C.75.

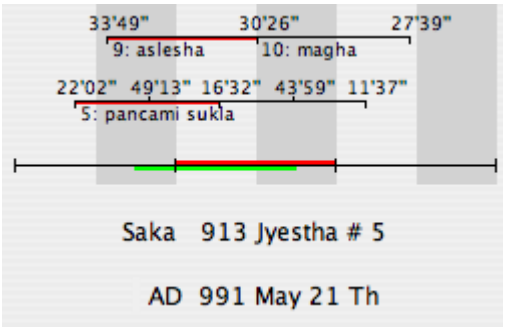
(1) śakarāja 913 [not: 713] hurei 5 vaṅun vulān [4/] 8 vṛhaspativāra ma-
(2) gha naksatra vṛścikalagna

In śaka 913, 5 waxing of month 4 [jyeṣṭha], Thursday, nakṣatra *maghā*, lagna Scorpio

The use of a numeral for the month is evidenced also in the incomplete (and unresolvable) date of C.142 but nowhere else in the inscriptions of Champa or Cambodia. The digit was taken initially to be an 8, but when this did not lead to a result it was interpretatied as a 4.[1]

It was recognised that the combination of 5 waxing and nakṣatra 10 had to lead to a point in the year around jyeṣṭha - āṣāḍha,[2] and the question was then what the numerical equivalent of these months would be. The (false) assumption followed that since caitra was the start of the astronomical year, ordinally the 1st month, it would therefore be cardinally numbered 1. But in Thailand, where month-numeration is standard, caitra is variously month 5 or 6 or 7.[3]

Editors have rejected 713 as the year on historical grounds (the year is also given in numerals and not as a chronogram): the choice instead has been 913, in which year a clear match is found in jyeṣṭha:



The text's data leads to jyeṣṭha, the problem now being to determine whose mode of numeration will lead to an 8 or a 4 for that month.

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1 Louis Finot, "Notes d'épigraphie ...", *Béfeo*, iv. 113-15 and 933; Karl-Heinz Golzio, *Inscriptions of Campā*, Aachen, 2004, p.122. Golzio's interpretation of 4 (in śaka 917) leads to āṣāḍha.

2 Nakṣatra values represent the moon's longitude divided by 13°20'. It follows that at the start of any lunar month (new moon), the moon's nakṣatra value will roughly equate with the sun's longitude and increase by roughly one nakṣatra per day through the month, thereby giving a different pattern to each. Hence waxing 5 and 10: *maghā* is the combination that will occur only in 3rd and 4th months of the year.

3 The speculative explanation for the numbering is that its cycle had an agricultural or seasonal basis: in any event no known system takes its origin in caitra, and the term *caitrādi* applies to the point in the year when the *year's* numeral increases by 1.

Khmer calendrical reckoning eventually changed to the only form attested in Thailand where month numeration was standard. The change to this mode is not clearly in evidence in the Khmer record until the "Inscriptions modernes" of Angkor in the śaka 1500s. Hints of the usage, however, appear in Zhou Daguan's account in the early śaka 1200s when he remarks that the first month of the Khmer year is "kia-to", his Chinese 10th month, interpreted as equating with kārttika. [4] Consistently with this scheme he indicates that the Khmer intercalate *only* in (their unnamed) 9th month, which equates with āṣāḍha. From this equivalence it follows that jyeṣṭha would be the 8th month. [5]

This form of numerical usage is widely attested in Lan Na, found occasionally in LanXiang, and is standard numeration in Sipsongpanna to its North. It is not, however, evidenced in the inscriptions as the Khmer style, suggesting that his informants (if they used numbrs themselves) were immigrants from one of these areas. The point, for us, is that such slender evidence as we do have concerning month ordering in South-East Asia, but outside Thailand and Laos, leads to an interpretation of the Champa numeral that has a regional and historical validity, which caitra as a supposed month 1 does not have.

Against the possibility that jyeṣṭha was the 8th month, however, we have competing evidence from an even later source, where the Cam-French dictionary of 1906 reports that "le 11e [mois] s'appelle *bulan phuas* (skt. puṣya) et le 12e *bulan mak* (skt. *māgha*)", with the first ten months being designated *sa, dua* ... etc, that is to say numerically by word. [6] These varying accounts generate the following table of equivalence:

skt.	Chinese numeration	Khmer order	Champa numeration
kārttika	10	1	9
	11	2	10
	12	3	[pus]
	1	4	[mak]
phālguna	2	5	1
	3	6	2
	4	7	3
jyeṣṭha	5	8	4

The alignment with jyeṣṭha generates 5 in Zhou Daguan for the Chinese month and 4 via

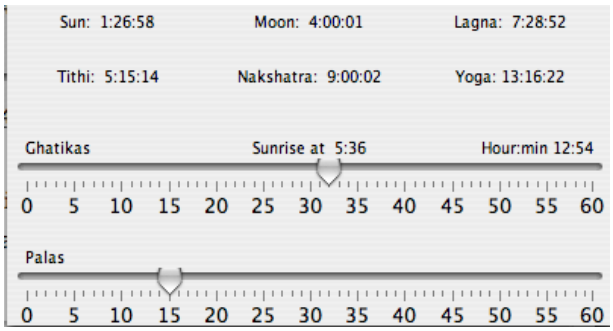
4 Paul Pelliot, Mémoires sur le Coutumes du Cambodge" in *Befeo*, 2 (1902), 159.

5 It is not clear whether these ordinal numbers are Zhou Daguan's conversions or numbers supplied by his informants.

6 Etienne Aymonier and Antoine Cabaton, *Dictionnaire čam-français*, Paris, 1906, sv. *bulan*.

the Dictionary for the Champa month. There is no actual date in Zhou Daguan by which to test whether his Chinese-Khmer alignment is correct, or perhaps distorted by interclataion, but reference to Reingold's *Calendrica* application, for example, does provide a key to the Champa scheme. Entering 21 May 991 there, the equivalent of 5 jye ṣṭha śaka 913, returns 4th month 5th day for the *Chinese* date.[7] On this basis one recognises that *phālguna* would in any case be a strange place for a native South-East Asian system to begin its own month count. And it follows that the numeral in C.75 is indeed a 4 deriving from China, and not an 8 coming from somewhere in South-East Asia.

It remains to be seen how Scorpio lagna relates to nakṣatra *maghā*. The time window, below, indicates that nakṣatra 10: *maghā* came into force at 32gh15.[8] At this time Scorpio had only a degree or so still to run (lagna 7signs28:52):



This arrangement appears different from the Khmer practice, the obvious and this time the secure point of comparison. There, overwhelmingly, the nakṣatra will already be in place and the time will be delayed until the auspicious rāśi eventually comes to the horizon, sometimes after several hours. The Khmer thinking for C.75 would probably have been: We have selected a nakṣatra; when is (the start of) thefavourable rāśi to pair with it? The Champa thinking is: We want a favourable nakṣatra, what lagna value do we need for it to commence operation?[9] Detecting this difference in usage offers an explanation for why, unlike the Khmer horoscopes, C.73A (śaka 539) and C.96 (śaka 579) give water-clock times in addition to the lagna's rāśi; and why C.87 (śaka 609) dispenses

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7 The differing month alignment created by differing positions for the extra lunar months cancels out here. The extra month in śravana śaka 990 is compensated by an extra Chinese month 3 in 991. If actual dates rather than a general schema are used, jye ṣṭha and month 4 are correctly aligned.

8 The notation 9:00:02 in thetime window indicates that nakṣatra number 9 is complete and the moon is a fraction into number 10 current. Nine times 13°20' is 120°, so correspondingly the moon's longitude is 4signs00:01, as also shown.

9 If true to the form of something like 30 instances, the Khmer timing of this event would have fallen on the next day, such that the start of Scorpio as lagna came into effect while nakṣatra *maghā* was still operative.

with the lagna and gives the time by reference to the muhūrta and nalikā.[10]

Burma, North and South Thailand, Laos, Cambodia, Champa—all derive their computation system from India but each region has its differences of convention and emphasis that work as finger-prints. Champa and Cambodia are certainly the closest cousins, but attention to detail does occasionally distinguish between the way they hadled dating.

Additional Note: The Aymonier-Cabaton Dictionary indicates in its entry for *bulan* that "Les mois des Banis de Panraṅ concordent avec ceux des Annamites; les brahministes les avancent ou les retardent d'un jour". I take this to indicate that the non-Brahmin reckoning is settled because it reckons by civil days but the Brahmin reckoning fluctuates because, in strict Indian mode, it reckons by lunar *tithis*. The more or less habitual use of *ahar* and *divasa* in the Champa texts suggests that its reckoning was also chiefly by civil day, a matter that remains ambiguous in the Khmer corpus and is not resolved by the fact that the actual word *tithi* occurs only once (K.506, śaka 559).

10 Untypically the Khmer section of K.324 (śaka 815) gives a clock time, specifying "two measures of water" (past midnight), in parallel to Taurus lagna in the Skt. section, but the time equates with the start of the sign. Other water-clock references come spasmodically in K.449 (śaka 991), K.383 (śaka 1043), K.754 (śaka 1230) and K.405 (śaka 1239). The terms *nalikā* and *muhūrta* do not appear in the Khmer texts.