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# SKIPPING YEARS AND SCRIBAL ERRORS

## *Kaqchikel Maya timekeeping in the fifteenth, sixteenth, and seventeenth centuries*

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### Abstract

Adrian Recinos's correlation of Kaqchikcl Maya and Spanish dates in the *Annals of the Kaqchikels* contains numerous errors. and there are several scribal and calculation errors in how both the 260-day and 400-day Kaqchikel Maya calendars were used within the manuscript. These are dating problems that stem from errors by the scribes in their attempt to adapt to a European counting and documentation system and their inexperience with the Kaqchikel Maya calendars. In addition, unique citation marks and two scribal errors shed light on the existence of earlier documents and subsequent effects on the later time counts of the Kaqchikcl Maya calendar system. This paper adjusts the previous correlation by Recinos and extends it from 1570 until 1603. Moreover, by highlighting and correcting the internal errors, this paper offers a caveat to scholars when reconstructing the histories, events, and social relations of past Mesoamerican peoples and scripts without regard for internal errors.

The *Annals of the Kaqchikels,* also known as the *Memorial de Solola* and the *Memorial de Tecpri.11-Atitfrin,* is one of the major chronicles known from the New World. Along with nearly fitty other extant *titulos* from the sixteenth century, mostly written in indigenous languages, it is one of many documentary sources for the historical anthropology of the highlands of Guate- mala. This ma nuscript was written in Kaqchikel Mayan, a member of the K'iche'an linguistic family, during the sixteenth and seventeenth centuries and consists of many documents that span several distinct genres. It reflects the way in which indigenous languages were used in early Colonial Guatemala, pro- viding a crucial source of colonial historiography and historical ethnography.

The *Annals* have long been available to scholarship through partial translations (Brasseur de Bourbourg 1907-1908; Brinton 1885; Galich 1933; Gavarete 1873-1874; Miguel Diaz 1928; Tele- tor 1946; Polo Sifontes 1980; Raynaud 1928, 1937; Recinos 1950, 1953; Villacorta-Calderon 1934). In recent years, there has been a renewed interest in this manuscript, including its rereading, re- translation, and reinterpretation. the results of which are only now becoming public ( Academia de las Lenguas Mayas de Guatemala '.WO I : Esquit-Choy 200 I ; Fischer and Sattler 2003; Hamrick 1999, 200 I ; Maxwcll 200 I; Maxwell and Hill 2003; Romero 200 I ; Smith 2000, :2003: van Akkeren 2000; Warren 1998). The most compre- hensive results of this work are two new and complete transla- tions, one originating from the Academia de las Lenguas Mayas de Guatemala, and the other from Tulane University in the United States ( Maxwell and Hill). It was my work on ihe Tulane translation project that led to the current study.

This paper addresses the Spanish and Kaqchikel calendrical records in the *Annals.* Two calendars are reflected: the ritual cal- endar of 260 days. which is well-known to Mesoamericanists, and a more poorly understood calendar of 400 days. Reflections of these indigenous calendars have been discussed before (Edmon- son 1988; Long 1935; Recinos 1950, 1953; Seier 1889. 1902; van Akkeren 2000), with the primary aim being the correlation of references in Maya calendars to their equivalents in Spanish chro- nology. It is Recinos's widely available work that is generally used in recent publications.

In addition, this paper reanalyzes the entirety of the calendrical records in this manuscript. Such a reanalysis is required in part because of numerous errors in previously published correlations that are identified and corrected here, and in order to provide correlations for those dates not treated by Recinos (those after 1570). More subtle issnes arise from consideration of what turn out to be errors in the manuscript itsel f, whose analysis leads to a clearer picture of the overall calendrical organization of the doc- ument and its cultural correlates. the date of its composition. and how both Kaqchikel and Spanish dating practices corroborate the actual dates ofrecorded events. It focuses specifically on what are shown to be errors by the authors and scribes in their attempt to adapt to a Spanish counting and documentation system. In addi- tion, it shows how two scribal errors, which Recinos failed to discuss, shed light on the existence of an earlier document and its effects on later time counts of the Kaqchikel calendar system. In this paper, I will be using the orthographic system advocated by the Academia de las Lenguas Mayas de Guatemala and approved by the Ministry of Culture and Sports (Acnerdo Gnbernativo

1046-87) and the Congreso de la Republica (Decreto Legislativo 65-90: Ley de las Lenguas Mayas de Guatemala).

## CHRONOLOGY AND SECTIONING OF THE MANUSCRIPT

Allhough *The Annals of the Kaqchikels* has been described as the work of two authors-Francisco Hernandez Arana, who started the document in 1573. and Francisco Dias, who continued the entries after the previous author's death in 1582 until 1604 (Hill 1992:129-130; Recinos 1953:11-12)-five scribes are specifically mentioned between 1584 and 1603 (where the office of the scribe is listed): Pablo Ximenez, Matheo Garcia, Baltasar Aju', Bernabe Sayin, and Esteban Martin. This manuscript can be divided into five distinct, yet related, documents, based on theme and chronology:

Section I: ff. 1r-9r
Section !IA: ff. 9v-24r
Section IIB: ff. 24r-34r.26
Section III: ff. 34r.27-44v.10
Section IV: ff. 44v.11-48v

### Section I: ff. 1r-9r

The first section of the document, which was not translated completely by Daniel Brinton (1885) and only selectively translated by Recinos 1953), discusses legal battles and land issues. Brinton's translation leads up to 1559 (a date that later will be shown to have beeen houblesome for him). R.::cinos completely translates only until 1560 and then writes:

> From here on the manuscript speaks of affairs of less importance to the reader, and therefore I have limited myself to extracting some items which throw light on lhc life of the author or on events of some importance in the development of the native community [Recinos 1953:143].

### Section 11A: ff. 9v-24r and Section 11B: ff.24v-34r.26

The next section, which desc1ibes events that occurred before 1558. may be considered the mytho-history of the Kaqchikel nation. lt contains two subsections. The first comments on the original creation and wanderings of the highland tribes. The second describes the Tuquche' lineage's revolt on May 20, 1493, and documents other events between the revolt and the installation of *alcaldes* (mayors) in 1558. Although it is not entirely clear whether this revolt established the unique 400--day calendar used in the *Annals*, it will be shown later that anniversaries of the event are celebrated with this calendar and that this revolt is the only occasion whose anniversaries are recounted.

The first subsection speaks of migrations from various ancient Tulans (Tulan being the primordial land of origin for many indigenous groups of Mesoamerica). As for other groups, this was an important claim of Toltec ancestry at a time that the Kaqchikels were attempting to establish their own legitimacy and dominance in the highlands vis-a-vis the K'iche' nation, whose capital was at Q'umarkaaj (Carn1ack 1973. 1977, 1981; Fox 1977. 1978). Thus. this part of the manuscript also describes the separation of the Kaqchikel nation from that of the K'iche's with whom they had been contracted warriors. During this "independence period," dates are given for births, deaths, and war events in the 260-day count.

The second subsection starts with the Tuquche' revolt (the third faction of the Kaqchikel nation at Iximche', behind the Xajila · and the Sotz'ila', both of which would retain power), and every entry from this event on contains a reference to how many 400-day years had passed since that reference point. That is. the revolt's anniversaries in the 400-day year provide a native chronological framework for the subsequent events. This part of the manuscript describes the arrival of the Spanish and documents the changing relationship between the Kaqchikel leaders and Pedro de Alvarado, the Spanish conquistador of Guatemala. It was near the end of this section, with entries starting in 1555, that the Kaqchikel scribes made an attempt to conclate the system of Spanish years with the 400-day anniversary calendar. The scribal errors that will be shown in this paper occur in the years 1569 (anonymous scribe) and 1600 (Baltasar Aju'). lt is highly tmlikely that Aju' was the scribe in both years. Thus, I refer to more than one scribe having made an error. Moreover, lwill demonstrate. based on patterns of scribal errors, that this section was probably copied from an earlier version.

The header of the entry about the Tuquche' revolt is a large "O" with crosshatching, and the entries for lhe 60 years that follow it are given a smaller, plain "O" marking. (One anniversary, 13 Aj, which would have occurred in the year 1516, does not have this header. I have not been able to detect any content that clearly distinguishes this entry from earlier or later entries in the section and thus presume that it was an oversight during recopying.) As demonstrated later. based on patterns of scribal errors and special entry markers, each year of this section was probably copied from an existing compilation or document. whereas later sections were not. The first section that cannot have been copied begins with the year 1558; tl1is is also the first year in which the "()" mark does not occur. Given this contextual difference, the "O" may have been an explicit mark of the citation rather than a similar separator for discussion of the events of the successive Spanish years.

Robert Hamrick has worked with both of these subsections of the mannscript. He focuses on the use of formal linguistic mechanisms, reported speech. and direct address, and argues that their highly repetitive use in these subsections establishes a particular poetic structure that sets them apart from other sections of the manuscript (1999). Thus, for instance, while direct address occurs sporadically throughout the manuscript, the author of these subsections expli<.:itly invokes his addressees as *ix nuk 'ajol* (you. my sons), *ix qak 'ajol* (you, our sons), or *at nuf, 'ujol* (you, my son) 39 times. For example:

| | |
|---|---|
| **"Xux." kccha' nab'ey qatata· qamama'. ix nuk'ajoL** | **"So it was," our first fathers and grandfathi:;rs say, you, rny sons.** (9v.29 30) |
| **K re· k'a xloq'o wi winaq ri', kccha ojer wintiq, ix qak'ajul.** | **So wcri:; these people beloved, say lhc ancient people, you, our sons.** (!Or.4-5) |
| K'a chila', k'a ch'aqa' palow k'u wi ijuyub'al, itaq'ajal. ix nuk'ajol. | **Yonder. across the sea lk your moun tains, your valleys, you, my sons.** (lOr.22-23) |
| **Ke re' b.'a t6q xya'Jr Tuquche' ri ojer, ix nuk'ajol.** | **flms were the Tuquche' dissolved long ago. you, my sons. (25r.25···'.:!6)** |
| **Ke re' k'a *Wq* xul Kastilan winaq ri ojer, ix nuk'ajol.** | **Thus it was when the Spanish people anivcd long ago, you, my sons.** (29r.25) |
| **Ronojd xqatz'et k'a ronojel ri', ix nuk·aj1)L** | **Vv'e all saw all of this, you. my sons.** (31r.15 16) |

### Section III: ff. 34r.27-44v.IO

The fourth section of the document begins with the year 1559 and continues until 1594. This section can be distinguished as a unit and as distinct from the other four sections through several features. The year 1559 is the first in which the "O" citation mark ceases to be recorded consistently-it occurs two more times in the manuscript (4v.36). It is also the year in which the consistent reference to *nuk'ajol* stops, as well as where Brinton chose to close his translation (1885:194). Each entry of this section opens with the Spanish year, the name of the *a/ca/des* of that year, and the day of the 260-day divinatory calendar on which the anniversary of the revolt foll. This fonnat is unchanged until the record for 1599 (page 13), where the *alcaldes* arc given first, followed by the Spanish year.

### Section IV: ff. 44v.ll-48v

The fifth section of the manuscript is a collection of documents, references, sermons, and diverse events from the years 1564, 1583, 1591, 1593, 1594, 1596, and 1600. The documents are not given in chronological order, nor are they provided as entry headers with parallel anniversary dates. Based on references in the first person by various people, this section has many authors, but demonstrating this is outside the scope of this paper, and nothing in the arguments depends on this conclusion. As in the rest of the manuscript, the main text (excluding margin notes) of this document is written in the same hand.

## THE 260-DAY DIVINATORY CALENDAR

All indigenous dates in this document are represented in the Kaqchikel 260-day divinatory calendar. This calendar system is still in use today in highland Guatemala, with numerous studies presented on its structure and use (Earle 1986; Edmonson 1988; Ldm-Chic 1999; Rupflin-Alvarado 1999; Tedlock 1982). K nown in modern Kaqchikel as the *cholq 'tj* (lit.. ordering of days), each day's name consists of one in sequence of 20 names, each preceded bv a numeral coetlicicnt between I and 13. For example, if today is, I lmiix, lomo1Tow will be 2 lq', followed by 3 Aq 'ab'al, then 4 K'at, then 5 Kan. and so on, until one reaches 13 Aj, the thirteenth number and the thirteenth name. Given that there are only thirteen numbers but twenty days, the sequence of munbers starts over while the sequence of days continues. The next day after 13 Aj would be 1 l'x, followed by *2* Tz'ikin and 3 Ajmaq, and so on. Alier reaching 7 Junajpu', the sequence of names starts over while the sequence of numbers continues. A complete pass through the calendar occurs when the first number, 1, again occurs with the first name, lmiix. This takes 260 (= 13 x 20) days (Table 1).

In addition to the 260-day count, Kaqchikel months arc referred to throughout the manuscript but are not specifically named. More information about the Kaqchikel month names can be found in Calendario de los Indios de Guatemala (Anonymous 1685) (see also Brinton 1885:29-30: Edmonson 1988:145).

## THE ANCHOR DATE FOR THE CORRELATION

Four lines of evidence make it possible to conelate Kaqchikel dates in this manuscript with their Spanish counterparts:

Table 1. Day signs of the 260-day Cholq'ij

| | |
|---|---|
| 1 Imōx | 11 B'atz' |
| 2 Iq' | 12 Ey |
| 3 Aq'ab'al | 13 Aj |
| 4 K'at | 14 I'x |
| 5 Kan | 15 Tz'ikin |
| 6 Kamey | 16 Ajmaq |
| 7 Kej | 17 No'j |
| 8 Q'anil | 18 Tijax |
| 9 Toj | 19 Kawōq |
| 10 Tz'i' | 20 Ajpu' |

1. There are two entries in which a Kaqchikel date is given with a Spanish month name (i.e., *I Kan fell in Decemher).* Although these are useful because of their consistency, they do not distinguish between this new correlation and that of Reci nos.
2. There are four entries that link a Kaqchikel date in the divinatory calendar with a Spanish date by giving either the Spanish month and day of the week with the Kaqchikel day (i.e., *I Ka11 fi:ll on 'Tuesday in December)* or the Spanish mont h (or day) with lhc Kaqchikcl day (i.e. *f Kan .tell on litesday).* Aztec, lowland Maya. and highland Maya calendars show a good deal of agreement within a few days of a European correlation. Although there is some leeway, this allows for a choice between correla tions that will specify a date within six days or fewer. fly specifying a day of the week, this will confirm the choice of correlation between the few days.
3. The most obvious evidence comes from 22 occurrences in which an exact c01Telation *is* given (i.e., *I Kanfell on December 14).*
4. Seventeen other entries link lhe Maya and Spanish dates of different events by an explicit time count (i.e., *Ten daysfimn I Kan).*

Each of these dates and their respecli ve correlations have been tested and. in the case of uncertainties, resolved using independent evidence. Ethnographic accounts of the modem divinatory calendars of highland Guatemala provide a correlation of those calendars with Spanish chronology as it was in the twentieth century. For example, Barbara Tedlock (1982:60) records that the day 1 Deer (Kaqchikel 1 Kej) fell on April 21. 1976. This is consistent with Jackson Li ncoln's data on the Ixil divinatoty calendar (1942) and with Oliver La Farge 's work from Jacaltenango (Thompson 1950:303, who summarized agreement of data) and Santa Eulalia (La Farge 1947), In addition, it corresponds with Benjamin and Lore Colby's correlation of kii ritual calendar dates (Colby and Colby 1981).

The *Annals* place the day 2 Tijax on September I0, 1541, and the day I Kan on October 14, 1555. These dates were both in the Julian calendar (the Gregorian system not yet havi ng been invented). A back-projection of the Gregorian calendar would put these dates 10 days later, on September 20, 1541. and October *24,* 1555, respectively. The relevant wmputations are as follows. Between 1541 and 1976, 435 years elapsed. Leap years have 366 days; other years have 365. In the Gregorian calendar, all years divisible by four are leap years, except century years that are not divisible by 400 (in this case. all but 1700, 1800. and 1900): there are therefore I06 years of 366 days and 329 years of 365 days. Therefore, the number of days between April 21. 1541, and April 21.

1976, was (106 X 366) + (329 X 365) = 158,881 days. September 20, 1541, was the 263rd day of that year. while April 21, 1541, was the 111th day, 152 days earlier. Thus, the manuscript date fell 158,881 – 152 = 158,729 days before April 21, 1976. Counting in the divinatory calendar, 158,729 days = 260 x 610 + 129 days. Any multiple of 260 days leads from 2 Tijax back to the same day, 2 Tijax; 129 days later than 2 Tijax is 1Kej. By the same method it can be shown that 153,582 days separate the Julian date October 14, 1555, from the Gregorian date April 21. 1976. and that 153,582 days leads from 1 Kan to 1 Kej. John Justeson checked all of the dates on which the current study is based, aided by a computer program (MCAL) written by Floyd Lounsbury.

A lynchpin of the chronology of the Kaqchikel anniversary-ycar count, using 400-day years, is provided by a double-dated entry (having both a Maya and a Spanish date) of the 57th anniversary of the revolution that fell on October 22, 1555. This was calculated from the first mention of a Spanish date with its Maya counterpart, when I Kan foll on Monday, October 14, 1555:

**T1Jq xkiim chi k'a ajaw Don Francisco Ajposotz'1l, du Jun kan xktim.**
Pa lunes xkajlajuj iiq chi q"ij ik'
**octubrc dq xktim.**
**Ja k'a ri juna' ralaxik qajawal Jesuc rito.**
**Xwuqlaj rujub'alz' ruk'in wolajuj ...::hl.k l-hi jlma' Oq mixkam Don Francisco**
xb"elejej oq tel wuqla'uja' rox may.

**Chi b"eleje' aj xel mwuqla"uja' rox may.**

**Th..:!n the lord Don Fmncisco, high lord** of the Sotz'il, died; on I Kan he died.
On Monday, the fourteenth day of the **month of October. he died.**
**Since the year of the birth of our lord Jesus Christ,**
1540 and fitleen years had passed
**\vhcn Don Francisco died,**
**nine days before fiftyseven years [after the rcvoll] came out.**
On the day 9 Aj, fifty-seven years had elapsed. (33v.6-·l 1)

Note that the text says that nine days after 1 Kan was 9 Aj, the 57th anniversary (400-day calendar) of the Tuquche' revolt. A count of nine days from October 14 leads to October 23. However, a count of nine days forward from I Kan leads to I0 I'x, not to 9 Aj. This is because the counting of days in this manuscript is similar to that of Kaqchikels today. Days are counted forward and backward including today's date as the first day. For example. if today is March *20*, a Kaqchikel would say that five days from today is March 24, not March 25. Thus, counting nine days forward from I Kan, including 1 Kan as the first day, leads to 9 Aj, the correct Kaqchikel date as mentioned in the text. This shows that the correct Spanish date of the anniversary was October *22* rather than October 23, 1555.

This new anchor date for the correlation is secure: It is internally consistent with the other dates in the manuscript, and it agrees with the correlation of the modern divinatory calendars of the Guatemalan highlands. The correlation adopted in this paper as a whole is not new. It was previously proposed by Georges Raynaud ( 1928, 1937), based on his belief that April 14, 1524, fell on I Junajpu' in the Maya calendar.

Recinos was led to an erroneous chronology by failing to interpret properly the nine-day interval leading from the death of Don Francisco Sotz'il to the anniversary of the revolt. He misunderstood the nine-day interval of the manusi:ript as leading to October *23*. 1555. seemingly inconsistent with the evidence of the Kaqchikel day names themselves that the temporal distance, in Spanish terms, was eight days. He based his chronology on the Kaqchikcl date of the entry of Alvarado into Iximche and a Span- ish date he inferred from a Spanish document, a letter by Pedro de Alvarado:

> For example, on page 00 it is stated that the Spaniards entered lximche. the Cakchiquel capital. on the day I Hunahpu. Now in the first letter to Cortes, written from Utatlan, the Quiche capital, Alvarado declared: "I leave for the City of Guatemala [Yximche] Monday, April 11." And in the second letter: "I, Sir, left the city of Utatlan and in two days came to this city of Guatemala." It appears certain, therefore, that Alvarado and his anny reached Yximchc on twelfth of April. 1524, and that this date corresponds to the day I Hunahpu, upon which the manuscript fixes the date of that event [Recinos 1953:32].

Recinos used his inferred equation of April 12, 1524, with 1 Junajpu' as the anchor for his correlation (Recinos 1953:32, 121). Given the correlation established earlier, however, l Junajpu' fell on April 14, 1524. However, although Alvarado's "in two days" was intended, it is not consistent with a departure on April 11 and anival on April 14. Because the correlation established in this paper is secured by all data internal to the document, Recinos's equating of 1 Junajpu' with April 12, 1524, must be incorrect. Whatever the source of the error, Recinos was forced later in his translation to add two days (giving him the correct correlation) when the document double-dates the destruction of Ciudad Vieja from the 1541 mud slide of the Agua volcano:

> However, Ihave accepted the error of two days as we approach the year 1541 to agree with another clear equivalence. that of the day 2 Tihax and September 10. 1541, the date which marked the destruction of the city of Guatemala founded at the foot of 1he Volca no of Agua. On the assumption that I Hunahpu was April 12, 1524, 2 Tihax would be September 8. 1541. which is evidcn1ly incorrcc1. For this reason, from 2 Tihax (September IO. 1541) on. two days have been added to the corresponding dates in the Spanish calendar [Recinos I953:33].

The only thing "evidently incorrect" here is Rccinos's manipulation of the dates and correction of adding and subtracting two days where he saw fit. Using the correlation established here, and consistent with that of modern ethnographic research. there is no need to adjust the dates and correlation. The arrival of the Spaniards occurred on I Junajpu', which fell on April 14, not April 12, 1524. Recinos did not accept this date. critiquing Raynaud's belief that Alvarado arrived on April 14, because it "would indicate that the journey took four days, but this contradicts the statement of Al varado" ( 1953:32). In fact, there is no contradiction here with what Al varado wrote; rather. the contradiction is with what Recinos inferred from what he wrote. The statement in the first letter mentions Alvarado's intention to leave on April 11; the statement that the journey took two days was retrospective. It is also not out of the question that Al varado misrepresented or was mistaken about the antici pated date of departure or about the time that it took to make his journey. or that the Kaqchikel report of Alvardo's arrival on I Junajpu' was mistaken or misleading in some way. But whatever the source of the discrepancy, these data are not definitive enough to establish a correlation that is contradicted by all of the data internal to the document itself.

## THE 400-DAY ANNIVERSARY CALENDAR

The years that arc counted in the anniversary statements were 400 days long. According to Munro Edmonson (1988:134--135), this 400-day calendar "bears no relation to solar astronomy but explicit political rationale seems to corroborate a political rather

th an purely calendrical motivation." Justeson and Lyle Campbell ( 1997) show that a 400-day year was probably used by other K'iche 'an groups, as well; it is reflected, for example, in the use of the word *may* for a period of 20 years in several of lhem, while in Q'eqchi' the word now means both "20" and "8,000"-presumably via the equivalence of 20 years with 8,000 <lays. Eric Thompson alluded to such a count for Veracruz when he tried to build a case for the epi-Olmec long count dates being in a 400-year count, but they are not. and in his 1950 book he mentions only Kaqchikel as a direct source. It would appear, then, that the *Annals* are the only documentary or ethnographic source for the existence of a 400-day year anywhere in Mesoamerica. This unique calendar starts with the Tuquchc' lineage revolting on the day 11 Aj, as stated in the text:

| | |
|---|---|
| **Rukamib'al Tuquche'.** | The death of the Tuquche. |
| Wa'e· qitzij xya'ar chi kamik. | Here trnly they were delivered unto death. |
| Qi k'a tipakatiij mxe' kai chi juljuj aj. | When the day broke on 11 Aj, |
| **xb·os pe Tw..iuche' ch'aqa' tinamrt.** | **the Tuquc.·he' 1':ntptcd from the other** sido of town. (25r.l-6) |

The revolt was commemorated frequently throughout the document in anniversary statements, using the Kaqchikel *word juna* ', "year," for example:

| | |
|---|---|
| **Chi ka'i' aj xel oxi' juna' rub'anik** yujuj. | **On 2 Aj ended the third year since the** rcv0lt. (25.v l8) |

The anniversary statements indicate the day on which the 400-day year ended. Because 400 is a multiple of 20. an anniversary of any event falls on the same one of the *'.W* named days as the original event. Because the date of the revolt was 1 1 Aj, all of the anniversaries take place on a day Aj. And because 400 days is three fewer days than a multiple of 13 (specifically, 400 = [31 X 13) – 3), the numeral coefficient of the day Aj should decrease by three with each successive anniversary stakment. The coefficients of Aj in the anniversary dates are therefore predictable from the number of the anniversary (Table 2).

ln all of the earlier entries in the document, this stmcture is kept intact. After an 11 Aj entry will come an 8 Aj entry, then a 5 Aj entry, and so on. To compute the Kaqchikd <late of the next anniversary, one must subtract three from the numeral coefficient of the current anniversary date. In addition, each entry gives the number of years since the revolt occurred:

| | |
|---|---|
| **Chi wo'o' aj xcl rukab'a' rub'anik** yujuj. | **On 5 Aj ended the sc(1.md year since the revolt.** |
| **Chi ka'i' aj xcl oxi' juna' rub'anik** yujuj. | **On 2 Aj ended the third year since the** 1cvolt. (15v.l 7-l8) |

There are no discrepancies between the recorded and expected coefficients associated with any of the anniversary dates in the first and second sections of the manuscript except for 1514, 1569, and 1600 (the reasons for this will be shown later). If the Spanish date of any anniversary is known, the Spanish correlates for every one of the entries can be determined by calculating forward or backward, as long as there arc no discrepancies.

As mentioned, the 57th anniversary of the revolt is anchored at Tuesday, October 22, 1555. The Spanish date of Ihe Tuquche' revolt of 1 1 Aj, therefore, was 57 X 400 = 22,800 = (62 X 365) + 1 70 <lays earlier. This puts the date of the revolt in the year 1493. There were 1 5 leap years in this interval, so in terms of the Spanish calendar, the interval of 22,800 days amounts to (47 X 365) + ( 15 x 366) + 155 days. The date of the Tuquche' revolt of 11 Aj was therefore 155 days before October 22, 1493, or May 20. 1493-two days after Recinos's correlation.

Table 2. Tl1e Ai cycle

| Day of the Anniversary | Years (400-day) Since the Tuquche' Revolt |
|---|---|
| 1 1 Aj (Tuquche' revolt) | 0/ 13 years/26 years/39 years |
| 8 Aj | 1/14 ycars/27 ycars/40 years |
| 5 Aj | 2 years/ 15 years/28 years |
| 2 Aj | 3 years/ 1 6 ycars/29 years |
| 12 Aj | 4 years/17 years/30 years |
| 9 Aj | 5 years/ 18 years/31 years |
| 6 Aj | 6 years ii9 years/32 years |
| 3 Aj | 7 years/20 yearn/33 years |
| 13 Aj | 8 ycars/21 years/34 years |
| IO Aj | 9 years/22 years/35 years |
| 7 Aj | I O ycarsi23 ycars/36 years |
| 4 Aj | 1 1 years/24 years/37 years |
| IAj | 1 2 years/25 years/38 years |

In lhe second section of the manuscript (ff. 9v-34r.26), which contains pre-1 558 dates, there are no discrepancies between the recorded data and the c01Telation used in this paper. except for a scribal error in 1514, which does not affect the count (discussed later). However, in the records for the year 1559, there is a problem.

## SKIPPING YEARS: THE FIRST INTERNAL ERROR

In the Spanish year 1557. there is an entry of the 59th anniversary of the revolt, which fell on 3 Aj:

| | |
|---|---|
| **Chi oxi aj xd b'djla'uja' rox may** yujuj. | On the day 3 Aj elapsed fifty-nine **years since the revolt.** |
| **Alcaldcs 1557 afios Don Juan Juitrcz Frnncisco PCreL.** | *Alea/des* [in the year! 1557; Don Juan **Ju:irez (anJl Francisco Perez.** (34r.4-5) |

Although not stated in the text, the Spanish correlate for this event was December 30, 1557. The next anniversary entry, according to the 400-day cycle (Table 2), should be 1 1 Aj. The recorded anniversary falls on the correct Kaqchikcl date:

| | |
|---|---|
| **Chi oxbjuj aj k'a xel rox may rub'amk** yujuj. | On the day 1 3 Aj elapsed sixty years **sim:e the revolt occurred.** |
| **Mixd oxmay.** | **Sixty years went by.** |
| **1558 ai'ios** | 1558 years. (34r.l 1 -1 2) |

However, looking at Appendix I, one may notice that successive anniversary dates fall in later and later months in the Spanish calendar. This movement, of course, is due to the 35-day difference between the lengths of the years in the two calendars (365 versus 400 days). Thus, each year, the Kaqchikel anniversary date will fall about 35 days later than it did in the previous year (Table 3).

In consequence, if the Kaqchikel count were maintained correctly, every tenth or eleventh Spanish year would not include a Kaqchikel anniversary date. The year 1558 is lost, then, because when the 35 days arc added to December 30, 1557. the gap must

Table 3. Worksheet showing loss of the year 1558

| | |
|---|---|
| *12 Ajjidls 011* | *September 17, 1554* |
| + 365 days → | September 17, 1555 |
| + 30 days → | October 17, 1555 |
| + 5 days → | October 22, 1555 |
| September 17, 1554 + 400 days → | October 22, 1555 |
| *12* Aj + 400 days → | 9 Aj |
| *9 Aj fizlls on* | *October 22, 1555* |
| + 366 days → | October 22, 1556 [leap year, includes February 29, 1556] |
| + 31 days → | Kovember 22, 1556 |
| + 3 days → | November *25,* 1556 |
| October 22. 1556 + 400 days → | November 25, 1556 |
| 9 Aj + 400 days → | 6 Aj |
| *6 Ai.fi1lls on* | *November 25. 1556* |
| + 365 days → | November 25, 1557 |
| + 30 days → | December 25, 1557 |
| + 5 days -) → | December 30, 1557 |
| November 25, 1557 + 400 days → | December 30. 1557 |
| 6 Aj + 400 days → | 3 Aj |
| *3 Aj falls 011* | *December 30, 1557* |
| + 365 days → | December 30, 1558 |
| + 31 days -) → | January 30. 1559 |
| + 4 days → | February 3, 1559 |
| December 30, 1557 + **400** days → | February 3. 1559 |
| 3 Aj + 400 days → | 13 Aj |

*I\lute:* **Boldface signifies that a year has been zkipped.**

now also jump ahead by one extra calendar *year,* from 1557 to 1559. In particular, the 60th anniversary of the revolt, correctly recorded as 13 Aj, must have occurred on February 3, 1559; no anniversary of the revolt could actually have occurred in 1558 (Table 4). This posed a problem for the timekeepers. The year 1557 was the first in wh ich there were *a/ca/des* i n Solola ( Barrios-Escobar 1996:111-127; Brinton 1885:194), who were installed in office on January **I** (as is done in present-day Solola) to serve for the Spanish calendar year that would begin the next day. This section is organized in a succession of entries. each of which deals with the events of a single Spanish calendar year, under the authori ty of a particular set of *a/ca/des.* The year 1558 would be the second in whkh both Kaqchikel and Spanish dates would be registered as an entry header. If the scribes had maintained the native anniversary count correctly. they would have waited until the next 400---day anniversary, which fell on Febrnary 3, 1559. For whatever reason-for example, a misunderstanding of the 'workings of the 400-day calendar or administrative pressure to associate both Spanish and Kaqchikel years with each entry-the format of this section called for an anniversary date in association with each mayorship or Spanish year. A Kaqchikel anniversary date was recorded in the 1558 entry. So what happened?

Table 4. Year skip of 1558

| Kaqchikcl date | Spanish date |
|---|---|
| 9*AJ* | October *22,* 1555 |
| 6 Aj | November 25, 1556 |
| 3 Aj | December 30, 1557 |
| 13 Aj | XX, 1558 (cannot exist) |

Two types of solution can be considered: that the date that is attributed to the anniversary count was an actual day 13 Aj in the year 1558 but was not, as stated, the actual 60th anniversary of the Tuquche'; or that the Kaqchikcl revolt anniversary dates were computed, in order to create this account, by people who did not understand the 400-day calendar and simply assumed that each Spanish year would contain an anniversary of the revolt.

originally arrived at and temporarily adopted the first type of solution. Under this solution, the more complicated of the two, timekeepers were well aware of the different year lengths in the two calendars. What they did was manipulate the calendar mathematically, which allowed them to maintain their system while including the foreign system--in essence, adapting to a Spanish institution. Whenever an anniversary date. such as 13 Aj, did not fall in the cmTent Spanish year, it would fall in the first 35 days of the next such year, but the same day in the Kaqchikel divinatory calendar would also have occurred once in the current Spanish year, 260 days earlier than the revolt anniversary, which would fall 140 days after the last revolt anniversary and between the 106th and the 140th day (April 16 to May 20) of the current current calendar year. The hypothesis, then, was that in 1558, the timekeepers selected as a stand-in for the true anniversary the day on which 13 Aj fell in 1558, or May 19, 1558. This provided the needed 13 Aj date and allowed the timekeepers to have a Spanish entry date for recording the *alcaldes* of that year.

It appears that someone did interpret the 13Aj of May 19, 1558 (following the first hypothesis) as the anniversary of the revolt. The entry before the 60th anniversary of 13 Aj talks about Lord Ramirez and Don Martin leading an expedition against the Lacandon on the day 5 Ey (April 28, 1558), specifying that this was 20 days before the 60th anniversary (5 Ey is in fact 21 days before 13 Aj, and given the the counting scheme discussed earlier in connection with Kaqchikcl divinatory calendar dates, a 22-day characterization would have been expected). However, because divinatory calendar dates in this part of the year occur just once in that year, the reference to this date occurring 20 days before the anniversary could have been an inference based on the divinatory calendar date rather than on the anniversary scheme itself.

Looking at the next entry, for 1559, one is given the correct Kaqchikcl date of the 61st anniversary as 10 Aj. The question is: When did this occur? That is, was the 1558 "anniversary" date-at 140 rather than 400 days after the 1557 anniversary-used as the base for future anniversaries? Did the Kaqchikel timekeepers end up having to conform to the Spanish system? In the first solution, the answer is no. They switched right back on schedule, and the 61st anniversary, 10 Aj, foll on March 9, 1560. The next entry states that "in the eleventh month that we are in, Lord President Royal arrived in Antigua, on 3 K'at" (September 2. 1559). Because September is the ninth Spanish month, the reference to the eleventh month must refer to the eleventh month of the Kaqchikel year. Maya months had 20 days each, so the eleventh month consisted of the 201st through the 220th days of the Kaqchikcl year. In 1559, 3 K'at fell 211 days after the true 13 Aj anniversary of February 3, 1559. Accordingly. the "eleventh month" was figured from the true Kaqchikel anniversary system as it was in 1559. Had

a new base been established at 13 Aj on May 19, 1558, 3 K'at would still, of course. have fallen in the eleventh month since 1 3 Aj. but that date would have fallen on December 16, 1558, rather than in 1559. The bast: of the 400-day year count was therefore not shifted permanently, if at all, and the month count within the 400-day year was evidently maintained.

John Justeson (personal communication, 2001) points out an irnporlant consequence oflhis result. Because the Kaqchikel month count proceeds from these anniversary dates, the anniversary dates were not simply commemorations of the dale of the Tuquche' revolt. Rather, the anniversary date was the final day of the Kaqchikel 400-day year. The 400-day-year calendar. then, had the Tuquche' revolt and the first major victory of the Kaqchikel state as its inaugural date, and the anniversary dates were in fact the names and year-ending dates of the Kaqchikel years. ln this respect, as stated by Thompson (1950: 151) without demonstration, the Kaqchikel year names parallel the names of years in the lowland Maya long count; the anniversary statements in the *Annals* arc in fact naming the Kaqchikcl years.

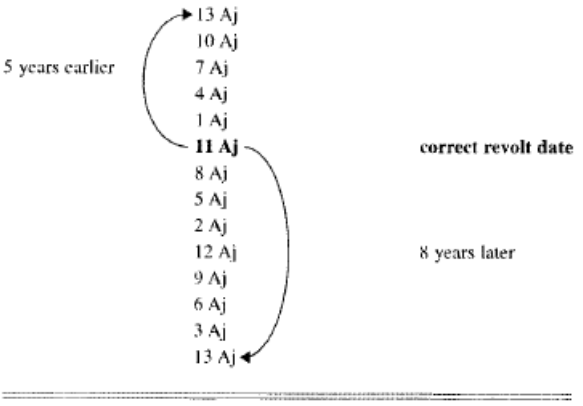
Under this hypothesis, then. the timekeepers adjusted the calendar in order to place an anniversary date in 1558, but the alteration of the position of that anniversary, by 260 days, was not continued beyond that one year's entry. However, the 400-day year count remained pe1manently shifted. As stated earlier, the 61 st anniversary was correctly given as 1 0 Aj, but this anniversary was placed in the year 1559 rather than correctly in the year 1560. The true anniversary system was intact, but the count of the anniversaries was not.

The simpler alternative solution is to suppose that the composer of these records- or, at least, of their annivcrsary statements-recognized from copying the earlier Kaqchikel records (with the "O" citation marks) that the coefficient of each successive anniversary date is reduced by three and simply supplied an anniversary to each successive year using the appropriate coefficient of the next year. This pattern of decrease by three is easily recognized by looking at Appendix 1; this was in fact how I understood the pattern of successive anniversary dat.:s from working through the successive records in the process of translation rather than from the arithmetic properties of the numb.:r 400. This simple solution is consistent with the later entries. Because of the evidence that divinatmy calendar dales were linked to the computed anniversary dates. it indicates that the anniversary count was nu t being maintained-at least. not by those who were involved in producing the *Annals.* This result also shows that the composer was not an *ajq 'ij* day keeper) and did not understand the 400-day year. Moreover, with the correct use of the Maya months (that September 2 did fall in the Kaqchikel eleventh month). it appears that those who were responsible for keeping track of the months knew when the first month and the twentieth month **tell**- that is, which 1 3 Aj was the anniversary date. However, those providing the Maya-Spanish dates were not familiar with this system.

## THE SCRIBAL ERRORS: THE SECOND INTERNAL ERROR

Three other discrepancies are involved in the compilation of this manuscript, all of a similar sort. Recinos ( l953: 1 13) poi nted to one of them: "Chi Vahxaqui Ah, or 8 Ab. the original reads. but it is evidently a mistake." However, he did not explore this: nor did he catch the later two scribal errors (Recinos 1953: 146, 1 59).

Table 5. Erroneous reconstruction of 13 Aj: 400-day years




These three errors turn out to be relevant to understanding the history of this manuscript.

1 begin with the two errors that Recinos did not address. The text states that the Tuquche' revolt occurred on 11 Aj, and numbered anniversaries in the first sections are correctly calculated from that date. However, later dates near the close of the sixteenth century cannot be calculated back to this date. Calculating back from them, the revolt would have occurred on 13 Aj-----at least five years earlier or eight years later, as can be seen from the anniversary-cycle chart (Table 5).

Analysis of the sequence of day names associated with each annivcrsa1y shows that discrepancies in the sequence occur at t:xactly two years. Through the date 9 Aj on the 70th anniversary. all recorded coefficients of Aj arc as they should have been. This changes with the record for the year 1569, when the 71 st anniversary of the Tuquchc' revolt is recorded:

| | |
|---|---|
| 1568 ai'ios | Year 1568 |
| Don Pedro Solis Juan LOpcz Ma Sinaj Alcaldes. | Don Pedro Solis anJ Juan L6pcz Ma Sinaj, *Alea/des.* |
| Rulajujjuna·ruka may yujuj chi b'ekje' aj. | On the Jay 9 Aj seventy years elapsed since the revolt. |
| Chujunab'il mixik'o wi Don Francisco Brc!'t'1lo visitadtir chuwi' Sub'a mani xul \vawe:·. | This ·year the Visitador Don Francisco Brizeno passeJ alH.1ve Sub'a, he diJ not c:ome here. |
| Wawc' xik'o chi wi Dem Frani::isco Uresefio Patulul Sancta Maria Magdalena. | Don Francit·o Brizeno passed through Patulul [and] Santa Maria Magdalena. |
| \vawe· xk'amar wi jupillio chuwuq ik' novicmpre 1569 arios. | The jubilee \Vas brought on November 7, in the year 1569. |
| Gonzalo de Cu;rman Francisco Emantcz ()'alo ll'ak'ajol Alcaldes. | Gon;ralo de Guzman and Francisco Hernandez Q'alc B'ak'ajol, *Alea/des* |
| Rujulaj juna' rnknj 1m1y 1l1juj chi wajxaqi' aj. | On the day 8 A.1 elapsed seventy-one years sine the· revolt. (35r.33--35v.9) |

Given that the 70th anniversary of the Tuquche' revolt fell on 9 Aj, the seventy-first year of the revolt should have fallen on 6 Aj. However, it was written down (and copied later) as 8 Aj. It is plausible that this error resulted from confusion based on pronunciation. At that time, the number 6 in Kaqchikel was the archaic *waqaqi'* (today it is *waqi* ·,although some older speakers in Solola use *;mqaqi'*), whi le the number 8 was the phonetically similar

*wajxaqi'* (underlyingly, *waqxaqi* · as it is today). This is not a unique mistake; rather, the same substitution of 8 for 6 occurs again in the record for 1600:

| | |
|---|---|
| Don Miguel Lopez Pablo Ximenez Alcaldes. | Don Migud Lopez land] Pablo **XimCnez,** ***Alcalde,*** **·.** |
| **Francisco Oo Francisco B"atz'in** Ch'okojay jo' Alguasil Mayor. | Francisco Oo [and[ Francisco B'atz'in Ch'okopy, *Alg11aci/[es/ MawJr(esj.* |
| **Jun juna· 1599, atlos waqmay yujuj chi** lximchc', ja k'a chi b'dcjc' aj. | [n the year 1599, one hundred and **t\vcnty years since the revolt at** rxirnche'. on the day 9 Aj. (7r.17-19; |
| **Esteuan Martin, Francisco Arana** Alcaldcs. | **Esteban Martin [andJ Francisco Arana,** *Alea/des.* |
| **Francisco Xitayul, Agustin Perez** Alvasil Mayor. | **Francisco Xitayul and Agustin Perez,** *Alguacil/esj Mayorfesj.* |
| **Scriuano Baltasar Aju'.** | Scribe. Baltazar Aju'. |
| **KaT juna' mwaq may yujuj chi lximchc';** | **One hundred and t:'A·'O years since the revolt at lximche';** |
| ja k'a chi wajxaqi' aj, juna t600 ailos. | it is fthe day] 8 Aj, in the year 1600. (Sv.22 24) |

Again, the anniversary should have fallen on 6 Aj, not 8 Aj.

It must be emphasized that these dates were written down wrong and later copied. The result of the previous section is that the date of the anniversary assigned to a given Spanish year was computed from the date of the preceding year by subtracting three from the coefficient of the day Aj. The sequence of coefficients in the manuscript proceed from the erroneous 8 /\j of the 71st anniversary to an erroneous 5 Aj for the 72nd anniversary; this suggests that all subsequent dates were computed by the original compilers from the entry recorded for the previous year. Had the error been introduced by a copyist, it is unlikely that the substitution of 8 Aj for 6 Aj would have continued, and the counts would not have been off for later dates. Such a result would require that the copyist had recognized that every subsequent entry was in error and had carefully corrected every one of them but was not careful enough to recheek the last t:ntry before each of these errors was made.

A similar error occurs in the second section of the manuscript. but it had different effects and points to a different facet of the compilation of the manuscript:

| | |
|---|---|
| **Chi b'eleje' aj 'el chrk wajxaqla'uja'** yujuj. | On the day 9 Aj elapsed eighteen years since the rebellion. (27r.2) |
| Chi wajxaqi' aj xet b'elejla'uja· yujuj. | **On Ih day 8 Aj elapsed nineteen years since the revolt. (27r.11)** |
| **Chi oxi' 1j k'a xel jumay rukamik Tuquche' rub'anik yujuj.** | **On the day 3 Aj elapsed twenty years sine(' the death of the Tuquchc ·. the i.)t'currence of the revolt. (27r.18··19)** |

Unlike in the two previous cases, after the incorrect record of 8 Aj in place of 6 Aj, the correct sequence immediately returns with 3 Aj. The writing of 8 /\j does not affect the following entry of3 /\j, which would be expected after the correct 6 Aj. Because this .::rror did not affect the count, it must have been an error in copying or in committing an oral tradition to writing; the anniversary records in this early part of the manuscript, in the discussion of events that occurred before the affival of the Spanish and the Spanish calendar system, were not computed. or the count would have shifted at this point to an incorrect sequence of anniversary dates. Thernfore, it is unlikely that this s.::ction was copied from a previously written version (in Latin script or not).

Th.: error of substituting "8" for "6" occurs three of eight times that anniversary dates fell on 6 Aj. This indicates that these errors arc syst.::matic, not independent of one another. The most obvious source of a relationship among these errors would be a particular scribe who was prone to that error and involved in making them all. This is not feasible for the third enor in the year 1600. Baltasar Aju', scribe in 1591 and 1600, most likely was not the scribe in 1569, the year of the second scribal error. In fact, a scribe is not named for that year. However, the 1600 error could have resulted if Aju' was using the records from the years 1557 onward to work out what the current anniversary dates should have been, knowing that the sequence repeated. In particular, whi le following up the recorded 9 Aj anniversary for 1599, he may have registered 8 Aj for the anniversary in 1600 after seeing that the 9 Aj anniversary assigned to 1568 was followed by an 8 Aj anniv.::rsary in 1569.

A similar copying error could have occurred for 1558, rnlying on the .::rror of 1512. I suggested earlier that the assignment of anniversary dates to each Spanish year, starting in 1557, was due to familiarity gained with the changes in the system of coetlicients as a result of copying. If this is so, then the anniversary date of 1568 is likely to have been computed, and the error would not have resulted from copying. As a result. it is likely that at least the error associated with the 1569 record was made by the same p.::rson who made the first of these errors. The second error would have occmTed after the scribe computed the coITect position, 6, and was in the process of writing it down. This suggests that it was Francisco Hernandez who wrote down the first sections of the manuscri pt, whether from oral tradition or as a copyist, in preparation for the recording that he was about to do each year until his death under the *alcalde* system.

## SUMMARY

This paper has shown that *The Annals of the Kaqchikels* contains both scribal and calculation errors involving anniversary dates in the 400-day Kaqchikel year that help to elucidate the history of the composition of the manuscript. There are dating problems in this document that stem from errors by the scrib.::s in their attempt to adapt to a Spanish counting and documentation system and from their inexperience with the Kaqchikel 400-day year. These led to several errors in Recinos 's correlation of Kaqchikel and Spanish dates in the *Annals.* which are corrected here.

The fourth section of the manuscript is basically organized by Spanish chronology, framed in tem1s of Spanish calendar years under the civil authorities of the *a/ca/des* who served during the year of entry, and is seemingly drawn from the record of civil scribes working in terms of Spanish chronology. This is inferred from references to the Spanish death dates of scribes, whos.:: names are partly Spanish. These secular officials were evidently not fully conversant with the 400-day annual ealendar, but they noticed a "system" to the sequence of the Kaqchikel year dates and assumed that they could provide a Kaqehikel year name for a giv.::n Spanish year. However, because the lengths of the Kaqchikel and Spanish years were different, some Spanish years did not contain a Kaqchikel year end. Consequently, this computing practice produced an incorr.::et correlation between the Kaqchikel and Spanish years. In addition. two scribal errors that consisted of writing the word *wajxaqi'* (8) for the phonetically and orthographically similar word *waqaqi'* (6) in the coefficient of the anniversary of the revolution affects all the subsequent records, showing that anniversary dates were calculat.::d, not carried over from records. Thus, both this yearr offsets and two scribal errors suggest the existence of an earlier document.

## RESUMEN

La cotTclacibn de fcchas mayas y curopcas en los *Ana/es de los Kaqcliikeles* de Adrian Recinos contiene numerosos crrorcs y en los calcndarios mayas de *260* y 400 dias ambos contienen errores dentro de! manuscrito. Los problemas son los resultados de las pricticas de grahado de sistemas de los calendarios mayas y espafioles. Estos errores provienen de los escritorcs por qucrcr adaptar cl contcnido al sistcma curopeo, dcsdc su cxperiencia con el calendario maya. Ademas, hay marcas (micas de citacibn y dos crrores de! cscribano quc dicron a conocer la existencia de un documento mas antes y miis tarde tuvo sus efectos en las cuentas de! tiempo, de! sistcma de! cakndario maya. La cuarta seccibn de! manuscrito cs organizada basicamente por cronblogos europeos. hechos con terminos de! calendario europeo, bajo la au!orizacibn de los alcaldes civiles, quienes servfan durante la toma de posesibn como alcaldes y aparentemente lo copiaron de escritores civiles. trabajandolo en tenninos de! calendario curopeo. Esto surgit\ de las refcrencias de escritores europeos ya mucrtos, cuyos nombrcs son en parte curopcos. Simplcmentc pusicron, cstos oficios seculares y notaron un ¦sis!ema" a los numeros (en cuanto a cste papel actual) y creyeron que ellos podfan usar un chivo para calcular cuando y cual es la fecha correcta de aniversario que daba 400 dias durante un afio curopco. Por consiguicnte, csto csta complctamcntc focra de cucnta. Ademas, dos errores de! escribano son que escribib *waixaqi'* (no. 8 en Kaqchikel) foneticamente y ortografieamente similar a *waqaqi '* (no. 6) indicando que las fechas de los aniversarios son calculadas y no lo tom<\ ta! como sc dcbc haccr de acucrdo a los tratados originalcs. Estudiantcs indigenas o extranjeros deben ver este manuscrito como una advertencia, cuando reconstruyen las historias y las relaciones sociales de personajes historicos; y se consideren los errores internos de los escritos.



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## APPENDIX I. New correlation

| Actual European Year | Recorded 260-day Anniversary | Recorded 260-day Station | Actual 260-day Anniversary | Actual 260-day Station | Present paper | **Recinos** |
|---|---|---|---|---|---|---|
| 1493 | 0 | 1 l Aj | 0 | 1 l Aj | May 20, 1493 | May 18. 1493 |
| 1494 | I | 8 Aj | | 8 Aj | June *24,* 1494 | June 22. 1494 |
| 1495 | 2 | 5 Aj | 2 | 5 Aj | July 29. 1495 | July 27, 1495 |
| 1496 | | 2 Aj | 3 | 2 Aj | September l, 1496 | August 30, 1496 |
| 1497 | 4 | 12 Aj | 4 | 12 Aj | October 6. 1497 | October 4, 1497 |
| 1498 | 5 | 9 Aj | 5 | 9 Aj | November I 0, 1498 | November 8. 1498 |
| 1499 | 6 | 6 Aj | 6 | 6 Aj | December 15, 1499 | December 13, 1499 |
| 1501· | 7 | 3 Aj | 7 | 3 Aj | January 18, 1501 | January 16, 1501 |
| 1502 | 8 | 13 Aj | 8 | 13 Aj | February 22, 1502 | February 20, 1502 |
| 1503 | 9 | IO Aj | 9 | IO Aj | March 29. 1503 | March 22, 1503 |
| 1504 | 10 | 7 Aj | 10 | 7 Aj | May 2, 1504 | April 30, 1504 |
| 1505 | **I I** | 4 Aj | **I I** | 4 Aj | June 6, 1505 | June 4, 1505 |
| 1506 | 12 | I Aj | 12 | I Aj | July 1 1. 1506 | July 9, 1506 |
| 1507 | 13 | 1 1 Aj | 13 | 1 1 Aj | August 15, 1507 | August 13, 1507 |
| 1508 | 14 | 8 Aj | 14 | 8 Aj | September 18, 1508 | September 16, 1508 |
| 1509 | 15 | 5 Aj | 15 | 5 Aj | October 23, 1509 | October 21. 1509 |
| 1510 | 16 | *2* Aj | 16 | 2 Aj | Novcmbcr 27, 1510 | November 25, 1510 |
| 1512 | 17 | 12 Aj | 17 | 12 Aj | Jan uary 1, 1512 | December 30, 1511 |

*continued*

APPENDIX I. *Concinued*

| Actual European Year | Recorded 260-day Anniversary | Station | Actual 260-day Anniversary | Station | Present paper | Recinos |
|---|---|---|---|---|---|---|
| 151.l | 18 | 9 Aj | 18 | 9 Aj | February 4, 1513 | Febmary 2, 1513 |
| 1514 | 19 | 8(6) A,jb | 19 | 6 Aj | March 11, 1514 | March 9, 1514 |
| 1515 | 20 | 3 Aj | 20 | 3 Aj | April 15, 1515 | April 13, 1515 |
| 1 516 | 21 | 13 Aj | 21 | 13 Aj | May 19, 1516 | May 17, 1516 |
| 1 517 | 22 | 10 Aj | 22 | lO Aj | June 23, 1517 | June 21, 1517 |
| 1 518 | 23 | 7 Aj | 23 | 7 Aj | July 28. 1518 | July 26, 1518 |
| 1519 | 24 | 4 Aj | 24 | 4 Aj | September 1, 1519 | August 30, 1519 |
| 1 520 | 25 | l Aj | 25 | l Aj | October 5. 1520 | October 3, 1520 |
| 1521 | 26 | 11 r\j | 26 | l !Aj | November 9, 1521 | November 7, 1521 |
| 1522 | 27 | 8 Aj | 27 | 8 Aj | December 14, 1522 | December 12. 1522 |
| 1524 | 28 | 5 Aj | 28 | 5 Aj | January 18, 1524 | January 16, 1524 |
| 1 525 | 29 | 2 Aj | 29 | 2 Aj | Fcbrnary 21. 1525 | February 19, 1525 |
| 1 526 | 30 | 12 Aj | 30 | 12 Aj | March 28. 1526 | March 26, 1526 |
| 1 527 | 31 | 9 Aj | 31 | 9 Aj | May 2, 1527 | April 30, 1527 |
| 1528 | 32 | 6 Aj | 32 | 6 Aj | June 5, 1528 | June 3. 1528 |
| 1 529 | 33 | 3 Aj | 33 | 3 Aj | July l0. 1529 | July 8, 1529 |
| 1 530 | 34 | 13 Aj | 34 | l3 Aj | August 14, 1530 | August 12, 1530 |
| 1531 | 35 | lO Aj | 35 | IO Aj | September 18, 1531 | September 16, 1531 |
| 1 532 | 36 | 7 Aj | 36 | 7 Aj | October 22, 1532 | October 20. 1532 |
| 1 533 | 37 | 4 Aj | 37 | 4 Aj | November 26. 1533 | November 24, 1533 |
| 1 534 | 38 | l Aj | 38 | l Aj | December 31. 1534 | December 29, 1534 |
| 1536 | 39 | I t Aj | 39 | 11 Aj | February 4, 1536 | February 2, 1536 |
| 1 537 | 40 | 8 Aj | 40 | 8 Aj | March 10, 1537 | March 8. 1537 |
| 1 538 | 41 | 5 Aj | 41 | 5 Aj | April 14, 1538 | April 12, 1538 |
| 1 539 | 42 | 2 Aj | 42 | 2 Aj | May 19, 1539 | May 17, 1539 |
| 1540 | 43 | 12 Aj | 43 | 12 Aj | June 22, 1540 | June 20, 1540 |
| 1541 | 44 | 9 Aj | 44 | 9 Aj | July 27, 1541 | July 25, 1541 |
| 1 542 | 45 | 6 Aj | 45 | 6 Aj | August 31, 1542 | August 31, 1542 |
| 1 543 | 46 | 3 Aj | 46 | 3 Aj | October 5. 1543 | October 5, 1543 |
| 1 544 | 47 | 13 Aj | 47 | 13 Aj | November 8, 1544 | November 8, 1544 |
| 1 545 | 48 | JO Aj | 48 | lO Aj | December 13, 1545 | December 13, 1545 |
| 1547 | 49 | 7 Aj | 49 | 7A,j | January 17, 1547 | January 17, 1547 |
| 1548 | 50 | 4 Aj | 50 | 4 Aj | Febmary 2l, 1548 | Febmary 21. 1548 |
| 1 549 | 51 | l Aj | 51 | l Aj | March 27. 1549 | March 27, 1549 |
| 1 550 | 52 | l l Aj | 52 | l l Aj | May l, 1550 | May l, 1550 |
| 1551 | 53 | 8 Aj | 53 | 8 Aj | June 5, 1551 | June 5. 1551 |
| 1552 | 54 | 5 Aj | 54 | 5 Aj | July 9. 1552 | July 9, 1552 |
| 1 553 | 55 | 2 Aj | 55 | 2 Aj | August 13, 1553 | August 13, 1553 |
| 1554 | 56 | 12 Aj | 56 | 12 Aj | September 17. 1554 | sptember 17, 1554 |
| 1555 | 57 | 9 Aj | 57 | 9 Aj | October 22, 1555 | October 22. 1555 |
| 1556 | 58 | 6 Aj | 58 | 6 Aj | November 25, 1556 | Nowmber 25, 1556 |
| 1 557' | 59 | 3 Aj | 59 | 3 Aj | December 30, 1557 | December 30, 1557 |
| 1558 | 60 | l3 Aj | | | | |
| 1559 | 61 | IO Aj | 60 | 13A,j | February 3, 1559 | February 3, 1559 |
| 1560 | 62 | 7 Aj | 61 | lO Aj | March 9. 1560 | March 9. 1560 |
| 1561 | 63 | 4 Aj | 62 | 7 Aj | April 13. 1561 | April 13, 1561 |
| 1562 | 64 | I Aj | 63 | 4 Aj | May 18, 1562 | May 18, 1562 |
| 1563 | 65 | l l Aj | 64 | l Aj | June 22, 1563 | June 22. 1563 |
| 1564 | 66 | 8 Aj | 65 | l l Aj | July 26, 1564 | July 26, 1564 |
| 1565 | 67 | 5 Aj | 66 | 8 Aj | August 30, 1565 | August 30, 1565 |
| 1566 | 68 | 2 Ajd | 67 | 5 Aj | October 4, 1566 | October 4, 1566 |
| 1567 | 69 | 12 Aj | 68 | 2 Aj | November 8, 1567 | December 12. 1568 |
| 1568 | 70 | •) Aj | 69 | 12 Aj | December 12, 1568 | January 16, 1570 |
| 1569 | 71 | 8 (6) Aj' | | | | |
| 1570 | 72 | 5 (3) Aj | 70 | 9 Aj | January 16, 1570 | none given |
| 1571 | 73 | 2 (l3) Aj | 71 | 6 Aj | February 20, 1571 | none given |
| 1572 | 74 | l2 t lO) Aj | 72 | 3 Aj | March 26, 1572 | none given |
| 1573 | 75 | 9 (7J Aj | 73 | 13 Aj | April 30, 1573 | none given |
| 1574 | 76 | 6 (4)1\j | 74 | lO Aj | June 4, 1574 | none given |
| 1575 | 77 | 3 (l) Aj | 75 | 7 Aj | July 9, 1575 | none given |

*continued*

APPENDIX I. *Continued*

| Actual European Year | Recorded 260-day Anniversary | Station | Actual 260-day Anniversary | Station | !'resent paper | Recinos |
|---|---|---|---|---|---|---|
| 1576 | 78 | 13 (I I) Aj | 76 | 4 Aj | August 12, 1576 | none given |
| 1577 | 79 | 10 (8) Aj | 77 | I Aj | September 16, 1577 | none given |
| 1578 | 80 | 7 (5) Aj | 78 | I I Aj | October *21,* 1578 | none given |
| 1579 | 81 | 4 (2) Aj | 79 | 8 Aj | November 25, 1579 | none given |
| 1580 | 82 | I (12) Aj | 80 | 5 Aj | December 29, 1580 | none given |
| 1581 | 83 | I I (9) Aj | | | | none given |
| 1582 | 84 | 8 (6) Aj | 81 | 2 Aj | Februa ry 2, 1582 | none given |
| 1583 | 85 | 5 (3) Aj | 82 | 12 Aj | March 9, 1583 | none given |
| 1584 | 86 | 2 ( 13) Aj | 83 | 9 Aj | April 12, 1584 | none given |
| 1585 | 87 | 12 (IO) Aj | 84 | 6 Aj | May 17, 1585 | none given |
| 1586 | 88 | 9 (7) Aj | 85 | 3 Aj | J une 21, 1586 | none given |
| 1587 | 89 | 6 (4) Aj | 86 | 13 Aj | A ugust 5, 1 587/Gregorian | none given |
| 1588 | 90 | 3 (l) Aj | 87 | IO Aj | September 8, J 588 | none given |
| 1589 | 91 | 13 ( Il) Aj | 88 | 7 Aj | October 13, 1589 | none given |
| 1590 | 92 | I O (8) Aj | 89 | 4 Aj | November 17. 1590 | none given |
| 1591 | 93 | 7 (5) Aj | <lO | I Aj | December 22, 1591 | none given |
| 1592 | 94 | 4 (2) Aj | | | | none given |
| 1593 | 95 | I (12) Aj | 91 | 11 Aj | January 25, 1593 | none given |
| 1594 | 96 | 11 (9) Aj | 92 | 8 Aj | March I, 1594 | none given |
| 1595 | 97 | 8 (6) Aj | 93 | 5 Aj | April 5, 1595 | none given |
| 1596 | 98 | 5 (3) Aj | 94 | 2 Aj | May 9, 1596 | none given |
| 1597 | 99 | 2 (13) Aj | 95 | 12 Aj | June 13, 1597 | none given |
| 1598 | 100 | 12 (10) Aj | 96 | 9 Aj | July 18. 1598 | none given |
| 1599 | 101 | 9 \7) Aj | 97 | 6 Aj | August 22, 1599 | none given |
| 1600 | 102 | 8 (6) (4) Aj' | 98 | 3 Aj | September 25, 1600 | none given |
| 1601 | 103 | 5 (3) ( l ) Aj | 99 | 13 Aj | October *30,* 1601 | none given |
| 1602 | 104 | 2 (13) (11) Aj | 100 | IO Aj | December 4, 1602 | none given |
| 1603 | 105 | 12 (IO) (8) Aj | | | | none given |

[a]Buldface type indicates that nu anniversary could h<we fallen in the previous year. Thus, a year was skipped.

[b]Thc first scribal error appears in the year 1514. However, it did not affect the later time counts. This ievidence that the error was made in copying rather than in the original entry ur compilation. Tht• panmthetical number is the correct <late that was recorded incorrectly (1.e., lhe incorrect 8 was written instt.:ad of b).

[c]This is the first year in which a European year was given in numeric form as an entry header.

[d]Rccinos' incorrCctly writes 4 Aj instead of 2 Aj !'or Lhc 1566 entry ( 1953:146). The manuscript has the entry 2 Aj (ff. 35r.24). lnddcntally, his f()\lowing two-year correlations arc wrong and, with the second scribal error in l 569, he stops giving Spanish equivalents altogether.

[e]second scribal error. The parenthetical number is the correct date that \Vas recorded inc1.wrcctly (i.e., the incorrect 8 was writtn instead of 6).

[f]Third s<.·ribal errcir. The parenthetical number is the correct date that was recorded incorre<.·tly \i.<..!.. th<..! inconcct 8 was written msl<:1J of 6).