

Nā Pō o ka Malama: The “Nights” of the Hawaiian Month¹

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‘ŌLELO HŌ‘ULU‘ULU / SUMMARY

Aia ma kēia ‘atikala nei he noi‘ina i ka palena ma waena o nā pō o ka malama ma Hawai‘i i ka wā kahiko. Kākau ‘ia ma ka puke wehewehe na Pukui lāua ‘o Elbert (1986), ma ke ‘ano kuluma, ua ho‘omaka ka pō (he iwakālua kūmāhā hola ka lō‘ihi) ma ka napo‘o ‘ana o ka lā. Eia na‘e, ma ka nānā ‘ana i nā mea i kākau ‘ia no ka ‘alemanaka Hawai‘i e nā mea kākau Hawai‘i mua, ua ho‘omaka ‘ia ka pō o ka malama ma ka hikina a ka lā, ‘a‘ole ma ka napo‘o ‘ana.

This article discusses when the traditional Hawaiian twenty-four-hour period called *pō* ‘night’ began and ended. The Pukui and Elbert dictionary (1986) states that the twenty-four-hour period began at nightfall. However, the research presented here, examining the earliest Native Hawaiians who wrote about the Hawaiian calendar, shows that the Hawaiian *pō* began with daybreak, not nightfall.

Introduction

All writers on the Hawaiian division of time seem to agree that the ancient Hawaiians had twelve *malama* (months) and that there were thirty *pō* (twenty-four-hour periods) in a *malama* (with a few qualifications that are not important for this discussion).² However, there is considerable disagreement on when the twenty-four-hour *pō* began and ended. Unfortunately, the earliest Hawaiians who wrote about the Hawaiian calendar and who really knew, Kēlou Kamakau and Davida Malo, do not address the question directly. Presumably they saw no need to do so.

Four opinions can be found in the literature as to when the twenty-four-hour *pō* began.

- (1) In their Hawaiian dictionary, Pukui and Elbert (1986:333) provide one opinion in defining *pō* as follows: “Formerly the period of 24 hours beginning with nightfall (the Hawaiian ‘day’ began at nightfall).” In my experience, most students of Hawaiian culture depend on the dictionary and believe this statement implicitly. But I shall show that it is likely wrong. There are three other opinions:
- (2) Two authors, S. M. Kamakau (1870) and Z. P. Kalokuokamaile (according to Valeri 1985:194), say that the twenty-four-hour period began with day and continued through the following night.

- (3) Fornander (1919:332) states: “The Hawaiian day commenced at 12 midnight and ran till next midnight.”
- (4) Tsuha (2007:73) argues that the twenty-four-hour period (which she terms “*pō mahina*”) extends from one moonrise to the next, thus beginning at a different hour on each *pō* of the month.

In the body of the paper I examine the primary nineteenth-century and early twentieth-century Hawaiian sources in order to try to settle the question of when the Hawaiian *pō* began. The oldest of the writers—Kēlou Kamakau, born about 1773, and Davida Malo, born 1795—must have grown up using the traditional calendar (*helu malama* and *helu pō*), even though they had become familiar with the Western calendar by the time of their writing. I conclude that the information from S. M. Kamakau (nineteenth century) and Z. P. Kalokuokamaile (early twentieth century) is probably correct, that the twenty-four-hour *pō* began at dawn. I also look at the similar twenty-four-hour period in other Polynesian cultures for corroboration. There are, however, some sources contemporary with Kalokuokamaile to be considered that say the twenty-four-hour *pō* began at nightfall.

PRIMARY HAWAIIAN-LANGUAGE SOURCES

Davida Malo (born 1795)

In his *Mo‘olelo Hawai‘i* (forthcoming), Malo devotes all of chapter 12, “No nā Wā ma loko o ka Makahiki,” to traditional Hawaiian reckoning of time, describing first *nā kau* (the seasons) and *nā malama* (the months), and then the thirty *pō* of the *malama*. At the beginning of his discussion of the twenty-four-hour periods, Malo (forthcoming, 12:7)³ states:

Ma ka *pō* na‘e ka *helu* o nā *lā* a ka *po‘e* kahiko.

The meaning of this short statement may not be readily obvious. In his manuscript, Malo usually uses *lā* (day) to refer to the twenty-four-hour period recognized by Hawaiians, and that is evidently the case here. Presumably he uses *lā* (rather than *pō*) because that term had become current for the twenty-four-hour period by the 1840s–50s when he wrote. Thus Malo’s statement is translated (ibid.) as follows:

However, the days [twenty-four-hour periods] were reckoned by the night (*pō*) by the people of old.

The import of his statement is that in the old days people called the twenty-four-hour periods *pō*, not *lā*. Malo (ibid., 12:8–20) then continues to describe the appearance of the visible moon⁴ for each of these twenty-four-hour periods by which the “day” (*pō*) may be recognized. (See the following table of the *pō*. Note that in describing them, Malo refers to these twenty-four-hour periods as *lā* [day]). Although the moon is often visible during the day, it is much more obvious at night, and that is presumably why Hawaiians (and other Polynesians) “reckoned by nights.”

Table 1. *Nā pō o ka malama* (Nights of the month),
as given by Malo

1	Hilo	e māhuahua ana (waxing)
2	Hoaka	
3	Kū Kahi	
4	Kū Lua	
5	Kū Kolu	
6	Kū Pau	
7	‘Ole Kū Kahi	
8	‘Ole Kū Lua	
9	‘Ole Kū Kolu	
10	‘Ole Pau	
11	Huna	
12	Mōhalu	e poepoe ana (rounding)
13	Hua	
14	Akua	
15	Hoku	
16	Māhealani	
17	Kulu	
18	Lā‘au Kū Kahi	e ‘u‘uku ana (waning)
19	Lā‘au Kū Lua	
20	Lā‘au Pau	
21	‘Ole Kū kahi	
22	‘Ole Kū Lua	
23	‘Ole Pau	
24	Kāloa Kū Kahi	
25	Kāloa Kū Lua	
26	Kāloa Pau	
27	Kāne	
28	Lono	
29	Mauli	
30	Muku	‘ike ‘ole ‘ia (not visible)

Malo does not say directly at what time of day the twenty-four-hour *pō* begins. However, it can be worked out from his description of the timing of religious rituals. To give one example, Malo (*ibid.*,12:23; brackets in the source) describes the four *kapu* periods of the month when religious rituals were held, beginning with the Kapu Kū:

Ma ke Kapu Kū, ‘ekolu pō e kapu ai: ma ka pō o Hilo ke kapu ‘ana, [a] ma ke ao o Kū Lua i noa [a]i.

The Kapu Kū included three nights, starting on the night of Hilo and ending with the daybreak of Kū Lua.

This means that Pukui and Elbert’s statement that the twenty-four-hour period began with nightfall must be wrong, because if that were so, the Kapu Kū would have to include four nights—the night of Hilo and following day, the night of Hoaka and following day, the night of Kū Kahi and following day, the night of Kū Lua—and end on

the following day. Here is another example from chapter 37, “No ka Luakini” (Concerning the *Luakini*), where Malo (ibid.) describes the ritual activities at the *heiau luakini* over the period of ten days when the *luakini* was renewed for that year. (Only the initial sections dealing with time are given.)

Table 2. Timing of rituals at the heiau luakini, according to Malo

37:29	A ma ia ao a'e, 'o Muku ia lā, a ma ia ahiahi iho, a laila, ho'ākoakoa 'ia nā kānaka a pau.	The next day was Muku [the thirtieth], and that evening all the men . . . were gathered together.
37:31	A ma ia ao a'e, Hilo ia lā ('o ia ka lā mua o ka malama hou, 'o Welo paha) a ma ia ahiahi iho, kapu ua luakini lā.	The next day was Hilo (the first day of the next month, of Welo perhaps) and that evening the <i>luakini</i> was made <i>kapu</i> .
37:33	A ma ia ao a'e, 'o Hoaka ia lā, eia ka hana ma ia lā.	On the next day, Hoaka [the second day of the month], here is what was done.
37:34	A ma ia pō iho o Hoaka, he kahuna 'oko'a ma ia pō.	On the night of the same day, Hoaka, a different <i>kahuna</i> officiated.

In 37:29 and 37:31 it seems by implication that Muku and Hilo begin with day and continue into night, but it is incontrovertibly the case for Hoaka in 37:33 and 37:34. At least for these three *pō*—Muku, Hilo, Hoaka—the twenty-four-hour period began with daybreak, not nightfall.⁵

Kēlou Kamakau (born ca. 1773)⁶

Kēlou Kamakau does not describe the Hawaiian calendar, but he does use it in describing the *luakini* ritual sequence. The same conclusion can be drawn from his description (K. Kamakau 1919:9, 11; my translation) as from Malo's, that the twenty-four-hour *pō* could not have begun with nightfall.

Table 3. Timing of rituals at the heiau luakini, according to Kēlou Kamakau

I o Kane kapu iho la ke kahuna kahalaalaea i ke ahiahi i o Kane, a hoomakaukau iho la ia i keia po, a pule aku la ia i keia po.	On the twenty-four-hour period of Kāne, the <i>kahuna kahala'alaea</i> declared the <i>kapu</i> [for the service] on the evening of Kāne and prepared himself and prayed that night.
A ao ae la i o Lono ku iho la ka ipuwai alaea.	And on the next day, Lono, the basin of 'alaea stood ready.
A ao ae la i o Maui hele aku la ke alii a me na kanaka a nui loa e hoolohe i ka olelo a ke kahuna kahalaalaea i kakahiaka i o Maui.	And on the next day, Maui, the <i>alii'i</i> and many people came to listen to the speech of the <i>kahuna kahala'alaea</i> on the morning of Maui.
A ahiahi iho la i o Maui, lupa haalele iho la ke alii a me ke kahuna.	And on the evening of Maui, the <i>alii'i</i> and the <i>kahuna</i> carried out the ritual disposal (<i>lupa ha'alele</i>).

Here again, it seems by implication that the twenty-four-hour *pō* of Lono begins with day and continues into night, but it is incontrovertibly the case for Maui.

S. M. Kamakau (born 1815)

Samuel Kamakau was born later than the first two writers considered, but before the 1820 advent of the Congregational missionaries and their introduction of Western schooling. Presumably, he too grew up using the traditional calendar. I quote from S. M. Kamakau's 1870 discussion of the Hawaiian calendar to show his understanding of the *pō o ka malama*.

Ua helu ka poe kahiko ma ka lakou helu, he 30 no la i kela malama keia malama a pau na malama he 12 o ka makahiki . . . a maloko o na po o ka malama, i helu ia ai na la o ka malama hookahi . . . a ua hoopili ia ke ano o ua mau po la ma ke ano o ke kau ana o ka mahina. Pela no ke kapa pono ana i ka inoa o na po, a ua lilo ia i mau inoa no na la o ka malama. (*Ke Au Okoa*, February 10, 1870)

The people of old counted thirty days in each of the twelve months of the year . . . and according to the nights of the month were counted [named] the days [the *lā* (twenty-four-hour periods)] of the month . . . and the nature of [the names of] those nights was likened to how the moon appeared. Thus were the nights named, and those names became the names of the days [*lā*] of the month. (My translation)

Ma ka helu ana i ka inoa o na la o ka malama a ka poe kahiko, o ke ao ka mua a mahope ka po penei: No Hilo ka helu mua o ke ao a me kona po e kau puahilo ai ka mahina, a no Hoaka ke ao ae, ua akaka ia ma ke mele o Kualii ka Moi kaulana o ke aupuni o Oahu penei: "O Kukahi ka po, o Kulua ke ao." (*Ke Au Okoa*, February 17, 1870; emphasis added)

In the listing by the people of old of the names of the days [*lā* (twenty-four-hour periods)] of the month, the day came first and after that the night, thusly: Hilo was the first of the daytimes together with its night on which the moon showed as a sliver, and Hoaka was the next daytime. This is obvious in the *mele* of Kūali'i, the famous paramount chief of the government of O'ahu, thus: "Kū Kahi was the nighttime, Kū Lua was the [following] daytime." (My translation, emphasis added)⁷

Like Malo, S. M. Kamakau uses *lā* (day) for the twenty-four-hour period. He makes clear that the twenty-four-hour period is named after the phase of the moon that appears during the night of that twenty-four-hour period, and that the period begins with daytime (*ao*) and ends with night (*pō*).

Kepelino (born ca. 1830)

Kepelino was born about 1830 (Beckwith 1932:4), considerably later than the other three writers, so there might be some question about the system that he grew up using, whether traditional Hawaiian or Western. He describes the Hawaiian calendar at length, but it is not possible to determine when he thought the twenty-four-hour *pō* began and ended. Like Malo and Kamakau, Kepelino describes the four *kapu* periods, which might have allowed such a determination; but except for the Kapu Kāloa, his statement of when the *kapu* periods began and ended is either vague or it conflicts with

the older writers as to when the *kapu* period ended. It seems best to pass over his work as inconclusive.

J. K. Kaunamano (born ca. 1830)

Kaunamano was most likely born by 1830, since he wrote a newspaper article in 1865 that provides answers to certain questions about the Hawaiian calendar (although not an explanation per se). Although Kaunamano, like Kepelino, is a younger writer, he says that his answers are based on the knowledge of the old men of Maui and O‘ahu, based on the system of the famous *kilo lani* (astronomer) Luahoomae, so presumably he is to be trusted. Like other early writers, Kaunamano uses *lā* instead of *pō* for the twenty-four-hour period. Among his answers to questions is one about the “day” of Hilo, which seems to indicate that for him, night follows day within the twenty-four-hour period.

Ninau; Owai hoi [ka inoa o ka la] mamua ka la mahope ka mahina?

Haina, o Hilo, napoo ka la, e kau ana ka Hilo, mahope napoo aku. (*Ka Nupepa Kuokoa*, June 29, 1865)

Question: What is the name [of the twenty-four-hour period] in which the sun is first and the moon comes after?

Answer: Hilo. The sun sets, [then] the Hilo phase of the moon appears, and later it sets [before the next dawn].⁸ (My translation)

Although the question has somewhat the appearance of a riddle, the answer indicates that during the twenty-four-hour period called Hilo, the moon in its Hilo phase appears after the daytime called Hilo, that is, the night half of Hilo follows the daytime half.

J. L. Mailehahei (birth date unknown), George P. K. Kalama (born 1829),⁹ Zepelino Kalokuokamaile (born 1849)¹⁰

These three Hawaiians provided information on the traditional Hawaiian calendar much later on, including statements about the start of the twenty-four-hour *pō*. (Many other Hawaiians also wrote to the Hawaiian-language newspapers about the Hawaiian calendar during the nineteenth and early twentieth centuries, but not about the start of the *pō*.) Mailehahei wrote a newspaper article published in *Ka Nupepa Kuokoa* on March 28, 1891, stating:

O ka helu malama no hoi a ko Hawaii nei, he 30 no la i ka malama e like me ka mea i hoolaha mua ia, a ma ka po nae ka hoomaka ana, he ukali aku ke ao.
(Emphasis added)

According to the Hawaiian enumeration of the months, there are thirty days in a month, as first established, but they begin in the night, and the days follow.
(Translation from Kelsey n.d.)

Kalama provided information to Theodore Kelsey for an unpublished piece written by him and George Mossman (n.d.), probably in the 1920s. Although we do not have Kalama’s words, Kelsey used what he said to write the following:

As in the dawn of Creation, when “the evening and the morning were the first day”, the Hawaiian of old reckoned time by nights and their following days, from sunset to sunset, though the night was especially the period of darkness. How strange is the reverse order of the haole!

Kalokuokamaile worked with both Kenneth Emory and Theodore Kelsey in the 1920s. He wrote for Kelsey or dictated to him a piece in Hawaiian on the Hawaiian calendar (Kalokuokamaile n.d.),¹¹ but that piece does not shed light on the timing of the twenty-four-hour *pō*. He also provided written information on the Hawaiian calendar to Kenneth Emory for an unpublished article, saying, according to Valeri (1975:184), that the twenty-four-hour period “begins at dawn but takes its name from the following night.” (Valeri cites the article as “How the Hawaiians kept track of the time of the year,” but it cannot be located in the Emory Collection at the Bishop Museum Archives.)¹²

It might be thought that the information from Kalama and Mailehahei simply confuses us and leaves us with no way to decide when the twenty-four-hour *pō* of the traditional Hawaiian calendar began, whether at evening or at dawn. However, I would observe that the earliest Hawaiian writers considered (Kēlou Kamakau, Malo, Samuel Kamakau) all seem to agree that the *pō* began with daytime. It is later on that there is disagreement. As time went on and Hawaiians no longer used the traditional system, confusion apparently developed.¹³ Mailehahei (*Ka Nupepa Kuokoa*, March 28, 1891) refers to Malo’s description of the Hawaiian calendar in his “Buke Moolelo” to support his own description.¹⁴ If he read Malo’s manuscript, he might easily have misconstrued Malo’s statement (forthcoming, 12:7), “Ma ka *pō* na’e ka helu o nā lā a ka po’e kahiko” (However, the days [twenty-four-hour periods] were reckoned by the *pō* by the people of old), which is certainly open to misinterpretation. Perhaps the Pukui and Elbert entry stating that the traditional Hawaiian twenty-four-hour period began at evening was also derived from Malo’s statement as translated by Nathaniel Emerson (Malo 1951:31), or perhaps it was derived from such later sources as Mailehahei and Kalama.

SECONDARY SOURCES

Two secondary sources that consider the twenty-four-hour *pō* are worthy of discussion, Fornander (1919) and Tsuha (2007). As mentioned previously, Fornander says that the twenty-four-hour *pō* began at midnight. However, we do not know the basis for his statement. In general, Fornander’s material (which subsequently became the *Fornander Collection of Hawaiian Antiquities and Folk-lore*) was collected in the 1870s from elderly Hawaiians. Fornander ([1880] 1969:iv) describes the collecting as follows:

I employed two, sometimes three, intelligent and educated Hawaiians to travel over the entire group and collect and transcribe from the lips of the old natives, all the legends, chants, prayers, etc., bearing upon the ancient history, culture, and customs of the people, that they possibly could get hold of. This continued for nearly three years.

He adds (*ibid.*:v–vi) that he had access to Malo’s manuscript collection and that he conferred with S. M. Kamakau “often and lengthily.” Clearly he had excellent sources.

Still, it seems likely that he imposed his own view on what he was told about the twenty-four-hour *pō*. After all, midnight is when the Western day ends and a new day begins, and it would have been easy to assume the same thing for the Hawaiian twenty-four-hour period. Fornander's statement does, however, agree in the main with the evidence from the earliest Hawaiian writers, that within the twenty-four-hour *pō*, morning/afternoon preceded evening.

Tsuha's master's thesis (2007:73) proposes a new understanding of the twenty-four-hour *pō*:

No ka'ū pepa nei, e hahai ana au i nā hi'ohi'ona o ka mahina. No ka'ū helu 'ana, ke pi'i a'e ka pō mahina hou ma ke ao o ka lā a i 'ole ka pō o ka pō ma kekahi lā a pi'i hou a'ela ka pō mahina i ke ao a pō o ka lā a'e, he lā piha nō ia ia'ū. 'Oko'a ho'i ka hola e pi'i ai ka mahina ma kēlā lā kēia lā. E hahai ana au i ka mahina.

For my paper, I will follow the characteristics of the moon. For my reckoning, when the moon rises during the daytime or the nighttime of one day and rises again during the daytime or nighttime of the next day, that is a complete day, according to my thinking. The hour when the moon rises differs from one day to another. I will follow the moon. (My translation)

As Tsuha (2007:75–81) points out, the rising of the moon is later by approximately fifty minutes each day. While the moon rises at about 7:00 a.m. on the first day of the lunar month, it rises at about 8:00 p.m. on the sixteenth day of the lunar month.

According to Tsuha's model, the start of the twenty-four-hour *pō* would alter through the month. She does not make clear how she came to this idea; perhaps it is an attempt to reconcile the contradictory statements of earlier authors. Her model is elegant, but it does not fit with Malo's (forthcoming; brackets in the original) account, below, of the *luakini* renewal ritual.

Table 4. Timing of rituals at the heiau *luakini*, according to Malo

37:113	Ma ia ao 'ana a'e, lū ka maea. 'O 'Ole Kū Kolu ia lā.	On that next day, 'Ole Kū Kolu [the ninth day of the month], they "cast off their stink."
37:115	'Ai kākana a moe [i] ia pō.	The men ate and then slept that night.
37:116	Ma ia ao 'ana a'e, 'o 'Ole Pau ia lā, ma ia kakahiaka, hele mai kā ke ali'i nui mau wāhine.	On the morning of the next day, 'Ole Pau [the tenth day of the month], the wives of the ruling <i>ali'i nui</i> came.

On the tenth day of the month of Kaulua (the Hawaiian month, roughly corresponding to February, when the *luakini* renewal ritual was normally carried out, according to Malo), the moon rises at 2:28 p.m. (<http://www.timeanddate.com>). According to Tsuha's model, 'Ole Pau would therefore begin in the mid-afternoon. Malo writes that the men went to sleep on the night of 'Ole Kū Kolu and that on the morning of the next day, 'Ole Pau, the wives came to carry out their ritual. It seems clear in Malo's narrative that 'Ole Pau began the next morning. By contrast, if Tsuha's model were correct then the men would have gone to sleep on the night of

‘Ole Kū Kolu, which did not end until 2:28 p.m. the next day; then ‘Ole Pau would have begun at that hour and nothing would have happened that afternoon and night until the following morning, the morning of ‘Ole Pau, by her reckoning. That seems extremely unlikely, given the amount of ritual activity packed into the ten-day *luakini* renewal ritual.

POLYNESIAN COMPARISONS

A number of early writers describe the calendars of other Polynesian cultures. As described, these calendars were very similar to that of Hawai‘i: the year was composed of twelve lunar months, generally called *malama*, as in Hawai‘i; as in Hawai‘i, the *malama* was composed of thirty twenty-four-hour periods originally called *pō*, the term for “night.”¹⁵ An early missionary to the Cook Islands, resident there in the 1860s and 1870s, wrote the following based on his experience there:

Polynesians invariably counted by *nights*, not by days. The reason assigned for this practice is that one day (*rā* = sun) is like another, whereas each night gives a different phase of the moon, with a distinct name. . . . Something perhaps may be put down to their habit, when voyaging of steering by the stars, visible (of course) only by night. Latterly, as taught by missionaries, day-counting has come into vogue; but this is a novelty. (Gill 1885:222)

As Gill says, Native Polynesians often began to use the term for “day” for the twenty-four-hour period as a result of European contact, instead of the term for “night” (a practice we have already seen in the work of Davida Malo and S. M. Kamakau of Hawai‘i). Here is an example documented by J. M. Orsmond who lived in Tahiti in the nineteenth century and interviewed King Pomare and High Priest Tamere in 1836 concerning the Tahitian calendar. Orsmond’s information was subsequently published by his granddaughter, Teuira Henry (1928:327):

In former times the Tahitians spoke of the day as *ru‘i* (night), thus: *ho‘e ru‘i*, a *rua ru‘i* e *toru ru‘i* (one night, two nights, 3 nights); or reversed, with the same meaning, *ru‘i ho‘e*, *ru‘i rua*, *ru‘i toru*. But they have long since adapted the word *mahana*, literally means “sun” [actually “warm”] for day, in conformity to the European manner of speaking, thus: *ho‘e mahana*, e *piti maha*, e *toru mahana*.

Unfortunately for the purpose of this paper, most descriptions of Polynesian time-keeping are like those of the early Hawaiian writers: they do not specify when the twenty-four-hour *pō* began. One clear statement, however, is given by Collocott (1922:14) in a paper that describes the traditional Tongan calendar, based on an account written thirty years earlier by the former premier of Tonga, Tukuaho:

With the Tongans, as with other Polynesians, it is habitual to count by nights rather than by days. Where the English speaker says, “five days after” the Tongan says “five nights after.” An intelligent Tongan suggests as a reason that his people treat the hours of daytime and of the succeeding darkness as one day and that in reckoning the closing portion of the day is considered.

CONCLUSION

In Hawai‘i, as elsewhere in Polynesia, the twenty-four-hour period that we know in English as “the day” was referred to as *pō*. Although there are very few direct statements as to when *pō* began and ended, the evidence of the earliest Hawaiian writers makes it evident that within the twenty-four-hour *pō*, daytime preceded nighttime, not the other way around. The same was probably true of *pō* elsewhere in Polynesia, although this is documented only for Tonga.

NOTES

1. I use “*nā pō o ka malama*” for “the nights of the month,” not “*nā pō mahina*,” a construction used by some recent writers. In his *Mo‘olelo Hawai‘i* (forthcoming), Davida Malo consistently uses *malama* for “month” and *mahina* for “moon.” So do many other nineteenth- and twentieth-century writers. A search of the Papakilo Hawaiian newspaper database (<http://www.papakilodatabase.com>) showed that in almost all cases *pō mahina* is used to mean “moonlit night,” not “night of the month.”

2. These are the qualifications to the initial statement: (1) Because the lunar month is 29½ “days” long, not exactly thirty, the last day of the Hawaiian month, Muku, was sometimes cut short (*ua muku*) and the first day, Hilo, of the next month began at sunset. (2) Because twelve lunar months add up to less than 365 days, a thirteenth month was intercalated periodically to fit the Hawaiian year (*makahiki*) to the sidereal year. See Dibble (1843) 1909:108; Poepoe 1929; Valeri 1985:195–98; and Tsuha 2007:33–35.

3. All quotations from Malo’s *Mo‘olelo Hawai‘i* are taken from the forthcoming text and translation by Langlas and Lyon. References thereto are given by chapter:paragraph, rather than by page number.

4. Many late nineteenth-century Hawaiian writers use the term *kaulana mahina* to refer to the characteristics of the moon on a particular night, but Malo, S. M. Kamakau, and other earlier writers do not. It seems likely that the term was coined late in the nineteenth century, as the earliest usage found in the Papakilo database of Hawaiian newspapers is 1890. Thereafter, the term is used frequently by J. M. Poepoe (1929) and other Hawaiian writers.

5. Several additional examples of ritual sequences from Malo could be given, including 36:21, 27–28, 50–52, and 37:47–48, 69, 84.

6. See Rev. Ellis (1825) 1979:68 for the approximate date of Kēlou Kamakau’s birth: when Ellis met him in 1823, he seemed about fifty years old. He was still alive but quite sick in 1838 (“Make,” *Ke Kumu Hawaii*, May 23, 1838:104).

7. Kamakau’s discussion of the Hawaiian calendar has been translated by M. K. Pukui (in Kamakau 1976:13–18), but a portion of the first quotation given above is omitted from her translation.

8. For example, on October 24, 2014, the sun set at 6:01 p.m., then the moon (which rose at 7:16 a.m.) became visible, then the moon set at 6:55 p.m. (<http://www.timeanddate.com/moon/usa/honolulu>). After Hilo, there are many other “days” in which the sun sets, then the moon is visible, then the moon sets before the next daybreak. However, Hilo is the first of these days, so it is the correct answer to the riddle because the question contains the word “*mua*” (first).

9. According to Kelsey and Mossman (n.d.), Kalama was born in 1829 and died in 1929.

10. Kalokuokamaile was 93 at his death in 1942, according to his obituary in *Ka Hoku o Hawaii*, September 9, 1942.

11. The handwritten Hawaiian-language copy of Kalokuokamaile's explanation that I saw in the June Gutmanis collection is in Kelsey's handwriting. Perhaps Kalokuokamaile dictated it to Kelsey, or perhaps Kelsey rewrote Kalokuokamaile's copy. There is also an English translation in Kelsey's hand. Kalokuokamaile is said to have spoken only Hawaiian, according to a letter from Maunupau to Emory.

12. Valeri's (1985:417) reference to the Emory paper says, "typescript obtained from author." Apparently the paper never reached Bishop Museum. The Emory Collection is manifestly incomplete. The materials are xeroxes rather than originals, and several manuscripts have pages missing.

13. It is also true that there were differences between the calendars of Kaua'i, O'ahu, and Hawai'i Island. However, these differences seem to have been primarily in different names given to the lunar months. (See, for example, Malo 1951:33, n. 2 by Emerson). It seems unlikely that the islands differed in the fundamental idea of when the twenty-four-hour period began and ended.

14. He writes, "Ua hoike o Davida Malo maloko o kana Buke Moolelo penei" (Davida Malo explained thus in his Buke Moolelo). This sounds as if Mailehahei had access to Malo's manuscript. He couldn't have been referring to Nathaniel Emerson's translation because it was not published until 1903, more than ten years later. It might be supposed that he was referring to the *Ka Mooolelo Hawaii* published by Rev. J. F. Pogue in 1858, since it was known to have been based largely on Malo's writing; but the information Mailehahei gives on the correspondence of Hawaiian *malama* with Western months is found only in Malo's manuscript, not in Pogue's publication.

15. The online site Pollex (<http://pollex.org.nz/>) provides a compilation of lexemes in various Polynesian languages and a reconstruction of protoforms at various language group levels. Examination of Pollex shows that *poo* (Hawaiian *pō*) is the term used for "night" nearly everywhere in Polynesia, although in Tahiti the term *ru'i* is also used. The sources used by Pollex do not always make clear what lexeme is used for the twenty-four-hour period. *Poo* is given for the Marquesas and for Tuvalu. *Raa* (Hawaiian *lā*), meaning "sun, day" is given for Mangarevan, Māori, and Tahitian. But other evidence for Māori (Best [1922] 1973:23) and for Tahitian (Henry 1928) indicates that the use of *lā* is a post-contact development. I presume the same is true for Mangarevan.

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