
		
		.

syllabogram-bu	head	
		
		MC = K&H K&H workbook JM TOK.p36.r3.c4
		
		MC = K&H JM TOK.p8.r3.c4
		
		(Tokovinine lecture/lesson lost reference) In the early stages of the Classic Maya script, **bu** and **mu** were not distinguished, probably because they were borrowed from a language which didn't distinguish between b and m. But as this distinction is important in Classic Maya, they gradually developed two different forms:
		• **bu** *with* dots on the scroll
		• **mu** *without* dots on the scroll
		
		Sub-variants (2)
		• A. Full: head with "leaf" on the left (usually just a boulder outline instead of a leaf outline)
		  o Left: boulder with bold scroll inside – the scroll has two or three dots on the outer edge, optionally cross-hatched.
		  o Right: head, which can be "turtle", "bird" or "skull"-like
		• B. Reduced: left part only.

syllabogram-cha	boulder	 MC = K&H TOK.p32.r5.c2 JM JM TOK.p14.r1.c3 Sub-variants (2)

		• A. Full: ○ Top: one or multiple pairs of "feelers" – shorter feelers can have protectors. ○ Bottom: CHUWEN. • B. Reduced: bottom part of full form. Notes • The reduced sub-variant is similar to **se**.
syllabogram-cha	three eyes	MC = K&H JM LTI - Kimbell Panel F1 MC = K&H TOK.p10.r1.c2
syllabogram-cha	scroll and eyeball	JM.47.1 YAX Lintel 27 H1 YAX Lintel 1 A7b • Occurs commonly as the initial phonetic complement of *cha'an* = "master of".
syllabogram-cha	hand	MC K&H TOK.p20.r2.c2 • The outline of this glyph is a left fist, viewed from the back of the hand. It is one of four glyphs with this characteristic: ○ **cha**: IK' in the top left. ○ **k'a**: horizontally stretched, cross-hatched, inverted-U in the top left. ○ **ho**: 3 non-touching dots in a triangular formation, pointing downwards. ○ (One variant of) Glyph-G7: with the head of a young man below and a **NAAH** on the left of both. The bottom left has a 180-degrees rotated curved-L with one or two reinforcing lines to the right. • In the hand variant of **cha**, the bold-T ("IK'", symbolic of breath or wind) also can take the form of a short, slightly curved horizontal line (tips pointing upwards), with a "u" under it, making it resemble a tooth or (in this context) an eye.
syllabogram-che	cloth knot	MC MC K&H JM TOK.p7.r5.c3 • Not to be confused with the knot-variant of **HUUN** –**HUUN** is "asymmetric" (has a loop on one side and two "tassels" on the other) while **che** has (double) loops on both sides.
syllabogram-che	floppy knot	MC K&H JM • Do not confuse this glyph with the visually similar undeciphered logogram "KS" (used in the EG of the "Knot-Site"). The ends of the "KS" logogram droop downwards, whereas the ends of this variant of **che** curve upwards.
syllabogram-chi	hand	MC = K&H JM TOK.p19.r1.c1
syllabogram-chi	head	MHD.MR4s.1 0671hh
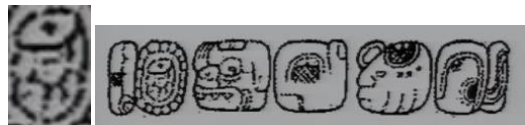
		• As often happens in Maya glyphs, this is simply the "animated form" of the common hand variant of **chi**. In such "conventional" animated forms, the characteristic elements of the base form are simply transferred to a head-outline.

syllabogram-chi	skull	TOK.p22.r5.c3 MHD.SC9
		
		González-EAFeePCTM.p305.pdfp316.fig4.70 (Martin)
		MSK844 F
		
		• This glyph is also logogram **CHIH** = "pulque". The syllabogram usage is obviously derived from the earlier logogram usage.
		• MSK844 (a.k.a. CLK Structure II-B Tomb 4 Plate; "objabbr = CLKT4pl") F is apparently such a skull form of **chi**. [Sim: I don't see the characteristics that clearly.
		  ○ In all three examples, there'0s a tooth with a hook in it, at the right side of the mouth.
		  ○ MSK844 F seems to have a "feather" in the top right. This seems to be partly reflected in TOK.p22.r5.c3 and MHD.SC9 but much less clearly a feather.
		  ○ There is the nose hole in all three examples, but the top of the head in MSK844 F has a LEM-like element, which is not shown in the canonical form of TOK.p22.r5.c3 and the typical example form of MHD.SC9.]

syllabogram-chi	agave plant	BPK SS5 H9/I4
		ju.chi
		
		• The example glyph from BPK SS5 is either H9 or I4, depending on which of the two very slightly different glyph-block labelling systems is used.
		• A skull or animal head with three long leaves on the right represents pulque because the sap of the plant (= three leaves) is buried (= skull) for the fermentation process.
		  ○ Zender-CaCiAMF.t0:21:39-22:25: [...] Potentially, it's also the logogram CHIH for "pulque" since that's what it depicts, but there's no doubt that there's many contexts in Maya art from this time that use it as just a syllable. If so, then it's a syllable that *originates* from the word for maguey products, specifically, in this case, pulque proper.
		  ○ Houston-PaP.p4: The chi occurs in both "hand" or "agave" variants, perhaps with another conflated sign, an animal head.

syllabogram-cho	jawbone	MC JM TOK.p20.r4.c3 MHD.HJ1.1&3
		
		MHD.HJ1.2
		
		MatsumotoEtAl-STalitCMKoST.p4.pdfp4.col2.fig2 (Houston)
		LTZ Panel 1 C1
		<chi:cho:la>.<YAX:?>
		
		Sub-variants (2)
		• A. Asymmetrical:
		  ○ Bone-jaw with three touching dots representing teeth on the left side.
		  ○ Left side of bone-jaw has only one "knob" while right side has two.
		• B. Symmetrical:
		  ○ Bone-jaw with three touching dots representing teeth in the centre.
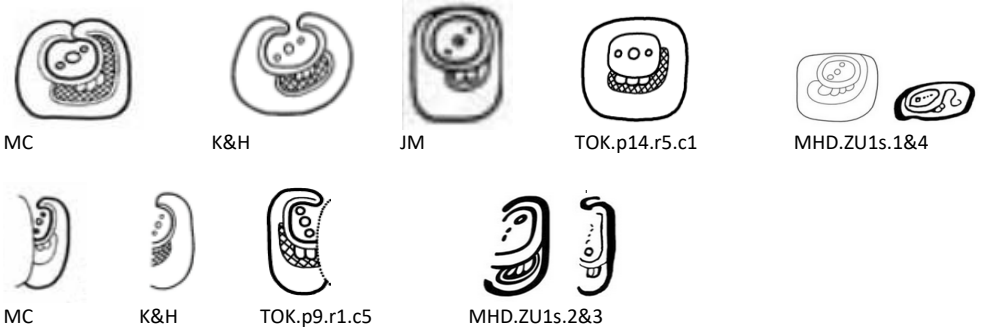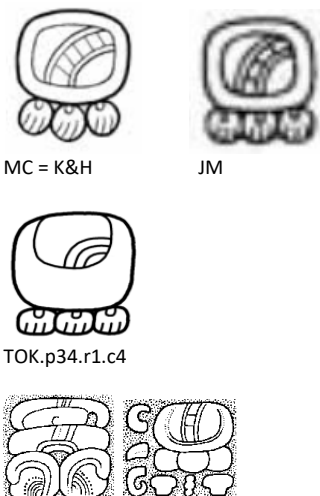
|						
		o Left side of bone-jaw has two "knobs" same as the right side, which also has two. Notes • The MHD code is HJ1 and gives three examples in the Catalog – HJ1.1&3 are the asymmetrical sub-variant and HJ1.2 is the symmetrical sub-variant. • A search on MHD with "blcodes contains HJ1" gives 87 hits and a visual inspection reveals that the occurrences of the asymmetrical sub-variant far outnumber the occurrences of the symmetrical sub-variant – only about 13 clear symmetrical sub-variants compared to 74 others (either clearly asymmetrical or unclear either way).				
syllabogram-chu	tooth and axe	MC K&H JM TOK.p16.r4.c2 • Do not confuse with **k'e**, which has a tooth and a bone.				

syllabogram-ch'a	two eggs in a nest	MC K&H JM TOK.p18.r2.c4
		
		MC MC JM K&H TOK.p8.r4.c4
		
		Sub-variants (2)
		• A. Full:
		  o Top: Two circles – touching or non-touching, each circle:
		    ▪ Can have a dotted reinforcement inside the perimeter.
		    ▪ Can have either a dot or a crescent (tips pointing upwards) in the centre.
		    ▪ Can itself be made up of touching dots.
		    Not every combination is valid – for example, a crescent in the centre tends to be inside a single circle, not to have a "fancy" outer border.
		    ▪ Has a pair of feelers – feelers can be:
		      • Standard left and right feelers (scrolls).
		      • "Pax" feelers (curving upwards).
		    ▪ Standard feelers tend to have protectors while "pax" feelers don't.
		  o Bottom: below the two circles, a single boulder outline:
		    ▪ With a U-indentation in the middle of the top (between the two circles).
		    ▪ Walls, ceiling, floor tend to be bolded - optionally even with a spine.
		    ▪ Interior is cross-hatched.
		• B. Reduced: half of full.				

syllabogram-ch'e						
syllabogram-ch'i						
syllabogram-ch'o	rat head	MC K&H JM TOK.p31.r1.c1 (also **si**)				
syllabogram-ch'o	torch eye	TOK.p24.r5.c4				
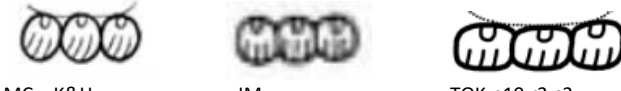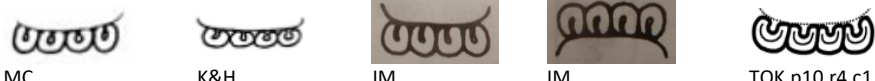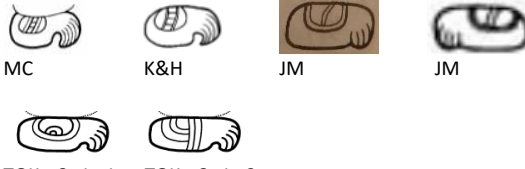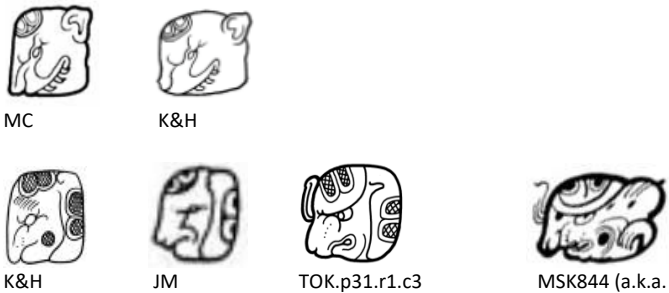
		• I'm not aware of any inscriptions in which this variant occurs.
syllabogram-ch'o	goggle eyes	 JM • This element is no longer considered to be a syllabogram. It only occurs to write *ch'ok* in the phrase *u-ch'ok k'aba'*, and always in combination with the so-called "row of teeth" variant of **ko** (also no longer considered to be a syllabogram). Instead that fixed combination of "goggle eyes" above and "row of teeth" below is now considered to be **CH'OK** (i.e. a logogram) – see **CH'OK** for more information.

syllabogram-ch'u	abstract	
		1526st MHD.2S5 FK2.p17.pdfp17.c4.r5
		ch'u? ch'u? ch'u?
		
		MHD (Hunter) BeliaevEtAl-LTJM.p196.pdfp20.figIII.4 (Stuart)
		CPN Altar R E2 CRN Panel 1 H8
		ch'u.xa.K'AWIIL <ch'u?:ba>.ja
		
		• Features:
		   ○ "LEM"
		   ○ A "grip", with two struts inside.
		   CPN Altar R E2 has a sub-variant which has two "LEMs" instead of one, and the "LEMs" more resemble **li** than LEM.
		• The only known reference in a textbook resource is FK2.p17.c4.r5, but given with a question mark. MHD and Bonn both list it, also with a question mark.
		• BeliaevEtAl-LTJM.p197 and PragerEtAl-DDe3D.p76: <ch'u:ba>.ja ➔ *ch'uhbaj* = "was put", "was delivered".
		• A search in MHD on "blcodes contains 2S5" gives 10 hits, widely spread throughout the Classic Maya world – from CPN, CRN, NTN, YAX, TNA, etc.
		• Summary: the reading of this glyph as a variant of **ch'u** seems to be more secure than that of the "bat-head" variant.
		• Do not confuse **ch'u** with the **pi** variants with a grip: in both cases there's a grip with two struts infixed, ending in one or two elements each having a boulder outline:
		   ○ In **ch'u** the boulder outline is one or two "LEMs" or **li**'s at the end of the grip.
		   ○ In **pi** the boulder outline is one or two **KAWAK**s.

syllabogram-ch'u	bat-head	
		Safronov
		PNG Panel 3 F'2-E'3
		a.ch'u bi:ji
		
		• The proposal to read the bat-head conflated with "KAWAK" as **ch'u** can be found in Biró-PNP3.p304.pdfp14.para3-p309.pdfp19.para1 (2011) (more than four pages!). This gives **a-ch'u-bi-ji** ➔ *ach'úbij* = "you delivered it, you handed it over, you entrusted it, etc".
		• In contrast, Carter-SaSoCMH.p359.pdfp20.fig17.5 (2014) transliterates this as a conflation: **xu+ku** (informally treated as infixing, but this is, strictly speaking, conflation). This results in Carter-SaSoCMH.p359.pdfp20.l-5: **a**.<**xu+ku**> **bi:ji** ➔ a xukbij = "your *xukbij*", glossed as "a word of uncertain meaning" (Carter-SaSoCMH.p360.pdfp21).
		In any case, Biró-PNP3.p304.pdfp14.para3-p309.pdfp19.para1 treats F'2b as a single glyph **ch'u**, while Carter-SaSoCMH.p359.pdfp20.l-5 does not.
		• Bíró-PNP3.p308.pdfp23: For *ch'ub'* and its cognates the following entries are found in the dictionaries:
		   ○ (C.Y.) *k'ub-* encomendar, depositar, entregar o dar entregando, ofreciendo [GT: entrust, deposit, deliver or give delivering, offering].
		   ○ (M.Y.) *k'ub'* deliver, hand over, give up.
		   ○ (ChT) *ch'ubin* poner [GT: put].
		   ○ (ChR) *ch'ujb'a* ahorrar, guardar, cuidar, depositar, encargar [GT: save, save, take care of, deposit, entrust].

		o (TZO) *k'ub* commission, use a person's services, entrust someone with. o (C.TZE) *cuban* encomendar, secuestrar en otro algo, tomar a cargo [GT: to entrust, to sequester in another something, to take charge]. • Summary: the reading of this glyph as a variant of **ch'u** rests (as far as I know) only on Bíró-PNP3 and should be treated with a certain degree of caution.

syllabogram-ha	knot-skull	
		MC JM K&H TOK.p22.r4.c1 Wikipedia
		
		Notes
		• Wikipedia: https://en.m.wikipedia.org/wiki/File:Maya_Syllabary_Ha_1.jpg
		• In MotT2019 the theme was acrophony, and there it was explained that **ha** is derived from **HA'**, which means "fly" (the insect).
		• Do not confuse this variant of **ha** with one of the (only superficially) vaguely similar variants of **CH'EEN** (the "bundle and bird-head variant):
		  o **ha** has a knot on the left (occasionally on top) and a skull on the right (occasionally on the bottom).
		  o **CH'EEN** has a "bundle" on the left (occasionally on top) and a bird-head on the right (occasionally on the bottom).
		
		Sub-variants (1)
		• A. Knot-skull
		  o Left – knot:
		    ▪ Quite a distinctive feature is that the knot is *asymmetric*, i.e. the two ends are not similar, as they are in the reduced variant of **ma** or in the abstract variant of **MUT** (the EG of Tikal).
		    ▪ What makes it asymmetric is that it's a "knot *with tassels*" – i.e. one end is a loop, and the other end is two "tassels".
		    ▪ This is a known variant of **hi**.
		  o Right – skull:
		    ▪ **AK'AB** at the top of the head, in a very high/wide forehead.
		    ▪ Medium-sized, round eye.
		    ▪ Nose hole.
		    ▪ Bone-jaw with two or three teeth.
		    ▪ %-sign at middle height, on the right.
		    ▪ Optionally, complex ear, optionally with paper strip pulled through hole in earlobe.

syllabogram-ha	tooth	
		K&H TOK.p16.r4.c4 MHD.ZYC.1&2
		
		Sub-variants (2)
		• Main sign: tooth outline with reinforced left wall and ceiling.
		• Top left: oval with:
		  o A. Three tiny non-touching dots in a row, on the long axis of the oval ("bone property marker").
		  o B. Instead of the three tiny non-touching dots, a single curved line, multiple parallel curved lines, a single scroll, or nothing (this last could simply be erosion). The reference works tend to give only the sub-variant with three tiny non-touching dots, but a search in MHD on "blcodes contains ZYC" gives 33 hits, of which *only four* have the three tiny non-touching dots – all the others are a mix of the alternatives given in "B".
		
		• Do not confuse this variant of **ha** with the tooth variant of **ye**, which has a "dot cascade left" in the top left, instead of the oval shaped "bone property marker".

syllabogram-he	boulder	 MC K&H JM TOK.p13.r5.c1 TOK.p17.r1.c1

		YAX Lintel 16 D1 ye.<he:TE'> YAX Lintel 23 M1 u:TZ'AK:ka{j} *17:he :wa - A modified form of OHL/WAJ – has the same elements except that: - There is a curved-v indentation in the middle of the roof. - From the indentation hangs an upside-down feeler/scroll. - YAX Lintel 16 D1 seems to lack the lipped-U with supporting pillars at the bottom – perhaps the partially cross-hatched element in the middle is the equivalent of the lipped-U, but the pillars are completely absent. - YAX Lintel 23 M1 has an uncharacteristic variant of **he** as it lacks the characteristic "scroll" at the top, and instead has the **LEM**-like element usually found in **OHL**.
syllabogram-he	animal head	TOK.p30.r3.c4 he PAL PT B18 18.<he:wa> or 18.<HEEW:wa> - A rabbit head is suggested by the very distinctive ear – two crossed bones cover the eye. - Known from PAL PT B18, where it substitutes for *he'ew* of a DN. - Note that it is also possible to read this as **HEEW** (i.e. as a logogram).
syllabogram-hi	knot	MC K&H JM JM YAX Lintel 1 E1b (part of u-baah) - Reduced boulder form – just the knot at the top: - Symmetric: the elements on both sides of the central knot are equivalent. - Asymmetric: there is a "loop" on one side and "tassels" on the other side of the knot. - JM lists this as **ji**, but it is actually **hi**.
syllabogram-hi	boulder	MC K&H JM TOK.p33.r4.c1
syllabogram-ho	hand	MC JM = 25EMC.2 TOK.p20.r2.c3 MHD.MZ3.1&2 25EMC.1&3&4 - Not listed in the syllabogram tables of K&H, K&L, BMM9, only in TOK, 25EMC (and MC). - MHD reads this as **jo**, in every context, including the very common *ch'ahoom* (which is therefore transcribed *ch'ajoom*). - The outline of this glyph is a left fist, viewed from the back of the hand. It is one of four glyphs with this characteristic:
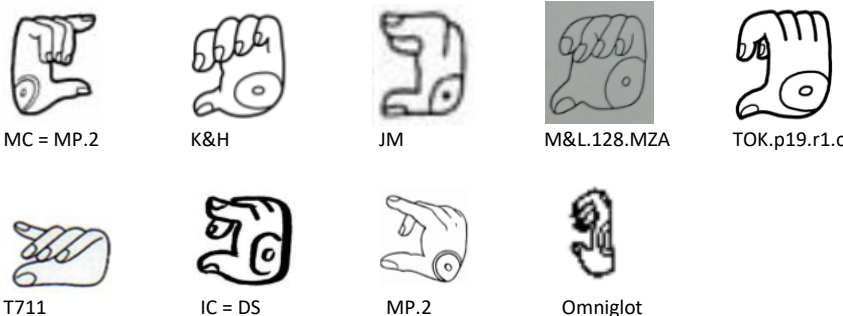
- o **cha**: IK' in the top left.
- o **k'a**: horizontally stretched, cross-hatched, inverted-U in the top left.
- o **ho**: 3 non-touching dots in a triangular formation, pointing downwards.
- o (One variant of) Glyph-G$_7$: with the head of a young man below and a **NAAH** on the left of both. The bottom left has a 180-degrees rotated curved-L with one or two reinforcing lines to the right.
- In the hand variant of **ho**, the dots are optionally darkened / cross-hatched. They can even have crossed bands (25EMC.1&2), or the top one can be a **LEM** (MHD.MZ3.1).

syllabogram-ho	human head	

K&H = K&L = 25EMC.5
CPN Stela N Altar B2
ho

TOK.p25.r1.c1
jo

TOK.p18.r1.c2
jo

BMM9

M&G.p105.3

Zender-BH.p9.fig7
CPN Stela N Altar B2

AT-E1168-lecture15.t0:21:21
PNG Panel 2 T1

Looper
QRG Stela C K1

- Given in all 5 reference sources – K&H, K&L, TOK, BMM9, 25EMC, but TOK gives a reading **jo** rather than **ho**.
  - This has traditionally been read as **jo**, but now **ho**, according to the "Russian school", no paper yet; BeliaevEtAl-NGA.p357.pdfp7.fn1: Evidence for the reading of "Thick-Lipped Head" as **ho** (with glottal spirant) and not **jo** (with velar spirant) will be presented in a forthcoming paper (Davletshin n.d.).
- Zender-BH.p9.fig7 = Zender-BH.p10.c1.l+11 (part of K'ahk' Hoplaj Chan K'awiil).
- AT-E1168-lecture15.t0:21:21 is from ta.<[ho]mo> u k'a ba TUUN.ni ➔ Tahoom (formerly Tajoom) Uk'ab Tuun.
- TOK.p18.r1.c2 is the head variant of **ho**. It looks almost identical to the head variant of **LEM**, which is TOK.p18.r1.c1 **LEM?** (with a question mark). The only difference is the element infixed in the middle of the right side:
  - o **LEM?** / TOK.p18.r1.c1 has a **LEM**.
  - o **ho** / TOK.p18.r1.c2 has the "bone property marker" (= oval with three non-touching dots along the long axis of the oval)

syllabogram-hu	iguana head	

MC

K&H

JM

TOK.p28.r1.c3

syllabogram-hu	crest	

BMM9.p7.r4.c2
hu / wu

MHD.32Ms.1&2
hu / wu

1772st
wu

MHD.32Ms.3
hu / wu

0104st
-

T104
-

- No glyphs given in K&H, K&L, TOK, 25EMC. It is however given in BMM9 and by MHD. This suggests that it's quite a recent decipherment.
- There may perhaps be more confidence in reading this glyph as **wu** than as **hu** - BMM9, MHD and Bonn give **wu**, but only BMM9 and MHD give **hu**.
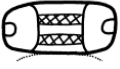
syllabogram-ja	moon	
		MC　　　　　K&H　　　　　JM　　　　TOK.p14.r5.c1　　MHD.ZU1s.1&4
		MC　　　　　K&H　　　TOK.p9.r1.c5　　　MHD.ZU1s.2&3
		- This glyph is also a logogram **UH** = "moon". - The iconographic origin of this glyph is the crescent moon, with the two points meeting at the top being the endpoints of the crescent. It's used as the syllabogram **ja** but also to write the word "moon" as the logogram **UH**. There are no distinguishing characteristics between these two usages – it's the "same" glyph, distinguished only by context. MHD distinguishes them with a lowercase suffix to the 3-letter MHD character code – ZU1a and ZU1s respectively: - MHD.ZU1b: used as syllabogram **ja**. A search in "Classic - Blocks" on "blcodes contains UAZ1s" gives 2,750 hits. - MHD.ZU1a: used as logogram **UH**. A search in "Classic - Blocks" on "blcodes contains UAZ1a" gives 63 hits. The statistical analysis shows that the crescent moon glyph is used far more as **ja** than as **UH**. Sub-variants (2) A. Full: - Crescent moon with the tips of the crescent curve around to almost touch, forming a "bay". - Sometimes tips touch and merge so that the bay becomes a totally enclosed internal circle. - Within the bay (or circle) a diagonal row of three non-touching dots, the middle dot often slightly larger than the outer ones. B. Reduced: half of full.
syllabogram-ja	head variant	
		MC = K&H　　　　TOK.p24.r1.c4
		Human head with infixed three quarters of the full form – the inner edge of the crescent begins on the left at the level of the nose, not (as might be thought) at the level of the mouth.
syllabogram-je	full	
		MC = K&H　　　　JM
		TOK.p34.r1.c4
		Graham YAX Lintel 47 B8-C1 yi:pi ya.<je:le>

		MC = K&H JM TOK.p10.r3.c3

M&G.p158.5
PAL TI Sarcophagus Lid 34-35
<a:je>.<ne:{y}OHL> ma:ta

MHD (Graham)
PAL Bench 1 / Subterranean Throne glyph-block B
a.je.ne

- Do not confuse the reduced variant of **je** with a reduced variant of **AKAN** = "grass", "grassland":
  - The reduced variant of **je** is three touching circles (each with three ticks and a dot) which peek out from the behind the *bottom* of any glyphs covering it, i.e. are (visually) *below* the covering glyph.
  - The reduced variant of **AKAN** is three touching circles (each with three ticks and a dot) which peek out from the behind the *top* of any glyphs covering it, i.e. are (visually) *above* the covering glyph.

Sub-variants (2)
- A. Full:
  - Top – boulder:
    - (Optionally) bold outer edge.
    - Curved ladder inside, with bold or non-bold rungs – ladder can be replaced by curved arcs, making the entire element "**LEM**"-like.
  - Bottom: three touching circles, each circle has:
    - Top: tiny dot.
    - Bottom: three short ticks.
- B. Reduced: the three touching circles of the bottom of the full form.

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syllabogram-ji	horseshoes	MC K&H JM JM TOK.p10.r4.c1

- This consists typically of four touching horseshoes, often "bloated crescents".
- It's frequently conflated with **ya**, to write the verbal suffix *-jiiy*.

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syllabogram-ji	hand	MC K&H JM JM

TOK.p6.r1.c1   TOK.p6.r1.c2

- Do not confuse this with the hand variant of **yi**:
  - **ji** has the internal oval on the *ceiling*, with a ladder or **LEM** in it.
  - **yi** has the internal oval on the *floor*, with a left feeler in it (the oval forms the protector of the feeler).

Sub-variants (2)
- A. The "infixed" element in the top left is a **LEM**.
- B. The "infixed" element in the top left is a "ladder".

---

syllabogram-ji	mammal head	MC K&H

K&H   JM   TOK.p31.r1.c3   MSK844 (a.k.a. CLK Tomb 4 Plate) E

- Characteristic of this variant is a mammal head (with mammal ear)
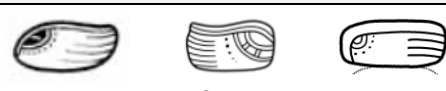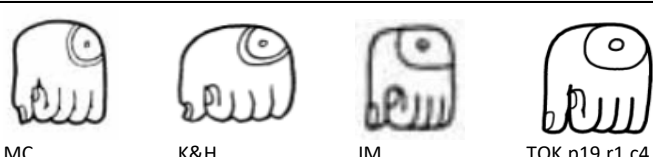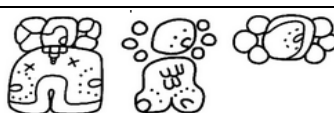
		• Infixed **AK'AB** (darkness property marker) implying a dark-coloured mammal or a nocturnal one. [Sim: think of it as a *rat*.] • Note that in MSK844 (a.k.a. CLK Tomb 4 Plate) E, the distinctive characteristic of the hand variant is visible in the bottom right. Sub-variants (2) • A. With teeth (typically three or four): seems to go parallel with a single **AK'AB** and a mammal ear. • B. No teeth: seems to go parallel with two **AK'AB**s and no mammal ear. But this pattern may be an illusion caused by the small sample size.

syllabogram-jo	boulder without bay	
		MC K&H JM JM TOK.p13.r1.c2
		
		Stuart-ANVotSk.p4.fig5c
		CPN 19469 (disc altar)
		
		Looper Zender&Guenter-TKoLCT.p1.fig1 Graham = KuppratApp.#2
		QRG Stela I C8 TRT Monument 6 YAX Lintel 31 K5
		<ch'a:<jo.ja>>.<u.K'AHK'> IX.<wa:na:<k'o.jo>> TZUTZ.<jo:ma>
		
		• Without a bay on the bottom left of the boulder:
		  o **TUUN/ku**-like outline, optionally with reinforced inner wall.
		  o Two or three indentations on the left all and left side of floor.
		  o Three non-touching dots in a row, diagonally; middle dot slightly larger than the other two.
		  o (Optionally) struts from inner wall (bold in this case) to the ceiling.
		• QRG Stela I C8:
		  o Has a form of **jo** that is quite difficult to recognize.
		  o Not only that, but the reading order is slightly unexpected, making it slightly more difficult to work out what is written.
		  o <ch'a:<jo.ja>>.<u.K'AHK'> needs to be read **jo-ch'a-ja u-K'AHK'** ➔ *johch'aj uk'ahk'* = "it was drilled, the fire of …".

syllabogram-jo	boulder with bay	 MC K&H • Three-quarter circle of boulder outline, with bold inner bottom, sides, and top. • With a bay on the bottom left of the boulder. The bay faces outwards in the bottom left corner, also with reinforced wall (outer wall of bay, but inner wall of boulder). • Three non-touching dots in a triangular formation, diagonal pointing down, i.e. a "face". • One and a half very slightly curved struts at the top. The phrase "one and a half struts" means one strut and one slightly curved line (alternatively, a single strut with one wall a bold wall.
syllabogram-jo	symmetric face	 MC Stuart-ANVotSk.p4.fig5d Stuart-ONojaw.p1.fig1 Dresden 6b Dresden Codex • Nickname: "Face in Renaissance Window".

		• Stuart-ONojaw.p1.fig1: A late example of the **jo** syllable from the Dresden Codex.

		• Sergei Vepretskii:
		  o This variant was removed from some textbooks (perhaps because it is a codex glyph and from a later period).
		  o In the Classic period, there were ceramics in codex style (=red border and crème background), but it is uncertain to what extent these were similar to the codex glyphs of the Classic period.
		  o Note that the glyphs on ceramics are significantly different from the (later) codex glyphs – they are both different from the monumental glyphs but also different from one another.

syllabogram-jo	early jo	 Stuart-ANVotSk.p4.fig5a Stuart-ANVotSk.p4.fig5b Stuart-MoTM6.p1.fig1 TRT Monument 6 O2 ²TZUTZ.<jo:ma> • That the glyph with a large spiral / scroll starting from the bottom left and occupying a large part of the centre is an early form of **jo** is given in Stuart-ANVotSk.fig5, supported by the word *tzutzjoom* written **²TZUTZ.<jo:ma>**, with this variant of **jo**. • The earlier form has optional "horseshoes" and/or optional butterfly/bow-tie ma-like element on top.
syllabogram-ju	serial horseshoes	 MC = K&H

syllabogram-ju	radial horseshoes	
		MC K&H JM TOK.p7.r6.c2
		
		• Do not confuse this variant of **ju** with the visually similar (older) form of **HUL** – both can consist of an outer arc of touching horseshoes:
		  o The syllabogram **ju** has a turtle shell on the inside.
		  o The logogram **HUL** has **AK'AB** on the inside.

syllabogram-ka	comb	 MC JM K&H TOK.p7.r3.c1 MC CNC Panel 1 A5 4.<ka:se:wa> <u>Sub-variants (3)</u> • A. Plain comb:

		• B. Comb with flourish: the top end of the comb has an extra curve – very commonly found on both sides of the ISIG (perhaps evolved / merged from the two side elements of the **tzi** above it?). • C. Double comb: despite the fact that there are two combs present, only a single syllable **ka** is intended, not **ka**-**ka**.
syllabogram-ka	full fish	 MC K&H JM TOK.p28.r1.c1
syllabogram-ke	hand	 MC = MP.2 K&H JM M&L.128.MZA TOK.p19.r1.c3 T711 IC = DS MP.2 Omniglot • Either left or right hand, looking either at the back of the hand or at the palm. | Reference	Left or Right hand	View Back or Palm
MC	R	P
K&H	L	P
JM	R	B
M&L	L	P
T711	L	P
IC	R	B
MP	R	B

Omniglot	R	B |
		
		• Most versions are anatomically difficult or even impossible.
		• Distinguishing characteristic is that the thumb and index finger form a gesture to indicate a small distance apart.
		• Do not confuse this with the visually similar logogram **NAB** = "handspan":
		  o Syllabogram **ke** has the fingers and palm pointing (roughly) sideways – to the left or to the right.
		  o Logogram **NAB** has the fingers and palm pointing (roughly) downwards.

syllabogram-ki	flint with tied down fork	 MC JM TOK.p6.r2.c3 K&H Add the 2-tine on top and 2-tine at bottom examples. • Less subject to bolded walls and ceiling than the variant with bumps and wood Sub-variants (3) • A. Three tines at top and three tines at bottom. • B. Three tines at top and two tines at bottom . • C. Two tines at top and three tines at bottom. • [The form with two tines at the top and two tines at the bottom doesn't seem to exist.]
syllabogram-ki	flint with bumps and wood	

		MC	K&H	JM	

TOK.p6.r2.c4

- More subject to bolded walls and ceiling than the variant with tied down fork.

Sub-variants (2)
- A. One 3-bump line from ceiling to floor, with a curved band from the ceiling to the 3-bump line, and off curved band, two touching dots.
- B. Two 3-bump lines from ceiling to floor (mirror images of one another). Now the curved band goes from one 3-bump line to the other, with two touching dots off the curved band.

syllabogram-ki	bird head	

BMM9.p4 = K&L.p53   TOK.p26.r4.c3   MHD.BT5 [MHD.BT5.2 = EKB Acropolis M96G O1]

Coll-1 (Schele)   Coll-1 (Grube)   Coll-1 (Lacadena)   Schele
CPN Stela P C4   CRC B16-sub Stucco p19   EKB Acropolis M96G O1   PAL PT P5
3:wi{n}:<ti.ki>   <K'UH{ul}:K'AN:tu>.<ma:ki>   u.<ki:ti>   PIK.<ki:yi>

- Bird head with trilobate element over the eye.
- A search in MHD with "blcodes contains BT5" gives 10 hits, but only CPN Stela P C4, CRC B16-sub Stucco p19, and (slightly less clearly) EKB Acropolis M96G O1 show the distinct trilobate element over the eye. The reading of PAL PT P5b (top) as **ki** (despite the lack of a trilobate element over the eye) is from MHD.
- Drawing credits and glyph-block references are from MHD as the drawings I have access to are uncredited and have not been provided with glyph-block labels.

syllabogram-ki	face	

TOK.p12.r2.c4
ki?

- Three-crescent face (tips pointing upwards), half in darkness.

syllabogram-ko	turtle	

MC   K&H   JM   TOK.p7.r1.c1

MC = K&H

- The element which is described as "two rows of teeth in an open mouth" is no longer considered to be a syllabogram. It only occurs to write *ch'ok* in the phrase *u-ch'ok k'aba'*, and always in combination with the so-called "goggle eyes" (also no longer considered to be a variant of **ch'o**). Instead that fixed combination of "goggle eyes" above "row of teeth" is now considered to be **CH'OK** (i.e. a logogram) – see under logogram **CH'OK** for more information.

syllabogram-ku	boulder	

MC   K&H   JM   TOK.p12.r5.c3

Martin-AMP.p398.r1.c3
<bu:ku>.<TUUN:ni:AJAW>

- There is a sub-variant of the boulder-outline / abstract variant of **ku** where there are only a very few dots in the stalactite (canonically, three), and each of the dots has a tiny dot in the middle.

syllabogram-ku	animal head	
		
		MC = K&H
		
		• There is a lot of space between the ceiling and the eye in order to be able to accommodate the "grapes" in a direct vertical line with the eye.
		• This animal head has both the characteristics of a bird and a snake:
		  ○ Bird-head: the animal head has a beak.
		  ○ Snake-head: the animal head has three teeth in the mouth.

syllabogram-k'a	hand	
		
		MC K&H MC JM TOK.p20.r2.c1
		
		• The outline of this glyph is a left fist, viewed from the back of the hand. It is one of four glyphs with this characteristic:
		  ○ **cha**: IK' in the top left.
		  ○ **k'a**: horizontally stretched, cross-hatched, inverted-U in the top left.
		  ○ **ho**: 3 non-touching dots in a triangular formation, pointing downwards.
		  ○ (One variant of) Glyph-G7: with the head of a young man below and a **NAAH** on the left of both.
		  The bottom left has a 180-degrees rotated curved-L with one or two reinforcing lines to the right.
		• In the hand variant of **k'a**:
		  ○ The horizontally stretched, cross-hatched, inverted-u can also take the form of a **ka**-comb with teeth pointing downwards and with a bold handle (JM and TOK.p20.r2.c1).
		  ○ The area in the bottom left enclosed by the curved-L can have three non-touching dots in it, vaguely reminiscent of the three non-touching dots in **si** (MC).

syllabogram-k'a	camera shutter	 TOK.p11.r4.c1 0627st k'a - Aguateca Archaeological Project AGT Stela 19 A2-B2 <NAH:5:TUUN:ni>.<k'a?:{ay}> • This looks a little bit like a **mo** without the ring of touching dots around the outside and without the snake coming out of the centre. • A search in MHD "Classic – Blocks" with "blcodes contains XF3" yields 11 hits. However, MHD treats this glyph as a logogram **K'A'**, not as a syllabogram **k'a**. MHD (objabbr = AGTSt19) A2-B2 gives: **nah-5-tun-ni k'a'? ok-ki** ➔ *nah ho'-tuun k'a'ay ook* = "the base/leg? expires?" – both interpretations seem valid (see also logogram **K'A'**). • There are no strong, concrete reasons to think that TOK.p11.r4.c1 and 0627st are the same glyph. But they share enough commonality (the slightly curved "spokes") that it seems worthwhile to at least list them together. The salient differences are:

		○ The outer perimeter of TOK.p11.r4.c1 doesn't have a dotted spine on the inside, while that of 0627st does. ○ The "spokes" of one go in the opposite direction to those of the other (TOK.p11.r4.c1 has a "clockwise" feeling, while 0627st has an "anticlockwise" feeling).
syllabogram-k'e	bone in tooth	 MC K&H TOK.p16.r4.c1 • Mnemonic: "bone as toothpick helps fight tooth *decay*". • Do not confuse with **chu**, which has a tooth and an axe.

syllabogram-k'i	single wing	
		MC2 K&H TOK.p7.r3.c2
		
		• Single wing – wing-shaped outline, with:
		○ Top: bold ceiling and top part of the edge "near the body"
		○ Edge "near the body" (representing the attachment to the body of the bird? / partitive disk?):
		   ▪ One or two bold, semi-circle arcs – region inside inner arc is (optionally) cross-hatched.
		   ▪ Arc of dots outside of the outer arc.
		○ Edge "far from the body":
		   ▪ A series of parallel, slightly curved ticks (representing the feathers of the wing).
		○ Variation possible of feathers on the right or feathers on the left, i.e. mirror images of one another.

syllabogram-k'i	double wing	 MC-2 • Double wing: ○ Two single wings, mirror images of one another, joined horizontally at the edge "near the body".
syllabogram-k'o	fist	 MC K&H JM TOK.p19.r1.c4 Stuart-ANVotSk.p2.fig2d Stuart-ANVotSk.p3.fig4a TRT Monument 6 J17b YAX.<k'o:ja>.a.AHK IX.<<ya/wa:na>:<k'o.jo>> Sub-variants (1) • A. Left fist with fingers and thumb downwards, viewed from the back of the hand. Notes • **k'o** is from "knocking" *k'oj*. • Do not confuse this with **CHOK**, which has the index finger stretched out pointing downwards, with many tiny dots (representing incense) falling downwards from the hand. • TRT Monument 6 J17b has fingers and thumb downwards, and it could be a right fist.
syllabogram-k'o	"kuch" above two kawaks	 MHD.ZCF.1&2&3

k'o

Stuart-ANVotSk.p1.fig1
k'o
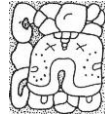
| Schele PAL TI CT E5 ya.<k'o:la> | Schele PAL TI CT I3 ya.<k'o:la> | Schele PAL TI WT A4 ya.<k'o:la> | CPN Altar Q E2 ya.<k'o{l}> | CPN Altar Q F6 <u?.<YAL>>:<TE'.k'o> |
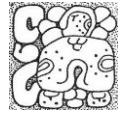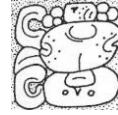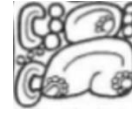
Stuart-ANVotSk.p3.fig4a
TRT Monument 8̶ -> 6 J17
IX.<ya:na:<k'o.jo>>
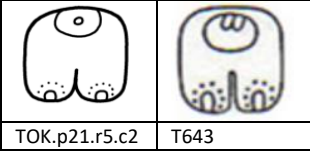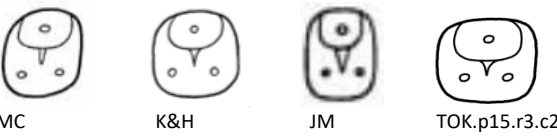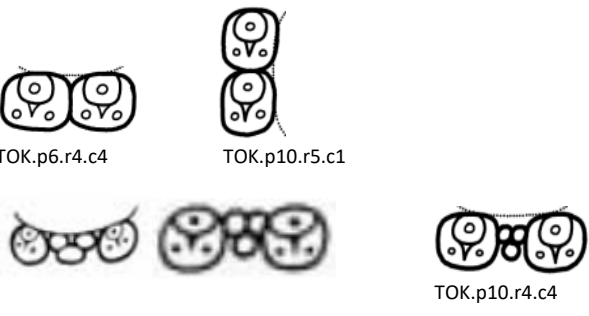
Stuart-ANVotSk.p3.fig4b
TRT Monument 6̶ -> 8 A22-A23
<IX.ya:>na k'o.jo
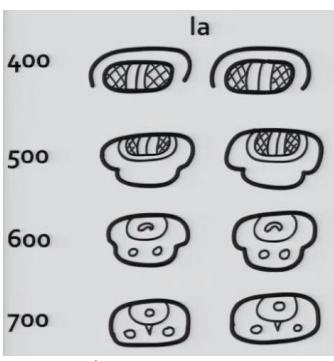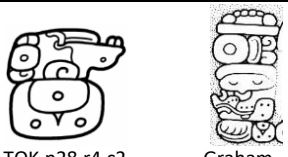
- Stuart-ANVotSk is the paper which first proposed the decipherment / reading of this glyph.
- The example from Stuart-ANVotSk.p3.fig4b (TRT Monument 8 A22-A23) is an important step in the reading of this glyph as **k'o** because it is related to another monument (TRT Monument 6 J17), where the same noblewoman's name – Ix Yan K'oj – is written IX.<ya:na:<k'o.jo>>, where the **k'o** is written with the common "fist"-variant (and the **jo** is written with the chronologically later and more common variant). This establishes substitution between the two variants of **k'o**.
- Verifying this was made much more difficult due to three factors:
  - A typo in the label of Stuart-ANVotSk.p3.fig4, where the glyph-block of fig4a – TRT Monument 6 – is labelled as being from TRT Monument 8 while the two glyph-blocks of fig4b – TRT Monument 6 – is labelled as being from TRT Monument 8 (i.e. the numbers of the two monuments were swapped).
  - The glyphic text of TRT Monument 6 is written in a T-shaped area, where the left side of the horizontal bar of the T is completely eroded, leaving only the vertical bar and the right side of the horizontal bar of the T. Many drawings of TRT Monument 6 show only the vertical bar and the right side of the horizontal bar without even hinting that the left side of the horizontal bar exists. There is hence a tendency to start the column labels at A for the top glyph-block of the vertical bar. In fact, columns A-D (four columns) should be assigned to the completely missing/eroded left side of the horizontal bar. The vertical bar (of the "T" shape) is then columns E-L (eight columns) and the right side of the horizontal bar is columns M-P (another four columns). This is the labelling used by MHD, which I have adopted. Such a labelling is (apparently) done on the assumption that the T-shaped region of glyphic text is symmetrical along the vertical axis, with four columns each for the left and right side of the horizontal bar of the T. It is only with this labelling that the glyph-block with the full syllabogram-spelling **ya-na-k'o-jo** of the noblewoman's name is J17.
  - The glyphic text of TRT Monument 8 is around the edge *of the top surface* of the sarcophagus (i.e. lying "flat" on the surface) and around the *actual edge* of the lid of the sarcophagus (i.e. standing "vertically", with respect to the ground). In one drawing, the former are assigned glyph-block numbers 1-84 and the latter are assigned glyph-block numbers 85-108. However, MHD (and perhaps Gronemeyer-MA also) label the former A1-A24 and latter B1-B81. It is only with this labelling that the glyph-blocks with the full syllabogram-spelling **ya-na-k'o-jo** (with the rarer *k'o* variant) of the noblewoman's name is A22-A23.
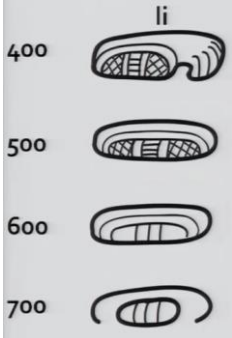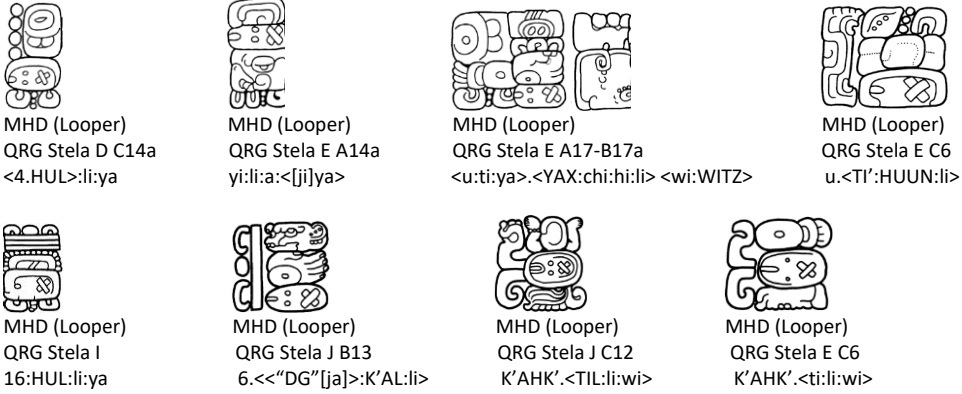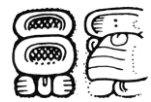
Sub-variants (1)
- Sole variant:
  - Top: "KUCH".
  - Bottom: a KAWAK-like element, but symmetric with respect to the vertical axis:
    - Top (optional): a "stalactite / bunch of grapes" in the centre.
    - Bottom:
      - The floor has quite a long/deep indentation in the middle, reaching almost to the middle of the KAWAK – this indentation has a reinforcement on the inside.
      - In each of the left and right sides (or bottom corners), a "pond" / glistening element.
      - (Optionally) a small X in each of the top corners (on each side of the stalactite / bunch of grapes).
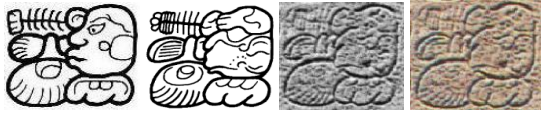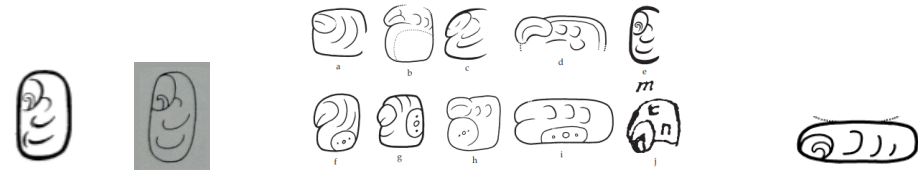
Warning: do not confuse with the glyph *without* the KUCH on top. This is T643, which is not **k'o**.

		 TOK.p21.r5.c2 | T643 .

syllabogram-k'u	full	
		MC K&H JM TOK.p18.r2.c3
		
		MC MC JM
		
		Sub-variants (3)
		• A. Full:
		 ○ Top: two touching, angled (SW to NE) "rugby balls", optionally with left reinforcement of line or row of dots (or both)
		 ○ Bottom: boulder with indentation in the middle of the top
		  ▪ Cross-hatched area slightly smaller than the boulder
		  ▪ Outer edge of cross-hatched area optionally bold
		 Tokovinine in AT-E1168-lecture?.t0:? explains that the iconography is two eggs in a nest.
		• B. Reduced-1: top part only. Do not confuse this variant of **k'u** with one of the reduced variants of **nu**:
		 ○ **k'u** has a dotted line as the line reinforcement of the left edge whereas **nu** has a solid line reinforcement of the left edge.
		 ○ Where **ku** has a solid line reinforcement (e.g. the full form in TOK.p18.r2.c3), the large cross-hatched region below the "rugby balls" shows that **ku** is intended and not **nu**.
		• C. Reduced-2: left or right half only.

syllabogram-la	"ajaw"-face	 MC K&H JM TOK.p15.r3.c2 TOK.p6.r4.c4 TOK.p10.r5.c1 TOK.p10.r4.c4 Sub-variants (3) • A. Single AJAW-face: ○ Single upside-down AJAW-face. • B. Double AJAW-face: ○ Two touching, upside-down AJAW-faces. • C. Double AJAW-face with dots: ○ Two single upside-down AJAW-faces separated by three dots. ○ The three dots in a triangular formation, touching, triangle pointing down.
syllabogram-la	no-"ajaw"-face	 JM TOK.p10.r4.c3
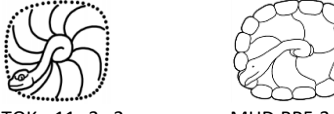
<table>
<tr><td></td><td></td><td colspan="2">

MC ~= K&H   MC.p83.r1.#2

Sub-variants (2)
- A. Five dots:
  - Two larger dots, one at each side.
  - With three smaller touching dots in a row, in between.
- B. Three dots:
  - Three non-touching dots in a row.
  - All three very small dots not touching the main sign (touching the main sign, or slightly larger dots, or touching one another would be more likely to be **ma** – but tiny size of the dots is the main distinguishing characteristic of this variant of **la**).

</td></tr>
<tr><td>syllabogram-la</td><td>two na-outlines</td><td>

TIK Stela 31 A12

AT-E1168-lecture4.t0:07:40

- The na-outline variant is an "older" form.

</td></tr>
<tr><td>syllabogram-la</td><td>skull</td><td>

TOK.p28.r4.c2   Graham
                     YAX Lintel 44 A5a

- Caution: YAX Lintel 44 A5a is the only known instance where the skull is right-side up. One should not be too hasty in equating the right-side up and upside-down versions of a glyph. For example, the right-side up bat head is SUUTZ' and the upside-down one is TZUTZ – semantically *and* phonetically unrelated to one another.
- In TOK and other instances in MHD, the skull is upside-down (blcodes contains SC3).

</td></tr>
<tr><td>syllabogram-le</td><td>abstract flint</td><td>

MC = K&H   JM   TOK.p6.r6.c2

- It is a representation of the leaf of a waterlily (AT-E1168-lecture?.t0:?)

</td></tr>
<tr><td>syllabogram-le</td><td>dog head with tongue sticking out</td><td>

TOK.p31.r3.c3

</td></tr>
</table>
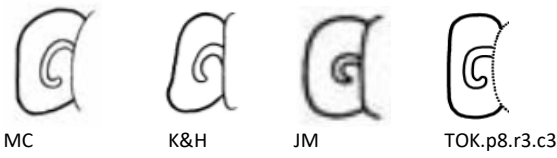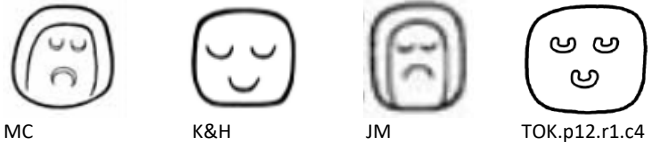
syllabogram-li	no-face flint	

MC K&H JM TOK.p6.r5.c3

- The no-face flint variant is not the last historically attested form in the Late Classic – there was one later form with the smaller element more complete and independent of the bottom.

AT-E1168-lecture4.t0:07:40

syllabogram-li	face flint	

MC K&H JM TOK.p6.r6.c1

MHD (Looper)
QRG Stela D C14a
<4.HUL>:li:ya

MHD (Looper)
QRG Stela E A14a
yi:li:a:<[ji]ya>

MHD (Looper)
QRG Stela E A17-B17a
<u:ti:ya>.<YAX:chi:hi:li> <wi:WITZ>

MHD (Looper)
QRG Stela E C6
u.<TI':HUUN:li>

MHD (Looper)
QRG Stela I
16:HUL:li:ya

MHD (Looper)
QRG Stela J B13
6.<<"DG"[ja]>:K'AL:li>

MHD (Looper)
QRG Stela J C12
K'AHK'.<TIL:li:wi>

MHD (Looper)
QRG Stela E C6
K'AHK'.<ti:li:wi>

- All sub-variants of this variant share a "face" (= three non-touching dots in a triangle pointing left, with the dot at the point of the triangle optionally touching the left end of the flint (= "face on the left; mouth optionally touching left wall").

Sub-variants (2)
- A. Comb:
    o The non-face end has a "comb".
    o Just the teeth of the comb can be attached directly to the right wall.
    o The comb can also be a 90-degrees counter-clockwise rotated-U with cross-hatching inside.
- B. Crossed bands:
    o The non-face end has crossed bands instead of the "comb".
    o This sub-variant is common in QRG:
        ▪ The comb sub-variant is also common in QRG.
        ▪ But there are many occurrences of the crossed bands sub-variant in QRG, and most of the existing occurrences are from QRG (perhaps even only restricted to QRG?).

syllabogram-li	bird head with worm	

DS-table TOK.p26.r1.c3

- Characteristics:
    o A worm half sticks out from the mouth of the bird.

28
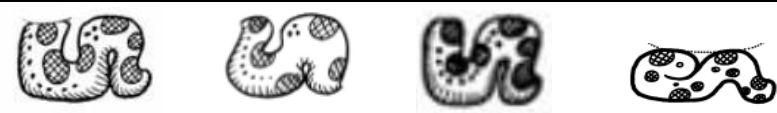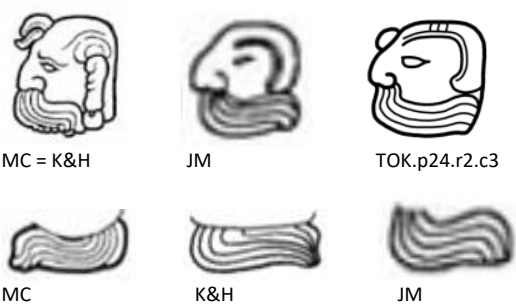
		○ Forehead ornament: a scroll / left feeler with protector and dotted reinforcement. • In modern Q'eqchi' and Mopan, the word for the bat falcon (*Falco rufigularis*) is *liklik*, a bird which eats snakes (Hull, explained during MotT 2019 glyph workshop, devoted to the acrophonic origin of syllabograms)

syllabogram-li	helmet-or-snail	A.
		
		TOK.p18.r4.c4 MHD.ZD6.1 1719st
		
		mayavase.com MHD (Graham)
		K8393 PSS NAR Stela 32 X3
		u tz'i{h} ba li pa:pa:ma li:li
		
		--- 	
		B.
		
		MHD.ZD6.2 MHD (Moot)
		                    'Lagartero Vase' C-E
		                    {u}TZ'I{h} ba li
		
		--- 	
		Sub-variants (2):
		• A. Simple: perhaps a helmet(?) with two leaves under it, or a snail shell, with the snail's two feelers sticking out?
		• B. Double: might be a "doubled" version of the single, with a mirror image added to the right (but without repetition of the dotted section on the right of the simple form).
		
		Notes:
		• This is a rare but interesting variant of **li**.
		• A search on "blcodes contains ZD6" yields 5 hits. Extending the domain of the search to "All - Blocks" (i.e. including the Codices) does not yield any additional hits.
		• Of those 5 hits, 4 are on vessels and 1 is on a monument (NAR Stela 32).
		• Despite the very small number of occurrences, this glyph can be read with confidence. This is because:
		  ○ It occurs as the "simple" sub-variant in K8393 PSS D-G, in the context of the standard formulaic word *utz'ihbal* = "it is the painting of", at the position where **li** is expected.
		  ○ It occurs as the "simple" sub-variant in NAR Stela 32 in the name **pa-pa-ma-li-li** ➔ *Papmalil*. This is a name known from monuments elsewhere (CRC Altar 12, CRC Altar 13, and IXL Altar 1) where the name is spelled with very well-established variants of **pa**, **ma**, and (in particular) **li**. I.e., there is a substitution of this "helmet" variant for the other well-known forms of **li**.
		  ○ It occurs as the "double" sub-variant in 'Lagartero Vase' PSS C-E, in the context of the standard formulaic word *utz'ihbal* = "it is the painting of", at the position where **li** is expected.

syllabogram-li?	double YAX	 JM.162.4 • Two non-touching YAX-outlines, each YAX-outline containing a 3/4 flint attached to the flat end, with parallel diagonal stripes inside the flint. • Should this be the "two na-outlines" variant of **la**?
syllabogram-lo	boulder	 MC = K&H JM TOK.p15.r1.c1 lo/CHIT

		- Do not confuse this with one variant of **u** – the so-called "muluk-u". "Muluk-u" is **lo** rotated 90 degrees clockwise. - Do not confuse this with **IHK'**: **IHK'** has a darkened area attached to the top of the inner circle, in the middle – like a (large) darkened protector. This is an essential distinguishing characteristic of **IHK'**. - Conversely, the two touching dots are a distinguishing characteristic of **lo**, and these can be absent in **IHK'**. - This syllabogram also has a reading as a logogram: **CHIT**.

syllabogram-lu	snail	
		MC K&H JM TOK.p21.r1.c1

syllabogram-ma	boulder	
		MC K&H JM TOK.p14.r3.c1

- This variant is a boulder outline with two infixed elements (a "dot necklace" and "blades of grass") in common with a number of other glyphs. The list below shows the unique element infixed in the top which distinguishes them from one another:
  - **ba**: **LEM**-like element.
  - **ma**: right-side-up AJAW-face.
  - **t'u**: KAWAK.
  - **tz'e**: a slightly curved, bold V with "dot protector" underneath (the "dot protector" replaces the "necklace", and the bold V can sometimes be non-bold).
  - **tz'u**: K'IN.
  - **HA'**: cross-hatched circle.
  - "IMIX": cross-hatched circle or **LEM**-like element (usually distinguished from **HA'** by the blood cartouche).

syllabogram-ma	bowtie / butterfly	
		MC K&H JM TOK.p10.r2.c1

Sub-variants (1)
- A. bowtie / butterfly
  - Centre:
    - A small rounded-rectangle or circle with an indentation in the middle of the bottom.
    - The indentation is often a curved, inverted-V, but can be so narrow that it appears to be just a vertical tick.
  - Sides – the central "circle" is flanked by two "wings" (mirror images of one another):
    - Longish, rounded rectangles with a series of 3-5 horizontal ticks on the inside of the "outer" end.
    - A small (half-)dot on the inside of the "inner" end.

Notes
- The nickname "bowtie/butterfly" is obviously not related to the iconographic origin of this sign.
- This glyph is found as the "outermost" element of the abstract variant of **K'INICH**. This is the reason that an early reading of **K'INICH** was *ma k'ina* (ultimately rejected).

syllabogram-ma	spectacles	
		JM.p165.#2 T74d T74e MHD.ZM1.6 ma - - ma MHD (Grube) CRC Ballcourt Marker 3 F3 <K'UH{ul}:K'AN:tu>.<ma[ki]>

AT-E1168-lecture10.t0:27:04 = MHD (Förstemann)

Dresden Codex 28a01

<ka/u>.<ma:ma>

Sub-variants (1)
- A. Spectacles:
  - ○ Two rounded squares, each with a series of 3-5 horizontal ticks on the inside of the "outer" end.
  - ○ The two squares are joined to one another by a single slightly curved line between them (the so-called "bridge" in the frames of spectacles, which goes on the bridge of the nose when the spectacles are worn).

Notes
- The nickname "spectacles" is obviously not related to the iconographic origin of this sign.
- CRC Ballcourt Marker 3 F3:
  - ○ In MHD this inscription has "objabbr = CRCBCM03".
  - ○ The ticks are missing in one of the flanking elements because the **ki** is infixed in it, hence obscuring the ticks.
- BPK Sculptured Stone 5 F9:
  - ○ Safronov made two different drawings of this inscription.
  - ○ There are also two photographs in Coll-1, both unfortunately unattributed.
  - ○ In MHD this is "objabbr = BPKSS05". From one of the drawings, the middle element of F9a looks like the "spectacles" variant of **ma**. However, it's coded as XV4 = **sa** in MHD. Examination of a photograph reveals that it's more like a **sa** than a **ma** (personal communication, Matthew Looper 2023-01-28). Indeed, the bolding of the outer wall (visible in both photographs and in one of the Safronov drawings) points more to **sa** (i.e. the "left comb") than **ma**.

Safronov = Safronov = Coll-1 = Coll-1

BPK Sculptured Stone 5 F9

<ta:<ma/sa>:ba>.<CHAN:na>

This inscription is hence *not* an example of "spectacles" variant of **ma**. It's only included here for the sake of completeness (e.g. to warn against reading it as the "spectacles" variant of **ma**).

syllabogram-ma	extended boulder	
		MC K&H JM TOK.p34.r1.c3
		• The element at the top of the boulder can be a **LEM** or an oval with a ladder in it. • The three "legs" can be round or "contoured".
syllabogram-ma	three circles	
		MC = K&H JM TOK.p10.r3.c1 TOK.p10.r3.c4
		• The three "legs" can be round or "contoured".
syllabogram-me	penis	
		K&H M&L.278.1SE Zender-TMMD.p14.fig4 TOK.p6.r6.c3

		TOK.p20.r3.c3 • There is a boulder variant and a narrow-rectangular ("reduced") variant, but the latter is just a compressed form of the former (rather than omitting some part of it). • The syllabogram **me** is very similar to the logogram **AAT** as both are iconographically derived from the drawing of a penis. There is perhaps a tendency for **me** to be very slightly more "abstract" (and more "rectangular") and **AAT** to be more "representational" (and more "square"/boulder-outline).
syllabogram-mi	flower	TOK.p17.r3.c3 MC K&H JM.p169.5 TOK.p9.r3.c3 K&H = K&L = 25EMC.1
syllabogram-mi	hand alone	MC JM
syllabogram-mi	hand holding shell	TOK.p19.r3.c4 • The iconographic origin of this glyph is sometimes described as "hand holding shell" (lost reference).

syllabogram-mi	head	TOK.p24.r1.c3 1695st
		mi
		
		1592st MHD.SNC.1&2
		MIH
		
		• Features: anthropomorphic head with a hand cradling the chin.
		• Bonn distinguishes two sub-variants:
		  o 1592st/**MIH**:
		    ▪ A %-sign on the cheek.
		    ▪ A lock of hair in the top right.
		    ▪ A smaller, but very fancy ear, slightly resembling an obsidian blade.
		  o 1695st/**mi**:
		    ▪ Three non-touching dots in the shape of a triangle, pointing down, on the cheek.
		    ▪ No lock of hair in the top right.
		    ▪ A larger, tripartite ear, slightly resembling a syllabogram **yu** (occupying the entire right side).
		    Bonn makes a strong distinction between two sub-variants of the head variant – one for **mi** and one for **MIH**.
		• TOK.p24.r1.c3 goes for the opposite solution and deliberately combines the different characteristics of 1592st and 1695st into a single glyph (implying that this variation is not significant).

		o Furthermore, TOK.p24.r1.c3 is glossed only as **mi** – a **MIH** reading is not given.
		o In this work, Tokovinine gives no **MIH** readings at all – not for this head variant, nor for the "flower" and "hand holding shell" variants. This could be just an oversight, as in various lectures (e.g. AT-E1168-lecture6.t0:37:40 and AT-E1168-lecture6.t0:50:25) the "flower" and "hand holding shell" variants are glossed as both **mi** and **MIH**.
		• MHD has both examples of the head variant without the %-sign or 3-dot triangle.

syllabogram-mi	squid	MHD.MRF.1&2
		
		  Graham YAX Lintel 1 A4 mi.<xi:WINKIL?>
		 Graham YAX Lintel 3 D3 mi.<xi:WINKIL?>
		 Graham YAX Lintel 5 A2 mi.<*xi?:*WINKIL?:*la?>
		 Graham YAX Lintel 33 A6 mi.<xi:WINKIL?>
		
		 • This glyph isn't shown in K&H, K&L, TOK, BMM9, 25EMC.
		 • Bonn doesn't seem to have given it a code.
		 • MHD has assigned it the 3-character code MRF.
		    o A search in MHD on "blcodes contains MRF" gives 28 hits – so, not common, but also not at all rare.
		    o Importantly, it's not regionally restricted:
		      ▪ YAX (8 hits) and YAX region (1 hit)
		      ▪ Various ceramics (7 hits)
		      ▪ SCN (Sacchana, 2 hits)
		      ▪ AGT, BPK, CNK, CRC, CRN, NAR, PMT, PSD, TIK (1 hit each).
		      This is more or less the entire Classic Maya world except for the far south-east (e.g. QRG and CPN).
		    o The preponderance of hits in YAX is because of the name/title Mix Winkil, which was one of the extended names/titles of Yaxuun Bahlam IV.

syllabogram-mo	macaw	TOK.p26.r5.c2
		
		  MC = JM ~= K&H TOK.p11.r4.c3
		
		  TOK.p11.r3.c2 MHD.BP5.3
		
		  MHD (Tolles) PNG Panel 3 Q'1 K'AN.<mo:TE'>
		 MHD (Stuart) PNG Stela 5 E1 <K'AN:na>.<mo:TE'>
		 MHD (Looper) PNG Stela 12 K1 AJ.<mo?:chi:hi>
		
		 <u>Sub-variants (3)</u>
		 • Full:
		    o Head of a macaw, with.
		    o Circle of touching dots with a central dot, signifying the eye and markings around it.
		 • Reduced: eye of the macaw.
		 • Snake:
		    o Could be viewed as the reduced variant, with a snake emerging from the centre of the eye.
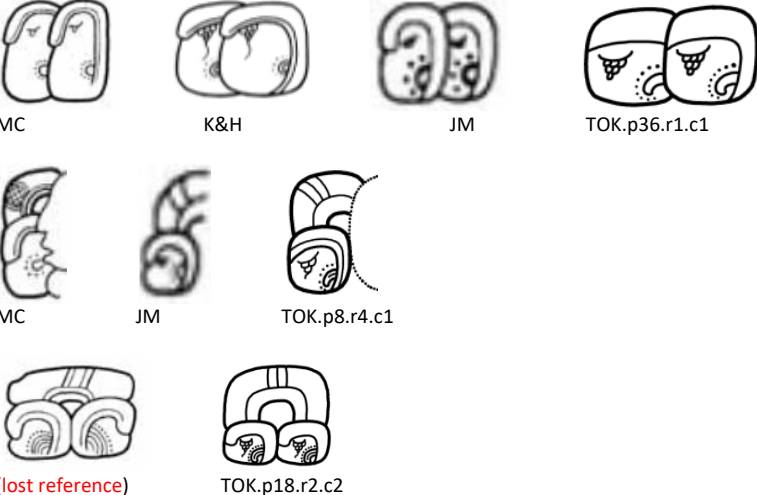
		o Additional radial arcs from the centre to the outer edge. o MHD views this variant as a logogram.

syllabogram-mu	animal head	
		MC K&H JM TOK.p36.r3.c3
		
		MC K&H JM TOK.p8.r3.c3
		
		(Tokovinine lecture/lesson lost reference) In the early stages of the Classic Maya script, **bu** and **mu** were not distinguished, probably because they were borrowed from a language which didn't distinguish between b and m. But as this distinction is important in Classic Maya, they gradually developed two different forms:
		• **bu** *with* dots on the scroll
		• **mu** *without* dots on the scroll
		
		Sub-variants (2)
		• A. Full:
		   o Left: boulder with scroll.
		   o Right: snake/lizard/turtle or bird head, with bass-clef spiral in the bottom middle or right.
		• B. Reduced: left part only.

syllabogram-na	house	 MC K&H = TOK.p6.r5.c4 JM TOK.p6.r5.r4 MC JM JM MC Sub-variants (3) • A. Curved: 2-3 dots on the outer side of the inner reinforcement. • B. Curved: 2-3 dots on the inner side of the outer reinforcement. • C. Rectangular.

syllabogram-na	face	
		MC K&H JM TOK.p12.r1.c4
		
		• Features:
		   o A boulder outline with (optional) bold walls and ceiling
		   o Inside: three crescents in a triangular formation (with the triangle pointing down), forming a "face". The face can be smiling or scowling.
		   o Internal elements can be bold or non-bold.
		• Not to be confused with the boulder variant of **e**: that variant of **e** has three non-touching dots in triangular formation (pointing down) whereas this variant of **na** has crescents.
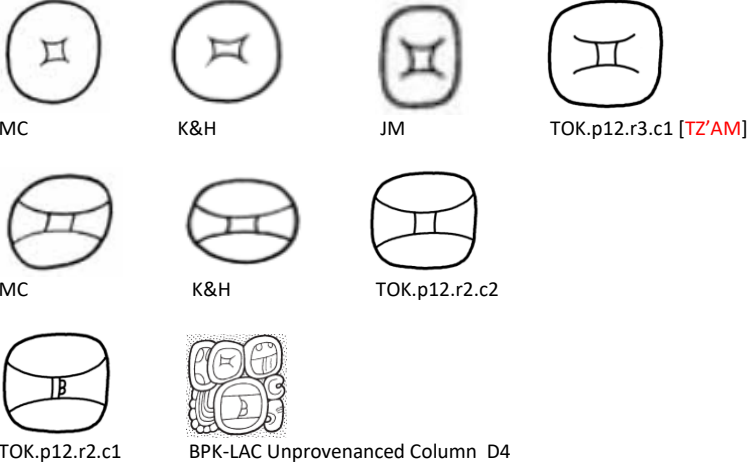
syllabogram-na	god head	
		MC K&H JM
		
		TOK.p23.r1.c4 = AT-E1168-lecture16.t0:00:50 = AT-E1168-lecture6.t0:42:12
		
		• AT-E1168-lecture16.t0:00:50:
		  ○ The head of the Maize God.
		  ○ Also read as **IXIIM**.
		• AT-E1168-lecture6.t0:42:12:
		  ○ Also read as JUN, the number "1" .
		  ○ Represents "1" because maize is the most primary food of the Maya (and rest of Mesoamerica).
		• Easy to confuse with **IX/IXIK**. The differences are (AT-E1168-lecture16.t0:01:09):
		  ○ There is a "jewel" in the forehead.
		  ○ There is a "protected scroll" instead of hair in the top right – hair would be a cross-hatched round or oval element.
		  ○ There can be one or more long strands (probably representing the corn husk) with (optionally) three touching dots (representing maize kernels).

syllabogram-ne	jaguar tail	 MC K&H JM TOK.p6.r3.c2 • This glyph is also logogram **NEH** = "tail". The syllabogram usage is obviously derived from the earlier logogram usage.
syllabogram-ne	boulder	 MC K&H TOK.p17.r2.c2 • Do not confuse with KUK, which looks similar but has full cross-hatching in the entire background, instead of jaguar spots. See Prager-TS576.
syllabogram-ne	feathery tail	 MC K&H MC TOK.p6.r3.c1
syllabogram-ni	man with long nostril-hairs	 MC = K&H JM TOK.p24.r2.c3 MC K&H JM
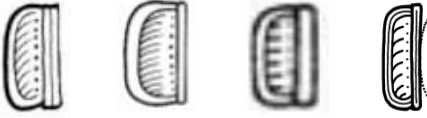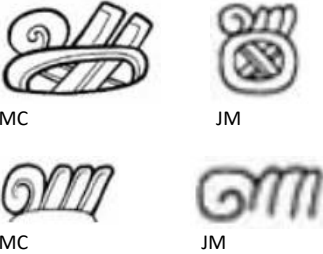
MC   K&H

- The head variant represents a person with heavily overgrown nasal hair (AT-E1168-lecture5.t0:11:56)
- Do not confuse with **wi**:
  - **wi** consists of two distinct "leaves" – a longer one and a shorter one, going in opposite directions whereas **ni** consists of only one "leaf" (which is not really a leaf, just called that here for the sake of comparison to **wi**).
  - In **wi**, each of the "leaves" has only *one* spine inside whereas **ni** has *multiple* wavy lines inside the single "leaf" (and as such, are not really spines, just called that here for the sake of comparison to **wi**).
  - In **wi**, the touching dots are always on the *inside* of the long leaf, touching the single spine whereas in **ni**, each of the long flowing lines in the middle often (*but not always*) end in one of the dots, making the dots on the "outside" of the "leaf".
- AT-E1168-lecture5.t0:11:22 explains that in later times some scribes no longer distinguished between **wi** and **ni**.

syllabogram-ni	full-figure	
		
		M&G.p122
		YAX Throne 2 glyph-block #4
		\<ya.YAXUUN:ni>:BAHLAM
		
		• Full-figure:
		  ○ The human head, shoulders, and arm in the middle of M&G.p122 is believed to be the full-figure variant of **ni**. The wavy lines on the forehead *could* correspond to the wavy lines of the other **ni** variants, but this association is perhaps questionable because they represent nose-hairs in the head and reduced variants but have nothing to do with the nose in the full-figure variant.
		  ○ Without the connection to the wavy lines, there is even some doubt that it represents **ni** at all.
		  ○ What might appear to be a spanner that the human figure is holding in his left hand is not proof of alien visitors but in fact just the leg of the YAXUUN bird.

syllabogram-no	boulder form	
		
		MC ~= K&H JM
		
		TOK.p12.r2.c3
		
		TOK.p10.r5.c4
		
		Sub-variants (3)
		• A, Full: "horseshoes" + boulder form (see below)
		• B. Boulder form only:
		  ▪ Boulder outline, with
		  ▪ Nine non-touching "u"-elements inside in a 3 x 3 matrix
		• C. "Horseshoes" only:
		  ○ Both sides:
		    ▪ Three or more stacked horseshoes on the left side, touching, pointing right.
		    ▪ Three or more stacked horseshoes on the right side, touching, pointing left.
		    Equal number of horseshoes on each side.
		  ○ Left only.
		  ○ Right only.
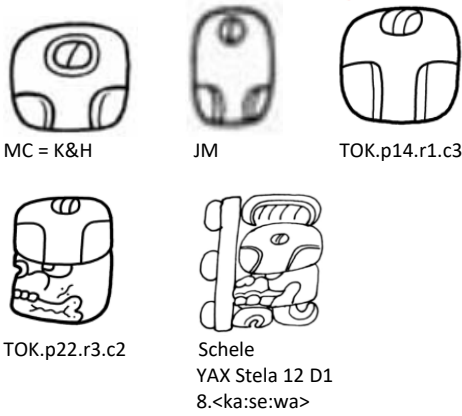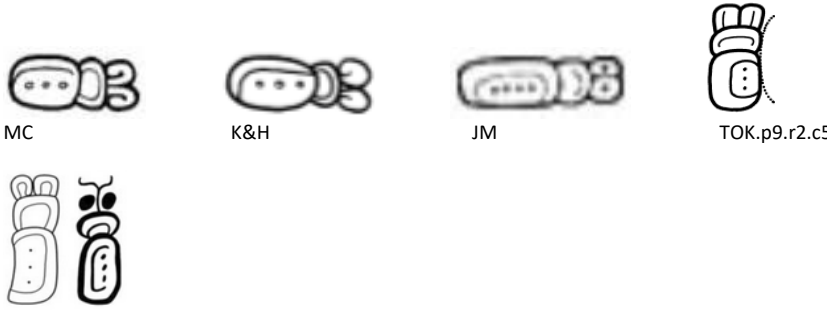
syllabogram-nu	boulder	 MC = K&H JM LTI - Kimbell Panel F1b (bottom) TOK.p11.r1.c1 K&L.53.r5.c3 T592 • LTI - Kimbell Panel F1b (bottom) – part of u-cha'an

syllabogram-nu	eggs	
		MC K&H JM TOK.p6.r4.c2
		
		• Do not confuse this variant of **nu** with the reduced form of **k'u**:
		    ○ **nu** has a solid line reinforcement of the left edge whereas **k'u** has a dotted line as the line reinforcement of the left edge.
		    ○ The two elements of **nu** can be rounder whereas those of **k'u** are more egg-like ("rugby balls") [only in the TOK example].

syllabogram-nu	two eyeballs	 MC K&H TOK.p6.r3.c3 TOK.p6.r3.c4 JM.p186.#3 JM.p186.#4
syllabogram-nu	knot and tassels 1	 K&L.p53 TOK.p8.r2.c2 FK.pdfp9.r3.c6 = KuppratApp.#4.1 = MC.p159.r5.c1.#5 AT-E1168-lecture9.t0:18:03.#4 nu.<u{n}>:<[JOL]CHAAK>>
syllabogram-nu	knot and tassels 2	 FK.pdfp5.r1.c2 = KuppratApp.#3.2 = MC.p159.r5.c1.#4
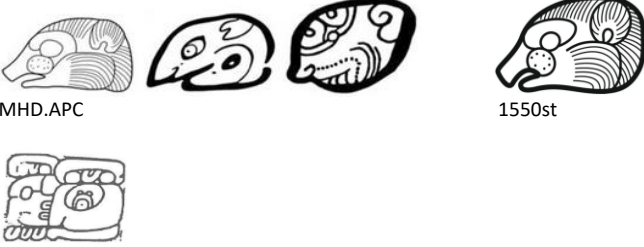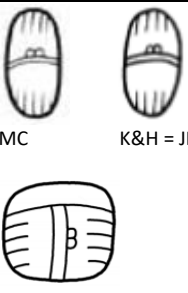
syllabogram-nu	knot and tassels 3	
		TOK.p9.r3.c2 FK.pdfp9.r3.c5 = FK2.p15.r3.c5 = KuppratApp.#3.4 = MC.p159.r5.c1.#6
		NUUN / WAYIS nu nu nu nu
		
		AT-E1168-lecture9.t0:18:03.#6 AT-E1168-lecture9.t0:18:03.#1
		nu.u nu:<[JOL]CHAAK> nu{un}:<[JOL]CHAAK> / {²}nu: <[JOL]CHAAK>
		
		Rabe
		K1446
		nu:?
		
		• FK.pdfp9.r3.c5 & KuppratApp list this as **nu**.
		• TOK.p9.r3.c2 has a similar looking glyph, but views it as being a logogram NUUN / WAYIS.
		• It is very often an initial phonetic complement for the EG of Rio Azul, leading to some sources reading that logogram as NUUN or NU'UN. However, other sources restrict themselves to only saying that the logogram begins with ne- (the initial phonetic complement), without venturing an opinion on the sounds of the rest of the word.
		
		Sub-variants (2)
		• A. Symmetric:
		  o A knot in the middle.
		  o On each side of the knot, trailing, slightly curved, parallel bands.
		  o Each of the two groups of bands ending in two curved tassels.
		• B. Asymmetric:
		  o Top: two curved L-shaped bands, with two crossed bands between them; the crossed bands can optionally have spines or reinforcements.
		  o Middle: the two curved L-shaped bands end in a washer (optionally bold centre).
		  o Bottom: two or three spiral- (i.e. "feeler") or leaf- or tooth-shaped tassels.
		• Curved: 2-3 dots on the inner side of the outer reinforcement. (What does this mean?)

syllabogram-pa	boulder	 MC K&H JM TOK.p11.r2.c1 • AT-YT2021-lecture20.t0:00:56-01:48 (only the boulder form is shown in the slide, neither the head variant nor the full-figure variant are shown, only described): This is a syllable **pa**. And it's actually not black - it's really cross-hatching. In painting and in carving, it basically shows a piece of net. We don't know why, but [the] Ancient Mayas thought that men dressed in full-body net suits are funny. And so Maya clowns looked like people dressed in full-body net suits with very large exaggerated noses, and they carry rattles. There's a whole article written about what Maya clowns look like. So the full form of this sign is a whole fellow looking like that, and that's just a piece a net [pointing to the reduced form].
syllabogram-pa	split	 MC.159.c2.r1.3
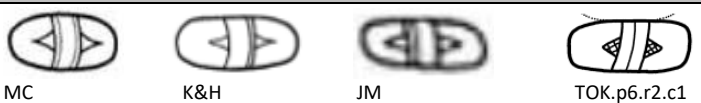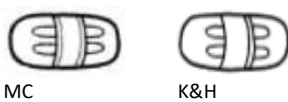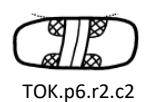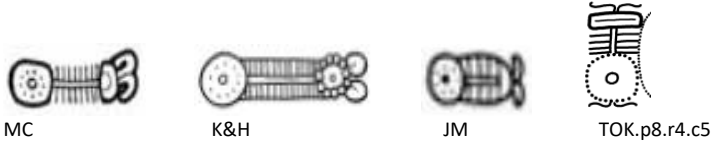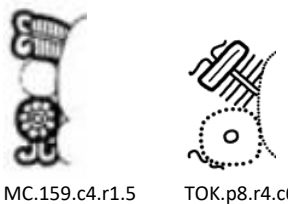
syllabogram-pa	clown head	
		MC JM.p199 S&Z.p33 TOK.p23.r2.c3
		• See note under the boulder form for an explanation of the cross-hatching.

syllabogram-pe	rabbit head	
		K&H TOK.p31.r1.c4 T759a&b M&L.AP7 pe/T'UL/CHIT

- A rabbit head is suggested by the very distinctive ear:
  - Long and floppy.
  - With "water" markings on it (because the rabbit is associated with the moon, and the moon is associated with water?).
- A small eye (as is accurate for rabbits).
- The snout points (basically) downwards, not to the left.
- The reading as **pe** is well attested in (for example) the toponym / polity Peptuun, and the verb *pek-* (in the passive form, as *pehkaj*).
- This syllabogram also has a reading as **CHIT** or **T'UL**.
- This syllabogram also has a reading as **tz'o** (some uncertainty, proposed by Stuart, but apparently not widely accepted).
- Is there a *tendency* for **pe** not to have a beard and for **CHIT** to have a beard?
- This decipherment was officially published in 2021 in Davletshin&Beliaev-ASSfP but knowledge of it has been informally passed from the authors to the epigrapher community for many years.

syllabogram-pi	cave	
		MC K&H JM TOK.p36.r1.c1
		MC JM TOK.p8.r4.c1
		(lost reference) TOK.p18.r2.c2

- In this "cave" variant of **pi**, the stalactite / grapes can take the form of a short, slightly curved horizontal line (tips pointing upwards), with a "u" under it, making it resemble a tooth or (in this context) an eye. (In the hand variant of **cha**, the bold-T ("IK'", symbolic of breath or wind) also can also look like this.)

Sub-variants (3)
- A. Double "cave" with no grip/bracket.
- B. Single "cave" with a grip having two struts infixed.
- C. Double "cave" with a grip/bracket having two struts infixed.

Do not confuse the **pi** variants with grip with **ch'u**: in both cases, there's a grip with infixed struts, ending in one or two elements each having a boulder outline. In **pi** the boulder outline is one or two "caves" (each with pond and optional stalactite/grapes), whereas in **ch'u** the boulder outline is one or two "LEMs" at the end of the grip/bracket.

syllabogram-pi	animal head	 MC JM • Features: bird-head with hand-jaw.

syllabogram-po	boulder	
		MC K&H JM TOK.p12.r3.c1 [TZ'AM]
		
		MC K&H TOK.p12.r2.c2
		
		TOK.p12.r2.c1 BPK-LAC Unprovenanced Column D4
		
		Sub-variants (3) – the term "depression" is used because the boulder outline is being viewed as a cushion, and the element in the middle is seen as the depression in the middle of the cushion (this may or may not be the true iconographic origin of this glyph):
		• A. Depression completely internal.
		• B. Depression connected to perimeter by two long curved arcs (the continuation of two opposite "horizontal" sides of the depression).
		Many of the standard sources treat both the sub-variant with completely internal "depression" and the the sub-variant with the "depression" connected to the perimeter as both being **po**. In contrast, TOK keeps them separate and reads the sub-variant with the completely internal depression as **TZ'AM** (TOK.p12.r3.c1) and the other as **po** (TOK.p12.r2.c2).
		• C. Depression replaced by short vertical band or line, with two touching dots on one side (slightly resembling the internal element of TE'), connected to perimeter by two long curved arcs.
		   o That this is **po** is known from substitutions, e.g. in Glyph-X:
		
		| Grube-FoGX.p9.fig16c
			Grube-FoGX.p9.fig16b	Safronov CRN Panel 3 B7 |
				
				   o This variant is easy to confuse with AJAW or TE' in the context of EG's or titles.

syllabogram-pu	boulder	
		MC K&H JM TOK.p12.r4.c1
		
		• In many respects this resembles an upside-down **CHAN** = "sky".
		• The subtle aspects where it differs are:
		   o The U is not lipped, and is more or less just a standard (bold) U.
		   o The U has a dotted spine.(never present in **CHAN** = "sky").
		   o The two "pillars" tend to be curved (whereas they tend to be straight (or can be at an angle or have crossed bands in between) in **CHAN** = "sky".
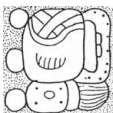
syllabogram-sa	comb	
		MC K&H TOK.p13.r4.c1
		MC K&H JM TOK.p8.r2.c5
		Zender-BH.p4.Fig5b Zender-BH.p4.Fig5c
		CPN Temple 21a Bench CPN Temple 18 SW Jamb
		sa.ja (part of Yax Pasaj Chan K'awiil) sa.ja (part of Yax Pasaj Chan K'awiil)

Sub-variants (2)
- Full: double comb with two bars in the middle.
- Single comb with two, one, or no bars on the right.

Notes
- Do not confuse the ("two-comb") full variant of **sa** with **tz'i**:
  - **tz'i** has the bolding going all the way across the ceiling, whereas **sa** has a break caused by the double vertical bars.
- Do not confuse the ("two-comb") full variant of **sa** with the boulder-only variant of **to**:
  - **to** has crossed bands in the middle, whereas **sa** doesn't.
- Do not confuse the ("two-comb") full variant of **sa** with the boulder-variant of **su**:
  - **sa** has two symmetrically placed "combs" with a double vertical band between them whereas **su** has only a single vertical band separating the two halves with "whiskers" (which only superficially resemble the combs of **sa**).
  - **sa** has dots at the end of each tooth of the comb whereas **su** has no dots at the end of each "whisker".
  - **sa** has no dots associated with the double vertical bands down the middle whereas **su** has two touching dots on one side of the single vertical band.

syllabogram-sa	human head	
		MC K&H TOK.p24.r3.c4

Sub-variants (1)
- Human head with KAB in mouth – the top of the mouth is not needed – the KAB can begin immediately below the nose.

syllabogram-sa	crest	
		MC JM
		MC JM

Sub-variants (2)
- A. Full:
  - Top
    - Left: vertical scroll curling to the left (optionally bold) with protector.
    - Right: Touching (NW to SE) diagonal bars, optionally with reinforcement on one long and one short edge.
  - Bottom: AT (=circle with crossed bands in an X).
- B. Reduced: top part of full form.
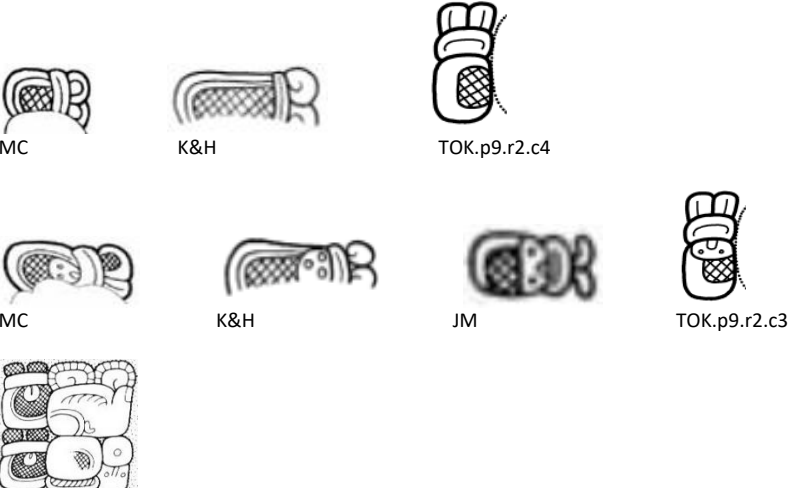

		• Caution: it could be the case that only the full form is **sa**, the reduced form could be **wu** or **hu**.
		  ○ The reduced form is listed as **sa** in JM (2002/2006) and MC (2000/2005), but these are relatively old sources.
		  ○ In K&L it has already been deliberately dropped.
		  ○ In BMM9, it is given as **wu**, and Dorota Bojkowska has a handwritten note that Beliaev suggests **hu**.
		  ○ In FK2, it is given as **hu**.
		• Is it ever used just for spelling or words, or is it restricted the EG of NAR?

syllabogram-se	boulder	MC = K&H JM TOK.p14.r1.c3
		
		TOK.p22.r3.c2 Schele
		YAX Stela 12 D1
		8.<ka:se:wa>
		
		• Similar to a reduced variant of **cha**.
		• Do not confuse with **bo**, where the two elements on the side each have a vertical spine of three non-touching dots (and the two elements are also more in the middle of the vertical axis, rather than touching the bottom, as here in **se**.
		
		<u>Sub-variants (2)</u>
		• A. Standard:
		  ○ Boulder outline – a tendency to be rectangular, with more height than width.
		  ○ LEM at the top, attached to (or slightly free of) the ceiling.
		  ○ An "inverted-L" on the left and an "inverted-L" on the right.
		• B. Skull:
		  ○ A standard skull:
		    ▪ Nose-hole.
		    ▪ Bone-jaw with 3 touching dots as teeth on the top.
		    ▪ %-sign.

syllabogram-si	stylized	MC K&H JM TOK.p9.r2.c5
		
		MHD.3M6.1&2
		
		• Do not confuse with **tu**:
		  ○ **si** has three small non-touching dots in a row.
		  ○ **tu** has cross-hatched area (with optional face).
		
		<u>Sub-variants (1)</u>
		• Only variant:
		  ○ Left: flint, with:
		    ▪ Reinforcement of the ceiling and (optionally) left wall (and even more optionally, right wall)).
		    ▪ A row of three or more non-touching small dots (canonically three).
		  ○ Middle: circle with reinforcement on right and (optionally) top and bottom.
		  ○ Right: left and right scroll, each with protector.
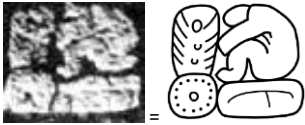
syllabogram-si	representational	 MC K&H JM MHD.3M6.3

syllabogram-si	rat head	
		MHD.APC 1550st
		
		Graham
		YAX Lintel 10 D6
		<u:si:ji>.<u:[CHIT]CH'AB>
		
		• There is a rare variant, featuring a rat's head.
		• Sergei Vepretskii: this [= the "rat head" glyph] is in fact a very rare form of **si**, making this *usij uchit (u)ch'ab* = the child of. This is cited in Kettunen&Helmke-RoB.p34.fig65i.
		• MHD statistics. A search in "Classic - Blocks" with:
		  o "blcodes contains 3M6" gives 377 hits:
		    ▪ 3M6 is both the stylized and the "beetle" variant. MHD doesn't distinguish the stylized variant from the "beetle" variant.
		    ▪ 377 hits is overcounting slightly, as the "beetle" variant is also included in this count. Nevertheless, it doesn't overcount too much, as the "beetle" variant is known to be quite rare also, anyway.
		  o "blcodes contains APC" gives 15 hits:
		    ▪ This too might be overcounting, because quite a number of these hits are APC? rather than pure APC.
		  In any case, it confirms Sergei's explanation that the "rat head" variant is quite rare.

syllabogram-so	snail	 BMM9.p6 = TOK.p17.r1.c2

syllabogram-su	wood property	
		MC K&H = JM
		
		TOK.p13.r4.c2
		
		<u>Sub-variants (2)</u>
		• A. Flint:
		  o Both ends: 3-4 longish ticks
		  o Middle: slightly curved band with two touching dots on one side
		• B. Boulder: similar to the flint form but the curved band is always vertical, and with a bold ceiling.
		
		<u>Notes</u>
		• Do not confuse the flint variant of **su** with **te**, which also has "whiskers".
		  o **te** has "whiskers" in one half only, whereas **su** has "whiskers" at both the extremities.
		  o **te** has only two "whiskers" wherever there are "whiskers", whereas **su** has three or more "whiskers".
		• Do not confuse the boulder variant of **su** with the full variant of **sa**:
		  o **sa** has two symmetrically placed "combs" with a double vertical band between them whereas **su** has only a single vertical band separating the two halves with "whiskers" (which only superficially resemble the combs of **sa**).
		  o **sa** has dots at the end of each tooth of the comb whereas **su** has no dots at the end of each "whisker".

		o **sa** has no dots associated with the double vertical bands down the middle whereas **su** has two touching dots on one side of the single vertical band.

syllabogram-ta	flint	 MC K&H JM TOK.p6.r2.c1 MC K&H TOK.p6.r2.c2 Sub-variants (2) A. Single element bound to flint: - Two slightly curved lines in the middle (one or both bold), perpendicular to the long axis of the flint. - They form a broader band "binding" a long, thin element to the flint: - The bound element has the same long axis as the flint. - The bound element can have sharp or rounded ends. B. Double element bound to flint: similar to the single bound element form but with two elements bound to the flint: - The bound elements have the same long axis as the flint. - The bound elements generally have only rounded ends. The top and bottom bound elements can each respectively touch the ceiling and the floor of the flint.
syllabogram-ta	boulder	 MC K&H JM TOK.p10.r5.c3 TOK.p14.r1.c2 MC.p159.c4.r1.6 Sub-variants (2) A. Boulder: - A "three-bump" horizontal line dividing the boulder roughly in 1/3 (bottom) and 2/3 (top). - A bold ceiling. - In the centre of the top 2/3's, two slightly curved bands (curved pillars) going from ceiling to the "three-bump" line – the two curved bands may optionally have very short bands between them, creating a "ladder". - On the left of the bottom 1/3, a bold right feeler. B. Head: the boulder form infixed in the outline of a human head.
syllabogram-ta	centipede	 MC K&H JM TOK.p8.r4.c5 MC.159.c4.r1.5 TOK.p8.r4.c6 Sub-variants (2) A. The whole centipede lies parallel to the main sign: - Head: - Circle or circle with top of head bold or circle is a circle of tiny dots, or optionally absent. - Two feelers at the end – can be bold feelers or non-bold feelers each with a protector. - Body: single band on long axis of the centipede, with parallel ticks on both sides for the legs.
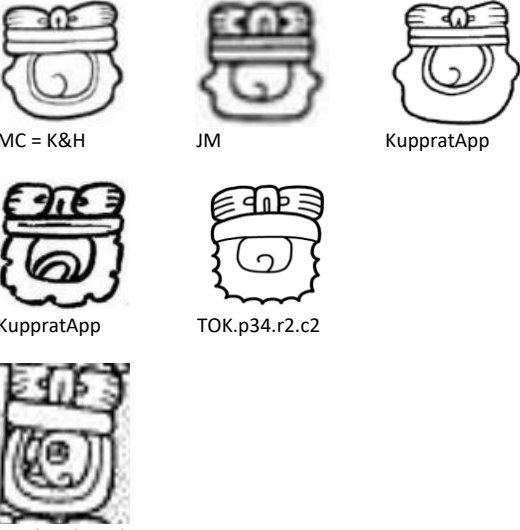
		o Tail: ▪ Circle with dot in the centre, with a dotted circle between the central dot and the outside edge of the circle. ▪ The tail can optionally have two feelers also, reflecting the structure of real-life centipedes. • B. Body of centipede goes into the main sign, with only the end part of the body and tail emerging from the main sign again (perpendicular to the main sign or at a sharper angle).
syllabogram-ta	torch	 JM.221.4 Notes • This is actually just **TAJ** = "torch" used acrophonically / dropping the final consonant.
syllabogram-ta	jellyfish	 | TOK.p16.r5.c3	MHD.AAG	1715st	T155e
?	ta	-	-	 This glyph is in a "transitional state". I originally thought it was an undeciphered logogram, and gave it the nickname "JELLYFISH". • Looper&Polyukhovych-SICV (2022) is a recent paper which proposes the reading **ta** for this glyph. This argument sounds very plausible, as the paper cites a newly photographed ceramic vessel (Mint Museum Bowl 1999.129.7), where **ta pa lu** ➔ *ta paaj ul* = "for sour/fermented atole" occurs in the PSS. It occurs in exactly the spot where *ta <adjective> <food-substance>* would be expected, in the highly formalized syntax of a PSS (e.g. in the formulaic phrase of the PSS: *yuk'ib ta (yutal) ixiim te'el kakao* = "(the) drinking vessel for (fruity) maize-tree-ish / maize-tree-type cacao"). For this reason, the reading of **ta** for the "JELLYFISH" glyph seems to be quite acceptable.
syllabogram-te	boulder	 | MC	K&H	JM	TOK.p15.r1.c2 | JM.229.1 Sub-variants (3) • A. Round boulder: o Semi-circular arc dividing boulder into a top and bottom half – bottom half ~ CV washer. o 2 touching dots attached to the upper side of the arc, in the middle. o In top half, on the inside: ▪ 2 ticks on the middle of the left wall. ▪ 2 ticks on the middle of the ceiling. ▪ 2 ticks on the middle of the right wall. • B. Flint: same as round boulder form, but flatter. • C. "Cave": o Rectangular boulder with bold top half of left wall, ceiling, and entire right wall. o Slightly curved vertical line, bulging to the right, dividing the inside into roughly two halves. o Two vertical touching dots halfway up the vertical line, on the right side. Notes • Do not confuse the boulder-variant of **te** with the flint variant of **su** as they both have "whiskers" (short ticks): o **te** has "whiskers" in the top half only (at 9 o'clock, 12 o'clock, and 3 o'clock on the perimeter of the boulder outline), whereas **su** has "whiskers" at both the extremities of the flint outline. o **te** has only two "whiskers" wherever there are "whiskers", whereas **su** has three or more "whiskers". Also, **te** has a tendency to have a boulder outline, whereas **su** has a tendency to have a flint outline (though there are sub-variants of **su** with a boulder outline as well). • Do not confuse the boulder-variant of **te** with **lo**: o **te** has "whiskers" in the top half (at 9 o'clock, 12 o'clock, and 3 o'clock on the perimeter of the boulder outline)

		○ **lo** has no "whiskers" at all.
syllabogram-te	wood	 JM.228.4 • This is actually just **TE'** used acrophonically.

syllabogram-ti	bird / feather	
		MC K&H JM TOK.p26.r1.c2
		
		MC K&H JM TOK.p9.r2.c2
		
		Schele
		PAL TI CT F5
		3.<<LUUT.K'UH>:ti>
		
		Sub-variants (2)
		• A. Full (bird head) (One of the Tokovinine lectures says this is a vulture = lost reference):
		  ○ A long, hooked beak, with a tiny dot for a nostril, either at the top or the tip of the beak.
		  ○ Eye – dot with:
		    ▪ a tick on the left of the dot.
		    ▪ a tick on the right of the dot.
		  ○ "Sickle" line: attached to the bottom of the dot eye, curving round to under the mouth.
		  ○ Optionally, multiple reinforcement (one or two) on the inside of the lower part of the upper beak.
		  ○ Soundwaves to the right of the curve of the sickle, towards the right wall.
		  ○ A feather as forehead ornament:
		    ▪ Bottom: washer.
		    ▪ Middle: band or semicircle or ¾ circle.
		    ▪ Top: longish pointed, "leaf-like" element with multiple spines running along the long axis.
		Interestingly, all the canonical examples from MHD and Bonn have an element which resembles the "bone property marker" in the top right.
		• B. Reduced (feather): Just the feather of the full form:
		  ○ The middle element of the feather can have a reinforcement on three of the four sides (in the direction away from the washer).
		  ○ Do not confuse this variant with the visually similar **SAK**:
		    ▪ The syllabogram **ti** has only one "leaf".
		    ▪ The logogram **SAK** has two or three "leaves".

syllabogram-to	flame	 MC K&H JM TOK.p32.r3.c1 MC MC MC K&H

JM

TOK.p13.r4.c4

Sub-variants (3)
- A. Full:
  - Top ("crest"):
    - Two or three feelers with protectors:
      - The feelers can be:
        - All left feelers (when there are two or three).
        - A left and a right feeler (when there are two).
        - A left and a right feeler with a middle, non-curved "feeler" (when there are three).
      - Each feeler has its own circle of tiny dots as protector, but in addition there can be an optional additional single-line protector over the tiny dot protectors – this single line can be:
        - Just one protector for all the tiny dot protectors, or
        - Individual protectors, one for each of the tiny dot protectors.
  - Bottom ("boulder"):
    - Bold left wall, ceiling, and right wall.
    - In the middle:
      - 2 vertical bars from ceiling to floor.
      - Crossed bands or JAL weaving, between the 2 vertical bars.
    - On both sides of the middle:
      - Many parallel horizontal ticks, each tick ending in a tiny dot.
      - This resembles the two combs of the double comb variant of **sa**, the difference being that:
        - In **sa** the tips of the combs don't touch at the top (blocked by the two vertical bands), whereas in **to**, the top is a continuous bold ceiling.
        - In **sa** the tips of the combs don't touch at the bottom (blocked by the two vertical bands), whereas in **to** the question of their touching or not touching doesn't arise, because the bolding of the two sides ends when the sides reach the bottom (i.e. the floor is non-bold).
- B. Reduced to crest: just the "crest" of the full form.
- C. Reduced to boulder: just the "boulder" of the full form.

Further notes:
- I seem to vaguely recall that Tokovinine explains in one of his lectures (lost reference) that the "protected feeler" elements at the top are related to flames and that the full variant of **to** is closely related (iconographically speaking) to the full variant of **K'AHK'** – i.e. the boulder-shaped element below the "protected feelers" / flames in both cases are a "container" from which the flames emerge.
- Do not confuse the "boulder-only" reduced variant of **to** with:
  - **tz'i**: **tz'i** has no crossed bands in the centre, whereas **to** does.
  - The "two-comb" full variant of **sa**: **to** has crossed bands in the middle (and the column bands do not reach all the way to the top (i.e. the bold ceiling continues through the whole of the top), whereas **sa** never has crossed bands, and has a break in the bold ceiling caused by the double vertical bars.

syllabogram-tu	bifoliate	

MC

K&H

TOK.p9.r2.c4

MC

K&H

JM

TOK.p9.r2.c3

Graham
YAX HS3 Step 1 D8
<tu.<to:k'a>>.<tu.<pa:ka>.la>

Sub-variants (2, maybe 3?)
- A. Without face:
- B. With "face":
  - Three non-touching dots in a triangular formation.
  - Point of the triangle can point to either left of right, independent of whether the leaves are on the left or right:
    - The triangle can point in the "same" direction as the leaves, or in the opposite direction.
    - The most common orientation is that the triangle points in the opposite direction to the leaves, but the other way around also occurs (as seen in the JM example).
- C. "Reduced face"?:
  - YAX HS3 Step 1 D8 has an unusual variant where there is a further *non*-cross-hatched area in the middle of the top of the cross-hatched area, which in turn has a short tick hanging from the middle of the top. This could in fact be the "face" variant (= with upside-down "la"-face), with the "mouth" of the face being reduced to a tick, and with the "eyes" disappearing completely. Furthermore, the "leaves" at the top are cross-hatched, which is quite unusual.

Notes
- Do not confuse with **si**:
  - **tu** has cross-hatched area (with optional face).
  - **si** has three small non-touching dots in a row.

syllabogram-t'a	o-like	

Gronemeyer-FtG.p2.fig1c
IKL Structure 1
<t'a:ba>.yi

Gronemeyer-FtG.p3.fig3
UXM Capstone Block C
T'AB.<t'a::ba>

Gronemeyer-FtG.p4.fig4b
PNG Looted Altar Support A5b
t'a:T'AB[*yi]

Gronemeyer-FtG.p6.fig5a block #3
XLM Lintel 1 Stone I Block C
<bo:t'a>.ja

Gronemeyer-FtG.p6.fig5b
Museo Amparo Jamb B3
<bo.ja>:t'a

Gronemeyer-FtG.p6.fig5c
DO 114 A1
<bo.ja>:t'a

 =

Gronemeyer-FtG.p9.fig9a&b
CHN T4L A8 (probably typo ➔ D8)
t'a.<T226:li>

T226

TOK.p16.r4.c3
?

BMM9.p6
t'a?

- The variant which looks like **o** is still just a proposal, in Gronemeyer-FtG. Do not confuse it with **o** and **TE'**:
  - In Gronemeyer-FtG.p9.fig9a&c it does indeed look like **o**; however, **o** often has a cross-hatched area at the end of the feather, which is absent in this one.
  - Gronemeyer himself says that this one is very tentative and might in fact be a **o** after all. If it is a **t'a**, then he proposes that the "depressed man" glyph be read **T'AL**.
  - In Gronemeyer-FtG.p9.fig9b it looks slightly like **TE'**.
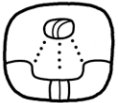
		• TOK.p16.r4.c3 lists the "tooth + torch" glyph without pronunciation (and so there is no indication if it is a syllabogram or logogram), but BMM9.p6 gives a tentative reading as **t'a**. The original source of the proposal is not known.
syllabogram-t'e		
syllabogram-t'i	split akbal

1624st
t'i?

Davletshin&Bíró-APSfT.p4.fig2a
Pendants 8a and 8b, Comalcalco Urn 26
ti.<nu:t'i:li>

Davletshin&Bíró-APSfT.p4.fig2b
Stingray Spine 4, Comalcalco Urn 26
nu:<t'i:li>

Davletshin&Bíró-APSfT.p4.fig2c
K1815
nu:<t'i:li>

Davletshin&Bíró-APSfT.p4.fig2d
K2208
nu:<t'i:li>

1624hc
t'i?

• Davletshin&Bíró-APSfT is the paper which first proposed the reading of this glyph as **t'i**.
  ○ Davletshin&Bíró-APSfT.p4.c1.para2.l+2: The sign in question is not registered in Thompson's (1962) catalog of Mayan signs, and is instead known to epigraphers by the nickname 'Split-Akbal' […] in order to distinguish it from the well-known logogram **AK'AB** "night" (long referenced in the literature as 'Akbal') and the 'Flaming-Akbal' […] [Sim: "flaming-ak'bal" is the **AJ** of the famous murals of the Chik Nahb marketplace in CLK.]
  ○ Davletshin&Bíró-APSfT.p4.c2. para2.l+1: the 'Split-Akbal' sign occurs only five times in the extant corpus: twice in texts from Comalcalco (Armijo et al. 2000, 2001; Zender 2004) and thrice on painted Codex-style ceramics. [Sim: only four of the five are shown as examples above, as the fifth is too eroded to be of real value in giving an idea of how the glyph looks.]
• Davletshin&Bíró-APSfT was published in 2014, and Bonn has recognized the glyph as 1624st *and* assigned the pronunciation **t'i** (but with a question mark).
  ○ This indicates that the proposed reading has found at least some support among other epigraphers.
  ○ Bonn has even recognized a head variant: 1624hc. |
| | | |
| syllabogram-t'o | kuch and conch |

K&H =K&L = BMM9.1 TOK.p34.r3.c4 BMM9.2 25EMC

MHD.AAA.1&2 0174bv 0174bt |
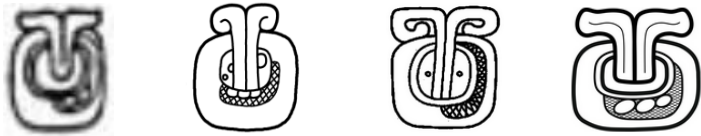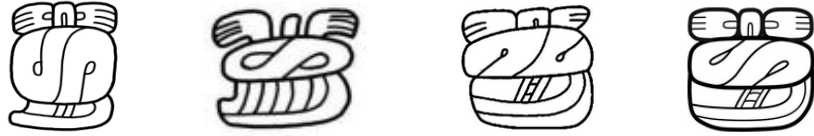
		Safranov
		PNG Panel 3 M'1/T'1
		t'o.<lo{l}:CHITAM>
		
		• Mnemonic: you stub your t'o(e) on a rock, when you try to kick the snail.
		• Though not a *very* common glyph, it's:
		  o Quite well established, as it's listed in K&H, K&L, TOK, BMM9, 25EMC.
		  o MHD gives it the 3-character code AAA with no match to an existing T-number.
		  o Bonn gives it the 6-character code 0174bv with variant reduced variant 0174bt.
		• A search in MHD on "blcodes contains AAA" yields 27(!) hits:
		  o More than half of them (16) spell the verb form *t'ohxaj* = lets blood? 'splits' (translation by MHD).
		  o 5 of them spell a proper name T'ol (4) or T'olol (1):
		    ▪ There is an example of T'olol on PNG Panel 3 – T'olol Chitam, Muxkan Sajal – the tag for one of the figures portrayed on the panel.
		  o The remaining 6 are "miscellaneous" (no particular pattern).

syllabogram-t'u	boulder	
		MC K&H TOK.p14.r4.c1
		
		• This variant (the only one) is a boulder outline with two infixed elements (a "necklace" and "blades of grass") in common with a number of other glyphs. The list below shows the unique element infixed in the top which distinguishes them from one another:
		  o **ba**: **LEM**-like element.
		  o **ma**: right-side-up AJAW-face.
		  o **t'u**: KAWAK.
		  o **tz'e**: a slightly curved, bold V with "dot protector" underneath (the "dot protector" replaces the "necklace", and the bold V can sometimes be non-bold).
		  o **tz'u**: K'IN.
		  o **HA'**: cross-hatched circle.
		  o "IMIX": cross-hatched circle or **LEM**-like element (usually distinguished from **HA'** by the blood cartouche).

syllabogram-tza	ma with lemon or gear	
		MC = K&H JM KuppratApp
		
		KuppratApp TOK.p34.r2.c2
		
		YAX lintel 3 F1b
		
		• Do not confuse with **LAM** ("decrease", "diminish", "elapse"):
		  o Similarities:
		    ▪ Top: reduced ("butterfly") variant of **ma**.
		    ▪ Middle: one or two horizontal bars.
		  o Differences are in the bottom, where **tza** has:

		▪ Has "lemon outline" or "gearwheel" or "boulder outline", while **LAM** has **MIH**. ▪ Mnemonic: "lemons, gearwheels or boulders can reach the top of the tza(rts)". <u>Features</u> • Top: reduced ("butterfly") variant of **ma**. • Middle: one or two horizontal bars. • Bottom: approximate boulder outline, the sub-variants have different shapes for the boulder outline: ○ Inside: a circle or oval (optionally bold) attached to the ceiling, with a left feeler inside on the floor. <u>Sub-variants (3)</u> • A. Lemon: lemon shaped boulder outline. • B. Gearwheel: gearwheel shaped boulder outline. • C. Smooth: smooth shaped boulder outline (what is inside this?).

syllabogram-tze	ma-ladder-grip	
		1900tv 1900ta 1900tc MHD.ZHN Vepretskii&Davletshin-APTS.p13.fig2.a&b
		
		Vepretskii&Davletshin-APTS.p14.fig3.a Vepretskii&Davletshin-APTS.p16.fig4.a&b&c
		
		• This glyph is not given in the syllabaries of
		• Vepretskii&Davletshin-APTS (2022) is the paper which first proposed that a hitherto undeciphered glyph could be read as **tze** – Vepretskii&Davletshin-APTS.p24.para3.l-2: The composite sign with the central **ko**-like element tends to be associated with the syllables **le** and **he**; its plausible reading value is **tze**. See also **tzo**.
		• Sim: note that the description is "**ko**-like", not just **ko** – the two ends do not have a tiny dot on the inside, which **ko** has.
		• Bonn gives 1900tv as **tze** with a high confidence level. This indicates that Bonn accepts the Vepretskii&Davletshin-APTS proposal with no reservations. However, MHD indicates **tze?** for the equivalent glyph.
		• Features (stacked):
		   ○ Top: butterfly/bowtie.
		   ○ Middle: two stacked ovalish elements, each with a ladder in the centre.
		   ○ Bottom: a **ka**-like or **li**-like element.
		• Sub-variants:
		   ○ The middle element can be a single ovalish element rather than double.
		   ○ The bottom element can be completely absent (but then the middle element is double).
		   ○ The top and bottom element can be completely absent (but then the middle element is double).

syllabogram-tze	head with winik on eye	
		BMM9 = CMC4 = FK2 MHD.PHEs 1022st T1022
		tze? tze? tze tze? - -
		
		• This appears to be a codical-only form.
		   ○ MHD gives all examples (including a logogram equivalent **TZEN?** as codical.
		   ○ Even in the codices, it's quite a rare form:
		     ▪ There only 3 hits in "All - Blocks" for a search on "blcodes contains PHE".
		     ▪ All 3 hits are PHEs and from the Dresden Codex:
		
		<table><tr><td>Blsurfpgfr</td><td>coordinate</td></tr><tr><td>DRE51b02</td><td>B1</td></tr><tr><td>DRE51b03</td><td>C1</td></tr><tr><td>DRE55b05</td><td>E'1</td></tr></table>
		• The reading is uncertain: MHD assigns it **tze?** with a question mark, whereas Bonn doesn't assign it a reading at all.

		• It's listed in BMM9, CMC4 and FK2, but only FK2 lists it without a question mark. It's not listed in K&H, K&L, TOK, and 25EMC. This seems to me to indicate considerable doubt as to the correctness of this reading.

syllabogram-tzi	dot cascade	MC TOK.p32.r5.c4
		
		  MC JM TOK.p10.r2.c3
		
		  MC K&H JM TOK.p13.r5.c3 T507a&b
		
		  Coll-1
		 TNA Monument 171 B1
		 ta.\<pi:tzi\>
		
		  TOK.p23.r4.c3 MHD.PL7.2 0507hh = Prager-DdEdM.t0:31:57
		
		  MHD.PL7.1 Graham
		 TNA Monument 141 D4b
		 *pi:*tzi:la
		
		 Sub-variants (4)
		 • A. Abstract full form:
		   ○ Top – a trifoliate "crest":
		     ▪ With the outside leaves curling respectively to the left and right, and slightly downwards.
		     ▪ Central leaf with smooth top (no tip pointing upwards).
		     ▪ The leaves optionally with spines.
		   ○ Bottom – Boulder, with inside:
		     ▪ Top: circle (often bold), with arc inside (slightly "**LEM**"-like).
		     ▪ Middle: three lines of cascading non-touching dots (each dot in the cascade growing smaller the further down it is):
		       • Left: slightly curved.
		       • Middle: straight down.
		       • Right: slightly curved.
		     ▪ Bottom (T507a&b show that this is optional):
		       • Top: lipped-U.
		       • Bottom: two parallel vertical bands, optionally slightly curved outwards.
		 • B. Crest only = Abstract full form reduced to only the trifoliate element ("considerably reduced").
		 • C. Boulder only = Abstract full form reduced to only the boulder element ("slightly reduced").
		 • D. Head form:

		o An anthropomorphic head with a "**LEM**" at the top and a 3-pronged "shower of dots" and the lipped-U with column supports infixed. (0507hh and MHD.PL7.1 show that the lipped-U with column supports is optional). o The 3-pronged "shower of dots" is sometimes not that obvious, as in MHD.PL7.1 and TNA Monument 141 D4b. The latter occurs in a context where we expect *pitzil*, which is how we know that that head glyph is **tzi**. o The distance from 0507hh to MHD.PL7.1 is small, and perhaps the distance from MHD.PL7.1 to TNA Monument 141 D4b is also small, but leads to quite a large distance from the first to the last. o The 3-pronged "shower of dots" could become just the middle prong, e.g. from erosion, as shown by TNA Monument 171 B1. This helps to make the reading of the head variants more plausible.
syllabogram-tzi	pax-ja	 JM.244.#1 TOK.p14.r5.c4 MHD.ZU5 1709st tzo ? tzi? - • This is a glyph that is not listed in almost all the standard tables of syllabograms, not even those which show quite uncommon ones. • JM.244.#1 (2002) lists it as **tzo** and describes it as a "sprout emerging from a 'moon' sign". • Very similar to TOK.p14.r5.c4 (2017), which is given with "?". • Very similar to MHD.ZU5 (2022 onwards), which is given with **tzi?**. • Very similar to Bonn's 1709st (2022 onwards), which is not given a reading. • Summary: **tzo** is probably now outdated, with a *very* tentative reading of **tzi?**.
syllabogram-tzo	ma-tal	 TOK.p34.r1.c2 BMM = CMC4 = FK2 MHD.ZS4 1608tv tzo? tzo? tzo?? tzo? tzo tzo • TOK.p34.r1.c2 (2017), BMM (2019), and FK2 (2017) give pronunciation **tzo?**, i.e. uncertain, with a question mark. CMC4 (2015) goes even further and has **tzo??**, with two question marks. • Vepretskii&Davletshin-APTS.p24.para3.l+4 (2022): The composite sign with the central **TAL**-like element co-occurs with the syllables **lo** and **mo**; its plausible reading value is **tzo**. See also **tze**. • MHD and Bonn (2022 onwards) both give **tzo** without a question mark, which would suggest that it went from uncertain **tzo** to confidently **tzo**, between 2015 and 2022.
syllabogram-tzu	vine	 MC K&H JM TOK.p16.r3.c1 0370st MHD.ZT1s.1 MHD.ZT1s.3
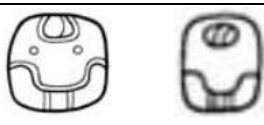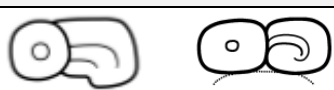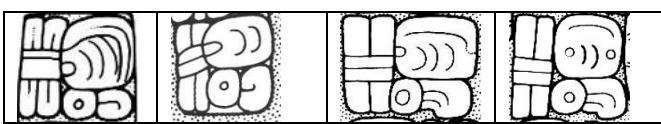
MHD.ZT1s.2

- Do not confuse with **TAK** = "dry", which has **K'IN** in the top left, whereas **tzu** has **LEM**.
- Do not confuse this with **UUN / UN** = "avocado", which has a cross-hatched circle in the top left (=the seed of the avocado fruit?), whereas **tzu** has **LEM**.
- It is derived from **TZU(')** meaning "gourd".
- There is also a reading as **HOP** for this glyph (BeliaevEtAl-NGA.p358.pdfp8, but seen only in the very limited context of the ruler name / theonym Hoplaj). MHD distinguishes them by assigning **tzu** the code ZT1s and **HOP** the code ZT1a.

Sub-variants (3) – all sub-variants are a basic vine of the gourd with infixed:
- A. LEM: this is the most typical sub-variant.
- B. Circle: this one could be confused with **UN/UUN**, but the circle in **UN/UUN** is typically cross hatched.
- C. Two instances of the "wood" property marker: This seems to be quite an aberrant sub-variant, given by MHD.

syllabogram-tzu	ribcage	

MC   K&H   JM   MHD.ZT1s.5

- Although this resembles a spine and ribcage, it is in fact simply the codex version of the "vine" variant.
- In contrast to the non-codex forms, the codex form doesn't have an infixed circular element (the distinct shape of the vine "branches are sufficient to identify it as **tzu**).

syllabogram-tzu	head	

MHD.SM5   0370hc

COLAIC71895   Martin-AMP.p255.fig62   mayavase.com   Morley
    BPK-LAC - Unprovenanced Column D1   K8257 S   PUS Stela E
tzu.<tza:ja>   tzu.<tza:ja>   5.pi.tzu   <²tzu>.ja

- The examples above were found using MHD:
  - "blcodes contains SM5" (to get the "head with 'tree-trunk with roots' infixed down the middle").
  - "blmaya1 does not contain tzuk" (to exclude **TZUK**).
  This gives 7 hits, of which I have selected the best 4.
- Some of these contain a tree trunk (e.g. K8257 S). Such examples could be considered to be a head sub-variant of the "tree" variant, but quite a number do *not* have a tree-trunk. The context in which they are found shows that they are **tzu**. For example, in BPK-LAC Unprovenanced Column D1, the head-glyph has **tza:ja** very clearly after it, and the whole of D1 occurs before *uhx lajuun haab*. So *tzutzaj uhx lajuun haab* is the obvious reading. For convenience I have put all the head-related ones here, with or without a tree trunk, but the former could just as well be classed with the tree trunk variant.

syllabogram-tz'a	leafy	

MC   K&H   JM   TOK.p9.r3.c1

Sub-variants (1)
- A. Only form – long / "rectangular", quadripartite glyph:
  - Element 1: Bracket (can be rounder, almost 3/4 circle)
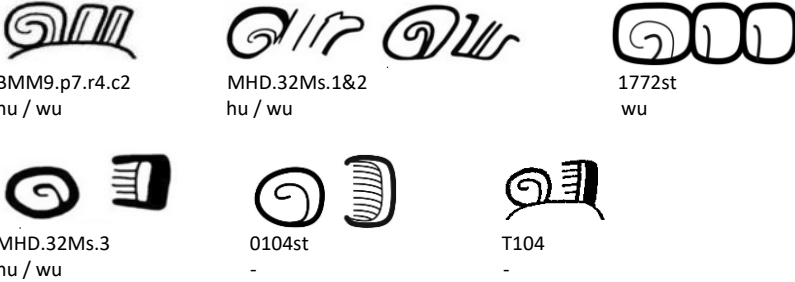
<table>
<tr><td></td><td></td><td>

○ Element 2: Washer with reinforcement on the end adjoining Element 3
○ Element 3: Oval with reinforcement on the end adjoining Element 4 (alternatively: bold bracket)
○ Element 4: tri-foliate element:

▪ Rather "stubby" leaves
▪ Often with spine

• Do not confuse tz'a with the visually similar SAK.

○ SAK has three components: a washer, a bracket, and 2 or 3 "leaves".
○ Usually, tz'a has four components: a bracket, a washer, a bracket, and (always) 3 "leaves". When the first ("outside"/"bottom") bracket is missing, it looks rather like SAK. In most cases, context can be used to determine which of the two is intended.

</td></tr>

<tr><td>syllabogram-tz'e</td><td>boulder</td><td>

K&H = K&L   TOK.p34.r1.c1   BMM9 = CMC4 = FK2

• This variant (the only one) is a boulder outline with two infixed elements (a "necklace" and "blades of grass") in common with a number of other glyphs. The list below shows the unique element infixed in the top which distinguishes them from one another:

○ ba: LEM-like element.
○ ma: right-side-up AJAW-face.
○ t'u: KAWAK.
○ tz'e: a slightly curved, bold V with "dot protector" underneath (the "dot protector" replaces the "necklace", and the bold V can sometimes be non-bold).
○ tz'u: K'IN.
○ HA': cross-hatched circle.
○ "IMIX": cross-hatched circle or LEM-like element (usually distinguished from HA' by the blood cartouche).

• Stuart-GfRaLp3.para2.l-3 entertains the possibility that this is tz'e derived from TZ'EH (meaning "right" as in "right vs. left").

<u>Sub-variants (1)</u>

• A. Only form:

○ Top: "butterfly" variant of ma
○ Bottom – boulder, with inside:

▪ Top: bold curved V with dotted reinforcement on the bottom
▪ Bottom: blades of grass (optionally paired)

</td></tr>

<tr><td>syllabogram-tz'i</td><td>boulder</td><td>

MC   K&H   JM   TOK.p7.r4.c1   TOK.p13.r4.c3

T563a   T563b   MHD.XV1.1&2&3   MHD.XV3   0563st

• Features:

○ Outline: boulder outline, with walls and ceiling bolded / reinforced (i.e. a "symmetric cave") or only ceiling bolded.
○ Instead of a single vertical bar in the middle, there can be two (optionally cross-hatched), and optionally with cross bands between them. [Is this correct? TOK = "cloud", "storm" has this "symmetric cave" with crossed bands in the middle, with two or three "protected feelers" above, and there are variants of TOK without the "protected feelers". But it's not really clear that tz'i can have these crossed bands (no examples from MHD or Bonn have them). So this could be a misconception on the part of JM.] Note however:

▪ It has survived into the web-based version of JM (revised by Helmke).
▪ MHD.XV3 – a codical form – has crossed bands.
▪ Thompson's original example for T563b has crossed bands, and Bonn has decided to perpetuate this number as 0563st (though Bonn's example has no crossed bands).

These three points are probably sufficient indication that the cross bands can be present in tz'i, even if they are not common.

</td></tr>
</table>
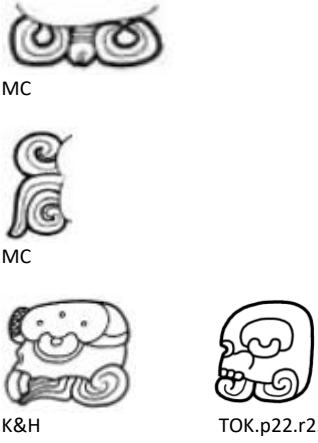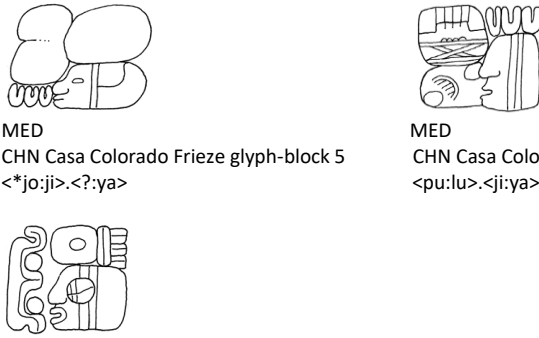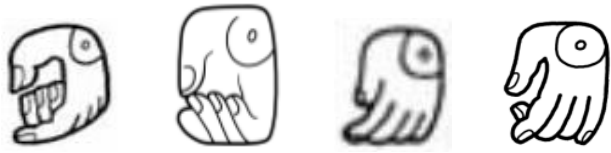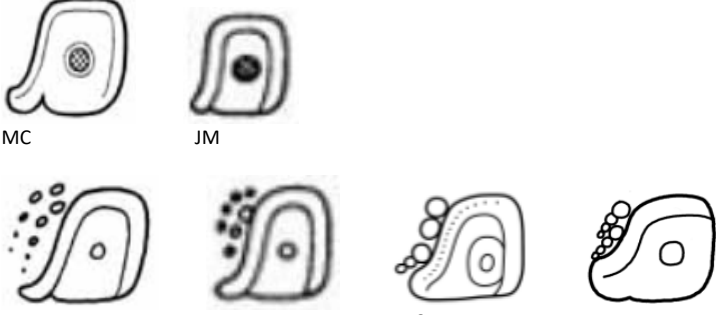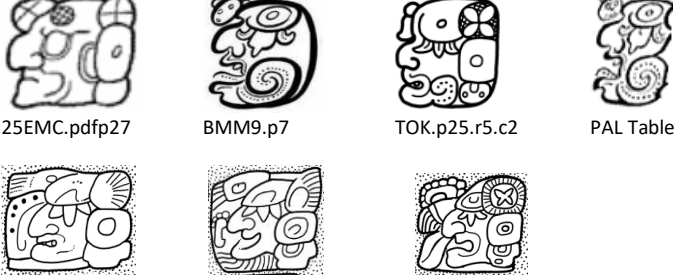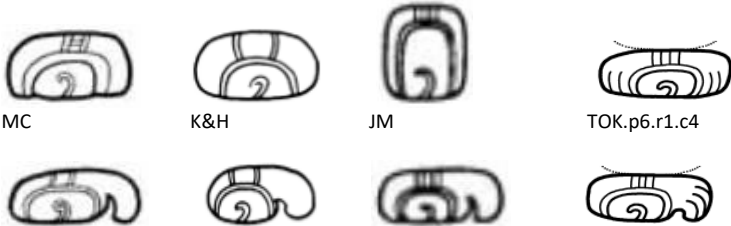
		- Do not confuse **tz'i** with: - The "boulder-only" reduced variants of **TOK/to**: **tz'i** has (generally!) no crossed bands in the centre, whereas **TOK/to** does. - The "two-comb" full variant of **sa**: **tz'i** has the bolding going all the way across the ceiling, whereas **sa** has a break caused by the double vertical bars.
syllabogram-tz'i	bat head	 TOK.p30.r4.c1 - This glyph can be read as **SUUTZ'**, **tz'i**, or **xu**. - TOK glosses it as SUUTZ'/tz'i/xu? and has TOK.p2.para2.l-4: The sign that looks like a head of a bat, for instance, has two confirmed readings in distinct contexts: a logogram SUUTZ' "bat" and a syllabogram tz'i. The third reading - a syllabogram xu - is plausible, but less well-proven. The corresponding catalog entry will show all these readings underneath the character.
syllabogram-tz'o	abstract	 K&H = K&L = 25EMC = FK2 TOK.p34.r4.c1 BMM9 = CMC4
syllabogram-tz'o	rabbit head	[Same examples as for **pe**] K&H TOK.p31.r1.c4 T759a&b M&L.AP7 - Lopes-ANLatNPotSL.p2 (2005): There is some evidence that the rabbit head (T759) at [13] may be a syllable with a value /**tz'o**/ (Stuart 1999:173-174). The transitive CVC root *kotz'* has the meaning of "to roll, wind, wrap" in some Maya languages such as Ch'olti' (Moran 1935) and Colonial Yucatec (Vásquez 2001:339). A syllabic value of /**pe**/ has also been proposed for this glyph which is productive in some contexts. Curiously, both roots *kotz'* (Vásquez 2001: 339) and *kop* (Vásquez 2001: 336) have similar meanings in Colonial Yucatec [= to roll, wind, wrap]. - Gronemeyer&MacLeod-WCHi2021 (2010) provides a detailed argument for a possible alternative (i.e. additional) reading of the rabbit head glyph as **tz'o** (possibly arising from the merger of two formerly distinct glyphs) – Gronemeyer&MacLeod-WCHi2021.p54.fn57: We prefer the reading /**tz'o**/ for the sign AP7 first proposed by David Stuart (Stuart, Houston & Robertson 1999: II-52) for the "Snake Lady" conjuring scene on K5164; he reads the whole as *Ix Tzak Kotz'-om Chan*: 'she who conjures/grasps the rolled-up snake'. This *kotz'-o:m* 'winder snake' (the term we prefer) is likely to be the same being owned by *Ihk' Mu:y Muwa:n* in his parentage statement, as will be explained. The /**tz'o**/ reading for this animal head does not seem to work in all instances, as in the Codex Dresden pp. 4a-10a, where the productive reading /**pe-ka-ja**/ for *pehkaj* (*t-u chich*) 'it is spoken (in his prophecy)' appears (Schele and Grube 1997: 96, who offer a translation 'he reads'). Beliaev (2004: 122, fn. 1) has proposed /**ko-pe-ma**/ for the snake in this Snake Lady scene, yielding a nearly identical meaning *kop-em* 'rolled up'. But we observe that the Ch'olan perfect participle *-em* is all but absent from the script, while the agentive *-o:m* abounds. Additionally, a participle **u-kop-em* with no modified noun following (as we have at K2) seems unlikely, whereas a possessed agentive *u-kotz'-o:m* works well here. We speculate that two distinct signs merged creating a default bivalence for AP7. - The rabbit-head is listed as **pe** but not as **tz'o** in any of the (post-2010) syllabogram tables of the "printed" reference / pedagogical works (up to K&H in 2020). Bonn also does not list the rabbit-head with a reading of **tz'o**. So the Stuart 1999 proposal hasn't perhaps met with much support. - Sim: it would appear that MHD is in favour of **pe** (for K5164).
syllabogram-tz'u	fish	
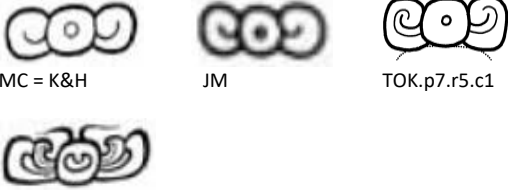
		MC = K&H JM TOK.p8.r4.c3
syllabogram-tz'u	boulder	 TOK.p14.r3.c4 Polyukhovych MacLeod&Bíró-DUDW.p383.fig6b CNC Panel F3 ? 7.<9:<tz'u.ni>> 7.<tz'u:ni> 9.<tz'u:ni> • This variant is a boulder outline with two infixed elements (a "necklace" and "blades of grass") in common with a number of other glyphs. The list below shows the unique element infixed in the top which distinguishes them from one another: o **ba**: **LEM**-like element. o **ma**: right-side-up AJAW-face. o **t'u**: KAWAK. o **tz'e**: a slightly curved, bold V with "dot protector" underneath (the "dot protector" replaces the "necklace", and the bold V can sometimes be non-bold). o **tz'u**: K'IN. o **HA'**: cross-hatched circle. o "IMIX": cross-hatched circle or **LEM**-like element (usually distinguished from **HA'** by the blood cartouche). • A strong argument that this is **tz'u** is presented in MacLeod&Bíró-DUDW.
syllabogram-wa	two crescents	 MC K&H JM TOK.p6.r4.c1
syllabogram-wa	circle and l	 MC
syllabogram-wa	boulder	 MC JM ` • Dorota Bojkowska: **OHL** and **WAAJ** are identical, in some contexts used to write **wa** (from the **WAAJ** reading).
syllabogram-we	te-like	 K&H TOK.p7.r5.c2 | YAX Lintel 2 J1 che.<le:we>	YAX Lintel 13 A4 che.<le:we>	YAX Lintel 52 I2 che.<le:we>	YAX Lintel 58 E1 che.<le:we> | • For a long time mistaken for **TE'** used as an acrophonic for **te**, hence the name Chelte' Chan K'inich (now Chelew Chan K'inich). In other inscriptions also mistaken for **yu**. • Correctly deciphered in ZenderEtAl-SSw. Sub-variants (2) • Single strand • Double strand
syllabogram-wi	maize	 MC K&H K&H JM

		TOK.p8.r1.c1 TOK.p8.r1.c2
		
		• Do not confuse with ni:
		  ○ wi consists of two distinct "leaves" – a longer one and a shorter one, going in opposite directions whereas ni consists of only one "leaf" (which is not really a leaf, just called that here for the sake of comparison to wi).
		  ○ In wi, each of the "leaves" has only *one* spine inside whereas ni has *multiple* wavy lines inside the single "leaf".
		  ○ In wi, the touching dots are always on the *outside* of the long leaf, not touching the single spine whereas in ni, each of the long flowing lines in the middle often (*but not always*) end in one of the dots (*so this cannot be used as a distinguishing characteristic*).
		  ○ AT-E1168-lecture5.t0:11:22 explains that in later times some scribes conflated ni and **wi**.
		• Do not confuse **wi** with the reduced variant of **NAL**:
		  ○ Syllabogram **wi** has only two "leaves" while NAL has three (in both cases probably the sheaths of the corncob)
		  ○ Syllabogram **wi** has dots on the "outside the long leaf" whereas **NAL** has them on the "inside".
		  ○ Syllabogram **wi** usually has more dots than **NAL** – 4 or more for **wi**, and only 2-3 for **NAL**.

syllabogram-wo	w-shape	 MC K&H JM JM TOK.p10.r1.c4 • Given in TOK as **wa**, but Sergei Vepretskii confirmed on 2022-07-13 that this is a typo, and it should be **wo**.

syllabogram-wu	crest	
		BMM9.p7.r4.c2 MHD.32Ms.1&2 1772st
		hu / wu hu / wu wu
		
		MHD.32Ms.3 0104st T104
		hu / wu - -
		
		• No glyphs given in K&H, K&L, TOK, 25EMC. It is however given in BMM9, and by MHD and Bonn. This suggests that it's quite a recent decipherment.
		• There seems to be two sub-variants:
		  ○ A. Scroll and two slanting bars:
		    ▪ MHD.32Ms.1&2: read as either **wu** or **hu**.
		    ▪ 1772st: read only as **wu**.
		  ○ B. Scroll and "comb":
		    ▪ MHD.32Ms.3: read as either **wu** or **hu**.
		    ▪ 0104st: not given a reading.
		I.e. Bonn treats the "two slanting bars" variant as being very distinct from the "comb" variant, reading the former only as **wu**, and giving no reading to the latter while MHD treats both variants as more or less equivalent, and gives a reading of either **wu** or **hu** to them, i.e. Bonn is more restrictive in its reading than MHD.
		• An element which resembles this can be seen at the bottom of a **CHAN**-like glyph in LAC Panel 1 A3b and in PAL Temple 19 Platform Passage S-1 B1.
		  ○ It is not a rotated form of **wu/hu**. Because it consists of a protected scroll on the left, with two slanting bars on the right: if it were a rotated form of **wu/hu**, then the scroll would be on the right.

		o It is not **wu/hu** (unrotated) attached to the bottom of the main sign rather than to the top because it has an anticlockwise scroll: the element below the "**CHAN**" has a clockwise scroll.
		In that context, it isn't **CHAN:wu** or **CHAN:hu**, but is instead a logogram in itself – a variant of **PIK**. This is further confirmed by the fact that:
		   o In the LAC and PAL examples, it occurs in the glyph-block immediately after the ISIG, where logogram **PIK** is expected, with a numerical coefficient.
		   o MHD has assigned it its own 3-character code, as a logogram: ZHA = **PIK**.

syllabogram-xa	flint	 MC JM = K&H TOK.p7.r2.c1
syllabogram-xe		

syllabogram-xi	skull	
		MC = K&H JM TOK.p22.r1.c3 MHD (Moot)
		Fenton Vase E3
		ya:xi
		
		• Distinguishing characteristics:
		  o Kidney-shaped eye, tips pointing left, with dotted border around most of it (except left side) = inverted-C.
		  o Bone-jaw.
		• If the **XIM** logogram exists (Davletshin, Valencia 2018, see **XIM**), then this could be the origin of **xi**, under the acrophonic principle.
		• Do not confuse with the visually similar **CHAM** and **JOL**. The distinctive feature of **xi** is the dotted arc ("inverted-C") around the eye.
		• Do not confuse with one example of **MAAX**, which is intended to be a monkey head even though it has some skull-like qualities (BMM9.p17.r7.c1).

syllabogram-xo	face with horseshoes	 MC K&H JM TOK.p15.r2.c2 • MC has the most extreme indentations on the outer perimeter (at 9 o'clock, 12 o'clock, and 3 o'clock) – other examples have little to no indentation at 9 o'clock and 3 o'clock).
syllabogram-xu	bat	 MC K&H JM TOK.p30.r4.c1 • This glyph can be read as **SUUTZ'**, **tz'i**, or **xu**. • TOK glosses it as SUUTZ'/tz'i/xu? and has TOK.p2.para2.l-4: The sign that looks like a head of a bat, for instance, has two confirmed readings in distinct contexts: a logogram SUUTZ' "bat" and a syllabogram tz'i. The third reading - a syllabogram xu - is plausible, but less well-proven. The corresponding catalog entry will show all these readings underneath the character.
syllabogram-ya	insect	 MC K&H JM TOK.p7.r6.c4

		MC
		
		MC
		
		K&H TOK.p22.r2.c4
		
		Sub-variants (3):
		• A. Full form – insect head:
		  o Bony insect with two front fangs and left and right blood scrolls coming from the mouth.
		  o Nose hole.
		  o Kidney-shaped eye with ends pointing up.
		  o Oval with three non-touching dots.
		• B. Reduced variant 1 – just the blood scrolls making up three elements (two outside and one short one in the middle):
		  o Outside elements: blood scrolls or rounded crescents.
		  o Middle element: two or three (usually) touching dots.
		• C. Reduced variant 2 – just the blood scrolls making up three elements (two outside and one long one in the middle):
		  o Outside elements: tight blood scrolls or rounded crescents.
		  o Middle element: one long band that sticks out like a tongue.

syllabogram-ya	head	MED CHN Casa Colorado Frieze glyph-block 5 <*jo:ji>.<?:ya> MED CHN Casa Colorado Frieze glyph-block 30 <pu:lu>.<ji:ya> MED CHN Casa Colorado Frieze glyph-block 5 u.<ti:ya> Head (sole) sub-variant: • An anthropomorphic head with vertical bar down the middle, from top to bottom. • This appears to be a post-Classic – perhaps also regionally restricted – form, as there are only three occurrences in the MHD database, and they are all from CHN. And not only just from CHN, but from just one single monument in CHN.
syllabogram-ya	full-figure	M&G.p122 YAX Throne 2 glyph-block #4 <ya.YAXUUN:ni>:BAHLAM • Full-figure: o The skeletal head, shoulders, and arm in the top left of M&G.p122 is the full-figure variant of **ya** – the blood-sucking insect.

syllabogram-ye	hand
MC   K&H   JM   TOK.p19.r2.c1
syllabogram-ye	tooth
MC   JM

MC   JM   K&H   TOK.p16.r5.c4

• The main sign is a tooth in its iconographic origin.
• The circle in the tooth is the inlaid jade bead, which was done in the front teeth of Classic Maya nobility.

Sub-variants (2)
• A. No "dot cascade left".
• B. With "dot cascade left":
   o Tokovinine (get reference) says that historically iconographic origin of the "dot cascade left" is droplets of saliva and that the dot in the centre is an inlayed precious stone (both associated with teeth).
   o There can be either one cascade or two.
   o Do not confuse this with the "tooth and bone" variant of **ha**, which has an oval element in the top left (with (optionally) three non-touching dots in a row inside), instead of the dot cascade. |
| syllabogram-ye | head |
25EMC.pdfp27   BMM9.p7   TOK.p25.r5.c2   PAL Tablet of the 96 Glyphs J5a

Stuart   Stuart   Stuart
TIK Marcador B7   TIK Marcador D1   TIK Marcador G5

• In all the examples except 25EMC, the eye is covered by a washer above and a trifoliate element below (leaves pointing downwards).
• Do not confuse this with the visually (slightly) similar logogram K'EK'EN:
   o K'EK'EN has a mammal head while (the head variant of) **ye** has an anthropomorphic head.
   o The interesting point is that it seems in both cases of K'EK'EN and (the head variant of) **ye**, it is *exactly* the same unusual element covering the eye: a "washer with a trilobate element below it, leaves pointing downwards". |
| | | |
| syllabogram-yi | boulder |
MC   K&H   JM   TOK.p6.r1.c4

MC   K&H   JM   TOK.p6.r1.c3 |

		Sub-variants (2) • Flint • Hand
syllabogram-yi	head	 MC
syllabogram-yo	leaf	 MC K&H JM TOK.p8.r3.c5
syllabogram-yo	hand	 MC K&H JM TOK.p19.r1.c2
syllabogram-yu	two feelers	 MC = K&H JM TOK.p7.r5.c1 MC