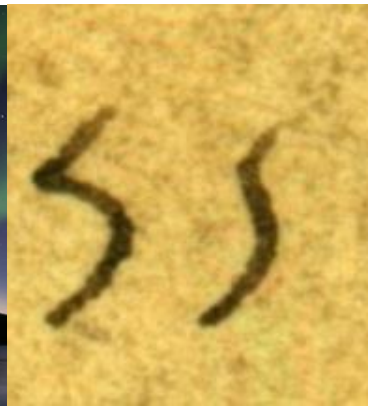
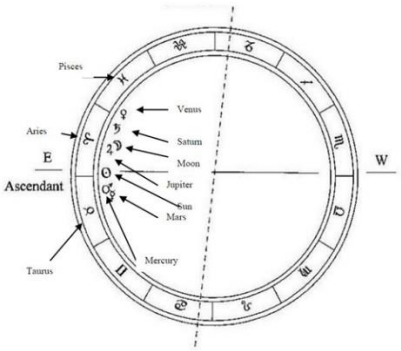
CALENDARS AND CHRONOLOGY OF THE BOOK OF MORMON

Jerry D. Grover, Jr. PE, PG





NIGHT OF SIGNS AND WONDERS AND BRIGHTNESS

Anyone that has read the entire Book of Mormon, whether believer or not, will note that the book is heavy in chronological structure, from the various prophecies fulfilled after a specific number of years, to the continuous mention of nearly every year in certain periods. While the calendars within the Book of Mormon are internally consistent, it has not been apparent as to how these calendars correlate to events in Israel and in Mesoamerica. The book provides proof of exact correlation of Book of Mormon calendars with the siege of Jerusalem, the break in the siege of Jerusalem, and the final destruction of Jerusalem. It also provides exact dates and correlation for the birth and death of Christ, consistent with known Biblical scholarship in Israel. It also shows a direct correlation to a known date in Mesoamerica. It also provides an internally consistent Jaredite calendar that also conforms to known scientific and archeological data found in the core Olmec area. Also identified is a new Jubilee Calendar.

NIGHTS OF DARKNESS

CALENDARS AND CHRONOLOGY OF THE BOOK OF MORMON

CALENDARS AND CHRONOLOGY OF THE BOOK OF MORMON

By

Jerry D. Grover, Jr. PE, PG

Jerry D. Grover, Jr., is a licensed Professional Structural and Civil Engineer and a licensed Professional Geologist. He has an undergraduate degree in Geological Engineering from BYU and a Master's Degree in Civil Engineering from the University of Utah. He speaks Italian and Chinese and has worked as a freelance translator with his wife off and on for the past 25 years. He has provided geotechnical and civil engineering design for many private and public works projects. He took a 12-year hiatus from the sciences and served as a Utah County Commissioner from 1995 to 2007. He is currently employed as the site engineer for the remediation and redevelopment of the 1750-acre Geneva Steel site in Vineyard, Utah.

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I am thankful for the review of portions of this book by Dr. John L. Sorenson, who has now passed. Thanks are in order for the academic input of Don Bradley, Charles Dike, and Brian Voeks. I am grateful for the support of all my children Shirley, Gemma, Sabrina, JD, and Alessia, and to my son-in-law Marvin Calderon who have seen me through the dark eclipse that occurred in my life and for the light that fortunately reappeared. Finally, thanks to my little 3-year-old granddaughter Bettina, a veritable little comet of life and fun.

Special thanks for both the professional blind and seeing peer review that I have had from tens of persons on various sections of the book.

Special recognition goes to Adam Carson, who has volunteered his time and resources to the dissemination of all my research. Recognition is also in order for Randall Spackman, who made the significant breakthrough in determining the Book of Mormon pre-Christ calendar was an uncorrected lunar calendar, and that the Book of Mormon post-Christ calendar was a solar calendar.

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On the front cover: The early morning sky generated from Stellarium astronomy software at the time of Christ's birth on April 17, 6 BC, arising over Israel in the form of a perfect alignment of the moon, sun, and all the known planets forming a scepter; the glyph form for an eclipse from the Aztec Codex Telleriano-Remensis; an annular solar eclipse the type of which arose at sunrise in Mesoamerica on the date of Christ's birth; representation of a comet as a multicolored serpent with barbs eclipse from the Aztec Codex Telleriano-Remensis; Comet Neowise in 2020; rainbow hues of the signs and wonders of the Aurora Borealis (Northern Lights) over Iceland. On the title page: Serpents eating the sun on the eclipse tables of the Maya Dresden Codex.

On the back cover: A serpentine signs and wonders Aurora Borealis (Northern Lights) over Iceland; the reformed Egyptian glyph for "night of brightness" found in the Book of Mormon Caractors Document; astrological aspects from the Magi at sunrise on April 17, 6 BC (by Molnar); Aztec depiction presumably of the erupting Popocatépetl Volcano from the 1570 AD Codex Vaticanos Rios; artistic depiction of an erupting volcano; three reformed Egyptian glyphs for "came in darkness" and the number eleven as occurred in the numeric date sequence for the 3rd Nephi destruction as found in the Book of Mormon Caractors Document.

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Introduction

Anyone that has read the entire Book of Mormon, whether believer or not, will note that the book is heavy in chronological structure, from the various prophecies fulfilled after a specific number of years, to the continuous mention of nearly every year in certain periods such as the Reign of the Judges.

Those that maintain that the Book of Mormon is an actual historical text recognize that it must have taken place in a particular place and at a particular time. While there are a few different geographic models for the location of the Book of Mormon, this book is based on the premise that it took place in Mesoamerica, which also is consistent with the Mesoamerican practice of the integration of calendars directly into religious practice and ritual.

Back in the 1980's I took an anthropology class at BYU where some elements of the Book of Mormon were discussed. On the final exam, there was a true and false question as to whether the "400 year" prophecy of the Nephite destruction is equivalent to the Maya Baktun. There was also an essay question asking how you can detect the Maya "tun" calendar system in the Book of Mormon. Of course, in order to get a good grade, I had to put "true" and then proceed to include in the essay question the predetermined justification of the "tun" calendar that the professor was looking for. However, I had run the calculations myself with the Book of Mormon calendar, and it was very clear that the "tun" calendar simply did not work with the Book of Mormon calendar. I thought that one day when I was older, I might look at this issue closer and see what I could come up with.

There have actually been very few scholars who have written specifically addressing the Book of Mormon calendars, most with the primary purpose of attempting to tie the Lehite departure to the Old World calendar and also tangentially to attempt to give further clarity to the birth and death dates of Christ. While the issue of the connection of Old World to Book of Mormon calendars will be discussed, a primary purpose of this work is to apply and flesh out the new calendrical information obtained from the "Caractors" Document to solve some calendrical problems that have perplexed Book of Mormon scholars in the past and show new textual correlations to some of the dates and calendars.

The Caractors Document is a previously under-utilized, or simply unused, key source for Book of Mormon chronology. The Caractors Document (sometimes conflated with the Anthon transcript) consists of some 222 reformed Egyptian characters copied from the Book of Mormon plates. This document, recorded in the handwriting of Joseph Smith's early scribe John Whitmer, and laid out in seven rows on a torn sheet, has been an enigma since the early days of the Restoration. While it may initially seem daunting, or even impossible, that one might translate those characters, several fortuitous factors make its translation possible and plausible. First, Egyptian, Hebrew, Sumerian, Mayan, and other languages that contributed to the language, number system, and calendars of the Nephites are known, providing scripts, vocabularies, numbers, and language structures that are found in reformed Egyptian. Second, we possess the contents of the Book of Mormon, which can be compared against identifiable elements on the Caractors document to discern which portion of the Book of Mormon the Caractors document corresponds to. Third, research by previous scholars identified many Egyptian numbers on the Caractors document, which assists in identifying what type of text the Caractors document represents, and where in the structure of the Book of Mormon it would be found. Fourth, leveraging the

initially identifiable words and numbers on the Caractors document it is possible to identify the document as Mormon's chronological summary of the period from the 19th regnal year of $Mosiah_1$ to the coming of the Limhites (likely the preface to the Book of Mosiah), and also Mormon's synopsis of the Book of Mormon Prophetic Calendar (Grover 2019). Since much of the meaning of a text is contextual, establishing this context enables the further translation of characters in the document, each of which, in turn, provides still further context interpreting and refining the meaning behind other characters in the text. In this fashion, the author was able to systematically work out the content and meaning of the Caractors document in a previous volume. Because this content, thus discerned, is greatly focused on matters of chronology and calendar it is uniquely suited to assist in establishing the Nephite calendars and chronology of Book of Mormon events in the present work. Specifically, the Caractors Document provides the following new calendrical information:

1. The existence of a Jubilee year count

2. A new date for Christ's death provided in a Reign of the Judges date

3. A new count from Christ's death to his appearance and ascension to the Nephites

4. A new sub-calendrical period called the Period of the Seven Tribes

5. A new count from the appearance of Samuel the Lamanite to the birth of Christ

6. Glyphic evidence in the reformed Egyptian that a solar calendar was used after Christ's birth

In addition, new information regarding Christ's birth will be integrated into the analysis. The approach taken will be first to further establish an internally consistent Book of Mormon chronology including the relationship of multiple calendars and correlations with the text. New textual evidence of these calendars will be discussed. Although part of an earlier publication, the Nephite number system and its use of sacred numbers, specifically as it applies to patterns of year counts, will be extensively discussed.

There are various proposals as to the Book of Mormon Nephite chronology. Discussed here are those who were the first to specifically espouse a position with some scholarly support. Others since then who have utilized these positions are not discussed here unless they added something new to a particular position. Primary prior work relating to the type of years utilized in the Book of Mormon and other calendar information includes:

<u>Huber</u>

Jay H. Huber wrote an article pertaining to Book of Mormon chronology (Huber 1982). The main points argued by Huber were:

- The Nephites used an uncorrected 360-day calendar

- The Lehi departure date was 597 BC

- Christ's birth was 4-5 BC

<u>Pratt</u>

John P. Pratt wrote an encyclopedia section and an article pertaining to Book of Mormon chronology (Pratt 1992; 2004). The main points argued by Pratt were:

- Lehi's departure date was on April 6, 601 BC

- Christ's birth date was on Wednesday, April 5, 1 BC

- Christ died on Friday, April 1, AD 33 (J) ("J" means Julian date as opposed to Gregorian)

- The Nephite calendar used a 365 ¼ days solar year

Spackman

Randall P. Spackman has published two articles and maintains an online book that is periodically updated (Spackman, 1993, 1998, 2014). Extensive in research and commentary, Spackman also deals with the grammatical construction of time references, which this work does not involve. The main points made by Spackman were:

- An uncorrected lunar calendar was used by Lehi at his departure and was used until a calendar change nine years after the birth of Christ (Spackman refers to this as the Common Lunar Calendar)

- After the calendar change following Christ's birth, the Nephites used a 365-day year solar calendar (Spackman refers to this as the Civil Calendar)

- The calendar change involved a 105-day adjustment

- The year itself involved a possible division of two parts, the "commencement" and "latter half"

- The date for Lehi's departure of Jerusalem was shortly before January 25, 587 BC (J)(1507046 Julian date)

- The date for Christ's birth is March 23, 5 BC (J)(1719679 Julian date)

- The date for Christ's death is March 18, 29 AD (J)(1731727 Julian date)

Seely/Brown

David Rolph Seely wrote a joint article with S. Kent Brown in 2001 and an additional solo article in 2003 (Brown and Seely 2001; Seely 2003). These articles counter Spackman in relation to the Lehi departure date and assert that it was early in Zedekiah's reign with his first year being 597–596 BC, not later as Spackman asserts.

Chadwick

Jeffrey R. Chadwick has written four articles pertaining to the date of Lehi's departure and Christ's birth and death dates (Chadwick 2004; 2010; 2016; 2018). The main points argued by Chadwick were:

- Lehi's departure date was in November, 605 BC

- Christ's birth date was in December, 5 BC

- Christ died on Thursday, April 6, AD 30 (J)(1732111 Julian date)

- The Nephite calendar used a 365 ¼ days solar year

Blumell/Wayment

Lincoln H. Blumell and Thomas A. Wayment wrote an article primarily in response to Chadwick's work (Wayment and Blumell 2012). The main points argued by Blumell and Wayment were:

- The Nephite calendar may have utilized a lunar or solar year

- Jesus was born before Herod "the Great" passed away in the spring of 4 BC and probably not any earlier than 6 BC

- The preferred death date for Christ is around AD 29 or 30 and the birth date for Christ is approximately 6–5 BC

Sorenson

John L. Sorenson in his book An Ancient American Setting for the Book of Mormon (Sorenson 1985, 270-76) suggested that a southern Mesoamerican "year" of 360 days was probably in use among the Nephites with the departure of Lehi around 597 BC and the birth of Christ in 5 BC. In 1993, as a result of Spackman's first article, he backtracked on his original position. He did however make a reference to this possibility in his 2013 book Mormon's Codex: An Ancient American Book but indicated there was no real evidence for it (Sorenson 2013 193, 441).

Rappleye

Neal Rappleye, while not looking at the entire calendar system in the Book of Mormon wrote an article making a calendar proposal relating to the 5-year prophecy of Samuel the Lamanite (Rappleye 2018). Essentially, Rappleye indicates that the apparent failure of the prophecy apparently not happening within the 5-year time period as perceived by the more wicked Nephites is evidence that the Nephite calendar consisted of the Mesoamerican Long Count, the Nephites thus using the tun as the year unit, with the Lamanites using the haab year unit.

Wright

Mark Wright (2014) wrote an article pointing out some possible similarities of prophecy or year count lengths in the Book of Mormon with the Mesoamerican Long Count. The majority of Classic period monuments begin with a "Long Count," which begins with a count of baktuns (400 years) and katuns (20 years). Similarly, the concluding chapter of the Book of Mormon begins with a count of "four hundred and twenty years" (Moroni 10:1). The twenty-year katun was subdivided into five-year periods called hotuns, which were often celebrated by royalty and commemorated in monumental inscriptions, mirroring Samuel the Lamanite's five-year prophecy concerning the birth of Christ (Helaman 14:2).

There have been a variety of proposals involving Jaredite chronology, but only I have proposed that the Jaredites used the Mesoamerican 260-day calendar. There will be a discussion of Jaredite chronology as taken from my prior work, The Swords of Shule.

It is hoped that this work will be of interest to all students of the Book of Mormon to provide further background and in textual meaning to the events recounted in the Book of Mormon.

Chapter 1

Time Cycles and Calendars

The ancient measurement of time was based on the natural cycles that ancient peoples could observe. For purposes of this work on the Book of Mormon, I will only be discussing those methods of measuring time relevant to the calendars and year counts in the Book of Mormon, and those counts generally known by observation methods known to the ancients.

The earth rotates on its axis and produces a cycle of time called a “day” as referenced by the sun coming up each morning. As the moon orbits the earth the reflection of sunlight off the moon that is visible on earth changes in predictable cycles (new moons and full moons) in what is called a “lunar month,” or more accurately “lunation” or “synodic month.” For purposes of this work, a “lunar month” refers to a “synodic month.” The complete orbit around the sun by the earth is called a “solar year,” and is also referred to scientifically as a “tropical year,” and is the time that the Sun takes to return to the same position in the cycle of seasons, as seen from Earth; for example, the time from vernal equinox to vernal equinox, or from summer solstice to summer solstice, consists of 365.24217 days.

As the earth goes around the sun, since the earth is tilted and rotates on an axis, the sun rises at different points on the horizon over the course of a solar year. A solstice is the moment that the sun reaches its observed northern or southernmost point. In the Northern Hemisphere the summer solstice happens in June, and in the southern hemisphere, the solstice happens in December — hence why the seasons are reversed in each hemisphere. So, the winter solstice in the northern hemisphere (December 21) is the shortest day of the year while the summer solstice (June 21) is the longest day of the year.

Also important for ancient astronomical observers of the sun are the equinoxes. An equinox is an event that happens twice a year. The word "equinox" comes from a Latin term meaning "equal night." That is because during an equinox, it is believed that all areas of the Earth's surface experience an equal amount of daylight and darkness — 12 hours each. In autumn, the equinox (roughly September 21) is in the northern hemisphere, and in spring, the equinox (roughly March 20) is in the southern hemisphere. So, the equinoxes are the times of the year where the part of the Earth closest to the sun is the exact equator. When everything is aligned, everywhere from the North Pole to the South Pole receives the same amount of sunlight — but only on those two equinoxes, in September and March — the exact dates of which might change up to three days, depending on year. The equinoxes are the midpoints between the solstices (or vice versa).

The agricultural seasons were important anciently as they are today and are dictated by the alignment of the earth and the sun through a solar year. In our modern calendar the equinoxes and solstices are used to designate our calendrical seasons: spring, summer, autumn, and winter. They do not always correlate with a particular growing season, as different crops grow at different times of year and in different climates. However, the equinoxes and solstices each occur reliably two times every solar year and over time occur reliably at the same time. So, any solar calendar that exclusively ties events to these times (as opposed to counting days) is not required to be periodically adjusted.

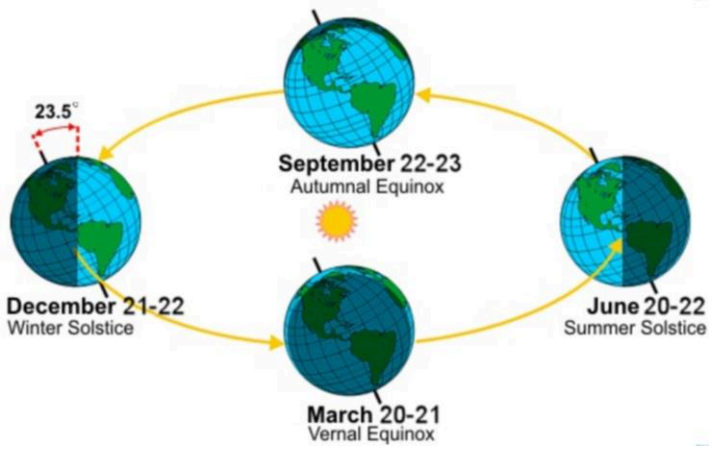


Figure 1 Solstices and Equinoxes

Types of calendars relevant to the Book of Mormon

A calendar can consist of just the measurement of one of these types of time units (i.e., days, lunations, equinoxes/solstices, or solar years). For example, it is possible to just count a sequence of days or other units and not divide them up into subunits or try to link or correlate them to other types of the cycles of nature. This would be called a continuous count calendar.

Raw Day Continuous Count calendar

There is a calendar that consists only of raw day counts called the Julian calendar. It was not used by the ancients and is useful for expressing a given day that can then be correlated to other calendars. The Julian calendar consists of the continuous count of days since the beginning of the Julian Period and is used primarily by astronomers and in software for easily calculating elapsed days between two events.

The Julian Day Number (JDN) is the number assigned to a whole solar day in the Julian day count starting from noon Universal time, with Julian day number 0 assigned to the day starting at noon on Monday, January 1, 4713 BC, which date was chosen because it preceded any dates in recorded history. For example, the Julian day number for the day starting at 12:00 UT on January 1, 2000, was 2,451,545. Julian dates are expressed as a Julian day number with a decimal fraction added. For example, the Julian Date for 00:30:00.0 UT January 1, 2013, is 2,456,293.520 833. The Julian Period is a chronological interval of 7980 years; year 1 of the Julian Period was 4713 BC (−4712). The Julian calendar year 2020 is year 6733 of the current Julian Period. The next Julian Period begins in the year AD 3268.

Continuous Day Count calendars with units consisting of groups of days

Weekly Calendar

The most common calendar that consists of groups of days is the weekly calendar consisting of seven days, which is called a “week.” This was present anciently in Israel, is referred to in a few places in the Book of Mormon (Mosiah 18:25, 31:12; Alma 32:11), and is present in our calendar today. While most people don’t think about it much, the weekly calendar and our yearly calendar are technically independent of each other and run concurrently in the sense that the series of repeating weeks is never adjusted to fit the yearly calendar, and the yearly calendar is not adjusted to accommodate a certain number of weeks. The weekly calendar does not attempt to correlate with any agricultural seasons but was originally exclusively a religious calendar.

Mesoamerican Long Count Calendar

The Mesoamerican Long Count calendar is another calendar which fundamentally consists of different units of continuously counted days or combinations of these day units. It consists of the following five distinct units of days:

one day - kin

20 days - uinal

360 days - tun

7,200 days - katun

144,000 days – baktun

The name *baktun* was invented by modern scholars. The numbered Long Count was no longer in use by the time the Spanish arrived in the Yucatán Peninsula, although unnumbered *katuns* and *tuns* were still in use. Although not designated as such by the Maya, a *tun* was sometimes utilized in a fashion comparable to a year.

The Long Count calendar identifies a date by counting the number of days from a starting date that is generally calculated to be August 11, 3114 BC in the Gregorian calendar.

Mesoamerican Sacred Round or Sacred Cycle

The 260-day calendar is called the Sacred Round, the Ritual Calendar, or the Sacred Almanac. Each day in this cycle was named using a number from one to 13, matched with 20-day names in each month. The day names varied from society to society. Scholars have been divided about whether the 260-day cycle represents the human gestation period, some as-yet unidentified astronomical cycle, or the combination of sacred numbers of 13 (the number of levels in heaven according to Mesoamerican religions) and 20 (Mesoamericans used a base 20 counting system).

Lunar Count continuous calendar

A continuous lunar count calendar without grouping by year, while theoretically possible, has not been known historically.

Lunar Count continuous calendar with groups of lunations (months)

A continuous lunar count calendar is found among both the ancient and modern Arabs, and early civilizations. The number of lunar months that come close to matching the time period of a solar year is 12, so the period of 12 lunar months is referred to as a “lunar year.” A lunar month is the time between two successive syzygies (new moons or full moons). The precise definition varies, especially for the beginning of the month. Since Earth's orbit around the Sun is elliptical and not circular, the speed of Earth's progression around the Sun varies during the year. The same is so for the Moon's orbit around the Earth. Because of these variations in angular rate, the actual time between lunations may vary from about 29.18 to about 29.93 days. The long-term average duration is 29.530587981 days (29 days 12 hours 44 minutes 2.8016 seconds).

Solar year continuous count calendars

Mesoamerican Solar Round

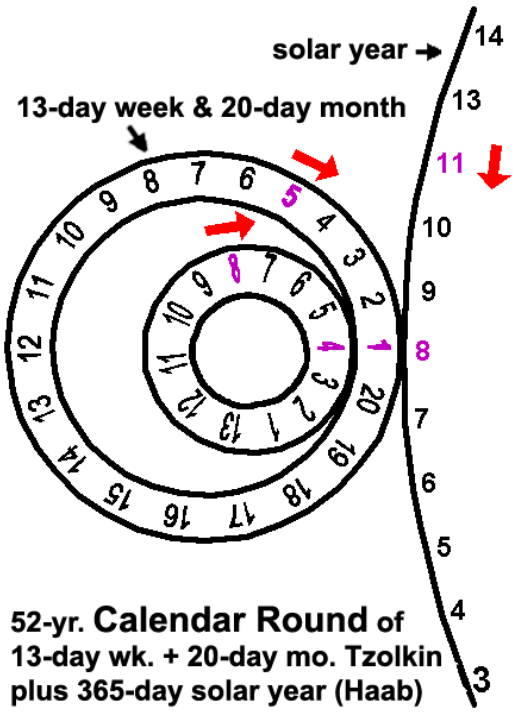
As previously discussed, the 365-day solar round, a portion of the Mesoamerican Calendar Round calendar, was also known as the Solar Round calendar. It was based on 18 named months, each 20 days long, with a five-day period to make a total of 365 days. The Maya, among others, thought the five days at the end of the year were unlucky.

The oldest form of the calendar—the solar round—was likely invented by the Olmec, epi-Olmec, or Izapans about 900-700 BC, when agriculture was first established. The Sacred Round may have been developed as a subdivision of the 365-day year, as a tool specifically designed to track important dates for farming. The earliest confirmed combination of Sacred and Solar rounds (Calendar Round) is found in the Oaxaca valley at the Zapotec capital site of Monte Alban. There, Stela 12 has a date which reads 594 BC. There were at least sixty or so different Calendar Round calendars established throughout pre-Columbian Mesoamerican, and several dozen communities throughout the region still use versions of it today.

Combined calendar

Mesoamerican Calendar Round

The Mesoamerican Calendar Round calendar is a continuous day calendar that was a complex shared calendar as it involved two calendar parts (Sacred and Solar Rounds) that worked together to make a 52-year cycle, such that each day had a unique name. As discussed earlier, the Sacred Round cycle lasted 260 days, and the Solar round was 365 days. There are multiple day counts running concurrently in the Sacred cycle calendar where the 260-day unit that repeats consists of subunits that are also repeating. There is a repeating 20-day unit that has day names, and there is a repeating 13-day subunit that repeats where the days are identified by numbers.



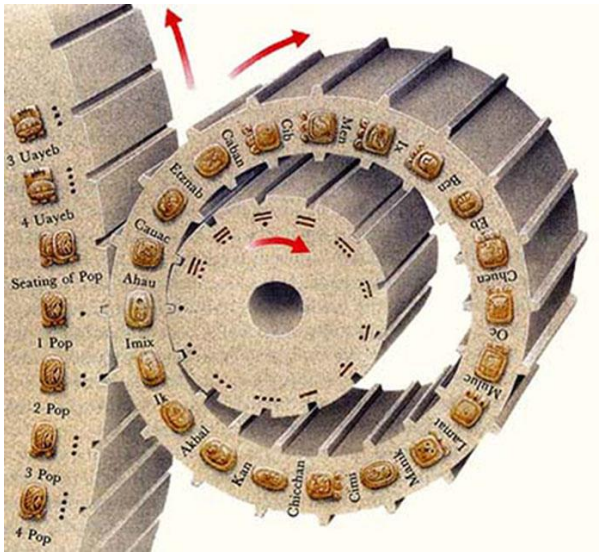


Figure 2 The Calendar Round calendar (Maya)
(www.mesoamericanstudiesonline.blog/2019/06/02/the-maya-calendar-round/ 2019)

The Solar Round of 365 days as a whole ran and repeated continuously; however, its underlying subunits did not. It was made up of eighteen months of twenty days each plus a period of five days. So, in this respect there is a portion of this complex calendar where, while the day counts run continuously, some of its subunits do not.

The two parts together were used to keep chronologies and king lists, mark historical events, date legends, and define the beginning of the world. The dates were chiseled into stone stelae to mark events, painted on tomb walls, carved onto stone sarcophagi, and written into bark cloth paper books called codices.

Correction and Adjustments of Calendars

A continuous count calendar is a simple and practical way to count time because it does not need to adjust to other calendars. However, calendars that have utility need to match the things that are continuously and periodically done in a particular society. In our modern-day calendar, we use days of the week to determine our days off each week, we use certain days of the month as holidays, we dictate a certain number of years before a person is old enough to drink alcohol or drive a car. Anciently the initial primary use of a calendar was marking agricultural seasons. Often the growing seasons of certain crops dictated the structure of the calendar itself. Religious festivals related to agriculture were also important anciently. Agricultural seasons are based on the sun or solar year. If a solar year is solely marked by the equinoxes or solstices which can be independently determined by observation and not day counts, then it needs no adjustment to stay current with the agricultural seasons, but just consists of two points per year, and there is no need to further correlate it with non-solar calendars (weeks, months, etc.).

There are no Mesoamerican calendars that are corrected (intercalated); all run continuously. In Mesoamerica various areas started their calendars at different times, and often abandoned a calendar and started a new one.

Chapter 2

Calendars, Subcalendars, and Pertinent Time Points and Periods in the Book of Mormon

The approach in this work will be to determine internal calendrical consistency of the Book of Mormon, and also attempt to link it to any Old World calendars or New World calendars. In the initial stage, it will determine the birth date of Christ astronomically using both New World and Old World information.

The scope of this work will not look at all elements of passage of time in the Book of Mormon (such as the use of the terms related to "came to pass") or to list all Book of Mormon events on timelines. Instead, it will deal with events related to prophecies of particular lengths, as these are essential in order to act as a control to determine the presence of a particular calendar.

In the Book of Mormon there are underlying calendars, with overlying calendars, subcalendars, or other year count time periods. A subcalendar is considered a calendar that runs concurrent to a previously existing calendar or other concurrent subcalendar and that utilizes the same types of year counts as the other concurrent calendar.

Early calendars

The initial underlying calendar is the Lehi Departure religious calendar. Overlaying the Lehi Departure calendar is the Reign of the Kings political calendar and the Reign of the Judges political calendar. Subcalendars of this period include the Seven Tribes subcalendar, regnal subcalendars including a concurrent Zeniff regnal subcalendar, and the Jubilee festival subcalendar. The 1000-year calendar has some undefined correlation to the Jubilee festival subcalendar.

Religious Calendars

Lehi Departure calendar

The Lehi Departure calendar ran from the date of departure of the Lehites from Jerusalem until at least 9 years after Christ was born, for 609 years (3 Nephi 2:6), which is the last reference to this calendar. A specific reference to this calendar is not made within the first time period mentioned in the Book of Mormon where $Nephi_1$ only indicates that they were "eight years in the wilderness" (1 Nephi 1:4). After having arrived in the New World, a more specific reference is made in that "thirty years had passed away since the time we left Jerusalem" (2 Nephi 5:28) and later more definitive references to Lehi, "fifty and five years had passed away from the time that Lehi left Jerusalem" (Jacob 1:1) and "from the time that our father Lehi left Jerusalem" (Enos 1:25). It was not always specifically called out as a calendar when it was referenced in the small plates, as it was the only calendar enumerated in the small plates (other than implied regnal calendars of individual kings) and also because the small plates are not a later retrospective view as Mormon's abridgment was, there was no reason to differentiate it, and so is often implied when referred to such as "forty years have passed away" (2 Nephi 5:34) with similar verbiage in later small plate references (Jarom 1:5, 13; Omni 3:3, 5).

The Lehi Departure calendar became to be integrally linked to the 600-year prophecy that Christ would come 600 years after Lehi had departed from Jerusalem since it was the starting base date for this prophecy (1 Nephi 10:4, 19:7-8; 2 Nephi 25:19; 3 Nephi 1). Per the author's translation of the Caractors Document has references to this calendar.

1000-Year calendar(s)

Not much definitive can be said about the 1000-Year calendar other than it has some correlation with the Jubilee calendar as it is mentioned in conjunction with the 12th Jubilee year and that it is mentioned as part of the calendar shift to the Coming of Christ calendar as the primary calendar count. The glyph forms are different in each of these instances, so it is very possible there are two separate 1000-Year calendars running concurrently, one a lunar calendar and one a solar calendar. A 1000-Year calendar is mentioned in the Caractors Document at the time of the Gaddianton siege after Christ's birth, but the Caractors Document did not include the period of time as to when it may have started other than identifying it as the 12th Jubilee. Given its apparent long duration it would seem to underlie the Reign of the Kings and Reign of the Judges calendars. Going forward it would continue to extend until past the demise of the Nephites. It is also related to the Jubilee Year Count as it starts and ends on a Jubilee (which will be discussed later). It is only mentioned in the Caractors Document.

Jubilee Festival Year Count "sub calendar" and relation to one of the 1000-year calendars

The Jubilee is an Old Testament religious celebration that occurs on a Jubilee year, which occurs every 49 years, and adds an additional year which does not affect the 49-year count, meaning the 50th year is actually the first year of the next Jubilee 49-year period. The Jubilees are numbered, with the first Jubilee starting at the time Lehi came out of Jerusalem and had visions that started his ministry in Jerusalem. As a periodic event, it is not exactly a year count sub calendar, but because the 49-year interval is somewhat dependent on the underlying calendar year length, it still has certain calendrical features so is considered a sub calendar of the Lehi Departure calendar and the 1000-year calendar. The 1000-year calendar starts and ends on a Jubilee year and from that standpoint is related to the uncorrected lunar calendar, but the entire calendar itself seems to derive its name from the solar year equivalent of its length. The Jubilee year count was initiated prior to the Lehi Departure calendar and extends beyond that into the Coming of Christ calendar. Although not noted as a calendar in the Book of Mormon, as the Jubilee year glyphs are found in the Caractors Document, there is textual evidence of the Jubilee practice and existence in the Book of Mormon text. The determination of endpoints and evidence of the Jubilee Festival sub calendar within the Book of Mormon is discussed in detail later in Chapter 8.

In determining the relationship of the 1000 years with the Jubilee festival count, it is necessary to determine the total years of that count. The initiation of the Jubilee calendar at the time Lehi first came out of the city of Jerusalem to start his ministry included one Sabbath year and then the next Jubilee year, so there is one year included before the formal count started. There were 21 Jubilees that occurred during the time period of the Nephites in the Book of Mormon. With 49 years (7 x 7) constituting a Jubilee, and with the with total number of Jubilees being 21 as found in the Book of Mormon, the years would be 1029 years (7 x 147 years or 21 x 49), and with one additional year for the base year (not counted as a Jubilee year for this count) the total number of years on this calendar would be 1030 lunar years. At first glance this would not seem to work with a 1000-year calendar, however

when one converts 1030 lunar years to solar years, it is exactly 1000 years (1030 years x 354.37 days per lunar year / 365 days per solar year = 1000 solar years).

Political Calendars

Reign of the Kings calendar

The Reign of the Kings calendar ran from approximately the 55-year point on the Lehi Departure calendar (Jacob 1:1, 9-12) to approximately 509 years on the Lehi Departure calendar (Mosiah 29:47).

Overlaying the Reign of the Kings calendar are sub calendars for the periods for the reign of individual kings. They are not all listed or identified as much of the Reign of the Kings period was from the lost section of the Book of Mormon. The small plate replacement of this portion is likely much abbreviated (Bradley 2019 92-95) and the small plates were maintained by the priestly line, not the kingly line, after the death of $Nephi_1$, so only featured the Lehi Departure prophetic calendar. References to the regnal years of a particular king are mentioned upon the commencement of the reign (Mosiah 6:4) and the death of $Mosiah_2$ which occurred in the thirty-third year of his reign (Mosiah 29:46). The Caractors Document mentions a regnal year of $Mosiah_1$ and the coronation date of Benjamin, which would be consistent with Mormon's abridgement of the large plates with more political information.

Seven Tribes sub calendar

The Seven Tribes calendar is a sub calendar overlaying the Lehi Departure calendar and the Reign of the Kings calendar and runs from 399 years to 475 years on the Lehi Departure calendar. It is mentioned only in the Caractors Document but would presumably have been found in the large plates and in the lost portion of the Book of Mormon.

Zeniff subcalendar

Zeniff left the main body of the Nephites and returned to the land of Nephi, and upon doing so initiated his own calendar year count, which also consisted of a regnal year count, at least for his reign (Mosiah 9:14). No dates beyond his lifetime are found in the Book of Mormon. It appears to be a sub calendar of the Lehi Departure calendar and the Reign of the Kings calendar. Based on information found in the Caractors Document, this calendar started at year 420 of the Lehi Departure calendar and ran (at least a known number of years had passed) until the Limhites returned to the main body of the Nephites at year 480 of the Lehi Departure calendar.

Reign of the Judges calendar/sub calendar

The Reign of the Judges calendar/sub calendar was initiated at a point of approximately 509 years on the Lehi Departure calendar and ran past the end of the Lehi Departure Calendar to the end of the 34^{th} year of the Coming of Christ calendar and ending 126 years after its start. There is a possibility that there may be a marker date referring to the death of $Mosiah_2$ that is different from the calendrical transition date from the Reign of the Kings calendar to the Reign of the Judges calendar. Mosiah 29:44 seems to indicate that the Reign of the Judges calendar started prior to the death of $Mosiah_2$, which seems to have happened later than the calendar start. The death of $Mosiah_2$ is indicated as the end of the Reign of the Judges (Mosiah 29:46-47) as he had indicated that he would be king "the remainder" of his days (Mosiah 29:11). This may indicate some small period of informal overlap between the effective end of the reign of $Mosiah_2$ and the beginning of the Reign of the Judges. The last year of the Reign of the Judges calendar mentioned in the Book of Mormon of the Reign of the Judges is clearly the 99^{th} year and

appears to be the 100th year; however, this last mention indicates "an hundred years had passed away since the days of Mosiah, who was king over the people of the Nephites"(3 Nephi 2:5) which is not referring to a specific calendar. The subsequent verses indicate that 609 years (within the accuracy of a year) had been completed on the Lehi Departure calendar. The continuation of the Reign of the Judges calendar past its 100th year to its terminus is found only in the Caractors Document. Information from the Caractors Document shows that the Reign of the Judges starts on New Year's Day and there are no gaps or overlaps between the Reign of the Judges and the Reign of the Kings calendars.

Later calendar

Coming of Christ calendar

The Coming of Christ calendar began following 609 years on the Lehi Departure calendar; the end is not indicated, but presumably to the end of the Nephite era. Its count was started retroactively, and the first nine years of the calendar were "borrowed" from the Lehi Departure calendar. Whether the length of the year was also retroactively adjusted from a different type of year (i.e., lunar uncorrected to solar uncorrected) cannot be automatically assumed but will have to be tested.

Prophecies and related calendar periods

600-year prophecy. According to the text found in the small plates of the Book of Mormon, Christ was to be born 600 years after the Lehites left the land of Jerusalem (1 Nephi 10:4, 19:7-8; 2 Nephi 25:19; 3 Nephi 1).

Samuel the Lamanite 5-year prophecy to the birth of Christ. According to the Book of Mormon the prophecy was that after 5 years from the prophecy Christ would be born. According to the Caractors Document it was 60.5 months before the birth of Christ (Helaman 14:20-27; 1 Nephi 19:10-12; 3 Nephi 8).

Samuel the Lamanite 400-year prophecy to the sword of justice falling on the Nephites. The base date here is the same as the 5-year prophecy of Samuel the Lamanite (Helaman 13:5, Mormon 8:6-9).

$Alma_2$ 400-year prophecy to the extinction of the Nephites. $Alma_2$ prophesied that the Nephites would be pursued and become extinct 400 years from the time that Christ would manifest himself unto the Nephites (Alma 45:9-14).

50-week Period between Christ's resurrection and Christ's Nephite ascension. This period is not a prophecy but is important in determining the base date of the $Alma_2$ prophecy. This period is found only in the Caractors Document.

33 years and 3.5-day time period from the birth of Christ to his death. This period is found in the Book of Mormon. It is not a prophecy in and of itself, but it is important in determining the base date for the 600-year prophecy and to correlate Old World calendar days. This period includes the last 9 years of the Lehi Departure calendar as well.

Fourth generation prophecy. While not strictly a calendrical prophecy, it does involve a period of time in the form of generations that would pass prior to and concurrent with the commencement of Nephite wickedness (1 Nephi 12:11-15; 2 Nephi 26:8-10; Alma 45:9-14; Helaman 13:5-10; 3 Nephi 27:31-32; 4 Nephi 1:18-34).

Calendar adjustment nine years after Christ's birth

There is no mention of any other calendar adjustment or change (intercalation or otherwise) in the Book of Mormon except for 9 years after the birth of Christ (3 Nephi 2:8). The same is true for the Caractors Document.

Apparent discrepancies in Book of Mormon chronology

There are three primary apparent discrepancies that appear in the Book of Mormon if one considers that there is one uniform calendar existing through the entirety of the Book of Mormon that need to be resolved in any calendar proposal:

(1) If Lehi departed the Old World sometime from 600 BC – 587 BC, and Christ was born in or prior to 4 BC, then the maximum number of years that can pass between those events is 596 years. The Book of Mormon prophecy indicates 600 years passing from Lehi's departure to the birth of Christ.

(2) Samuel the Lamanite made a prophecy that 400 years would pass where the sword of justice would fall on the Nephites (Helaman 12:5). Samuel's prophecy is made roughly 5 years before Christ's birth, the final battle occurs 384 to 385 years after Christ's birth, thus the passage of time is 389 to 390 years, not 400.

(3) $Alma_2$ prophesied that 400 years after Christ ministers in the flesh to the Nephites, the Nephites will be extinct. $Moroni_2$ dies not long after 420 years after Christ's birth and Christ appears to the Nephites 34 years after his birth, thus the passage of time from year 34 to year 420 years is 386 years, not 400.

At this point, although the genesis of the Book of Mormon dates and calendars is yet to be discussed in this book, a complete set of Book of Mormon timelines is included here for reference as one proceeds through the book. Appendix A contains a reference table correlating Book of Mormon year counts to Gregorian dates.

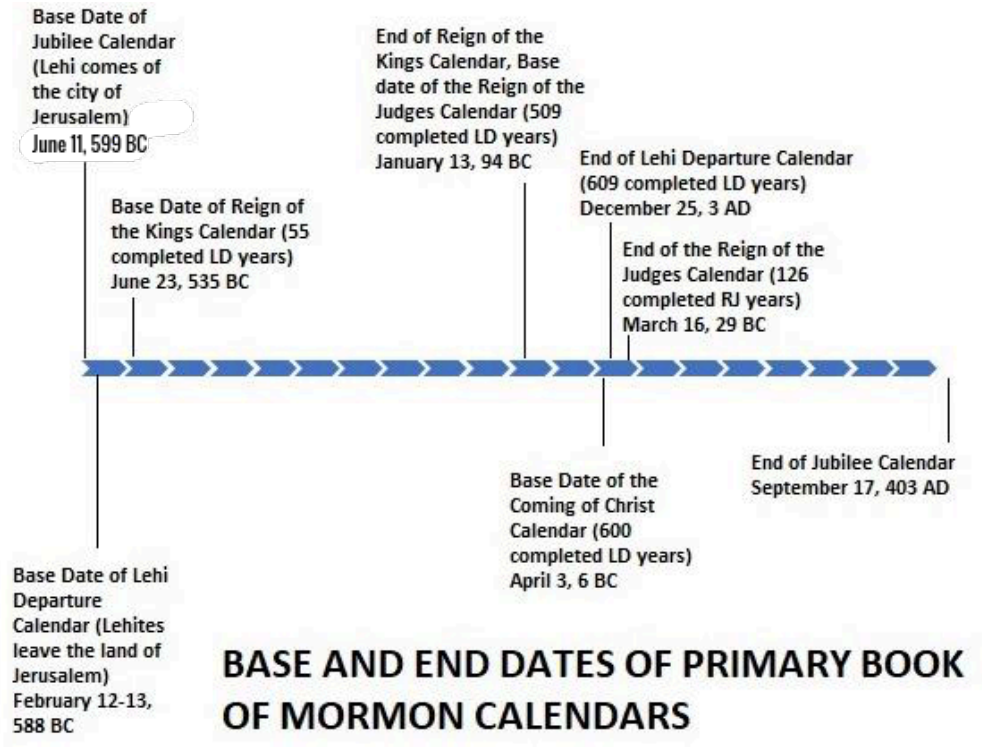


Figure 3 Primary Calendar Base and End dates

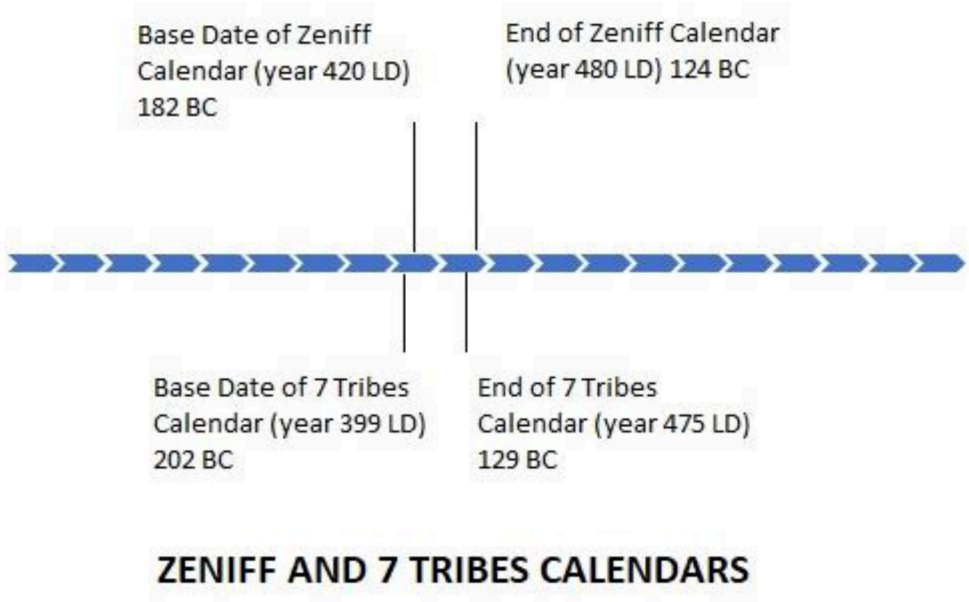


Figure 4 Zeniff and 7 Tribe Calendars

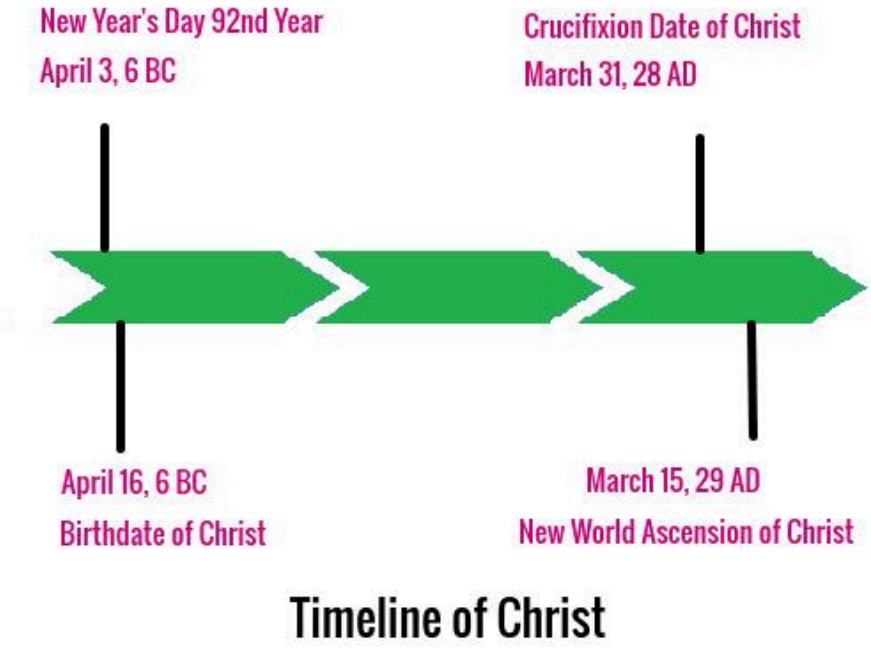


Figure 5 Calendar of Christ's life

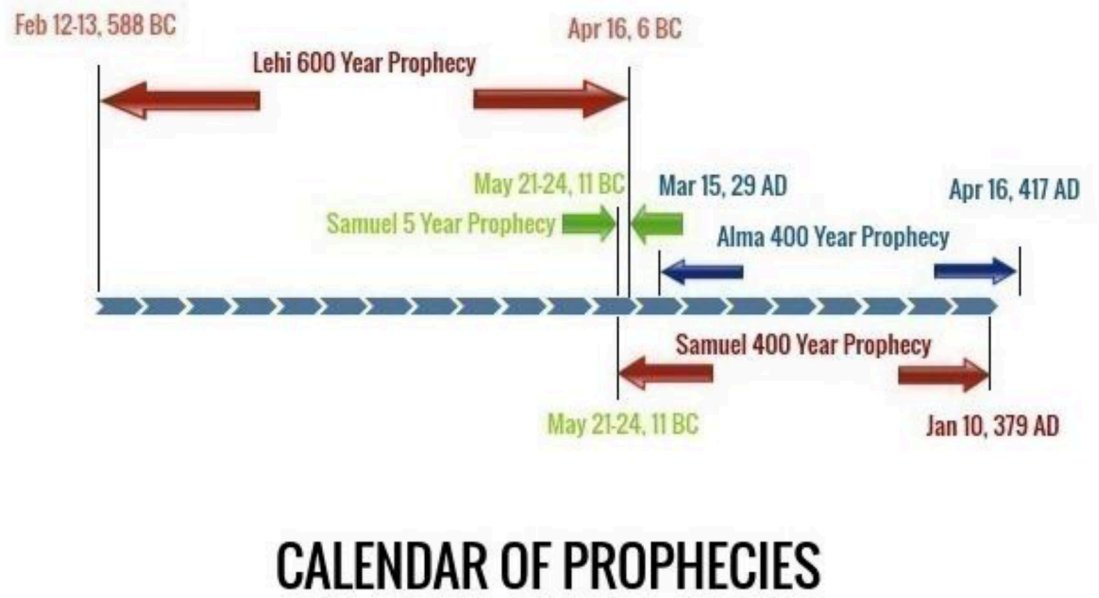


Figure 6 Calendar of Prophecies

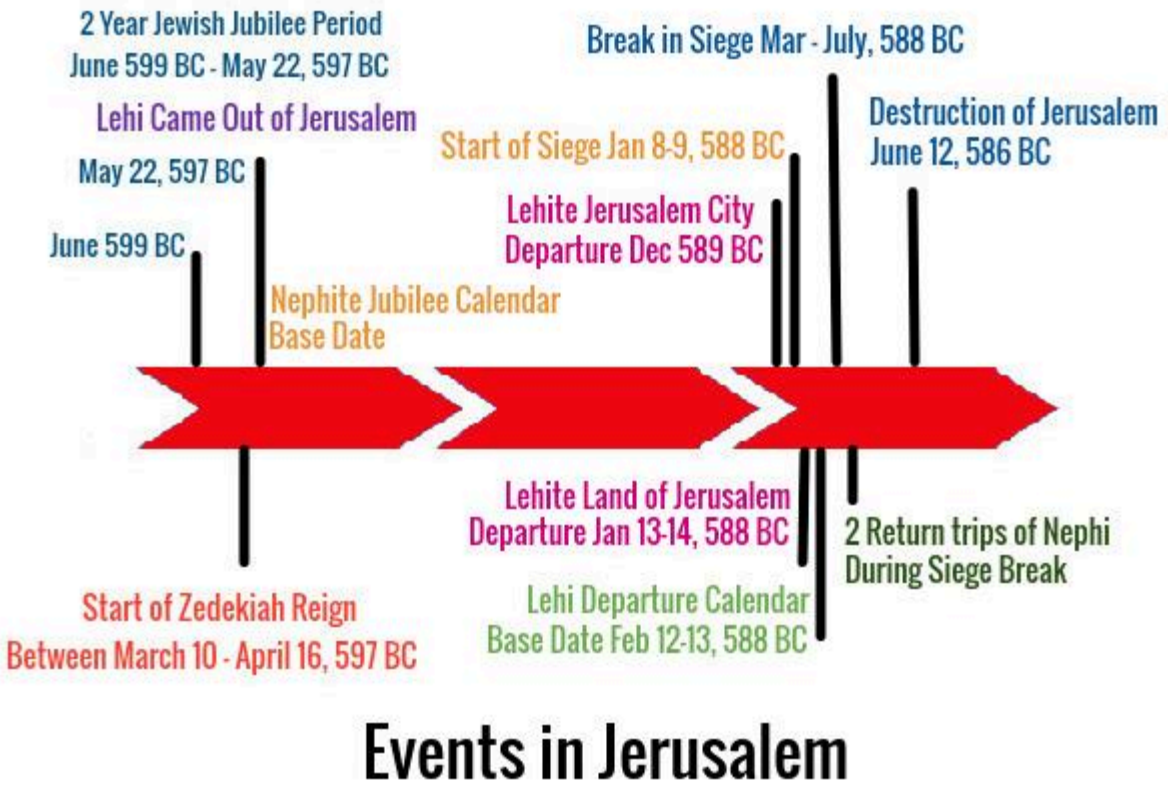


Figure 7 Events in Jerusalem

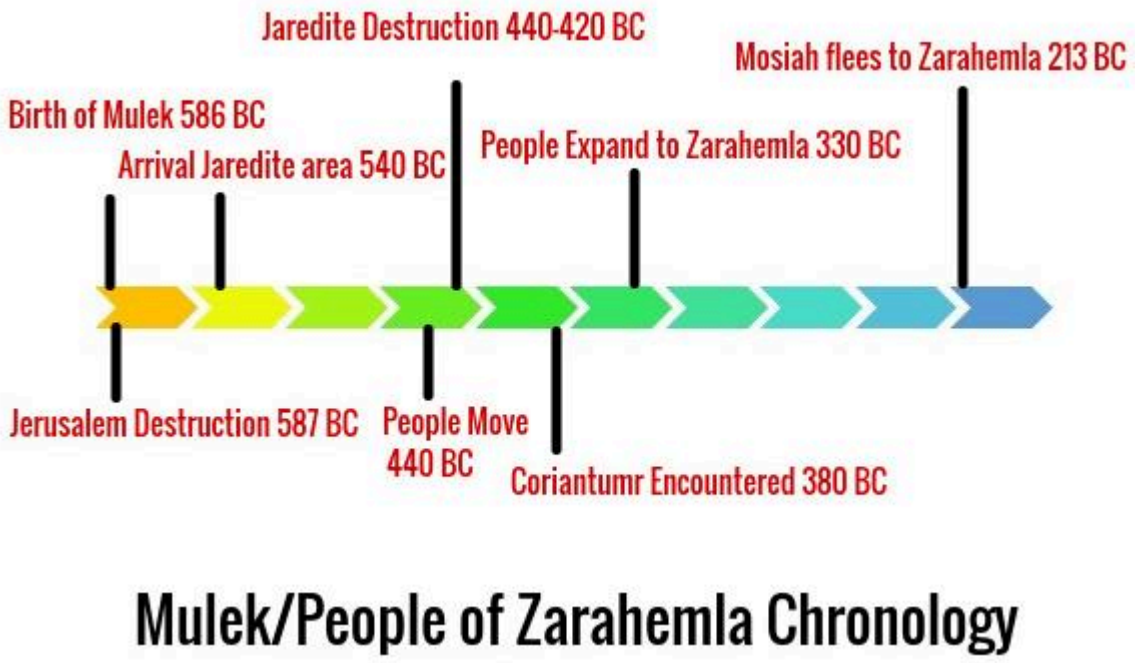


Figure 8 Mulek/People of Zarahemla Chronology

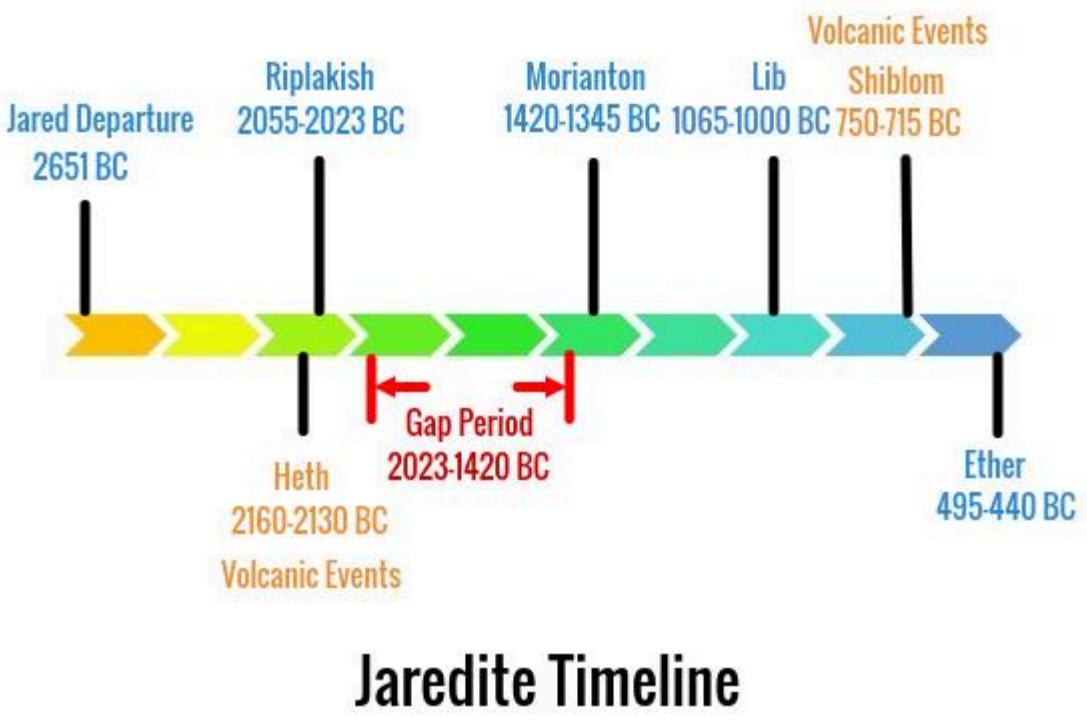


Figure 9 Jaredite Chronology

Time Periods

In order to properly compare, calculate, and convert different calendars, it is necessary to break down various time periods useful to us into the common unit of days. The term "uncorrected" is used and is equivalent to a calendar that is not intercalated.

1 lunar year: 354.367056 days

1 solar year 365.24219 days

1 solar year, uncorrected: 365 days

Difference between a solar year (uncorrected) and a lunar year (uncorrected): 10.633 days

1 average lunar month: 29.530588 days

600 lunar years, uncorrected: 212620.2 days

509 lunar years, uncorrected: 180372.832 days

609 lunar years, uncorrected: 215809.5 days

50 weeks: 350 days

5 lunar years, uncorrected: 1771.835 days

9 lunar years, uncorrected: 3189.3 days

33 solar years, uncorrected and 3.271 days = 12048.271 days

125 lunar years, uncorrected plus 1 lunar month plus .5 day = 44295.882 + 29.530588 + .5 days = 44325.913 days

125 lunar years plus .5 days = 44295.882 + .5 days = 44296.382 days

125 lunar years plus .292 days = 44295.882 + .271 days = 44296.153 days

60.5 lunar months = 1786.6 days = 5.042 lunar years, uncorrected

375.45 solar years, uncorrected: 137039.25 days

400 solar years, uncorrected: 146,000 days

91 lunar years, uncorrected: 322417.402 days

Chapter 3

Two Days of Brightness and the Stars of Christ's Birth

While the Book of Mormon recounts a variety of miracles, two miraculous events have special significance: the illuminated night and associated signs and wonders and the appearance of a new star in Mesoamerica previous to the birth of Christ, and the darkness and destruction which occurred upon his death. In a previous work, *The Geology of the Book of Mormon*, I elucidated a scientific explanation of the destruction. Here, I will provide the most likely scientific explanation for the illuminated night and signs and wonders. Also established is the correlation of the day of Christ's birth with a solar eclipse, seen both in Mesoamerica and Mesopotamia, and the Old World astrological calculation used by the Magi of the day of Christ's birth, together with a planetary Bethlehem Star and a separate Mesoamerican new star as a comet. Exact dates are then determined for Christ's birth and death based on this astronomical information and information from the Book of Mormon and other associated sources.

Controlling parameters from the Book of Mormon

The Book of Mormon description of the multifaceted event surrounding Christ's birth (referred to here as the Nephite Nativity Event) is found both in the prophecy for the Nephite Nativity Event by Samuel the Lamanite (Helaman 14:2-7) and the description of the event itself (3 Nephi 1:8, 15-22). The original language from the Original Manuscript and Printer's Manuscript of the Book of Mormon was consulted with regards to these sections of scripture. While there were small differences, none were of significance as to the description of the event, so the current edition's text of the Book of Mormon is utilized. In order to find the most likely cause of the Nephite Nativity Event, it is necessary to establish the parameters based on the description from these scriptures:

1. "There shall be great lights in heaven" which will be "a sign" of the coming of "the Son of God." (Helaman 14:3).

2. "In the night before he cometh there shall be no darkness" (Helaman 14:3); "the night shall not be darkened" (Helaman 14:4).

3. "It shall appear unto man as if it was a day" (Helaman 14:3); "There was no darkness in all that night, but it was as light as though it was mid-day" (3 Nephi 1:19).

4. "There shall be one day and a night and a day" (Helaman 14:4); "that day and that night and that day which should be as one day as if there is no night" (3 Nephi 1:8)

5. "Ye shall know of the rising of the sun and also of the setting" (Helaman 14:4); "At the going down of the sun there was no darkness … there was no darkness when the night came" (3 Nephi 1:15); "the sun did rise in the morning again, according to its proper order" (3 Nephi 1:22).

6. “There shall be many signs and wonders in heaven,” “ye shall all be amazed, and wonder, insomuch that ye shall fall to the earth.” (Helaman 14:6, 8); after the sun set, “And there were many who had not believed who fell to the earth and became as if they were dead,” “and they began to know that the Son of God must shortly appear; yea in fine, all the people upon the face of the whole earth from the west to the east, both in the land north and in the land south, were so exceedingly astonished that they fell to the earth” (3 Nephi 1:17); “from this time forth there began to be lyings … that they might not believe in those signs and wonders which they had seen.” (3 Nephi 1:22).

7. “There shall a new star arise … and this also shall be a sign unto you” (Helaman 14:5).

8. Four years after the Nephite Nativity Event, it is mentioned that “the people began to forget those signs and wonders which they had heard, and began to be less and less astonished at a sign or a wonder from heaven,” (3 Nephi 2:1).

Scientific parameters, including the order and times of events described, derived from the Book of Mormon text are as follows:

- There are “great lights” which would indicate multiple significant light sources, as opposed to a one exclusive overall glow or a combination of small light sources (such as a meteor shower).

- Separate from the overall brightness, there are specific “signs and wonders” in heaven. It is not indicated that the signs and wonders are separate events from the light sources. They may be features of the light sources or the light sources themselves.

- The overall light is not bright enough that the sun cannot be observed the next day but is bright enough to approximate a midday brightness.

- The overall light was present or commenced with the setting of the sun.

- The text considering Samuel’s prophecy containing a description of the actual event seems to indicate that the order of events as: the sun goes down and night illumination starts, the non-believers collapse, signs and wonders are seen, and the rest of the population falls to the earth, the premise being that after falling to the earth they would not effectively be able to witness the signs and wonders for some period of time, although there appears to be a differentiation from the non-believers as the believers and a portion of the non-believers are not mentioned as becoming as if they were dead. Samuel seems to indicate that the new star may be present after the start of the illumination but could be interpreted alternatively without that requirement. The description of the actual event mentions the new star after the two days of brightness, which would make more sense as it would not be expected to be observed during the illuminated night.

- There is no mention of when the signs and wonders ended (other than the night of illumination). However, not long afterward, during the ninety-second year, there was an attempt by Satan (likely through his pagan astronomy priest representatives) to lie about the things that the people “had seen” (3 Nephi 1:22), so presumably the signs and wonders were no longer present at that time. Since after four years the people were no longer astonished at a sign or a wonder from heaven, it is indicative that some sort of heavenly events may have been continuing for at least up to four years after the Nephite Nativity Event; however, the people “began to forget” (3 Nephi 2:1) at that time, so the unique Nephite

Nativity Event signs and wonders presumably were not occurring long after the ninety-second year at the longest.

- The entirety of the Nephite Nativity Event occurred only once in the 1000 years of occupation of the Nephite geographical area as one would assume another such event would have been mentioned.

- Fairly soon after the mention of the illuminated night and the appearance of the new star, the "signs and wonders" are mentioned that were "seen," but there is no mention of them being "heard" (3 Nephi 1:22), and Samuel in his prophecy is silent as to whether the signs or wonders can be heard (Helaman 14: 6), just that there would be "many signs and wonders in heaven." Four years after the Nephite Nativity Event, it is mentioned that "the people began to forget those signs and wonders which they had *heard* and began to be less and less astonished at a sign of a wonder from heaven," (3 Nephi 2:1), and later it is mentioned that they "began to disbelieve all which they had *heard and seen*." This apparent textual inconsistency has been discussed by Royal Skousen (2014, 3203-4) as part of the Original Text project and may just be an unusual textual construction that still implies that the meaning is in fact that certain signs and wonders were both seen and heard even though it only says "heard" in that instance. Skousen states:

> "Mosiah 28:1 has a similar reference to hearing alone in its description of what the sons of Mosiah had both heard and seen when the angel of the Lord appeared to them and to Alma, the son of Alma."

The most straightforward reading of the text here would be that some signs and wonders were not seen but only heard (at least by some of the people) perhaps because some of the area was overcast. The only definitive sign that was referred to that *all* the people witnessed by sight was the night being illuminated after the sun went down (3 Nephi 1:17). Under either textual interpretation, the text here does require that at least some of the "signs and wonders" were heard and had an acoustic element caused by them or occurring concurrent with them and based on the being signs and wonders themselves being heard, likely an acoustic event that was different than the standard atmospheric sound of thunder.

It is important to note that when looking at the overall textual usage of the terms, the terms "signs" and "wonders" are used elsewhere in the Book of Mormon and do not imply a heavenly event (2 Nephi 26:13, Mosiah 3:15, Alma 37:27). Some years before the Nephite Nativity Event, the prophet $Nephi_2$ was preaching and "showing signs and wonders, working miracles among the people" (Helaman 16:4). So, these signs and wonders that the people heard are non-heavenly signs and wonders, presumably other miracles involving the preaching of the prophet $Nephi_2$ (or others). Thus, while the best textual construction to explain the Nephite Nativity Event would involve some of the "signs and wonders" to be heard, it is not an absolute requirement as there is another alternative possible broader textual interpretation.

Two years before the Nephite Nativity Event it is indicated that "there were great signs given unto the people, and wonders; that the words of the prophets might be fulfilled" (Helaman 16:13). This would at first glance seemingly be referring to the prophecies of Samuel the Lamanite, and the only signs and wonders that he mentioned were those in heaven (Helaman 14:6-7), perhaps implying that there were some heavenly signs and wonders occurring two years before the Nephite Nativity Event. However, this occurs too early for Samuel the Lamanite's prophecy, and it would be expected that, if the signs and

wonders were heavenly, they would have been noticed by the wicked Nephites and been some proof of the validity of Samuel the Lamanites prophecy. Second, it uses the plural "prophets," and Samuel the Lamanite was a single prophet. However, there is at least one other possibility. In the Messianic prophecies in the Isaiah sections cited by $Nephi_1$ state that "I and the children whom the Lord hath given me are for signs and wonders in Israel from the Lord of Hosts" (2 Nephi 18:18) and shortly thereafter "the people that walked in darkness have seen a great light; they that dwell in the land of the shadow of death, upon them hath the light shined" (2 Nephi 19:2). This can be interpreted as a foreshadowing of the Nephite Nativity Event. We also do not have the missing 116 pages, and there very well may have been some additional prophecies there involving non-heavenly signs and wonders that were to occur leading up to Christ's birth. Thus, it is not necessary to assume and identify heavenly signs and wonders to be occurring two years before Christ's birth, so no attempt is made to identify those here.

- The illumination of the night appearing is referred to in the singular as a "sign" which appears to be different from the mention of "signs" in association with the "wonders" which seems to be indicative that there were particular features of the lights or wonders that represented some more specific meanings related to the overall fact that Christ is going to be born. Also, the new star is considered a separate "sign."

<u>Other controlling parameters</u>

Lack of corroborating documentation in other areas

The night of brightness does not appear to be noted in other record-keeping cultures of the time (primarily Old World). This is not absolutely definitive, but the assumption is that this type of significant event would have been noted had it been atypical, especially among the few cultures that recorded astronomical events. It probably can be said with some certainty that if this event did occur it would have at least been noted by Gospel writers in Israel as a sign of Christ's birth. This is a geographic factor that must be considered.

Duration

Considering that it may have been possible for the brightness to have been present during the daytime on the first day and extended to dusk on the second day, any source that is considered cannot be of a longer duration than approximately 40 hours on the ground (this assumes an average time of 16 hours of light from dawn to dusk). The shortest duration would be approximately 8 hours (the hours normally in darkness from post-dusk to pre-dawn).

Potential Impact Proximity

There is no description of any of the features of an impact of a celestial body (single explosive sound and pressure waves).

Axial Rotation and Orbital Path of the Earth

The earth orbits around the sun and rotates on its axis in a counterclockwise direction when looking down on it from the North Pole (see figure 10). With this rotation, the side of the earth that first rotates into darkness (dusk) is on the backside of the direction of travel in the earth's orbital path around the sun. Since the brightness was present when this part of the earth became obscured from the sun, any explanation involving the earth running into material sitting in its orbital path is not a possible explanation for the brightness. This is why nearly all meteor showers (caused by the earth encountering

particles in its orbital path) can only be observed after midnight, after that location on the earth has rotated to the leading side of the earth's orbital path. Although some isolated meteors may enter the atmosphere on the trailing side of the direction of travel, they are not significant. Essentially, dawn occurs on the leading side of the earth, dusk on the trailing side. The average orbital speed around the sun is 66,600 miles per hour.

Geographic extent of the phenomena

The geographic extent of the observed phenomena includes all of the land of the Nephites, which at the time of Christ's birth under most Mesoamerica models would extend from near Veracruz, Mexico on the northwest to Chiapas, Mexico on the southeast across the Isthmus of Tehuantepec (340 x 130 miles). For a person 6 feet tall, the observable area to the visible horizon of the earth is a little more than 3 miles. Areas of the atmosphere above and beyond the horizon are visible for up to 40 miles. This distance is dependent on height, so a person standing on top of Mount Everest at 29,000 feet the visible horizon is 230 miles.

Thus, the phenomenon need not include the entire area of the darkened side of the earth, but it does need to either follow in some fashion the Nephite geographic area roughly 500 miles or less (based on atmospheric visibility) or be a band that is present above the Nephite area as it rotates with the earth through the night. As previously mentioned, at least with one textual interpretation, some Nephites may have just "heard" and may have not visually witnessed all or some of the signs or wonders, so it is possible the signs and wonders portion of the phenomenon may have not occurred uniformly across all the geographic area of the Nephites.

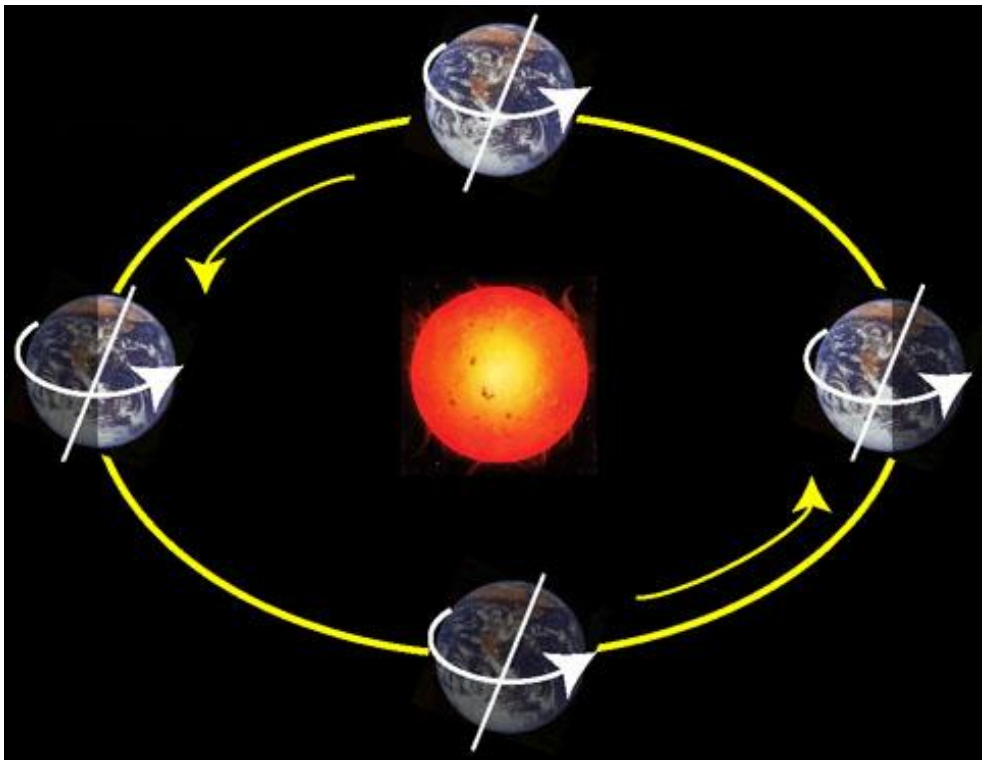


Figure 10 Rotation of the Earth in Relation to the Direction of Orbit (Taylor, 2012)

Illuminance

Illuminance is now measured in units called lux and is the amount of light received on a unit surface area. Interpreting the Book of Mormon reference to the degree of light is obviously a subjective one, as there was no ability to measure the actual light level. For example, a standard modern residential room has a lux of 200-500 lux, and direct sunlight is 100,000 lux (Velux 2021). Would an ancient person consider the light level of our current residential room "as light as though it was mid-day" as the Book of Mormon mentions? Perhaps, which would fall into the "overcast day" classification. This term to describe light is not found anywhere else in the Book of Mormon, so no obvious textual comparisons are possible. Daylight is also highly variable as it is dependent on atmospheric conditions (Schlyter 2017):

Source	Illumination (lux)
Sun overhead	130000
Full daylight (not direct sun)	10000-25000
Overcast day	1000
Very dark overcast day	100
Twilight	10
Deep twilight	1
Full Moon overhead	0.267

The Book of Mormon description does not indicate direct sun, but just mentions "as though it was mid-day," so may be a subjective standard as to the light at midday of just the day before the Nephite Nativity Event. For example, if the previous day prior to the event had been somewhat overcast (not so overcast that the sun could not be observed to set), then the relative light that would be consistent with the observation of continuing daylight may only be an illumination of 100 lux.

Supernova

A supernova is an explosion of a massive supergiant star. It may shine with the brightness of 10 billion suns. The BMC Team at Book of Mormon Central (2016) recently summarized seemingly the only three theories developed so far for the birth of Christ event. The first was a supernova, first proposed by Hugh Nibley (2004, 291), the second was a comet/asteroid explosion event similar to the Tunguska Event on June 30, 1908, proposed by John A. Tvedtnes (1998) (to be discussed later), and the third was a volcanic eruption as proposed by Brant Gardner (2007, 191-192) (also discussed later).

Hugh Nibley suggested that the sign could have been caused by a supernova, comparing it to one which "could be seen all over the world" and "was almost as bright as the sun" so seems to be the first to suggest this as a possibility for night of brightness.

The brightest supernova recorded occurred starting on May 1, 1006, AD, where a spectacularly bright star appeared suddenly in the southern sky in the constellation Lupus (the wolf), to the south of Scorpio. Observers in China, Japan, Egypt, Iraq, Italy, and Switzerland recorded observations of the star, which remained visible for several months before becoming lost in the glare of daylight.

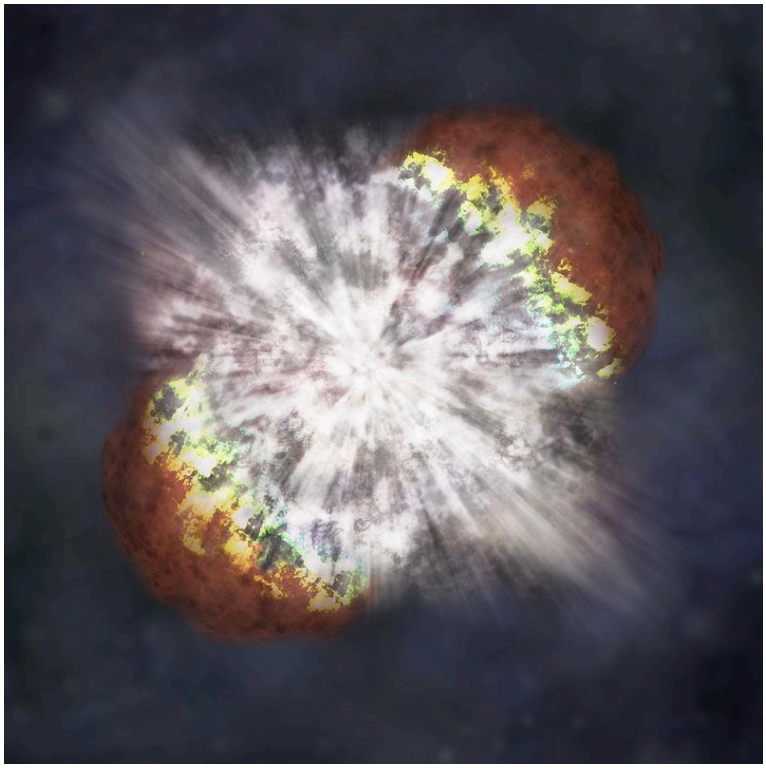


Figure 11 NASA artist's impression of the explosion of SN 2006gy, a super luminous supernova (NASA 2007)

A team of astronomers headed by Frank Winkler of Middlebury College combined precise digital observations with simple mathematics to estimate the apparent brightness of this event. On the magnitude scale used by astronomers, it was about minus 7.5, which puts its brightness a little less than halfway between that of Venus and that of the full Moon (Noao.ed 2003). The most explicit historical record of the 1006 AD star's brightness comes from the Egyptian physician and astrologer Ali bin Ridwan, who in fact compared the spectacle both with Venus and with the Moon.

"There's no doubt that it would have been a truly dazzling sight," Winkler concluded, "In the spring of 1006, people could probably have read manuscripts at midnight by its light."

However, with regards to the Nephite night of brightness, the supernova does not appear to meet all the required parameters of the Nephite Nativity Event. A supernova does seem to potentially have the ability to have sufficient luminosity for the event, but it fails with regards to other parameters.

First, a supernova is a singular light source, but the Nephite Nativity Event refers to "lights." Second, the appearance and longevity of a supernova are not consistent with the Nephite Nativity Event, namely, the time to peak visual magnitude of a supernova takes some days, and the supernova, once reaching peak magnitude, will continue for a week or two at or close to peak magnitude (see figure 12). This is not consistent with the Nephite Nativity Event, which appeared within a maximum period of 16 hours of daylight before the sun set. The Nephite Nativity Event was over in a maximum of 2 days, so the longevity is not consistent with a supernova. Supernovae and hypernovae (a highly energetic form of supernovae) are classified as Type I if their light curves exhibit sharp maxima and then die away gradually. The maxima may be about 10 billion solar luminosities. Type II has fewer sharp peaks at maxima and peaks at about 1 billion solar luminosities. They die away more sharply than Type I.

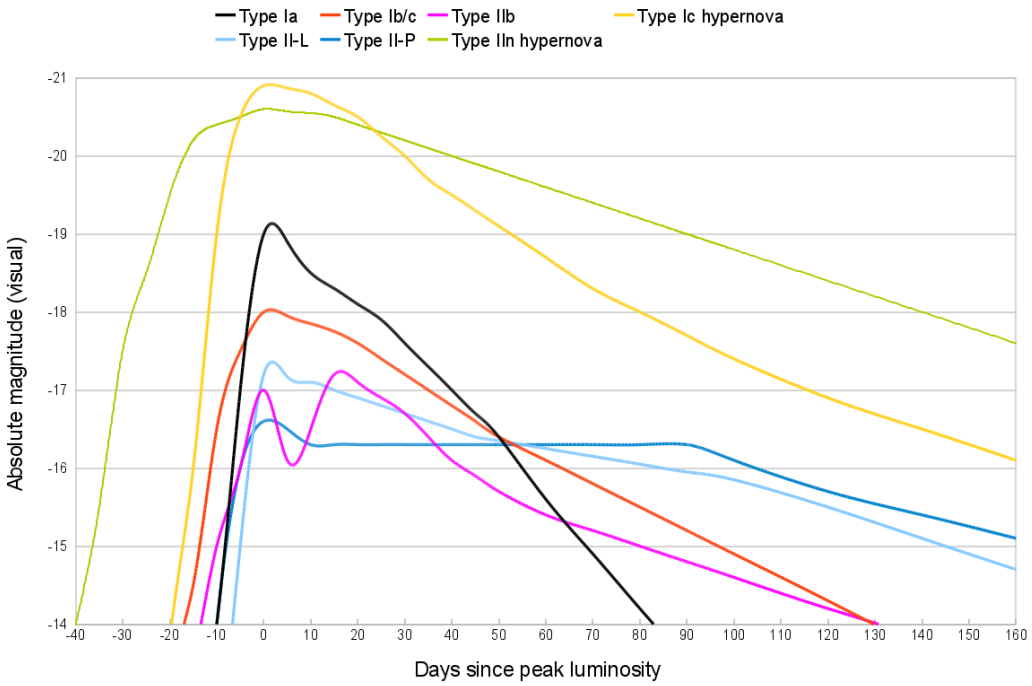


Figure 12 Light curves of supernovae (Lithopsian 2012)

In addition, the appearance of a supernova to an observer on earth is as a very bright star, so the requirement that there be signs and wonders does not appear to match the appearance of a supernova, at least by itself.

In addition, a supernova could be observed by others as its illumination is not limited to a geographic area, so this theory runs into problems with the expectations that other cultures would have recorded the event. Finally, supernovae leave remains in their wake, and no remains of a supernova 2000 years ago have ever been discovered (Nicholl 2015, 78).

Noctilucent clouds

Noctilucent clouds, or night shining clouds, are tenuous cloud-like phenomena in the upper atmosphere of Earth. They consist of ice crystals and are only visible during astronomical twilight. Noctilucent roughly means "night shining" in Latin. Too faint to be seen in daylight, they are visible only when the observer and the lower layers of the atmosphere are in Earth's shadow, but while these very high clouds are still in sunlight. They are the highest clouds in Earth's atmosphere, located in the mesosphere at altitudes of around 76 to 85 km (249,000 to 279,000 feet).

Figure 13 Noctilucent clouds in 2019 (Pärn 2019)

The Tunguska Event mentioned previously involved an explosion (current scientific consensus is it was an atmospheric explosion of a comet) which caused the formation of noctilucent clouds. It was documented that after the Tunguska explosion, from June 30 to July 1, 1908, covering approximately 4.6 million square miles, there was no night, and the luminosity was as light as daytime (Rubtsov 2009). Mother-of-pearl clouds (a form of noctilucent cloud) were reported (Tvednes 1998).

Some contend that the massive amount of water vapor spewed into the atmosphere by the comet's icy nucleus was caught up in swirling eddies with tremendous energy by a process called two-dimensional turbulence, which explains why the noctilucent clouds formed a day later many thousands of miles away.

Noctilucent clouds may be seen at latitudes of 50° to 65° (Gadsden and Parviainen 1995). They seldom occur at lower latitudes although there have been sightings as far south as Paris, Utah, Italy, Turkey and Spain. It is generally not possible to have noctilucent clouds beyond these limits because noctilucent clouds require water vapor, dust, and very cold temperatures to form. In addition, away from the very northern and southern latitudes, they are only observable close to dusk or dawn. The reason for this is that the clouds are not a light source themselves, but only reflect sunlight coming from beyond the horizon (see figure 15). Noctilucent clouds are the highest clouds in the atmosphere. That is one reason that they can be seen as illuminated while the lower atmospheric clouds are dark. Being higher, the sun is still able to hit them after it has gone down on the horizon.

Since the most advanced geographic models point to a Mesoamerican location for the Book of Mormon, noctilucent clouds alone are not a good candidate for the Nephite Nativity Event, as the Mesoamerican latitudes (roughly between 14 and 22 degrees) are too low for noctilucent clouds to be present during the entire night, only shortly after sundown and before sunrise.

Figure 14 Mother of Pearl Clouds over Oslo, Norway in 2014 (Strømme 2014)

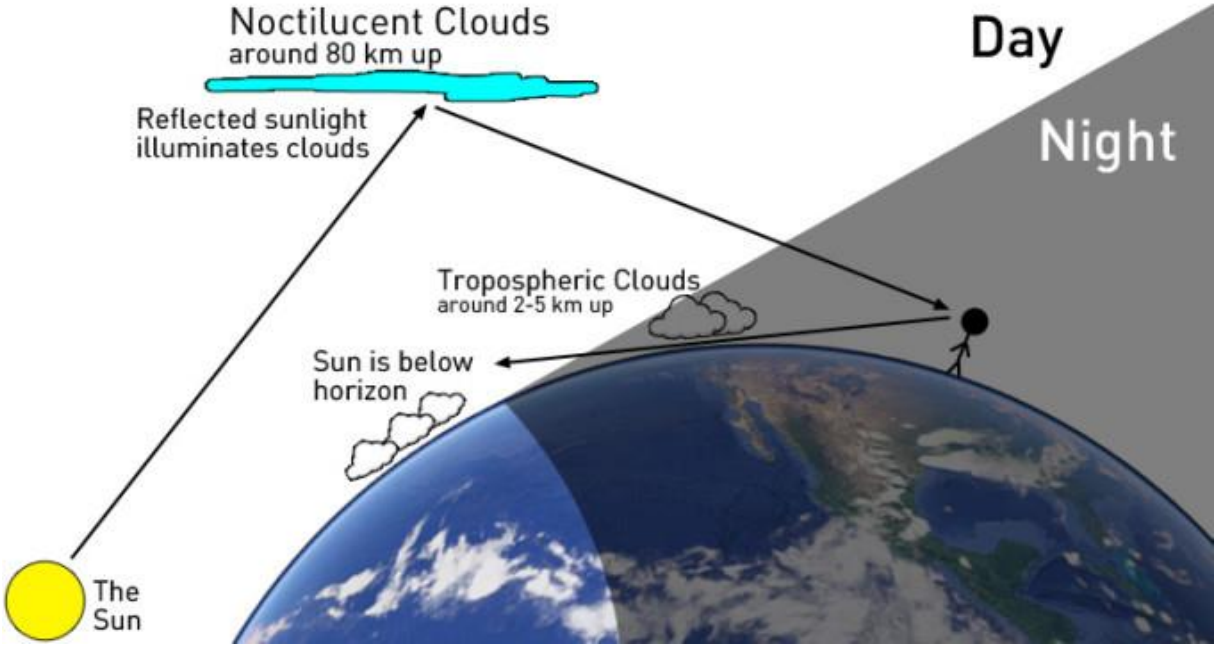


Figure 15 Diagram of the extent of visibility of noctilucent clouds (Sutherland 2020)

Atmospheric explosion of an Asteroid/Comet

As previously mentioned, for some months after the Tunguska Event, because of the residual dust in the atmosphere, there were other atmospheric effects such as spectacular sunrises and sunsets throughout the world and daytime anomalies such as intense and prolonged solar halos (including blue and brown colors) and mother-of-pearl clouds (Tvedtnes 1998). Others assert that the noctilucent clouds were only a secondary effect, and that not all the illumination can be accounted for by the noctilucent cloud formation, possibly implying a layer of reflective dust higher than the formation of noctilucent clouds (German 2010). However, even if an extremely high-altitude layer of reflective dust was present where sunlight could be reflected to lower altitudes, like the Tunguska Event, it likely would have been of a longer duration than one night, so is not a likely explanation for the Nephite Nativity Event. While not being a likely candidate for the night of illumination, it could technically be possible that a more minor explosion theoretically could have been part of the "signs and wonders" as it certainly could be heard.

Volcanic eruption

Brant Gardner (2007, 191-192) has proposed that the light source could have been produced by a volcanic eruption. There have been tens of thousands of volcanic eruptions observed in modern times, with none having illumination described in the Nephite Nativity Event. On the contrary, most serve to darken, not illuminate, an area; thus, this proposal cannot meet the most important parameter of the Nephite Nativity Event, namely a night of brightness. While not being a likely candidate for the night of illumination, it is theoretically possible that a minor eruption may be part of the "signs and wonders" as it certainly could be heard; however, it still would be incompatible with the illumination, and the signs and wonders are described as being "from heaven."

Meteor Shower/Comet tail

Meteor showers occur when the earth passes through an area of residual dust, typically the debris stream shed by a comet. The residual dust is also still moving in the direction of the original comet, but the main motion is that of the earth. The problem with the Nephite Nativity Event being some sort of a meteor shower is that, as previously mentioned, because the earth is essentially running into the particles, generally speaking significant meteor showers can only occur during the second half of the night. The Draconid and Andromedid showers are of this type but only occur from the late evening to early morning. The Geminid shower, also of this type does occur all night. These showers occur in October, November, and December, so do not occur in the correct season for Christ's birth (April). In addition, because the tails of comets are extremely wide, the speed of the earth is such that a one-night event is not consistent with meteor showers, as meteor showers last from 2 to 3 weeks, meaning it takes that long for the earth to pass through the debris stream.

It is, however, possible that within a 2-to-3-week meteor shower one night can be fairly spectacular, like the 1833 Leonids (see figures 16 and 17). It has been estimated that at the peak of the 9-hour event there were 240,000 meteors per hour. It was described by Professor Olmstead of Yale College (Mechanics Magazine 1833):

> "… a constant succession of fire-balls, resembling sky-rockets, radiating in all directions from a point in the horizon near the zenith, and follow the arch of the sky towards the horizon. They proceeded to various distances from the radiating point, leaving after them a vivid streak of light, and usually exploding before they disappeared. The balls were of various sizes and degrees of splendor: some were mere points, but others were larger and brighter than Jupiter or Venus and one … was judged to be nearly as large as the moon. The flashes of light though less intense than lightening, were so bright as to waken people in their beds. One ball that shot off to the northwest … left, just behind the place of explosion, a phosphorescent train of peculiar beauty. This line was at first nearly straight, but it shortly began to contract in length, and dilate in breadth, and to assume the figure of a serpent folding itself up, until it appeared like a small luminous cloud of vapor."

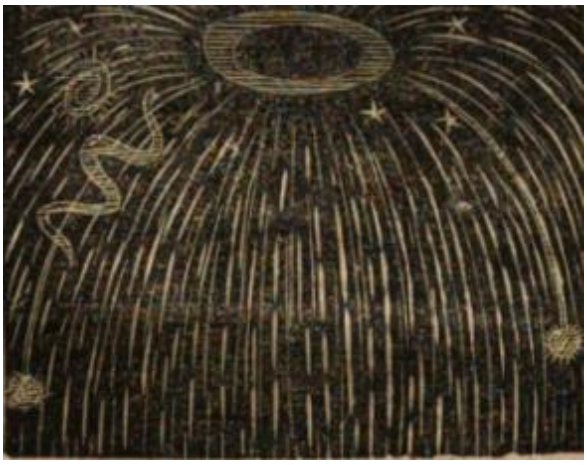


Figure 16 Illustrations of the 1833 Leonid meteor shower made by one present (Mechanics Magazine 1833)

It may be possible that a meteor shower may have occurred during the Nephite Nativity Event, adding to the illumination and "signs and wonders," and may have added to the illumination present. Meteors can create sound waves. As they tear their way through the atmosphere, they can create a sonic boom in the same way a fast-moving airplane does, but because of their height, such sonic booms would not be heard until many minutes after the meteor appeared to viewers on Earth. Hissing or buzzing noises have been heard simultaneously with seeing a meteor. These may be caused by the very low frequency radio waves that are generated by meteors; these waves can cause glasses, plant foliage, pine needles and even hair to vibrate (Gunn 2021).

The earth passing through the tail of an active comet (this has not been historically observed) might be expected to be of high illumination. However, just like a meteor shower, it would generally not last all night, and would require weeks (if not longer) for the earth to pass through the tail of a typical comet. Based on the determination of Christ's birth to be in April (to be discussed later), the Lynids meteor shower, which was noted 2700 years ago by Chinese astronomers, may have been some element of the Nephite Nativity Event as it occurs during the correct period of April of each year.

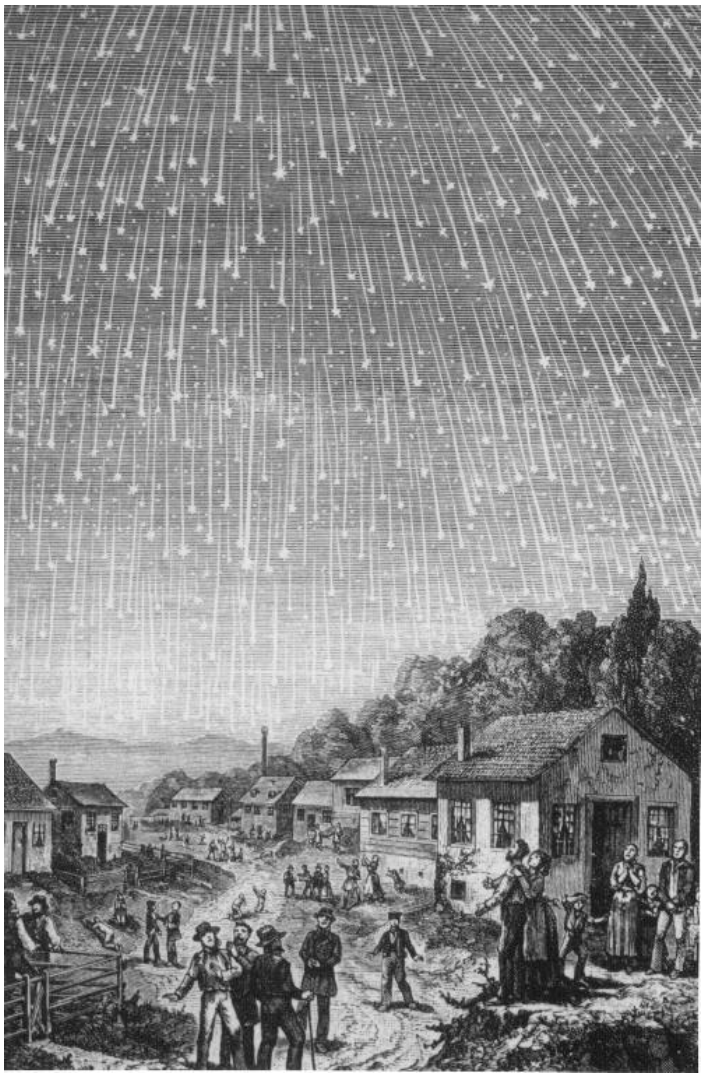


Figure 17 Illustration of the Meteoric Shower of November 13, 1833 (Review and Herald 1889, 66)

Zodiacal Light and Gegenschein

The zodiacal light (also called false dawn when seen before sunrise) is a faint, diffuse, and roughly triangular white glow that is visible in the night sky and appears to extend from the Sun's direction and along the zodiac, straddling the ecliptic (i.e., the route of the sun through the sky). Sunlight reflected by interplanetary dust causes this phenomenon. Because of the nature of the location of the dust, dust escaping the dust storms of Mars appears to be the source of the dust (see figure 19).

Like zodiacal light, gegenschein is reflected sunlight scattered by interplanetary dust. It occurs at a point that is exactly opposite of the sun's direction, and the glow is produced because the dust at this point is directly reflecting the light back to earth, similar to a full moon.

Both the gegenschein and the zodiacal light are generally not candidates for the Nephite Nativity Event by themselves, there is no potential for increased luminosity by themselves, absent changes in solar activity other than their dim glow. Lacking external events, they are also constant and consistent, and are not one day events.

Figure 18 Zodiacal Light (Wallpaper Access 2021)

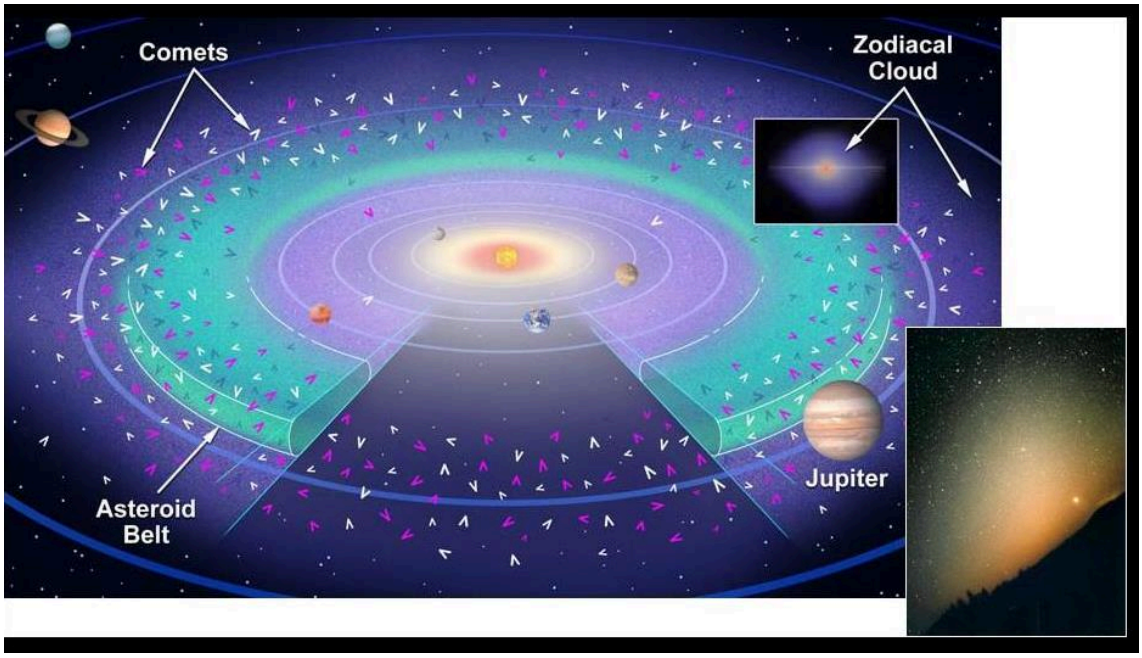


Figure 19 Zodiacal Cloud (Blanchard, Nesvorný and Jenniskens with [Inset] Dominic Cantin 2010)

Figure 20 Gegenschein (ESO/Y. Beletsky 2008)

Magnetosphere light effects

A magnetosphere is that area of space, around a planet, that is controlled by the planet's magnetic field. The shape of the Earth's magnetosphere is the direct result of being blasted by solar wind (see figure 21).

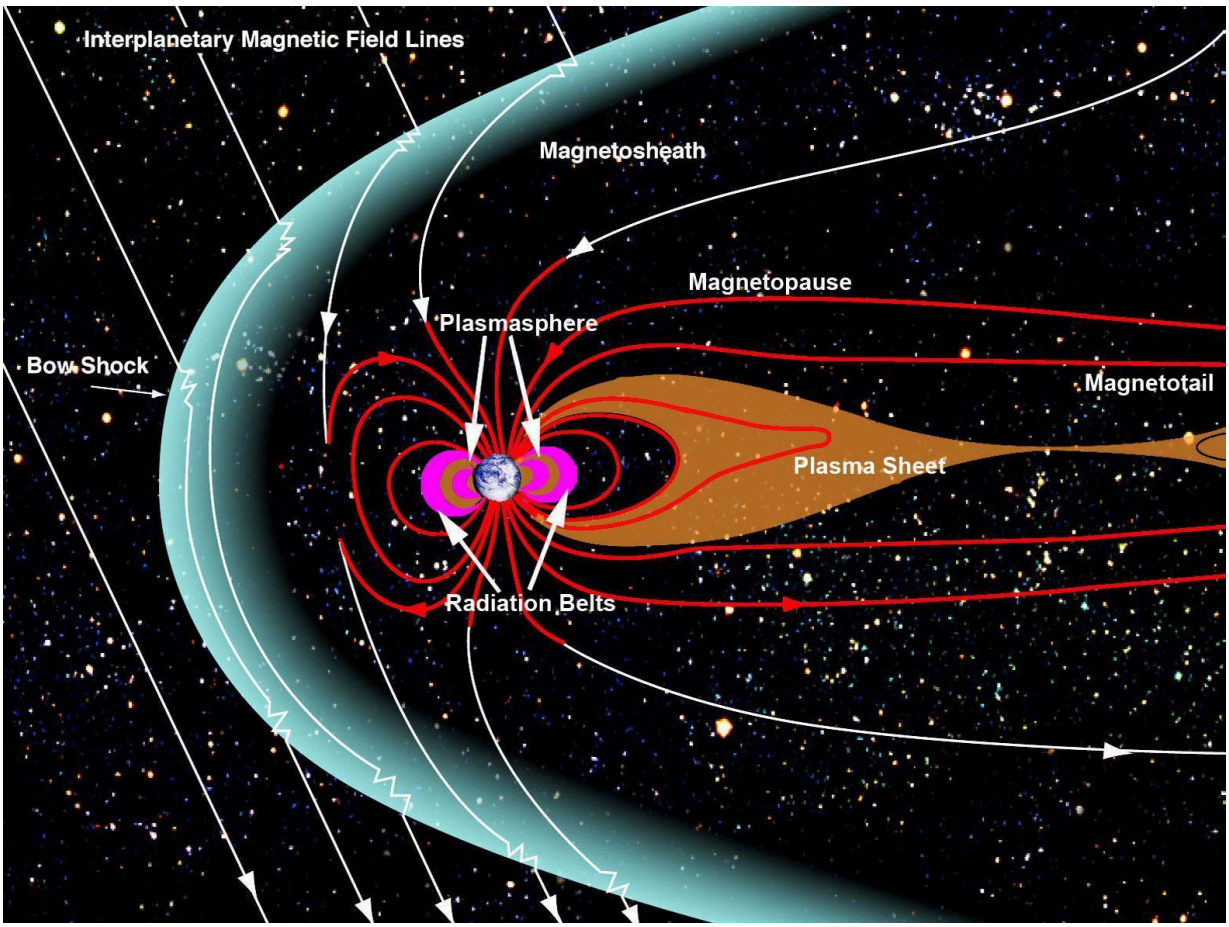


Figure 21 The solar wind and the earth's magnetosphere (Planetary Society 2021)

Aurora Borealis and Southern Lights

Auroras are the result of disturbances in the magnetosphere caused by the solar wind. These disturbances alter the trajectories of charged particles in the magnetospheric plasma. These particles, mainly electrons and protons, precipitate into the upper atmosphere (generally at an altitude of 80-300 km). The resulting ionization and excitation of atmospheric constituents emit light of varying color (most often green, red and blue) and complexity. The form of the aurora, occurring regularly within bands around both polar regions, is also dependent on the amount of acceleration imparted to the precipitating particles.

Eerie sounds associated with the auroras have surprised and even frightened observers for thousands of years. Through the centuries and even among recent scientific observers the sounds have been described as a "great noise," "faint rustling," "hissing," "swishing," "crackling," "curious faint whistling sound," "a whooshing noise that repeated …during an interval of some ten seconds," "a distant crackling hiss – like an object zipping over one's head ... sssssSSSSSssss … not unlike a spitting cat," "swishing …

resembled music produced when the strings of a harp are lightly touched," and a "rhythmically repeating rustling noise." The reports often indicate that the sound seems to match the movement of the aurora. There have even been a half dozen reports of a smell or a sulfur or ozone odor, similar to small worn electrical motors (Eather 1980, 153-61; Davis 1992, 183-95).

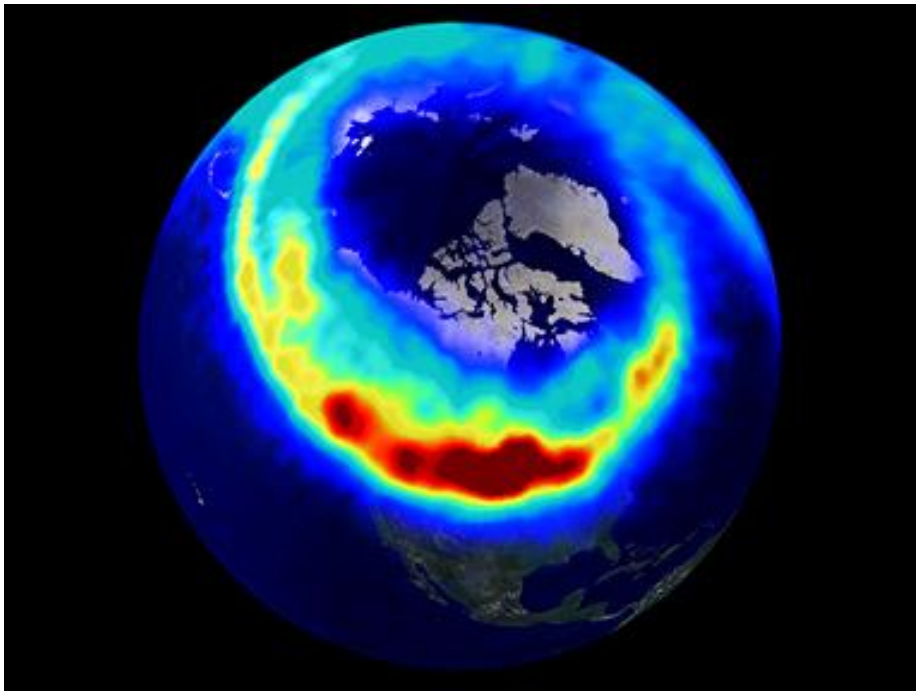


Figure 22 The POLAR satellite looks down on an aurora from high above the Earth's north polar region on 22 October 1999, showing the northern lights in their entirety. The glowing oval is imaged in ultraviolet light. The most intense aurora activity appears in bright red or yellow. It is typically produced by magnetic reconnection events in Earth's magnetotail, on the night side of the Earth (Lang 2010).

Scientists had scoffed at these reports based on the fact that auroras are so high up that no sound generated by the aurora, even if there was any, could possibly reach the observers of the auroras. Recent sophisticated acoustic studies of the aurora have identified short "clap" sounds which corresponded to the magnetic field fluctuations and occurred 60 to 70 meters above ground level in the clear sky. The current explanation is that temperature inversion that may be present at the level of the sound claps traps rising negative charges, while the geomagnetic storm increases the conductivity of the upper atmosphere, and positive charges are accumulated above the inversion layer. After the charges build up, a sudden discharge then occurs that produces a crackling or clapping sound together with the magnetic pulses (Laine 2016).

Stable aurora red (SAR) arc

Stable Auroral Red (SAR) arcs were discovered in 1956. These are diffuse, persistent, practically monochromatic auroral forms peculiar to mid-latitude regions of earth (see figure 23).

Strong Thermal Emission Velocity Enhancement (STEVE)

STEVE (Strong Thermal Emission Velocity Enhancement) is an atmospheric optical phenomenon that appears as a purple and green light ribbon in the sky, named in late 2016 by aurora watchers from

Alberta, Canada. According to analysis of satellite data from the European Space Agency's Swarm mission, STEVE is caused by a 16-mile-wide ribbon of hot plasma at an altitude of 280 miles (American Geophysical Union 2018). The thin light ribbons of STEVE were only visible a few times per year. The light from STEVE is also showing up closer to the equator than the aurora.

It would initially seem that the auroras, the SAR arc, and STEVE would not be candidates for any element of the Nephite Nativity Event as they are too far north or south. However, a rare type of solar activity changes the geographic location and magnitude of these magnetosphere phenomena and provides the almost certain context and explanation of the Nephite Nativity Event.

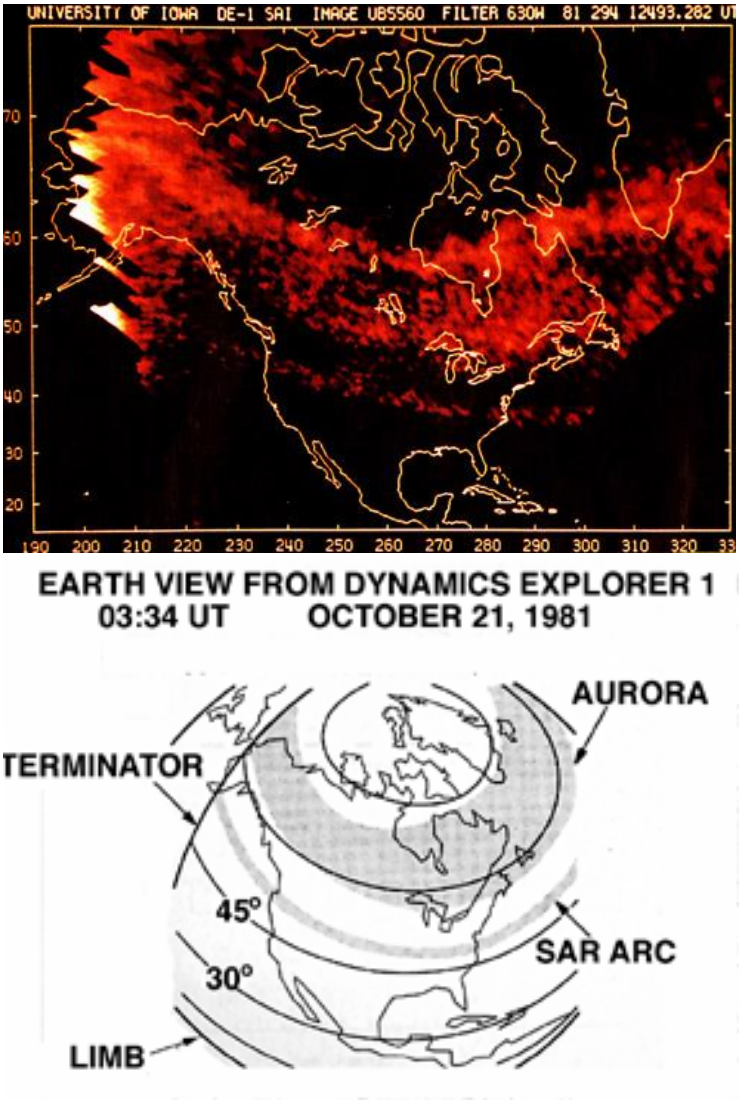


Figure 23 Location and Stable auroral red (SAR) arc emission observed over North America from space by the Dynamics Explorer 1 satellite (Frank et al 2021)

Figure 24 'STEVE' on 17 August 2015 at Little Bow Resort, AB, Canada (Elfiehall 2015)

Coronal Mass Ejection

A coronal mass ejection (CME) is a significant release of plasma and accompanying magnetic field from the solar corona, specifically from sunspots. They often follow solar flares and are normally present during a solar prominence eruption. Plasma is released into the solar wind and can be observed in coronagraph imagery. Coronal mass ejections release large quantities of matter and electromagnetic radiation into space above the Sun's surface, either near the corona, or farther into the planetary system, or beyond (interplanetary CME). The ejected material is a magnetized plasma consisting primarily of electrons and protons.

The solar cycle or solar magnetic activity cycle is a nearly periodic 11-year change in the sun's activity measured in terms of variations in the number of observed sunspots on the solar surface. Sunspots have been observed since the early 17th century and the sunspot time series is the longest continuously observed and recorded time series of any natural phenomena.

Coronal mass ejections are often associated with other forms of solar activity, but a broadly accepted theoretical understanding of these relationships has not been established. CMEs most often originate from active regions on the sun's surface, such as groupings of sunspots associated with frequent flares. Near solar maxima, the sun produces about three CMEs every day, whereas near solar minima, there is about one CME every five days (Fox 2021). The size of these events themselves does not depend on the phase of the solar cycle. A case in point are the three large X-class flares that occurred in December

2006, very near solar minimum; the X9.0 flare stands as one of the brightest on record (Spaceweather.com 2017).

When the ejection is directed towards Earth and reaches it as an interplanetary CME (ICME), the shock wave of traveling mass causes a geomagnetic storm that may disrupt Earth's magnetosphere, compressing it on the day side and extending the night-side magnetic tail. When the magnetosphere reconnects on the night side, it releases power on the order of terawatt scale, which is directed back toward Earth's upper atmosphere.

Solar energetic particles can cause particularly strong auroras in large regions around Earth's magnetic poles. As mentioned, these are also known as the Northern Lights (aurora borealis) in the northern hemisphere, and the Southern Lights (aurora australis) in the southern hemisphere. When impacted by a large CME, the auroras are intensified, and the auroral oval moves further south in the northern hemisphere, and further north in the southern hemisphere.

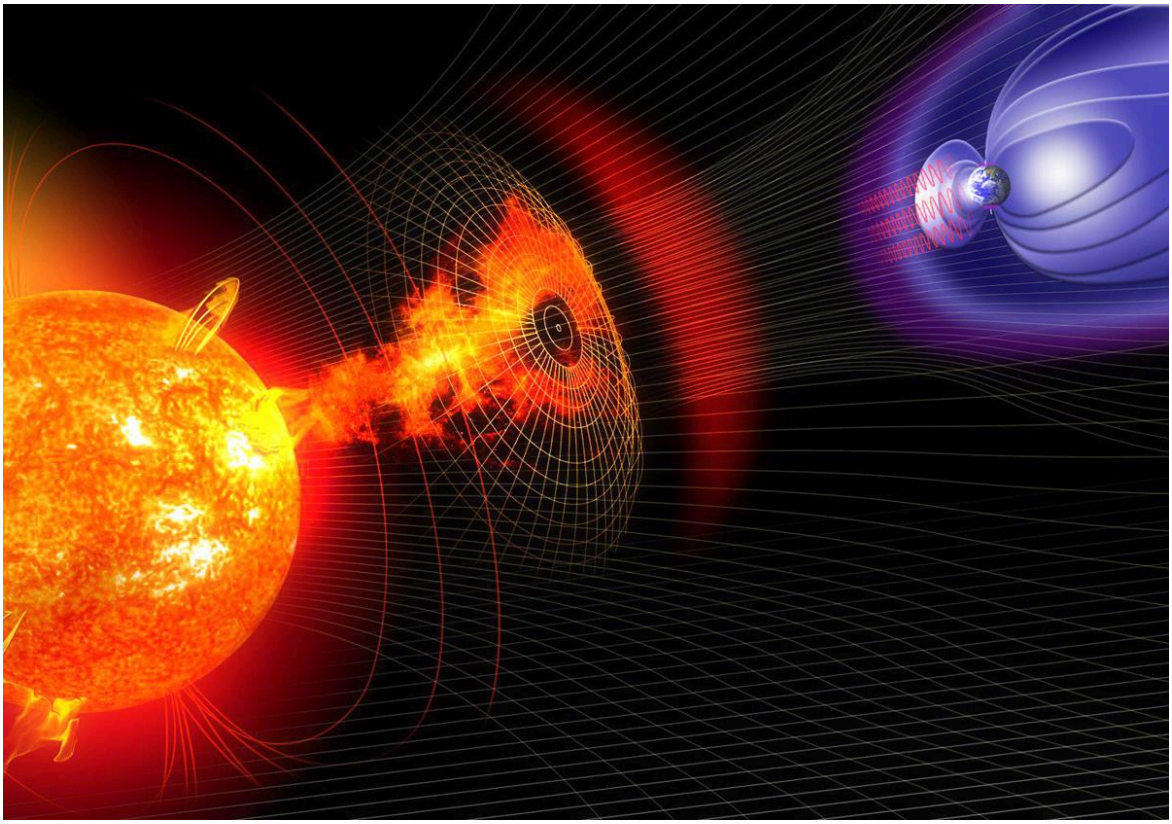


Figure 25 Depiction of a Coronal Mass Ejection moving towards Earth (Major 2012)

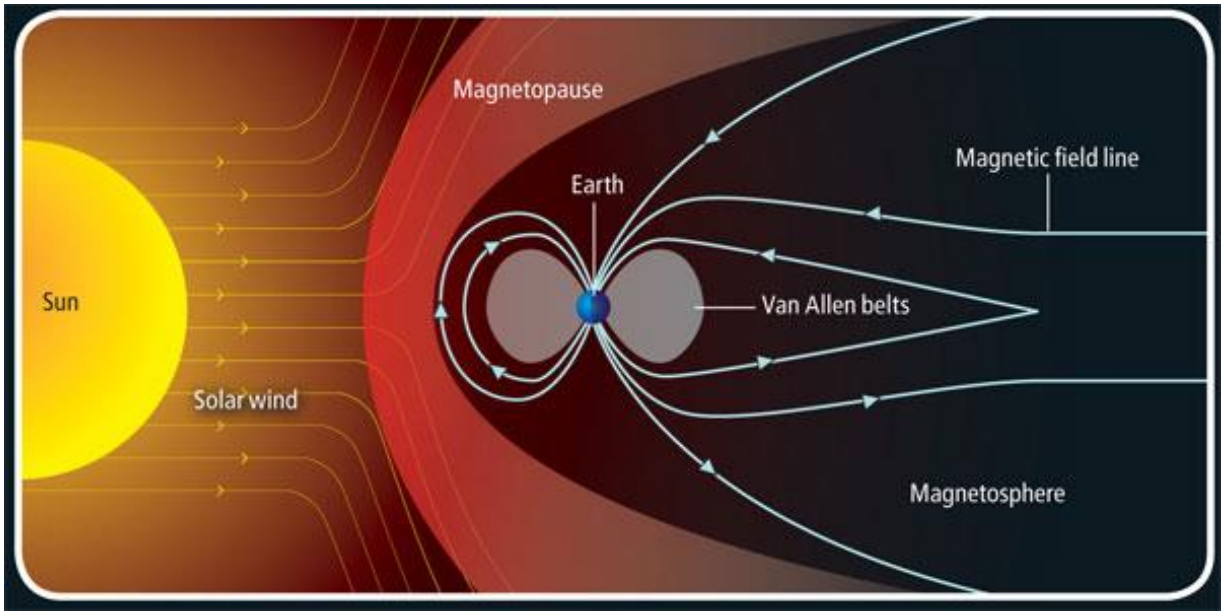


Figure 26 Normal condition of the earth's magnetosphere (Chillymanjaro 2011)

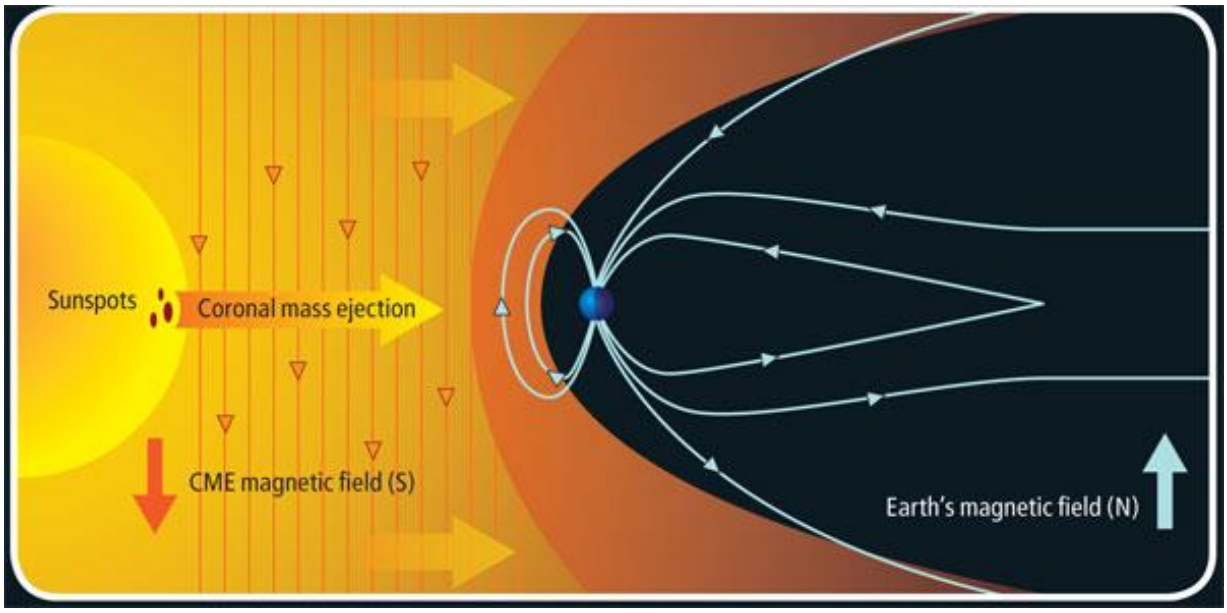


Figure 27 Condition of the earth's magnetosphere during a CME event (Chillymanjaro 2011)

Carrington Event CME

The largest recorded geomagnetic perturbation, resulting presumably from two CMEs hitting the Earth's magnetosphere in sequence, was the solar storm of 1859 (the Carrington Event), which took down parts of the recently created US telegraph network, starting fires and shocking some telegraph operators.

Many sunspots appeared on the sun from August 28 to September 2, 1859. Bright and variable sky colors were observed in the evening on August 28 and subsequently reported in various newspapers in

the New England area. On August 29, southern auroras were observed as far north as Queensland, Australia. Just before noon on September 1, the English amateur astronomers Richard Carrington and Richard Hodgson independently recorded the earliest observations of a solar flare, observing “two patches of intensely bright and white light” erupting from sunspots they were observing. Carrington and Hodgson compiled independent reports which were published side by side in the Monthly Notices of the Royal Astronomical Society and exhibited their drawings of the event at the November 1859 meeting of the Royal Astronomical Society.

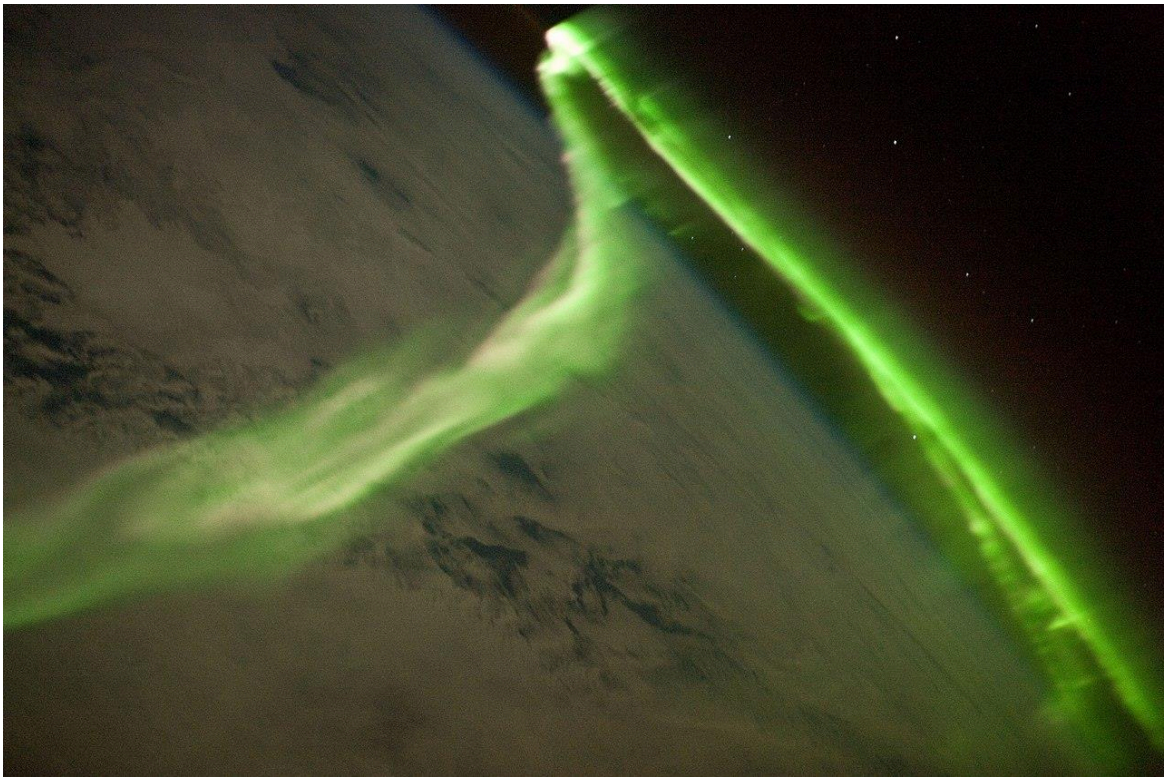


Figure 28 Aurora during a geomagnetic storm that was most likely caused by a coronal mass ejection from the Sun on May 24, 2010, taken from the International Space Station (ISS 2010)

Carrington (1859), projecting through his telescope, described that the white light lasted a little over an hour and reported:

> The image of the sun's disk was, as usual with me, projected on to a plate of glass coated with distemper of a pale straw colour, and at a distance and under a power which presented a picture of about 11 inches diameter. … and was engaged at the time in counting from a chronometer and recording the contacts of the spots with the cross-wires used in the observation, when within the area of the great north group (the size of which had previously excited general remark), two patches of intensely bright and white light broke out, … my first impression was that by some chance a ray of light had penetrated a hole in the screen attached to the object-glass, by which the general image is thrown into shade for the brilliancy was fully equal to that of direct sun-light,”

Hodgson (1859), also using his telescope, reported:

> "While observing a group of solar spots on the 1st September, I was suddenly surprised at the appearance of a very brilliant star of light, much brighter than the sun's surface, most dazzling to the protected eye, …the rays extending in all directions, and the centre might be compared to the dazzling brilliancy of the bright star "Lyrae" when seen in a large telescope of low power."

The flare was associated with a major coronal mass ejection (CME) that traveled directly toward Earth, taking 17.6 hours to make the 93-million-mile journey. Typical CMEs take several days to arrive at Earth, but it is believed that the relatively high speed of this CME was made possible by a prior CME, perhaps the cause of the large aurora event on August 29 that "cleared the way" of ambient solar wind plasma for the Carrington Event (Hayakawa et al 2018).

On September 1–2, 1859, one of the largest geomagnetic storms (as recorded by ground-based magnetometers) occurred. Auroras were seen around the world, those in the northern hemisphere as far south as 22-23 degrees in magnetic latitude. The aurora was visible from the poles to lower latitude areas such as south-central Mexico (Mexico City, Mineral de Zimapán, Querétaro, Guadalajara, Guanajuato, San Luis Potosi, and San José de Gracia), Queensland, Cuba, Hawaii, southern Japan and southern China, and even at lower latitudes very close to the equator, such as in Colombia (González-Esparza et al 2018).

Luminosity

During a CME, intense electron precipitation can cause much brighter auroras than normally expected at low latitudes. During the Carrington Event, in Guadalupe, Mexico the auroral display was described as "ruddy light" noticeable in the interior of the houses, and in La Union, Mexico it was described as "light … equal to that of day-break," while other records in East Asia compared the auroral display to a conflagration or colossal fire.

Auroras were seen over the Rocky Mountains in the U.S. and were as bright as daylight such that the glow woke gold miners, who began preparing breakfast because they thought it was morning (Odenwald 2008). People in the northeastern United States could read a newspaper by the aurora's light (Lovett 2011).

In Abbeville, South Carolina, masons awoke and began to lay bricks at their job site until they realized the hour and returned to bed. In Bealeton, Virginia, larks were stirred from their sleep at 1 a.m. and began to warble. A woman on Sullivan's Island in South Carolina (Klein 2018) reported:

> "The eastern sky appeared of a blood red color. It seemed brightest exactly in the east, as though the full moon, or rather the sun, were about to rise. It extended almost to the zenith. The whole island was illuminated. The sea reflected the phenomenon, and no one could look at it without thinking of the passage in the Bible which says, 'the sea was turned to blood.' The shells on the beach, reflecting light, resembled coals of fire."

The appearance of rays with whitish, red, purple, and violet colors may result from a fold in a sheet-like structure of the aurora. When the sheet-like structure of the aurora is folded, the line-of-sight integral of the light is increased, resulting in a localized enhancement of brightness at all wavelengths (Hayakawa et al 2018). Based on the description of large areas of red aurora during the Carrington Event, the SAR

arcs, which are not often very visible, may also have been actively illuminated as very bright SAR arcs have been observed when large magnetic storms appear.

The larger overall Carrington Event auroras were classified as being somewhat brighter than a full moon, so overall may not have been as bright as regular daytime, but there clearly were local locations where the brightness was described as similar to the Nephite Nativity Event.

While not necessarily recognized as part of the Carrington Event, it has since been observed in 1990 that a brightening of the zodiacal light occurred in conjunction with a solar flare event and occurred concurrently with a vigorous auroral display that had moved to a lower latitude south into the English midlands (Bone 1996, 86-87). So, it is possible that brightening of the zodiacal light may have contributed to the illumination of the Carrington Event and the Nephite Nativity Event.

Also, not part of the Carrington Event, historical Spanish chronicler Friar Duran reports among the Aztecs ten years before the Spaniards came (early 1500's) a possible auroral event that was as bright as day:

> "… a marvelous and wondrous thing appeared in the sky which seemed to be a very large and brilliant flame. It seemed to lie in the heavens themselves. It was wide in its nether regions and sharp in its upper parts, as when a fire burns. It seemed that its point reached to the mid-heavens. It rose in the East after midnight and came out with such brilliance that it seemed like day. It lasted until morning and then it was lost from sight."

Figure 29 Drawing of an auroral display with a corona at the Melbourne Flagstaff Observatory in Australia on September 2, 1859 at 10:26 PM (scanned frontpiece, Neumeyer 1864). Neumeyer (1864 242) describes his auroral observation as follows: "… the last 10 or 15 minutes a beautiful red arc of light, extending from E. to W., and passing through the crown, had become almost stationary."

This was thought to be a possible auroral event but was then thought initially that its duration was too short for an auroral event, and it should have appeared in the north (Trejo and Ricalde 1998). There is conjecture that it remained for a year, but no documentation has been identified to support this. This opinion was also made prior to the more recent thorough documentation of the behavior of the aurora

in the Carrington Event showing that the time and luminosity of the Aztec event would be consistent with a CME auroral event.

Other non-Carrington Events involving night illumination sufficient to read newspapers involving solar flare activity have been reported in 1886 in Florida; January 7, 1831, in Europe; and January 26, 1857, in Quito, Ecuador (Corliss 1982, 30-33).

Duration and Geographical Extent

The geographical extent of the Carrington Event auroras is shown in figure 30. The duration of the geomagnetic storms compromising the Carrington Event has been determined by a compilation of observations at the time (see figure 31).

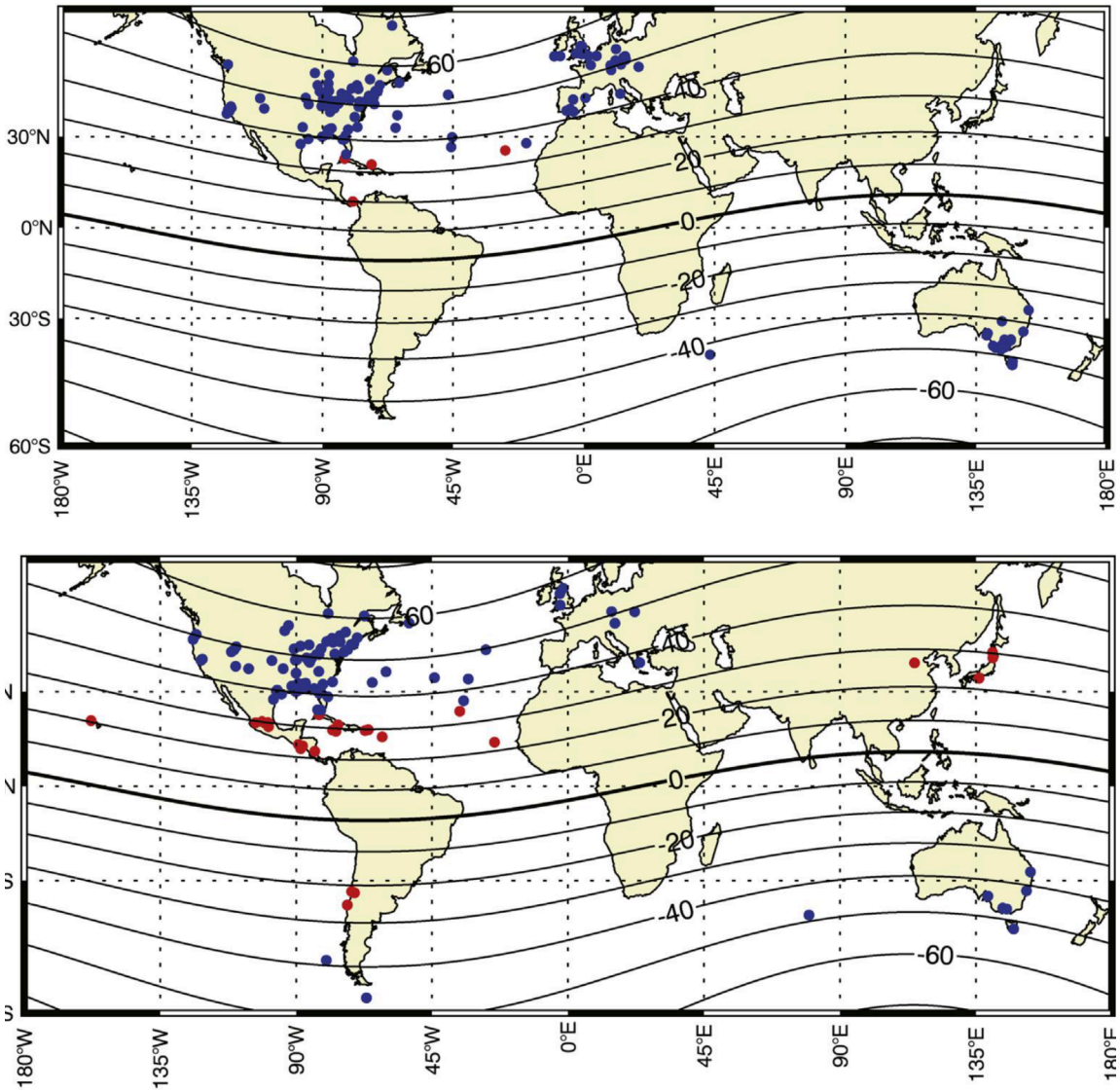


Figure 30 Observational sites of auroral displays during August 28/29, 1859 (a: top) and September 1/2 (b: bottom). Only the sites within ±60° are shown. The sites with magnetic latitude lower than 35° are shown in red. The sites with magnetic latitude higher than 35° are shown in blue. The contour indicates the magnetic latitudes in 1859 calculated based on the GUFM1 magnetic field model (Hayakawa et al 2018).

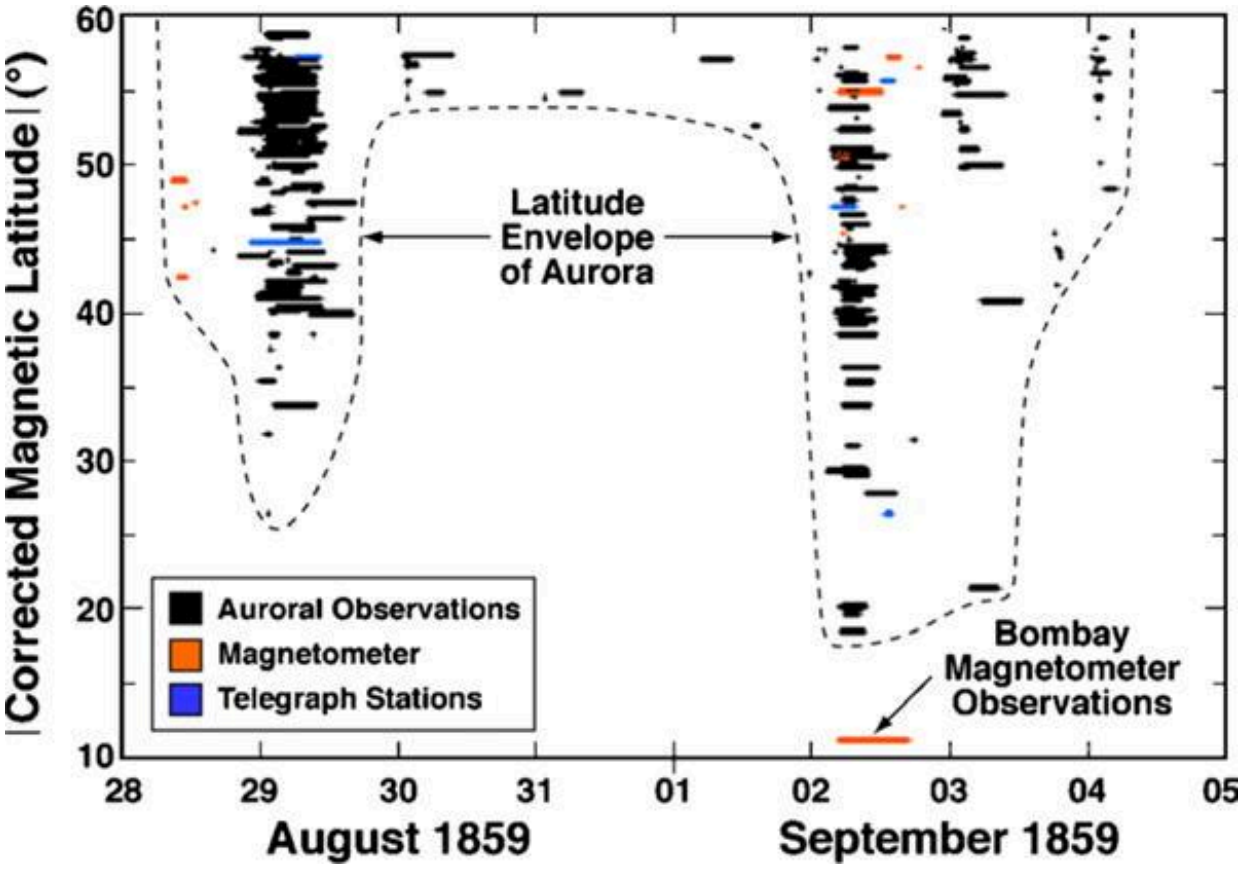


Figure 31 Duration of the Carrington Event and relation to magnetic latitude (Green et al 2006)

Comparison of the Nephite Nativity Event with the Carrington Event

Illumination

While the overall entirety of the Carrington Event which was rated as significantly higher illumination than a full moon but lower than full daylight, specific local areas of the Carrington Event did approximate daylight according to witnesses there as discussed above. Since the area of the Nephites is restricted geographically, this would be generally consistent with the Carrington Event also having some areas of higher luminosity. In addition, the Nephite Nativity Event may have been a more powerful CME than the Carrington Event, leading to areas of higher illumination and extent.

Extent of aurora oval expansion

As shown in figure 31, the southern extent of the expansion of the auroral oval during the Carrington Event was observed in Mesoamerica and even south of current Book of Mormon geographic models. The Carrington Event had great auroral displays occurring at very low magnetic latitudes (22-23 degrees as mentioned above). It has been recognized that the southern extent of the expansion of the auroral oval is correlated to the intensity of the geomagnetic storm (Hayakawa et al 2018).

Because the earth's magnetic pole and field has shifted with time, in order to do a comparison with the Nephite Nativity Event, it is necessary to determine the magnetic pole and equivalent latitudes at the time of the Nephite Nativity Event. A sophisticated archaeomagnetic computer model developed by M.

Korte, F. Donadini, and C. G. Constable (2009) called ARCH3K.1 can be utilized to determine the magnetic latitude at the time of Christ's birth. After running this model, I determined that the magnetic field latitude for Mesoamerica at the time of Christ's birth (6 BC) was 30 – 37 degrees. The 30–37-degree magnetic latitude is much further north than the southern extent of the Carrington Event, so Mesoamerica would have clearly fallen well within the aurora oval of a Carrington level event in 6 BC. In fact, for this parameter, the 6 BC Nephite Nativity Event could have been an event of lesser intensity than the Carrington Event because it does not require the storm intensity required to extend south to 22 – 23 degrees.

Duration comparison

The Nephite Nativity Event potentially ranged from a period of 8 hours to 40 hours. The Carrington Event consisted of at least two primary CMEs and the duration of either one falls within the Nephite Nativity Event window (roughly 12 hours and 36 hours) so is consistent with the Nephite Nativity Event.

Geographic variability of the event

One of the criteria for the Nephite Nativity Event is that it likely had to be an event that was not observed (at least in a significant way) by potential record-keepers in the Old World. The second wave CME of the Carrington Event had auroras observed only in a very few locations in the Old World (see figure 31), and none of the sightings had the recounting of the event approaching daytime luminosity (although in East Asia it was viewed as a conflagration). In addition, for the Nephites in Mesoamerica, because of the southern location, the auroras had never likely been seen before, thus the event was extremely dramatic for them, while in Europe, the Middle East, and in China, because of their closer proximity to the normal auroral oval, they periodically witnessed auroral events during minor solar storms, so the event was not all that dramatic. From 193 BC to 1770 AD there were 846 documented observations of auroras in China, Korea, and Japan (Yau et al 1995). That is roughly one every couple of years, and that is just those that someone happened to document.

Acoustical events

Although there were no acoustic events reported during the Carrington Event, as discussed previously, auroras are associated with atmospheric crackling and clapping sounds that can be heard, which is a potential requirement of at least some of the signs and wonders.

Signs and Wonders

The Nephite Nativity Event contained a luminosity event (no night) that was considered a "sign" and other "signs and wonders" in the heavens. That these aurorae could be described as "wonders" or in other words, a previously unseen miraculous event, is apparent just by their very nature of colors and shapes (see figures 32-36). Outside of the Carrington Event, a variety of auroras have been observed with unusual geometries, including loops, small and sky spanning arches, arrays of luminous stripes of bands radiating from one horizon and converging on the opposite horizon, pillars, vertical streaks that appeared and disappeared, horizontal streaks with a number of bright balls jumping up and down below, moving luminous patches, and curtains of fire (Corliss 1982, 7-15, 22-24, 49-52).

In 1909, an Australian gold miner C. F. Herbert retold his observations of the Carrington Event in a letter to The Daily News (Herbert 1909) in Perth:

> "I was gold-digging at Rokewood, about four miles from Rokewood township (Victoria). Myself and two mates looking out of the tent saw a great reflection in the southern heavens at about 7 o'clock p.m., and in about half an hour, a scene of almost unspeakable beauty presented itself, lights of every imaginable color were issuing from the southern heavens, one color fading away only to give place to another if possible more beautiful than the last, the streams mounting to the zenith, but always becoming a rich purple when reaching there, and always curling round, leaving a clear strip of sky, which may be described as four fingers held at arm's length. The northern side from the zenith was also illuminated with beautiful colors, always curling round at the zenith, but were considered to be merely a reproduction of the southern display, as all colors south and north always corresponded. It was a sight never to be forgotten, and was considered at the time to be the greatest aurora recorded... The rationalist and pantheist saw nature in her most exquisite robes, recognizing, the divine immanence, immutable law, cause, and effect. The superstitious and the fanatical had dire forebodings and thought it a foreshadowing of Armageddon and final dissolution."

There are certain features of the aurora that could also be interpreted as a sign of Christ. Some configurations resemble persons (see figure 34). In the case of Mesoamerica, the long, bright green serpentine auroras would have special significance.

Figure 32 Aurora Borealis 'wonder' (B.T. 2020)

Colors of the Aurora

Most solar particles typically collide with our atmosphere at an altitude of around 60 to 150 miles where there are high concentrations of oxygen. When the oxygen is "excited" at these altitudes it causes the aurora to appear in shades of green. Coupled with the eye's greater ability to detect the green color spectrum, this makes it the most predominant and frequent auroral color.

Reds appear in the aurora when solar particles react with oxygen at higher altitudes, generally above 150 miles. At this height the oxygen is less concentrated and is "excited" at a higher frequency or wavelength than the denser oxygen lower down making reds visible.

Very occasionally, yellow and pink are present in an auroral display which are associated with only high solar activity as they are simply a mixture of red with green or blue.

Blue and purple are also colors which are seen less frequently, and again, they tend to appear when solar activity is high. In this case, the colors are caused by particles colliding with our atmosphere at an altitude of 60 miles or less. At these heights, it is a reaction with nitrogen that causes the aurora to be tinged with purple or blue and most commonly, you will see these colors towards the lower parts of the display.

Figure 33 Aurora Borealis 'wonder' in Lapland Sweden (Science Photo Library 2014)

Figure 34 Apparent face in northern aurora in Iceland (Mackiel 2016)

Religious Interpretations of the Auroras

Ancient cultures where the aurora is somewhat of a more regular event saw the auroras in a religious or superstitious light. They were called dragons and serpents and associated with disastrous events. In Colonial America it was written with regards to the auroras that it was God forewarning a sinful world of approaching calamities; Germany in the fifteenth through eighteenth centuries had similar interpretations. The Scandinavians of the same time period believed great auroras foretell the death of kings. Many European cultures believed that the auroras indicated impending war. Many cultures saw them as spirits of the dead. The Eskimos viewed them as lights to guide spirits in heaven; the Mandan of North Dakota saw the aurora as fires over which the great medicine men of the north simmered their dead enemies in enormous pots (Eather 1980, 44, 93, 104-115). So, the fact that the Nephites are viewing a spectacular display of the aurora for the first time and see religious "signs" in it would certainly be expected. In line with their luminosity, other cultures referred to the aurora as "night suns," "fiery heavens," "sky fires," "northern radiance," "northern dawn," "southern dawn," and "heaven light" (Eather 1980, 280-81).

Signs of Mesoamerican Deities and Religion

The Maya and other Mesoamerican civilizations studied the heavens for divination purposes (de Landa 1566, 13) and believed the celestial bodies exerted direct control over the affairs of man (Andrews 1940, 150). As far as the Maya were concerned, astronomy was astrology (Aveni 1981, 85). Mesoamerican priests were obsessed with knowing time. Time was cyclical, meaning events in the past are the same as events in the present or future. The Mesoamericans also believed that the conditions in the heavens

were a portent of situations on earth. The Mesoamerican priest kept records of celestial observation to make predictions.

One reason that the Nephite Nativity Event may have been so stunning to unbelievers was that symbols of their pagan gods may also have been able to be interpreted by the features of the aurora. The signs potentially seen during the Nephite Nativity Event in the heavenly aurora representing Mesoamerican deities or premises are very straightforward. When one considers that the meaning of the name Quetzalcoatl is "precious serpent" or "beautiful snake," the direct observation of these flying green serpents in the heavens does not take much interpolation. Quetzalcoatl is a miraculous synthesis of serpent and bird. The word *quetzal* in Nahuatl (the language of the Aztecs and likely Teotihuacan) derives from the green, emerald Quetzal bird, and *coatl*, which means serpent, specifically rattlesnake (Miller and Taube 2007, 141). In the Mayan language the name for snake and sky are identical. Quetzalcoatl is known among the later Maya as Kukulcan. The various green colors and serpentine shape of the auroras is a direct sign of Quetzalcoatl, especially since the hissing and clapping sounds that accompany an aurora could easily be interpreted as similar to the sounds of a rattlesnake.

Figure 35 Green Serpentine Aurora (Wandering Owl 2020)

Mixcoatl, literally meaning "cloud serpent," may have been identified as the Milky Way and the very heavens. Among the Aztec, a deified serpent, Xiuhcoatl, known as the fire serpent, but more literally the turquoise snake, plays an important role in their iconography. On the Aztec Calendar Stone, two Xiuhcoatls carry the sun on their backs. Snakes then, are the vehicle for the movement of the sun. Mesoamerican peoples conceived of the area above the earth as divided into different levels or heavens: the Fifth Heaven, situated above the heaven which holds the Sun, was occupied by fire snakes made by the fire god, and that from there emanated comets and other heavenly signs (Trejo and Ricalde

1998). Since the new star/comet and solar eclipse (discussed later) appeared after a night of these fire serpents in the form of the auroras filling the skies, this is a perfect fit of the religious preconceived expectation of the Mesoamerican observers.

Snakes in general have the broadest and most varied roles in religion and religious symbolism in Mesoamerica: in states of ecstasy lords dance a serpent dance; great descending rattlesnakes adorn and support buildings from Chichen Itzá to Tenochtitlan. In Mesoamerican religions, snakes are the vehicles of rebirth. One of the primary fundamental religious notions that accompanies the serpent is that the serpent represents the sky. Mesoamerican serpent deities are considered to exist as fours or as four-in-one, often with separate color associations, which is also consistent with the multiple color arrays of the auroras. The serpent was the body for many Maya and deified objects.

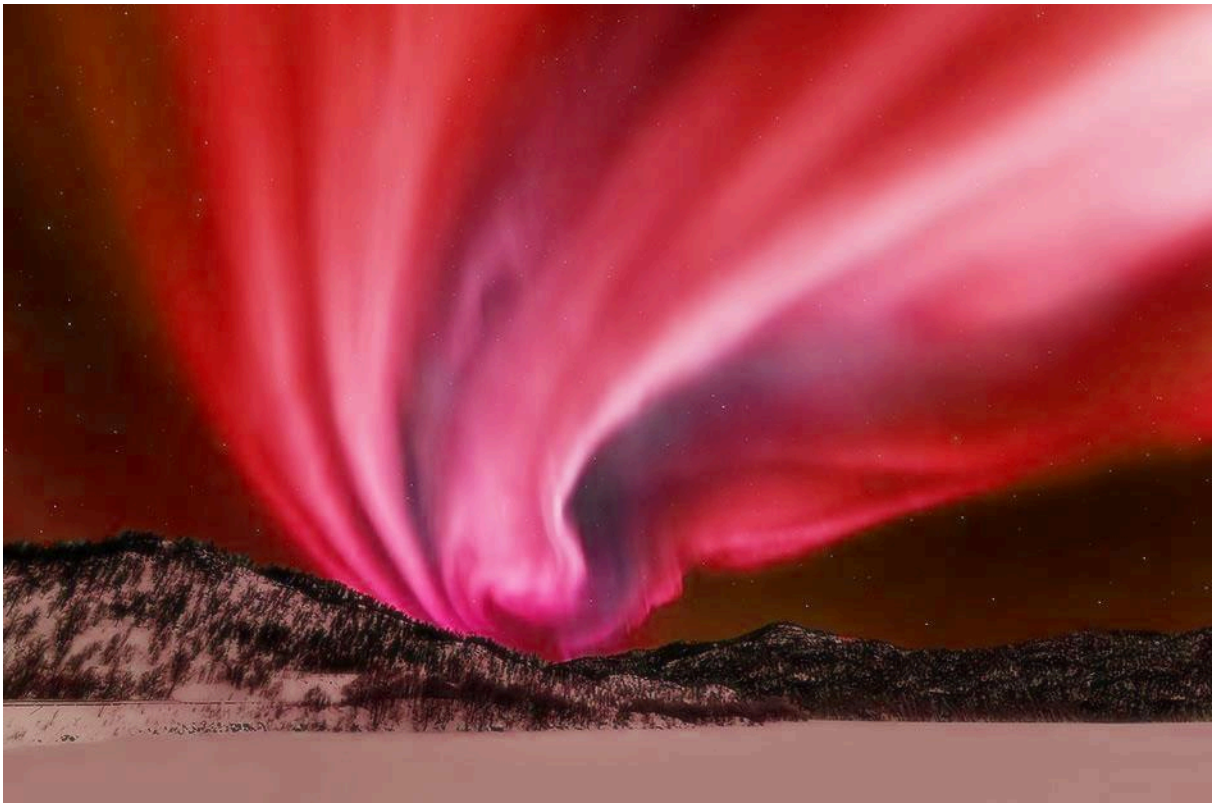


Figure 36 Red Serpentine Aurora (Tom15745 2021)

In states of ecstasy and usually following bloodletting, Maya nobility conjures up the Vision Serpent. The great undulating serpent rises from burning bloody paper and from its mouth emerges an ancestor or occasionally, a deity. The Vision Serpent can be the vehicle by which ancestors or deities make themselves manifest for humanity.

Other cultures characterized the aurora as “candle dragons,” “flying dragons,” “burning dragons,” and “heaven god” (Eather 1980, 280-81) so it would seem likely that this type of interpretation would be made by Mesoamericans in relation to their religious gods and beliefs.

There has been no small amount of LDS literature and debate about the correlation of Christ with the Mesoamerican god Quetzalcoatl. It is beyond the scope here to cite all the literature in this regard, but worth noting is some research in favor of this connection has been made by Diane E. Wirth (2002), an extensive discussion by Brant Gardner (2007, 353-95) argues that no real parallel has yet been found when examining native records uncontaminated by the post-conquest bias of various chroniclers in this regard. The discussion above was not intended to be evidence that Quetzalcoatl was considered by Mesoamericans to be the uniquely Christian god of the Nephites whose "sign" was found in the aurora. I think that all the evidence shows that Quetzalcoatl was a god recognized by the non-Nephite Mesoamericans as part of their "pantheon" of gods. The primary impact that signs of Quetzalcoatl and other Mesoamerican gods may have been found in the aurora is found in the fact that these signs were predicted by a Christian prophet and not by the wicked Nephite priests, no less a Lamanite whose larger culture believed in the pagan form of these gods. This fact alone challenges the authority of the wicked Nephite priests.

It is also very possible that the Christian Nephites had identified some symbols of Quetzalcoatl with Christ, while not incorporating the pagan form of the god into their religious beliefs, so they may have found a bolstering of their Christian faith by seeing signs of a feathered serpent, similar to the "fiery flying" serpent episode that included the lifted up upon the staff of the brass serpent by Moses, represented in the aurora (Numbers 21:6-8; 1 Nephi 17:41). In addition, as the righteous Nephites did not subscribe to all of the Mesoamerican gods and superstitions, the heavenly signs (also including the new star/comet and a solar eclipses) had different meanings to them, so these heavenly signs did not portend the end of the world to the righteous Nephites, in fact just the opposite, it saved them.

Chronological Evidence of the Nephite CME Event

Historical Records

Review and extracts of ancient records have been made to find evidence of observations of the aurora. Of course, regardless of the diligence of any observer, these records are incomplete as any observation is at the mercy of the local weather and cloud cover. There is only one area in this time frame where there was information on the potential of auroras in Europe, and that was from central Italy and is basically an extract from classical literature. There are possible references to auroras there in 17 BC and 9 AD (Stothers 1979). Interestingly, some of these records in Europe refer to the aurora as a "night sun," consistent in a fashion with the description of the Nephite Nativity Event. In Asia, the only records for auroras in the proper time period is in China, which shows mention of the description of an aurora on March 27, 15 BC and summer of 12 AD (Yau et al 1995).

So neither of these records show an aurora in the 6 BC time frame, which does not mean that the Nephite Nativity Event did not happen, just that it was not observed in either of these areas, either because, as discussed, the auroras are not uniformly distributed in a CME event with some areas having no auroras, or because weather may have been such in these two places that the auroras were not observable. There has been a statistical analysis of the ancient European events based on the historic auroras to determine the solar cycle which has been monitored since 1755 and ranges from 9.0 to 13.6 years with an average of 11 years. The statistical historic aurora analysis determined that the range was from 8.7 to 13.3 years, with an average of 11.5 years (Stothers 1979). CMEs are much more likely at the end of the solar cycle, and 6 BC falls within the expected end of a solar cycle based on this statistical analysis. In the case of the central Italy data, the expected range of the end of the solar cycle after 17

BC would be approximately 8 BC to 4 BC, with the average being expected in approximately 5 BC. Applying the European data analysis to the Chinese information, the range of the start of the solar cycle would be 5 BC to 1 BC. Thus a 6 BC date for the Nephite Nativity Event is roughly consistent with a CME at the end of a solar cycle in 6 BC.

Carbon 14 Data

Two verified annual anomalies in the Carbon 14 radiocarbon record, also known as Miyake Events, have been found in years 775 AD and 994 AD. Detected through the analysis of tree-ring archives, the events comprise sudden and globally synchronous increases in the atmospheric concentration of radiocarbon (Δ14C). Upticks were quickly attributed to increases in cosmic radiation, as radiocarbon is produced by means of nuclear reactions associated with the cosmic ray cascade. The rate of production is proportional to the cosmic ray flux entering the Earth's magnetosphere, which is in turn modulated by the interplanetary magnetic field in accordance with the solar cycle. In fact, this solar cycle is inversely related to radiocarbon production as, during periods of maximal solar activity, the shielding of cosmic rays by the solar plasma in the interplanetary and the geomagnetic fields is enhanced. In such cases, a decrease in radiocarbon production occurs, and vice versa (Scifo 2019).

The most intense solar storm to hit Earth in modern times was the Carrington Event of September 1859. However, a careful analysis of the Carrington Event determined that it left no detectable imprint on the atmospheric radiocarbon record (Scifo 2019). So, in application to the Nephite Nativity Event, as with the Carrington Event, the Nephite Nativity Event may have left no trace in the radiocarbon record either.

In looking at the data sets utilized in the most recent scientifically accepted and utilized radiometric dating curve called IntCal20 (www.intcal.org 2020), I examined all 32 of the underlying data sets to see if there was data available to determine a significant change in the rate of change of C14 (ΔC14) near 6 BC. Only three data sets had data within the 6 BC time frame. The QL data set (derived from dendrochronology from German oak and pine, Irish oak, Alaskan trees, NW USA trees, and California trees) had data only for 4.5 AD, 4.5 BC, and 14.5 BC. The UB data set (derived from dendrochronology from Irish and German oak) had data only for 9.5 AD, 9.5 BC, and 29 BC. The Sakamoto data set (derived from dendrochronology from various Japanese trees) had data only for 3 AD, 3 BC, 8 BC, and 13 BC. These data sets (and the underlying reference material upon which they rely) do not have enough data for a determination as to whether there was an anomalous annual change in ΔC14 that would indicate a potential CME event in 6 BC, as ΔC14 data for each individual year from 25 BC to 20 AD would probably be ideally necessary to reliably establish the dataset necessary to identify an anomalous deviation for the expected annual rates of ΔC14. Essentially, more radiometric sampling is necessary before any conclusions could be reached as to whether a CME event is evident by an anomalous ΔC14 during the potential Nephite Nativity Event timeframe.

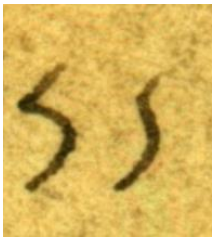
^{10}Be and ^{36}Cl Ice Core Data

^{10}Be is an isotope of beryllium and ^{36}Cl data is an isotope of chlorine that is also formed in the atmosphere as a result of the interaction of solar particles in the atmosphere which can then be deposited onto polar ice. The ^{10}Be data and secondarily the ^{36}Cl have been used in conjunction with Δ14C data to corroborate the existence of the 775 AD event (Usoskin et al 2013). According to the NOAA ice core database, there are three ice cores that contain ^{10}Be data during the period of the Nephite Nativity Event, the Taylor Dome, the GRIP, and North Atlantic Holocene Drift Ice Proxy, (NOAA

National Center for Environmental Information, 2021), and all three contain ^{36}Cl data as well. A preliminary look at the ^{10}Be data and ^{36}Cl data indicates that the Taylor Dome data does not have enough resolution (one data point for approximately 200 years) during the Nephite Nativity Event time frame, and the North Atlantic Holocene Drift Ice Proxy has a similar problem (one data point for approximately 70 years) to determine a particular year of the Nephite Nativity Event. I was unable to find any research related to correlation of the GRIP data during the chronological period of the Nephite Nativity Event.

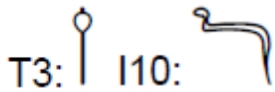
Corroboration by the Caractors Document

The Caractors Document does support the aurora being present as part of the two days of brightness. The reformed Egyptian glyph that was used for "white" or "brightness" in the Caractors Document was slightly modified as 2 squiggly lines, which match the serpentine form of the aurora. The second portion of the hieratic glyph is the monumental Egyptian glyph form of a snake (cobra in repose), which seems to have been chosen (as other reformed Egyptian glyphs are) based on the shape of the glyph matching the observed event.

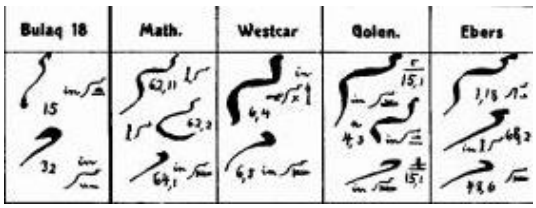


C-139, C-138 brightness, white

The word meaning "white" or "bright" in Egyptian is *ḥd*. It can occur as a single glyph identified as Gardiner Number T3, but most often occurs with Gardiner Number I-10 (Dickson 2006, 228; Budge 1920, 1:522). The hieroglyphs and hieratic are:



Möller Number 447 (Gardiner Number T3), Bd. III-32-72-Taf, pg. III 436-447bis (Möller 1965)



Möller Number 250 (Gardiner Number I10), Bd. I-23-76, pg. II 250-258 (Möller 1965)

See 3rd Nephi 1:1-15

The Solar Eclipse on the Day of Christ's birth

To the Maya, eclipses were dreadful times. Both solar and lunar eclipses were portents of the end of time (Closs 1989, 234). On page 72 of the Dresden Codex (the oldest surviving book written in the Americas, dating to the 11th or 12th century) the flood scene depicts the flood that destroyed the previous creation. At the top of the downpours are glyphs of solar and lunar eclipses. Like another story from the Popol Vuh, total solar or lunar eclipses could cause all of the domestic tools to be transformed into living creatures that could kill their masters (Closs 1986, 392). Eclipses also were believed to cause illness and deformity. Pregnant women and their infants were extremely susceptible to eclipse effects. Infants would get gastrointestinal problems and pregnant women would have their infants born with dark splotches, called sun and moon bites (Closs 1986, 391). The most dreaded part of eclipses was the monster that would descend to earth to devour people when the sun became obscured.

Among the Aztecs, the time of a solar eclipse meant something unlucky, fearful, and perhaps the end of the world, and so they sacrificed persons with fair complexions or fair hair and prisoners to the sun. The Aztec people made a loud noise, they sang and sounded drums in all their temples in order to save the sun from being eaten (Trejo 2002, 8) either by a celestial jaguar or snake. Another belief concerned demonic creatures of darkness. They are depicted with banded faces wielding weapons, and they have their hair pulled into two hornlike projections. These demons, named "Tzitzimime," were sky-dwelling skeletal beings corresponding to the souls of sacrificed warriors that are said to descend down to Earth during totality as well as other periods of darkness, and destroy the world. This would bring about the end to mankind. Sahagún, an early Spanish chronicler, records in Book 7 Chapter 1 of the Florentine Codex (Sahagún [1953] 16th Century):

> "People are restless, there is an uproar, fear and weeping. People wail, give cries of alarm, scream, clamour, rattle hawk bells. Fair colored people are sacrificed. Captives are sacrificed. People shed their own blood, piercing their ears with reeds, and flowery songs are sung in the temples. The noise continues, the wailing persists. It was said 'If it comes to an end, if the Sun is eaten, everything will be dark forever. The [feminine monster called] tzitzimime will come down to devour the people.'"

The Maya also believed they could keep the sun from being swallowed by making an uproar of lots of noise, such as making their dogs howl and by beating drums.

That faithful Nephites were to undergo a ritual sacrifice on the day of an anticipated solar eclipse is apparent from the Book of Mormon. Just prior to the day of sacrifice that the unbelievers had set for the execution of the faithful "…they did make a great uproar throughout the land," (3 Nephi 7:7) (the Book of Mormon text provides no reason or purpose for these actions), which is completely consistent with preparation for a potential imminent eclipse, especially given that the accuracy of the prediction in Mesoamerica may have been plus or minus a day. The word "uproar" is not used elsewhere in the Book of Mormon. That the Nephite faithful were imprisoned in some way awaiting ritual sacrifice seems apparent as there is little chance that those destined to be sacrificed were just waiting patiently in their homes to be rounded up to be summarily sacrificed. In addition, while it is not exactly clear whether the righteous Nephites featured relatively fair complexions, it certainly would not be unreasonable considering that some ancestry originates from the Middle East.

The Nephite Nativity Event with its serpentine auroras occurring on the night before an anticipated solar eclipse would be extremely impactful and traumatic on the Mesoamerican pagan religious astronomy-priests as the Mesoamerican belief is that solar eclipses happened because creatures, primarily serpents, were biting and consuming the sun. The depiction of a solar eclipse in the Maya Dresden Codex has images of serpent figures attempting to eat the sun (see figure 37) with some indication that the serpent represents Venus. In addition, with the eclipse occurring at sunrise and lasting only a few minutes, it was too late to sacrifice any of the captive Nephites to have any effect.

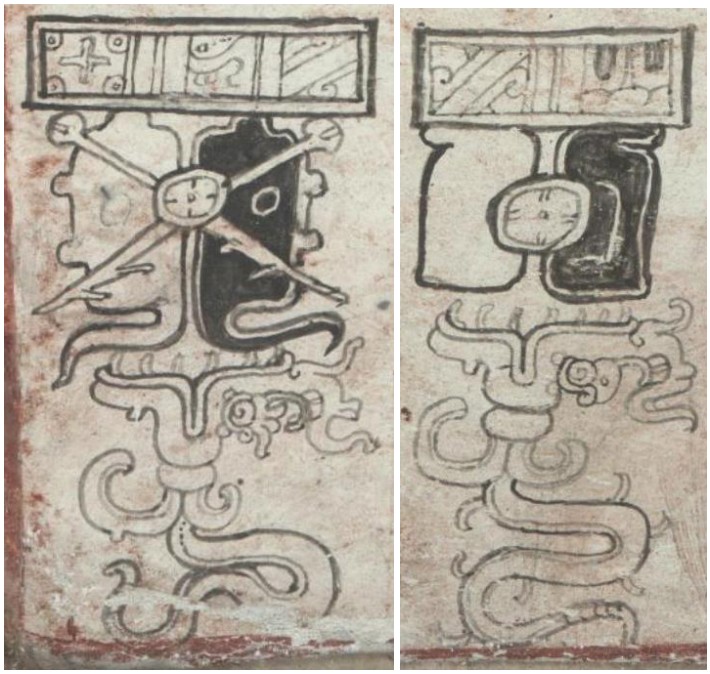


Figure 37 Serpents eating the sun on the eclipse tables (pages 59 and 60) of the Dresden Codex (Dresden 11th Century)

For the righteous Nephites, who followed the law of Moses and are assumed to have other Hebrew traditions, it is likely that a solar eclipse was not viewed as disastrous for them. The Mishnah (3rd Century AD) and the Talmud in the Tractate Sukkah (Chapter 2) states:

> "The rabbis taught: An eclipse of the sun is an ill omen to the whole world. What does this resemble? A human king making a banquet for his servants, and placing a great lantern before them, when he gets angry he says to his servant: Take away the light, let them sit in the dark.
>
> We have learned in a Boraitha: R. Meir said: When the sun and the moon are eclipsed, it is a bad sign to the enemies of the Israelites (meaning, the Israelites themselves), because they are used to troubles: it is equal to the teacher's coming to the school with his whip in his hand. Who is more afraid? The child used to being beaten. This is the case when Israel does not do the will of the Creator; but when they do, they need not fear anything, as it is written [Jeremiah, x. 82]: "Thus hath said the Lord: Do not habituate yourselves in the way of the nations, and at the signs of the heavens be ye not dismayed; although the nations should be dismayed at them."
>
> The rabbis taught: On account of the following four things the sun becomes eclipsed: When a chief judge dies, and is not lamented becomingly; when a betrothed virgin calls for help in the

> town, and is not aided; unnatural vice; when two brothers are killed on the same day; and on account of the following four things both the sun and the moon are eclipsed: Forgery, false witness, when fruit-bearing trees are cut out, and when sheep and goats are kept in Palestine. On account of four things the property of householders is transferred (confiscated) to the government: When paid notes are kept; usury; and when men had the power to prevent, but would not; and when charity was promised to the people, and was not given. Rabh said: For four things the property of householders becomes annihilated: When they keep workers, and do not pay them in time; for robbing them; when the strangers free themselves from the yokes on their necks and put them on their neighbors' necks; and for arrogance. And arrogance is the worst of all. But of those who are modest is written [Ps. xxxvii. 11]: "But the meek shall inherit the land, and shall delight themselves because of the abundance of peace." "(Jewish Virtual Library 2021)

An eclipse of the sun, under these beliefs, would be verification that the cause of the solar eclipse was the wicked Nephites. No doubt the wicked Nephites, even though following a different religious tradition, were familiar with the traditional Hebrew derived beliefs of the righteous Nephites.

There are two methods to calculate eclipses (Sadler 1966, 1119). One method is to precisely predict eclipse occurrences by using the theories of motions for the sun and moon. The other is to use the mean periods derived from past observations. In Mesoamerica, the religious priests used the observational technique as they do not appear to have had a knowledge of the theories of motions for the sun and the moon. There are Eclipse Tables found in the Maya Dresden Codex (Bricker et al 1983). There is no consensus on the exact utilization, accuracy, and which eclipses are referenced there, but most agree that solar and lunar eclipses are found there and that the Eclipse Tables can be used for prediction of lunar and solar eclipses regardless of their location. However, because eclipses, especially solar, are only visible to specific areas of the planet, there is no evidence of Mesoamerican ability to predict if a particular eclipse could be seen in Mesoamerica, just that one could occur on that particular date (and generally did occur elsewhere on the planet), so in Mesoamerica the meaning is an "eclipse warning" date (Trejo 2002). Lunar eclipses are rarer but are visible to more than half the planet when they do occur, so actually are more commonly seen than a solar eclipse. The solar eclipse itself would be considered one of the heavenly "signs and wonders" referred to in the Book of Mormon. Genesis 1:14 states that the lights in the firmament of heaven, which included the sun, was to be "for signs," so the Nephite scripture would have recognized a solar eclipse as a sign and would not need to be called out separately.

As will be further demonstrated the birthdate of Christ was on a solar eclipse date. With that knowledge it can now be determined more definitively, as it could have taken place on any of the six "eclipse warning" dates during the period from 7 BC to spring of 4 BC. The following dates are when eclipses actually occurred somewhere in the world during that time frame: April 27, 5 BC; October 21, 7 BC; April 16, 6 BC; October 11, 6 BC; March 6, 5 BC; April 4, 5 BC; August 30, 5 BC; October 9, 5 BC; and February 23, 4 BC. Since we know that Christ's age at death was somewhere close to 33 years of age and he was crucified in March or April, the October, August, and February eclipse warning dates can be removed for consideration. As will be discussed later, because we do know the potential dates for Passover of each year, and with the knowledge of approximate length of Christ's life as 33 solar years, and with the requirement of a Wednesday crucifixion dictated by the Book of Mormon text (which will be later demonstrated), the only date left for consideration as a potential for Christ's birth is April 16, 6 BC. Because of current astronomical science, ancient solar eclipses can be calculated exactly. Based on

this science it is known that there was in fact a solar eclipse on April 16, 6 BC (April 18, -0005 astronomical Julian date) (see figure 38).

In Mesoamerica, this solar eclipse was visible at sunrise as a partial eclipse coming out from a total eclipse. In the Old World where the Magi were located, it was observable at sundown as a more limited partial eclipse. For the Magi, this would be occurring in their western sky, in the direction of Israel. The visible area of the eclipse path also narrows the likely location of the Magi to Babylon (Iraq) or Persia (Iran) (the eclipse map in figure 38 shows the current political boundaries) so is consistent with the Bible accounts indicating the Magi came from the east. Another possibility that had been considered was Arabia, but this is mostly out of the path of the eclipse (Nicholl 2015, 43).

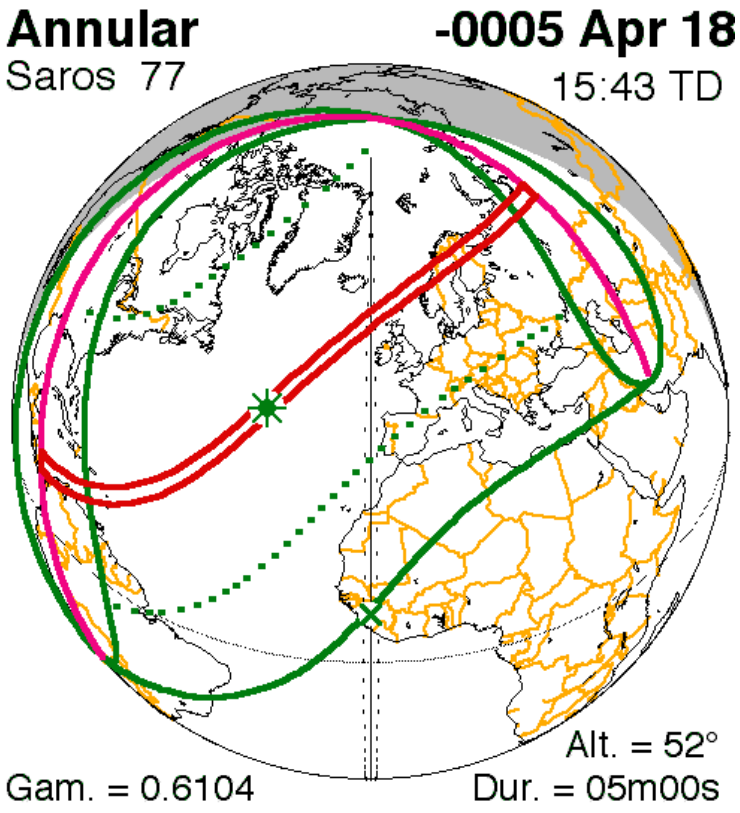
The observation of a solar eclipse to the west by the Magi in Babylon or Persia and the arising of a new king in Israel to the west of them is entirely consistent with what we know of ancient Mesopotamian astrology. Ancient Mesopotamian astronomer priests made observations of the sky and of the phenomena of the earth which formed the basis of divination. Just like in Mesoamerica, they were able to predict the times when a solar eclipse would occur, even though on many of these occasions the eclipse was not visible at their location. The Babylonians apparently even predicted the hour of the eclipse plus or minus an hour or two (Steele 2000). Through divination, priests could read the signs given by the gods in the heavens and on the earth in the form of omens. Using this knowledge, they developed a sophisticated system over thousands of years of observation and scholarship dedicated to predicting the future. If a prediction was especially dire, priests could conduct specific rituals to help mitigate or cancel the disastrous event portended in the omens, by appeasing the gods or directing their destructive force to another target. Interestingly, this practice in Mesopotamia regarding solar eclipses is similar to that practiced in Mesoamerica.

In Mesopotamia one of the most serious omens was a solar eclipse, which predicted grave danger of death for the ruler of the area of the world in which it appeared. Similar to Mesoamerica, ancient Mesopotamian astronomers had developed the knowledge to accurately predict eclipses with a high degree of precision. Once an eclipse was predicted and the area in which it would appear had been identified, the court and the priests took action. If the eclipse took place over Assyria, for instance, the Assyrian king would be in danger, and for the king to be in danger would put the entire power structure of the kingdom at risk. So, a substitute would be put in his place—literally, a substitute king, or *šar pûhi* (shar PU-khee) in Akkadian, the language of the Assyrian court and its official documents.

The substitute king did not have to look like the real king but had to be a man. After he was selected, he was dressed in the king's garment, declared to be the king, and made to participate in other rituals investing him with royal identity. He was also given a young woman as a queen. After this, the true king withdrew from public view until danger had passed. The substitute king and queen were offered as sacrifices for the evil fate that was destined for the true king, taking it on themselves while he remained safely hidden. Once the dangerous time had passed, the substitute king and queen were killed, the true king re-emerged, and the ritual was complete. (Bottéro 1992). The anticipated ritual killing of the righteous Nephites to avoid the evil impact of an eclipse does have similarities to the Mesopotamian practice as well.

Thus, the Magi seeing an eclipse at sundown directly in the direction of Israel with the eclipsed sun seeming to set into Israel on the horizon, together with perhaps a new comet adjacent to the setting sun (to be discussed later), from the Magi's view, the arising of a new king in Israel is the logical

astronomical conclusion. In fact, when traveling to Jerusalem, that was their inquiry, namely, “Where is he that is born King of the Jews?” (Matthew 2:1).



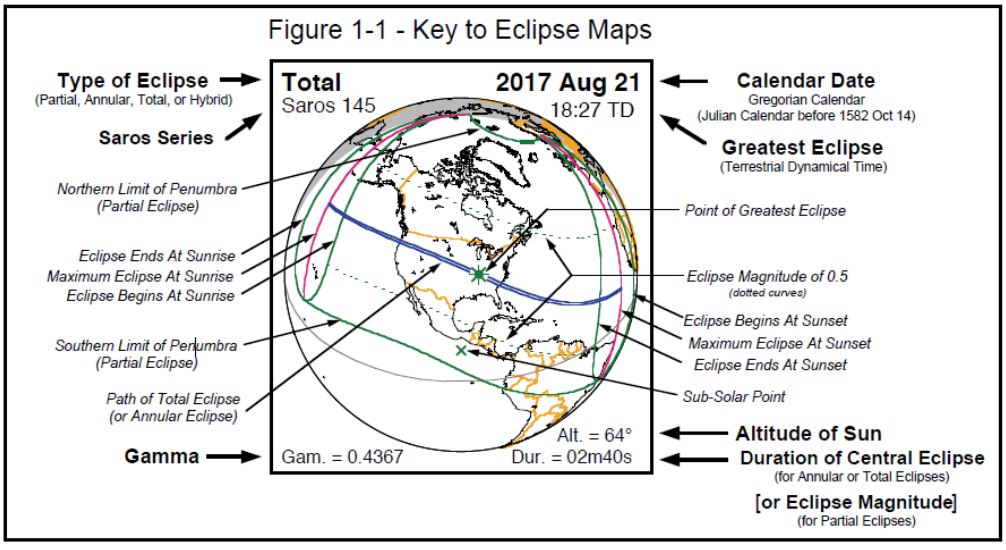


Figure 38 April 18, -0005 Eclipse (astronomical Julian day, which is April 16, 6 BC in the Gregorian calendar) with the eclipse traveling west to east/left to right) (Espenak and Meeus 2006, Catalog No. 04759, www.eclipse.gsfc.nasa.gov/5MCSEmap/-0099-0000/-5-04-18.gif) and Legend of the April 18, -0005 eclipse (Espenak and Meeus 2007)

It seems clear that the Magi must have had some indication that this was not a normal king as they came "to worship him."

The Star of Bethlehem and the New Star

It is a common mistake to assume that the Star of Bethlehem and the "new star" which will "… arise … (s)uch as one as ye have never beheld" (Helaman 14:5), and which "did appear" in Mesoamerica (3 Nephi 1:21) refer to the same star. It appears that this has been the common conjecture as I have found no discussion of the issue of one of two stars (other than a single star supported by a footnote in the current version of the Book of Mormon citing Matthew 2:1-2), but, in fact, it is nowhere indicated in the text of the Book of Mormon that the two stars mentioned are one and the same. In fact, unlike the new star that appeared in Mesoamerica that was of a sort that had not been seen before, no one in Israel apparently even noticed their star. Only the Magi noticed the star as Herod had to inquire of them when it first appeared. Even then, after being informed of it by the Magi, instead of trying to follow the star with his own people to find the King of the Jews (with the intent to kill him), he relied on the Magi to find the Christ child, so interpreting the movements or indications of the star did not appear to be obvious and required some astronomical knowledge, of which Israel had comparatively little.

Star of Bethlehem

Serious proposals for the Star of Bethlehem (Nicholl 2015, 69-89) are a triple conjunction of Jupiter in Saturn and Pisces in 7 BC, a nova or supernova, an ordinary star, a comet, and finally astronomer Michael R. Molnar's proposal of Jupiter using astrological techniques known to the Magi which determined planetary positions and the occultation of Jupiter by the moon near noon on April 17, 6 BC in Persia/Babylon (Molnar 2013). The intent of this work is not to rehash the merits of each proposal but to determine which one is consistent with the chronology and information found in the Book of Mormon.

Based on the new information and evidence of the day of Christ's birth correlating sometime during the Nephite solar eclipse day in Mesoamerica on April 16, 6 BC, the Molnar Star of Bethlehem proposal amazingly fits perfectly with the Book of Mormon. An evaluation of the timeline also helps us establish that a Nephite day was in fact like a Hebrew day in that it ended and started at sunset.

Without going extensively through the in-depth analysis done by Molnar, a summary of the proposal is that the Magi used a Hellenic form of astrological interpretation and divination, which included the analysis of the signs of royal births in theirs and other countries. Essentially, the first royal condition was that individual constellations represented different countries (in the case of Judea, the constellation Aries), and the appearance of certain of the five known planets, moon or sun in that constellation were indicative of a royal birth. The second regal astrological principle involves the configuration of the positions of the planets in respect to the horizon. The third regal principle is the cardinal points of the sky with four important sectors with "Midheaven" being the highest sector. In addition, the activity of Jupiter and the Moon had particular implications, specifically, Julius Firmicus Maternus, an astrologer to Roman Emperor Constantine, wrote that an occultation of Jupiter by the moon in Aries was a sign of the birth of a divine king (Firmicus Maternus 1975, 4.3.9).

Molnar then looked at all these astrological principles and applied them to the astronomy during the potential time frames of Christ's birth and determined that April 17, 6 BC was the rare day (estimated as once in a million) where all the divine regal astronomical conditions were present. Also on this day, all

the planets, sun and moon rose at a point in a perfect linear alignment (see figure 41, 42, and 43) at all geographical locations which configuration also fulfills the Old Testament prophecy regarding Christ's birth that "a scepter (regnal staff) will rise out of Israel" (Numbers 24:17) He also determined that a regal lunar occultation of Jupiter (the Moon passed in front and obscured Jupiter) occurred on that day. It is also a Jewish Sabbath day.

The Magi stated, "we have seen his star in the east," which some interpreted the original Greek to mean the "star at its rising" (Nicholl 2015, 48-50). The astrological representation of sunrise and at the time of the occultation of Jupiter by the moon are shown in figures 39 and 40. Using the Stellarium software program, a computer simulation of the appearance of the sky after sunrise in Jerusalem, Tehran, Iran and in Guatemala City, Guatemala on April 17, 6 BC is depicted in figures 41, 42, and 43. These figures show that the alignment of all the planets, the sun, and the moon is in a straight line, another of the rare astronomical features that occurred on this day which as a fulfillment of prophecy is definitely a "sign."

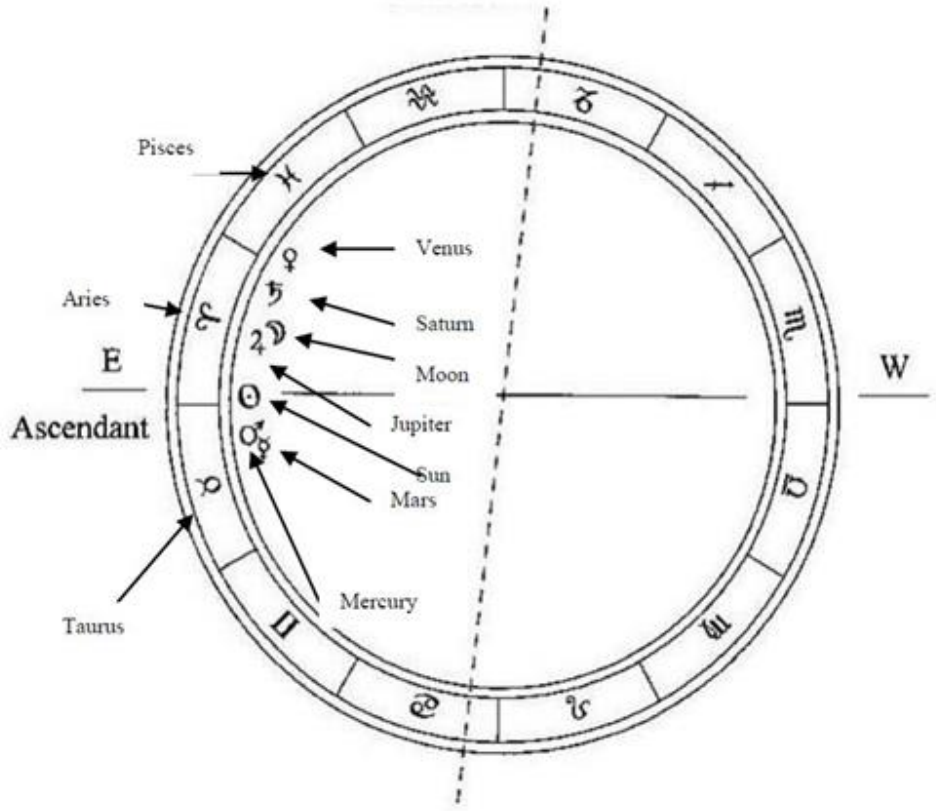


Figure 39 Astrological Aspects at sunrise on April 17, 6 BC (Molnar 2013, 97)

Based on the work of Molnar, the Star of Bethlehem is the planet Jupiter which also explains its ability to appear to stand still (as indicated in the New Testament) when it is in retrograde motion with respect to the orbit of the Earth. Interestingly, Molnar did not note in his work anything about the solar eclipse that occurred the day before April 17, 6 BC and perhaps was not aware of it and its additional implications and evidence of the arising of a new king.

There have been some critiques of Molnar's work (Barthel et al 2015), and naturally the individuals with their own pet theories seem to be the most critical, but the least viable. Some do not even appear as if

they have read Molnar's work. Nearly all independent reviews agree that the astronomical configuration is indeed quite rare and would definitely be indicative of a kingly horoscope. One primary objection has to do with Judea being correlated with Aries, as it is only explicitly indicated by Ptolomy, and he listed other areas that it correlates to in addition to Judea, thus raising the question as to how the Magi would have known to go to Judea given the other possibilities to inquire about a new king.

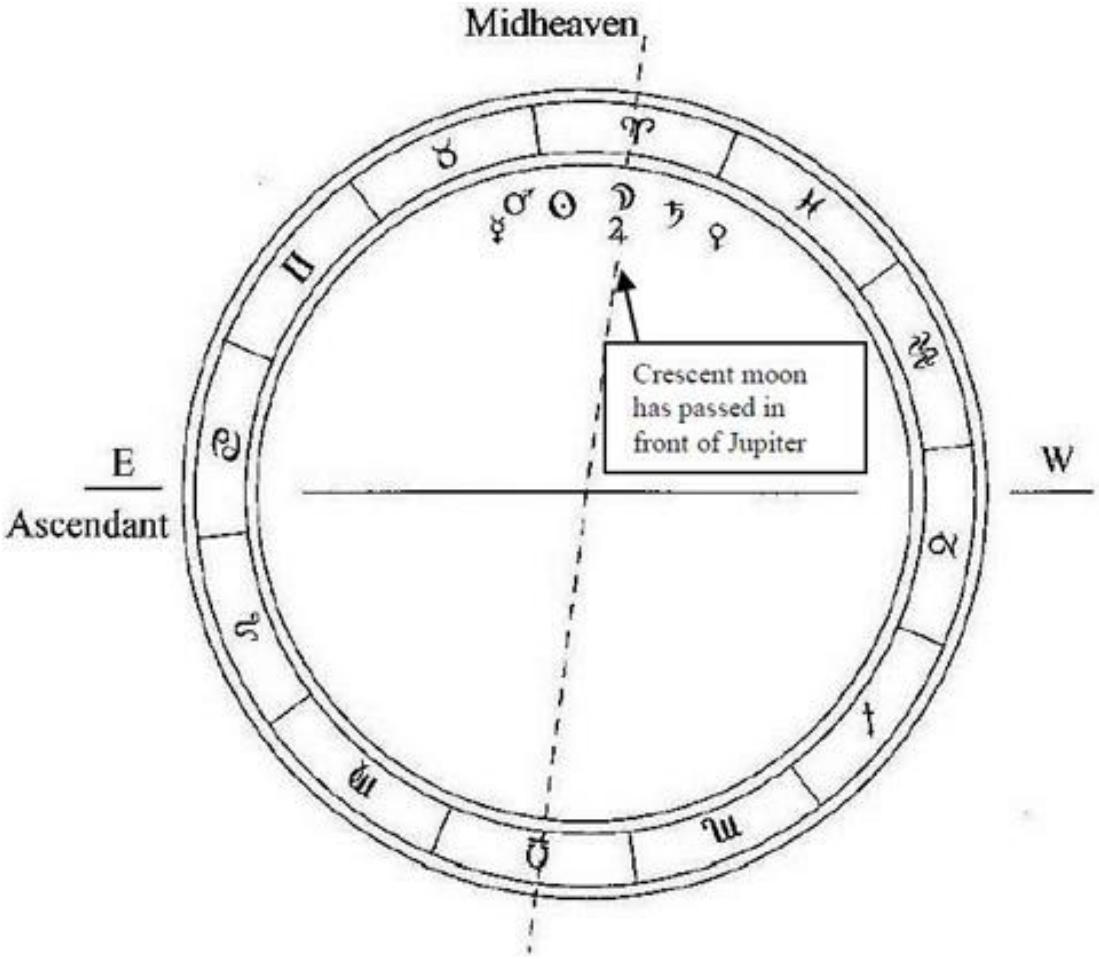


Figure 40 Position of the planets with Jupiter at the Midheaven (just after noon) on April 17, 6 BC (Molnar 2013, 98)

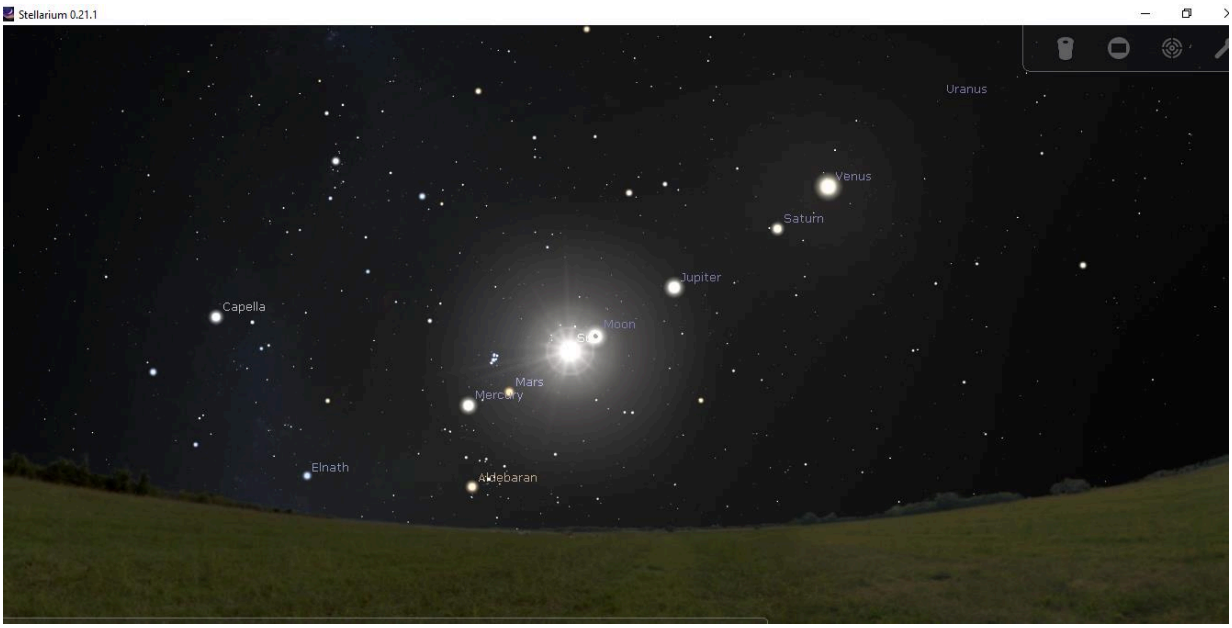


Figure 41 Image from the Stellarium software showing the straight line (scepter) alignment of the heavenly bodies at sunrise In Jerusalem on April 17, 6 BC (author 2021)

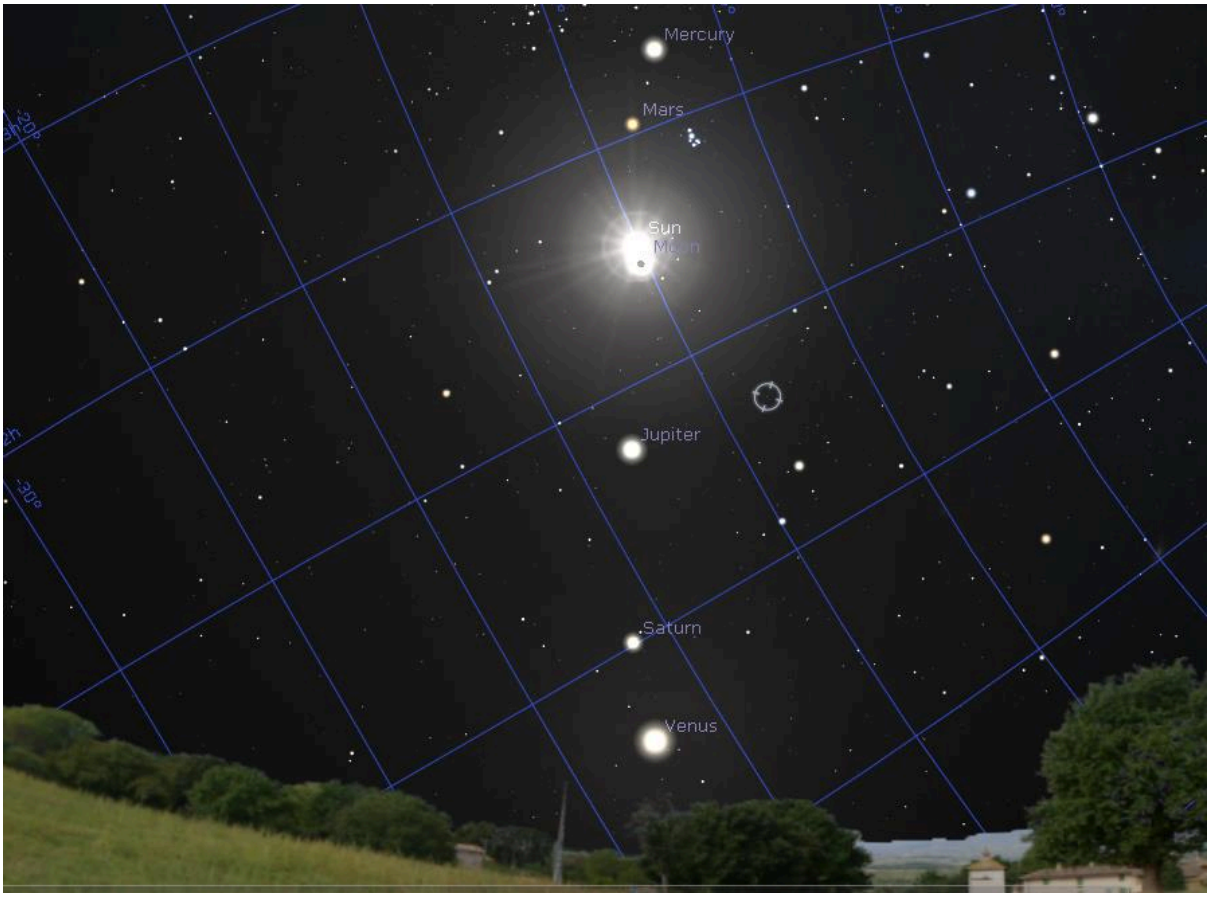


Figure 42 Image from the Stellarium software showing the alignment of the heavenly bodies in the afternoon in Tehran, Iran on April 17, 6 BC (author 2021)

The solar eclipse at sunset to the west in the direction of Judea might help answer that since it set over Israel as seen from Persia. The other primary objection is that the astrologers at the time, although making prognostications about many other kinds of things, were not known to prognosticate as to the birth of new kings, primarily running their horoscopes after the fact. Perhaps, again, the unusual event of an eclipse at sunset indicating the demise of an existing king may have caused them to run the horoscope for evidence of a potentially new king.

It is now possible to lay down an exact timeline described in the Book of Mormon consistent with what Molnar has determined in the Old World. Utilizing the Sorenson Book of Mormon geographic model, Zarahemla lay in the general vicinity of the current city of Tuxtla Gutierrez, Mexico. On April 15 and April 16, 6 BC, at this location, sunset was at 6:26 PM (+6 UTC) (NOAA 2021). In Jerusalem on April 16, 6 BC sunrise was at 5:09 AM and sunset was at 6:06 PM, and on April 17, 6 BC sunrise was at 5:07 AM. The time in Iran (presumed location of the Magi) is approximately 9 hours and 45 minutes ahead of Tuxtla Gutierrez, so a 6:26 PM sunset in Tuxtla Gutierrez equates to 4:11 AM in Iran. The time in Jerusalem is approximately 8 hours and 30 minutes ahead of Tuxtla Gutierrez, so a 6:26 PM sunset in Tuxtla Gutierrez occurs at 2:56 AM in Jerusalem.

We know that prior to sunset on April 15, 6 BC in Mesoamerica, $Nephi_3$ had "cried mightily unto the Lord all that day" and was then told by the "voice of the Lord" that "on this night shall the sign be given, and on the morrow come I into the world" (3 Nephi 1:12-13). Thus, we know that Christ was born on "the morrow," which with the day starting at sunset, his birth was sometime during the time from sunset on April 15, 6 BC to sunset on April 16, 6 BC as measured in Tuxtla Gutierrez (6:26 PM), which in Jerusalem would be potentially sometime between 2:56 AM on April 16, 6 BC to 2:56 AM on April 17, 6 BC.

We know from the New Testament that the shepherds were watching their flock "by night" when they were informed by an angel of Christ's birth, so we know that Christ was born after sunset and before sunrise in Bethlehem (Jerusalem time). Thus, assuming Christ was born before sunrise on April 16 as the sign indicates, the possible time frame based on this parameter is Christ would have been born sometime (in Jerusalem time) between sunset (which was 6:06 PM) on April 16, 6 BC and 2:56 AM on April 17, 6 BC to satisfy what was told to Nephi. 2:56 AM in Jerusalem is approximately 4:11 AM in Iran. On April 17, 6 BC the Magi at sunrise (5:16 AM in Tehran, Iran) observed all of the astronomical and astrological evidence of a new king in Israel. Using Molnar's indication that the astronomical signs of Christ's birth occurred on April 17, 6 BC between sunrise and just after noon presumably as seen in Iran, with the Hebrew measurement of a day being from sunset to sunset, and consistent with what $Nephi_3$ was told, Christ's birth and the subsequent associated signs occurred on the same "morrow" Hebrew day in Mesoamerica, as indicated to Nephi.

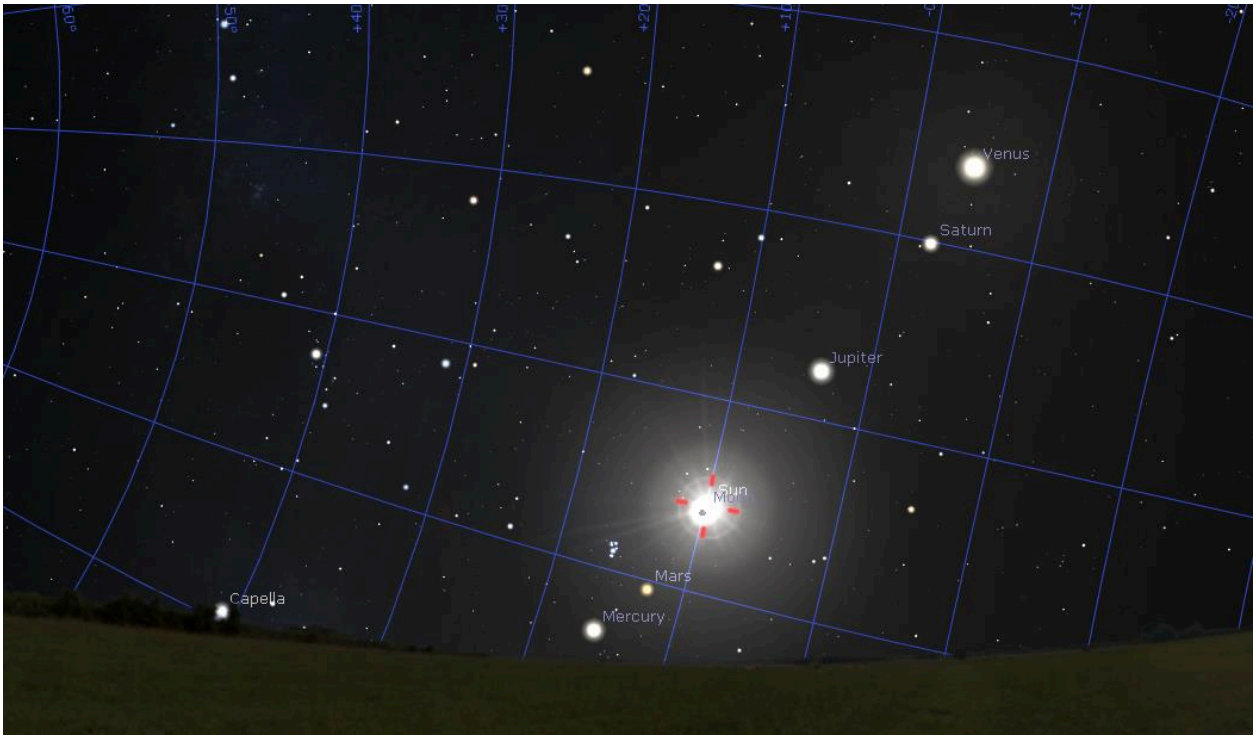


Figure 43 Image from the Stellarium software showing the alignment of the heavenly bodies after sunrise In Guatemala City, Guatemala on April 16, 6 BC with the sun in eclipse (author 2021)

With a partial solar eclipse at sunset occurring essentially at the beginning of this same Hebrew day signifying the death of an existing king, Christ's birth occurring during the night prior to 2:56 AM Jerusalem time, and then with the astronomical and astrological signs arising in the morning of the same Hebrew day indicating the birth of a new king, this must have been an impressive and miraculous divine birth to be sure.

The Nephite New Star

Given Molnar's determination using the ancient astrological principles applied by the Magi, it is apparent that a Nephite star would not be this type of star as the astrological techniques of the Magi would not be known or practiced by the Nephites. In addition, the Nephite star is described as a "new star," which Jupiter certainly was not. Further, the Nephite star is indicated to be "beheld" by the people; the Star of Bethlehem was apparently not noticed by anyone except the Magi. Thus, the simple conclusion is that the two stars are not the same star.

In evaluating what could be the Nephite new star the following parameters are found:

1. It must be able to be observed by persons in Mesoamerica, but not in Israel.

2. If absent from other astronomical records of the time, it likely was not observable from those locations.

3. It would have been present after April 17, 6 BC, but was apparently not present 3 years later (although not specifically mentioned) as it appears to be part of the signs and wonders of heaven that were forgotten (3 Nephi 2:1-3).

4. Similar to the Star of Bethlehem it was said to "arise" (Helaman 14:5) which was noted after that fact that it "did appear, according to the word" (3 Nephi 1:21).

5. It was a star "such as one as ye never have beheld," meaning the Nephites (Helaman 14:5).

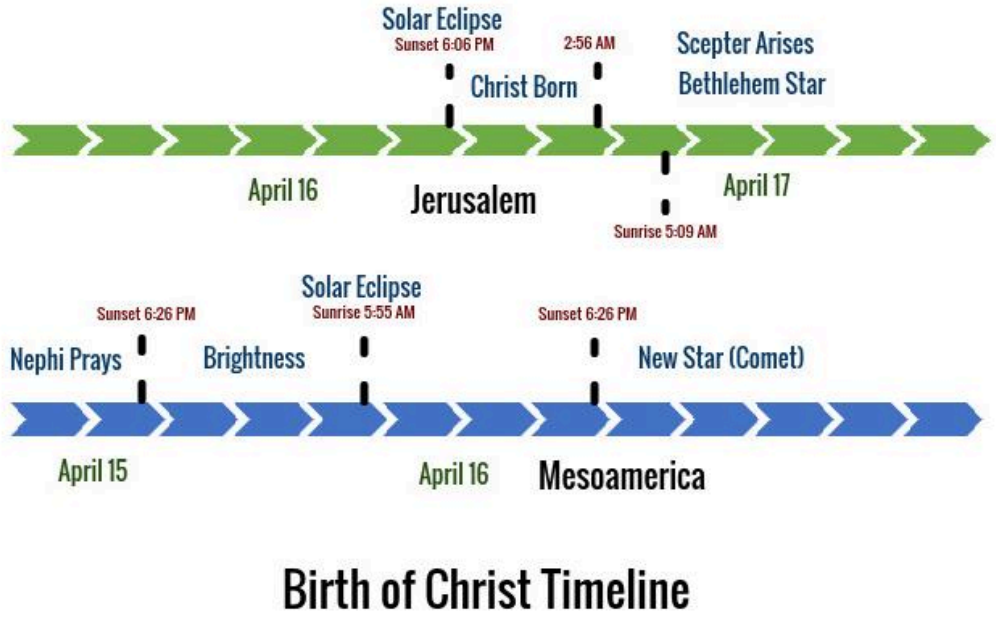


Figure 44 Corresponding Timelines of Christ's Birth in Jerusalem and Mesoamerican

The first parameter necessary to be discussed is that of the visibility of the star in Mesoamerica without being noticed in Israel (or other ancient astronomical record keeping areas like Mesopotamia or China). The most clear-cut explanation is the new star not being visible from Israel (or Mesopotamia or China) was because Mesoamerica is further south in latitude. A person standing on the equator is capable through the year of seeing all the stars and constellations; however, a person on the north pole cannot observe stars or constellations that appear in the southern hemisphere and vice versa for the south pole.

For example, the Southern Cross, which is the navigational equivalent of the North Star in the Southern Hemisphere, can be observed from the Northern Hemisphere from latitudes less than 35 degrees (just south of Albuquerque, New Mexico) (McClure 2021). Israel and Mesopotamia are at approximately 32 degrees latitude, the southernmost portion of China is at 21 degrees latitude. Mesoamerica is at 16 degrees latitude. Thus, there is a small portion of the southern sky that is visible from Mesoamerica that is not visible from these other more northern locations.

It would seem certain that it would have been noted in the New Testament if there was a significant astronomical event such as a "new" star observable to all at the time of the birth of Christ. However, the ancient astronomical records do not appear to be complete. For example, there is currently no indication from historical records of a comet matching the description of a comet in 6 BC. The primary ancient astrological record keepers were the Babylonians and the Chinese. Unfortunately, there are no Babylonian records for this time period, and it has been demonstrated that all of the combined records that we actually have of the other record keepers, including the Chinese, only account for about a third

of the expected number of visible comets during this time period (Nicholl 2015, 119-20), so lack of historical notation of a comet associated with the birth of Christ is not unexpected. Thus, for example, it may have been possible for the star to be a comet that was visible in China but not recorded, meaning that there was a larger swath of Mesoamerican skies where a comet may have appeared.

Considering these conditions, there is only one viable scientific possibility for the new star, a comet. As has been mentioned previously with regard to the night of illumination, there has been no evidence of a supernova found during this time period. Stars that continually shine but change in brightness, called variable stars, are known; however, the longest known brightness cycle is 1000 days, so would not be considered a new star, and certainly one that had not been seen before.

There are comets that are visible only in the southern hemisphere (see figure 45). As many comets do appear with some regularity, there is a question as to how the parameter "one as ye never have beheld" could be met. However, comets are remarkably varied not only in celestial route, but also as to coma and tail size and number, shape, color, and duration. In addition, since the comets that the population may have previously witnessed would be expected to be less than a dozen, it need not have been an extremely rare form of comet with a long orbital period to be one unlike others that they had seen. Figure 46 shows a variety of differing comet types.

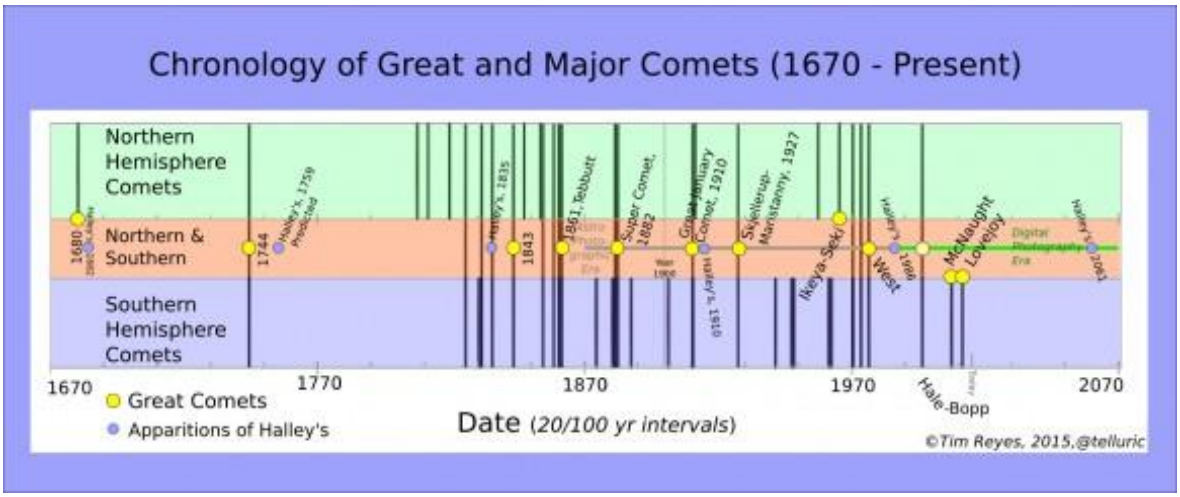


Figure 45 Chronological chart of great comets and major comets, 1670 to present. Great comets are marked with a yellow dot and all comets are displayed relative to their spheres of visibility – north, south or both. (McClure 2021)

There is also the possibility that the new star is a sungrazer comet located in proximity to the sun, which was only visible in Mesoamerica on the day when the sun was in near full eclipse, which definitely would have been a star that they would "never have beheld" and would definitely be observed as rising. This would have to be from a class of comets called "sungrazers." The proposal of a sungrazer comet as the star, to my knowledge, was first proposed by Charles Dike (2021). It may have also been possible for only the Magi to see this type of comet during the limited partial eclipse that occurred there. This would be possible for a very bright comet, as the closer to the sun a comet gets, it generally becomes exponentially brighter. After the eclipse it would not be visible if it was close to the sun.

There is evidence that ancient Babylonian astronomers used a dark glass of some sort to directly observe eclipses. They may have been able to see an adjacent comet that was not visible to those without such a tool (Simon 2018). In addition, since they could observe the sun directly, they may have been intently watching the sun if they had just observed a brightening of the sun during the start of the CME event. Once having identified the comet during the eclipse, they may have still been able to see it through the dark glass without the eclipse as it rose adjacent to the sun in the east. In Mesoamerica, they would likely have only seen the comet rising in the east, and the Book of Mormon doesn't mention exactly how long after Christ's birth that it was visible to them. There is considerable evidence that in Mesoamerica the astronomer priests observed sunspots using the naked eye, perhaps using techniques of reflection off of the Mesoamerican concave mirrors, or perhaps that used in Islam using water reflection, or in China where fine dust from the Gobi Desert becomes suspended in the atmosphere which reduces the sun's intensity tolerable to the naked eye, or also at sunrise or sunset when the sun is observed through a thicker slice of hazy atmosphere. Like the Babylonians, the Japanese observers used smoked glass, so perhaps in Mesoamerica they also had this technique that is yet to be documented (Zito 2017).

In Mesoamerica, the appearance of a comet, especially adjacent to a solar eclipse rising from the horizon after a night of illumination and auroras, would have no small religious impact. In Mesoamerica a comet is called "the smoking star," and the appearance of a comet was taken as a portent of a coming catastrophe and was taken as a prophecy of the death of a king, or of war and hunger. The common people believed that the blaze of the comet, which they called "arrow hurling star," throws out arrows which when hitting a living thing causes a worm to grow in it. For this reason, people made sure that they were well covered up at night to make sure the blaze of the comet did not fall on them (Trejo and Ricalde 1998). It was believed that the fall of Tullan was caused by a comet passing over them. Motecuhzoma's Comet, which was observed by the Mexican emperor, was one of the events that foretold the coming of the Spaniards.

In the 16th century Aztec Telleriano-Remensis Codex (see figure 47), a comet is depicted as a multi-colored snake, again consistent with the Nephite auroral event seen just before the arrival of the new comet. The concurrent presence of a comet and a solar eclipse, although the initial appearance was not at the same time (which appears to be the case with the Bethlehem Star), occurred in 1531, so it is not an impossible event.

What the meaning of a comet may have had to Christian Nephites is not really known but might be expected to be somewhat different to the meaning of a comet in those practicing Mesoamerican religions. While there was a general importance and religious significance attached to astronomy in the Holy Land, no notable developments in astronomy happened there. Only a few stars or constellations are mentioned in the Bible, and only two planets. There is no mention of comets in the Old Testament, so we must look for more recent indications of the appearance of comets in Israel.

Figure 46 Differing types of comets (Weissman 2021)

Figure 47 Representation of a comet as a multicolored serpent with barbs in the Telleriano-Remensis Codex Plate 39 (Famsi.org 2021)

Although generally comets would be considered unlucky signs in Mesopotamia, it is not necessarily so, and it appears that they may be lucky for the Jews if they occur during a positive event. For example, Halley 's Comet, which appeared over Judea in 164 BC together with a second comet in 163 BC that appeared over Judea as well, were positive signs in the heavens as:

> "… the liberation of Jerusalem, the subsequent rededication of the temple, and the death of Antiochus IV Epiphanes all occurred during the autumn months of 164 B.C when Halley's comet shone in the sky. … the appearance of the comet in the skies over Judaea, at such a momentous moment in Judaean history, was understood by contemporary Judaeans as a portent of their victory over the Seleucid Empire. … the "extraordinary coincidence" of the Judaean victory and the appearance of the comet became part of the background of the Jewish Hanukkah Festival (*the Festival of Lights*), the very festival that has celebrated the resanctification of the temple on the twenty-fifth of Kislev, from as early as the time of Josephus." (Horowitz 1996)

This historical situation would seem to be close to the experience of the righteous Nephites in that a new star in the form of a comet would signify their freedom and liberation from execution.

Comparison of April 17, 6 BC date for the birth of Christ with the date of his crucifixion

There has been a huge amount of conflicting scholarship evaluating all the possibilities for dates of Christ's birth and his death. The scope here is not to review and respond to all that past scholarship, as all of it lacks the current information from the Caractors Document and chronological parameters found in the Book of Mormon as well as recognition of a solar eclipse at the time of Christ's birth as indicated by the text of the Book of Mormon. The scope here is to look at the Old World scholarship to see if there is some agreement for the date provided by this new information.

Astute observers of the date of the solar eclipse proposed here will note that, while close, the likely dates currently thought to be the dates of Christ's crucifixion will not be 33 years and 4 days for the length of Christ's life as seems to be indicated by the date of destruction in 3 Nephi 8:5, assuming that the year length is 365 days. A careful reading of the retroactive change to the primary Nephite calendar indicates that the calendar change was made after nine years had passed away after the sign was given, where they "began to reckon their time from **this period** when the sign was given" (emphasis added) (3 Nephi 2:8). The term "period" used elsewhere in the Book of Mormon does not indicate an exact date, but is used, as is the common modern usage as well, to be a designation of a stretch of time (1 Nephi 7:13; Mosiah 2:28; Alma 9:11, 17; 51:19; 53:19, 59:5, ad 58:31). The topic is discussed in more detail later and shows that a 365-day year was used under the Coming of Christ calendar.

We would expect that the "period when the sign was given" would still be approximately close to the exact number of years that Jesus lived (approximately 33 years). In the Old World, from the New Testament, we do know potential dates of Christ's crucifixion since it occurred on Passover. Approximately 33 years from April 17, 6 BC would place the crucifixion in 28 AD (there is no zero year in the Gregorian calendar). There is no scholarly consensus as to the date of Christ's crucifixion, but there is consensus that he was crucified on or close to Passover, which can be calculated astronomically for each year. As to the Hebrew month and date for the annual Passover, scholars consider two dates as possibilities, Nisan 14 or Nisan 15 (Finegan 1998, 354):

> "If the day was reckoned according to the earlier practice from sunrise to sunrise, then both the slaying of the lamb and the eating of the meal took place on one and the same day, namely, on the fourteenth day of Nisan. But if the day was reckoned according to the later practice from sunset to sunset, then the lamb was indeed slain on the fourteenth day of Nisan but the Passover meal held "that night" was actually eaten on the fifteenth day of Nisan which had begun at sunset. Jubilee 49:1 explicitly describes the observance in terms of the latter manner of reckoning."

For 28 AD, there are four potential dates for Passover: Tuesday March 30th (Nisan 14), Wednesday March 31st (Nisan 15), Wednesday, April 28th (Nisan 14), or Thursday April 29th (Nisan 15) (Finegan 1998, 363). The last two dates are indicated if there happened to be an intercalation month inserted in the preceding year, which was necessary to correct the lunar calendar to the solar calendar which was the practice in Israel at that time.

The last two April dates are not possible as they would have Christ's life be longer than the maximum the Book of Mormon indicates of 33 years 4 days, as it would be 33 years 19.71 days or 33 years 20.71 days respectively using the 365-day year. The first two March dates indicate the length of Christ's life to be 32 years 355.815 days, or 32 years 356.815 days respectively. Either of these days are consistent with the potential length of Christ's life in the Book of Mormon, in that the Book of Mormon indicates that the length of his life may be shorter than the 33 years and 4 days (which will be discussed) since the year count started during the "period" when the sign was given. It is possible to further determine which of these dates (a Tuesday or a Wednesday) is consistent with the description given of the destruction after the crucifixion and correlation with the Old World Description, which is a Wednesday.

A Wednesday Crucifixion

Many (probably most) Biblical scholars accept a Friday crucifixion of Christ because the New Testament indicates that the crucifixion was the day prior to the Sabbath (assumed to be our Saturday)(Mark 15:42; Matt. 28:1; Luke 23:56; John 19:31) and the visit of the women was on the first day of the week (our Sunday)(Mark 16:2; Matt. 28:1; Luke 24:1; John 20:1). However, the difficult problem with this is that it does not square entirely with the New Testament record since Matt. 12:40 is emphatic that Christ would lie in the grave three days and three nights. Various solutions have been proposed (a figurative three days, partial days as full days, etc.) to try to square the New Testament record with a Friday crucifixion (Finegan 1998, 354; Ramsundar 2015). This particular predicament can be resolved as John 19:31 makes it clear that Christ's crucifixion was a "High Day" (an annual Sabbath, not a weekly Sabbath) which can fall on almost any other day of the week (or year) (Lev. 23:6-7). Thus, a Wednesday crucifixion becomes the most probable.

Additional evidence in favor of a Wednesday crucifixion is that with a death of Christ at about 3:00 pm (Matthew 27:45), it is likely that he was placed in the tomb around dusk, which eliminates a partial daylight period that could be counted as a day. Similarly, John 20:1 indicates that the women came to the tomb Sunday morning while it was still dark, meaning that Sunday cannot be counted as a fraction of a day if a postulation is made that a day start at sunrise. Luke 23:56 indicates that the women prepared spices and rested on the Sabbath. With a High Day Sabbath the day after the crucifixion, the spices could not be prepared until its completion. With a regular weekly rest day Sabbath following the High Day Sabbath, a Friday crucifixion is not possible, and neither is a Thursday crucifixion since the day following the crucifixion was a High Day Sabbath or a Sabbath and no work could be done (Lev. 23:7),

leaving no opportunity for the women to prepare the spices before the weekly Sabbath started, unless there was an intervening non-Sabbath day.

The *Didascalia Apostolorum* (1905, 21 = 5.4-6, vol. 1, 272) is a Christian legal treatise which belongs to the genre of the Church Orders. It presents itself as being written by the Twelve Apostles at the time of the Council of Jerusalem; however, scholars agree that it was a composition of the 3rd century, perhaps around 230 AD. The apostles are quoted as saying that they ate the Passover Meal on Tuesday evening and that on Wednesday Jesus was taken captive and held in the house of Caiaphas.

Researchers from LDS points of view have also noted that the Friday crucifixion is not tenable in light of what the Book of Mormon has to say about the time period between his death and resurrection and noted that the Book of Mormon requires an earlier crucifixion than Friday (Chadwick 2016; Cummings 2007, Dike 2021a).

The Book of Mormon text indicates from prophecy that Jesus would "be buried in a sepulchre according to the words of Zenos, which he spake concerning the three days of darkness" (1 Nephi 19:10); that Jesus would be "laid in a sepulchre for the space of three days" (2 Nephi 25:13); "there should be darkness for the space of three days over the face of the land" (3 Nephi 8:3); "and that darkness should cover the face of the whole earth for the space of three days" (Helaman 14:27). All these prophecies indicate that the three days of darkness corresponds to the time that Christ was placed in the tomb until his resurrection. The initial statement of prophecy by Samuel the Lamanite would seem to allow the possibility that the three days of darkness started at the time of Christ's death until the time of his resurrection, that "there shall be no light upon the face of this land, even from the time that he shall suffer death, for the space of three days, to the time that he shall rise again from the dead" (Helaman 14:20).

The actual recounting of the destruction, presumably by $Nephi_3$, indicates that the storm, initial earthquake, tempests, etc. lasted "for about the space of three hours -- and then behold there was darkness upon the face of the land" (3 Nephi 8:20). This would indicate that Christ's death corresponds with the start of the destruction, and about three hours later Christ was placed in the sepulcher, corresponding with the start of the Nephite darkness. It is then stated that "it did last for the space of three days that there was no light seen" (3 Nephi 8:23) and "thus did three days pass away. And it was in the morning, and the darkness dispersed from off the face of the land" (3 Nephi 10:9-10).

As others have discussed, we can determine the time of day when the destruction started because we do have information regarding times of day from the New Testament. Prior to the crucifixion, Jesus' second trial before Pilate began around 8 AM and according to Mark 15:25 it ended and the crucifixion took place at "the third hour," which using the Jewish method of counting hours, would correspond to nine o'clock in the morning. Around noon, while Jesus was on the cross, total darkness surrounded the area, until about 3 PM (see Matthew 27:45) when He cried out, "It is finished" and died (John 19:30). Since Jerusalem is 8.5 hours ahead of Mesoamerica (128 degrees difference in longitude), the 3rd Nephi destruction would have occurred starting at approximately 6:30 AM in Mesoamerica. According to the Book of Mormon there were about three hours of initial destruction (ending at 9:30 AM in Mesoamerica) during which Christ was removed from the cross and placed in the tomb (at about 6 PM Jerusalem time). There were three days of darkness in Mesoamerica that occurred starting 3 hours after Christ's death at 9:30 AM (3 Nephi 8:19), with the darkness dispersing "in the morning" (around 9:30 AM in Mesoamerica, 6 PM in Jerusalem) upon completion of 3 days of darkness (3 Nephi 10:9), which

dispersal corresponds with "the time that he shall rise again from the dead" (Helaman 14:20). This time correlation between the New Testament and Book of Mormon is also an independent verification that the place of the Book of Mormon was Mesoamerica (or at least in that time zone).

We know that the women arrived at the empty tomb of Jesus on Sunday while it was still dark (John 20:1), so with an assumption of an entombment on Friday at dusk, Jesus could have only been in the tomb a maximum of a little over a day and a half (two nights and one day). Thus, a Friday crucifixion is not possible given the Book of Mormon text requiring three days, which we know in Mesoamerica went from morning to morning, and in Jerusalem from dusk to dusk. If fact, a Thursday crucifixion is not possible either, because, with an entombment at dusk on Thursday, a full three days would require that Christ be resurrected at dusk on Sunday, which we know from the New Testament did not happen because the tomb was empty early Sunday morning. A Wednesday crucifixion is the only timeframe that meets the requirements of the both the New Testament times of crucifixion and the Book of Mormon three-day requirement.

Surprisingly, even given the fairly obvious time requirement, Cummings, an LDS author, although recognizing Wednesday as a possibility, indicates that Jesus was crucified at 9 AM on Thursday, but that only 60 hours passed that Christ laid in the tomb (short of 3 days by 12 hours) and that he was only in the tomb for three days and two nights. The reason given by Cummings for his dismissal of a Wednesday crucifixion is that:

> "Since, according to John's gospel, the crucifixion took place on the preparation day for the Passover, this view leads to a Passover Sabbath on Thursday and a weekly Sabbath on Saturday, with the body being embalmed on Friday. A Wednesday crucifixion also puts the resurrection near the end of the weekly Sabbath on Saturday, which conflicts with discovery of the empty tomb early Sunday morning, the first day of the week."

Chadwick recognizes that a Friday crucifixion is not possible and argues for a Thursday crucifixion. His analysis excluding a Wednesday is:

> "As affirmed in all four Gospels, Jesus's body was in the tomb for three days, and his resurrection occurred on a Sunday, the "first day of the week." Therefore, the crucifixion cannot have occurred on any day from Saturday through Wednesday. Only Thursday and Friday fall within a three-day window of time prior to Sunday, and even this depends on how the three days are counted."

Dike, on the other hand, makes the case for a Wednesday crucifixion and points out the deficiencies of Cummings and Chadwick based on the Book of Mormon text. He notes the errors in Cummings and Chadwick timeline and the Book of Mormon text as follows:

1. Their timeline has the end of the initial three-hour destruction correlating with the death of Jesus, not the beginning of the three-hour destruction contrary to the straightforward statement by Samuel the Lamanite in Helaman 14:21.

2. As discussed above, Dike makes the point that their timeline of 60 hours in the tomb is short of the full three-day requirement (72 hours) given by the New Testament timeline in conjunction with the requirement of the Book of Mormon text.

3. Dike addresses Cummings' objection to a Saturday evening resurrection, in that there is no contradiction or conflict between them finding an empty tomb on Sunday morning and Christ having resurrected earlier on Saturday evening after sundown (remembering a Hebrew day runs from sundown to sundown). With regards to Chadwick, there is no New Testament scripture that indicates that Christ was resurrected on Sunday. Although Dike didn't argue this, even if there was, had Christ been laid in the tomb slightly after sunset, on Saturday, under the Hebrew system, it would be the beginning of Sunday, so that condition would be met even if there was one.

Dike does not address Cummings' statement that crucifixion took place on "the preparation day" for the Passover (no scriptural citation is given, presumably Matthew 27:62; Mark 15:42; Luke 23:54; John 19:14, 31, 42 are what is being referenced) indicating somehow that this precluded a Wednesday crucifixion. There is no reason given by Cummings why a Wednesday crucifixion is not consistent with a preparation day; in fact, it is perfectly consistent with a High Day Sabbath starting at sunset on Wednesday running to sunset on Thursday.

Ironically, while publishing an online article in support of Chadwick and a Thursday crucifixion, Book of Mormon Central through their "BMC Team," they created a diagram (see figure 48) which they believed illustrated this point. However, looking closely at their Thursday Crucifixion diagram, it shows that the darkness dissipated in the middle of the night, which is contrary to the Book of Mormon, which states "(a)nd it was in the morning, and the darkness dispersed from off the face of the land." (3 Nephi 10:9). As discussed above, a Thursday crucifixion is 12 hours short. The BMC Team also makes the same error as others, namely that they show the darkness starting at the death of Christ instead of after the 3 hours of destruction as the Book of Mormon indicates.

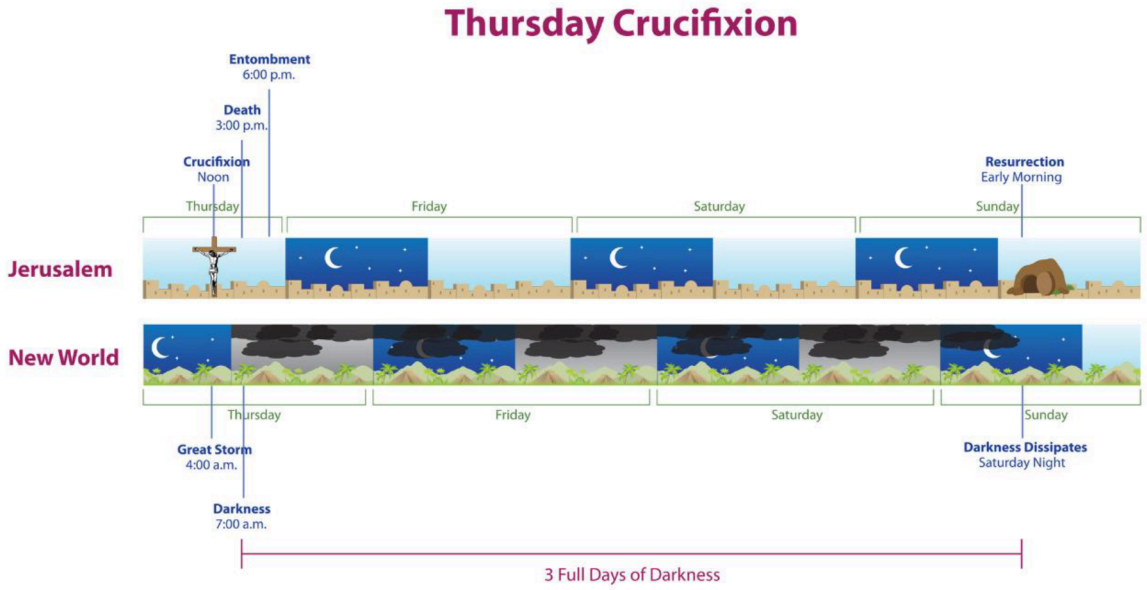


Figure 48 BMC Team Diagram of Crucifixion (BMC Team 2017)

Table 1: Timeline for the Crucifixion Day

Event	Jewish Time	Roman Time System	Remarks
Christ observes the Passover with his disciples according to the pre-deuteronomic guidelines	Abib 14 - Night	Tuesday – 6.00pm ~ 10.00pm	I Cor 11:23; Mark 14:16 Matt 26:19 Luke 22:13 ~15
Christ is arrested	Abib 14 - Night	Tuesday – midnight	Luke 22:55
Christ tried and convicted by the Jews	Abib 14 - Night	Wednesday – 1.00am ~ 6.00am	John 18:19 ~ 24
Christ brought before Pontius Pilate	Abib 14 - Day	Wednesday – 7.00am	Matt 27: 1 ~ 14 Luke 23: 1 ~ 7 John 18:29 ~ 38
Christ sent to Herod	Abib 14 - Day	Wednesday - 7.30am	Luke 23:8 ~ 10
Christ brought once again before Pontius Pilate	Abib 14 - Day	Wednesday - 8.00am	John 19:8 ~ 16
Christ crucified	Abib 14 - Day	Wednesday - 9.00am	Mark 15:25
Darkness over the land	Abib 14 - Day	Wednesday - 12.00noon ~ 3.00pm	Matt 27:45; Mark 15:33 Luke 23: 44 ~ 45
Christ dies	Abib 14 - Day	Wednesday - 3.00pm	Matt 27:50; Mark 15: 37 Luke 23:46; John 19:30
Christ placed in tomb	Abib 14 - dusk	Wednesday - 6.00pm	Matt 27:59 ~ 60 Mark 15:46; Luke 23:53 John 19: 41 ' 42
High Day Sabbath 1st Day of Unleavened Bread (Pharisaic Passover at Wednesday Evening)	Abib 15 – Night and Day	Wednesday - 6.00pm ~ Thursday 6.00pm	
Women buy and prepare spices. (Wave Sheaf Offering according to Pharisee tradition in morning)	Abib 16 – Day	Friday – between 6.00am and 6.00pm	Luke 23:56
Weekly Sabbath Women rest	Abib 17 – Night and Day	Friday - 6.00pm ~ Saturday 6.00pm	Luke 23:56
Christ resurrected	Abib 17 - dusk	Saturday - 6.00pm	Matt 12: 40
Women visit the empty tomb	Abib 18 - dawn	Sunday - 6.00am	Matt 28:1 Mark 16:1 ~ 4 Luke 24:1 ~ 3; John 20:1
Christ - the Wave Sheaf according to Sadducee tradition.	Abib 18 - day	Sunday – between 7.00am and 6.00pm	John 20:17

Table 1 shows the sequence of events for a Wednesday crucifixion created by Ramsundar (he assumes a Nisan 14 day of Passover instead of Nisan 15).

Knowing that the Book of Mormon dictates a Wednesday crucifixion, and noting that Herod died in the spring of 4 BC, and knowing that Christ lived around 33 years (365-day year), the latest possible year for consideration for Christ's death (remembering there is no 0 year) is 30 AD. The earliest year considered possible for Christ's death by Biblical scholars is 27 AD. There is only one year from 27 AD to 30 AD where Passover (either Nisan 14 or Nisan 15) falls on a Wednesday, which is 28 AD (Finegan 1998, 363). Thus, the Book of Mormon text describing the time of the destruction independently confirms the date of Christ's death, and also the associated date of his birth in April of 6 BC, just as the Book of Mormon text and solar eclipse indicate.

New Year's Day of the 92nd year of the Reign of the Judges

With the information discussed it is possible to calculate the date in the Old World calendar for New Year's Day of the 92nd year of the Reign of the Judges, and thus know the number of days that had passed after which Christ was born.

1. The raw length of Christ's life was approximately 32 years 356.815 days (12036.815 days). Adjusting for the time of his death versus his birth (a range of hours) there may be a half day difference.

2. Christ's death was on March 31, 28 AD at 3:00 PM, which in the Hebrew day system would be sunset on March 30 to sunset on March 31, 28 AD.

3. The time from Christ's crucifixion in Mesoamerica from New Year's Day of the 92nd year is 33 years (uncorrected solar) and 3.25 days (12048.25 days).

Counting back the correct number of days (12048 days) from the death of Christ, one arrives at approximately sunset on April 3 to sunset of April 4, 6 BC as the New Year's Day of the 92nd year. Considering the approximate time window of Christ's birth (sunset of April 15 to sunset of April 16, 6 BC in Mesoamerica), and the time difference in Mesoamerica, the time from the start of the Nephite New Year of the 92nd year of the Reign of the Judges until the birth of Christ would be approximately 12-13 days. Knowing the exact date for the New Years Day of the 92nd year we can use this to determine the stage of the full moon utilized for year beginnings and endings.

Marking of Nephite months by completion of a full moon

Knowing that Christ's death occurred on a Nephite New Year's Day, and that the change in the Coming of Christ calendar corresponds with a lunar calendar Nephite New Year's Day, it is possible to postulate how the Nephites determined the start of their year and presumably the individual months utilizing the phases of the moon.

As already indicated, the Nephite calendar and chronology correlates exactly with Christ's birth in the Old World calendar utilizing a sunset to sunset Nephite day, as was generally agreed to be the pre-Exile Hebrew practice (Segal 1957, 254).

Based on the death of Christ occurring near the time of Passover, which occurs around the time of a full moon, and given his death occurring on a Nephite lunar year New Year, the Nephite year and month appears to start with some point of observation of a full moon. There is extensive evidence that the pre-Exilic Jews utilized the full moon to mark the month and year endings or year beginnings (Snaith 1947, 253), with the year ending and including the full moon, which was the Harvest Full Moon, although the new moon was used in Babylon and the Middle East (Segal 1957, 253) and among the Jews at the time of Christ.

While we now have the scientific knowledge and tools to determine the exact minute when the moon is directly in opposite alignment to the sun generating a full moon, the ancients had to make their determinations based on visual sightings. The full moon appears such to the naked eye for about three days (or perhaps a bit more) as can be seen in figure 49, so there is room for a few days of variability for any given month if it is just an observation of a full moon (Johnston 2021). Marking of months based on lunar observations also must accommodate local meteorological conditions that may block visibility for a

period of time. This will precipitate some variability as well on any given month (or year-end/beginning). For example, amongst the Jews at the time of Christ, if the new moon was not seen at sunset, or views were blocked on the expected day of the new moon, the next day was automatically determined to be the first day of the month.

According to our modern scientific calculations, looking at the Nephite days we are interested in, for a full moon for the New Year's Day of the 92nd year just prior to Christ's birth, the calculated date is from sunset to sunset of April 3-4, 6 BC. The scientific full moon in that time frame was April 1, 6 BC at 11:17 PM (Mesoamerican time) (Espenak 2014), thus during the Nephite sunset to sunset day of April 1-2, 6 BC. Thus, this Nephite New Year's date was roughly 2 days after the scientifically noted full moon. Thus, April 3-4 was the beginning base date of the Coming of Christ calendar, which was an uncorrected solar calendar.

The scientific full moon closest to Christ's death is March 26, 28 AD at 9:53 PM (Mesoamerican time), so would be the Nephite day of sunsets on March 26-27, 28 AD (Espenak, 2014). Christ's death occurred on the Nephite day of sunsets on March 30-31, 28 AD, so the calendar here shows this Nephite New Year's date roughly 4 days after the scientific full moon date.

With this information, while admittedly for only two of over a thousand New Year's Days that occurred in the Book of Mormon, it is still possible to postulate the ways that the Nephites made their visible determination of the change in months/years using the full moon. Following the pre-Exile practice, it is clear that they were including the full moon period in the end of a month, meaning that the month did not end until there was an observation that the full moon had ended by observing a dark edge appearing on the moon, as the New Year day is occurring 2 days after the scientific full moon time for the 92nd New Year. In the other instance we have at the date of the 3rd Nephi destruction, there are more than the 2 days. Three additional days might be accommodated by naked eye observation subjectivity, but the fourth day would seem to indicate a similar practice to what the Old World Jews were doing, basically where there was an inability to see the moon, an additional day was added and called the New Year. I had noted in my book, the Geology of the Book of Mormon, that when the San Martín volcano erupted in 1792, which is the best candidate for the 3rd Nephi volcano, it was covered in clouds so the people in 1792 thought the initial eruption was a large storm. The fact that the 3rd Nephi event was also characterized as a "great storm" might be indicative that there were meteorological conditions present that would not allow observation of the moon prior to the eruption. Of course, after the eruption there was no observation of anything as there were three days of darkness.

Given the difference between 2 and 4 days, another possibility to be considered with regards to setting the first day of the month based on the full moon observation is that it may have been a fixed day count starting from the first observation of the full moon instead of when it ended, along with a requirement that the full moon must not be above the opposite horizon at sunset in order to be considered in a full moon count. Using the Stellarium software, for all the April 6 BC dates, the full moon rose after sunset. For the March 26-31, 28 AD dates, on March 26-27 the moon was already up at sunset, and for March 28-31 it rose after sunset. So, using this parameter of March 28-29 it would place the New Year 2 days after the scientific full moon, just as the April 6 BC day is.

Figure 49 All phases of the moon (Tanner 2021)

Summary of the Sequence of the Nephite Nativity Event and events of Christ's birth in the Old World

New Year's Day of the 92nd year of the Reign of the Judges, 600 years completed since Lehi left Jerusalem – April 3-4, 6 BC.

Possible observation of the white flash of the CME solar event by Mesoamerican and/or the Magi – April 13 to April 16, 6 BC.

Mesoamerican priests predict the day of the anticipated solar eclipse as April 16, prepare for the impending eclipse by making a great uproar and preparing all Nephite prisoners for sacrifice (some possibly with fair complexions) - April 15-16, 6 BC.

Night of illumination, signs and wonders – CME hits earth April 16-17, 6 BC.

A solar eclipse appears at sunrise in Mesoamerica and at sunset the Magi observe the same solar eclipse (partial) -- April 16, 6 BC.

Night of Christ's birth in Jerusalem – sunset to sunset April 16-17, 6 BC.

Magi (and perhaps Mesoamerican astronomer priests) watch and observe sunrise and witness Magi astrological royal astronomical events – April 17, 6 BC.

Appearance of new star (comet) likely in the southern skies of Mesoamerica – Night of April 16-17, 6 BC.

Continuing Signs or Wonders

Sometime quickly after the conclusion of the Nephite Nativity Event, there were "lyings sent forth among the people, by Satan, to harden their hearts, to the intent that they might not believe in those signs and wonders which they had seen" (3 Nephi 1:22). Presumably Satan was working through the political and religious powers present at the time in spreading his lies. The Mesoamerican astrologer priests no doubt were highly motivated to discount the Nephite miracle, as the consequences of the failure to maintain the religious hegemony under which they operated were severe. The failure of later astrologer priests of Montezuma, the Aztec king, to notice the appearance of a comet the night before resulted in dire consequences. Montezuma, who had heard about the comet from a youth, observed the comet himself at midnight. When the astrologer priests were summoned and admitted their failure, Montezuma became enraged and ordered them locked in cages so they could die of hunger. The astrologers wept and pleaded to be put to death instead. Montezuma ordered the astrologers to be slain, their houses sacked and razed to the ground, and he condemned their women and children to perpetual slavery (Trejo and Ricalde 1998).

Four years after the Nephite Nativity Event, it is mentioned that "the people began to forget those signs and wonders which they had heard and began to be less and less astonished at a sign or a wonder from heaven," (3 Nephi 2:1) and later mentioned that they "began to disbelieve all which they had heard or seen." There is a notable detail in the text, in that what occurred during the Nephite Nativity Event was always referred to as Nephite Nativity Event "signs and wonders" (instead of signs or wonders) and it is apparent that there was not a recurrence of these "signs and wonders" as they were forgetting them. In order to forget the signs and wonders that they saw, there must have been a disappearance and no recurrence of the signs particular to the Nephite Nativity Event (night of illumination, star (comet), aurora). At the close of five years after the Nephite Nativity Event it is noted that:

> "… they did not believe that there should be any more signs or wonders given; and Satan did go about, leading away the hearts of the people, tempting them and causing them that they should do great wickedness in the land" (3 Nephi 2:3).

This verse does not specify heavenly signs or wonders; it may have been inclusive of the other non-heavenly signs or wonders as well. Also, based on the text, the signs or wonders that followed the Nephite Nativity Event need not occur together. There were apparently still signs occurring at times and wonders occurring at times after the Nephite Nativity Event, but there was something about them that did not influence the people to maintain a belief in Christ (probably less spectacular and more predictable like a meteor shower). The requisite element of the Nephite Nativity Event that drew them to believe in Christ was that the Nephite Nativity Event was predicted by Christian religious priests (prophets), and that at least part of the event was something that they hadn't seen before, giving the prophecy even that much more impact. Had there been no Christian prophecy, it would not seem likely that the Nephite Nativity Event would have had any effect in building allegiance to the Christian faith in competition with the other religions present at the time. The lack of inspiration of Christian faith or awe in these post Nephite Nativity Event heavenly events would be caused by the prediction of additional astronomical events by competing pagan religions (such as solar or lunar eclipses) in the five subsequent years, not by Nephite priests.

Because of the usurpation at the Nephite Nativity Event by the Nephite prophets of the ability to predict heavenly events, in order for the pagan religious astronomer priests to start to reestablish credibility, they were going to need to reestablish the ability to have successful predictions of heavenly events, namely solar and lunar eclipses. After the Nephite Nativity Event there were six solar eclipses that occurred that were not visible in Mesoamerica that would have been predicted as "eclipse warnings" by the pagan Mesoamerican astronomer priests so these failures did not restore any confidence to the people of their religious power (Espenak and Meeus 2006). The next solar eclipse visible in Mesoamerica was on August 19, 4 BC approximately 2 solar years and 4 months after the Nephite Nativity Event, which is roughly 2.4 years in the Nephite uncorrected lunar calendar. With the Nephite Nativity Event happening towards the beginning of the 92nd year, that would put the first accurate prediction of a solar eclipse, towards the middle of the 94th year. The Book of Mormon indicates that there was peace through the 93rd year because of the signs which had come to pass (3 Nephi 1:26-27). In the 94th year there started being Nephite dissenters to the Gaddiantons, led away by some who were Zoramites (3 Nephi 1:28-29).

After the predicted solar eclipse in the middle of the 94th year, later in the 94th year there was one additional solar eclipse that would not have been visible in Mesoamerica, but the next one was visible in Mesoamerica and occurred on August 8, 3 BC placing it in the 95th year, which is the year that the people began to stop believing in the Nephite prophets (as they weren't doing any more predictions of heavenly signs). At the end of the 96th year the Nephites had reverted back to their old Mesoamerican ways, namely that it was "the power of the devil" (3 Nephi 2:2) that causes the eclipses and other heavenly signs, and their pagan clergy was again reliable in their predictions protecting them from "evil," and there was no reason to believe in Christ, and that whatever heavenly signs and wonders they had seen had nothing to do with a good god (Christ).

Observable lunar eclipses after the Nephite Nativity Event follow a similar pattern as the solar eclipses. After the Nephite Nativity Event, five months later there was a partial lunar eclipse, but it only involved an extremely small part of the moon and was below the horizon (not visible) for part of the time. Over the next year and a half there were two anticipated eclipse periods where the lunar eclipses were not visible in Mesoamerica. Two years after the Nephite Nativity Event (first part of the 94th year) there was another very small partial lunar eclipse, barely visible, which was also below the horizon for part of the time. Six months later (towards the end of the 94th year) there was another partial lunar eclipse. So, similar to the solar eclipse, in the 94th year there was a significant predicted observable partial lunar eclipse in Mesoamerica. There was no intervening non-visible expected eclipse from the insignificant partial eclipse from six months earlier, which showed that there was again reliable prediction occurring among the pagan astronomers. After that there were four more "missed" lunar eclipses but then (towards the beginning of the 96th year) another significant predicted observable partial lunar eclipse in Mesoamerica (Espenak and Meeus 2009).

Conclusions

Based on parameters for the miraculous astronomical events that occurred at the birth of Christ as contained in the text of the Book of Mormon, and known scientific parameters of astronomical phenomenon, a large Coronal Mass Ejection event matches all of these parameters and was the likely cause of the Nephite Nativity Event. An anomalous meteor shower may have been involved as well but is not a required element. Christ's birth occurred after conjunction with a partial solar eclipse on April

16, 6 BC that appeared upon sunrise of that day in Mesoamerica and appeared in similar fashion at sundown in Babylon and Persia and was likely observed by the Magi there.

The appearance of the Star of Bethlehem as indicated by the astrological determinations of the Magi is consistent with the birth of Christ on April 17, 6 BC matching the Book of Mormon text. Information from the Book of Mormon and the Old World indicates that Christ was crucified on Wednesday, March 31, 28 AD.

Chapter 4

Samuel the Lamanite and $Alma_2$ Prophecies

Samuel the Lamanite's Prophecies Base Date Determination

It was asserted by Rappleye (2018) that a supposed failure of Samuel the Lamanite's prophecy of Christ's birth apparently not happening within the 5-year time period of the prophecy as perceived by the more wicked Nephites is evidence that the Nephite calendar consisted of the Long Count, the Nephites thus using the tun as the year unit, with the Lamanites using the haab year unit. His argument is that the terms "haab" and "tun" were used interchangeably among the Maya, so the Nephites understood "tuns" while Samuel the Lamanite intended to mean "haab."

Although there really is no failure of the prophecy as discussed below, Rappleye raises an important point related to the Book of Mormon reference to "years." Based on this current work as well as Spackman's, the term "year" can mean two different types of years, without the Book of Mormon specifically indicating a difference. This fact is not without precedence in the Book of Mormon as it seems clear that the use of the term "hour" can constitute different lengths of time depending on the culture.

Alma 18:14

> Therefore Ammon turned himself unto the king, and said unto him: What wilt thou that I should do for thee, O king? And the king answered him not for the space of an hour, **according to their time**, for he knew not what he should say unto him. (Emphasis added)

When the Nephites changed the year count nine years after Christ, it was indicated that the Nephites "began to reckon their time from this period when the sign was given" (3 Nephi 2:8). The term "reckon" is only used in two other locations in the Book of Mormon. The first involves the "reckoning" of their commodity exchange system, which consisted of the comparison of three different commodities (gold, silver, and barley and other grain) each with a different system of counting, or reckoning (Alma 11:4, 5, 14, 18). The use of this term in this context would not be at odds with the interpretation of "reckon" to accommodate more than one counting system in relation to the counting of years. The other use of the term "reckoning" is 3 Nephi 8:2 where it is indicated that "if there is no mistake made by this man in the reckoning of our time, the thirty and third year had passed away." This phrase does seem curious, as no one had ever questioned the capabilities of the year counter. Although not definitive, it would seem that perhaps this individual had not counted multiple calendar year counts (specifically the solar year count) prior to the change in year counting that occurred at the birth of Christ, so the year counter was in need of a testimonial from Mormon.

While we have determined that the pre-Christ calendar was the uncorrected lunar calendar, and the post-Christ calendar is the uncorrected solar calendar, it might be useful to test the possibility that Samuel the Lamanite gave his 5-year prophecy using a different calendar as Rappleye suggests, since we have already seen that the Lamanites, at least at the time of Ammon, were measuring the hours of the

day differently. If the Samuel the Lamanite prophecy was made using the 360-day tun calendar, then 5 years would be 1800 days. If using the haab calendar, then 5 years is 1825 days. 5 years in the uncorrected lunar calendar is 1771.84 days, shorter than the other two. Ignoring for a moment the time period found in the Caractors Document of 60½ months, since the 5-year haab is 53.16 days longer and the 5-year tun is 28.16 days longer than the uncorrected lunar calendar, Rappleye's reasoning that there is a different year type being contemplated by Samuel is a possibility. However, one would have to assume that Samuel the Lamanite's 400-year prophecy would also be made using either the tun or haab year, since it is part of the same prophecy.

Using 60.5 months plus the Nephite destruction date just after 384 uncorrected solar years (last Nephite battle), the total number of days is:

1786.6 + (384 years x 365 days/year) =141946.6 days

Dividing those number of days by the various year lengths, one can see which of the potential year lengths would work to arrive at 400 years in order to match the prophecy of Samuel the Lamanite:

141946.6 days /360 days = 394.27 tun years

141946.6 days /365 days = 388.9 haab years

141946.6 days /354.367056 days = 400.56 uncorrected lunar years

The uncorrected lunar year is clearly the best fit for the Samuel the Lamanite 400-year prophecy, not tun or haab years.

So, what about the apparent problem of more than 5 years apparently passing in the Book of Mormon? Even the Caractors Document shows more than 5 years passed (60 and a half months). First, one must look to the text of the prophecy to see whether it is possible to accommodate a little over 5 years. Second, in order for the Caractors Document length of time to be accommodated, the prophecy of Samuel the Lamanite must have been given at the very end of the 86th year of the Reign of the Judges as there is only approximately 12-13 extra days after the start of the New Year of the 92nd year to accommodate some "greater signs and greater miracles wrought among the people"(3 Nephi 1:4) and for the setting a part of the day by the unbelievers to put to death the righteous Nephites (3 Nephi 1:9).

The 5-year prophecy actually accommodates the fact that the coming of Christ to fulfill the prophecy occurred <u>after</u> 5 years as it states:

> "Behold, I give unto you a sign; for five years more cometh, and behold, **then** cometh the Son of God" (emphasis added) (Helaman 14:2)

While one reading is that the prophecy would be completed exactly at 5 years, the verse can also be read that 5 years will pass, and then at some point shortly thereafter, the Son of God would come.

The first step is to try to determine from the Book of Mormon text the base date of the prophecy, meaning when the prophecy was made. One must look at what happened during the eighty-sixth year to narrow down the base date of the prophecy. The text does not say that Samuel the Lamanite began to preach in the commencement of the eighty-sixth year, it just says "in this year" (Helaman 12:2). Prior to the prophecy the text continues to say that he "did preach many days," he was "cast out" and "was about to return to his own land" (Helaman 13:3). He was then told to return again and prophesy.

Ultimately, he got up on to the wall of the city and began to preach and then delivered the 5-year prophecy (Helaman 13:4). While not completely definitive, it appears that his prophecy is very late in the year based on all of the other events occurring earlier in the year with the preaching and the prophecy being the last event recounted in the eighty sixth year (Helaman 16:6-7, 9) and it is then noted that "thus ended the eighty and sixth year." Thus, the text of the Book of Mormon does indicate that Samuel's prophecy was given at the very end of the eighty and sixth year.

In addition, various themes and references contained in Samuel's teaching and prophecy are consistent with a year-end theme. As discussed previously, the celebration and year-end events approaching a Hebrew New Year contain certain Biblical themes. Samuel's teachings and the correlating year-end and New Year's themes are:

Repentance: Helaman 13:6, 8, 11, 13, 36, 39; 14:9, 11, 13, 18, 19; 15:3, 7, 14, 17
Weeping and howling: Helaman 13:32
The Lord is "the Creator of all things from the beginning": Helaman 14:12
Day of Atonement: Helaman 14:13, 15, 18
Day of Judgment: Helaman 13:38
3 Days: Helaman 14:20, 27
Thunder and lightning: Helaman 14:21
Great tempest: Helaman 14:23
Fire coming down from heaven: Helaman 13:13

It is very noteworthy that Samuel went up unto the wall and "stretched forth his hand" and "cried with a loud voice" and announced that "heavy destruction" awaited the people indicating at 15 different points in the text a call for repentance (Helaman 13: 4-6). In the Hebrew Bible, in which phrases referring to the raising or extending of the hand are those of destruction (Calabro 2014, 188) the "loud destruction" meaning of the name of the New Year's Day and the Book of Mormon text here does not appear to be a coincidence. As has been noted, during the last month of the year (Elul) under the Jewish tradition, on each day a shofar sounded, reminding the Jewish people to repent. Samuel's message of repentance was totally in line with this tradition.

Rappleye (2018) noted that:

> "Despite believing that the time had passed, the skeptics "set apart" a specific day in the 92nd year as the deadline for the prophecy — literally, they planned to "put to death" all who believed in the prophecy, "except the sign should come to pass" (3 Nephi 1:9). Given this was a planned mass execution, it is safe to say this was not an arbitrary date. There was probably some reason for even the unbelievers to think the prophecy could potentially be fulfilled before that day and for believing that after that day it would be definitively too late for the sign to come."

It has already been determined that this date was a solar eclipse date. Rappleye's suggestion was that this deadline date could have been the year ending of a different type of calendar year. As previously discussed, it was a few days after the New Year's Day of Judgment (which is 10 days after the northern kingdom's New Year). Also, on somewhat of a twist of this Biblical type, the decision to put the believers to death is consistent with the premise of putting people to death as was done by the sons of Levi as a result of Moses's descent from Mount Sinai and finding the worshiping of the golden calf (Exodus 32:26-28).

The text in the Book of Mormon records that on this form of a Day of Judgment of Christ's birth, many of the unbelievers "fell to the earth and became as if they were dead for they knew that the great plan of *destruction* which they had laid for those who believed in the words of the prophets had been frustrated" (3 Nephi 1:16) and others throughout the land also fell to the earth (3 Nephi 1:17). As mentioned, the name of the New Year festival means "loud destruction," so even their great plan of destruction, again in an evil twisting of the Hebrew New Year meaning, is consistent with this event correlating with the Day of Judgment. Imagine the fear and anxiety when they were the ones who were shocked on a Day of Judgment and fell to the earth.

We know (as shown earlier) that the birth of Christ was 12-13 days after New Year's Day of the 92nd year. According to the Caractors Document, 60.5 lunar months passed from the prophecy to the birth of Christ, which is 1786.6 days. The 5-year prophecy consisted of 1771.83 days, so the difference in days is 14.77 days. Thus, the base date of Samuel's prophecy was from 1-3 days prior to the end of the 86th year and New Year's day of the 87th year, just as the Book of Mormon text, Biblical typology, and the theme of his sermon indicate.

Samuel the Lamanite's 400-Year End Date Prophecy Calculation

Now that it is known what the years are that are being used in each calendar count, it is possible to see if this year count equates to each of the 400-year prophecies. It has already been noted that the Samuel the Lamanite prophecy of the sword of justice falling on the Nephites does not work well using any kind of solar year as 5 years before the sign, plus 384 years to the final battle makes 389 years, not 400. 400 years after Samuel the Lamanite would place the fulfillment of the 400-year prophecy 5 years after the final battle, which is much too late. The exact language of Samuel the Lamanite is a bit curious, as it says that "four hundred years pass **not** away save the sword of justice falleth upon the people" (Helaman 13:5) and "four hundred years shall **not** pass away before I will cause that they shall be smitten; yea I will visit them with the sword and with famine and with pestilence" (Helaman 13:9). So, the events in the prophecy will occur prior and up to the completion of 400 years.

Since Samuel the Lamanite's 5-year prophecy corresponded with the uncorrected lunar calendar count, and he made it prior to the change in calendar, the evidence is that the 400-year prophecy (like all the other Book of Mormon prophecies) was made using the uncorrected lunar calendar. Since the prophecy was spoken just a day or two before the completion of the eighty-sixth year of the Reign of the Judges, we will add two days for purposes of this calculation to determine what 400 years under the uncorrected lunar calendar amounts to in the Coming of Christ uncorrected solar calendar count. There were 5 uncorrected lunar years from Samuel to when the new calendar count started, so what is necessary is to convert the prophecy's remaining 395 uncorrected lunar years of the prophecy to the uncorrected solar Coming of Christ calendar:

395 uncorrected lunar years (354.367056 days/lunar year) = 139974.987 days

139974.987 days + 2 days/(365 days/solar year) = 383.5 years.

The last battle took place sometime after 384 years had passed away (likely in the 385th year) in the Coming of Christ calendar (Mormon 6:5), thus the prophecy would be considered to be fulfilled based on the 400-year calculation exactly halfway through the year (an interesting precision). The language of the prophecy is that "four hundred years pass not away save the sword of justice falleth upon this

people," (Helaman 13:5) and "four hundred years shall not pass away before I will cause that they shall be smitten; yea, I will visit them with the sword and with famine and with pestilence" (Helaman 13:9).

The prophecy can be read that all the events described must have occurred before the 400 years had passed away. The prophecy indicated the Nephites would undergo famine which is mentioned in Moroni 9:17, the date of which is 345-350 (in the Coming of Christ calendar) (Grover 2018, 174-6). Mormon does not use the word pestilence in his description of the last days of the Nephites, but describes rape and cannibalism, which would seem to certainly qualify as meeting the prophetic requirement. As far as being visited by the sword and the sword of justice falling on the people, the documented battle periods by Mormon are 326–30, 345–50, 361–62, 363, 364, 366, 367, and 375–80 (in the Coming of Christ calendar).

Since in these continuing battles with the Lamanites the Nephites were successful, perhaps one could interpret that the point where the Nephites stopped winning might be a point where the prophecy began to be fulfilled which was after 375 years (in the Coming of Christ calendar) when Mormon indicated they had gained "no power over the Lamanites and began to be "swept off" "even as a dew before the sun" (Mormon 4:19). Since all of these occurred before year 383.5 (the prophecy date of 400 uncorrected lunar calendar years), the 400-year prophecy of Samuel the Lamanite is consistent with the uncorrected lunar year count.

The language of the prophecy indicates a variety of things would occur prior to the 400 years passing and indicates that "heavy destruction awaiteth this people," (Helaman 13:6), which would seem indicative that this destruction would occur after the completion of the 400 years. During the various conflicts that the Nephites had during Mormon's life, he does not talk about some of the Nephites being actually "destroyed" until just before the battles leading up to the final battle starting in year 379 and ending in the final battle that occurs after year 384, which after that battle notes the "great destruction" of his people (Mormon 5:5, 7, 6:22). With the destruction starting in year 379 and ending sometime in year 385, 383.5 years being the 400-year prophecy date is exactly consistent with the prophecy and text of the Book of Mormon.

An additional note on the prophecy, although unrelated to the year count, one likely reason why $Moroni_2$ prior to burying the plates included an epistle from his father Mormon (Moroni 9) was to document the fulfillment of both of the 400-year prophecies with regards to "famine." Both prophecies indicate famine, but up to Moroni 9 there is no mention of famine. Moroni 9:16 gives an example of famine.

Using the base date of the Coming of Christ calendar as April 3, 6 BC, 400 uncorrected lunar years from the base date of the prophecy is June 26, 378 AD. The date of the completion of the 384 years just prior to the final battle is December 28, 378 AD. If we use the actual date of Christ's birth (April 16, 6 BC) as the base date, then the prophecy completion would be January 10, 379 BC. The text of the Book of Mormon does not provide us the date of the last battle. The only intervening event between the end of year 384 and the last battle was that Mormon completed the abridgement and gave it to $Moroni_2$ and hid up all the rest of the records in the Hill Cumorah. Although an exact date is not known, it may be possible to hazard a guess.

Mormon was the one who chose the location of the final battle, and presumably the time frame (Mormon 6:2-3). It is a reasonable assumption that Mormon, knowing the culture of the Lamanites,

which has been indicated to correspond with the Maya, would have selected a time that, as much as possible, would not correspond with their superstitious and religious beliefs of warfare that would give favor to the Lamanites.

It is known among the Maya that decisive conflicts between rival Maya polities during the first millennium AD coincide with astronomical events involving the planet Venus, either when it was first visible in the morning or night sky or during its absence in inferior conjunction. Inferior conjunction is the short, roughly eight-day period when Venus is not visible as it is on the front side of the sun relative to the earth when shifting from being the evening star to the morning star. These are referred to as "star wars" based on the specific depiction of a star showering earth with liquid droplets in the glyph used to designate these conflicts. Losing one of these "star wars" was usually disastrous for the defeated party and included declines in population, destruction of monuments, rulers being tortured to death and possibly eaten, and capture of personal effigy gods of its ruler, and the loser's "blood was pooled, the skulls were piled" (Chase et al 2003, 171-188; Robertson 2006, 360; Doyle 2015).

So, in an effort to try to narrow down the time frame for the final battle that would be unfavorable to the Lamanites, one can try to identify the astronomical periods favorable to Lamanites and try to find times that will avoid them to the greatest extent possible. The text of the Book of Mormon indicates that the battle occurred sometime in year 385 (otherwise Mormon would not have noted that the Nephites were all gathered together at the end of year 384).

A study of these "star wars" dates in the Maya indicate that 70 percent correspond with Venus's evening phase, with 84 percent of those matching the first appearance of the evening star. The rise and fall of Venus as a morning star takes 263 days. For the next 50 days, Venus disappears and cannot be seen in the sky at all. Then, Venus reappears in the evening sky, where it remains for another 263-day phase before disappearing below the horizon for 8 days.

Using Stellarium software, on December 28, 378 AD, the end of year 384 in Mesoamerica, it was determined that Venus had already been appearing for some days as the morning star. It disappeared for its superior conjunction, which lasts approximately 50 days, around April 14, 379 AD and reappeared as the evening star around June 4, 379 AD. No inferior conjunction of Venus occurred in 379 AD. Thus, for Mormon to avoid the inferior conjunction and the Lamanite preferred warfare period when Venus was an evening star, the best time would have been prior to April 14, 379 AD.

It has also been determined that where there is not an appropriate Venus event, there is a statistically significant correlation between the first appearance of Mercury as a morning star or last appearance as an evening star and these "star wars" dates. At the beginning of 379 AD, based on the Stellarium software, Mercury had already appeared as a morning star at the beginning of the 385th year, and last appeared as an evening star around April 8, 379 AD. Thus, Mormon would have avoided this date. There was one correspondence at Palenque of Mercury at its evening star rising, so perhaps Mormon might have also avoided that date, which was around March 7, 379 AD.

At a tertiary level, when favorable Venus and Mercury were not available, there was some minor correlation between the retrograde motion of Jupiter, Saturn or Mars (Aveni et al 1994, 195). During this time period, Mars was in retrograde from May 10 to July 14, 379 AD, and Saturn was in retrograde from August 9 to December 22, 379 AD. Jupiter, which has a long retrograde period, was in retrograde from December 12, 378 AD to April 13, 379 AD (Carmen et al 2019).

The star war dates seemed to have a seasonal bias as well as 84 percent clustered in November through January. Solar eclipses have also been correlated with the "star wars" dates. No solar eclipses occurred in Mesoamerica in 379 AD.

Given all of this information, the best time for Mormon to schedule the final battle in 379 AD with the Lamanites would have been sometime in February or March of that year, perhaps avoiding March 7th. The only favorable Lamanite astronomical element during this time period was a very minor one with less correlation, the retrograde period of Jupiter. This preferred time period for Mormon (February and March) also falls within the dry season in the final battle area in the land northward (in or around the Tuxtla Mountain area) which is a recognized time for battle in Mesoamerica, so at least would have been minimally acceptable to the Lamanite King $Aaron_3$. However, because the Tuxtlas are the wettest area in Mesoamerica, there was still some chance of a heavy precipitation event, which may have added to Mormon's strategic advantage.

Just as important, it is reasonable that Mormon would have also considered a date that was significant and favorable to the religious background of the Nephites. There actually is such a rare and unique date that occurs within this time frame. There is a complex Venus cycle that is recognized throughout Mesoamerica known as the eight-year cycle of Venus, and it stems from the fact that 13 Venusian orbits (8 x 224.8 days) very nearly equals eight solar earth years and ninety-nine lunar months. Essentially, this means that on the completion of this cycle, Venus is in the exact location in relation to the sun as it was eight years earlier. If one counts this cycle from the date of Christ's birth, one arrives at 48 cycles in 379 AD. As is discussed later, in the Book of Mormon there is evidence of 13 and 24 being treated as sacred numbers. 48 is of course a multiple of 24.

To the beginning of year 385, using the 365-day year and noting that Christ's birth occurred approximately 12 days after the New Year, (384 x 365) -12 = 140148 days. The solar and Venus cycles do not have exactly the same period, as 13 Venus cycles (synodic) is 13 x 224.70067 = 2921.1 days, and 8 solar cycles is 8 x 365.2422 = 2921.93 days. So, 48 cycles using only Venus years and not making any correction for the slight difference is 48 x 2921.1 days = 140212.8 days. 48 cycles using only solar years and not making any correction for the slight difference is 48 x 2921.93 days = 140252.64 days. So, using the Venus cycle without correction, the completion date would be 64.8 days into the 385th year or March 3, 379 AD. Using the solar cycle without correction the completion date would be 104.6 days into the 385th year or April 12, 379 AD.

Thus, there are two possible dates, depending on whether the .8 days difference in the two cycles is corrected by adjusting the Venus cycle, or by instead adjusting the solar cycle. Since the cycle also consists of 99 lunar months, it is possible that it may also have been adjusted to this cycle. In the Dresden Codex of the Maya (Milbrath 2000, 167), the adjustment was made to match the heliacal rising of Venus, so if that is the case here, then the date of the final battle would be the March 3, 379 AD date. If adjusted to the solar, then April 12, 379 AD. Either of these dates work within the period least favorable to the Lamanites.

<u>$Alma_2$'s 400 Year Extinction Prophecy Calculation</u>

$Alma_2$'s 400 year prophecy indicated that the Nephites, "in four hundred years from the time that Jesus Christ shall manifest himself to them" would "dwindle in unbelief," "see wars and pestilences," "famines and bloodshed even until the people of Nephi shall become extinct," and "whosoever remaineth, and is

not destroyed" "shall be numbered among the Lamanites," "all, save it be a few who shall be called the disciples of the Lord; and them shall the Lamanites pursue even until they shall become extinct" (Alma 45:9-14).

When converting the Coming of Christ calendar that was in solar years to the underlying prophetic lunar year calendar the prophecy is spot on. At the end of the Book of Mormon, $Moroni_2$, the very last Nephite writes when "more than four hundred and twenty years have passed away," that he would "soon go to rest in the paradise of God" (Moroni 10:1, 34). Assuming a date of 422.35 uncorrected solar years after the Coming of Christ for the death of $Moroni_2$, the last Nephite, the conversion to prophetic uncorrected lunar years from the time he manifests himself to the Nephites is:

(422.35 - 34 solar years) x (365/354.367056) = 400 uncorrected lunar years.

Just to check the other year counts against this prophecy, utilizing the end of the 34th year when Christ manifested himself to the Nephites at Bountiful, 400 years under the solar calendar would put the completion of this prophecy at 434 years after the Coming of Christ. This is well beyond the end of the Book of Mormon, so again using a solar year does not appear to work. 400 tuns (a baktun) is 144000 days or 394.521 uncorrected solar years. Adding 34 years to that one arrives at 428.52 years, which is too long as well, so the tun year does not work either. Only the uncorrected lunar calendar works.

Christ ascends to heaven 50 weeks after the destruction

The Caractors Document indicates that Christ "departed" "upwards to heaven" 50 weeks or 350 days after the destruction. The next glyphs in the Caractors Document indicated that the Reign of the Judges period ended. Following those glyphs, it indicates a date as the 12th month of the 34th year after he came in the darkness to the Nephites. In my original translation, I had translated this section that Christ remained with the Nephites. The 'remained' was not based on a glyph but was just based on the context that the glyphs indicating he "came in the darkness" seemed to imply that he at some point remained. However, the simplest and likely the most correct translation does not necessitate that he remained with them continuously.

The 50 weeks referenced in the Caractors Document started on one of two days, the destruction date or when Christ spoke in the darkness. Christ speaking to the Nephites in the darkness seems to indicate from the text that it was closer to the end of the 3 days of darkness than the beginning (3 Nephi 10:7-9). Knowing that the 3rd Nephi destruction would have occurred starting at approximately 6:30 AM in Mesoamerica on a New Year's Day (.27 days) on March 31, 28 AD, then adding 3 days for the destruction event with Christ speaking at the end, then adding 50 weeks (350 days), one arrives at the ascension of Christ occurring exactly 353.4 days from the date of destruction, which period is just one day short of a lunar year, so Christ ascended on the New Year's Eve at the end of the 126th year of the Reign of the Judges. The text indicates that he would have ascended towards the end of the day, as he had been ministering all day and had told the people to go home and come back the next day, with his return on New Year's Day of the 127th year. The scientific full moon for this time is March 16th at 4:09 PM in the afternoon, so technically the date is March 15 -16, 29 AD from sunset to sunset, but there is obviously a little bit of potential variability here with the issue of observation and inclusion of a full moon in the end of the year. In any event, the times in the Caractors Document appear to be very precise (as we would expect from Mesoamerican record keepers). This time is also noted as the Period Ending of the Reign of the Judges calendar, nicely and exactly completing that calendar period exactly at the end of the 125th

year of the Reign of the Judges. The exactness of this calendar is indeed astonishing. The Book of Mormon is tracking the solar year calendar, so Mormon simply notes the general time period of these events as happening "in the ending of the thirty and fourth year" (3 Nephi 10:18). Mormon does indicate that the full body of the people of Nephi as well as righteous Lamanites would be ministered by Christ "soon after" his ascension, which would have started on the second day of his teaching after the portion of the people of Nephi that he saw on the first day had gathered all the rest of the available people of Nephi and righteous Lamanites to hear him on the second day (3 Nephi 19:1-3).

On the first day of Christ's visit, he healed and blessed the people (3 Nephi 17), and that evening he ascended to heaven (3 Nephi 18:38-39; 19:1). Christ taught the people for 3 days (3 Nephi 26:13), and then, some undefined period of time later, Christ showed himself to the apostles (3 Nephi 27:2).

The fact that this event corresponds with a yearend/New Year's Day occurrence is circumstantially supported in the Book of Mormon, because there was a great multitude gathered round about the temple in Bountiful, and they were conversing about the sign of Christ's death that had been given (3 Nephi 11:1-2). The fact that there was some sort of gathering, or festival is consistent with a New Year's event, and that it was the one-year (lunar) anniversary of the sign which had occurred on New Year's Day. While not identified in the Bible as one of the Jewish New Year pilgrimage festivals, when occurring in conjunction with the harvest festival in pre-exile Israel it was in fact considered a pilgrimage festival (Snaith 1947), meaning that people gather in regional religious locations. In this case, because of the destruction there may have been fewer available spaces suitable for gathering, so they may have had a more centralized regional pilgrimage than normal, such as an undamaged temple in Bountiful. It is clear that it was not a completely centralized pilgrimage as afterwards the disciples had to journey and preach to all the rest of the people (3 Nephi 26:17; 27:1; 28:23). There they were marveling and wondering one with another and showing one another the "great and marvelous change which had taken place," which by one textual interpretation could have been referring to the destruction of the land. In addition, just like in the Mount Sinai event and the New Year's Day volcanic eruption and aftermath, just prior to Christ appearing in person to the Nephites, there was a voice from heaven, three times, in this case from God the Father (3 Nephi 11:3-8).

Christ's third day of teaching would have been on the 355th day into the 365-day 34th (solar) year. Considering that the 10 days following the end of the 126th year being the period of the New Year's celebration, corresponded with final element of the of the last ten days Teshuvah, the last day of the 10 days being the Day of Atonement, this would put the Day of Atonement as the commencement of the New Year's Day of the 35th year on the Coming of Christ calendar. Again, the correspondence of this Day of Atonement under the lunar calendar with the New Year's Day on the Coming of Christ solar calendar is very astonishing as to its exactness and timing.

<u>Fourth generation prophecy</u>

Nephi, Alma$_2$, Samuel, and Christ all witnessed, made, or referred to a prophecy about the Nephites becoming wicked during the fourth generation after Christ. (1 Nephi 12:11-15; 2 Nephi 26:8-10; Alma 45:9-14; Helaman 13:5-10; 3 Nephi 27:31-32; 4 Nephi 1:18-34).

The specific elements of the prophecies are:

- Three generations shall pass away in righteousness (1 Nephi 12:11, 2 Nephi 26:9)

- Three generations shall have peace (2 Nephi 26:9)

- Many of the fourth generation shall pass away in righteousness (1 Nephi 12:12, 2 Nephi 26:9)

- The fourth generation shall not pass away before the great iniquity comes (Alma 45:12)

- The fourth generation from this generation (at the time of Christ's visit) shall be led away captive by the son of perdition (3 Nephi 27:32)

- After the fourth generation shall pass, a speedy destruction shall come upon the Nephites (2 Nephi 26:10)

- Lamanites of the fourth generation (does not specify from what point the generations will start) shall behold the utter destruction of the Nephites (Helaman 13:10)

There is a bit of ambiguity in the various prophetic references as to whether the four generations are inclusive of the generation Christ was speaking to or if the prophecy started with the generation after that. In addition, Christ's statement that the fourth generation would become evil should not be interpreted that all of the fourth generation would become wicked, just part of it as the other prophecies indicate.

It seems as if a primary purpose of the scant record of 4th Nephi is to provide sufficient information to show the fulfillment of the fourth-generation prophecy. Mormon provides some clarity as to the counting in 4 Nephi 1:18 where he indicates that 110 years had passed away "and the first generation from Christ had passed away." This seems to track with the recordkeepers as well because the next verse indicates the death of the recordkeeper $Nephi_4$.

In 4 Nephi 22 Mormon indicates that "two hundred years had passed away" and "the second generation had all passed save it were a few" with the previous verse noting that the next record-keeper, $Amos_1$, had died. From that point on, Mormon does not identify any more passage of generations.

A "generation" is not a discrete period of time, as it is dependent on the birth rate and longevity of individuals. For example, on the short side, assuming a young age of 16 as being capable of reproducing, one could have completed four generations on that family line in, say, 50 years, assuming that there is a birth every 16 years with the fourth-generation individual passing away as a child. On the long side, assuming a child can be successfully sired by a male of 85 years of age, with the fourth generation passing away at 85 years of age, the fourth generation could have been completed in 340 years. A person can also be of different generations over time, if either the father or mother is not of the same generation.

Mormon has provided us with at least one of the long-lived generations, as he indicates that $Amos_2$, the third record-keeper and of the third generation (1st - $Nephi_4$, 2nd - $Amos_1$, 3rd - $Amos_2$) lived to a minimum age (discussed later) of 111 years old. Assuming $Amos_2$ was the last of the third generation, then the end of the third generation, would have been 305 years after the coming of Christ when he died (4 Nephi 1:47). It is also interesting that $Amos_2$ apparently had no children as he passed the records to his brother Ammaron (4 Nephi 1:47). Since the prophecy indicated that all the third generation would pass away in righteousness, and $Amos_2$ was alive when the commencement and spiraling down into wickedness occurred, does this mean the prophecy was incorrect? No, the prophecy just indicated

that all individuals of the third generation would be righteous, not that all the other later generations with whom they co-existed with would be righteous.

As mentioned, a generation can be a very short time, so by the time $Amos_2$ died, considering that one of the second generation may have been born shortly after Christ came in the year 34, there may have been as many as 16 generations, with the possibility that the Nephites at that time could have consisted of persons from the fourth to the sixteenth generations. On the other hand, it may also be possible that all of the fourth generation (or even the fifth and more) may have already been dead when $Amos_2$ passed away.

With that generational determination backdrop, an examination of 4th Nephi is in order to compare it against the terms of the prophecy, which may also provide additional evidence of the point of presence of specific generations in time. Mormon notes that in the two hundred and first year there were those that were lifted up in pride and that property was no longer held in common among them (4 Nephi 1:24). This is indicative that some of those from the fourth generation were present at this point as we know that only some of the fourth generation would pass away in righteousness, according to the prophecy. This does not imply that the first person in the fourth generation was present at this point, as there were likely those of the 5th and additional generations present at this point in time, they all could have passed away in righteousness and still be consistent with the prophecy. The prophecy indicated that all the first three generations should have peace. We know that $Amos_2$ was of the third generation (perhaps one of the last) and died before the end of 4th Nephi. Although there is discussion of the increased tribalism and wickedness amongst the Nephites, throughout the book of 4th Nephi, there is no mention of warfare occurring, so all the third generation having peace as the prophecy said is also evidenced by the scriptural record.

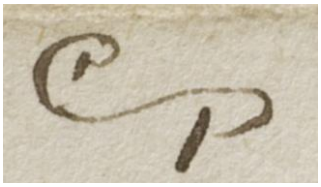
One segment of the fourth-generation prophecy made by Samuel the Lamanite involves the Lamanites of the fourth generation that shall behold the "utter destruction" of the Nephites. Samuel was speaking to the Nephites 5 years before Christ was born, so it is not clear which generation that he is referring to as the first generation. If one assumes that Samuel is talking about the generations starting with his prophecy and the utter destruction of the Nephites consists of the final battle 384 years after Christ, is it actually theoretically possible for someone to be alive of the fourth generation approximately 389 years later? Technically the answer is yes, because there is documented siring of children in modern times up to 101 years old, so assuming a child was sired by a 100-year-old person, then the person of the fourth generation in that line would be 84 years old. However, more than likely, Samuel is also talking about the generations starting after Christ's visit to the Nephites, as he actually talks about Christ coming into the world and being slain for his people a few verses earlier (Helaman 13:6).

One question that comes to mind is whether Ammaron, the brother of $Amos_2$, also witnessed peace throughout his entire life as an apparent member of the third generation per the prophecy. The first mention of warfare is when Mormon was 11 years old, and the year before when he was 10 years old, he met with Ammaron. Although it is possible that Ammaron passed away during that intervening year consistent with the prophecy, it would seem that perhaps Mormon might need some additional instruction as to being the Nephite record-keeper after Ammaron. However, the likely explanation is that Ammaron did not exclusively belong to the third generation even though he was the brother of $Amos_2$.

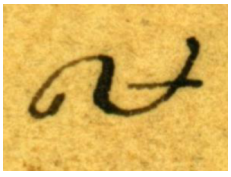
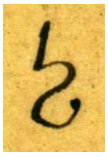
Mormon's Unique Birth Year and the Fourth Generation Prophecy

In my earlier work on the translation of the Caractors Document, I noted that the Oliver Cowdery/Frederick G. Williams glyph that had been translated as the name of Mormon was also a Mesoamerican time period reversal marker glyph. Since Mormon's birth year was in 309, and since only the passage of the first and second generation are noted in 4th Nephi, it is likely that Mormon's birth year of 309 also marked the ending of the third generation, also perhaps with the caveat that was given at the end of the second generation that all had passed "save it were a few." Ammaron could have been one of the few, although he was likely from the third generation from his father, but from a higher generation than that on his mother's side.

While not a part of the Caractors Document, the character from Cowdery or Williams—translated by Joseph Smith by use of the interpreters (the Urim and Thummim) as "Mormon"—takes the main portion of its definitional source in the Caractors Document.

OF2 

As discussed in my previous work, there are two glyphs for the Jubilee Year in the Caractors Document, which was celebrated every 49 years under Hebrew tradition. The glyph for "Mormon" is a mirror image of the Jubilee glyphs (C-151 and C-84). These glyphs (including the one for "Mormon") are a version of a glyph for an Egyptian month. Mormon was actually born on a Jubilee Year, so that was one important genesis for his name glyph.

C-151  C-84 

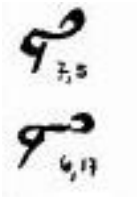
The Book of Mormon Onomasticon (2023) lists a wide series of possibilities for the etymology of *Mormon* and then adds as an afterthought:

> Less likely is EGYPTIAN *mr* (> Nubian and Coptic *mur*, *mor*), "bind, girth"

However, this least-likely etymology is the correct one. The determinative Egyptian hieroglyph for "bind" is Gardiner Number V-12 (Gardiner 1957, 523):

V12: 

The Egyptian hieratic for this glyph is:



Möller Number 522 (Möller 1965, Bd. I-23-76, pg. I 522–532)

The V-12 glyph also constitutes the simplest form of the Egyptian word *ꜥrk* or *arq* (in Budge phonetics) (Budge 1920, 1:131), meaning "the last" or "the end," which is very descriptive of Mormon. *ꜥrk* also means "to be wise." In addition, the V-12 glyph represents a band of string used to bind rolls of papyri, and thus it is typically associated with and included in Egyptian words related to records, such as *art* (meaning "roll of papyrus"); *TAw* ("book"); *Sat* ("document"); *pr mDAt* ("library"); *hrwyt* ("journal"); *snn* ("copy [of a document]"); *mdw nTr* ("written characters, script"); *sxrt* ("roll [of papyrus]"); *gnwt* ("records, annals"); *wD* ("[written] decree, dispatch," "inscription," and "stela"); *wDt* ("command, decree"); *Hbt* ("ritual book"); and *mDAt* ("papyrus – roll") (Dickson 2006). Of course, records and record keeping are also clearly associated with Mormon.

Having some familiarity with Mesoamerican iconography, I recognized the *Mormon* glyph as a form of the "Lazy-S," or curlicue, glyph that is found in Olmec and Maya iconography. In a previous work involving Sumerian roots of Book of Mormon names (Grover 2017), I determined that many of the names in the Book of Mormon have multiple levels of meaning in Hebrew and Sumerian, as well as, as my translation of the *Mormon* glyph showed, Egyptian.

Academics involved in Book of Mormon geography generally associate the Olmec with the Jaredite culture. Although there is debate over exactly where the Nephite lands were located in Mesoamerica, most agree that there was some contact between Nephites and the early Maya, with the Lamanites likely being part of or reflective of Maya culture. Because the *Mormon* glyph is present in both Olmec and Maya iconography—with the Jaredites' time period being consistent with the Olmecs and the later Nephites' time period being consistent with the early Maya—the *Mormon* glyph will be discussed in each of these contexts.

In the Mayan hieroglyphic classification system, the Lazy-S glyph is more formally identified as T632 (Macri et al 2009, 140). A typical drawing of a glyph containing the Lazy-S, as well as an example of the glyph from the Madrid Codex, is shown in figure 50.

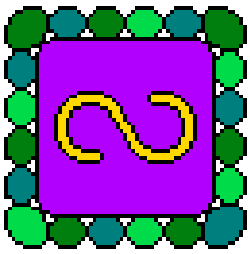


Figure 50 Lazy-S glyphs (T632): The top image is a reproduced drawing from monuments (www.pauahtun.org 2016); the bottom image is from page 11, register b, of the Madrid Codex (Wikipedia Commons 2016).

The *Mormon* glyph actually consists of a mirror image of the Lazy-S, which is not an atypical representation in either Maya or Egyptian glyphs; such mirroring is found in both.

In its function as a time marker, the Lazy-S is referred to as the "reversal sign," and Herbert Spinden has indicated that in the Dresden Codex, it represents the reversal from the dry season to the wet season. Also, in relation to the Dresden Codex, V. Bricker and H. Bricker have, based on interpretation of other tables in the Codex, indicated that the sign may refer to solstices and equinoxes (Macri et al 2009, 140).

Year 309 under the uncorrected solar calendar (haab), the year of Mormon's birth, has its New Year's Day as January 19, 303 AD. The scientific time for a full moon is the evening of January 20, 303 AD in Mesoamerica, well within the range of visual measurement accuracy of the full moon.

More importantly, and likely indicative of Mormon's birthday because of the correlation of his name glyph with an equinox, in 303 AD a total penumbral lunar eclipse of the full moon visible in Mesoamerica occurred at approximately 6 pm in the evening on March 20th. The vernal equinox in that year was calculated to be the next day, March 21st, at approximately 1:00 PM. Remembering that the Nephite day ran from sundown to sundown and considering the Nephite measurement of the full moon was the end of the full moon, the Nephite date of the full moon would have exactly coincided with the vernal equinox, with that full moon experiencing a total lunar eclipse, quite a rare event. This was likely the day of Mormon's birth, and would partially explain why even the wicked superstitious Nephites were willing to follow him in battle as he had been marked as a significant individual by the heavens. It is also noteworthy that in the Caractors Document the glyph for Moroni's name also has the Mesoamerican form for equinox, which may well be his birthdate and is consistent as to why his appearances to Joseph Smith occurred on the autumn equinox in September.

<u>$Amos_1$, $Amos_2$, and Ammaron</u>

In 4th Nephi, after $Nephi_4$ died sometime after the year 110 after the coming of Christ, his son $Amos_1$ kept the records 84 years (v. 19-20) until his death in the year 194 after the "coming of Christ" (v. 21), thus meaning that $Amos_1$ at a minimum lived to 84 years of age. $Amos_2$ the son of $Amos_1$ received the records from his father at that time (v.21). $Amos_2$ lived until 305 years after the coming of Christ, meaning that his minimum age (assuming he "kept" the records as an infant) at his death would have been 111 years old. While obviously very old, that is still within the realm of possibility as there are more than one hundred documented modern men living past 111 years of age, and if his father $Amos_1$ sired him at a minimum of 84 years old, as previously mentioned, there are documented siring of children in modern times up to 101 years old.

$Amos_1$ and $Amos_2$ are both within the realms of possibility, but things on their face appear to be a bit trickier when it comes to Ammaron. When $Amos_2$ died, the record indicates that his brother Ammaron kept the record in his stead. Since the scripture indicates that $Amos_1$ died in 194 upon giving the record to $Amos_2$, there were no possibilities of any more brothers sired by $Amos_1$ to $Amos_2$, after 194. In that case, Ammaron would have had to have been born prior to 194. Ammaron is indicated to have hidden up the sacred records in year 320 (v. 48), thus would have placed Ammaron at a minimum age of 126. Modern history has shown the oldest recorded male as 116 years old (www.wikipedia.org 2020). George Reynolds (2000, 70-71) and Archibald F. Bennett (1959, 111) opined that righteousness somehow extended life spans. Brant Gardner (2007, 39) commented that this explanation "faltered" because it was not consistent among other righteous men and indicated that it was likely an error of omission by Mormon. So, is there a possible explanation for the age of Ammaron without reverting to the stretching of nature or an error by Mormon? Yes, the answer is that Ammaron and $Amos_2$ shared the same mother but not the same father, so Ammaron was the half-brother of $Amos_2$. Their mother would have been a young wife to the elderly $Amos_1$. With $Amos_2$ being a first child, and Ammaron a much younger child from a second young wife, Ammaron, considering a woman has potentially 30 years of childbearing, could have been as much as 30 years younger than his half-brother $Amos_2$, so could have been born as late as 224 making him 94 years old when he hid the plates. This would also indicate that Ammaron could not be purely of the third generation, as his mother was definitely from a generation later than the third based on her ability to still bear a child at that date in time.

Scripturally this would be consistent. In the case of the Biblical Joseph, at the time he was sold into Egypt, he was referred to as a "brother" by all his brothers who were in fact his half-brothers with different mothers (Genesis 37:27). David had two stepsisters which were referred to as "sisters" (1 Chronicles 2:15-16). Jesus shared many half-brothers by virtue of his mother Mary, and they were referred to as "brothers" (Matthew 13:55; Mark 6:3).

Another alternate interpretation that is not extremely persuasive but warrants mention is that a designation of a son may include grandsons based on the reference by Lehi to the children of $Laman_1$ in that fashion as "my sons, and my daughters, who are the sons and the daughters of my first-born" (2 Nephi 4:3). Thus, this would require that $Amos_2$ was in fact a grandson of $Amos_1$, which would mean Ammoron was also not the son of $Amos_1$. The reason this is not extremely persuasive is that type of relationship reference to a grandson is present only at the beginning of the small plates, not in Mormon's narrative, and not found in the chain of record-keepers, or really in any other place in the Book of Mormon in that specific way.

Another issue related to $Amos_1$ and $Amos_2$ that has been raised in various places by critics of the Book of Mormon is that ancient cultures who went by single names did not give a father and a son the same name as presumably there would have been confusion during the time, they were both alive with the same name. The other Book of Mormon examples are $Alma_1$/$Alma_2$, $Helaman_1$/$Helaman_2$, and $Nephi_2$/$Nephi_3$/$Nephi_4$. It is notable that all of these individuals are in the line of $Alma_1$. Are there any possible explanations? Yes, there are a few.

First of all, it is not totally unknown to occur anciently, as was the case for the famous Greek orator Demosthenes, son of Demosthenes, although his father died when he was seven so there was only a brief period where they were both alive. Second, the Caractors Document has different glyph forms for $Nephi_1$, and $Nephi_2$, and this may be the case here. It would thus seem possible that there may have

been some possibility for a slightly different original pronunciation in the native language that would not necessarily have transliterated into English during the translation. For example, in Uto-Aztecan, a good proto candidate for one of the Nephite languages, contains glottals, long and short vowels, pitched accents, and stressed syllables that may not have made it through the Book of Mormon interpretation process into English.

It is also worthy of note that these father-son pairs only occur in the lineage of $Alma_1$ so may just have been an unusual practice unique to that family line.

Chapter 5

Biblical Typology of Christ's Death Event with Identical Date Using Different Calendars

The Caractors Document provides a date of Christ's death that ignores the calendar shift to the uncorrected solar calendar and provides a date in the Reign of the Judges calendar, so it can provide us the exact days of the calendar using different calendars to arrive at the date of the death of Christ. I would note that my initial translation of this date I interpreted to read the "first month," but I had recognized an alternative reading based on the glyphs is "the first day of the first month," which based on this further research, the alternative reading I had made is clearly the correct one. Also, I had translated it to be "in" the 125th year, but an alternative translation could be the first day of the first month after the completion of the 125th year, which I now assert the latter is the correct one.

As previously discussed, prior to the crucifixion Jesus' second trial before Pilate began around 8 a.m. and according to Mark 15:25 it ended and the crucifixion took place at "the third hour," which using the Jewish method of counting hours, would correspond to nine o'clock in the morning. Around noon, while Jesus was on the cross, total darkness surrounded the area, until about 3 p.m. (Matthew 27:45) when He cried out, "It is finished" and died (John 19:30). Since Jerusalem is 8.5 hours ahead of Mesoamerica (128 degrees difference in latitude), the 3rd Nephi destruction would have occurred starting at approximately 6:30 a.m. (.271 days) in Mesoamerica. There were three days of darkness in Mesoamerica that occurred starting 3 hours (3 Nephi 8:19) after Christ's death at 9:30 a.m., with the darkness dispersing "in the morning" upon completion of 3 days of darkness (3 Nephi 10:9), which dispersal corresponds with "the time that he shall rise again from the dead" (Helaman 14:20). This is an independent verification that the place of the Book of Mormon was Mesoamerica (or at least in the proper time zone).

Using the Book of Mormon calculation, assuming that the calendar was retroactively corrected nine years after Christ's birth to uncorrected solar years nine years after the sign of Christ's coming, with the indication that the Lehi Departure calendar up until the sign of Christ's coming is in the uncorrected lunar calendar, and the rest of the years afterward are in the uncorrected solar calendar, one can calculate:

> Book of Mormon and Caractors Document calculation from Lehi Departure to Christ's death: 509 years (lunar uncorrected) to start of Reign of Judges calendar + 125 years (lunar uncorrected) plus .271 days = 180372.832 days + 44296.153 days = **224668.985 days**
>
> 600 years to the calendar change (lunar uncorrected) + 33 years (solar uncorrected) plus 3.271 days = 212620.2 days + 12048.271 days = **224668.471 days**

So as can be seen, the accuracy is remarkable between the Caractors Document Reign of Judges date and the Book of Mormon date that consists of the 600-year Lehi Departure date (uncorrected lunar

calendar) and the Coming of Christ date (uncorrected solar calendar), with both arriving at the same day.

The significance of an exact New Year's Day destruction provides additional meaning to the comment made by Mormon regarding the Nephite daykeeper (which by all indications appears to refer to $Nephi_3$), providing assurance that the day count was correct "in the reckoning of our time" (3 Nephi 8:1-2). The daykeeper was having to track two continuous calendars (at least) and in this case, the fact that the destruction was exactly on the Hebrew New Year's Day (as indicated in the Caractors Document) was extremely important to the overall significance of the event in light of the Jewish New Year's Day tradition as discussed below. It is also significant that on the uncorrected solar calendar, although not exactly New Year's Day, the event occurred on the fourth day of the New Year (3 Nephi 8:5), which falls within the 10-day celebration period of the Hebrew New Year which is also discussed below even under the uncorrected solar calendar.

3rd Nephi destruction occurred on a New Year's Day of the Reign of the Judges calendar

The destruction by eruption of a volcano and a regional earthquake that occurred in 3rd Nephi initiating the destruction of the wicked Nephites on the Nephite Hebrew New Year's Day is extremely significant. The biblical name for the holiday of the Jewish New Year is *Yom Teruah*, (also known as Rosh Hashanah) literally meaning "day of shouting or blasting" and "to raise a noise." It is the first of the Jewish High Holy Days (*Yamim Nora'im* meaning "Days of Awe") specified by Leviticus 23:23–32. On that day "ye shall offer an offering made by fire unto the Lord," and it was "a day of blowing the trumpets" (Leviticus 23:25, Numbers 29:1-6).

Part of the 3rd Nephi destruction was a "terrible thunder" (3 Nephi 8:6) and "tumultuous noises" (3 Nephi 10:9) consistent with the literal meaning of the Biblical Hebrew name of the New Year Day. The term "tumultuous noise" is used elsewhere in the Book of Mormon quoting Isaiah to describe the noise of gathering and mustering for battle (2 Nephi 23:4). The Hebrew word *teruah* (or a form thereof) is used to describe sounding of trumpets in the tumult of battle (Amos 1:14; 2:2). Notably, the ranges of noises that are produced from volcanic eruptions have been characterized as a "volcanic symphony" and can produce harmonious sounds from lava tubes (Garces et al 2013, 368) that might even approximate the sounding of a trumpet.

According to Strong's Exhaustive Concordance (2020), the Hebrew root for *teruah* is *rua* which means (1) to mar, disfigure, or shatter by breaking; (2) to split ears by loud noise, such as intense crying; and (3) loud destruction. These definitions are all consistent with the description given of the 3rd Nephi destruction, which included highways "broken up," "smooth places became rough," the "face of the whole earth became deformed," "rocks were rent in twain; they were broken up upon the face of the whole earth" (3 Nephi 8: 13, 17, 18).

As part of *Yom Teruah*, the Lord required a burnt offering of one young bullock, one ram, and seven lambs of the first year without blemish (Numbers 29:1). The death by fire of many Nephites is certainly consistent with this New Year practice. The voice of the Lord in the first statement in darkness announced that "ye shall offer up unto me no more the shedding of blood; yea, your sacrifices and your burnt offerings shall be done away, for I will accept none of your sacrifices and your burnt offerings" (3 Nephi 9:19).

The Mishnah, which contains the first major written collection of the Jewish oral traditions, references Rosh Hashanah as the "day of judgment" (*Yom haDin*) (Tractate on Rosh Hashanah, 1983, I,2), which is certainly a spot-on description of the 3rd Nephi destruction event. The oral traditions recorded in the Mishnah were recorded later than the time of Lehi's departure (300 AD), so how far they go back anciently are not easy to determine based on the Mishnah itself. Because the Samaritans separated from the orthodox Jews of Jerusalem from the time of Ezra (considered the "cursed Ezra" by the Samaritans), looking to their practice can place the New Year traditions back closer to the time of Lehi, so around 450 BC. The Samaritans regard a 10-day period following the New Year as being a great penitential period, with the prayers and ideas during the period reflecting sorrow, penitence, and remembrance as a background to the idea of judgment in connection with the turn of the year, with the 10th day becoming the Day of Judgment (Snaith 1947, 152). Since the evidence is that Lehi originated from the area of the Northern Kingdom, which included the area of the Samaritans, this tradition may have been familiar to the Nephites along with the Jewish tradition.

Among the Jews there is a portion of the New Year's synagogue ritual that involves the recital of certain passages of scripture (called Benedictions) that predate the Mishnah. The passages are in three groups, first the Malkiyyoth, passages referencing the Kingship of Jehovah; second, the Zikronoth, passages referencing Jehovah remembering Israel; and thirdly, the Shofaroth, passages in which the blowing of the *shofar* (trumpet) is mentioned. The Malkiyyoth and the Zikronoth each contain 10 passages consisting of 3 from the Law, the next 3 from the Psalms, the next 3 from the Prophets, concluding with a closing verse from the Law.

All of the passages predate or are contemporaneous with Lehi except for one of the Malkiyyoth (quotes Zechariah). The topics of these passages are nearly all found in the brief text in the Book of Mormon where the Lord speaks to the Nephites just after the time of the initial destruction.

Specifically, in looking at the Malkiyyoth, the first Benediction is Exodus 15:18 indicating Jehovah will reign forever and ever. This correlates to 3 Nephi 9:15, 18, which indicates Christ was with the Father from the beginning, and that he is "the beginning and the end." The second Benediction is Numbers 23:21 which indicates "the shout (trumpet) of a king is among them," which correlates to the thunderous volcanic eruption and Christ then speaking to the Nephites. The third Benediction is Deuteronomy 33:5 which mentions the Lord as king in Jeshurun (Israel), "when the heads of the people and the tribes of Israel were gathered together." 3 Nephi 9:15 and 10:5-6 includes the declaration of Christ as the Son of God, and that he would have and will gather Israel as "a hen gathereth her chickens under her wings." Like the first Benediction, the fourth through tenth Benedictions are essentially the theme that Jehovah is king (Psalms 22:29; Psalms 93:1; Psalms 24:7-10; Isaiah 44:6; Obadiah 21; Zechariah 14:9; Deuteronomy 6:5) with the seventh Benediction quoting Isaiah 44:6 "I am the first, and I am the last" essentially mirroring 3 Nephi 9:18 "I am Alpha and Omega."

The Zikronoth Benedictions also contain significant correlations to Christ's voice in the darkness. The ten Benedictions are Genesis 8:1, Exodus 2:24; Leviticus 26:42; Psalms 111:4; 111:5; 106:45; Jeremiah 2:2; Ezekiel 16:60; Jeremiah 31:20; and Leviticus 26:45. One of the primary correlations is the covenant between the Lord and Israel, which is mentioned in the second, third, fifth, sixth, eighth, and tenth Benediction and correlates with 3 Nephi 10:7 which mentions "the time of the fulfilling of the covenant to your fathers." The first Benediction involves the dissipation of Noah's flood, and "God made a wind to pass over the earth," so it has some correlation to a covenant, as well as the whirlwinds and flooding

that was part of the 3rd Nephi destruction. The third Benediction, in addition to a covenant correlation also mentions that "God heard their groaning," so correlates with the "crying," "weeping," and "howling," of the people after the destruction (3 Nephi 8:24-25; 10:8). The fourth, seventh, and ninth Benedictions show the desire of the Lord to provide mercy to Israel and indicate that "the Lord is gracious and full of compassion" which correlates with the offer of healing, salvation, and protection offered by the Lord after the destruction (3 Nephi 9:13; 9:21; 9:22; 10:4-6).

Finally, the Shofaroth Benedictions correlate to the destruction itself and consist of verses Exodus 19:16; 19:19; 20:18; Psalms 47:5; 98:6; 81:3-4; 150; Isaiah 18:3; 27:13; and Zechariah 9:14. The first Benediction mentions a time period of "three days" and that also in "the morning" "there were thunders and lightnings, and a thick cloud upon the mount, and the voice of the trumpet exceeding loud; so that all the people that was in the camp trembled," all matching the description of the eruption in 3rd Nephi. The second Benediction states "the voice of the trumpet sounded long, and waxed louder and louder, "and God answered him by a voice," which also directly correlates with the 3rd Nephi event. The third Benediction states:

> "And all the people saw the thunderings, and the lightnings, and the noise of the trumpet, and the mountain smoking: and when the people saw it, they removed, and stood afar off."

Again, this correlation is very straightforward to the 3rd Nephi volcanic destruction. The tenth Benediction states:

> "And the Lord shall be seen over them, and his arrow shall go forth as the lightning: and the Lord God shall blow the trumpet, and shall go with whirlwinds of the south."

This correlation is also straightforward complete with reference to lightning and whirlwinds which are both specifically mentioned in the 3rd Nephi account. The second through tenth Benedictions all mention the sound of the shofar or trumpet, which as previously discussed relates to the large volcanic eruption, with the sixth Benediction indicating it would occur at the beginning of the month, and the ninth Benediction adding that the outcasts of Israel will come to the mountain to worship Jehovah.

Indeed the 3rd Nephite destruction, to some extent, contains features of Biblical typology, meaning it mirrors in some respects a specific Biblical event. As I have noted in my previous works, in the Book of Mormon there are many instances of God communicating with or in the midst of a cloud, often accompanied by earthquakes, thunder, and sometimes fire, indicative of volcanic activity (Mosiah 27:11; Helaman 5:27-28, 34, 36; 3 Nephi 8:10). Although not a mainstream view of Biblical scholars, some scientists have looked at the elements in Exodus and agreed that Mount Sinai, with its description of smoke, fire, and earthquake, was a volcano, and with Mount Bedr in northwest Saudi Arabia as a likely candidate (Grover 2018, 80).

The Biblical event to which the 3rd Nephi destruction appears to be a type is the Lord speaking to the children of Israel from Mount Sinai. The 3rd Nephi event was the only instance in the Book of Mormon where the Lord spoke to all the people, similarly, the Lord spoke to all the children of Israel at Mount Sinai (Exodus 19:9-21):

> 9 And the Lord said unto Moses, Lo, I come unto thee in a thick cloud, that the people may hear when I speak with thee, and believe thee forever. And Moses told the words of the people unto the Lord.

10 And the Lord said unto Moses, Go unto the people, and sanctify them to day and tomorrow, and let them wash their clothes,

11 And be ready against the third day: for the third day the Lord will come down in the sight of all the people upon mount Sinai.

12 And thou shalt set bounds unto the people round about, saying, Take heed to yourselves, that ye go not up into the mount, or touch the border of it: whosoever toucheth the mount shall be surely put to death:

13 There shall not an hand touch it, but he shall surely be stoned, or shot through; whether it be beast or man, it shall not live: when the trumpet soundeth long, they shall come up to the mount.

14 And Moses went down from the mount unto the people, and sanctified the people; and they washed their clothes.

15 And he said unto the people, Be ready against the third day: come not at your wives.

16 And it came to pass on the third day in the morning, that there were thunders and lightnings, and a thick cloud upon the mount, and the voice of the trumpet exceeding loud; so that all the people that was in the camp trembled.

17 And Moses brought forth the people out of the camp to meet with God; and they stood at the nether part of the mount.

18 And mount Sinai was altogether on a smoke, because the Lord descended upon it in fire: and the smoke thereof ascended as the smoke of a furnace, and the whole mount quaked greatly.

19 And when the voice of the trumpet sounded long, and waxed louder and louder, Moses spake, and God answered him by a voice.

20 And the Lord came down upon mount Sinai, on the top of the mount: and the Lord called Moses up to the top of the mount; and Moses went up.

21 And the Lord said unto Moses, Go down, charge the people, lest they break through unto the Lord to gaze, and many of them perish.

Afterwards, Mount Sinai was described as having a "cloud" that "covered the mount" (Exodus 25:15) and the sight of the glory of God "was like devouring fire on top of the mount in the eyes of the children of Israel" (Exodus 25:17). Later, while still at Mount Sinai, after the children of Israel showed their wickedness and constructed a golden calf, the Lord stated that "my wrath may wax hot against them that I may consume them" (Exodus 32:10). The correlations of the 3rd Nephi event and event with Moses at Mount Sinai are:

1. Thunder and lightning in both events

2. A thick cloud in the Sinai event, a mist of darkness in the 3rd Nephi event

3. A period of time consisting of three days found in each

4. Earthquakes in both events

5. The Lord descended upon Mount Sinai in fire, and in 3rd Nephi certain cities were destroyed as the Lord said, "I did send down fire and destroyed them" (3 Nephi 9:11)

6. At Mount Sinai the Lord spoke from smoke that "ascended as the smoke of a furnace," and in 3rd Nephi the Lord spoke while the land was covered in a mist of darkness.

7. Approaching Mount Sinai to see the Lord would cause the children of Israel to perish, and in 3rd Nephi the volcano killed those in proximity to it.

8. There was the "voice of the trumpet" that "sounded long, and waxed louder and louder," and in the 3rd Nephi event there were tumultuous noises that lasted 3 days. As mentioned, a volcano can produce many sounds, some of them sounding like a trumpet.

9. Mount Sinai's "devouring fire" was exactly the type of fire that devoured certain of the Nephites and their cities in 3rd Nephi.

10. The children of Israel who were wicked were threatened to be consumed, and such was the fate of the wicked Nephites in the 3rd Nephi event.

Also of interest, according to the Midrash, the last Hebrew month prior to the New Year (known as Elul post-exile) is a time of *Teshuvah*, which means repentance in Hebrew, which begins on the first day of Elul and continues for forty days, concluding on the Day of Atonement, and its concept originated with Moses. Moses was on Mount Sinai for forty days receiving the commandments (Exodus 24:13-18). According to tradition, Moses was in the camp until he had burned the golden calf. After organizing the tribes, God instructed Moses to ascend the mountain again on the first day of Elul. A trumpet was sounded throughout the camp, warning the people not to go near the mountain and not to err again. God ascended in the trumpet blasts, and it was said: "God went up in a blast, the Lord in the sound of shofar (trumpet)."

The forty days of Teshuvah are divided into two parts. The first part consists of the twenty-nine days in the month of Elul. Each day a shofar sounded, reminding the Jewish people to repent. The second time a trumpet is sounded it is to remind the people that God is in their midst and watching their actions. The first part of Teshuvah deals with personal repentance toward God and man. The final ten days, starting with New Year's Day, direct the people to a time of national repentance. It is believed that during the final ten days the gates of heaven are opened, in order to hear the petition and prayers of the people. During the ten days three groups are examined by the Lord: the totally righteous, the totally unrighteous, and those that are neither righteous nor unrighteous but those somewhere in between. Based upon prayers of repentance God's mercy is manifest on the last of the final ten days, the Day of Atonement, where sins are remitted (Stone 2009, 191-192).

The Book of Mormon account is consistent with the basic elements of Teshuvah. In fact, the record only contains a discussion of repentance during the year leading up to the destruction (3 Nephi 7:23-26), so the first part of the Teshuva is clearly there. Just after the initial destruction and during the darkness, and prior to Christ speaking, the people in one place cried "O that we had repented before this great and terrible day" and in another place the exact same statement (3 Nephi 8:24-25). When Christ spoke, his first statement was grief for "the inhabitants of the earth except they shall repent" (3 Nephi 9:2). During the three days of darkness, Christ's primary discussion with the people at multiple points is repentance (3 Nephi 9:13-14, 3 Nephi 9:17, 3 Nephi 9:20, 3 Nephi 9:21, 3 Nephi 9:22, 3 Nephi 10:6).

Also consistent with the Teshuvah tradition, the heavens were opened, and Christ spoke during the three days of darkness. As in the Teshuvah tradition, there was also apparently a classification of three

groups of people implied in the text of Christ's comments in the days of darkness. First, Christ identifies the wicked and indicates multiple times that they were destroyed (3 Nephi 9:5, 9:7, 9:8, 9:9, 9:10-11, 9:12). He then identifies those that "were more righteous" than the wicked and asks them to return to Him and repent of their sins (3 Nephi 9:13-14) which would be those under the Teshuvah as those between righteousness and unrighteousness. Finally, he identifies the righteous stating "as many as have received me, to them I have I given to become of the sons of God" (3 Nephi 9:17).

The final element of the Teshuvah of the last ten days is the Day of Atonement where sins are remitted. While there is no specific discussion of any days after the first three days of darkness, it is clear that Mormon is keeping to this theme as he discusses no events afterwards until the appearance of Christ to the Nephites in Bountiful, which is the effective Day of Atonement. He does assure the reader just after the discussion that this day of remission of sins is soon to come where Mormon states "… that in the ending of the thirty and fourth year, I will show unto you that the people of Nephi who were spared, and also those who had been called Lamanites who had been spared, did have great favors shown unto them, and great blessings poured out upon their heads" (3 Nephi 10:18).

The Book of Mormon does identify the presence in the text of a volcano, which is also in the right position to be the 3rd Nephi volcano. The "tower of Sherrizah" and "Sherrizah" are mentioned in the epistle from Mormon to $Moroni_2$ in the context of battle with the Lamanites (Moroni 9:7, 16–17). Sherrizah is derived from the biblical name Sherezer or Sharezer; which is the Hebrew transliterated loan name *shar-eh 'tser* from Zend meaning "prince of fire." For the word tower, some of the potential meanings in Hebrew are *o'fel*, meaning "hill," or *bakh'an* (also corresponding with the Egyptian *bekhen*, *bakhun*, and *bekhat*), meaning "outlook or tower built on a hill."

Sherrizah can also be a constructed compound word using Sumerian words, which has been identified as a likely etymological source for the New World construction of many Book of Mormon names. Sherrizah is mentioned at the end of the Book of Mormon in relation to the last battles but is not identified as being a "land" or a "city," so is likely some sort of geographic feature.

Reasonable Sumerian etymological units of Sherrizah related to the volcanic description of Sherrizah are:

še: to call by name (š is the phonetic representation of the "sh" sound)
še: a geometric shape
šer: reddening, sunburn(?); (to be) bright; brilliance, ray
    sir_2-ra, *sir_2-re* (forms of *šer*)
ere: to press, throttle
ri: to place; to release; to pour out
    e-RI (form of *ri*)
ri: to be distant
za: property, estate
ah: a paste; foam (equivalent to lava)
    uh_3-a (form of *ah*)

Constructed Compound Word: Sherrizah

The tower of Sherrizah, which has the Hebrew etymology of a high hill and the “prince of fire,” along with its Sumerian etymological roots, is a fairly straightforward reference to a volcano. The correlation of “prince of fire” with a volcano is a known Mesoamerican concept.

In Aztec mythology, Xiuhtecuhtli was known as the “Lord of Fire “and was the god of fire, day, and heat. He was the lord of volcanoes and was also named Cuezaltzin (“flame”). He is usually depicted as a young deity, so "prince" would be an appropriate title.

In addition, in Ezekiel's vision the description is likely generated from the eruption of the active volcano to the north of him in Turkey (Nemrut Dagi). In the International Standard Version, and the New American Standard Bible the Hebrew here (*sə·ʿā·rāh*) was translated as a "storm" and is also translated that way in other places in the Bible. Since there are no volcanoes in Israel, (there is a volcanic field) there is no known word for volcano in Biblical Hebrew or in Egyptian, so a "great storm" would be the likely word to be utilized to describe it. Also, in the 1793 eruption of San Martin, the best 3rd Nephi candidate, the eruption was thought to be and described as a large storm by the locals because the volcano was shrouded in clouds as it often is.

Chapter 6

Lehi's Departure Date

Knowing the date of the New Year's Day of the 92nd year of the Reign of the Judges calendar, and knowing that there was no addition or subtraction of days to the calendar (based on the previously shown calculation comparing the 600 year count with the Reign of the King and Reign of the Judges calendars), and based on the text of the Book of Mormon which indicates that the end of the 91st year occurred at the same time as the completion of the 600 years since Lehi had left Jerusalem (3 Nephi 1:1), it is now possible to determine the date that was utilized as the base start date of the Lehi Departure calendar. A continuous count of 600 years of 12 months marked by full moons back from April 3-4, 6 BC arrives at a base scientific full moon date of February 11, 588 BC at 11:39 PM. Assuming that the measurement was the end of the full moon, sunset to sunset of February 12-13, 588 BC is the base date.

Lehi's actual departure date from Jerusalem prior to the February 12-13, 588 BC calendar base date

The most likely scenario in setting the full moon as the base date is that Lehi used the first full moon after his departure to start the Lehi Departure calendar. The scientific full moon prior to the February 12-13 full moon base date occurred on January 13, 588 BC at 4:39 a.m., or the sunset-to-sunset date of January 12-13, 588 BC. It is possible that this date may be inclusive of the full moon, or perhaps the next day, January 13-14, 588 BC. Thus, Lehi could have left as early as January 13, 588 BC using this scenario.

It is possible that Lehi may have left earlier than this and used some other parameter to set the base date on February 12-13, 588 BC. For example, during the time frame of Lehi's departure, a method for establishing the new solar year was to observe the heliacal rising or setting of a particular star near the solar equinox (either around March 20 or September 23). If it had occurred prior to the new moon or during the next nine days, the following full moon was declared to be the beginning of a new year (Segal 1957, 280, 283). In the case of the Lehi date we have in February, and since the Nephite calendar is not linked to the solar year, this method does not appear to have been used, but there may have been some astronomical event other than the next full moon that was important for starting the calendar.

Geographic point of Lehi's departure

Although we know the base date of when the calendar started, likely the next full moon after Lehi departed, there is the question of what geographic point and time was utilized when referring to Lehi's departure. It appears that Lehi, generally speaking, lived within the walls of the city of Jerusalem (1 Nephi 1:4-7). While initiating the making of the small plate record decades after the event, $Nephi_1$ indicates that the year count started from "the time that my father left Jerusalem" (1 Nephi 10:4; also 2 Nephi 25:19). Nephi 19:8 uses a similar designation, "the time my father left Jerusalem."

Laman and Lemuel complained about their father Lehi being "a visionary man" that "had led them out of the land of Jerusalem, to leave the land of their inheritance, and their gold, and their silver, and their precious things, to perish in the wilderness" (1 Nephi 2:11). The preface to 1st Nephi indicates the departure out of the "land of Jerusalem" not the city. After the initial departure, Lehi's sons returned to "land of Jerusalem" and then to the city of Jerusalem to confront Laban (1 Nephi 3-4), and then returned

later to the "land of Jerusalem" to get Ishmael and his family (1 Nephi 7:2-3). Thus, it seems that there may be various points in time possible for Lehi's departure to have technically happened for calendrical purposes, namely:

1. The initial departure from the city of Jerusalem.

2. The initial departure from the land of Jerusalem.

3. The final departure of all members of the Lehite group from the land of Jerusalem after all the return trips were completed.

When considering the second possibility of the initial departure from the land of Jerusalem, this is the straightforward reading found in the preface to 1 Nephi, which was on the plates and is not a recent addition. There it states that the "Lord warns Lehi to depart out of the land of Jerusalem." This does not exclude the possibility that Lehi may have been within the city of Jerusalem initially but does indicate at which point the base calendar may have been initiated. Previous to this departure, the trip likely involved visiting Lehi's land of inheritance, as that was where the silver and gold were located when $Nephi_1$ and his brothers returned to confront Laban (1 Nephi 3:22). Since the initial departure of Lehi into the wilderness indicated that "he took nothing with him and left his silver and gold (1 Nephi 2:3-4), it would seem that if he initially left from the city of Jerusalem that the departure was not considered complete until he had deposited his gold and silver at the land of his inheritance, and then made a final departure from (or through) the land of Jerusalem. According to Chadwick's (2004) analysis, the land of inheritance was located outside of the land of Jerusalem, thirty miles north of Jerusalem, which would mean that if Lehi initially came from the city of Jerusalem he would have to travel north to the land of inheritance and then southward likely again through the land of Jerusalem to later arrive at the wilderness near the Red Sea. He may have been at the land of his inheritance when he received the instruction to depart into the wilderness. Thus, Lehi may have spent some weeks or perhaps a month or more traveling north of the city of Jerusalem and then back south. There is some additional textual indication that the year count was not commenced until they were clearly in the wilderness outside of the land of Jerusalem and any other semi civilized lands (or perhaps even later from their base camp) in that the only year count mentioned on the initial stage of the journey in the Old World was that they "did sojourn" for "eight years in the wilderness" (1 Nephi 17:4). Perhaps it was at the point where Lehi "was commanded to take his journey into the wilderness" out of base camp (Nephi 16:9). Thus, it is likely that the base calendar date was not when Lehi left the city of Jerusalem (if he indeed even started there), but more likely when he left the land of Jerusalem some weeks or a month after he left the city of Jerusalem (if he was even there to begin with), with the final departure from base camp also a possibility.

<u>Comparisons with the Old World date of the destruction of Jerusalem</u>

In the Old Testament, it indicates that the capture of Jerusalem was either in the summer of 587 BC or the summer of 586 BC, with 586 BC more commonly accepted by scholars (Young 2004). The summer date is primarily based on Jeremiah 52:6 which indicates that some time after the 9^{th} day of the 4^{th} month (June 12, 586 BC if using the 586 BC date) the walls of Jerusalem were breached. So, it is clear that with the determined latest possible date of departure sometime between January 13-14, 588 BC and February 12-13, 588 BC, Lehi was long gone before the walls were breached under either of these scenarios.

The next date that needs to be considered is the commencement of siege of the city of Jerusalem itself, which according to 2 Kings 25:1:

> "Now it came to pass in the ninth year of his reign, in the tenth month, on the tenth day of the month, that Nebuchadnezzar king of Babylon and all his army came against Jerusalem and encamped against it; and they built a siege wall against it all around."

This passage may refer to the date that the army left Babylon as there is no doubt that they did not build a siege wall in one day. In relation to this date, considering that the departure date talking about Lehi's departure was from the land of Jerusalem as opposed to the city itself, the siege likely would not have initially encumbered travel much distance outside the perimeter of the city itself, as this siege, typical of most ancient sieges, involved the attacking army encamping in close proximity to the city so as not to allow anyone in or out, and to construct defensive structures for the attacking army (siege wall) so they could stay within closer proximity of the city, minimizing the extent of the siege circumference and minimizing the number of troops needed to maintain the siege.

As indicated at the end of this siege of Jerusalem, there was famine in the land (2 Kings 25:3), not just the city, as the destruction and/or abandonment of agriculture later in the siege in the surrounding areas was a standard practice in ancient siege warfare (Wright 2008). We do not know exactly how large the "land of Jerusalem" was, but Mormon at least referred to the "land of Jerusalem" (Mormon 3:19) as being the place from which Jesus chose the 12 apostles in the Old World, so from what we know of the locations of the choosing of the various apostles, it was an area much larger than the city of Jerusalem proper.

Also, the date of the beginning of the siege from 2 Kings may have been the date of departure of the army from Babylon or the date the army actually arrived, and there would have been some organizational time required (weeks perhaps?) for the siege to have been put in place, during which time it was possible to escape the city. Ancient sieges, to be economically efficient, often started with the seizure of outposts around the city and did not initially prevent the movement of individuals, just large groups and transports. Before constructing walls and hermetically sealing a city, ancient sieges typically involved a period of negotiation, followed by a period of threats and intimidation (Eph'al 2009, 35-113). This seems to be the practice for the Jerusalem siege as the outlying outposts were only attacked after the siege of Jerusalem had started (Jeremiah 21:3-7; 34:7). If this date is the arrival date of the armies it is 5 days prior to the base date of the Lehi Departure calendar, under this scenario, even if Lehi had not technically left prior to the arrival of the army, he certainly could have escaped the city of Jerusalem sometime during the 5 days between the arrival of the armies and the base date of the Lehi Departure calendar. However, this final scenario is not consistent with $Laman_1$ and Lemuel complaining, as it seems that if they left while the city was under siege they would not have initially complained much. Obviously after returning during the break in the siege for the brass plates, they would have presumed the threat had passed and recommenced with their complaining. Thus, in the case that the date is an arrival date, it would seem that the Lehites were already outside of the city of Jerusalem and traveling in the land of Jerusalem.

Since the initial return of $Nephi_1$ and his brothers to visit Laban involved going in and out of the walls of the city of Jerusalem, a siege would be inconsistent with what is described in that particular event, so an analysis of the dates of the siege are necessary to see if that event can be accommodated. The second foray to get Ishmael and his family was to the land of Jerusalem--and did not mention the city of Jerusalem, so that event may have been possible even during a siege of the city of Jerusalem (may have actually been

an additional motivator for Ishmael and his family to leave the area, although probably not enough to commit to a long journey to a faraway promised land).

Since there is no scholarly consensus on the date of destruction of Jerusalem, there are varying dates proposed for the commencement of the siege. Spackman (2012, 6) (with one typographical correction) has summarized the varying proposed dates for the arrival of the Babylonian enemy forces as follows:

587 BC Destruction with a one-and-a-half-year siege -- January 8-9, 588 BC

586 BC Destruction with a one-and-a-half-year siege -- December 28-29, 588 BC

586 BC Destruction with a two-and-a-half-year siege -- January 8-9, 588 BC

The December 28-29, 588 BC date easily accommodates the calendar base Lehi departure date of January 588 BC and the two return trips to Jerusalem prior to the siege force arriving. This date seems unlikely because $Nephi_1$ was knowledgeable of Jeremiah's imprisonment which happened during a break in the siege. This would mean that they stayed at the Red Sea camp for more than a year before returning to Jerusalem for the brass plates. The January 8-9, 588 BC date is 5 days before the earliest calendar base date departure date of January 588 BC, which, as explained previously, can be accommodated because the base date may have been set some undetermined time after Lehi's initial departure, or the more likely, is that they had already left the city of Jerusalem, and when the siege force arrived they were still traveling away but still within the boundaries of the land of Jerusalem, and were 5 days (or more) from passing out of the land.

Considering the earlier dates of the siege, it would require that at least the return trip to visit Laban be during a period when the siege was temporarily lifted. During the siege, the army of Egypt came to assist Zedekiah, and the Babylonian army withdrew from Jerusalem to battle the Egyptians. There is again no scholarly consensus on the exact time period and duration of the siege, Spackman (2010) summarizes the varying opinions, and postulates a break in the siege as long as 4 to 5 months. Malamat (1968) who supports a two-and-a-half-year siege starting in January of 588 BC, postulates a 4-month break in the siege of January through April in 587 BC, starting a year after the siege army arrived at Jerusalem. Thus, a return to visit Laban and also a return for Ishmael's family can be accommodated during a break in the siege. Returns during the break in the siege are also consistent with $Nephi_1$ noting that Jeremiah had been imprisoned when talking to Ishmael on the second visit (1 Nephi 7:14). Jeremiah was imprisoned because he attempted to leave Jerusalem when the siege temporarily lifted (Jeremiah 37:11-16).

There are no dates provided as to how long the Lehite encampment near the Red Sea lasted. There have been some minimum estimates of time based on events and travels from the text with Brown (1997) estimating seven or eight months, not more than a year, Chadwick (2005) four months, and Spackman (2010a) five months. That would be more than enough time for one or two return trips to the city of Jerusalem. Don Bradley (2019, 135) makes the case that during the first return to Jerusalem by $Nephi_1$his encounter with the drunk Laban was on the night of a Passover feast. After the adoption of the vernal equinox, being as the beginning of the year in the late pre-exilic period, Passover fell in the second month (Wagenaar 2004, 157). With a typical vernal equinox of March 20 or 21, this would place the time for Nephi's return to get the brass plates sometime from approximately April 18-19 to May 17-18, 588 BC. Assuming the start of the siege on January 8-9, 588 BC, with the Lehites leaving just before that, Nephi's

return for the plates during Passover would have taken place approximately 4 months later, which would fit nicely into the period that they remained in their Red Sea encampment.

Thus, one can conclude that the Lehi Departure calendar base date of February 12-13, 588 BC is consistent with all the potential Old World events and the Book of Mormon text. The close proximity to some of the commencement of the siege dates is also consistent with the command from the Lord to Lehi to leave with some haste.

Notes on Lehi's land of inheritance

Chadwick (2004) makes an extensive analysis of the likely location of Lehi's land of inheritance, indicating it was north of Jerusalem in the lands that were historically controlled by the tribe of Manasseh (Lehi's tribe) and within those lands, those west of the River Jordan (see figure 51).

Remembering that during Lehi's trip outside of Jerusalem, presumably to the land of his inheritance at Jubilee time, "there came a pillar of fire and dwelt upon a rock before him" (1 Nephi 1:6), this location is consistent with the known volcanic activity in the area.

Figure 51 Lands controlled by each of the Twelve Tribes of Israel (12 Tribes of Israel Map.svg, 2020)

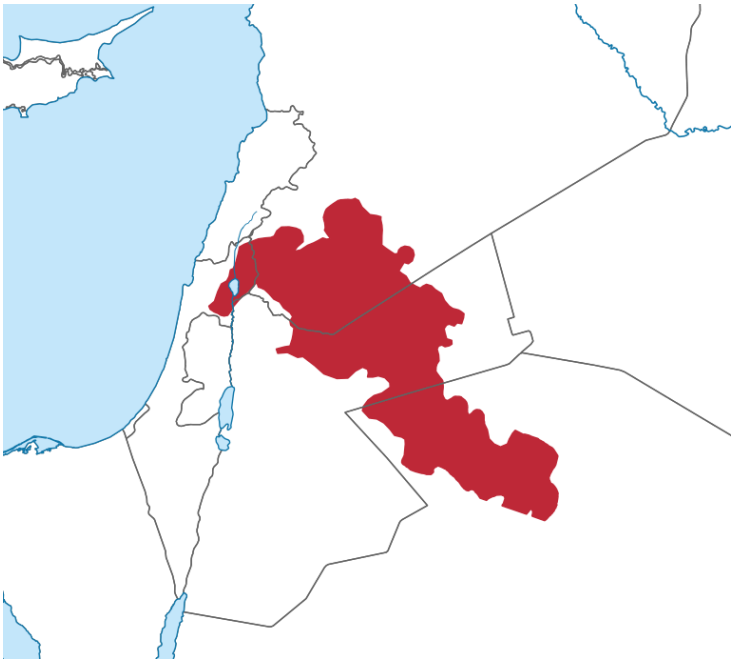


Figure 52 Map showing the location of the Harrat al-Sham (Black Desert) in the Levant. (Roe 2020)

The massive Harrat Ash Shaam volcanic province, which extends from Syria through Jordan and into northern Saudi Arabia, contains many smaller volcanic fields (see figure 52). The field is still active (although no major eruption has been observed in the area west of the Jordan River), where radiocarbon dating indicated an eruption at 2670 BC ± 200 years and an eruption observed in the mid-1800's (Smithsonian 2021). What Lehi described would not be considered a major eruption but may have just been a small cinder cone type of event. A small portion of this volcanic province overlaps the ancestral lands of Manasseh west of the Jordan River.

Chapter 7

Cycles Present in the Book of Mormon Calendars

Metonic cycle presence in the Book of Mormon calendar

For astronomy and calendar studies, the Metonic cycle is a period of almost exactly 19 years that is nearly a common multiple of the solar year and the synodic (lunar) month. The Greek astronomer Meton of Athens (fifth century BC) observed that a period of 19 years is almost exactly equal to 235 synodic months and, rounded to full days, counts 6,940 days. Although usually called the Metonic cycle after Meton, Meton probably learned of the cycle from the Babylonians, as the cycle was used earlier in the Babylonian calendar.

The point where the Reign of the Judges calendar was implemented at 509 years in the Lehi Departure count is also almost exactly 26 Metonic cycles.

509 lunar years x 12 lunar months per year x (1 Metonic cycle/234.997 lunar months) = 25.992 Metonic cycles, which puts the exact end of the last Metonic cycle 55 days into the first year of the Reign of the Judges. 55 is an interesting number here, because the Reign of the Kings started 55 years after the departure of the Lehites.

The number of 26 Metonic cycles is also religiously significant as it is also a construct of the Nephite sacred numbers, one of which correlates with the number of solar years in the Metonic cycle: 19 + 7 = 26; 10 + 9 + 7 = 26; 13 + 13 = 26. The remainder of 55 days into the next year also reflects the Nephite sacred number system utilizing the sacred number 5: 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 55. Mosiah 29:44-46 indicates that the death of $Mosiah_2$ and in the commencement of the Reign of the Judges was "making in the whole" five hundred and nine years from the time Lehi left Jerusalem, so it seems to accommodate a close but not exact alignment of the death of $Mosiah_2$ and the commencement of the Reign of the Judges. The comparison of the 600-year passage and additional time to Christ's death with the Reign of the Kings and Reign of the Judges calendars exactly coincides to the day, so it is clear that the implementation of the Reign of the Judges calendar occurred on a New Year's Day as there were no intervening days added or lost.

While the knowledge of the Metonic cycle was likely independently known in the New World, there may be some link to prior Old World knowledge among the Hebrews as the intercalated Jewish calendar ended up being based on the Metonic cycle of 19 years, of which 12 are common (non-leap) years of 12 months and 7 are leap years of 13 months. To determine whether a Jewish year is a leap year, one must find its position in the 19-year Metonic cycle. This position is calculated by dividing the Jewish year number by 19 and finding the remainder. (Since there is no year 0, a remainder of 0 indicates that the year is year 19 of the cycle.) For example, the Jewish year 5780 divided by 19 results in a remainder of 4, indicating that it is year 4 of the Metonic cycle. Years 3, 6, 8, 11, 14, 17, and 19 of the Metonic cycle are leap years.

Long Count presence in the Book of Mormon calendar

It was noted by Spackman that one reason that the calendar change occurred 9 years after the sign of Christ was because that would make a total of an even 100 years of passage from the days of $Mosiah_2$, as noted in 3 Nephi 2:5. Mormon also noted that it was six hundred and nine years from the time that Lehi left Jerusalem (3 Nephi 2:6). Just as in all things calendrical with the Nephites, there are multiple calendrical convergences going on. This number of years also corresponds exactly with 30 katuns.

609 lunar years x 354.367056 days in a lunar year ÷ 7,200 days per katun = 29.974 katuns, which would put the end of the 30th katun 190 days into the next year, the tenth year after the sign of Christ. The number 30 is also a Nephite sacred number. The remainder of 190 days into the next year also reflects the Nephite sacred number system with 19 + 19 + 19 + 19 + 19 + 19 + 19 + 19 + 19 + 19 = 190 or 19 x 10, with both 19 and 10 being sacred numbers.

Other cycles

As has been discussed, there does appear to be a purposeful selection by Mormon of the timing of the last battle to correspond with the Venus/solar cycle alignment, but that is on instance related to beliefs about fortunes in war as opposed to a calendar. I have checked a variety of other Mesoamerican calendar cycles against Book of Mormon dates but found no evidence of them. It actually is consistent with what one might expect as the Nephites were trying to keep their religious beliefs and the corresponding integrated religious calendar pure from competing pagan religion influence and belief, which pagan religion was completely integrated with their calendar and system of gods.

Summary of an internally consistent Book of Mormon calendar

The addition of the Caractors Document information shows the following information:

1. There is no gap or overlap between the Reign of the Kings and the Reign of the Judges calendars and consistent with this used the new year day when changing the calendar after the end of the 509^{th} year.

2. There is no gap or overlap between the Reign of the Judges 92^{nd} year and the retroactive first year of the Coming of Christ calendar and consistent with this used the new year day when changing the calendar after the end of the 509^{th} year.

Chapter 8

Nephite Jubilee and Festival Calendar

Also contained in the Caractors Document are elements of the Nephite Festival Calendar, which is an implementation of the Hebrew Festival Calendar, descriptions of which are contained in the Old Testament. The elements of the Hebrew Festival Calendar implemented by the Nephites that are present are:

1. Implication of the three pilgrimage festivals that occur within a year
2. Implications involving the importance of the New Year
3. Identification of the Jubilee Calendar

The reference to 1/3 of a year period indicated by the C-76 and C-77 glyphs found in the Caractors Document indicates a measurement of time in 1/3 of a year increments, which would correspond to the three annual pilgrimage festivals. The New Year implication, as previously discussed, involves the ascension of Christ at a year-end or New Year time frame under the prophetic calendar. The main festival calendar that is identified in the Caractors Document is the Hebrew Jubilee Calendar.

Jubilee Years

The Jubilee is the year at the end of seven cycles of *shmita* (Sabbatical years) and, according to Biblical regulations, had a special impact on the ownership and management of land in the Land of Israel. According to the Book of Leviticus, Hebrew slaves and prisoners would be freed, debts would be forgiven, and the mercies of God would be particularly manifest.

Leviticus 25:8–13 states:

> You shall count off seven Sabbaths of years, seven times seven years; and there shall be to you the days of seven Sabbaths of years, even forty-nine years. Then you shall sound the loud trumpet on the tenth day of the seventh month. On the Day of Atonement, you shall sound the trumpet throughout all your land. You shall make the fiftieth year holy and proclaim liberty throughout the land to all its inhabitants. It shall be a jubilee to you; and each of you shall return to his own property, and each of you shall return to his family. That fiftieth year shall be a jubilee to you. In it you shall not sow, neither reap that which grows of itself, nor gather from the undressed vines. For it is a jubilee; it shall be holy to you. You shall eat of its increase out of the field. In this Year of Jubilee each of you shall return to his property.

The ancient Hebrews had a practice that every seventh year was considered a sabbatical year, which involved a variety of practices ranging from leaving agricultural land fallow and releasing debts. Every seventh sabbatical year was considered a Jubilee Year, which means that every 49th year would be a Jubilee Year. A Jubilee Year was considered something of a "super-sabbatical." There is some disagreement among Biblical scholars as to whether the Jubilee would take place on the 50th year after the sabbatical year (meaning essentially two sabbatical years in a row) or whether it coincided with the 49th sabbatical year (Baker 1998).

Since the 49th year was already a sabbatical year, the land was required to be left fallow during it, but if the 50th year also had to be kept fallow, as the Jubilee, then no new crops would be available for two years, and only the summer fruits would be available for the following year. Judah the Prince contended that the jubilee year was identical with the sabbatical 49th year (Maimonides (1180) (1967). However, the stronger case is that the biblical phrase hallowed the fiftieth year (Leviticus 25:10), together with the biblical promise that there would be three years' worth of fruit in the sixth year, (Leviticus 25:10) implies that the Jubilee year was the 50th year, which was also the first year of the next 7-year sabbatical cycle (Bergsma 2007, 85-92).

Another question to look at to determine Old World consistency with the presence of the Jubilee in the Book of Mormon is whether the jubilee legislation existed in pre-exilic Israel. There has been some debate as to whether the Jubilee legislation was drafted post exile. Donald W. Blosser, in an unpublished dissertation, after reviewing the precedents for the jubilee legislation in older ancient Near Eastern literature, concluded that the legislation arose at the time of the occupation of the land (twelfth-century BC) and was adjusted in some minor ways after the exile.

The opinion of the Geonim, and generally of later authorities, was that prior to the Babylonian captivity the Jubilee was the intercalation of the 50th year, but after the captivity ended the Jubilee was essentially ignored, except for the blast of the *shofar*, and coincided with the sabbatical 49th year; the reason was that the Jubilee was only to be observed when the Jews controlled all of Canaan, including the territories of Reuben and Gad and the eastern half-tribe of Manasseh.

Bergsma (2007, 81-105) has classified the structure and features of the Jubilee based on Leviticus and other references or implications from other portions of the Old Testament. In general, the Jubilee year and the law governing the practices during the Jubilee year reflect an ideal state of existence of independence, ownership of ancestral land, and relative inequality. The features and practices of the Jubilee Year are as follows:

1. Recognition and reinforcement of the tribal/clan structure

2. Sacrality and inalienability of the land, maintaining ancestral property within the family line and returning it to the family of inheritance.

3. Principally applicable in a time of rural agricultural focus

4. Protection of the viability of the land through fallow practices, followed by replanting and increased fertility of the land

5. An extension of principles found in the Sabbatical year, namely that the fields lay fallow (see Exodus 23:10-11); debts were released (Deuteronomy 15:1-2); and Hebrew slaves were to be set at liberty (Deuteronomy 15:7-18; Jeremiah 34:8-16).

6. Identifies the progressive stages of destitution that can occur with persons in ancient Israel society that the Jubilee is designed to correct:

    a) Loss of lands

    b) Loss of home (inhabitants within cities)

    c) Loss of independence

d) Loss of freedom (slavery)

e) Loss of freedom to a foreigner

7. A time (pilgrimage) to return to ancestral lands and family.

8. An implied assistance and concern for the poor as they are allowed to glean the fields of any volunteer crops during the two years of fallow.

9. A special affiliation and emphasis to the Day of Atonement when the trumpet sounds initiating the Jubilee year. The Day of Atonement consists of a day without work, a day when the priest makes an atonement for all the people in the congregation exclusive of rank or wealth, cleansing all from sin by placing on holy garments.

10. The original construction of Solomon's temple during a Jubilee year, and the correlation of Jubilee years with periodic construction or renovations of the temple which include repairs by Joash, Hezekiah, Josiah, and the rebuilding by Zerubbabel (Casperson 2003).

The meaning of the Hebrew word for Jubilee may also be important in detecting its presence in the Book of Mormon text. The Septuagint rendered the Hebrew *yovel* as "a trumpet-blast of liberty." The Jubilee year was announced by a blast on a *shofar*, an instrument made from a ram's horn.

An alternative etymology notes that the Latin verb *iūbilō*, "shout for joy," predates the Vulgate, and proposes that instead the Latin *jubilo* (meaning shout, from Proto-Italic **jū*), as well as Middle Irish *ilach* (victory cry), English *yowl*, and Ancient Greek *iuzō* (ἰύζω: shout), derived from a Proto-Indo-European root **yu-* (shout for joy). In this theory, the Hebrew term for "jubilee" is a borrowing from neighboring Indo-European languages, rather than deriving from another Hebrew word (Mallory et al 2006, 363).

Some evidence has been previously presented for the presence of the festival calendar within the Book of Mormon by John W. Welch and Terrence L. Szink (1998), mostly pertaining to the speech of King Benjamin, namely, festivals of The New Year, the Day of Atonement, The Feast of Tabernacles (Sukkot), a Sabbatical year, and the Jubilee.

The Caractors Document contains two glyphs that represent the year of Jubilee. The Jubilee glyph occurs in the Caractors Document in conjunction with King Benjamin relinquishing the kingship to his son $Mosiah_2$ and the defeat of the Gaddianton robbers after being under siege, and there are two others (C-180 and C-220) that appear to have the form of this glyph as well; they occur at the time period after the coming of the resurrected Christ and at the time predating the final battle.

In looking at the text of the Book of Mormon, it may be possible to tie the 49-year Jubilee calendar more specifically into the calendar counts in the Book of Mormon. Since scholars are split as to whether there was a Sabbatical year followed by a Jubilee Year, or whether both occurred on the same year, it will be important to consider multiple years when trying to correlate this calendar. In addition, there may be some related themes present in the years immediately leading up to the Sabbatical/Jubilee years as the event only occurred every 49 years so likely was anticipated some time prior to its arrival, especially since it was a once in a lifetime event for most and restored liberty, lands, and relief from debt for many.

Caractors Document Jubilee Years

King Benjamin Jubilee Year (9th Jubilee)

Welch and Szink suggested that the Sabbatical/Jubilee year(s) may have occurred at the time Benjamin transferred his kingship, based primarily on elements of his speech. Specifically, they identified the statement that the concept of the dust of the earth belonging to God (Mosiah 2:25) corresponded with the return of alienated ancestral lands to the owner, the reference by Benjamin that he had not allowed slavery (Mosiah 2:13), the discussion of service to the poor (Mosiah 4:15-23), the settlement of debts (Mosiah 4:28), the reading of the law, specific textual correspondences between portions of King Benjamin's sermon and sections of Leviticus, and the general principal of starting things anew with the new King $Mosiah_2$. Specifically, Leviticus 25:18-19 states:

> Wherefore ye shall do my statutes and keep my judgments, and do them; and ye shall dwell in the land in safety. And the land shall yield her fruit.

This correlates with Mosiah 2:22 which indicates "(i)f ye would keep his commandments ye should prosper in the land." The addition of a tower to the Nephite temple is also correlative of a Jubilee year (Mosiah 1:18; 2:7). Welch and Szink also noted that the Jubilee and sabbatical would be an appropriate time to pass the kingship to his son.

In fact, the Caractors Document also documents a Jubilee Year at that time with a Jubilee glyph (C-84). It is oriented vertically, which probably indicates the order of the Jubilee Year in that the glyph rotates 90 degrees for each successive Jubilee. The translation rendered of the Caractors Document of this glyph was that the Period of the Seven Tribes ended four years before the arrival of the Limhites which ended "in conjunction" with the Jubilee Year. I had interpreted that later in the text to likely have been around 477 years. In fact, the Jubilee glyph sits in the time period between the end of the Period of the Seven Tribes and the death of King Benjamin, so could have occurred over a period from approximately 475 to 479 years after the departure of Lehi from Jerusalem.

In looking to the text of the Book of Mormon, it may be possible to further delineate the year in the case of King Benjamin, since $Mosiah_2$ "did cause his people that they should till the earth" (Mosiah 6:7,) which would indicate the end of the fallow period of the Jubilee. They may have planted crops near the end of the Jubilee year with the anticipation of crops occurring outside of the Jubilee year, as the text of the Book of Mormon is not always strictly chronological in the sense that sometimes a longer time period event is discussed as a unit and may extend beyond a time period which is then backtracked. Mosiah 6:4-7 reads:

> 4 And Mosiah began to reign in his father's stead. And he began to reign in the thirtieth year of his age, making in the whole, about four hundred and seventy-six years from the time that Lehi left Jerusalem.
>
> 5 And king Benjamin lived three years and he died.
>
> 6 And it came to pass that king Mosiah did walk in the ways of the Lord, and did observe his judgments and his statutes, and did keep his commandments in all things whatsoever he commanded him.
>
> 7 And king Mosiah did cause his people that they should till the earth. And he also, himself, did till the earth, that thereby he might not become burdensome to his people, that he might do according to that which his father had done in all things. And there was no contention among all his people for the space of three years.

This section of scripture could be interpreted in a few different ways in the sense that the things that $Mosiah_2$ did as king could have occurred in the three years between King Benjamin giving up his reign and his death, with the statement that there was no contention among the people for three years running concurrent with the last three years of Benjamin's life. So, the tilling of the earth could have started as early as 476 or as three years later in 479, leaving the possibility of the Jubilee year being any time from 475 to 479. So, this section of scripture does not provide any more definitive date than the Caractors Document does.

Land of Nephi Jubilee concurrent with King Benjamin Jubilee

Concurrent with the 475-to-479-time frame in Zarahemla, the people of Limhi, located in the land of Nephi, shows some corollary to a Jubilee. The theme of bondage was not an abstract concept for the people of Limhi, as they were in bondage from the Lamanites. In approximately 473 an expedition of men was sent out which returned in approximately 478 with the intent of finding the people of Zarahemla so the Limhites could be freed from bondage (Mosiah 7:15, 8:7). It was at the end of the first three years of the reign of $Mosiah_2$ that Ammon, coming from Zarahemla, encountered the Limhites in approximately 479. They were taught the Jubilee speech of King Benjamin (Mosiah 8:3), they rejoiced, and were shortly freed by escaping the land of Nephi.

Also concurrent with the 475-to-479-time frame, $Alma_1$ and his people had settled on their lands in Helam and were rejoicing in their liberty and freedom from King $Noah_3$ (Mosiah 23:12-14), so perhaps they had the land and liberty elements of the Jubilee. It does appear that in approximately 479 they were tilling their fields (Mosiah 23:25), so if they were practicing Jubilee traditions, then 479 was not likely a Jubilee year.

Gaddianton Robber Defeat Jubilee Year (12^{th} Jubilee)

The Caractors Document does indicate a Jubilee Year (glyph C-151) in conjunction with the siege and ultimate defeat of the Gaddianton robbers (3 Nephi 3–4). The Book of Mormon text is certainly consistent with this occurrence since significant elements are consistent with the Sabbatical/Jubilee.

Indications of a Jubilee are found initially, in all places, in the epistle of Giddianhi, the leader of the Gaddiantons in the sixteenth year of the Coming of Christ calendar. He mentions the "liberty" of the Nephites and the guarantee that they would not be "slaves" (3 Nephi 3:2, 7) and indicates that they should yield up their "lands" (3 Nephi 3:6, 10). In the seventeenth year the Nephites gathered together in a fortified location and left their lands "desolate" (3 Nephi 3:3) consistent with a Sabbatical/Jubilee fallow year, and had laid up provisions, also consistent with practice before a fallow year, leaving the Gaddiantons to take lands that had no crops available for plunder.

Upon the defeat of the Gaddiantons after the twenty first year, there was great celebration and religious rejoicing and shouts of "joy" and "Hosanna" which is one of the meanings of the word Jubilee, and consistent with a Jubilee the people were set free from the siege, and they captured their enemies but also gave liberty to some. They were able to return to their own ancestral lands in the twenty-sixth year and even granted lands to repentant robbers, which had lain fallow during the time of siege; and it instituted a time of peace and righteousness (however brief) (3 Nephi 6:1, 3). The Book of Mormon is not exactly specific as to the time of defeat and liberation. The verse is not precise, but the year of Jubilee could have occurred in the 24^{th} year within the time frame given.

> 3 Nephi 5:7
>
> And thus had the twenty and second year passed away, and the twenty and third year also, and the twenty and fourth, and the twenty and fifth; and thus had twenty and five years passed away.

The potential years of the Jubilee would thus be from the 16th year until the 26th year. Probably the most likely scenario is that either the 16th or 17th year was the prior Sabbatical fallow year seven years in advance of the Jubilee year, putting the Jubilee in the 24th or 25th year.

This Jubilee Year was identified in the Caractors Document as being the 12th complete Jubilee Year period and has an association with the 1,000 Year Calendar.

Other Textual Evidence of Jubilee Years in the Lehi Departure and Reign of the Judges Calendars

There is no Jubilee glyph in the first section of the Caractors Document except the one related to King Benjamin. A Jubilee glyph would be expected 49 years earlier, which would have fallen within the chronology of the first section of the Caractors Document. Since the idea is that the first section is a preface to the Book of Mosiah, the glyph may have actually appeared somewhere in the portion of the lost 116 pages containing the first part of the Book of Mosiah. The second section of the Caractors Document, containing the prophetic calendar running from five years prior to Christ, also does not identify all of the Jubilee Years during the chronological time frame. This would seem to indicate that the Jubilee glyphs were not included in the Caractors Document text unless they corresponded with significant Book of Mormon events.

Since the Caractors Document and the Book of Mormon text showed that a Jubilee year occurred sometime between 475 to 479, at the time of King Benjamin it would be useful to look both backwards and forward in time using 49-year increments to find other textual evidence of a Sabbatical/Jubilee year.

Jubilee years after the King Benjamin Jubilee

Time periods subsequent to King Benjamin up to the birth of Christ would be the 15th year of the Reign of the Judges to the 19th year, and years 64-69.

15th-19th Year of the Reign of the Judges Jubilee (10th Jubilee)

Szink and Welch also noted, in addition to Benjamin's Jubilee, the apparent presence of a Jubilee year 49 years after King Benjamin's speech at Alma 30:2–5, in the 16th and 17th year of Reign of the Judges, principally because it was a time of peace. However, elements of the Jubilee liberty and land themes are found starting some period prior to the fifteenth year where the people of Anti-Nephi-Lehi fled to freedom from the Lamanites to the land of Jershon, even volunteering to be "slaves" (Alma 27:8), where the Nephites gave the land of Jershon to the Anti-Nephi-Lehites as a land of inheritance (Alma 27:24). While there was a subsequent war to protect these people in the fifteenth year, there was rejoicing and exultation of hope (Alma 28:12).

At this time is found the moving statements by $Alma_2$ where he could speak with the "trump of God" (Alma 29:1). The Jubilee year is initiated with the sounding of the trumpet, the Hebrew meaning for Jubilee, as mentioned, is "a trumpet-blast of liberty." $Alma_2$ speaks of his father's being delivered out of bondage by the Lord (Alma 29:11-12) and of overwhelming "joy" (Alma 29:16) consistent with Jubilee themes.

In the 16th year there were days of fasting, mourning, and prayer and continual peace, with the people strict in their observing of the commandments and ordinances of God, according to the law of Moses (Alma 30:2-4). In the beginning of the 17th year there was peace, which was interrupted by the arrival of Korihor, an Anti-Christ. Like the Gaddianton leader, he utilized Jubilee themes in his attempt to sway Nephites away from the worship of Christ. He referred to "foolish traditions" (Alma 30:14) indicating that there could be "no atonement" (Alma 30:17). He "interrupt(ed) the rejoicings" of the people (Alma 30:22) and countered the assertion that the Nephites were a "free people" but stated that the Nephites were actually "in bondage" (Alma 30:24-27).

Also, in the 17th year $Alma_2$ headed a mission with Amulek to the Zoramites because they were not keeping the commandments of God and his statutes "according to the law of Moses" (Alma 31:9-10). $Alma_2$ was astonished to find that the Zoramites had built their own equivalent of a temple with a "holy stand" in the center (Alma 31:13, 21). Contrary to the practice of the Day of Atonement which initiated the Jubilee, when the priest makes an atonement for all the people in the congregation exclusive of rank or wealth cleansing all from sin by placing on holy garments, the Zoramites speak directly against the atonement and Christ. Instead of granting benefit to the poor and the wealthy, they established themselves as superior and elect by prayer on the Sabbath day (Alma 31:12-22). The Zoramites had taken Jubilee principles (equality, temple worship, atonement, and the Sabbath) and turned them on their heads. $Alma_2$ commences to teach and care for the poor, and teaches them using the principle of planting a seed and developing a tree of faith with fruit, and if not successful it is because "your ground is barren" (Alma 32; 32:39; 33), again utilizing Jubilee themes of care for the poor, fallow ground, planting, and atonement in his sermon. Amulek spoke after $Alma_2$ indicating that $Alma_2$ had "appealed unto Moses, to prove that these things are true" (Alma 34:7), spoke again of atonement (Alma 34:8-13) again referring to the law of Moses, spoke of caring for the poor and needy (Alma 34:28-29), referred to the principle of the temple (Alma 34:36), and becoming subjects of the devil who would have all power over them (Alma 34:35, 39). Subsequently, the Zoramites evicted the poor who believed in $Alma_2$ and Amulek, who ended up in Jershon where they were cared for and were given "lands for their inheritance" (Alma 35:9, 14) again resulting in the theme of the Jubilee where the poor are restored to ancestral lands of inheritance.

Immediately after the ending of the seventeenth year, $Alma_2$ called his sons together, and, again with some Jubilee themes, discussed with Helaman the "captivity of our fathers" and "bondage" and subsequent deliverance and freedom (Alma 36:1-2). He also discussed his conversion, which ended in his soul "filled with joy" (Alma 36:20-21), recounting his missionary experiences, including God delivering him from prison and bonds (Alma 36:27). He ended by recounting their fathers at the time of Moses "that were delivered out of bondage" and "led them by his power into the promised land" (Alma 36:28) and also the fathers that came out of the land of Jerusalem that were delivered "out of bondage and captivity" (Alma 36:29) indicating the righteous "shall prosper in the land" (Alma 36:30; 37:13; 38:1).

Similar to Benjamin, $Alma_2$ passed to his son Helaman the brass plates, interpreters, and the Liahona (Alma 37). $Alma_2$ mentions his son Shiblon's bondage and deliverance (Alma 38:4-5).

In the eighteenth year, a war was initiated with the intent of bringing the Nephites into bondage with the Nephites defending "their lands" and their "liberty" (Alma 43:8-9, 26, 45, 47, 50; 44:5). After being successful, the Nephites "exceedingly rejoiced," "gave thanks" to God, "did fast and pray much," and

worshiped with "exceedingly great joy" (Alma 45:1). In the nineteenth year is discussed the quick return to wickedness of the Nephites and loss of "the foundation of liberty" and the blessing "God had sent upon the face of the land" (Alma 46:10). In this year $Moroni_1$ creates the "title of liberty," praying for "the freedom of the land" and names the land the "land of liberty" (Alma 46:12-21) and commits all to the covenant in the cause of freedom, and there was peace again in the land through the end of the nineteenth year (Alma 46:37).

64th-69th Year of the Reign of Judges Jubilee (11th Jubilee)

The next potential Jubilee year period falls from the 66th year to 69th year of the Reign of the Judges. In the 64th year there was "peace in all the land," "whether among the Nephites or the Lamanites" (Helaman 6:7). However, it is indicated that they "did raise grain in abundance, both in the north and the in the south" (Helaman 6:12), which would indicate that the 64th year was not a sabbatical or Jubilee year, as the fields would have lain fallow in those years.

In the 65th year they had "great joy and peace," "much preaching and many prophecies" (Helaman 6:14). The only thing mentioned about the 66th year was that first Cezoram, the apparently not so righteous chief judge, and subsequently his son, were murdered (Helaman 6:15). The Book of Mormon does indicate that in the year prior there was "great joy and peace" and "much preaching and many prophecies," but in what would have been the Jubilee Year, the murders occurred. The people began to be wicked again at the start of the 67th year (Helaman 6:16-17) and continued so through the rest of the year and through the 68th year (Helaman 6:33). The 69th year was also a time of wickedness with no Jubilee themes mentioned other than the prophecy by $Nephi_2$ that their lands would be "taken from you" (Helaman 7, 7:28, 8).

At this point, because of the growing of grain in the 64th year, the other earlier years corresponding with 49 years prior to this year and sequentially can be eliminated as potential Sabbatical/Jubilee years, although it seems that there are Jubilee themes present in the time leading up to the much-anticipated Jubilee year, which would be reasonable as it generally occurs once in a lifetime. Thus the 15th year of the Reign of the Judges and the 475th year after Lehi's departure are not Sabbatical or Jubilee years either.

The next potential Jubilee period, the time of the siege by the Gaddianton robbers has already been discussed.

<u>Jubilees found during the Coming of Christ Calendar</u>

Because of the retroactive calendar change that occurred just prior to the birth of Christ, it is assumed that the Jubilee year count would have continued under the uncorrected prophetic lunar year calendar. Since both counts of the separate solar and lunar calendars were continuing, but only the solar calendar year count is tracked in the Book of Mormon, it is thus necessary to convert the uncorrected lunar years to the solar year count after Christ's birth. 49 lunar years is equivalent to 47.58 solar years. With that correlation, the following periods in the solar year count in the Coming of Christ calendar are looked at for textual evidence of the Sabbatical and Jubilee years after Christ:

21.3 to 25.25 (13th Jubilee)

68.88 to 72.83 (14th Jubilee)

116.46 to 120.41 (15th Jubilee)

164.46 to 168.99 (16th Jubilee)

211.62 to 215.57 (17th Jubilee)

259.2 to 263.15 (18th Jubilee)

306.78 to 310.73 (19th Jubilee)

354.36 to 358.30 (20th Jubilee)

401.94 to 405.88 (21st Jubilee)

A Jubilee styled glyph (C-180) from the Caractors Document might appear for the period of righteousness and prosperity after the visit of Christ. This glyph is translated as "truth," and it is a bit different from the previous Jubilee Year glyphs; it is probably best interpreted as a period of righteousness instead of a specific year. Mormon's description of the period is consistent with the terms of the Jubilee: they "had all things in common," and there were not "rich or poor, bond and free, but they were all made free, and partakers of the heavenly gift" (4 Nephi 1:3). In the translation of the Introductory Coming of Christ glyph, one of the Egyptian sources for the glyph was the Egyptian glyph meaning "jubilation."

C-180

21.3 to 25.25 year Gaddianton Siege Jubilee

As was previously discussed, the potential years of the Jubilee based on Jubilee and Sabbatical themes were from the 16th year until the 26th year. As previously stated, the most likely Jubilee scenario was that either the 16th or 17th year was the prior Sabbatical fallow year seven years in advance of the next Sabbatical and Jubilee year, putting the next Sabbatical and Jubilee in the 23rd -24th, or 24th- 25th years. It is very possible that one reason that a Jubilee glyph (12th) was identified for this Jubilee was that it was the last Jubilee practiced as prior to the next Jubilee Christ visited and ended the practice of the Law of Moses.

68.88 to 72.83 year Jubilee

It should be noted that just prior to the 72nd year the people "did not walk any more after the performances and ordinances of the law of Moses" (of which the Jubilee is a part) and that "there was no contention among all the people" (4 Nephi 1:12-13). Because the law of Moses was no longer practiced, it is a distinct possibility that for the rest of the text in the Book of Mormon there may be little or no trace of the Jubilee. In the 72nd year and through to the 100th year there "was no contention in the land" and "no manner of –ites" (4 Neph1 1:15-17). The fact that there was a specific mention of the law of Moses being discontinued is evidence that this was a Jubilee count year as well, even though it was no longer celebrated.

116.46 to 120.41 and 164.46 to 168.99 year Jubilee

4th Nephi covers a long period of time in a very brief text, so it is difficult to identify textual evidence of much of anything definitive. From year 110 to year 194 it is indicated that there was "still peace in the land" (4 Nephi 1:20).

211.62 to 215.57 year Jubilee

The period from 210 to 231 is discussed as one unit, and there were no Jubilee themes present and the Nephites were sliding into wickedness during this time (4 Nephi 1:27-35).

259.2 to 263.15 year Jubilee

The period from 244 to 300 is discussed as one unit, and there were no Jubilee themes, and the Nephites were all wicked by the end of this period (4 Nephi 1:40-45).

306.78 to 310.73 year Mormon's Birth Jubilee

Two documents purporting to include Book of Mormon characters and their translations were created in the mid-1830s by Oliver Cowdery and Frederick G. Williams (see figures 53 and 54). One set of 2 characters was translated together as "The Book of Mormon" and the other set of 2 characters was translated as "The interpreters of languages." In the translation of the Caractors Document the word for "book" was found to match the left most character.

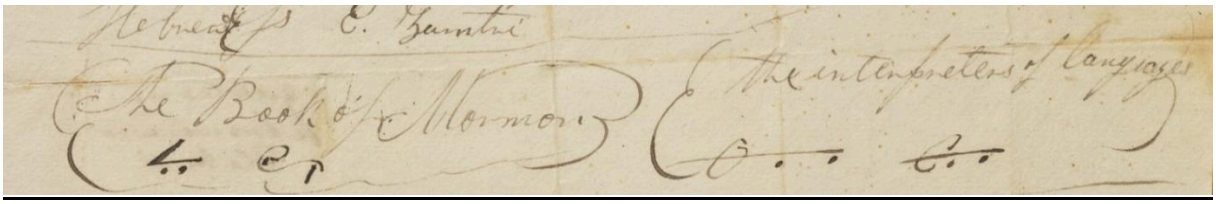


Figure 53 Book of Mormon characters copied by Oliver Cowdery, circa 1835–1836 (The Joseph Smith Papers 2023)

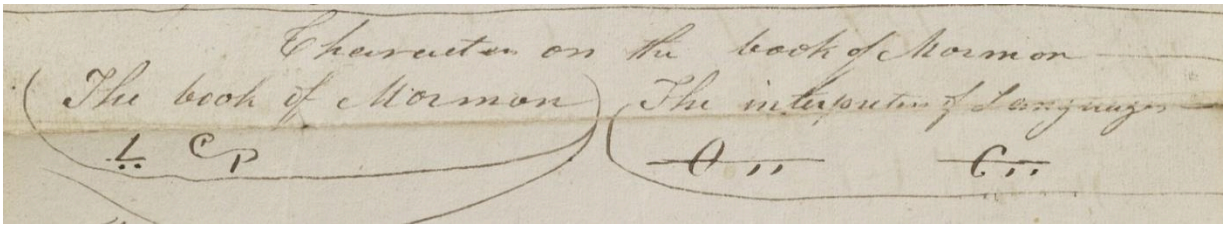
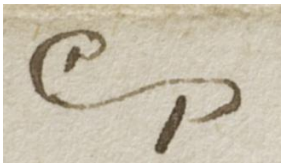


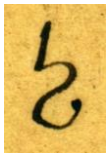
Figure 54 Close-up of the Book of Mormon characters copied by Fredrick G. Williams, circa February 27, 1836 (The Joseph Smith Papers 2023a)

As part of the Caractors Document translation, the character from Cowdery/Williams translated by Joseph Smith by use of the interpreters (Urim and Thummim) translated as "Mormon" was also translated.

OF2 

As previously mentioned, there are two glyphs that are the glyphs for the Jubilee Year. The glyph for "Mormon" is a mirror image of the Jubilee glyphs (C-151 and C-84). These glyphs (including Mormon) are a version of one of the glyphs for an Egyptian month.

C-151 

C-84 

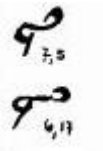
The Book of Mormon Onomasticon (2023) lists a wide series of possibilities for the etymology of Mormon and then adds as an afterthought:

> Less likely is EGYPTIAN *mr* (> Nubian and Coptic *mur*, *mor*), "bind, girth"

In fact, this least likely etymology is the correct one. The determinative Egyptian hieroglyph for "bind" is Gardiner Number V-12 (Gardiner 1957, 523):

V12: 

The Egyptian hieratic for this glyph is:



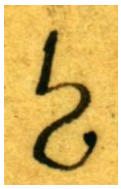
Möller Number 522, Bd. I-23-76, pg. I 522-532 (Möller 1965)

The V-12 glyph also constitutes the simplest form of the Egyptian word *arq* (Budge 1920, 1:131) meaning "the last" or "the end," which is very descriptive of Mormon. *Arq* also means "to be wise." In addition, as the glyph represents a band of string to bind rolls of papyri, the V-12 glyph is typically associated with and included in Egyptian words related to records such as *art* "roll of papyrus," *TAw* "book," *Sat* "document," *pr mDAt* "library," *hrwyt* "journal," *snn* "copy (of a document)," *mdw nTr* "written characters, script," *sxrt* "roll (of papyrus)," *gnwt* "records, annals," *wD* "(written) decree, dispatch," "inscription," and "stela," *wDt* "command, decree," *Hbt* "ritual book," and *mDAt* "papyrus – roll" (Dickson 2006). Of course, the relationship to Mormon and records and recordkeeping is another clear descriptor for Mormon.

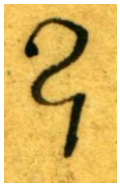
Mormon's name glyph is a mirror image of the Jubilee Year glyph, so it is likely that Mormon may correlate to the Jubilee year in some way, likely his birth year. Ammaron hid up the sacred records 320

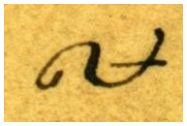
years after Christ (4 Nephi 1:48), and “at about the time” the records were hid, Mormon was “about 10 years of age” (Mormon 1:2), making his birth year, given the “about” statements, in the range of 309 to 310 years, which is consistent with the calculated potential years of this particular Jubilee of 306.78 to 310.73 years.

At this juncture, it is also possible to see what is happening with the orientation of the Jubilee Year glyph; it is rotating 90 degrees counterclockwise with every Jubilee Year. For example, the Jubilee Years from the King Benjamin Jubilee to the Gaddianton Robber Jubilee would be as follows:

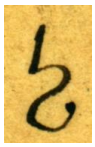
King Benjamin Jubilee 

17th Reign of Judges Jubilee 

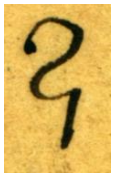
66th Reign of Judges Jubilee 

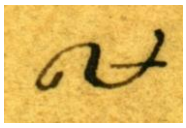
Gaddianton Robber Siege 

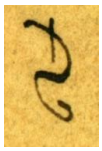
This would also be consistent with the calculation premise of the existence of only four Egyptian months in a year, so once every four years the same glyph alignment would reoccur. The following continues this counterclockwise rotational sequence (arbitrarily utilizing both Caractors Jubilee glyphs for illustration):

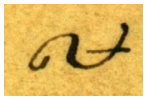
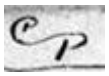
68.88 to 72.83 years 

116.46 to 120.41 years 

164.46 to 168.99 years 

211.62 to 215.57 years 

259.2 to 263.15 years 

306.78 to 310.73 years   Mormon's name glyph

We can see that Mormon's glyph is a mirror glyph to the expected Jubilee year glyph that occurred in his birth year, another excellent example of "glyphnastics" occurring with the names in the Book of Mormon. Unlike the glyph I have projected here (using the Gaddianton Robber Jubilee glyph), the actual glyph that represented Mormon's Jubilee Year probably had the tick mark on the end of the line of the glyph, just like his name glyph did.

354.36 to 358.30 years Jubilee

This period occurred while the Nephites and Lamanites were at peace because of a treaty that lasted from AD 350 to 360 (Mormon 2:28–29; 3:1), and the Nephites were "preparing their lands" "against the time of battle," so this is also consistent with a Jubilee Year occurrence.

401.94 to 405.88 years Jubilee

This period occurred after the Nephite nation was destroyed, with only $Moroni_2$ left. A few statements of $Moroni_2$ likely during this time period (immediately after the 401st year had started [Mormon 8:6]) are consistent with Jubilee themes, noting the "saints that have gone before me who have possessed the land" (Mormon 8:23) and a discussion of those who ignore the poor (Mormon 8:39-40). $Moroni_2$ also mentions that "all men shall be awakened by the power of God when the trump shall sound" (Mormon 9:13) a very definite Jubilee reference.

<u>Potential Jubilee years prior to King Benjamin's Jubilee year</u>

427-430 (9th), 378-381 (8th), 329-33 (7th), and 280-283 years (6th) Jubilee

Since the potential range of the King Benjamin Jubilee has been shown that it could not be year 475 to 479 but could only be 476 to 479, previous time periods to look at for evidence of Jubilee would be, going back in time, 427-430, 378-381, 329-33, 280-283, 231-234, 182-185, 133-136, 84-87, and 35-38. Unfortunately, because of the loss of the 116 pages, these periods are only covered by the small plates, not by Mormon's abridgement, and only have minimal information for most of this time frame. The book of Omni covers from 276 to a time when Benjamin is an adult with sons. As the record is brief, there is nothing uniquely indicative of a Sabbatical or Jubilee year, which includes the 427-430, 378-381, 329-33, and 280-283 year time frames.

231-234 (5th) and (4th) 182-185 years Jubilee

The book of Jarom (post 179 years) would include the 231-234 year and likely the 182-185 year time frames. Jarom mentions prior to 200 years that they "observed to keep the law of Moses and the Sabbath day holy" (Jarom 1:5) and that they battled and swept the Lamanites "away out of our lands, and began to fortify our cities, or whatsoever place of our inheritance" (Jarom 1:7). Jarom indicates that the word of the Lord was verified that they would "prosper in the land" (Jarom 1:9). Sometime after 200 years and prior to 238 years they "taught the law of Moses" (Jarom 1:11). Thus, there are indications of Jubilee themes but not enough specificity as to the years numbered to tie them to the expected Sabbath/Jubilee time frames.

133-136 years (3rd) Jubilee

The book of Enos would include this time frame. Enos mentions that the voice of the Lord had given the Nephites "this land, and it is a holy land" (Enos 1:10). Thus, there is not much indication of the expected Sabbath/Jubilee time frame in this short book.

84-87 years Jubilee (2nd)

This time period likely occurred near the end of Jacob's life. Jacob's record starts at 55 years after Lehi left Jerusalem (Jacob 1:1), so likely the last chapter of Jacob would be the place where this time period might have occurred. In this chapter, a man named Sherem came among them, challenging the Nephite religious beliefs, accusing Jacob that he had led away the people from keeping the law of Moses, and converting the law of Moses (Jacob 7:7). Jacob testified of the atonement (Jacob 7:12). The people responded by being overcome spiritually, and after that "peace and the love of God was restored among the people" (Jacob 7:23). Thus, there are some indications of Jubilee themes in a time frame that generally ties them to the expected Sabbath/Jubilee time frame.

35-38 years Jubilee (1st)

$Nephi_1$ was instructed to make the small plates 30 years after departure (2 Nephi 5:28) and then discusses what was to be engraven on the plates immediately after which he indicates that 40 years had passed away (2 Nephi 5:28). The language seems to indicate that all of the text prior to 2 Nephi 5:28 occurred before 30 years after departure; however, an alternate interpretation is that this is made as an insertion explaining the record, and that the text prior to 2 Nephi 5:28 could actually be inclusive of things that happened prior to 40 years after departure. Under the first interpretation, there is really no information of anything that happened between 30 and 40 years other than the making of the small plates. Assuming that the second textual interpretation is correct, then there is text that can be examined for Jubilee themes.

The only date prior to the 30 years after departure date is one of 8 years after departure (1 Nephi 17:4). As a result, determining what text falls within 35-38 years will have to be estimated. The balance of 1st Nephi appears chronologically to not potentially fall within the time frame as it mostly constitutes the travel and arrival to the promised land. 2 Nephi 1-4 is concerned with Lehi's blessing of his sons and his death. The text following 2 Nephi 5 will be looked at for Jubilee themes as it is possible that it may fall within the 35-38 year time frame.

The theme of returning to ancestral lands is not exactly present, but the establishment of the place of Nephi which would become the land of Nephi, a land of inheritance theme occurs (2 Nephi 5:8).

However, after arrival "we did sow seed" (2 Nephi 5:11) and then prospered so if there was a Jubilee year at this point, it would have ended with the planting of seed. It is stated that they kept the commandments "according to the law of Moses" (2 Nephi 5:10). $Nephi_1$ then built a temple constructed "after the manner of the temple of Solomon" (2 Nephi 5:16) and after that "lived after the manner of happiness" (2 Nephi 5:27). The construction of a temple like Solomon's is clearly an event matching a Jubilee theme as is the period of happiness.

Mention of the Nephites observing the law of Moses and the trump

An interesting item of note is that the only places where a description is given in real time of the Nephites observing the law of Moses in the entire Book of Mormon, when it does occur, occurs during one of the Jubilee Year periods. In addition, the mention of a trump in the Nephite portion of the text is found three times (Mosiah 26:25, Alma 29:1, and Mormon 9:13). The latter two are noted in conjunction with the Jubilee periods. Interestingly Mosiah 26:25 refers to a "second trump" and falls towards the tail end of the time period between known dates of 480 years and 509 years. The dates of a mid-Jubilee following the King Benjamin jubilee would fall between 501 and 504 years. A half-Jubilee cycle of 25 years is found in the Old Testament in the book of Ezekiel (Ezekiel 40:1; 40-48) (Bergsma 2007, 187-190). Thus, the third "trump" reference is also related to the Jubilee.

Jubilee themes across multiple years

During all the Jubilee periods noted in the text except one (when the people were wicked), it appears that Jubilee themes span multiple years, with the Jubilee year occurring towards the end of the period, likely representing that the years just before the Jubilee may have had Jubilee celebrations in anticipation of the upcoming Jubilee year.

<u>Base year for the Jubilee Count in the Old World</u>

According to this Jubilee calendar, calculating back from 35-38 years the base date of the Jubilee calendar would have occurred 14 to 11 lunar years prior to the Lehite departure, which would be 13.6 to 10.68 solar years prior to the Lehite departure. It is immediately apparent that the base year of the Jubilee year count has some correlation with Lehi's first coming out of Jerusalem. Since the Jubilee effectively consisted of 2 consecutive Sabbath years, one needs to look for the potential of Lehi's initial coming out in the second year as well as the first, with one of those years being during the first regnal year of Zedekiah.

Looking at the Book of Mormon text that occurred in the Old World it might be useful to see if there are any periods that may have Jubilee elements as there may be some correlations there. The first coming out of Lehi from Jerusalem by himself and his return (1 Nephi 1:5-7) during or just before the first year of the reign of Zedekiah (1 Nephi 1:4) has some Jubilee elements. The Book of Mormon text indicates that Lehi had gone and returned from his ancestral land of inheritance, and as has been mentioned, his family appears to have originated from the Northern Kingdom. Lehi's land of inheritance was quite probably farmed by Samaritans with rent paid to the Assyrian administration during its tenure of control over the province of Samaria and who themselves were probably under the necessity of paying rent to Lehi after Judah asserted control in Samaria (Chadwick 2004). To return at the Jubilee year to his ancestral lands in order to receive the title to the lands back to the family name is entirely consistent with the Jubilee practice. That this was ancestral land was clear as Lehi's land of inheritance (1 Nephi 2:4; 3:16) was later referred to by $Nephi_1$ as "the land of our inheritance" (1 Nephi 3:22). That Lehi still

had control of these lands is evident when his sons returned to retrieve their possessions likely hidden there.

The vision Lehi received at the time included the captivity of persons in Jerusalem by Babylon (1 Nephi 1:13). It indicated that he praised God and "his soul did rejoice, and his whole heart was filled" (1 Nephi 1:15). Both are Jubilee themes.

Correlation of the Nephite Jubilee Calendar Base Date in the Old World

Without consideration of anything in the Old World, just based on the internal calendar comparisons and information from the text of the Book or Mormon, the Nephite Jubilee Calendar base/start date is 14 to 11 uncorrected lunar years (13.6 to 10.68 solar years) before the start date of the Lehi Departure Calendar.

Since there are Jubilee themes related to Lehi coming out of Jerusalem for the first time, the most likely year would be one that also accommodates the first regnal year of Zedekiah, which is when the Book of Mormon indicates Lehi coming out of Jerusalem to visit the land of his inheritance for the first time. There is very accurate historical information from a cuneiform tablet from the Babylonian Chronicles that Zedekiah's predecessor, Jehoiachin, was captured by the Babylonians on the second of Adar which is March 16, 597 BC (Julian date) and March 10, 597 B.C (Gregorian). under the Gregorian calendar. Since Jewish days are measured from sunset to sunset, more accurately it would have been March 9 at sunset to March 10 at sunset 597 BC.

However, it is less clear exactly when his successor Zedekiah was actually installed. It has been argued by some scholars that Zedekiah may have been installed immediately on that date, while others argue it was when the Babylonian Exile count officially began the next month on the first day of the Babylonian year, the first day of Nisan, or April 13, 597 BC (Julian)/April 7, 597 B.C (Gregorian), which was the beginning of the eighth year of Nebuchadnezzar (Fried and Freedman 2003, 2259). Another assertion, based on statements and calculations from the prophet Ezekiel, is that Zedekiah was installed April 22, 597 BC (Gregorian) (Thiele 1983, 187).

This may not seem to have much importance as the dates are relatively close, but as has been pointed out by Neal Rappleye (2017) with respect to the Book of Mormon and "the first year of the reign of Zedekiah" (1 Nephi 1:4), there are different ways of determining the first regnal year of a king in the Bible. Generally speaking, when the kingdoms were divided, the northern kingdom of Israel measured the year from the new year starting in the spring (the first of the month of Nisan, although as previously discussed this month name did not exist pre-exile), and in the kingdom of Judah the new year started in the fall (the month of Tishri, this month name did not exist pre-exile either). With regard to the books in the Old Testament, for those relevant to dating at the time of Zedekiah, Jeremiah and Ezekiel used Nisan years, while Tishri years are used in Kings. In addition, to the time of the year, during different periods and kingdoms, the partial first year of a king's reign was not counted as his first regnal year but is called an ascension year. This was the system being used from the 8th century BC to the time of Zedekiah (Thiele 1983, 60, 163).

As noted by Rappleye (2017) citing Skousen (2017), there is a possibility that the original text of the Book of Mormon simply read "in the commencement of the reign of Zedekiah," without "first year of the" because in the Printer's Manuscript (the Original is not available here), "first year of the" is inserted

above the line. Skousen indicated that there is no change in ink flow, so it does appear to be an immediate correction so considers it to likely be correct as the first year of the reign of Zedekiah.

Since the Nephite Jubilee year count was an uncorrected lunar calendar and the year counts in this section of the Bible may have involved some correction to the calendars, there may not be an exact correlation between the Old World year and the base date year of the Nephite Jubilee calendar as the Old World may have been intercalated (corrected) years. It would seem more likely that perhaps the Jubilee calendar base date corresponds with the date that Lehi actually came out of Jerusalem for the first time.

Based on the spacing of the known Jubilee years in the Caractors Document and Jubilee years that are obvious in the Book of Mormon text, it is clear that the Jubilee calendar is following the same uncorrected lunar calendar, the same as the Lehi Departure calendar. Knowing the base date of Lehi Departure calendar (sunset to sunset of February 12-13, 588 BC) and knowing, as just discussed, that the first regnal year of Zedekiah started at the very earliest on March 9 at sunset to March 10, at sunset 597 BC, (a difference of approximately 9 solar years) and since the Jubilee essentially involved two consecutive years, one also needs to look one year earlier, 11 lunar years prior to 588 BC being the likely possibility for the base date of the Nephite Jubilee calendar.

132 full moons (11 lunar years) prior to February 12-13, 588 BC is June 11, 599 BC. Assuming this to be the first of the two celebrated Jubilee years, the end of this lunar year is May 31, 598 BC. The second celebrated Jubilee lunar year would start on May 31, 598 BC date and run to May 20, 597 BC, 12 full moons later. Since the measurement of the year includes the full moon, the end of that year might be a few days later, May 22, 597 BC.

Rappleye (2017) determined the earliest potential dates that could have been utilized as the start of the regnal year of Zedekiah were the range from March 10 - April 16, 597 BC (the exact date of Zedekiah being made king is not known exactly), October 2, 597 BC, and March 28, 596 BC. The March 10 – April 16, 597-year overlaps with the end of the second Nephite Jubilee year ending on May 22, 597. It also meant that Lehi would have necessarily come out towards the end of the second Nephite measured Jubilee year and also “in the commencement” of the first regnal year of Zedekiah. So, the best fit considering the Book of Mormon text is that the base date for the Nephite Jubilee calendar is approximately June 11, 599 BC, although an earlier date is still possible, for the reason that perhaps there was an Old World Jubilee count that was still being tracked by someone at the time.

Don Bradley (2019, 130) points out that the initial vision by Lehi upon his return to Jerusalem contains Passover themes. After the adoption of the vernal equinox, being as the beginning of the year in the late pre-exilic period, Passover would generally fall in the second month as it was still tied to the barley harvest in April and May. (Wagenaar 2004, 157). Thus, Lehi’s initial coming out on May 22, 597 BC or a bit earlier is consistent with the Passover time period.

Old World Evidence of the pre-exilic practice of the Jubilee at the time of Lehi

Many Biblical scholars agree that the laws establishing the Jubilee in Leviticus pre-date the exile based on the evidence of the priority Holiness Code (and thus Leviticus 25) to the Book of Ezekiel, the similarities between the jubilee legislation and ancient Near Eastern law and practice from the second millennium, certain examples of ancient diction in the text, the congruence of the jubilee with contemporary reconstructions of early pre-exilic Israel, and the widespread recognition of the ancient

and tribal roots of the jubilee even among scholars who date Leviticus 25 much later in Israel's history (Bergsma 2007, 56). Most Biblical scholars agree that the Jubilee was not practiced in its entirety at the time of Lehi's departure; however, some portions of the law or at least principles of the law were still in practice at that time (Blosser 1979, 77).

Since the Caractors Document indicates that the Gaddianton siege constituted the 12th Jubilee, it is fairly certain that there is no attempt in the Book of Mormon to continue some longstanding count of Jubilee years from the Old World as the Nephites started their own count. Lehi's first leaving is the base date of the Nephite Jubilee calendar. It may be possible that there might have been an existing Jubilee count (perhaps only in the brass plates) to which the Nephite Jubilee calendar, although clearly a different count, might have utilized as a base year.

Some Biblical scholars have asserted that there were specific Jubilee years around the time of the Lehite departure. The instance of the redemption of Hanamel's field by Jeremiah (Jeremiah 32:1-15) during Nebuchadnezzar's siege of Jerusalem at the end of the reign of Zedekiah (588 or 587 BC) has been asserted as potentially a Jubilee year (Fried and Freedman 2000); however, there are certain problems with this assertion, namely that money was exchanged, which is not consistent with the Jubilee law, Jeremiah and his family were Levites, so under the Jubilee law were excused from the stipulations in the law, and that the narrative indicates that the field is properly Hanamel's and not Jeremiah's (Bergsma 2007, 159-160). Another assertion has been made that the releasing of Jerusalemite slaves by Zedekiah (Jeremiah 34:8-22) constituted evidence of a Jubilee year (Fried and Freedman 2000, 2259) while Jerusalem was under siege, placing the Jubilee from the month of Tishri in 588 BC to Tishri in 587 BC. The release by Zedekiah did not literally follow any one of the laws for release of slaves found in any of the codes in the Pentateuch including the Jubilee portion of the code. However, Bergsma (2007, 169-170) concludes that Jeremiah 34:8-22:

> "(M)ay be regarded as evidence … for a creative re-use of language and concepts from the release laws of Deut 15 and the jubilee of Lev 25 in response to a failed royal gesture towards fulfilling these commands concretely."

There is some circumstantial evidence from Ezekiel in his reference to a jubilee related "year of release" (Ezekiel 46:16), which must be recurring for this piece of Ezekiel's legislation to make sense, and which raises the possibility that he was aware that sabbatical and jubilee cycles continued to be counted during the exile, even though they could not be observed (Bergsma 2007, 187).

So, there is substantial evidence that elements of the Jubilee year law existed prior to the exile when the Lehites departed and some portions of the law, or at least the principles of the law were practiced, although there is insufficient evidence to know if there was a formal Old World Jubilee count being kept. Since I have presumed that the Nephite Jubilee year count sought to be in exact alignment with the Lehi Departure calendar to the day, one would not expect that the Nephite Jubilee year count would correlate with a New Year's Day on the Old World Jewish solar calendar (which would either be Nisan 1 or Tishni 1) since Lehi left when he was told to depart. The Nisan 1 dates are in March-April and the Tishri 1 dates are in October to September, so they would not align with the best fit June 11, 599 BC base date for the Nephite Jubilee calendar. But since we do not have exact to the day dates on the Jubilee calendar either in the Caractors Document or the text of the Book of Mormon, it is possible that either Nisan 1 or Tishri 1 was used as the June 11th date is only a few months off from either of these dates for 599 BC (March 31 and September 25).

In Leviticus, the Jubilee year could be interpreted to start on either the first day or the 10th day of the seventh month (Tishri); however it would seem, since that may be a post-exilic addition, the Jubilee year at that time may have also started on the first or 10th day of Nisan, which is the other New Year's day utilized in Israel (specifically from the defunct north kingdom where Lehi's ancestral lands would have been).

One might ask why Lehi first left to visit his lands towards the latter part of the Jubilee period (June 11, 599 BC to May 22, 597 BC), but this fact provides at least circumstantial evidence that the base date is correct. Goings on in the region in 599 and 598 BC were not conducive for Lehi to leave Jerusalem. The king of Judah at the time, Jehoiakim, was in revolt against the Babylonian control of his area. A weakness in the Babylonian control of the area had occurred when the Babylonian invasion of Egypt failed in December of 601 BC (Lipschits 2002). In fact, it may have been expedient that Lehi leave Jerusalem, as after the first fall of Jerusalem some of the persons deported were "smiths" of which trade Lehi (and Nephi) appear to be involved to some extent (2 Kings 24:14).

During the next period, including 599 BC, the Bible (2 Kings 24:2) indicates that Babylonian auxiliary forces in the form of bands of Chaldeans, Syrians (Aramaeans), Moabites, and Ammonites were sent against Judah. It does not seem to have been a safe period for Lehi to leave Jerusalem to visit the tribal lands of Manasseh.

Between mid-December of 598 BC and mid-January of 597 BC the Babylonian King Nebuchadrezzar set out to re-establish his rule, with a siege of Jerusalem resulting in Jerusalem surrendering to the Babylonians on March 16-17, 597 BC. After Zedekiah was installed as the new king, it was now safe to leave Jerusalem, especially to the north in the direction of Babylon where Lehi's ancestral lands lay.

One also wonders why Jerusalem capitulated in such a relatively short time of siege (3 months) when it was able to hold off the siege for 2½ years about 10 years later. Could it have been because two years of Jubilee fallow fields, in conjunction with the raiders left them with little food supply? It has been noted by an expert in ancient siege practices, Israel Eph'al (2009, 35-113), that sieges against the Jews in Palestine were selected, when possible, at the close of sabbatical years because "the crop of the sixth year had been consumed and crop of the eighth year had not yet ripened." The first crop to ripen in Israel was barley in April-May. So, it does seem that the 597 BC siege time was selected for this reason, so is evidence of a Sabbatical year, and the reason to start a siege after two years of Sabbaths comprising the Jubilee would have double the effectiveness, which is consistent with a Jubilee year.

1000-Year Calendar End

As was previously mentioned the 1000-year calendar appears to be possibly affiliated with the Jubilee Calendar according to the Caractors Document. If one converts 1030 lunar years to solar years (21 Jubilees plus the addition of one additional year), it is exactly 1000 years (1030 years x 354.37 days per lunar year / 365 days per solar year = 1000 solar years). In that case, if one counts from the Jubilee Calendar base date, the end of the 1000-Year solar calendar ends with the full moon on September 17, 403 AD. Since the 401.94 to 405.88 year Jubilee equates to close to the completion of 396 AD to 399 AD, and the end of the Jubilee year count ending on September 17, 403 AD not long after the final Jubilee (perhaps even a sabbatical 7 years if considering the 396 AD date), this date appears to be the best fit with as much as is known at this point. This determination would have had to have been made

by Moroni$_2$, since at this point he was completely alone. This would seem to be some evidence that the prophetic calendar portion (the last 4 lines) of the Caractors Document was engraved by Moroni$_2$.

Chapter 9

Lehite Departure

As mentioned in the Introduction, the proposed years of final departure for Lehi proposed by others writing on the topic are 605 BC (Chadwick 2018), 601 BC (Pratt 2004), 597–596 BC (Huber 1982; Smith 1996; Seely 2003; Brown and Seely 2001), and 588–587 BC (Spackman 1993). Chadwick and Pratt primarily make the argument that the Zedekiah named in the Old Testament is not in fact Zedekiah but is one of the previous kings essentially rewriting history to force their chronology to work. The 597-596 BC dates rely on the date Zedekiah becomes king. Spackman's dates of departure coincide with the last time period (also determined by Spackman) that Lehi may have escaped from Jerusalem prior to its capture by Babylon (August 588 BC to June 587 BC). Spackman's dates are the only ones consistent with the Jubilee calendar base date identified in the Caractors Document as well as the Jubilee text of the Book of Mormon.

The 3rd Nephi Preface issue and discussion

The primary reason driving the prior researchers (except for Spackman) to difficult contorted conclusions regarding Lehi's departure (i.e. proposing changes to the known and established names of Biblical kings), is to have the researchers' requirement that the departure of the Lehites initiating the 600 year prophecy be in the first year of the reign of Zedekiah because the preface to 3rd Nephi indicates that Lehi "came out" of Jerusalem in the first year of the reign of Zedekiah. The Nephite Jubilee calendar forces the conclusion that this cannot be the case (besides the fact that they contradict known history). It supports the conclusion that the language that Lehi "came out" refers to his first exit from Jerusalem that started his ministry, not the later departure of the full Lehite party.

Spackman initially (1998, 59) asserts that the 3rd Nephi Preface is an "inaccuracy" and an "error" when written by Mormon as he was far removed in time and place from the original records. Spackman later (2014) indicates that this preface statement is an "inadvertent error" and discusses the possible alternative interpretation that this is referring to the first instance of Lehi coming out of Jerusalem so would not be an inaccuracy or error. Spackman states that the use of the terms "coming out" in other parts of the Book of Mormon indicate there is a departure with no return and that other similar or identical language is sometimes used when referring to the later Lehite departure (1 Nephi 17:20, 2 Nephi 25:4, 2 Nephi 30:4, Omni 1:15, Alma 10:3, Helaman 5:6, 7:7), and Spackman states that any assertion that the 3rd Nephi Preface refers to the initial Lehi departure to receive his prophetic calling faces "the rational hurdle of textual inconsistency." Spackman offers that it may not have been Mormon's unique error per se, but an error of prior record-keepers in the conflation of the two departure events. Spackman's method is careful and measured with the sole objection to the interpretation being textual, so a careful look at the text is warranted to see if the 3rd Nephi Preface is referring to Lehi's first departure.

Textual Analysis of the incident of the final Lehite Departure

When looking at textual comparisons regarding the 3rd Nephi Preface, one must be careful about textual

comparisons between the portion of the Book of Mormon constituted by the small plates and that of Mormon's abridgement, as the original source language of the small plates is Egyptian, where Mormon's abridgement is in reformed Egyptian. Care must also be taken even within Mormon's abridgement, because there are portions that are inclusions of sermons from prior persons some 400 years or more prior to Mormon which may have been written in an earlier form of reformed Egyptian or in the modified Hebrew or possibly some other native language.

Textual analysis as shown here provides an indication that the 3rd Nephi Preface can reasonably be interpreted as the initial Lehi exit and does not require the accepting of the 3rd Nephi Preface as an inaccuracy and thus overcomes Spackman's "rational hurdle." It is noted that there does not appear to be any other reference to Lehi's initial departure other than in 1st Nephi, and potentially in the 3rd Nephi Preface, so the approach that is needed is to evaluate all instances referring to the departures and determine if there is any unique language for the later Lehite departure.

Small Plates References

All instances by author and location in the small plates are listed as follows:

Author: Presumably $Nephi_1$ (possible later editor)

1 Nephi (Preface)
The Lord warns Lehi to depart out of the land of Jerusalem,
**
They take their families and depart into the wilderness.

Author: Nephi

1 Nephi 2:11
(Lehi) led them out of the land of Jerusalem

1 Nephi 3:18
(Lehi) hath been commanded to flee out of the land
***
Wherefore, it must needs be that he flee out of the land.

1 Nephi 7:14
… insomuch that they have driven him (Lehi) out of the land.

1 Nephi 10:4
… six hundred years from the time that my father left Jerusalem

1 Nephi 16:35
… he (Lehi) had brought them out of the land of Jerusalem

1 Nephi 17:14
I (the Lord) did bring you out of the land of Jerusalem.
1 Nephi 17:44
(Lehi) should depart into the wilderness

1 Nephi 19:8
six hundred years from the time my father left Jerusalem.

2 Nephi 5:28
thirty years had passed away from the time we left Jerusalem.

2 Nephi 25:4
I (Nephi) came out from Jerusalem with my father;

2 Nephi 25:5
I (Nephi) came out from Jerusalem

2 Nephi 25:10
after my father left Jerusalem

2 Nephi 25:19
six hundred years from the time that my father left Jerusalem;

2 Nephi 30:4
… we came out from Jerusalem, and that they are descendants of
the Jews.

Author: $Nephi_1$'s brethren (likely $Laman_1$ and Lemuel)

1 Nephi 17:20
… he (Lehi) hath led us out of the land of Jerusalem
***
… it would have been better that they had died before they came out of Jerusalem

1 Nephi 17:22
(Lehi) hath led us away (from the land of Jerusalem)

Author: Lehi (as recounted by Nephi)

2 Nephi 1:1
(Lord) bringing them out of the land of Jerusalem.

2 Nephi 1:3
we (Lehites) should flee out of the land of Jerusalem.

Author: Lehi

2 Nephi 1:9
… those whom the Lord God shall bring out of the land of Jerusalem

2 Nephi 1:24
from the time that we (Lehites) left Jerusalem

2 Nephi 1:30
thou (Zoram) hast been brought out of the land of Jerusalem

2 Nephi 3:3
I Lehi have brought (Joseph) out of the wilderness

Author: Jacob

2 Nephi 6:8
… those who were at Jerusalem

2 Nephi 9:5
… he shall show himself unto those at Jerusalem, from whence we came;

2 Nephi 10:20
we (Lehites) have been driven out of the land of our inheritance; … we have been led to a better land

Jacob 1:1
… that fifty and five years had passed away from the time that Lehi left Jerusalem

Author: Lord (through Jacob)

Jacob 2:25
I (the Lord) have led this people forth out of the land of Jerusalem

Jacob 2:32
… I (the Lord) have led out of the land of Jerusalem

Jacob 7:26

… we being a lonesome and a solemn people, wanderers, cast out from Jerusalem

Author: Enos

Enos 1:25
… seventy and nine years had passed away from the time that our father Lehi left Jerusalem.

Author: Amaron

Omni 1:6
… he (Lord) had led them out of the land of Jerusalem

<u>Mormon's Abridgement References</u>

All instances of author and location in Mormon's abridgement are listed as follows:

Author: Benjamin

Mosiah 1:11
… the people which the Lord God hath brought out of the land of Jerusalem;

Mosiah 1:6
… our fathers from the time they left Jerusalem

Mosiah 2:34
… even down to the time our father, Lehi, left Jerusalem

Author: Limhi

Mosiah 7:20
… God has brought our fathers out of the land of Jerusalem

Author: Zeniff

Mosiah 10:12
… they were driven out of the land of Jerusalem

Author: $Alma_2$

Alma 9:9
… our father, Lehi, was brought out of Jerusalem

Alma 9:22
… having been delivered of God out of the land of Jerusalem

Alma 36:29
… he has also brought our fathers out of the land of Jerusalem

Author: Amulek

Alma 10:3
… a descendant of Nephi, who was the son of Lehi, who came out of the land of Jerusalem

Author: King Lamoni's father

Alma 22:9
Is God that Great Spirit that brought our fathers out of the land of Jerusalem?

Author: Ammaron
Alma 54:23
… a descendant of Zoram, whom your fathers pressed and brought out of Jerusalem.

Author: Helaman

Helaman 5:6
… the names of our first parents who came out of the land of Jerusalem

Author: $Nephi_2$

Helaman 7:7
… days in the days when my father Nephi first came out of the land of Jerusalem

Helaman 8:22
Our father Lehi was driven out of Jerusalem

Author: Mormon as narrator

Mosiah 2:4
… (the Lord) brought them out of the land of Jerusalem

Mosiah 6:4
… about four hundred and seventy-six years from the time that Lehi left Jerusalem

Mosiah 28:20
… handing them down from one generation to another, even as they had been handed down from the time that Lehi left Jerusalem

Mosiah 29:46
… making in the whole, five hundred and nine years from the time Lehi left Jerusalem

Alma 3:11
… those records which were brought out of the land of Jerusalem

Alma 18:36
… even down to the time that their father, Lehi, left Jerusalem.

Alma 18:38
expounded unto them all the records and scriptures from the time that Lehi left Jerusalem down to the present time.

Alma 28:2
… never had been known among all the people in the land from the time Lehi left Jerusalem

3 Nephi 1:1
…it was six hundred years from the time that Lehi left Jerusalem

3 Nephi 1:2
… all those things which had been kept sacred from the departure of Lehi out of Jerusalem.
3 Nephi 2:6
… six hundred and nine years had passed away since Lehi left Jerusalem.

3 Nephi 4:11
… there never was known so great a slaughter among all the people of Lehi since he left Jerusalem.

Author: Mormon (presumably)

3 Nephi Preface
being a descendant of Nephi who was the son of Lehi, who came out of Jerusalem in the first year of the reign of Zedekiah, the king of Judah.

Author: Mormon as author

3 Nephi 5:15
… a small record of that which hath taken place from the time that Lehi left Jerusalem, even down until the present time.

3 Nephi 5:20
… he (the Lord) brought our fathers out of the land of Jerusalem, (and no one knew it save it were himself and those whom he brought out of that land)

3 Nephi 10:17
… are they not written upon the plates of brass which our father Lehi brought out of Jerusalem?

Moroni's Abridgement References

Author: $Moroni_2$ (as narrator)

Ether 13:5
… and the Jerusalem from whence Lehi should come

Ether 13:7
… the Lord brought a remnant of the seed of Joseph out of the land of Jerusalem

The first question is whether there is any standardization of the textual description when referring to the departure from Jerusalem.

Table 2 Textual Description of Lehite Departure

Phrase	Small Plates	Mormon/$Moroni_2$ Abridgement
"depart out"	2	0
"led out"	6	0
"flee out"	3	0
"driven out"	2	2

“cast out”	1	0
“deliver out”	0	1
“from the time … left Jerusalem”	7	10
“bring (or brought) out”	6	11
“depart”	1	0
“came (or come) out”	6	4
“left Jerusalem”	1	0
“led away”	1	0
“from the departure”	0	1
“since Lehi left Jerusalem”	0	2
“should come”	0	1

As is evidenced in Table 2, there is no standardization of the language describing the initial Lehi or later Lehite departure (except for the date counts as discussed below). There does not appear to be any textual preference between the small plates and the Mormon/ Moroni$_2$ abridgement except for possible “led out” and “flee out” being preferred in the small plates.

Spackman raised the issue that the text “came out” or “come out” seems to be indicative of a final permanent departure, but there are many places in the text of the Book of Mormon where that phrase or forms of it do not indicate that there would be no return (Mosiah 7:9, 7:13, 8:2; Alma 15:1, 22:3, 26:9, 42:2, 47:21-22, 49:10, 52:19, 52:20, 52:23, 58:15, 58:16-18, 60:25, 60:32, 61:7, 62:19; Helaman 5:6, 5:48; 3 Nephi 3:17, 4:1), especially in the case of driving out the Lamanites who seem to return incessantly. It is noteworthy that the instances that do not require permanence are all found in Mormon’s abridgement, where the 3rd Nephi Preface is also found.

Now that it has been determined that there is no unique standard textual form that specifically identifies or differentiates the Lehite departure, it is important to see if there is something unique in the language of the 3rd Nephi Preface that does uniquely link it to Lehi’s first exit from Jerusalem. The phrase “the first year of the reign of Zedekiah, the king of Judah” is found ONLY in the 3rd Nephi Preface in relation to a departure of some sort, and it is unlike ALL of the other later references made to the second Lehi departure. The only place in the Book of Mormon where this phrase does directly and specifically textually correspond is with the time when Lehi was first called and first exits Jerusalem, namely “the first year of the reign of Zedekiah, king of Judah” (1 Nephi 1:4). 1 Nephi 5:12-13 references the “commencement of the reign of Zedekiah” in relation to the description of the time period of records in the brass plates. The only other mention of King Zedekiah in the Book of Mormon is in

relation to the people of Zarahemla (aka people of Mulek) (Omni 1:15; Helaman 6:10, 8:21). This seems to be the language that the Nephites used to differentiate Lehi initially exiting for his prophetic calling.

The Caractors Document also may provide some information that may be helpful in understanding this issue. The specific dates in the Caractors Document were preceded by a unique calendar marker glyph for each calendar or were ultimately tied to a date preceded by a calendar marker by Anterior Date Indicators (ADI), Posterior Date Indicators (PDI), and Distance Numbers (DN). These ADI and PDI glyphs equate in form and translation to some form of "it came to pass." The calendar markers are similar in form and function to the Maya Initial Series Introductory Glyphs (ISIG). In the case of the Lehi Departure calendar, the Caractors Document identifies the calendar marker (ISIG) for this calendar as the combined C-69 and C-68 glyphs:

The specific dates in the Book of Mormon that are on the Lehi Departure calendar in the small plate time period are:

Years	Reference	Text
30	2 Nephi 6:28	"thirty years had passed away from the time we left Jerusalem"
40	2 Nephi 5:34	"forty years had passed away"
55	Jacob 1:1	"fifty and five years had passed away from the time that Lehi left Jerusalem"
179	Enos 1:25	"an hundred and seventy and nine years had passed away from the time that our father Lehi left Jerusalem"
200	Jarom 1:5	"two hundred years had passed away"
238	Jarom 1:13	"two hundred and thirty and eight years had passed away"
276	Omni 1:3	"And it came to pass that two hundred and seventy and six years had passed away"
282	Omni 1:3	"Yeah, and in fine, two hundred and eighty and two years had passed away"
320	Omni 1:3	"Behold, it came to pass that three hundred and twenty years had passed away"

1 Nephi 17:4 indicates that the Lehite group sojourned in the wilderness for "the space of many years, even eight years in the wilderness," but does not clearly tie in textual context to the departure itself.

The specific dates in the Book of Mormon that are on the Lehi Departure calendar in Mormon's abridgement are:

Years	Reference	Text
467	Mosiah 6:4	"… making in the whole, about four hundred and seventy six years from the time that Lehi left Jerusalem"
509	Mosiah 29:46	"… making in the whole, five hundred and nine years from the time that Lehi left Jerusalem."
600	3 Nephi 1:1	"… and it was six hundred years from the time that Lehi left Jerusalem"
609	3 Nephi 2:6	"And six hundred and nine years had passed away since Lehi left Jerusalem"

The reference to the Lehi Departure calendar in Mormon's abridgement (as opposed to the small plates) has textual uniformity, and the translation/interpretation of the glyph is at a minimum "Lehi left Jerusalem," with the linking language possibly relating to potential differences in the ADI or PDI used. This term is also used twice in the small plates in conjunction with a date. This term is used only in Mormon's abridgement in three other places not in conjunction to a specific date (Mosiah 28:20, Alma 28:2, and 3 Nephi 5:15). The Caractors Document chronological glyphs, like that of the Maya, are not really possible to translate directly into English maintaining the original structure, because English (both linguistically and culturally) does not count calendrical time in the same fashion. So, from a textual standpoint, all dates on this calendar use this calendar term, although the term is not uniquely used for calendar dates.

The 3rd Nephi Preface language provides a specific year date. If this date (or base date) was part of the Lehi Departure Calendar, one would have expected that the text would utilize the language of the term or glyph, namely "… Lehi left Jerusalem" which it does not. The fact that it includes different language is indicative that the preface is not referring to the Lehi Departure Calendar base date.

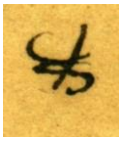
One might ask a reasonable question "Why was there the inclusion of the reference to the first year of the reign of Zedekiah in the 3rd Nephi Preface at all?" The most obvious answer is that it was distinguishing a different date referring to the year of Lehi's first exit. But why was that important to differentiate Lehi in this way from his later departure with the rest of the Lehites? It may have something to do with the most dramatic (and last) Jubilee involving the Gaddianton siege occurring within the book of 3rd Nephi. The prophetic calendar from the Caractors Document only has two Jubilee years marked, and the one in 3rd Nephi is the only one enumerated (12th). Including the beginning of the Jubilee calendar would be appropriate in the preface. In addition, the visit of Christ to the Nephites occurs within 3rd Nephi with Christ's Gospel replacing the law of Moses, of which the Jubilee is part, another good reason to feature the base date in the Jubilee calendar in the 3rd Nephi Preface.

Finally, again the Caractors Document provides probably the strongest reason for the inclusion of the Jubilee calendar base date. The birth of Christ occurs at the beginning of 3rd Nephi, which also (belatedly) institutes the Coming of Christ calendar.

The Coming of Christ Introductory Glyph consists of the following character:

C-175 

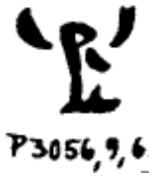
The Coming of Christ calendar reference glyph is:



C-115

This period corresponds to the calendar used in the Book of Mormon wherein the years were counted from the coming or birth of Christ. The glyph is first used after the Reign of the Judges came to an end at the departure of the resurrected Christ from the Nephites. There is an overlap between the Reign of the Judges calendar and the Coming of Christ calendar.

The Coming of Christ calendar Introductory Glyph, like all the other introductory Glyphs, has a numeric element and is a stylized version of an Egyptian hieratic glyph that numerically means “million,” “many,” or “a countless quantity.” The Egyptian word for this term is *ḥḥ*. In Ancient Egyptian the term also derives from and represents the god Heh, which was the deification of “infinity” or “eternity,” his name itself meaning “endlessness” (Gardiner 1957, 449):



Takelothis Papyri, 3056, 9.6; Aegyptisches Museum and Papyrussammlung, Berlin (Möller Number 37, Bd. III-1-31, pg. III 35a-47) (derived from Gardiner Number C-11) (Möller, 1965)

It is also inclusive or reflective of the Egyptian hieratic glyphs that are determinatives for “dance,” “joy,” or “jubilation” (Gardiner 1957, 443, 445):

Takelothis Papyri, 3050, 6, 7; Aegyptisches Museum and Papyrussammlung, Berlin (Möller Number 6, Bd. III-1-31, pg. III 1-10) (derived from Gardiner Number A-32) (Möller 1965)

Takelothis Papyri, 3048, 9; Aegyptisches Museum and Papyrussammlung, Berlin (Möller Number 36, Bd. III-1-31, pg. III 35a-47) (derived from Gardiner Number A-8) (Möller, 1965)

The matching of the meanings of these glyphs and the coming of Christ to the Nephites does not need any explanation; it is of course a perfect match. The Coming of Christ reference glyph appears as part of the Caractors Document that deals with the implementation of the Coming of Christ calendar nine years after the Coming of Christ. This event is referenced in the Book of Mormon (3 Nephi 2:6-8):

> 6 And six hundred and nine years had passed away since Lehi left Jerusalem.
>
> 7 And nine years had passed away from the time when the sign was given, which was spoken of by the prophets, that Christ should come into the world.
>
> 8 Now the Nephites began to reckon their time from this period when the sign was given, or from the coming of Christ; therefore, nine years had passed away.

The second use of the Coming of Christ Introductory Glyph is preceded by the title "Most (First) High" and occurs in conjunction with Christ's ascension. It also occurs in conjunction with the period ending of the Reign of the Judges calendrical period, so it is not clear whether the "Most High" adjective has calendar implications or is merely a title of Christ reflected in the name.

Thus, inclusion of the base date of the Jubilee Glyph in the 3rd Nephi Preface is certainly appropriate since the whole book of 3rd Nephi starts with the birth of Christ and ends with his ascension. Since the Caractors Document also identifies $Nephi_2$, whose book 3rd Nephi is, as one of the three disciples chosen by Christ, and whom Mormon personally knows, the inclusion of this unique date would be certainly appropriate, also given that Mormon's name is a form of the Jubilee year glyph.

<u>Brass Plates are indicative of a later departure</u>

The thrust of this research is not to reiterate all the prior LDS research on the topic except to engage it where it may present inconsistencies with this research, or where there is new information that is not found in the prior research. One Book of Mormon textual item that is not completely discussed in any of the prior research is included here. The description of the brass plates in the Book of Mormon seem to indicate that the full Lehite departure must be later than the commencement of the reign of Zedekiah. 1 Nephi 5:12-13 seems to indicate, by the order of the text, that the brass plates contained many of the prophecies of Jeremiah that occurred after the commencement of the reign of Zedekiah. Since wicked Laban does not seem a likely candidate to be recording prophecies, especially those of Jeremiah, it also is indicative that Laban must have taken ownership of the plates sometime after the commencement of the reign of Zedekiah, given that there must have also been time needed to engrave the oral prophecies of Jeremiah on the brass plates. 1 Nephi 5:16 indicated Laban and "his fathers had kept the record," so presumably the predecessor to Laban (likely his father) had recorded the prophecies of Jeremiah.

Brown and Seely (2001) assert that the mention in both verses 12 and 13 that the brass plates were complete "down to the commencement of the reign of Zedekiah" implies that the records were thus completed to that point, with nothing added afterwards, and then were obtained by $Nephi_1$ upon the slaying of Laban shortly after the Lehite departure at the time of the first regnal year of Zedekiah. This reading is not consistent with the full context of the description of the brass plates. The scripture indicates that Lehi searched the brass plates and found (1) the five books of Moses, (2) a record of the Jews down to Zedekiah "king of Judah," (3) the prophecies of the holy prophets down to Zedekiah, and "also many prophecies which have been spoken by the mouth of Jeremiah" (presumably after

Zedekiah), and (4) a genealogy of his (Lehi's) fathers. The context indicates that the "record of the Jews" was a different section of the record than the prophecies, one clue being that the title of the king was referenced in the first section. So, there is no implication that the record of prophecy as opposed to the political record ended with the first year of Zedekiah. Perhaps the Bible as a pattern is applicable, with Kings and Chronicles being separate from some of the contemporaneous prophetic books. This construction means that Laban (or his father) must have been making engravings on the plates because the record was made all the way up to the first year of Zedekiah.

Chapter 10

Intercalation of the Lunar Calendar and the Law of Moses

Intercalation and the Hebrew Calendar

Jeffrey Chadwick has opined that the uncorrected lunar calendar could not have been used by the Nephites because it would violate the premise that the Nephites observed the law of Moses as is indicated in the Book of Mormon which included some calendrical requirements (2 Nephi 5:10, 16; 25:24-25; Jacob 4:5; Jarom 1:5; Mosiah 2:3; Alma 25:15; 30:3; Helaman 13:1; 3 Nephi 1:24-25, Alma 30:3; Helaman 13:1). Chadwick stated with regards to the Nephite calendar:

> "Observance of the law of Moses absolutely required the lunar-solar year arrangement, which the tropical solar year of 365 ¼ days was the year that accumulated over time and history." (Chadwick 2018, 16)

This is a very strong statement by Chadwick, but does it really hold up to scrutiny?

One key to determining the calendars that the Lehite group may have been familiar with is to realize that they left before the Babylonian exile, so looking at post-exilic calendars or the post-exilic law of Moses will not be extremely useful unless there is some evidence that the exilic or post-exilic calendars or festival dates existed in the pre-exilic period. Chadwick refers to Sacha Stern (2001) as a source in support of his arguments for a lunar-solar calendar; however, Stern refers to the Jewish calendar as a "lunar" calendar and specifically states that any reference to a "lunisolar" calendar is a misnomer, because intercalation by adding a 13th lunar month is NOT regulated by the cycle of the sun, but was regulated by the season/agricultural criteria, and thus was only indirectly related to the solar year (Stern 2001, 1-2).

This is not to say that ancient Israel was ignorant of specific motions of the sun in the sky, as they clearly were not (Segal 1957, 260-63). Nevertheless, the determination by pre-exilic Israel and their neighbors of solar equinoxes were only rough approximations (Segal 1957, 265).

The Israelite Pre-Exilic lunar calendar

The pre-exilic calendar is a lunar calendar, although we are limited to whatever evidence can be derived from the Bible as direct evidence outside the Bible does not yet exist:

> "The sources for reconstructing the pre-exilic calendar of ancient Israel are different from those for any other calendar. Whereas at other sites dated business documents and, occasionally, ritual texts are available, such is not the case for Israel. We have only the biblical text. And the writers and redactors of these biblical works had religious and political agendas that greatly affected how the contents were presented." (Cohen 2015, 372)

That the primary pre-Exilic Israelite calendar was a lunar calendar is accepted by most scholars (Segal 1957, 254). The presence of a lunar calendar is amply confirmed by the obvious lunar bias of the Bible (Segal 1957, 254). The pre-Exilic Israelites clearly had a knowledge of the seasons and the motions of the sun, including equinoxes and solstices. The various festivals enumerated in the Bible are spring festivals (Passover [aka Pesach], Firstfruits, Massot [aka Unleavened Bread], and Weeks [aka Shavuot]), and autumn festivals (Trumpets, Atonement [aka Yom Kippur], Booths [aka Tabernacles including Shemini Atzeret and Simchat Torah], and Sefira [Counting of the Omer]). There are also celebrated holidays on the first day (or sometimes last day) of each month (Rosh Chadesh), and on the New Year (Rosh Hashanah).

There is absolutely no indication that the pre-exilic calendar utilized a 365 ¼ day solar calendar year as Chadwick asserts. As previously noted, there are indications of 12 thirty-day months. That may be evidence of a 360-day calendar, but that requires a correction of 5 extra days each year with a leap year day correction every 4 years. The 5 extra days are referred to as an epagomenal period. There is absolutely no trace of an epagomenal period among the Israelites (Segal 1957, 252).

Intercalation of the pre-exilic lunar calendar

There are only 12 months identified in the pre-exilic Old Testament. There is no mention of a 13th intercalation month. There may be some indirect evidence of accommodation of a solar calendar at times in the Bible. A plausible reference may be found in the description of Hezekiah's celebration of the Passover in the second instead of the first month (2 Chronicles 30) asserting that a such a pious king would not change the month of Passover, thus the deferment might be due to the insertion that year of an intercalary month (Segal 1957, 257). Suggestion has also been made that Jeroboam intercalated an extra month while the southern kingdom of Judah did not (1 Kings 12:32-33) (Segal 1957, 259).

Separate lunar and solar calendars

Anciently the observation of the moon in a culture precedes the observation of the sun as the cycle of the moon is mathematically simple (Segal 1957, 252-253). The pre-exilic Hebrew Old Testament does not indicate any 13th or "leap month" as there are only 12 lunar months identified (Segal 1957, 252-254). These months are enumerated as the "first month," the "second month," and so on. This is also the way of designating months in the Book of Mormon. Only during the building of Solomon's temple are month names mentioned: Aviv (first; literally "Spring," but originally probably meant the ripening of barley), Ziv (second; literally "Light"), Ethanim (seventh; literally "Strong" in plural, perhaps referring to strong rains), and Bul (eighth), and all are Canaanite names, and at least two are Phoenician (Northern Canaanite). These names have been associated with the seasons of nature and represent points in the seasonal year (Segal 1957, 255).

The total absence of references to the Canaanite months in any other place in the Bible seems to be indicative that this Canaanite calendar, at some period, was possibly only briefly the official calendar of Israel. (Cohen 2015, 372)

> "Although a numeric system was in use in the pre-Exilic biblical books, it does not preclude the possibility that a Canaanite (or other) calendar was in use elsewhere within Israel. We just do not know." (Cohen, 2015, 373)

Use of a religious lunar calendar running separately and side by side with the civil (solar) calendar is known in ancient Egypt (Segal 1957, 253).

The law of Moses was subject to change through time

Chadwick seems to indicate that the practice of the law of Moses, specifically as it relates to the calendar or timing of festivals and events, was somehow fixed in stone throughout the history of the Israelites, such that the Lehites would be in violation of the law of Moses if there was any change to the timing of these festivals or events that may or may not have fixed to the uncorrected lunar calendar used by the early Nephite.

Even conservative Biblical scholars recognize that the five books of Moses (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy, known as the Pentateuch) have been modified and reshaped through the years:

> "Like the orations of the later prophets these legislative orations of Moses may have continued for some time to have been preserved orally until they were committed to writing by the prophet himself and by his disciples. The scrolls in which the orations were written may have contained single orations or collections of orations which were eventually gathered together and arranged according to plan in the narrative of the Pentateuch. It may be that not all the teaching of Moses was written down. Some of it may have continued to be handed down orally as Mosaic laws, as maintained by ancient Jewish tradition. To this remnant of genuine Mosaic tradition was added from time to time new legislative material developed orally later, but also attributed to Moses which served to explain or amplify or supplement the old written Mosaic orations. Some of this new material may have found its way into writing and was then inserted into the Pentateuch as Mosaic teaching." (Segal 1967, Pentateuch, pg. 47)

One obvious change that was made dealing with the law of Moses festivals is the combining and separation of Passover (Pesach) with the Feast of the Unleavened Bread (Massot) that occurred in Deuteronomy where they first separate, then merged, separated, and merged again, resulting in contradictions and uncertainty between these two festivals (Wagenaar 2004, 250).

Different from this conservative camp of Biblical scholars, many Biblical scholars subscribe to a more extensive revisionist construction of the Pentateuch. The "documentary hypothesis" is one of the models historically used by biblical scholars to explain the origins and composition of the Pentateuch (see figure 55).

More recent models include the supplementary hypothesis and the fragmentary hypothesis. All agree that the Pentateuch is not a unified work from a single author but is made up of sources combined over many centuries by many hands. These models differ on the nature of these sources and how they were combined (Person 2007, 9-10). Some things found in the Book of Mormon, such as the sacrifice by Lehi outside of Jerusalem, are more consistent with this hypothesis as local sacrifice was a practice performed wherever people desired to do it (as found in Samuel 16:2).

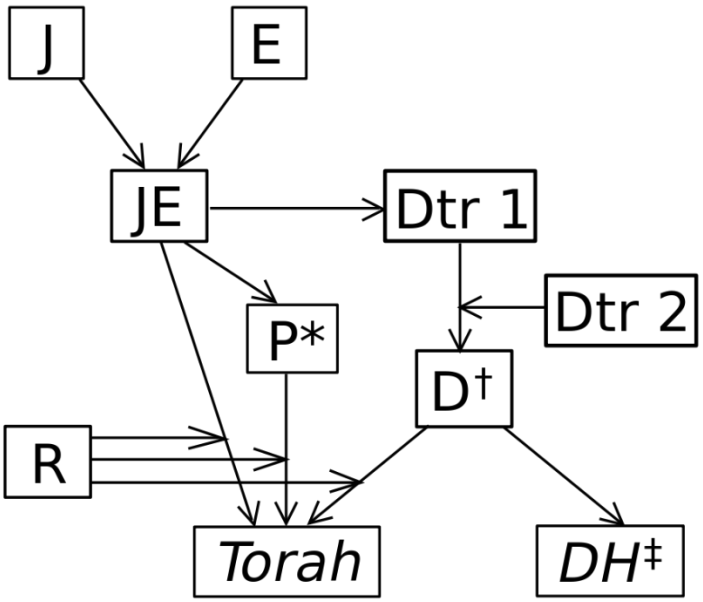


Figure 55 Diagram of the 20th century documentary hypothesis

J: Yahwist (10th–9th century BC) (Viviano 1999) (Gmirkin 2006)
E: Elohist (9th century BC) (Viviano 1999)
Dtr 1: early (7th century BC) Deuteronomist historian
Dtr2: later (6th century BC) Deuteronomist historian
P*: Priestly (6th–5th century BC) (Viviano 1999) (Gmirkin 2006)
D†: Deuteronomist
R: redactor
DH‡: Deuteronomistic history (books of Joshua, Judges, Samuel, Kings)

Most Biblical scholars agree that prior to the Exile the dates of the festivals floated to coincide with the actual end of each harvest, but at some post-exile date after Lehi left, fixed dates on the calendar were added in order to make sure that all Israelites observed these times together (Hartley 1992, xxxvii; Person 2007, 11). Thus, Chadwick's assertion that the Lehites were obligated to respect the calendar dates of the law of Moses festivals is not correct, as the Lehites would not have even had these dates in their scripture as they were added after the Lehites left.

Chadwick represents a series of Biblical practices which constitute the law of Moses in support of the premise that the law of Moses could not be practiced under the uncorrected lunar calendar. In addition to the fact that the calendar dates were added later than the Lehites, many of the items he specifies are not unique to a solar-lunar calendar. Specifically, he identifies new moon practices (Numbers 28:11), daily practices (Number 28:3-4), and Sabbath practices (Numbers 28:9-10). All of these three practices can occur in an uncorrected lunar calendar.

He also identifies the following additional practices that have links to a yearly calendar:

1. Passover (Pesach) to occur in the first month of spring (Numbers 28:16-25)

2. Feast of Weeks (Shabuot) (aka Festival of Reaping) (Numbers 28:26-27; Deuteronomy 16:10)

3. Day of Trumpeting on the first day of the seventh month (Numbers 29:1-2)

4. Yom Kippur or Day of Atonement (Numbers 29:7-8; Leviticus 23:27)

5. Feast of Tabernacles (Sukkot) (Number 29:12-13)

The Day of Trumpeting and Yom Kippur are entirely consistent with a lunar calendar. With regards to Passover, the Feast of Weeks, and the Feast of Tabernacles, they were originally linked to agriculture events, not the solar calendar.

Even assuming that the current Biblical text pre-dated the Lehite departure, any of these celebrations that are specifically tied to solar equinoxes or solstices (as identified by year endings or beginnings) could still have been practiced under an uncorrected lunar calendar with separate solstice/equinox measurement, as that is a time that could be approximated by visual observation. There is no reason to assume that the Lehites and later Nephites were not capable of understanding and marking some form of a solar year or equinoxes/solstices concurrent with their uncorrected lunar calendar. In many ways it is much easier to mark festivals related to agriculture with a solar calendar dictated by solstices and equinoxes than trying to use a combined solar-lunar calendar. The only real drawback is that if festivals or events are tied specifically to the uncorrected lunar calendar, over time, there may be overlaps with the solar calendar. There is no evidence in the Book of Mormon of correlating annual festivals with the Book of Mormon year count calendar. In fact, the lack of specific festivals tied to specific days or months is actually suppositional evidence that these annual festivals may not have been tracked on the Book of Mormon lunar yearly calendar(s).

Even if an event was tied to a first month or date to the equinox, the first uncorrected lunar month following the equinox could have been used and still fallen roughly within the errors that occur from a lunar calendar that had to be corrected every third year by adding an additional lunar month. For example, under an intercalated calendar after a year is “recalibrated” by adding the additional month, the next year will be approximately 11 days off of the equinox, and the year after that, 22 days off the equinox. In contrast the uncorrected lunar calendar from time to time could be off by a maximum of 29 days from the equinox.

It is clear that the brass plates contained additional records that the current Old Testament does not as there are prophets cited in the Book of Mormon that are not found in the Old Testament, namely Neum, Ezaias, Zenos, and Zenock. One cannot necessarily assume that there may not have been more (or perhaps in certain instances less) information related to the law of Moses found in the brass plates, including seasonal and calendrical practices. In the angel’s statement to Nephi, it is indicated that the Old Testament contains “many of the prophecies of the holy prophets; and it is a record like unto the engravings which are upon the plates of brass, save there are not so many” (1 Nephi 13:23). The level of difference or similarity between the two records indicated by “like unto” is not clear.

The heritage of the brass plates and Lehi were not from Judah but came from the northern tribes. It is likely that some of these lost texts were northern Israelite texts. According to 1 Nephi 5:14, the brass plates contained the genealogy of the descendants of Joseph. Because the tribes of Joseph lived in the northern Israelite kingdom, called Israel, not the southern Israelite kingdom, called Judah, it is likely that the plates of brass had many northern Israelite texts in them. Under the Pentateuch documentary

hypothesis, the Priestly writer (P in figure 55) comes from the Jerusalem sanctuary as the text has been edited toward practices of this cult center and occurred after the Lehites left Jerusalem (Hartley 1992, xi). Thus, one would not expect the law of Moses found in the brass plates to match the law of Moses that is found in the current Hebrew Bible both because of the location of genesis of the record and because of changes of the text through time.

Biblical scholars have distinctly recognized the possibility of other versions of the Pentateuch such as the brass plates:

> "(D)o Leviticus and other books in the Pentateuch contain all or only part of the ancient material? For instance, were there more "sermons" than those that have been preserved? How was this material copied and passed on? Did multiple copies exist, leading to differing versions? It is very likely that many copies existed, given the many sanctuaries throughout ancient Israel and the likelihood that each sanctuary had an official copy. These copies would have taken on local characteristics, leading over time to differing versions." (Hartley 1992, xi-xii).

Reasons why the Lehites may have chosen an uncorrected lunar calendar

Even if an intercalated or corrected lunar calendar was in use when Lehi left Jerusalem, there are reasons that an uncorrected lunar calendar may have been preferable or necessary.

1. Intercalation required specialized knowledge only available to a small group

Texts recovered from Mesopotamia indicate that there were texts that were only available to a narrow circle of the priesthood. In post-exilic times in Palestine the calendrical matters were guarded by priests with jealous care (Segal 1957, 259), so the Lehites may not have had access to intercalation procedures.

2. The intercalation was determined based on the heliacal rising of particular stars

The most accurate method available to ancient Israel upon which to adjust the lunar calendar to the solar year was not by observation of the sun or measurement of the lengths of daylight but was by the observation of the heliacal risings and settings of certain fixed stars (Segal 1957, 267). The heliacal rising of a star occurs annually when it briefly becomes visible above the eastern horizon at dawn just before sunrise, after a period of less than a year when it had not been visible. Historically, the most important such rising is that of Sirius, which was an important feature of the Egyptian calendar and astronomical development. The rising of the Pleiades heralded the start of the Ancient Greek sailing season, using celestial navigation. Accurate adjustment of the calendar thus may not have been possible:

a) The annual heliacal rising observation is dependent on the geographical configuration of the horizon, which was clearly in constant flux as the Lehites journeyed to the New World, rendering accurate readings of heliacal risings impossible.

b) The observation is also dependent on latitude, so as the Lehites traveled to the New World, the configurations of visible stars change and some disappear, and especially in the southern latitudes, which based on ocean currents is a possible path to the New World, the constellations are upside down. Thus again, accurate readings would not have been possible. Depending on the star used, a reading may have been impossible if the star was no longer visible.

c) While the 600-year prophecy was made in the Old World in the valley of Lemuel, it may not have been known to Lehi at that time that the revelation was in a year count that would not involve intercalation, which year count may have been determined by $Nephi_1$ once arriving in the New World, which had no intercalated calendars. This possibility, although speculative, is reasonable given the nature of the location that they settled, especially considering the fact that there were other locals there who became part of their population.

3. The intercalation of the lunar calendar at the time of Lehi was not an exact science.

Also, the Caractors Document shows that the later Nephites were familiar with the 365-day solar calendar, which they chose to utilize for tracking year counts after the sign of the birth of Christ. The presence of Metonic cycle intervals in the Nephite calendar involving periods prior to Christ's birth clearly indicates they were intimately familiar with the solar year cycles. All of this multiple calendar counting is very Mesoamerican.

4. The suspension of intercalation is known in the Middle East for various reasons

The Persians suspended intercalation when its time happened to occur at a period when the condition of the empire was disturbed by calamities, the Sogdians also did so. The Arabs had a continuously running uncorrected lunar calendar up until 200 years before the Hijra (in 622 AD) and then intercalation was prohibited by the Prophet (Muhammad Ibn Ahmad, Abu al-Raihan al-Biruni, 1879 (1000 AD), 46, 73-74). The Lehites may have done similar.

5. Returning to the early practice of the law of Moses

It would also make sense, given the state of Israel at the time of Lehites departure, the Lehites may have chosen to follow the earlier calendar of Israel to be truer to the Law of Moses. It is also possible that there was something in the brass plates that preferred or indicated the use of the uncorrected calendar as well.

Chapter 11

Miscellaneous Chronological Issues

The age of Enos issue and resolution

One calendrical issue that is resolved by using the uncorrected lunar calendar is an issue that involves the age of Enos. In Enos 1:25 Enos indicates that he began to be old, and that 179 years had passed since the departure of Lehi from Jerusalem. Enos received the plates from his father Jacob (Jacob 7:27) and was of sufficient age to be capable of understanding his father's instructions regarding the plates, and to have been instructed in the language of his father (Enos 1:1). Jacob was the younger brother of $Nephi_1$ and was born during the eight years (1 Nephi 17:4) that the Lehites sojourned in the wilderness in the Old World (2 Nephi 2:1) and was the "first-born" of the last two children born in the wilderness. A younger brother, Joseph, was also born in the wilderness (1 Nephi 18:7).

The chronological issue arises when one assumes that the latest that Jacob could be born in the wilderness is around 2 years before the end of their sojourn, since Joseph was also born in the wilderness, which would be year 6, meaning that the combined father and son generation (Jacob and Enos) was at least 173 years. If one assumes that age 12 is the youngest Enos could have been to be trained in the language by Jacob, and thus even if Jacob sired Enos at the very late age of 80 and trained him into his 90's, that would leave Enos at the age where he "began to be old" at the age of 93. If Jacob and Joseph were twins, then it would have been age 91.

It does seem likely that Jacob and Joseph were twins, as when on the boat to the promised land, both were still nursing to some extent (1 Nephi 18:19). From a Biblical typology perspective, Jacob being a twin is consistent with the Biblical type of Jacob and Esau, as well as the Biblical type of the mother Sariah corresponding with Abraham's wife Sarai/Sarah, who bore Isaac at an advanced age. Sariah is also mentioned at the time of the boat incident as being "stricken in years" (1 Nephi 18:17). Based on these facts, a potential birth year for Jacob in the wilderness is at the very end of the eight-year sojourn in the wilderness. Sariah was still nursing after being on the boat for "the space of many days" (1 Nephi 18:9).

The issue of Sariah's age at Jacob's birth must then be considered. Her four oldest sons were of marriageable age at the time of departure as each took a wife soon after arriving at Lehi's camp (1 Nephi 16:7). Looking at the youngest reasonably possible age for Sariah at Jacob's birth, assuming a one-year separation in age of the four oldest brothers, $Laman_1$ (the oldest) was likely 22 years old at departure and assuming Sariah's age at Laman's birth was 16, then her age at departure would have been 38, with her age at the arrival in Bountiful then 46, thus it is still possible for her to give birth to Jacob given the normal time that a woman can bear a child. That does seem a bit young to be classified as "stricken in years." In modern times, the oldest verifiable natural birth for a woman is 59 years old, so Sariah may have been older than 46, but it all is not inconsistent with Jacob and Joseph being twins. It is also a possible textual interpretation that the eight years mentioned that they sojourned in the wilderness (1 Nephi 17:4) might be interpreted to have occurred after Nahom as the chronological statement was

made after their stop in Nahom. With this interpretation, the actual time prior to Bountiful may have been longer than eight years, which would also mitigate the issue involving the age of Enos.

With regards to the possibility of a set of twins being still young enough to be nursing on the boat, the length of stay in Bountiful must not have been long. It is not overtly clear from the text whether the stay at Bountiful is included in the eight-year period of the sojourn in the wilderness, although the text implies that the arrival there was after the eight-year wilderness sojourn (1 Nephi 17:4-5). Although the text indicates that $Nephi_1$ was in the land Bountiful "many days" before starting to construct a ship (1 Nephi 17:7), it does not appear that they remained in Bountiful for even a growing season as Bountiful was characterized with the name Bountiful because of its "much fruit and wild honey" (1 Nephi 17:5) and the specific provisions that they took with them into the ship were not grown crops, it was "much fruit," "meat from the wilderness," and "honey in abundance" (1 Nephi 18:6). Nephi noted at the end of the wilderness sojourn that they lived upon meat in the wilderness (1 Nephi 17:2), so it appears they may even have taken meat with them that was obtained prior to them arriving in Bountiful. There is no mention of agricultural crops, and the fact that the seeds that they planted when they reached the New World were from the "land of Jerusalem" (1 Nephi 18:24 is indicative that they did not plant and regenerate new seed stock in Bountiful).

In either interpretation as to whether the period at Bountiful is included in the eight years in the wilderness or afterwards, assuming the maximum a child would be nursed is four years, the period of time in Bountiful would be four years or less. If measuring after the eight-year period, since the twins were born in the wilderness, the maximum time between their birth and the event on the ship where they were still nursing would be a maximum of four years. If assuming that the time in Bountiful was included in the eight years in the wilderness, then it would have to be less than four years as there are other things that were done previous to arrival in Bountiful. which it seems would take more than four years.

If one considers that a year is an uncorrected lunar year, then the apparent Enos anomaly is resolvable, as the effective equivalent solar years to lunar years (171) of the generation is 166, which would have Enos at age 86 instead of age 93, making Enos' statement more tenable, especially if "began to be old" is indicating physical condition as opposed to a defined age.

<u>Consistency of 8 years in the wilderness</u>

Indirect evidence of a February departure can be surmised from the indication that there were apparently no crops planted in Bountiful. The Book of Mormon text indicates that once the Lehites left the land of Jerusalem they considered themselves to be in the "wilderness" (1 Nephi 2:4). Thus, given a departure date of February 12, 588, after 8 lunar years they would have arrived in Bountiful at the earliest on November 17, 581. It does appear that they arrived likely too late in the fall for a winter planting as they would also have to prepare the land, and obviously much too early for a spring planting. It would seem that they knew that they were not planning on remaining in Bountiful long, so if they retained any seeds that required more than a year to be productive (fruit trees) they would have been unlikely to plant those, especially given the fact that Bountiful was indicated to have much fruit.

One question that would need to be asked with a November arrival is whether there would be fruit available for consumption. The description of the route through the Arabian Peninsula indicates that Bountiful is located along the coast of Oman. In Oman, using information on currently grown crops,

pomegranate is the most significant crop in this region; however, walnut, peach, apricot, fig, almond, cashews, plums, grapes, oranges, tangerines, limes, lemons, wild berries, strawberries, banana, mangoes, melons, apples, and pears, also contribute significant income to the local inhabitants. Other crops of economic importance include roses and cold-climate vegetables. Several wild plants produce fruit that are typically consumed fresh or in various preparations including boot, *nimt*, wild olive or *utom*, *sidr*, and *sawqam*. (Al-Yahyai et al 2014). Pomegranate harvests can run as late as November into December depending on the climate and other conditions. There are currently over 250 types of dates harvested in Oman, with harvests running as late as November. Fruits are available during all months of the year in Oman. Fruits available in each month are:

January: apples, oranges, grapefruit, pears
February: kiwi, oranges, tangerines
March: pineapples, tangerines, kiwi, oranges
April: banana, pomegranates, apples, grapefruit
May: strawberries, apricots, mangoes, cherries, pineapples
June: kiwi, melons, watermelons, apricot, blueberries, cherries, mangoes, strawberries, peaches
July: mangoes, melons, peaches, apricots, watermelons, kiwi
August: apricots, apples, melons, blueberries, strawberries, watermelon, mangoes
September: apples, mangoes, pomegranates, grapes, kaki, melons
October: grapes, kaki, cranberries, pomegranates
November: pomegranates, tangerines, cranberries, oranges
December: pears, apples, pomegranates, grapefruit

Obviously not all of the fruits currently grown would have been grown anciently, but the examples do indicate that fruits were available year-round for the Lehites to harvest, so also would not have dictated when they departed since they indicated that they took fruit with them.

Currently there are two growing seasons in Oman. Winter crops are planted in October or November and include wheat, barley, maize, rye, oats, peas, chickpea, alfalfa, and Rhodes grass. The summer crops are planted in March-April and include sorghum, millets, cowpea, sesame, maize (fodder), alfalfa, and Rhodes grass. Since the primary annual plants utilized in Israel at the time were the grains barley and wheat, it appears that the Lehites missed the fall planting for these crops, and as the growing situation for them in Oman is not favorable in the summer, they would not have been able to harvest a crop of barley or wheat until a year and a half after they arrived in Bountiful.

Another clue is the existence of wild honey. The context of the mention of wild honey in 1 Nephi 17:5 indicates that it was present and available upon their arrival. In Oman there are wild bees that are thought to have been there in antiquity (Whitcombe 1984). The wild bees native to Oman are no bigger than a fly and are identified as *Apis florea* the "Little Honeybee" or dwarf honeybee. During the warmer seasons like spring and summer, ambient temperatures allow honeybees to forage actively. During the colder seasons of autumn and winter, colonies diminish in size because they depend on food stores. While honey in Oman is available year-round, the biggest stores are available in autumn prior to the cold season. Thus, a November arrival of the Lehites is consistent with wild honey being plentiful upon their arrival.

Potential Defugalty of Helaman's epistle and Mormon's Abridgment

In 1990, John Sorenson pointed out what, on first impression, appears to be a chronological discrepancy involving an epistle written by Helaman in the latter part of the 29th year (Reign of the Judges) inserted into the Book of Mormon and the associated abridgement by Mormon involving the same time period. Namely, in the epistle to $Moroni_1$, Helaman indicates that in the 26th year (Alma 56:7) Helaman marched at the head of two thousand young men originating from Lamanites converted previously by Ammon "to the city of Judea, to assist Antipus, whom ye had appointed a leader over the people of that part of the land" (Alma 56:9). In Mormon's abridgment Alma 53:22-23, he indicated that Helaman:

> "did march at the head of his two thousand stripling warriors, to the support of the people in the borders of the land on the south by the west sea. And thus ended the twenty and eighth year of the reign of the judges over the people of Nephi."

Thus, it would appear that the same event is being recounted by Mormon as occurring in the latter part of the 28th year, while Helaman recounts it as happening in the 26th year, so if this event is the same, then there is at least a 2-year discrepancy in the chronology.

Miner (2020) rebuts this apparent discrepancy by indicating that the mention of the movement of Helaman's army prior to the end of the 28th year was, in summary, just a retrospective summary of military activity along the west coast (including Alma 53:8), as it was preceded fairly close in the text by a summary of activity along the east coast (Alma 53:6-7).

Book of Mormon Central (2021) characterized Alma 53:10–22 as a digression/flashback that lets readers know about some key events that were happening on another war front, which events began in the 26th year but clearly continued into the 28th year—the very year which Mormon was discussing before and after the digression (Alma 52:19; 53:23). While Helaman's initial march to the southwest war front occurred in the 26th year (Alma 56:9), his efforts "to support" the war effort in this area (including lots of additional marching to and from locations in this region) continued into the 28th year and even beyond (Alma 57:5–6).

While the retrospective theory is a reasonable interpretation to explain the proposed discrepancy, it is also constructive to look in some detail as to whether the march by Helaman in the 26th year is potentially consistent with Mormon's record, and to see if there is a possible movement by Helaman before the end of the 28th year that is also consistent with Mormon's record, therefore not requiring the retrospective theory.

The period of time bracketed in Mormon's abridgment as the 26th year runs from Alma 52:1-15. During that time on the east front, Amalickiah, the head of the Lamanites, was killed, and initially $Moroni_1$ was not on the east coast front (presumably in Zarahemla). Ammoron (who replaced Amalickiah) gathered a large number of men and "marched forth against the Nephites on the borders by the west sea," thus $Moroni_1$ could not go to the east coast front as he had to go against the Lamanites who were upon them "in the borders of the land by the west sea." No mention is made of the specific battles or engagements involving $Moroni_1$ on the borders of the land by the west sea. It is indicated that prior to $Moroni_1$ departing from that area to the land of Bountiful, at the latter end of the 26th year he had "established armies to protect the south and the west borders of the land" and Mormon writes that at the end of the 26th year the Nephites were "in dangerous circumstances."

The period of time bracketed in Helaman's epistle for the 26th year is found in Alma 9:7-20 and involves him first assembling and marching with his 2000 warriors to the city of Judea to assist Antipus at the city of Judea, whom $Moroni_1$ had appointed leader of the people in that part of the land. Antipus had recently been involved in battles and lost men, and in the process lost the land and city of Manti, Zeezrom, Cumeni, and Antiparah. Ammoron had commanded the Lamanites to maintain the cities that they had taken, and to take no further action against Judea. Judea is not located on the west seashore, as it is later indicated that the Nephite armies had to march towards the seashore from Judea, with the city of Antiparah between Judea and the west coast. Judea does appear to be in some proximity to the southern border (as the city of Manti is known to be located close to the southern border).

So thus, the information from Helaman is consistent with Mormon, namely that there had been an encroachment by the Lamanites and the taking of some cities, Mormon was not specific in his description of where, but battles against the Lamanites were indicated. He had established and sent armies (one of which was Helaman) to the south and west borders of the land to help protect the area. Thus, it would seem that Helaman's arrival in Judea was towards the end of the 26th year, after there had been battles with the Lamanites.

There is no record from Mormon involving the western front for the 27th year as $Moroni_1$ had arrived and was active on the east sea front. Thus, there could be no potential discrepancies with Helaman's record.

$Moroni_1$ remained on the eastern front during the 28th year. The commentary that may relate to the 28th year in the west area in Mormon's abridgment is Alma 53:8-23. Mormon commented that on the "west sea, south, while in the absence of $Moroni_1$," because of some "intrigue amongst the Nephites, which caused dissensions among them, [the Lamanites] had gained some ground…, [and] had obtained possession of a number of cities in that part of the land" (Alma 53:8). This geographic reference is a bit awkward textually and may be better interpreted as a specific recognized area such as "West Sea South" as there was no capitalization and punctuation in the original Book of Mormon dictation. This statement by Mormon does seem to be a retrospective statement that goes back to the time that $Moroni_1$ had departed, which was sometime likely in the middle of the 26th year. It would seem to also be consistent with the Lamanites taking the land and city of Manti (which land would include "some ground") which is on the south border, and Zeezrom, Cumeni, Antiparah, and an unnamed city on the seashore after $Moroni_1$ left, and prior to the arrival by Helaman. The named cities all appear to be at elevation as the Lamanites would have to march "down" from there to Zarahemla (Alma 56:25) so were also probably considered on the southern boundary area, and not on the seashore like the unnamed city. So, these would seem to be the cities that Mormon was referring to that fell to the Lamanites just after $Moroni_1$ had left for the eastern area. Further evidence that these were the cities referred to is that when Antiparah fell (actually abandoned), the "people" from there fled to other Lamanite held cities, indicating the people of this Nephite city had allegiance to the Lamanites, consistent with Mormon's statement of "intrigue amongst the Nephites which caused dissensions among them." Sorenson interprets this statement to not be retrospective, and that these cities must have fallen sometime in the middle or latter part of the 28th year, which clearly would not make sense, and would force one to look for an error in chronology. It does seem fairly clear that the statement regarding the fall of the cities at least is retrospective.

After the brief retrospective statement, Mormon proceeds to give a brief history of the people of Ammon, their pacifistic oath, and the covenant of their 2000 sons to fight for liberty. It is after this discussion that Mormon makes his statement that Helaman and the 2000 stripling soldiers marched "to the support of the people in the borders of the land on the south by the west sea" prior to indicating the end of the 28th year.

Thus, it does seem that this discussion by Mormon is retrospective and is looking at events earlier than the 28th year. However, it is useful to see if there was a potential march by Helaman in the 28th year that might satisfy a non-retrospective approach to the interpretation of this portion of the text. For Helaman's epistle the 27th and 28th year are not differentiated and runs from Alma 56:20 to Alma 57:5. Just prior to the end of the 28th year, Helaman had returned to the city of Judea and prepared to attack the city of Antiparah. The people of Antiparah ended up abandoning the city and it "fell into our hands." Thus, there may have been a march of Helaman and his men to "support the people" and the city of Antiparah was located in the proper location, namely on the borders of the land south by the west sea.

Thus, there does not appear to be an unresolvable chronological disparity involving Mormon's abridgment and the epistle of Helaman.

<u>The nine-year retroactive calendar adjustment</u>

3 Nephi 2:4-9 states:

> 4 And thus did pass away the ninety and sixth year; and also the ninety and seventh year; and also the ninety and eighth year; and also the ninety and ninth year;
> 5 And also an hundred years had passed away since the days of Mosiah, who was king over the people of the Nephites.
> 6 And six hundred and nine years had passed away since Lehi left Jerusalem.
> 7 And nine years had passed away from the time when the sign was given, which was spoken of by the prophets, that Christ should come into the world.
> 8 Now the Nephites began to reckon their time from this period when the sign was given, or from the coming of Christ; therefore, nine years had passed away.
> 9 And Nephi, who was the father of Nephi, who had the charge of the records, did not return to the land of Zarahemla, and could nowhere be found in all the land.

The Caractors Document also notes this calendar change (Grover 2019, 291-292) and has the retroactive effective date change in sequential order in the document prior to Christ's birth, which is consistent with the analysis showing the retroactive calendar change was counted from the New Year's Day of the 92nd year with the birth of Christ shortly thereafter.

One of the primary questions that arises is why did the Nephites wait nine years prior to making the change in the calendar? The Nephites had already turned to wickedness by this time. There are a few possible answers:

1. The last portion of the text notes that $Nephi_2$, the prior daykeeper, could not be found (likely presumed dead) so may have some import since it is mentioned in conjunction with the calendar change and had been missing prior to Christ's birth (3 Nephi 1:2-3). Although $Nephi_2$ passed the Nephite sacred relics and "all the records that had been kept" to $Nephi_3$ who kept "the records in his stead," verse 9, at least under the more straightforward reading, indicates that $Nephi_2$ perhaps took some records with him, perhaps the day-counting records. So, the Nephites did not make the change until there was no more hope of $Nephi_2$ returning, and the verse indicates that he could not be found as if they were

actively looking for him. This might be a reason why, at the time of the 3rd Nephi destruction, that Mormon had to add words of support for the daykeeper at that time (3 Nephi 8:1-2).

2. Passage of the religiously significant number of nine years (to be discussed later) related to death in Mesoamerican (exactly 100 years after $Mosiah_2$'s death, 9 years after $Nephi_2$'s disappearance and presumed to be dead). If this were the case since the Nephites were wicked at this time, it is possible that the change in the calendar was just involving the small minority who were righteous as part of their religious calendar.

3. Spackman (1993, 51) proposed that the calendar change occurred in conjunction with an undocumented theoretical adjustment with the Mesoamerican Kaminaljuyu calendar. The date he provided was 215156 days from Lehi's Departure date, which meant that the change would have occurred on the 347th day of the 610th year.

4. 30 katuns have passed since the Lehite departure. The number 30 was one of the Nephite sacred numbers incorporated from the Jaredites (to be discussed later). While not using the katun calendar for the Nephite religious count, they were no doubt aware of it. 609 uncorrected lunar years is equal to the passage of 29.974 katuns. That means that 30 complete katuns would have occurred 191 days into the 610th year, indicating that would have been a significant point to change the calendar from a Mesoamerican standpoint. It should be noted that the completion of these 30 katun cycles does not correspond with the Long Count calendar, as under the Long Count calendar the completion of katuns in that time period would have occurred on April 3, 2 AD or December 19, 21 AD which are well before and after any potential date approximately nine years after Christ's birth. This explanation would only be as a supporting argument, as the calendar in the Book of Mormon is a religious calendar, as evidenced by the retroactive count from a most significant event in the righteous Nephite religion, the birth of Christ.

5. One religious reason why the calendar would have been changed to a solar one is the association of Christ with the sun. There was a night of brightness, and then a sunrise with a solar eclipse, that had the sun moving directly out of the obstruction of the moon from a total solar eclipse. Replacing the lunar calendar with the solar calendar would make complete religious sense. The 34-year date found in the Caractors Document of Christ's appearance to the Nephites at Bountiful contains the numeral 19, which is the time period when the lunar cycles and the solar cycles coincide, and in the Egyptian this number glyph of 19 also means "god of the sun." In the Caractors Document, dates prior to Christ's birth (436 and 439 years) show the use of the number 20 glyph which also means "moon."

The correspondence of the sun with Christ has been asserted by Royal Skousen (2014a 2801; 2014b 830-33) as part of his Original Text project that the two references to Christ as the "Son of righteousness" (2 Nephi 26:9 and Ether 9:22) should instead match the language from Malachi 4:2 where Christ is referred to as the "Sun of righteousness." Since the small plates and the Jaredite record in Ether (presuming that was the term in the original Ether plates prior to later translation and abridgement) predate the Book of Mormon abridgement, it would seem that once Christ was born, shifting the year count to a solar count would be consistent with that tradition.

In trying to pinpoint the time chosen to implement the Coming of Christ calendar, there is a bit of a clue from the text, as these verses indicate that nine years had passed since the sign was given, so it was approximately 13 days into the 100th year of the Reign of the Judges. That it was not at the very beginning of the year is also suggested by the fact that $Mosiah_2$ is indicated to have died after the New

Year's Day after the 509th year on the Lehi Departure calendar which was when the Reign of the Judges calendar was started (Mosiah 29:44-46) and 100 years have passed away since "his days" (verse 5).

An analysis of the individual day dates found in the Book of Mormon

Nearly all events in the Book of Mormon are not mentioned in relation to any specific day date; however, there are a few specific dates down to the day that are found, and it is worth looking to see if there are any correlations or patterns apparent. Because we now have specificity down to the day on the calendar, the equivalent Gregorian date for each of these can now be determined:

Alma 10:6 indicates year 10 (Reign of the Judges), month 7, day 4 which is approximately April 17, 85 BC. In the scriptural verse, the order of the date is day/month/year.

Alma 14:23 indicates year 10 (Reign of the Judges), month 10, day 12 which is approximately July 12, 85 BC. In the scriptural verse, the order of the date is day/month/year.

Alma 16:1 indicates year 11 (Reign of the Judges), month 2, day 5 which is approximately November 1, 85 BC. In the scriptural verse, the order of the date is year/day/month.

Alma 49:1 indicates the year 19 (Reign of the Judges), month 11, day 10 which is approximately May 4, 76 BC. In the scriptural verse, the order of the date is month/year/day.

Alma 52:1 indicates year 26 (Reign of the Judges), month 1, day 1 which is approximately April 18, 70 BC. In the scriptural verse, the order of the date is year/day/month.

Alma 56:27 indicates year 27 (Reign of the Judges), month 2 which is approximately May 6 to June 5, 69 BC. In the scriptural verse, the order of the date is day/month.

Alma 56:20, 42 indicates year 27 (Reign of the Judges), month 7, day 3 which is approximately October 3, 69 BC. In the scriptural verse, the order of the date is day/month.

Alma 56:1 indicates year 30 (Reign of the Judges), month 1, day 2 which is approximately March 8, 66 BC. In the scriptural verse, the order of the date is year/day/month.

3 Nephi 4:7, 11 indicates year 19 (Coming of Christ), month 6 (we do not know for sure the month count under the uncorrected solar calendar, but we will assume 30 days) which runs from approximately August 27 to Sept 26, 13 AD. In the scriptural verse, the order of the date is day/month.

3 Nephi 8:5 indicates year 34 (Coming of Christ), month 1, day 4 which is approximately March 31, 28 AD. In the scriptural verse, the order of the date is year/month/day.

As there are so few specific dates identified in the Book of Mormon, the question arises as to why they were identified. A few of the dates are not noted by Mormon in his abridgement by his discretion, as they are contained in verbatim insertions of other records and are written by Amulek (Alma 10:16) or Helaman (Alma 56:1, 20, 27).

It is clear that the dates are being used in relation to specific seminal events. For Amulek it was when an angel of the Lord appeared to him. For Helaman it was the date he wrote his war correspondence involving the sons of Helaman, the visit of the fathers of the sons of Helaman bringing provisions, and the day of the battle where all the sons of Helaman completely escaped death.

In Mormon's abridgment, the dates are for (1) the miraculous collapse of the prison at Ammonihah releasing $Alma_2$ and Amulek and destroying their captors, (2) the attack by the Lamanites on the city of Ammonihah, destroying all the people of that city, (3) the later date of the intended attack at the direction of King Amalickiah by the Lamanite armies on the city of Ammonihah which had been rebuilt, (4) the slaying of King Amalickiah, (5) the commencement of the great and terrible battle of the army of Giddianhi and his Gaddiantons against the gathered Nephites where the Nephites were victorious, and (6) the day of the great destruction of the Nephites at Christ's crucifixion.

Many researchers have recounted that the slaying of King Amalickiah on a New Year's Day was a bad omen to the Lamanites (BMC 2016b) for reasons such that in ancient Israel the New Year was traditionally celebrated as a day of coronation of divine and earthly kings. It is not at all apparent that the Lamanites had any knowledge or concern for Nephite cultural history, and since they were not using the Nephite calendar system, it likely did not occur on the New Year's Day of any of their calendars so would not have been a significant cultural omen to them for that reason. It is, however, significant to the Nephites, as to the Hebrews and previously discussed, New Year's traditions did contain a significant element of the destruction of the wicked, especially since Amalickiah was a Nephite traitor. It may have been a bad omen for the Lamanites if they were aware of the Nephite traditions.

Unlike the year counts, since the specific dates are found in the quotations of Amulek and Helaman, it does not appear that there is some sacred number significance to the appearance of the dates. In evaluating whether there were any significant astronomical events related to the dates themselves or the time between dates, it does not appear that there were any. There were no solar or lunar eclipses on these dates, there was no correspondence with the position of Venus or Venus cycles on or between these dates, and there were no significant Mesoamerican calendar demarcations found on these dates. Running of the Stellarium software did not show any unique astronomical event on the specific dates.

Thus, it does appear that the reason for these dates was the significance of the associated events. It is interesting that two of the events, the Gaddianton siege and the crucifixion destruction, are both identified in the prophetic calendar found in the Caractors Document. Perhaps the other events were found there as well, but unfortunately the Caractors Document does not cover these other periods. This may have been an additional reason to note the specific dates in the text, especially if the underlying glyphs for the dates had some unique meaning or features as did the Gaddianton siege (Jubilee year) and the obvious death of Christ.

<u>Identification of the Three Disciples</u>

As mentioned, the Caractors Document provides a clue as to the identity of one of the Three Disciples chosen by Christ at the time of his visit (Grover 2019, 223-225). Summarizing from that source, the name of $Nephi_2$ is reflected in C-143 and C-199:

C-143 

C-199 

C-143 refers to Nephi$_2$ who in 3rd Nephi departed out of the land (3 Nephi 1:2–3, 2:9). The second is referring to the three "disciples of Jesus" who were blessed to "tarry" and not die (3 Nephi 28:4). They are now popularly referred to as the "Three Nephites" but were not referred to that way in the text of the Book of Mormon. Although Mormon indicates that he was forbidden from writing the names of the three disciples (3 Nephi 28:25), this glyph is an indication that one of them was Nephi$_3$ who was called as one of the twelve disciples (3 Nephi 19:4).

The Book of Mormon Onomasticon (2023) has indicated one of the etymologies of the name *Nephi*:

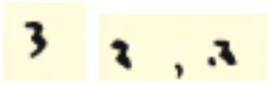
> The most likely derivation of the name is Egyptian *nfr* "good, beautiful." The final r in Egyptian had dropped out of pronunciation about a thousand years earlier, and it is attested as a personal name at the time of Lehi.

While *nfr* was not indicated directly by glyph forms, the Demotic article *nꜣ* also functions as a prefix to adjective-verb forms that are associated with "beautiful" and a few other similar words:

nꜣ def. art. (EG 202)

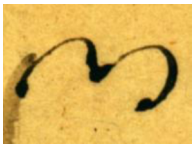
nꜣ prefix of adj.-verbs (EG 202)
for discussion, w. extensive list of verbal roots w. adj.-verb forms, see Stricker, *OMRO* 43 (1962) 33-34, §§23-24; Johnson, *DVS* (1976) pp. 29-31; Vernus, *RdE* 41 (1990) 170-72, §8
in compounds
nꜣ-ꜥꜣ "to be great" (EG 202)
nꜣ-ꜥn "to be beautiful" (EG 202)
nꜣ-wsḫ "to be broad" (EG 202)
nꜣ-bn "to be bad, evil" (EG 202)
nꜣ-mnḫ "to be excellent" (EG 202)
nꜣ-nw "to be good, pleasing"; see under *ꜥn*, above
nꜣ-nfr "to be beautiful" (EG 202)

(Chicago Demotic Dictionary 2014, N [04:1], 7)

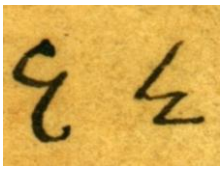
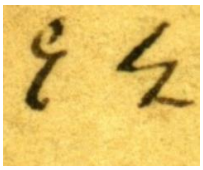


Demotisches Glossar (Erichsen 1954, 202)

The reverse mirror orientation is curious (if this etymology is correct) but may be explained by the reference to the three disciples, since the number in this reverse orientation would accommodate a double meaning as the number 3, which is found as character C-86:

C-86 

In addition, considering that it occurs exclusively in a match set for Nephi$_2$'s departure and the Three Disciples' departure with the glyph that means "departed," the reversal may also be some sort of glyph play to create parallel glyphs:

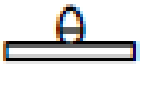
C-144, C-143  C-200, C-199 

Having determined that Nephi$_3$ is one of the Three Disciples, an additional question might be to determine if it is possible to speculate as to who the other two might be. All of the disciples are named in 3 Nephi 4:2 and understanding most Book of Mormon names to be metonymic, two names seem to stand out as being directly related to Christ and the number 3. Namely, Nephi$_3$'s brother whom he had raised from the dead named Jonas, and the other also named Jonas, who was the son of Timothy.

Jonas is the Greek form of the Old Testament Jonah. The correlation with the number 3 is known to most as he spent 3 days and nights in the belly of a giant fish (Jonah 1:17). The relationship to Christ is made by Christ when he calls himself "greater than Jonah" and promises the Pharisees "the sign of Jonah," which is his resurrection, again correlating well with the Three Disciples' immunity to death (Matthew 12:39-40, 16:4; Luke 11:29-32). It is also indicated by Christ that the sign of Jonah would be a witness to a wicked generation, which the three disciples did as the Nephites later turned to wickedness generations later.

In addition to the typological evidence for Jonas, postulates in the reformed Egyptian provide some corroborating evidence. Finding a glyph form in Egyptian that is close to the "3" or "W" formed glyphs that have meaning(s) associated with Jonah and the sign of Jonah referring to Christ would also be evidence for this Jonah correlation to the 3 disciples.

The Egyptian hieroglyph designated as Gardiner No. R-4 and its correlated hieratic glyph (Möller No. 552) is the word *ḥtp* which in Egyptian means to "rest in (tomb)" (Vygus 2012, 1531) and has the hieratic form that matches:

R4: 

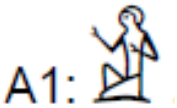
Möller Number 552, Bd. I-23-76, pg. I 541-552 (Möller 1965)

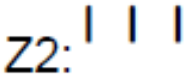
The Egyptian hieroglyph designated as Gardiner No. N-35A and its correlated hieratic glyph (Möller No. 333) is the word *mw*, which in Egyptian means "water" (Vygus 2012, 1270) and consists of 3 wavy lines representing the surface of the water (correlating to the sign of Jonah by water being represented by 3 symbols) and also has the hieratic form that somewhat matches:

N35a: 

Möller Number 333, Bd. I-23-76, pg. I 330-340 (Möller 1965)

Another hieratic ligature glyph that consists of two glyphs (Gardiner No. A-1 and Z-2) combined in one in the cursive hieratic has the meanings for each individual glyph of "man," constituting the Egyptian word *s* (Vygus 2012, 24) and "three," constituting the Egyptian word *ḫmt* (Vygus 2012, 2237). So, the individual element of this hieratic cursive glyph has the elements of the 3 Nephite disciples:





Möller Number LV, Bd. II-31-74-Taf, pg. II Anhang XLVII-LVI (Möller 1965)

Incidentally, it is hard to miss the fact that the number 3 in hieratic Egyptian is similar to the current form of our numeral 3. It should not be supposed that there is a direct correlation because the use of three lines to denote the number 3 occurred in many writing systems, including some (like Roman and Chinese numerals) that are still in use. Connection of the three lines through the evolution of writing over time is not unexpected.

Chapter 12

Potential Mesoamerican Chronological Correlations

As connections to certain points in the Old World calendar have now been determined, it is also possible to correlate the Book of Mormon to certain known Mesoamerican events.

King Limhi

Bruce Warren (2002) proposed a depiction of the ascent to the throne of King Limhi, the son of $Noah_3$, in Kaminaljuyú Stela 10 from the valley of Guatemala based on certain elements found on the stela (see figure 56). Essentially, the bearded figure on the top right is Limhi, and the top left is the deceased King $Noah_3$. Mesoamerican scholars agree that the $Noah_3$ figure, because of his closed eye, is considered an ancestral deceased king (Henderson 2013, 252). Most Mesoamerican Book of Mormon models place the land of Nephi in the valley of Guatemala where the ruins of Kaminaljuyú are found. Stela 10 has since been determined not to be a stela but is instead an altar or throne (Henderson 2013, 242). Munro Edmonson (1988) identified three different calendar dates recorded on this monument, from the local Kaminaljuyú calendar, the Teotihuacan calendar, and the Olmec calendar. All three record the same date, which he interprets to be November 8, 147 BC (Gregorian).

Warren cited Christenson (1991) who noted that November 8 was still the approximate date of the "harvest festival" in Santiago Atitlan in Guatemala and represents the New Year and the time kings ascended to the throne. Incidentally, a new moon occurred on the night of November 6-7, and an expected solar eclipse date occurred on November 7, 147 BC (Espenak 2014; Espenak and Meeus 2007), so this date, regardless of the current Maya practice of the "harvest festival" around November 8, was also an astrologically significant date for the ascension of a Maya vassal king (which Limhi surely was). One of the figures on Stela 10 is thought by some scholars to be a sacrificial victim (Henderson 2013, 251), which is also consistent with the practice of sacrificing victims at the time of a potential solar eclipse. The solar eclipse that did occur on November 7, 147 BC ended up not being visible in Mesoamerica, but the date is significant in Mesoamerica, nonetheless. This astrological correlation with Edmonson's date was discovered by myself.

The Caractors Document contains some new dates during this Book of Mormon timeframe. The events that are indented in the first section are those that occur concurrently with other events in different geographical locations. The line not indented includes events from the land Nephi and later of Zarahemla prior to $Mosiah_1$'s departure. The first indented line indicates events where the people of Zeniff are separated from Zarahemla in the land of Nephi, and the second indented line is for events involving $Alma_1$ after being separated from the people of Zeniff. Approximate dates that are listed are derived from the Book of Mormon, based on estimated time periods of transfer of records and reasonable lifespans and chronological facts, with the bold text indicating dates that are known from the Book of Mormon text or derived from the Caractors Document. Years are listed in terms of the years passed after Lehi's departure. This assumes that any years provided by the record of Limhi are still using the Nephite lunar year count.

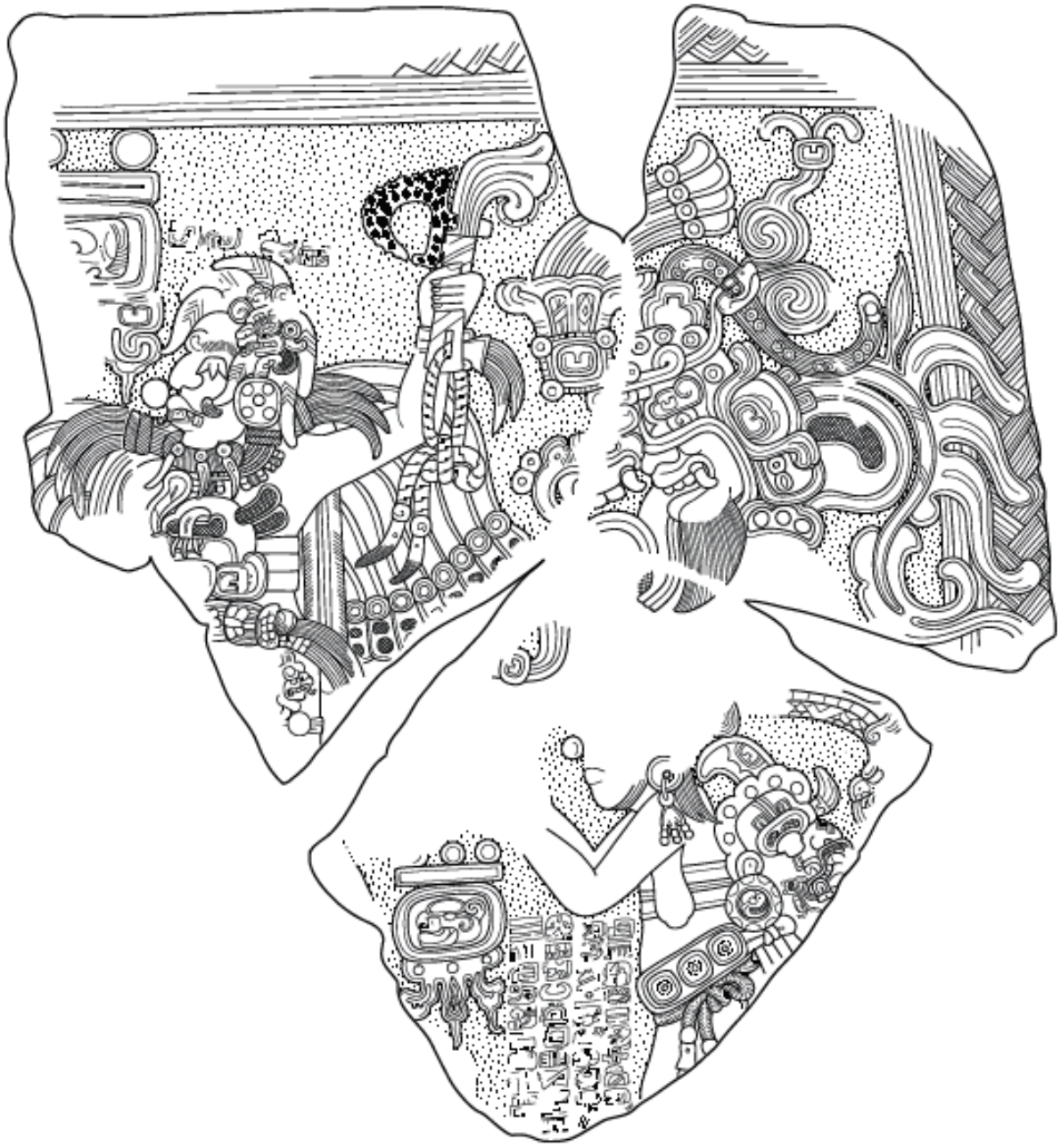


Figure 56 Stela 10 (aka Sculpture 10) from Kaminaljuyú and drawing (Henderson 2013, 493)

Amaron receives small plates, 320 years pass (Omni 1:5) (Amaron estimated age 20), 320 years

Amaron transfers small plates to brother Chemish (Omni 1:8) (Amaron estimated age 60, Chemish estimated age 40), 360 years

Mosiah$_1$ becomes king (calculated with Caractors information), 369 years

Zeniff born in land of Nephi (estimated at 370); Zeniff knew the land of Nephi (Mosiah 9:1), 370 years

Chemish transfers small plates to son Abinadom (Omni 1:10) (Chemish estimated age 60, Abinadom estimated age 20), 380 years

Mosiah$_1$ and followers flee to Zarahemla (calculated with Caractors information), 388 years

Benjamin born (Benjamin died at age 83; calculated with Caractors information), 396 years

Calendar Period of Seven Tribes commences (calculated with Caractors information), 399 years

Amaleki born in the days of Mosiah$_1$ (Omni 1:23), 400 years

Abinadom transfers small plates to Amaleki (Abinadom estimated age 60, Amaleki estimated age 20), 420 years

Zeniff and companions depart for land of Nephi (Omni 1:28–29; Mosiah 9:1) (calculated with Caractors information), 420 years

Zeniff becomes king (estimated at 420 years), 420 years

Large stone brought to Mosiah$_1$ (estimated at 425 years), 425 years

Zeniff and people experience threat of war 12 years after coming (Mosiah 9:11) (calculated with Caractors information), 432 years

Zeniff and people experience war 13 years after coming (Mosiah 9:14) (calculated with Caractors information), 433 years

Alma$_1$ born (calculated from age of death, indicated in Mosiah 29:44–47), 427 years

Mosiah$_1$ dies, Benjamin takes throne (date specified in Caractors Document), 436 years

Zeniff is still king after 22 years, King Laman$_2$ dies (Mosiah 10:3) (calculated with Caractors information), 442 years

Zeniff in his old age (estimated age 74 years) (Mosiah 10:10), 444 years

Noah$_3$ becomes king (estimated at 445 years), 445 years

Mosiah$_2$ born (calculated from Mosiah 6:4), 446 years

Alma$_1$ flees with followers (estimated at 455 years) (Mosiah 18:35), 455 years

Noah$_3$ killed, and Limhi becomes king (estimated at 462 years), 462 years

Amaleki grows old and transfers small plates to King Benjamin (Omni 1:25) (Amaleki estimated age 65), 465 years

Limhi sends out expedition to look for Zarahemla (Mosiah 8:7–9) (calculated with Caractors information), 473 years

Calendar Period of the Seven Tribes ends (calculated with Caractors information; corresponds with Nephite glyph name change), 475 years

King Benjamin waxes old (estimated age 79 years) (Mosiah 1:9), 475 years

$Mosiah_2$ takes throne (Mosiah 30 years old) (Mosiah 29:44–47; 6:4), 476 years

Jubilee Year **(determined with Caractors information),** approximately 477 years

Limhi's exploration party returns with the Twenty-Four Jaredite pure gold plates (Mosiah 21:26), 478 years

$Mosiah_2$ grants Ammon to go back to Nephi (Mosiah 7:1; Mosiah 21:28 [Original manuscript indicates Benjamin, not $Mosiah_2$, was in possession of the interpreters when Ammon left]), 479 years

King Benjamin dies (83 years old) (Mosiah 6:5) **(date also identified in Caractors text),** 479 years

Ammon finds Limhi currently king (Mosiah 7:8), 479 years

People of Limhi flee to Zarahemla with Ammon (Mosiah 21) (calculated with Caractors information), 480 years

People of $Alma_1$ subjugated (estimated at 484 years) (Mosiah 23), 484 years

People of $Alma_1$ flee to Zarahemla (estimated at 489 years) (Mosiah 24), 489 years

People of Zarahemla, $Alma_1$ and followers, and Limhites all become Nephites and then are baptized, supporting the glyph change of Nephites being called the people of Christ (estimated at 492 years) (Mosiah 25:17; 25:24), 492 years

$Mosiah_2$ dies (63 years old), $Alma_1$ dies (82 years old), and the Reign of the Kings ends, (Mosiah 29:44–47), 509 years

In evaluating whether the proposed November 8, 147 BC date for Limhi's ascending to the throne is possible within the Book of Mormon year count, using the known Lehi Departure base date, one must calculate what this date would be in years on the Book of Mormon Lehi departure to calculate the known dates of this time frame from the Book of Mormon text. November 8, 147 BC occurs at approximately 456.7 years under the Lehi Departure calendar. As shown above, using known Book of Mormon/Caractors Document dates, Zeniff is 22 years into his reign when King $Laman_2$ dies in year 442, and the next known date is year 473 when Limhi sends out the expedition to find Zarahemla. Sometime between this period Limhi became king.

November 8, 147 BC at year 456.7 does fit within a reasonable time frame between years 442 and 473. As shown above, I had previously estimated that $Noah_3$'s death and Limhi becoming king might have been around year 462, but 456.7 years works just as well with the known dates. It is notable that Limhi, assuming the Stela 10 correlation is correct, did not become king on a significant Nephite religious calendar date (full moon or New Year's Day) but instead would be consistent with the people of Limhi at that time following the pagan Maya idolatrous religious and civic practices and beginning, or at least maturing, at the time of King $Noah_3$ (Mosiah 11:6-7).

Although not related to chronology, even the most casual reader of the Book of Mormon will note the story of the wicked King $Noah_3$. Most readers would pose in their mind as to why one of the most wicked characters in the Book of Mormon would have the same name as the righteous Old Testament prophet Noah. That is especially puzzling since all or nearly all Book of Mormon names are metonymic (meaning the name describes the person or his doings). This becomes more vexing when one later

encounters a Jaredite king also named Noah, who is a rebel usurper and not described as particularly righteous.

Matthew L. Bowen (2017) has shown correlations in the Book of Mormon text of activities and attributes of the evil King Noah$_3$ that are the opposite of the Hebrew meaning of the righteous Old Testament prophet Noah, meaning "to rest" or "to comfort," but does not provide an etymological meaning of "Noah" that matches any characteristics of the evil King Noah$_3$.

So why would evil King Noah$_3$ feature the righteous name of the Old Testament prophet Noah? The simple answer is he does not. In English translations of the Bible, there are two characters named Noah, one man and one woman. In Hebrew, however, these two names are totally different, and their meanings are exact opposites.

The Noah first mentioned in Numbers 26:33 (pronounced No'ah) is one of the five daughters of Zelophehad; her sisters are named Mahlah, Hoglah, Milcah and Tirzah. The prophet Noah mentioned in the Book of Genesis (pronounced Noach, with a "ch" like Bach) is the main character of the great flood cycle, and father of Shem, Ham, and Japheth. The female Noah in the Old Testament was the great great granddaughter of Manasseh, the tribe from which Lehi derived. She, with her sisters, lived at the time of the Exodus and petitioned Moses for their deceased father Zelophehad's inheritance as he had no sons. Thus, it would be expected that her name was known to the Nephites. As a Biblical character she was not wicked, so there does not appear to be any Biblical typology of the use of her name as it applies to King Noah$_3$.

The feminine name Noah (נעה), according to BDB Theological Dictionary, comes from the verb נוע (*nua'*), meaning to shake or stagger:

> "The root-verb נוע (*nua'*) means to shake, stagger, quiver, tremble, etcetera. It's used for trees that sway in the breeze (Judges 9:9), of lips that stammer (1 Samuel 1:13), of drunks who stagger (Psalm 107:27). It's used to have beggars totter, or to toss corn about in a sieve (Amos 9:9). Rather grim is its role in Cain's curse: You shall be a vagabond נע (*n'*) and a fugitive (Genesis 4:12). God exiles Cain to the land of Nod. The name Nod is derived from a verb that is often used as a parallel to the verb *nua'*." (Abarim Publications 2022)

It is noted in the Book of Mormon that King Noah$_3$ planted vineyards and had wine presses and "became a wine-bibber, and also his people" (Mosiah 11:15). Abinadi prophesied that Noah$_3$ (and his priests) would be "driven and scattered to and fro" and "shall be hunted" (Mosiah 17:17-18). Of course, this is exactly what eventually happened to Noah$_3$ (Mosiah 19:4-5, 19). Thus, evil King Noah$_3$ is a spot-on match for the Biblical feminine name for Noah.

So, is there any precedent to use the feminine Hebrew form of Noah for a Mesoamerican king from the likely geographic location for the Book of Mormon? Yes. The surrounding pagan religion in the land of Nephi was some form of the Maya religion. Mayan iconography from the classic period shows several rulers dressed in the traditional clothing of women. It is thought that it may have been related to the bloodletting rituals. It is noted that the armies of Noah$_3$ "did delight in blood" (Mosiah 11:19).

It is also noted that King Noah$_3$ had many wives and concubines but in addition did "that which was abominable in the sight of the Lord" and committed "whoredoms and all manner of wickedness." Abinadi noted the "abominations" of Noah$_3$ and his people (Mosiah 11:20, 12:8).

Sodomy was found in Mesoamerica at the time of the conquest (although perhaps exaggerated by the Spanish), with men dressing as women on occasion. In 1512 the Spanish explorer Balboa first encountered homosexuality among the Indians at Quarequa in Panama, where an early English translation of his exploits recounts, "the most abhominal and unnaturall lechery," was practiced by "the kynges brother and many other younger men in women's apparell, smoth and effeminately decked, which by the report of such dwelte abowte hym, he abused with preposterous Venus." (Martyr 1533 [1516] 285).

Among Mayans, there was a strong association between ritual and homosexual behavior. Some shamans engaged in homosexual acts with their patients, and priests engaged in ritualized homosexual acts with their gods (Sigal 2000, 213). So given the cultural background, a feminine Hebrew name for Noah is within the realm of reason, and in fact, the name likely indicates these very characteristics for $Noah_3$.

There are a variety of practices in the Old Testament identified as “abominations,” two examples at least would be indicated in these types of practices:

> The woman shall not wear that which pertaineth unto a man, neither shall a man put on a woman's garment: for all that do so are abomination unto the LORD thy God. (Deuteronomy 22:5)
>
> Thou shalt not lie with mankind, as with womankind: it is abomination. (Leviticus 18:22)

The Chronology and Cultural Setting of Mormon’s Sermon in Moroni 7 and his Epistles in Moroni 8-9

After the demise of the Nephites, $Moroni_2$ wrote or included additional material in the Book of Mormon which constituted a portion of the book of Moroni. Chapter 7 of Moroni includes a sermon given by his father Mormon, and two epistles from Mormon to $Moroni_2$ are included as chapters 8 and 9. These chapters do not provide any dates as to when they were given or written, so the chronological point in time of their genesis can only be determined by the comparison of their content with other known events and chronologies in the Book of Mormon. Various proposals have been made as to the chronology of each by various researchers. The purpose of this research is to summarize and further analyze these prior attempts and to provide additional cultural background information, and thus determine more definitive dates.

Moroni Chapter 7 Epistle

Little has been published on the chronology of the sermon given by Mormon in Moroni 7, and the little that has been done is primarily conjecture, with the Book of Mormon Central Team and John W. Welch indicating that a reasonable time would be during the ten years of peace (Mormon 3:1) that occurred from 350 to 360 years (Welch 2020, 1161-77; BMC Team 2016a). This time frame would also place Mormon in the land northward at the time of the sermon.

Welch provides some corollary textual information regarding some elements of Mormon’s sermon echoing elements of Christ’s sermon at the temple in Bountiful (Moroni 7:5/3 Nephi 14:20; Moroni 7:6/3 Nephi 14:6; Moroni 7:10/3 Nephi 14:11; Moroni 7:18/3 Nephi 14:2; Moroni 7:26/3 Nephi 14:7, 27:29; Moroni 7:39, 43, 44/3 Nephi 12:5). However, this does not provide any clues as to the time of the preaching as scriptural information was implicitly available to Mormon at a young age as Mormon started his ministry by endeavoring to preach at the age of 15 (Mormon 1:15-16). Mormon was “about ten years of age” (Mormon 1:2) when Ammaron hid the records at 320 years (4 Nephi 1:48), thus Mormon was 15 years old at approximately year 325.

- *Notes on Mormon's preaching and to whom*

As has just been noted, Mormon 1:15-17 indicates that Mormon endeavored to preach to "this people" at year 325 but was forbidden to preach unto them. It has been assumed that "this people" referred to the Nephites, which at that time was defined by Mormon as the Nephites, Jacobites, Josephites, and the Zoramites (Mormon 1:8). It would seem from the prior verse, which refers only to "the people that were as numerous almost, as it were the sand of the sea" (Mormon 1:7), that this group of four tribes defined as Nephites may have possibly been a subset of a larger group of people.

Sometime between year 350 and 360 the Lord told Mormon to "(c)ry unto the people" asking them to repent and be baptized and "build up again my church," but it was in vain, and they just hardened their hearts to the Lord (Mormon 3:1-3). The people referred to here are "the Nephites."

- *Who was the Moroni 7 audience?*

In Moroni 7:1, $Moroni_2$ writes that his father Mormon spoke unto "the people" and that they were taught "in the synagogue which they had built for the place of worship." In Mormon's sermon, he is speaking to members of the church (Moroni 7:3). Also, a bit peculiar, Mormon refers to his listeners nine times as "beloved brethren." At least some of them were described as righteous and as "peaceable followers of Christ."

1. Synagogues as a defining parameter

In trying to determine what type of people these were (Nephites, Lamanites, others), since they are worshiping in a synagogue, it is prudent to see what groups of people utilized synagogues based on the text of the Book of Mormon.

The first mention of a synagogue is 1000 years earlier as part of a prophecy by $Nephi_1$ presumably to the future Lamanites (2 Nephi 26:26). $Alma_2$ and Amulek preached to "the people" in their synagogues (Alma 16:13), which was presumably the "people of Nephi" (Alma 16:12) and "all the people of the Nephites" (Alma 16:15). Later, $Aaron_1$ preached in the city of Jerusalem to the Amalekites in their synagogues, which had built synagogues "after the order of the Nehors" (Alma 21:4-6, 11, 16).

King Lamoni, a descendant of Ishmael, because of the teaching of Ammon, caused synagogues to be built in the land of Ishmael among the Lamanites, and caused that his people should assemble themselves in them (Alma 21:20-21). King Lamoni's father sent out a decree allowing the sons of $Mosiah_2$ authority to teach in the synagogues among the Lamanites (Alma 23:2, 26:29).

The apostate Zoramites also built synagogues (Alma 31:12-13; 32:1-3, 5, 9, 10, 12; 33:2). Nephite dissenters and their posterity who migrated to the land northward built synagogues (Helaman 3:3, 9). There is a generic statement by Mormon of the Nephites and Lamanites building temples, synagogues, and sanctuaries, but does not specifically indicate which group (or both) built synagogues (Helaman 3:14). Christ, after appearing to those who survived the destruction, taught "the people of Nephi" using reference to synagogues (3 Nephi 11:1; 13:2, 5; 18:32). There are no further references to synagogues after Christ's visit.

Thus, the groups that the text specifically indicates built and used synagogues are "the people of Nephi," "all the people of the Nephites," the Amalekites, those of the order of Nehor, the Lamanites (specifically those of Ishmael), and the apostate Zoramites. Thus, it is a distinct possibility that the people being addressed by Mormon in Moroni 7 are not Nephites or of the people of Nephi.

2. “Beloved brethren”

It may also be helpful to look at the context of the multiple uses of the term “beloved brethren” to see what, if any, unique groups were addressed in this way. It must be recognized that the use of this term over a period of 1000 years may not have continuity over time, but given that the Book of Mormon was abridged from sacred records, at least in part, there may be some continuity in terms, similar to the ancient Biblical terms we are currently familiar with in our culture. A thousand years earlier, as recorded in the small plates, Jacob spoke to “the people of Nephi” using this term (2 Nephi 6:2; 9:1, 3, 39-41, 44, 45, 52; 10:1, 18, 20, 24; 2:2; 4:11, 18; 6:5, 11). During this time period, “the people of Nephi” included everyone who had fled with $Nephi_1$ from the land of first inheritance (2 Nephi 5:9). $Nephi_1$ uses this term when speaking to the future Lamanites (2 Nephi 26:1, 23; 30:1, 18; 31:1, 6, 13, 14, 16, 19, 21; 32:1, 8, 19, 13). Also, on the small plates, Amaleki uses the term when speaking to all men (Omni 1:26).

In Mormon’s abridgment, $Alma_2$ uses the term when speaking to the people of the church in Zarahemla, the people in Gideon, the wicked people in Ammonihah, and the poor Zoramites (Alma 5:49, 50, 52; 7:1, 17, 22, 26; 32:24). Amulek also refers to the poor Zoramites in this fashion (Alma 34:28, 37 40). The Lamanite king Anti-Nephi-Lehi uses the term when speaking to his Lamanite subjects (Alma 24:12). Ammon uses it when referring to converted Lamanites, and to the other sons of $Mosiah_2$ (Alma 26:9, 26). $Moroni_1$ uses this term when addressing Pahoran and other government leaders (Alma 60:10). Samuel the Lamanite uses this term when preaching and prophesying to the people in the city of Zarahemla (Helaman 15:1). Finally, in $Moroni_2$’s own words, $Moroni_2$ uses this term addressing future readers of the Book of Mormon (Moroni 10:18, 19).

Essentially then, the use of the term “beloved brethren” is not restricted to preaching or use to a particular group of people, as it was used previously to address “the people of Nephi,” the church in Zarahemla, the people of Gideon, the poor Zoramites, the Lamanites, the people in the city of Zarahemla, government leaders, all men, and future generations. Thus, the use of this term does not indicate that the people being addressed in Moroni 7 must be Nephites.

3. The Moroni 7 audience in context of other statements by Mormon

Some of the members of the Moroni 7 audience were members of the church and peaceable followers of Christ and had a peaceable walk with the children of men (Moroni 7:3-4), and the synagogue had been constructed as a place for worship (Moroni 7:1).

a) Statements made prior to Mormon’s cessation of preaching at age fifteen

The existence of righteous church members during Mormon’s time seems to contradict statements by Mormon. Specifically, approximately 10 years before Mormon’s birth (year 310), in his abridgement he writes that “both the people of Nephi and the Lamanites had become exceedingly wicked one like unto another” and “the robbers of Gaddianton did spread over all the face of the land; and there were none that were righteous save it were the disciples of Jesus” (4 Nephi 1: 45-46). Mormon notes that at the time he was eleven years old (year 321) that there was a battle in the borders of Zarahemla between the Nephites and the Lamanites which was followed by four years of peace, but “wickedness did prevail upon the whole face of the land, insomuch that the Lord did take away his beloved disciples, and the work of miracles and of healing did cease because of the iniquity of the people. And there were no gifts from the Lord, and the Holy Ghost did not come upon any, because of their wickedness and unbelief” (Mormon 1: 6-15) after which he endeavored “to preach unto this people, but my mouth was shut, and I was forbidden that I should preach unto them” and “the beloved disciples were taken away out of the land, because of their iniquity” (Mormon 1:15-17). One interpretation of Mormon here is that he was

only speaking in generalities when speaking in absolutes. If not speaking in absolutes, it is worth considering whether Mormon's statement is more literally possible.

In evaluating whether there could have been a small body of members of the church during this time period, it is important to look at the first reference made 10 years prior to Mormon's birth (year 300). In the time period starting at year 230, the Nephites were defined by the Lamanites as the true believers in Christ and consisted of the Jacobites, the Josephites, and Zoramites, but they were still also referred to (presumably from the text by the non-Lamanites) by their individual tribal names as Nephites, Jacobites, Josephites, and Zoramites. The tribes who rejected the gospel were called by their individual tribal names at this point, namely, the Lamanites, Lemuelites, and Ishmaelites (4 Nephi 1:35-38). Then from year 230 to year 300, "the people of Nephi" became vain like the Lamanites (4 Nephi 1:43) which is then followed by this first statement that "the people of Nephi had become exceedingly wicked one like unto another" (4 Nephi 1:45). So, is there any room for a group that had any righteous people? The answer is yes, as the term Lamanites was not defined from year 230-321 as consisting of a combined group of tribes. The Lemuelites and Ishmaelites at this time were referred to independently from the Lamanite tribe. The statement in the following verse that there were "none righteous" is referring to the "face of the land" which can be reasonably interpreted as the area controlled by the Nephite polity, so the Lemuelites and Ishmaelites may still have hosted some righteous people being outside the Nephite polity. Some centuries earlier in the Book of Mormon, some of the Ishmaelites under King Lamoni and his father had embraced the gospel, so righteous people in the tribe of Ishmael at least would not be anomalous. Since Lamanites that lived in the city of Lemuel (Alma 23:12) (inferring that they were likely from the tribe of Lemuel) also became righteous at the time of King Lamoni, righteous Lemuelites also would not have been historically anomalous. A war commenced between the time Mormon was eleven and fifteen (321 to 325) where the Lamanites were then redefined as consisting of the Lamanites, Lemuelites, and Ishmaelites (Mormon 1:9).

Mormon mentions that the work of miracles and healing was taken away along with the three disciples during the time period just prior to his preaching prohibition and that "wickedness did prevail upon the face of the whole land" and that "the Holy Ghost did not come upon any because of their unbelief" (Mormon 1:13-14). Since Mormon himself was a follower and a member, this seems to indicate that there may have been in fact some followers of the gospel receiving the Holy Ghost present among the Nephite affiliated tribes, and perhaps the non-Nephite affiliated tribes, prior to the removal of the three disciples and that the Holy Ghost coming upon a person is indicative of new members via baptism.

b) Extent of Mormon's preaching prohibition

In Mormon 1:16, Mormon endeavored to "preach unto this people" but was forbidden that he "should preach unto them." The reference to "this people," consistent with the text, is in reference to the Nephites. Mormon 5:15 refers to "this people" and differentiates them from the Lamanites, so the text supports the construction that Mormon was prohibited from preaching to the Nephites but was free to preach to the Lamanites or others. This is also helpful in understanding the indirect ministering to persons by Mormon and direct ministering by $Moroni_2$ found in Moroni 8 which will be discussed later.

c) Statements made after Mormon's cessation of preaching at age fifteen

Mormon makes statements as to Nephite (or people of Nephi) wickedness after the age of fifteen, always referring to the Nephites as "my people" or "us" (Mormon 2:8 2:26, 3:1-3, 5, 9, 5:1-2). All absolutist statements made with regard to wickedness up to the final battle are made with regard to the Nephites. A statement indicating the general wickedness of the Lamanites (and Gaddiantons) is made,

but there appears to be room for the possibility that not all Lamanites were completely wicked (Mormon 1:18).

d) Cessation of Miracles

In his sermon in Moroni 7, Mormon poses the question as to whether miracles have ceased, and then answers it by saying "Nay; neither have angels ceased to appear unto the children of men" (Moroni 7:27-29; 35-37). As previously mentioned, at the age of fifteen Mormon indicated that "the work of miracles and healing did cease because of the iniquity of the people" and "there were no gifts from the Lord, and the Holy Ghost did not come upon any" (Mormon 1:13-14). From the verses previous to this, Mormon is talking about the Nephite controlling land. This statement would seem to indicate that the likely date for this sermon would have to be at the commencement of Mormon's preaching at 15 years of age; however, since the preaching prohibition seems to be limited to the Nephites, it is still possible that the Moroni 7 sermon may have been given later to a non-Nephite group of followers.

Among a series of speculative assertions regarding the Moroni 7 sermon unsupported by the text, Welch speculates that the Moroni 7 speech was given at the beginning of the 10-year period of peace (year 350) (Welch 2020, 1160-61). Because Welch is trying to resolve the discrepancy of Mormon's statement of the cessation of miracles among the Nephites with his forced later date of the sermon (or because he does not consider or has not thought of the possibility of a non-Nephite audience), Welch then provides a tortured explanation that the questions regarding miracles ceasing are simply rhetorical and that the people were arguing that the Savior was living in heaven and had distanced themselves from him. Of course, these speculations are not supported anywhere in the text, and are in fact contrary to the text. Unfortunately, these types of gyrations become necessary when underlying premises are flawed.

- *Summary of Moroni 7 observations*

There is no statement that is exclusive to all the Lamanites being wicked at all times, so the likely persons being addressed in Moroni 7 are Lamanites, with some likelihood that they were Ishmaelites or Lemuelites. The reference to "beloved brethren" is not exclusive to the Nephites. The references to synagogues are also not exclusive to Nephites; in fact, there is really no direct specific reference to Nephites using synagogues (other than apostate Zoramites). Synagogues are more specifically referenced as being among the Lamanites, or groups subject to Lamanite control.

Given this information, are there any clues in the Book of Mormon of which Lamanite group might be the group to which Mormon is preaching? Actually, a good candidate is the descendants of the people of Ammon, who were Lamanites converted by the sons of $Mosiah_2$. Mormon indicated in his abridgment that these people "were firm in the faith of Christ, even unto the end" (Alma 27:27), potentially indicating that they maintained righteousness to the end of the Nephite era at Mormon's time. They looked upon the shedding of blood with the "greatest abhorrence" "and they never could be prevailed upon to take up arms against their brethren" and never looked "upon death with any degree of terror; for their hope and views of Christ and the resurrection; therefore, death swallowed up to them by victory of Christ over it" (Alma 27:28-29). Mormon addressed at least some of the audience as being of the church and being "peaceable followers of Christ" "that have obtained a sufficient hope by which ye can enter into the rest of the Lord" (Mormon 7:3). Mormon then indicated that "I judge these things of you because of your peaceable walk with the children of men" (Mormon 7:4). Moroni 7 is the only place in the Book of Mormon where the term "peaceable" is used. The pacifist oath that was taken by the founding population of the people of Ammon was binding, but they were willing to break it to assist the Nephites in their defense (Alma 53:13; 56:7). As their sons had not taken the original oath, they were able to fight instead, but upon doing so were classified as "Nephites" (Alma 53:16). Some

twenty years later another group of Lamanites who were defeated in war entered into a non-aggression covenant and went to live with the people of Ammon (Alma 62:16). There is no mention of the nature of the people of Ammon after that, thus creating a one-hundred-year gap of information, but at least there are indications that they maintained a more pacifist, or peaceable, reputation. This comparative text of Mormon is consistent with the religious beliefs of the people of Ammon.

Moroni 8 Epistle

- *Past research on the Moroni 8 epistle chronology*

Past research on Moroni 8 chronology involves varying levels of rigor, ranging from basic commentary to an academic level review of information. All contain some level of opinion and naked speculation. This summary will discuss the portions of past research that includes actual textual or outside information and will avoid unsupported speculation.

Sidney Sperry in 1975 opines in commentary that the Moroni 8 epistle must have been late in Nephite history, sometime after Mormon reconsidered his decision not to lead the wicked Nephites in battle, sometime between year 380 and 384 (Sperry 1975, 491). No detailed analysis is provided.

In 1994 Alan C. Miner, in a more detailed academic analysis, arrives at a year 375-376 time frame for Moroni 8 (Miner 1994, 94-113). He evaluates what he characterizes as four chronological clues related to Moroni 8 and assigns the potential periods for each: (1) the time of the beginning of $Moroni_2$'s ministry (Moroni 8:1)(347-376), (2) an apparent time and distance gap since Mormon and $Moroni_2$ had been together (Moroni 8:4-5)(360-36, 375-380), (3) Mormon had devoted enough time apart from his military calling to serve in a church leadership capacity, with $Moroni_2$ being old enough to labor in the church (Moroni 8:6-7)(350-380), and (4) that Mormon's promise of writing again to $Moroni_2$ is the epistle in Moroni 9, thus it should be closely linked in time (Moroni 8:27)(375-76).

In evaluating Moroni's earliest ministry, Miner assumes that Mormon would have been unable to father Moroni except during a time of peace, so places the earliest date as 332. Miner uses a potential for $Moroni_2$'s age at first ministry to be as early as Mormon (15 years old). On the third point above however, Miner states his opinion that $Moroni_2$ would have had to be old enough to be an administrator in the Church, and that Mormon had to have devoted enough time apart from his military calling to serve in a leadership capacity in the church. Thus, the time periods which Mormon had available during which to write the Moroni 8 epistle were the fourteen years of peace (331-45), the ten-year peace treaty period (350-360), and the twelve years as an idle witness (362-75). Miner discounts the first period based on his opinion that $Moroni_2$ would have been too young if born in 332 to be old enough to labor in the Church (minimum age of 18). While Miner's opinion in this regard is not necessarily unreasonable, it is not specifically supported anywhere in the text, and is in fact a bit contradicted in the text, as $Moroni_2$ had to request help from Mormon to resolve a doctrinal disputation about child baptism that had already been clear doctrinally as a practice for many centuries (Mosiah 3:16-18). This is actually an indication that $Moroni_2$ was (exactly as $Moroni_2$ himself said) very early in his ministry. So, assuming that $Moroni_2$ was born in 332 as Miner has done at the beginning of a period of peace, he would have been 15 in 347, which was during the 344-50 time of war. On Miner's fourth point above, he ties this epistle to be not long before the second epistle (Moroni 9). This linkage is based on the preface to Moroni 9 identifying the epistle as the "second epistle of Mormon." This is a reasonable interpretation of the text, namely, that the second epistle would not be too far removed from the first, but it is also thus dependent on being consistent with the date of Moroni 9 (to be discussed later).

In 2016 Joseph M. Spencer examined the dating of Moroni 8-9 (Spencer 2016). Like Miner, he asserts that $Moroni_2$ would have been born in peacetime, the earliest being year 330. Spencer also agrees that

similar to Mormon, $Moroni_2$ could have started his ministry as a teenager, putting the earliest date for Moroni 8 at year 345. Spencer notes that Moroni 8:27 indicates that there was still some possibility for the repentance by the Nephites, so excludes the last battle period, making the latest date for Moroni 8 year 375. Spencer recognizes that Moroni 8 occurred during a time of war in which Mormon would have been engaged, thus limiting it to the periods between 344-50 or 360-362. Spencer notes that Mormon indicates that he needed to "go … out soon against" his enemies (Moroni 8:27) discussing that the 360-362 military combat was a defensive struggle, whereas the 344-50 campaign involved offensive battles to recapture cities lost in the north, thus concluding that the Moroni 8 letter was written during the 344-50 campaign.

Welch in 2020 opines, with little academic support, that Moroni 8 would have been close to the end of the ten-year peace treaty, and that $Moroni_2$ would have been 29 in year 362 (assuming a birth date of year 333).

The Moroni 8 epistle chronology

A primary clue for the dating of Moroni 8 is the first verse where $Moroni_2$ states it "was written unto me soon after my calling to the ministry" (Moroni 8:1). In prior research, Spencer indicates that, given Mormon's age of ten years at year 321, it is unlikely his son $Moroni_2$ was born earlier than 325 (age 15), and speculates that a time of peace was a better time to have a domestic life which next occurs from year 330 to 344 (Spencer 2016, 138). In any event, there is no textual evidence that indicates the date of $Moroni_2$'s birth. Mormon started, or attempted to start, in any event, his preaching ministry at age 15 after he was "visited of the Lord" (Mormon 1:15-16). It is thus theoretically feasible that $Moroni_2$ could have started his ministry at the age of 15, so the very earliest $Moroni_2$ could have started his ministry is at year 340. If one does assume $Moroni_2$ was conceived in a time of peace, the earliest time for that would have been towards the end of the year 330 after the battles of that year (Mormon 2:9). Given time for pregnancy, this would place the earliest time for $Moroni_2$ to be born at year 331.

Another important clue to help bracket the date of the epistle is Mormon indicates that he is in a period of time where battles against the Lamanites are occurring, to which Mormon might soon go out in battle (Moroni 8:27). This would eliminate the times of peace which were from years 330-344 and years 350-360. The active battle periods that could have involved Mormon (Mormon declined to fight for a period of time [see Mormon 3:11]) were 326–30, 344–50, 361–62, 375–80, and 384 years. As $Moroni_2$ had not born or was very young in 326-30 this period can be eliminated. So, the remaining time periods possible for this epistle are 344-50, 361-62, 375-80, and 384. Since $Moroni_2$ was with Mormon in the last battle of 384, that year can be eliminated. This leaves only 3 possibilities 344-50, 361-62, and 375-80.

- *The Moroni 8 epistle audience*

Although the Moroni 8 epistle was written to $Moroni_2$ from Mormon, it was ultimately referencing and directed to a broader group to which $Moroni_2$ was ministering to or ministering with. Mormon references disputations that arose "among you" and the baptism of "your children" (Moroni 8:4-6). Mormon was responding to a request from, or at least responding to, information provided to him from $Moroni_2$. The topic was concerning the baptism of children.

The most specific instruction is given to non-members, in that it is directed to parents that have not yet been baptized and their children (Moroni 8:10-11). Thus, these non-member parents had a belief in baptism of children (erroneous though it was) prior to the teaching and conversion that was to be provided by $Moroni_2$. This is consistent with the persons ministered to being of a Lamanite culture. The much earlier syncretic King $Noah_3$ religion and the order of Nehor religion, all related to the Lamanites, have been shown to correlate well with the native Maya belief system (Grover 2017). Brant Gardner

and Matthew Roper have noted that the Maya practice of baptism correlates with the Book of Mormon reference (Gardner 2007, 386; Roper 1992, 2-3). Not long after the Spanish conquest, Diego de Landa described a Maya practice that he called baptism:

> "Baptism is not found anywhere in the Indies save here in Yucatan, and even with a word meaning to be born anew or a second time, the same as the Latin word *renascer*. Thus, in the language of Yucatan *sihil* means 'to be born anew," or a second time, but only however in composition; thus *caput-sihil* means to be reborn. Its origin we have been unable to learn, but it is something they have always used and for which they have had such devotion that no one fails to receive it; they had such reverence for it that those guilty of sins, or who knew they were about to sin, were obliged to confess to the priest, in order to receive it; and they had such faith in it that in no manner did they ever take it a second time. They believed that in receiving it they acquired a predisposition to good conduct and habits, protection against being harmed by the devils in their earthly affairs, and that through it and living a good life they would attain a beatitude hereafter which, like that of Mahomet, consisted in eating and drinking.
>
> Their custom of preparing for baptism was as follows: the Indian women raised the children to the age of three, placing for the boys a small white plaquet, fastened to the head in the hair of the tonsure; the girls wore a thin cord tied very low about the waist, to which was attached a small shell over the private parts; to remove these two things was regarded among them as a sin and disgraceful, until the time of the baptism, which was given between the ages of three and twelve; until this ceremony was received they did not marry.
>
> Whenever one desired to have his child baptised, he went to the priest and made his wish known to him, who then published this in the town, with the day chosen, which they took care should be of good omen." (de Landa, 1566, 42-45)

Prior to the Maya baptism, confession to a priest was required, and it was only performed once in a lifetime. De Landa also noted that baptism was a rite of passage in the sense that those that had not received it could not marry. According to de Landa, the Maya believe that through it they "acquired a predisposition to conduct and habits" and "protection against being harmed by the devils in their earthly affairs" and that if they lived a good life they would "attain a beatitude hereafter." It is indeed interesting that Mormon refers only to the baptism of "little children" and does so many times and consistently (Moroni 8:5, 8, 9, 10, 11, 12, 13, 17, 19, 20, 22). The word "infant" is used elsewhere in Mormon's abridgement (Mosiah 3:18) so was known to Mormon and in the reformed Egyptian but is not used here by Mormon. The Maya practice of baptism is not performed on children under three years of age, so this is consistent with Mormon's terminology.

In addition, it is clear that Mormon is very strong and forceful in repudiating this practice, so it is apparent that it is not simply some single individual's idea of changing a Nephite religious practice. Mormon indicated it grieved him "exceedingly" (Moroni 8:4), that it was a "gross error" (Moroni 8:6), that it was a "mockery before God" (Moroni 8:9), that those that believed in the practice were "in the gall of bitterness," "the bonds of iniquity" and should be "cut off" and "must go down to hell," it being "awful" wickedness" (Moroni 8:14-15). He refers to "them" in the plural that "pervert the ways of the Lord after this manner" (Moroni 8:16). He further states that those who believe in the practice "are in danger of death, hell, and endless torment" (Moroni 8:21).

This is clearly not a situation of the practice of a few wayward members; this is addressing the incorrect doctrine of the practice of a large group of people, and more specifically, the practice of a competing

indigenous religion. One might wonder, aside from a traditional practice, why "disputations" would even arise on the subject. But given the other benefit believed to be provided by a Maya baptism, namely the protection from harm by devils, one can see why a superstitious potential convert might have some objection to waiting until an older age for baptism. In addition, the traditional belief being that baptism occurs only once, it would follow that some converts would have resisted a convert baptism based on their belief that their child had already received a Maya baptism which had many of the same elements anyway (a confession of sin, a rebirth, a change in the predisposition to do good, and a promise if they lived well they would receive a blessing in the hereafter).

Also of interest is the revelation to Mormon following his inquiry about the disputation of the baptism of little children which also states, "and the law of circumcision is done away in me (Christ)" (Moroni 8:8). This is an interesting comment given that the law of Moses had not been practiced amongst the Nephites for over 300 years, so is also indicative that this issue may have continued in some apostate form among a non-Nephite population or been an independent religious practice similar to circumcision. At the time of the conquest, de Landa noted that the practice of cutting away of a part of the foreskin by the Maya as part of their overall bloodletting and self-mutilation rituals had led one historian to say that the Maya practiced circumcision. De Landa noted that the bloodletting of the male genitalia involved "their sons of a tender age" (de Landa 1566, 47-48). It is important to note the current Jewish practice of circumcision to expose the full glans of the penis was started in approximately 140 AD. The previous procedure was less severe and would be more akin to the Mesoamerican practice (Hirsch et al 1906, V. 4, pg. 92). Similar to the Maya circumcision practice involving bloodletting, the Hebrew ceremony of circumcision also involved "the shedding of the blood of the Covenant" (Asher 1873, 37).

For Maya royal families the evidence of this first bloodletting or *yax ch'ab* seems to have occurred as a rite of passage at the time of puberty (Houston 2006, 145). This practice, based on geographic analysis of hieroglyphic texts, shows it was practiced among the portion of the Maya that are adjacent to the Nephite polity based on the current Book of Mormon geographic models. The practice of bloodletting was not limited to the priestly or royal class but is indicated to have been practiced among most social classes in Mesoamerica (Munson et al 2014).

Without commenting on any Maya connection, Brant Gardner indicated that the mention of circumcision is indicative of infant baptism since circumcision is to occur within the eighth day after birth according to the Bible (Gardner 2007, 289). However, this is the only reference to circumcision in the Book of Mormon. In addition, current Biblical scholarship indicates that the migration to a standardized circumcision on the eighth day after birth (Genesis 17:12; Leviticus 12:3) was added to the Bible text. Older and independent biblical sources imply that the rite was performed at a later age, and that it had an early association with the secular rite of marriage (Exodus 4:24-26; Genesis 34; 1 Samuel 18:17-27; Joshua 5:2-9) (Propp 1987, 355-370). In addition, the law of Moses that the Nephites were practicing was contained in the brass plates, so that version of the pertinent scriptural record available to Lehi related to circumcision would be expected to be some significant period of time prior to Lehi. It is notable the Maya practice of baptism is a rite of passage to marriage as is the ancient practice of biblical circumcision, in conjunction with the fact that Maya bloodletting involving some element of a circumcision-like event was also a rite of passage to puberty.

So, like the audience in the Moroni 7 epistle, the intended Moroni 8 audience is indicated to be non-Nephite, with specific indications of Lamanite descent and culture. The descendants of the people of Ammon are a good textual match for the audience and intended audience in Moroni 7 and 8 for those that are affiliated with the church. The people of Ammon, from a geographical standpoint, ended up in the land of Melek (Alma 35:13) on the west side of the Nephite polity (Alma 8:3) with some later

migrating to the land northward (Helaman 3:12). Thus, the text would indicate that the descendants of the people of Ammon were present both in the land southward and land northward, so could have been available to be preached to anytime during Mormon's lifetime.

With regard to Lamanites that are being addressed in either the Moroni 7 or 8 epistles, who were not affiliated with the church, the question does arise as to how they may have incorporated the corrupted practice of baptism and the continued practice of some form of circumcision. While independent development of these types of practices by indigenous Mesoamerican populations could not be ruled out, the more likely source is apostate Nephites that are periodically found among the Lamanites from prior to the visit of Christ. It is also possible that the founding group led by $Laman_1$ and Lemuel maintained these practices, as the original schism with $Nephi_1$ and his followers did not mention anything to do with objections to traditional religious practices but was primarily an attempt to gain power. In that scenario, it would be likely that for a generation or two after separation they continued to practice the law of Moses, but with the passage of time, lacking the brass plates, and intermixing with local indigenous religions, the practices would be expected to be corrupted to some extent. While baptism is not specifically mentioned in the pre-Lehite Bible to the extent we have it, it may have been included in some form in the brass plates as the parallel verse to Isaiah 48:1 in the Book of Mormon includes baptism (1 Nephi 20:1). In any event, it was known and mentioned in the Book of Mormon prior to the Nephite/Lamanite split (1 Nephi 10:9-10, 20:1).

- *Summary of Moroni 8 epistle observations*

As far as the chronology of Moroni 8, Spencer's analysis is based on the actual text and imposes little personal speculation and concludes the epistle to be between year 344-50. Miner's analysis imposes the speculation that $Moroni_2$ must have been a seasoned administrator of the church at the time. Miner does establish an element that Spencer also acknowledges as a preferred interpretation, and that is the likelihood that the Moroni 8 epistle is probably fairly close in time to the second epistle in Moroni 9. The ultimate audience of the Moroni 8 epistle reflects a non-member group that is practicing the baptism of little children, thus indicating that $Moroni_2$ was likely ministering to a Lamanite culture group at that particular point in time which correlates with the Maya culture.

Moroni 9 Epistle

Chapter 9 of Moroni is an epistle from his father, Mormon, written in the midst of war between the Nephites and the Lamanites. The epistle reports that the Lamanites were victorious in battle, or at least held the Nephites to a draw, and that a number of leading Nephites have been slain. Mormon fears that the Lamanites will utterly destroy his people, and he recounts the atrocities of ongoing war against the Nephites. Despite the details given in the account, prior attempts to chronologically place this epistle from Mormon have been problematic. Robert F. Smith (2010 126) indicates a year 366 date, Spencer (2016) concluded that 375–80 was the likely timeframe, Miner (1994) similarly concluded it was 375–76, and Welch (2020 1040, 1059) gives a somewhat schizophrenic conclusion of both a 367 (perhaps a typo?) and a 375-376 date but seems to primarily be agreeing with Miner.

- *Writing tense of Mormon in Moroni 9*

Critical to the correlation of events and descriptions contained in Mormon's epistle in Moroni 9 is determining if Mormon is describing events current or immediately prior to his writing of the epistle. The determination of the currency of events being current to the text is readily apparent from the narrative text. The specific event, time, and the determinative text are as follows:

Ref	Time	Text	Event Summary
9:1	Present	I write, I am	writing the epistle, statement that he is alive
9:2	Near Past	have had	a sore battle in which we did not conquer
	Near Past	has fallen	Archeantus, Luram and Emron fallen by the sword
	Near Past	have lost	lost a great number of men
9:3	Present	I fear	the Lamanites will destroy this people
	Present	do not repent	the people do not repent
	Present	stirreth up	Satan stirs the people up to continuous anger one with another
9:4	Present	am laboring	laboring with the people
	Near Past	I speak	speak the word of God with sharpness
	Present;		
	Near Past	tremble, anger	the people tremble and anger against Mormon
	Present;		
	Near Past		
	Present;	I use	when Mormon do not use sharpness they harden their hearts
	Present	I fear	the Spirit of the Lord has ceased striving with the people
9:5	Present	anger, fear, lost	the people anger, no fear of death, lost love, thirst after blood
9:6	Present	work	Mormon invites $Moroni_2$ to work continuously
9:7	Present	I write	writes about the suffering of the people
	Near past	have received	knowledge received from Amoron
	Present;		
	Near Past	have, took	Lamanites took prisoners and currently have them
9:8	Near Past	have slain	killed husbands and fathers
	Present	feed	feeding the flesh of the men to the wives and children
	Present	give	give only a little water to the prisoners
9:9	Present	doth exceed	abomination of the Nephites is worse than the Lamanites
	Near Past	have taken	daughters of Lamanites taken prisoner
	Near Past	depriving	daughters deprived of chastity and virtue
9:10	Near Past	did murder	murdered the daughters
	Near Past	torturing	after raping, and prior to murder, they did torture them
	Present;		
	Near Past	devour, do it	after death they devour flesh as a token of bravery
9:11	Present	are	people are without civilization
9:13	Present	delight	people delight in abomination
9:15	Present	cries	Mormon's heart cries
9:16	Present	are	women and daughters remain in Sherrizah
	Near Past	carry away	the Lamanites had carried away provisions
	Near Past	carried away	after the Lamanites, Zenephi army carried away provisions
	Near Past	left	Zenephi army left the women and daughters to wander
	Present;		
	Near Past	do faint	old women faint and die by the way
9:17	Present	is	Mormon's army is weak
	Present	are	armies of the Lamanites are between him and Sherrizah
	Near Past	have fled	those who fled to $Aaron_3$ have fallen victims
9:18	Present	are without	the people are without order and mercy
	Present	cannot	Mormon cannot any longer enforce his commands
9:19	Near Past	become strong	Mormon's people strong in their perversion
	Present;		

	Present	are	brutal, sparing none
	Present	delight	delight in everything save that which is good
	Present	doth exceed	the suffering of women and children is great
9:20	Present	knowest, are	$Moroni_2$ knows of the wickedness of the people
9:22-3	Future	witness	witness the return to righteousness or to destruction
	Future	must perish	the people will perish unless they repent
9:24	Near Past	have deserted	some Nephites have deserted
	Future	will desert	many more will desert over
	Present	write	instructions to $Moroni_2$ to write somewhat a few things
	Future	may see	Mormon is hopeful that he will see $Moroni_2$ again
	Future	would deliver	Mormon will deliver sacred records to $Moroni_2$

These correlations are important for evaluating the battle periods where Mormon was actively participating. Based on Spencer's and Miner's analyses, the active battle periods that could potentially have involved Mormon (Mormon declined to fight for a period of time [see Mormon 3:11]) were years 326–30, 344–50, 361–62, 375–79, and 380-84. Since Mormon was writing to his son $Moroni_2$, and since Mormon was born in year 310 or 311 after Christ's birth, the 326–30-year timeframe can be ruled out; Mormon would have been only sixteen to twenty years old during that time, and $Moroni_2$ would have either not been born or been too young to write to.

- *"We" and "us" as indicators of Mormon's involvement in battle*

Mormon reengaged as Nephite commander sometime during years 375-379. During this period, just using the order of the text, it indicates that in year 375 the Lamanites came down against "the Nephites" with numbers so large they could not be counted and came down against the city of Desolation where there was a "sore battle" which the Nephites lost (Mormon 4:16-19). The Nephites fled before the Lamanites to the city of Boaz and stood successfully against the Lamanites on the first attack, but fell on the second attack, where the Nephites were driven and slaughtered, and their women and children were sacrificed to idols (Mormon 4:20-21). The Nephites then fled before the Lamanites, taking all the inhabitants of villages and towns with them (Mormon 4:22). It is at this point that Mormon went to the hill Shim and retrieved all the records which Ammaron had hid (Mormon 4:23). From 375 up until this point Mormon referred to the Nephite military as "the Nephites" (Mormon 4:17, 18, 19, 21, 22) or "they" (Mormon 4:20, 21 ("their"), 22 ("them")).

It is at this point in the text that Mormon indicates that he "did go forth among the Nephites and did repent of the oath" he had made to not assist "them," and they then gave him command again of their armies (Mormon 5:1). After that, Mormon shifts his reference point from "them" to "us" and notes that the Lamanites "did come against **us**" "as **we** had fled" to the city of Jordan, but the Lamanites were "driven back" and did not take the city (Mormon 5:3). Then Mormon indicates that the Lamanites came "against **us** again, and **we** did maintain the city" and then he notes that other cities were maintained by "the Nephites" so that they (the Lamanites) could not get into the country which lay before **us**" (Mormon 5:4). Mormon states that "whatsoever lands **we** had passed by … were burned with fire" (Mormon 5:5) and then the year 379 passed away (emphasis added).

Note that after reengaging, Mormon uses the words "us" and "we" where he is personally engaged in the fighting. He uses "the Nephites" when it involves forces that are not part of his army or battle group. He continues to consistently use the word "us" and "we" after year 379 (Mormon 5:6, 7; 6:1, 2, 4, 6, 8, 11, 12) all the way through the final battle in 384. Thus, it is very clear that Mormon did not participate in the military actions that took place in the early part of years 375-379, namely "the sore

battle" at Desolation and all military actions prior to the aftermath of the fall of Boaz. He did participate in all the battles after that up through the final Nephite destruction.

In looking at an earlier period of conflict, in the period of time where Mormon is not involved because of his oath (starting just prior to year 363 through 375), Mormon never used the term "we" or "us" but referred to the Nephite military as "the Nephites" (Mormon 4:1, 8, 9, 10, 11, 13, 15, 16) or "the armies of the Nephites" (Mormon 4:2, 4) or "they" (Mormon 4:2, 4, 8, 10, 11, 15). In the period 360-363 where Mormon was engaged as the military commander during times of conflict, he uses the words "us" (Mormon 3:4, 7) or "we" (Mormon 3:6, 7, 8) or "my people" (Mormon 3:5, 9). At the point where Mormon refuses to be a commander and leader at the end of this period, he shifts again and refers to the Nephites as "they" (Mormon 3:12 ("them"), 13 ("them"), 14, 14 ("their")).

During the 344–50 period of military conflict in which Mormon was involved, interestingly, Mormon refers to "the Nephites" (Mormon 2:16) and "they" (Mormon 2:16), thus indicating a separate battle group. Then Mormon refers to his battle group (at least the point in time where he joined it) involving "the people of Nephi" (Mormon 2:20) as "we" (Mormon 2:20, 21, 25, 26, 27) and "us" (Mormon 2:22, 26) or "my people" or "our people" (Mormon 2:21, 23). "They" or "them" are only used after referencing them as "my people" or "our people" (Mormon 2:23, 24).

Although not under consideration here as a candidate time frame for the Moroni 9 epistle, in the earliest military period of years 326–30 where Mormon participated, he again refers to the Nephite armies that he was leading as "us" (Mormon 2:3, 4, 6, 9) and "we" (Mormon 2:4, 6, 7) or "my armies" (Mormon 2:3) or "ourselves" (Mormon 2:4). "They" or "them" are only used after referencing them as "my armies" (Mormon 2:3). Prior to Mormon being involved militarily, during a short period of military conflict, Mormon refers to "the Nephites" (Mormon 1:8, 11) and "they" or "them" (Mormon 1:10, 11).

In evaluation of the text of Moroni 9 using these parameters, it must be first recognized that Moroni 9 is not an abridged narrative as is Mormon's book. It is a personal letter to his son. As a result, Mormon sometimes uses "us" (Moroni 9:6) and "we" (Moroni 9:6, 14) in referring to himself and $Moroni_2$. The epistle discusses different groups including the people in general, wicked Nephites in Morianton, prisoners, women and children who have been abandoned to starve, so naturally uses "they" and "them" as they are not groups of which he is a part of at the time. This is also a critical rule when analyzing the text of Moroni 9 to distinguish a battle group that he is not personally involved in. In the few verses where he does talk about his military position, he uses the term "the army which is with me" (Moroni 9:17) and refers to a separate army (presumably Nephite), as the "army of Zenephi" (Moroni 9:16). Thus, Mormon is still consistent in identifying his affiliation with a particular battle group.

Mormon is absolutely and completely consistent throughout his book in the use of terms such as "us" and "we" or "my people" or "my armies" or similar when referring to the military groups he is personally involved in. Those he is not personally a part of are consistently referred to as "the Nephites" or "they" or "them." This is an important distinction, since one of the techniques to try to determine the chronological position of the Moroni 9 epistle is to compare the events and descriptions there with the description that Mormon provides in his abridged book. It is clear from the above analysis that the events that Mormon is describing in this epistle are either currently occurring, or have just happened, and Mormon is currently engaged in Moroni 9 as an active military leader. Thus, assertions of Moroni 9 to time periods of Mormon's abridgement that do not occur when Mormon is a military leader must be rejected.

- *Interpreting "Records" as the Large Plates of Nephi*

One item that also is important to address in this epistle is the reference by Mormon in the epistle of "sacred records" that he was going to "deliver up" if the Nephites are not overrun and he and $Moroni_2$ are spared (Moroni 9:24). Spencer's conclusion of a date for Moroni 9 relies almost exclusively on Mormon's indication that he had sacred records to deliver to $Moroni_2$, and Spencer assumes that these records were the full set of Nephite records retrieved by Mormon in or just prior to the year 379. However, there is nothing in the epistle itself that indicates that the records referred to in the epistle were the full set of Nephite records. Mormon obtained the large plates of Nephi when he was twenty-four years old (Mormon 1:3), in approximately year 335. The text indicates that Mormon was afraid he would be killed and needed to pass on the sacred records he was keeping and continue to write the Nephite history (Moroni 9:24). This fact is more consistent with the 344–50 years, not the later years.

Mormon's reference to "records" in Moroni 9:24 likely refers to the large plates of Nephi because throughout the Book of Mormon, the large plates are consistently referred to as "records" (see Words of Mormon 1:10; Mosiah 1:6, 28:20; and 3 Nephi 23:8). Regarding the 3 Nephi 23:8 example, although the text does not specifically mention the large plates, the term "records" seems to clearly refer to the large plates. In the prior verse, Christ asks $Nephi_3$ to bring out his own individual record (3 Nephi 23:7). $Nephi_3$ then brings out the "records" and is instructed by Christ to make a correction about an event that would have occurred during the timeframe of the record of Helaman's sons, indicating that the "records" referred to here are the large plates, again consistent with the pattern of the large plates being referred to in the plural as "records."

An exception appears on the Book of Mormon title page in the phrase "record of the people of Nephi," in which the singular "record" seems to refer to the large plates. This exception is curious, but it is consistent with the usage of "record of the people," a phrase that appears to be an acceptable substitute for the large plates of Nephi and its standard reference of "records." For example, 3 Nephi 1:3 reads, "Then he departed out of the land, and whither he went, no man knoweth; and his son Nephi did keep the records in his stead, yea, the record of this people." The Printer's Manuscript shows that the phrase in this verse should be read as "record in his stead," so the "record of the people" and its description maintains a singular reference (Skousen 2014a 3178-80). Jarom 1:14 refers to the "records of our wars" that are on the large plates but does not refer to the large plates themselves.

- *Correlations indicating Moroni 9 was written in the year 344-50 time frame*

The only other prior research (other than the author's) that concluded that the Moroni 9 epistle was in the 344-50 time frame was Richard Hauck who concluded that the epistle was written before the battle for Shem in 346 (Hauck 1988, 90). His was not based on an exhaustive analysis, but first because the Lamanite King $Aaron_3$ is mentioned prior to this time frame (Mormon 2:9) and in the epistle (Moroni 9:17), and second, because it was at Jashon, a place in the battle sequence (Mormon 2:17) that Mormon had access to the sacred records mentioned in the epistle. These and other correlations between the 344-50 time frame will now be discussed in their order of appearance in the epistle followed by is correlation in Mormon's abridgment for the 344-50 time frame. A verse by verse comparison between the epistle and Mormon's abridgment show very clearly that they are referring to the same chronological period.

Initially, Moroni 9 appears to be the next epistle that Mormon writes shortly after Moroni 8. Moroni 9 is identified as the "second epistle." In addition, Moroni 8 indicates that Mormon is going to write to Moroni again or shall meet him again (Mormon 8:27, 30). It also indicates the likelihood of an imminent battle against the Lamanites (Moroni 8:27). The very first statement in the second epistle states "I write

you again that ye may know that I am alive "(Moroni 9:1) and is thus completely textually consistent with Moroni 9 being a consecutive follow-up epistle to Moroni 8 based on the imminent Lamanite battle mentioned at the end of the first epistle. Also consistent is that at the end of the second epistle, Mormon indicates that he continues to desire to meet with $Moroni_2$ (Moroni 9:24). This is consistent with the statement in the first epistle that he would either write to $Moroni_2$ (if he did not have to go out to battle soon) or meet up with him. So, he ended up writing to him (the second epistle) but still needed to meet up with him in person as expressed at the end of the second epistle. The reality was that Mormon actually did end up having to go out to battle soon and so states at the beginning of the second epistle as he just had a sore battle with the Lamanites (Moroni 9:2). The close-in-time chronological tie between the end of the first epistle and the beginning of the second epistle is textually integrated and is clear and consistent.

In Moroni 9:1-2 Mormon indicates that he is "yet alive" and that he has "had a sore battle" where "we did not conquer" and that he "lost a great number of men." In his abridgment Mormon starts the description of the year 345 time frame indicating that the Nephites were fleeing "before the Lamanites" (Mormon 2:15), so it seems clear that a battle of some sort had been engaged in just prior to this event. In the preceding verse (v. 14) in 344, Mormon indicates that he "saw thousands of them (Nephites) hewn down in open rebellion against their God and heaped up as dung upon the face of the land," implying that he had a military engagement that did not go well. It seems as if this military engagement actually commenced in year 344. It is possible that this description could be of an internal Nephite conflict between religious groups but a conflict with the Lamanites is also possible. It is noteworthy that Mormon identifies the battles and number of soldiers where he is personally involved and is successful, but does not provide particulars of the ones he loses, except for the final battle in 384. The 344 battle is likely one of those.

It is important to note, as has already been established, that Mormon was personally involved in the battle as mentioned in the epistle, so it cannot be a battle during the time he took an oath not to fight. Miner acknowledges that the epistle requires that Mormon be personally involved in the battle (Miner 1994, 101) and acknowledges that this condition is satisfied in the 344-50 battles. The term "sore battle" is not used in 344-50. Miner makes a point that the term "sore battle" is used in the 363-64 battles, but this was a period that Mormon had refused to fight. The term is again used early in the 375-380 period (Mormon 4:18) but was also prior to Mormon lifting his prohibition. Miner tries to stretch this very definitive limitation by arguing that Mormon might be describing the battle as his own, even though he did not participate, but is describing his difficulties as a new leader (Miner 1994, 102). This interpretation does not square at all with the text, as Mormon described himself as "yet alive" so he was clearly at risk of death and is completely consistent with his discussion at the end of the epistle that he was not sure if he would survive much longer.

It is also important that Mormon notes that he did not "conquer." While not absolutely definitive, it does indicate that it was not a purely defensive battle. The initial 344 battle has the possibility of starting out as an offensive venture before they "did begin to flee." All of the other military time periods where Mormon was involved (363-66, 379-84) the Nephites were only involved in defensive battles as they were continuing to be driven back.

In Moroni 9:3, Mormon indicates he fears that the "Lamanites shall destroy this people," and notes that they "do not repent" and states that the Nephites are continually stirred up to anger with each other just prior to the 344-50 campaign. Mormon states that their "sorrowing was not unto repentance" and "they did not come unto Jesus with broken hearts and contrite spirits" (Mormon 2:13-14). During the 344-50 battle period Mormon notes that at the city of Shem he was attempting to save the people

"from destruction" (Mormon 2:21). He also notes during the 344-50 time period that they did not repent (Mormon 2:13).

In Moroni 9:4 Mormon indicates he is laboring continually with the people, and when he speaks the word of God with sharpness they tremble and become angry. When he does not speak the word of God they harden their hearts. He further states that he fears "lest the Spirit of the Lord hath ceased striving with them." During the 344-50 period at the battle of Shem, Mormon indicates that he had to speak with "great energy" and even then, his words only aroused "them somewhat to vigor" (Mormon 2:23-24). Prior to year 349 Mormon states that "we were left to ourselves, that the Spirit of the Lord did not abide in us" (Mormon 2:26).

In Moroni 9:5, it indicates that the Nephite people have such exceeding anger that "they have no fear of death" and have no love for each other and "thirst after blood and revenge continually." During the 344-350 time frame, they are in "open rebellion against their God" (Mormon 2:15) and they "curse God, and wish to die" (Mormon 2:14). The wickedness of the Nephite people is mentioned in Mormon 2:18, 19, and 27.

In Moroni 9:6, Mormon speaks to $Moroni_2$ indicating that despite the hardness of the people that he and $Moroni_2$ must continue to "labor diligently" "to conquer the enemy of all righteousness" and then "rest our souls in the kingdom of God." During the 344-50 time frame Mormon laments about the wickedness, but indicates "nevertheless, I know that I will be lifted up at the last day" (Mormon 2:19). The situation in Moroni 9 is indicative that Mormon and $Moroni_2$ are to continue to work, not in a military context, but to try to sway the people to righteousness. Such is clearly not the case during the last battle period from 375-384 as Mormon indicated that the people were without hope, and he knew the judgments of the Lord were already going to happen (Mormon 5:2).

Moroni 9:7-11 discusses the atrocities of the Lamanites towards Nephite widows and their children, forcing them to eat the flesh of their husbands and fathers, which was not as bad as the Nephites, which took prisoner the Lamanite daughters and raped them, tortured, and murdered them, and then ate their flesh. Mormon does not state that there was any sacrifice to idols by the Nephites going on here as was mentioned in the later time frame of Mormon 4:14 with the Lamanites. In Moroni 9:13 he refers to these atrocities and that the Nephites "whose delight is in so much abomination," and in 9:15 again refers to "abominations." Mormon says in Moroni 9:19 that "tongue cannot tell, neither can it be written" regarding the suffering of our women and children. During the 344-50 time frame Mormon states that on the large plates he made "a full account of all the wickedness and abominations" but did "forbear to make a full account of their wickedness and abominations" (Mormon 2:18) and he sorrowed for his people because of "their abominations" (Mormon 2:27). Abominations by the Nephites are not referred to during the other later battle periods, except where Mormon resigns his position after year 362.

Moroni 9:7 indicates that the Lamanites had taken many prisoners. The 344-50 time frame does not mention prisoners but does not preclude them either. The taking of Nephite prisoners by the Lamanites definitely does not seem consistent with the final battle period as the Lamanites were practicing genocide—they were not taking any prisoners or leaving any survivors as mentioned in Moroni 9. For example, the Nephites whose "flight did not exceed the Lamanites' were swept down and destroyed" (Mormon 5:7).

As discussed earlier, the year 361–62 battles were all defensive battles at or near the city of Desolation, which was not in Lamanite territory. The battles after the year 375 were all completely defensive battles in Nephite territory (Mormon 4:16–18). The only battle period that could have involved fighting in

Lamanite-held territories and taking Lamanite civilians prisoner is 344–50 and is thus the timeframe of the Moroni 9 epistle.

In Moroni 9:12, Mormon laments that "only a few years have passed away and they (Nephites) were a civil and delightsome people." Based on 4 Nephi 1:40, it would appear that the latest that some portion of the people may have been described that way was prior to year 300. If the epistle was written in years 344-50 it would seem more consistent with 45 years passing versus 75 years passing with the late battle period of 375-350.

The recounting of the military groups in Moroni 9:16-17 indicates that there were at least two battlefronts, one led by Mormon, the other by Zenephi. At the age of sixteen Mormon was appointed as the leader of the Nephite armies (plural). In the 344-50 battle period Mormon indicates that "the Nephites" were pursued to the land of Jashon, where for whatever reason, "it was possible to stop them in their retreat." The city of Jashon was near the hill Shim, which was not too far from the hill Cumorah, so well into the land northward. In a separate battle sequence, "the people of Nephi" were pushed northward to a land called Shem, where "we" (including Mormon) fortified the city of Shem with Mormon and his "army" of thirty thousand (Mormon 2:25). The Moroni 9 epistle refers to a separate Nephite army commanded by Zenephi which plundered provisions from their own people, leaving people to starve. Clearly Mormon was not commanding Zenephi to plunder his own people, so it is indicative of two separate battlefronts, and the text also indicates that Mormon and his army could not help the starving Nephites as the Lamanite armies were between him and the unfortunate Nephite women and children. In the 375-384 period, there is no indication of two separate battlefronts. However, in the 344-50 time frame this dual battlefront can be derived from the text. While Mormon at sixteen was technically put in charge of all the Nephite "armies" (Mormon 2:1), he was only personally fighting with one particular army during this time period (Mormon 2:9, 25). At the battle of Shem, he is fighting with one army and the Lamanites were fighting with one army (Mormon 2:25). It seems as though the other Nephite armies were engaged elsewhere. After Mormon defeats the Lamanites after the battle of Shem, the Lamanites were pursued by multiple Nephite armies (Mormon 2:26), which would make sense since Zenephi had apparently already defeated the Lamanites he was battling on his battlefront and would have been available as well to pursue the Lamanite army fleeing from Shem. Some of the implications of the geography of dual battlefronts will be discussed later.

Moroni 9:17 indicates that there are armies of Lamanites that are between his army and Sherrizah, with the individual Lamanite army of $Aaron_3$ exhibiting particularly "awful brutality." Fifteen years prior to the 344-50 time frame, Mormon had had an encounter with a Lamanite king named $Aaron_3$ who had "an army" of 44,000, whom Mormon defeated with an army of 42,000. The "king of the Lamanites" is mentioned in Mormon 3:4 in year 360 as sending an epistle to Mormon announcing the recommencement of hostilities, and again prior to year 384 where there was an exchange of epistles with Mormon agreeing to the final battle location (Mormon 6:2-3). The reference to $Aaron_3$ places the Moroni 9 epistle closer to the 344-50 time frame. Mormon does not specifically identify by name any Lamanite king other than $Aaron_3$ later in the text. The indication is that $Aaron_3$ is a Lamanite king through the end of the Nephite final battles. Miner acknowledges that the reference to $Aaron_3$ could have been referring to the 344-50 battle time period (Miner 1994, 107). The text indicates that $Aaron_3$ was simply "a king" in 330 but was then referred to as "the king" in 360, 380, and 384, indicating an ascendancy from minor king to the primary king in power. He thus was likely of a similar age to Mormon in order to be the king for at least 54 years, so $Aaron_3$ appears to be young (under 20) when he became king.

Also, in Moroni 9:17 Mormon says that "the army that is with me is weak." During the 344-50 time frame in year 346 at the battle of Shem, Mormon had to urge his army with "great energy" to stand boldly and fight for their homes, women and children, and then said he did "arouse them somewhat to vigor" such that they did not flee from the Lamanites (Mormon 2:23-24). Consistent with this description, Mormon indicated in Moroni 9:18 that he only had the strength of a man just prior to the battle of Shem and could not anymore enforce his commands.

In Moroni 9:20-21, Mormon laments about the wickedness of the people that "they are without principle, and past feeling" and he cannot "recommend them unto God." At the beginning of the 344-50 battle time frame Mormon states about the people "that the day of grace was passed with them, both temporally and spiritually" (Mormon 2:15).

In Moroni 9:22 Mormon still held out some hope of repentance for the Nephites "to witness the return of his people unto him." Not long after the 344-50 battle period the Lord told Mormon to "(c)ry unto this people – (r)epent ye and come unto me … and ye shall be spared" (Mormon 3:2). This is completely unlike the final battle period (375-384) where Mormon stated, "I was without hope, for I knew the judgments of the Lord which should come upon them, for they repented not of their iniquities" (Mormon 5:2).

Moroni 9:24 mentions the desertion of Nephites. The 344-50 battles do not mention any desertions but does not preclude them either. The verse also makes reference to "sacred records" that Mormon possessed. In the middle of the narrative of the 344-50 time frame Mormon mentions that he had gone and taken the plates of Nephi from the location where Amaron had hidden them (Mormon 2:17). The text does not indicate that he got the plates during the 344-50 time period, but is a commentary related to the proximity of the records location to the city of Jashon where a Nephite retreat had stopped. Presumably Mormon had taken those plates at the designated time when he was 24 years old, which would have been around year 334 during the time of peace prior to the commencement of the 344-50 battles. However, the mention of them at the same point in time in his epistle and in his abridgment establishes a chronological correlation.

Another larger question ignored by all previous research is that Moroni 9 does not appear to be an epistle to a fellow military leader, which $Moroni_2$ likely was in 376, as $Moroni_2$ led one of the ten-thousand-person battle groups in the last battle less than 8 years later in 384 (Mormon 6:12). Thus, it was written prior to $Moroni_2$'s service as a military leader.

- *Further analysis of previous research*

There are four primary works that have attempted to evaluate the chronology of the Moroni 9 epistle: Joseph M. Spencer (2016), Alan C. Miner (1994), Robert F. Smith (2010), and John W. Welch (2020). Book of Mormon Central posting as the "BMC Team," also published a blog post in 2020, but it is primarily an introductory piece introducing Welch's work (BMC Team 2020). The "BMC Team" (2018) also published an online article (updated in 2020) but added no new research or information, but relies on sources discussed in the Welch article, except for some unknown reason, ironically, ignores my previous publication on the topic. I also published research regarding this issue in a book with an update of that portion of the book published as an online paper both of which this book entirely incorporates, and updates so is not discussed separately (Grover 2018; 2018a).

1. Joseph M. Spencer

As previously mentioned, Spencer's conclusion of a date for Moroni 9 relies almost exclusively on Mormon's indication that he had sacred records to deliver to Moroni (Mormon 9:24), and Spencer

assumes without any commentary that these records were the full set of Nephite records retrieved by Mormon in or just prior to the year 379. This issue was previously addressed showing that the large plates of Nephi are referred to as "records" in the Book of Mormon, so it is not necessary to exclude the 344-50 time frame for this reason, especially given the fact that the earlier retrieval of these sacred records is also mentioned in the text during the discussion of the 344-50 time frame.

Spencer had concluded that the first epistle (Moroni 8) was written during the 344-50 time frame, which is consistent with my findings. Spencer acknowledges the fact that, based on the headings that identify Moroni 9 as the second epistle, and that the opening lines of the second letter state "I write you again that ye may know that I am alive" (Moroni 9:1), "creates an impression that the two letters were written in relatively short succession." (Spencer 2016, 143). However, because of the erroneous assumption that the sacred records referred to all of the records hidden by Ammoron retrieved decades later (circa 375 or later), Spencer is forced to look for another explanation, thus arriving at a conclusion that the heading "second epistle" must be $Moroni_2$ writing this at the time of the insertion of the epistle into the Book of Mormon at the time of compilation (citing the origination of this idea by Miner (1994, 101). Of course, this is completely textually inconsistent, as one would expect that Moroni 8 would then have been identified by $Moroni_2$ as the "first epistle," which he does not. Spencer also suggests that perhaps there is some error by Mormon in his abridgment as it does not conform to the actual epistle document. In all the past research of the Book of Mormon so far that I have done, I have yet to encounter any errors attributable to Mormon or $Moroni_2$ in the book. Each time that I have dealt with a topic in which researchers have asserted an error, it has always ended up being a flaw in their research, not an error by Mormon or $Moroni_2$. The assertion by Spencer is no different, as the research here shows a complete explanation that conforms entirely to the text of the Book of Mormon.

Spencer does leave open the possibility that the "sacred records" were not the full sets of records but indicates that this would need to be demonstrated, which this research does here. He also indicates that it would need to be shown that there were some offensive battles going on within chronological proximity to the first epistle as Mormon indicates that he was going "out … against the Lamanites" (Moroni 8:27). While there were offensive battles going on in the 344-50 time frame that meet Spencer's criteria, this interpretation by Spencer is incorrect in that it assumes that an offensive battle actually ended up taking place. Mormon may very well have been intending to go out on an offensive action but was attacked first. So, a more correct interpretation would be that it should have been written during a period where offensive battles were at least possible. This criterion is also met as there were offensive battles going on periodically in the 344-50 time frame. Finally, Spencer indicates that one would need to explain the change in attitude of Mormon where he requests $Moroni_2$ to "pray for" the Nephites in the first epistle whereas in the second epistle Mormon could not "recommend them to God" (Moroni 9:21). During the 344-50 time frame this change in feeling by Mormon would seem very possible as it is during this time frame that he notes the horrible abominations described in the second epistle. In fact, as mentioned previously, this is evidence of an earlier time period for both epistles, as Mormon specifically noted the abominations too horrible to write about in the 344-50 time frame, although Mormon does note that "a continual scene of wickedness and abominations has been before mine eyes ever since I have been sufficient to behold the ways of man." (Mormon 2:18).

2. Alan C. Miner

Miner's work predates Spencer's analysis and, like Spencer, links the epistle of Moroni 8 to the Moroni 9 epistle chronologically, based on the "second epistle" preface of Moroni 9. Miner also identifies a series of parameters extracted from the Moroni 9 epistle that are also consistent with the early 344–50 year

timeframe: Mormon was personally involved in battles (Moroni 9:2); the battle was one in which the Nephites "did not conquer" (Moroni 9:2); and $Aaron_3$ was in charge of a Lamanite army (Moroni 9:17).

Miner also requires that Mormon's actual abridgment record match his exact language in the Moroni 9 epistle in that there had to be a citation of a "sore battle" and "many prisoners" held by the Lamanites (Moroni 9:2, 9:7). However, the term "sore battle" is used in both the 363-66 battle time frames and the 375-380 time frames so is not a unique identifier. In addition, both of these references (as shown previously) were battles in which Mormon was not involved, as Mormon was not involved in any military action until he revoked his oath in Mormon 5:1. The same is true for the taking of prisoners, it is mentioned in both the 363-66 battle time frames and the 375-380 time frames (Mormon 4:1-2; 13-14) and is not exclusive. Again however, both references (as shown previously) were battles in which Mormon was not involved. In addition, both of these references only identify that Nephite prisoners were taken, there is no mention of Lamanite prisoners taken as described in Moroni 9, and so even if it were possible to consider these references, they are not consistent with Moroni 9. While not mentioned in these specific terms, during years 344–50, there were several battles and also victories over and losses to the Lamanites, potentially generating prisoners on both sides, so the prisoner references are actually more consistent with Moroni 9 being in 344-50 as the later battle periods were exclusively defensive affairs (Miner 1994, 102-5).

Miner also argues that likely only at the very late stage of battles were the Nephite prisoners of the Lamanites slain and treated inhumanely (Moroni 9:8) and were the Nephites making inhumane sacrifices of their own (Moroni 9:9–10) (Spencer 2016, 139-42). First, contrary to Miner's assertion previously mentioned, the atrocities in Moroni 9 did not mention any overt sacrifice to idols as does the description in Mormon 4:14 and 4:22. The Moroni 9 examples essentially were examples of torture and cannibalism, with perhaps an indication of some ritual killing by the Nephites. There is no mention of any prisoners taken by the Nephites in Mormon 4 (375-384) and no cannibalistic practice is mentioned in Mormon 4. There was absolutely no reference to any Nephite practice of sacrificing to idols in Mormon 4. In addition, in Moroni 9, the Lamanites took prisoners consisting of men, women and children. The Nephite men were then slain and fed to the women and children. Mormon 4 makes no mention of men being sacrificed to idols, only the women and children. Thus, the descriptions in Mormon 4 and Moroni 9 do not appear to be describing the same events at all.

In addition, as mentioned previously, the text describing the last stages of battle does not indicate any possibility that Nephites took any Lamanite prisoners, since the Nephites had no offensive victories. On the Lamanite side, they were practicing genocide—they were not taking any prisoners or leaving any survivors as mentioned in Moroni 9. The Nephites whose "flight did not exceed the Lamanites' were swept down and destroyed" (Mormon 5:7).

During the 344–50 year timeframe, Mormon states: "And upon the plates of Nephi I did make a full account of all the wickedness and abominations; but upon these plates I did forbear to make a full account of their wickedness and abominations, for behold, a continual scene of wickedness and abominations has been before mine eyes ever since I have been sufficient to behold the ways of man" (Mormon 2:18). It is fairly clear here that the depravity of the Nephites and Lamanites was extensive. In fact, since one would not have expected the epistles of Mormon to be censored as his abridgement was, the depravity mentioned in the Moroni 9 epistle is exactly consistent with the 344-50 timeframe of Mormon 2:18. Also inconsistent with the final battles is the fact that after the Lamanites left Sherrizah, a Nephite force then entered the area (however, no mention is made of a battle). This implies a Lamanite retreat and a Nephite advance, which did not occur in the later battle periods.

Like Spencer, Miner also subscribes to the theory that Mormon's "sacred records" referred to the full set of Nephite records, adding that there is no record of $Moroni_2$ receiving any records and that Mormon's intent to deliver records was just before the final battles, implying that the sacred records would not have been the large plates of Nephi from that earlier point in history which point has already been previously discussed. Miner also reasons that it must have been at a later date since Mormon laments that he "cannot any longer enforce [his] commands" (Moroni 9:18). However, as previously mentioned, the earlier battle description in years 344–50 actually does indicate that Mormon had difficulty getting the Nephites to stand and follow his commands (Mormon 2:23–24). This argument by Miner is in fact an argument <u>against</u> a later date for the epistle because when Mormon returned to defend his people, they actually were extremely anxious and motivated to follow his commands, "for they looked upon me as though I could deliver them from their afflictions" (Mormon 5:1) (Miner 1994, 105-6).

3. Robert F. Smith

In 2010 Robert F. Smith published research involving the form of epistles in the entire Book of Mormon but made a few comments indicating arguments towards literary parallels between Mormon 4 and Moroni 9. Smith indicated a date of circa 366 AD, which is presumed to represent year 366 in the Book of Mormon year count (pg. 107-8). There is no attempt by Smith to resolve the issue of Mormon's oath to not fight or other issues as it was not the scope of the article. All his correlations are from Mormon 4 during the period when Mormon was not fighting. Some of the correlations were essentially identical to Miner (the taking of prisoners and sacrificing to idols). A few additional correlations were presented:

<u>Mormon 4</u>	<u>Moroni 9</u>
v. 9 many Nephites were slain	v. 2 many Nephites slain
v. 10 "the Nephites repented not of the evil they had done, but persisted in their wickedness continually"	v. 3 the Nephites "do not repent, and Satan stirreth them up continually"
v. 11 "every heart was hardened, so that [Nephites and the Lamanites] delighted in the shedding of blood continually"	v. 4 the Nephites "harden their hearts" (cf. vv 6, 10) v. 5 the Nephites "thirst after blood and revenge continually" (cf. v. 23)
v. 12 "great wickedness"	v. 11, 13, 15, 17-19 varying types of wickedness

While these are general correlations, as previously discussed, they are not unique to Mormon 4 but also are consistent with the earlier 344-50 time frame. In order to evaluate textual borrowing, one must determine which is the earliest source material. Mormon indicates that he did make his own record and added it to the large plates (Mormon 2:18). Since the Moroni 9 epistle is a real time letter, it is presumed that for that chronological period, the epistle would predate the corresponding large plate record for the events in Moroni 9. The abridgement of the large plates would then be the tertiary text. It does appear that Mormon worked on the abridgement of his own book last of all the Book of Mormon books, which is what one would expect. Clues to that fact are the inclusion of elements consistent with the prior abridgment (mention of his major theme of the fulfillment of prophecies of Abinadi and Samuel the Lamanite in Mormon 1:19 and 2:10). Thus, a particular method of expressing something in

the abridgement (such as wickedness and repentance) may come from any of the underlying primary or secondary sources. To the extent that there are similarities in the text, since the original source material from Mormon for the abridgement would be his material, it would make sense under principles of textual comparison that the types of language used in an earlier epistle might be the basis for later descriptions of the condition of the people later than the epistle (such as Mormon 4). This provides some additional support for a 344-50 time frame.

4. John W. Welch

In 2020, while Welch essentially agreed with Miner's position and reiterates some of the particulars, he did make a few additional points attempting to support a late time frame for the second epistle but makes little analysis of the earlier 344-50 time frame. Similar to Miner and Spencer, Welch is forced to grapple with the fact that the Moroni 9 epistle is written as a real time event in which Mormon is involved, and since the later battle period does not match much of what is contained in Moroni 9, tries to find some approach that allows the use of earlier text when Mormon was inactive to correlate with Moroni 9.

Welch takes the approach that Moroni 9 was a "written as a reaction to the events" in Mormon 4, (Welch 2020, 1057), and "Mormon first wrote about these events in Mormon 4 and then drafted the personal letter to $Moroni_2$ in Moroni 9 based on that record," thus apparently requiring Mormon to pretend that these earlier events were happening to him under his command (pg. 1060). This approach is clearly nonsensical on its face, as it would require Mormon to abandon his careful chronological sequence and approach of notations of the passage of years and the events that occurred in them, totally ignoring even the years specifically mentioned in the abridgement in Mormon 4 (363, 364, 366, 367, 375) let alone additional years likely recorded in the large plates. Welch, in an absolute contradictory pivot to his own position, when trying to discount the early time period for Moroni 9 states, "As a rule, I favor the idea that Moroni 7, 8, and 9 were written in the same order in which $Moroni_2$ gives them to us. Without giving some indication of a "flashback," Mormon and $Moroni_2$ use a strict chronological framework for their introduction of documents into the finished record" (pg. 1086). He then uses this principle to assert that an "earlier time frame for Moroni 9 seems improbable," but it is only improbable because of his erroneous speculative determination of later time frames for Moroni 7 and 8 than the Book of Mormon text indicates.

Welch makes a few additional arguments than Miner did to somehow try to find support for a late time frame for the epistle. He indicates that the statement by Mormon that he "did not conquer" in battle in Moroni 9:2 is satisfied by the flight from the battlefield at the city of Jordan (Mormon 5:3) (pg. 1187). While this is true, the same is also true for the earlier 344-50 time frame, so is not determinative.

Welch indicates that the use of the word "anger" against the Lamanites in Mormon 4:15 correlates with the Moroni 9:5 use of the word "anger" (pg. 1088). There are two important problems with this comparison. First, Mormon was not involved in the battle mentioned in Mormon 4:15, and second, the Moroni 9:5 reference is not a reference of anger against the Lamanites, it is anger against Mormon (Moroni 9:4) and the Nephites against each other as "they have lost their love, one towards another" (Moroni 9:5). Textual comparison does not consist of picking out one word and comparing it to one other word unless it is an extremely rare word. It also must be used in the same context.

Welch also asserts that the statement in Mormon 5:1 "And it came to pass that I did go forth among the Nephites and I did repent of the oath which I had made" is a "parallel text to Moroni 9:6 which states "… notwithstanding their hardness, let us labor diligently for if we should cease to labor, we should be brought under condemnation for we have a labor to perform whilst in this tabernacle of clay." There is

clearly no correlation of the actual language of the texts between the statements, but Welch indicates that Mormon is providing the reasons that Mormon wanted to repent of his oath. While it is not inconsistent, it is primarily a speculative argument as there is no actual textual correlation.

Welch correlates the wickedness in Moroni 9:9-10 with the revenge and victory in Mormon 4:12, 14. However, again, Mormon 4:12, 14 occurs before the military actions starting in year 375, during the time that Mormon was not involved in military activity, so there is no possible correlation.

Welch acknowledges that the year 344-50 time frame could potentially work in many regards for the Moroni 9 chronology but argues for a 375-376 time frame. Welch raises the argument not addressed by Miner or Spencer that Moroni 7, 8, and 9 would be expected to be included in the book of Moroni in chronological order. Welch asserts that $Moroni_2$ would have been too young for the ministry in 344-50 so Moroni 8 would have to have been after that time frame. The possibility of $Moroni_2$ actually being old enough for the ministry during that time frame has already been addressed and is entirely possible. He also asserts that the speech in Moroni 7 is based on Mormon's abridging of 3rd Nephi, which would not have occurred before 344-50 time frame. This issue was previously addressed in the discussion of Moroni 7.

Welch also provided a summary table showing comparisons between Moroni 9 and Mormon 4 which table has a number of inaccuracies. Specifically, Welch asserts "shared content" between various verses, but many of the verses listed do not actually have the shared content as Welch asserts. Specifically, Moroni 9:8, 16 is asserted to mention human sacrifice to idols, yet these verses contain no such mention; Mormon 4:11-21 is asserted to mention that women were fed the flesh of their husbands, that they had no water, and that widows were left to wander with not food, yet these verses contain no such mention; Mormon 4:12 and Moroni 9:2 are asserted to be the only battles mentioned in Mormon's lifetime in which the Nephites did not conquer, however other battles in which the Nephites did not conquer are found or implied in five other occasions at Mormon 2:3, 4, 5, 16, and 20; Moroni 9:24 is asserted to indicate that the Nephites were "swept off as dew," yet this verse contains no such mention; Mormon 4:18 is asserted to state there were many desertions, yet this verse contains no such mention; and Moroni 9:24 is asserted to indicate that Mormon takes up all of Ammaron's records, yet this verse contains no such mention.

- *Geographical considerations*

The "tower of Sherrizah" and "Sherrizah" are mentioned in the Moroni 9 epistle from Mormon to $Moroni_2$ in the context of battle with the Lamanites (Moroni 9:7, 16–17). In the Printer's Manuscript of the Book of Mormon it was originally identified as the "tower Sherrizah" with Oliver Cowdery supralinearly inserting the word "of." *Sherrizah* is derived from the biblical name *Sherezer* or *Sharezer*; which is the Hebrew transliterated loan name *shar-eh 'tser* from the Zend language meaning "prince of fire." For the word "tower," some of the potential meanings in Hebrew are *o'fel*, meaning "hill," or *bakh'an* (also corresponding with the Egyptian *bekhen*, *bakhun*, and *bekhat*), meaning "outlook or tower built on a hill" (Fallows 1922).

Sherrizah can also be a constructed compound word using Sumerian words, which has been identified as a likely etymological source for the New World construction of many Book of Mormon names (Grover 2017a). Sherrizah is also mentioned separately from the tower but is not identified as being a "land" or a "city," so is likely some sort of geographic feature. The text which identifies "the tower Sherrizah" describes men, women, and children being taken prisoner by the Lamanites. Mormon indicates there were many widows and daughters who remained in Sherrizah who wandered withersoever they could for food, with many old women fainting and dying by the way. This was caused by the carrying away of

provisions by the Lamanites and later the Nephite army of Zenephi. Mormon indicates later in his epistle that the armies of the Lamanites were "betwixt Sherrizah and me" (Moroni 9:7, 16–17).

Reasonable Sumerian etymological units related to the geography of Sherrizah are:

še: to call by name
še: a geometric shape
šer: reddening, sunburn(?); (to be) bright; brilliance, ray
    sir$_2$-ra, *sir$_2$-re* (forms of *šer*)
ere: to press, throttle
ri: to cast, place; to release, let go; to pour out
    e-RI (form of *ri*)
ri: to be distant
za: property, estate
ah: a paste; foam (equivalent to lava)
    uh$_3$-a (form of *ah*)

Constructed Compound Word: *Š*errizah (Sherrizah)

The tower of Sherrizah, which has the Hebrew etymology of a high hill and loan etymology as the "prince of fire," along with its potential Sumerian etymological roots, is a fairly straightforward reference to a volcano. The correlation of "prince of fire" with a volcano is a known Mesoamerican concept.

In Aztec mythology, Xiuhtecuhtli was known as the "Lord of Fire" and was the god of fire, day, and heat. He was the lord of volcanoes and was also named Cuezaltzin ("flame"). The Nahuatl word *xihuitl* means "year" as well as "turquoise" and "fire," and Xiuhtecatl was also the god of the year and of time (Fernández 1996; Miller and Taube 2007; Moctezuma and Olguín 2002; Coe and Koontz 2002).

Since the Nephites were overcome by Lamanites followed by a Lamanite retreat at this juncture, the description of Sherrizah fits a location in the land northward. Based on current Book of Mormon Mesoamerican models, there is only one large active volcano that is near the boundary of the land northward and southward, the San Martín volcano. The location of the San Martín volcano is on the northern edge of the Isthmus of Tehuantepec adjacent to the Gulf of Mexico. This location is consistent with a northern battlefront separate from the one Mormon was involved in. The Moroni 9 epistle places a Lamanite army led by Aaron$_3$ as "betwixt" Sherrizah and Mormon (Mormon 9:17). At this point in time, there are at least two battlefronts because Mormon mentions that after the Lamanites plundered Sherrizah, they left survivors of women and children; the army of Zenephi, presumably a separate force of Nephites, also plundered the remaining people of Sherrizah for provisions, leaving many to die of starvation. The concept of at least two battlefronts is supported by the fact that Mormon received this information indirectly from Amoron (presumably a military courier) (Mormon 9:7). It also explains why Mormon would allow anyone under his command to plunder his own people; the fact that he was completely separated and pinned down defensively is the best explanation for the Zenephi plundering.

The Moroni 9 epistle from Mormon does not identify any other known geographic locations; it does mention Moriantum, where Lamanite daughters were imprisoned, tortured, raped, murdered, and eaten by Nephites (Mormon 9:9). The taking of Lamanite daughters as prisoners is indicative of foray into and holding of land in the Lamanite occupied territory in the land southward (Lamanite daughters would not be expected to be found in a front-line battle zone).

Both the multiple battlefront scenario within Nephite-held territory (required by the description provided in the Moroni 9 epistle) and the evidence that the conflict extended into Lamanite territory are consistent with the statement by Mormon regarding the resolution of the year 344-350 conflict in Mormon 2:29 that the "Lamanites did give unto us the land northward" and the Nephites in return "did give unto the Lamanites the land southward." There is no indication of a separated multiple battlefront in the 375–84 conflicts, thus again this later time frame does not fit.

Final Determination of Dates for the Moroni 7 Sermon and Moroni 8-9 Epistles

If one accepts the premise that Moroni 7-9 are in chronological order, then a close approximation of the sermon and epistles are possible. The easiest approach is to determine the bracketed time frame for Moroni 9 first. Knowing that it is in the time frame from years 344-350 and looking sequentially through that text that covers that period, we can determine chronologically where the best fit is. Since the epistle talks about the recently observed abominations, and mentions the sacred records, then it must have been written after Mormon 2:19. Since it involved only one army and was a battle in which Mormon did not conquer, it would have been prior to Mormon 2:25, which was the battle to defend Shem. Mormon 2:23 discusses the necessity of Mormon to urge the soldiers "with great urgency" and aroused them "somewhat to vigor," which seems to have occurred after the epistle was written since Mormon was complaining in the epistle that he had to "labor with them continuously" and he "cannot any longer enforce my commands" (Moroni 9:4, 18). The best fit for when the epistle was written would then be after he arrived in Shem, and before the battle at Shem. The very recent "sore battle" where he "did not conquer" would have occurred during the time that they "were hunted and driven" and "driven forth" on their retreat to Shem discussed in Mormon 2:20 or during the year 346 when the Lamanites "began to come upon us again" (Mormon 2:22), while they were at Shem. These last advances were before the larger battle of Shem, so seem to fit the narrative the best, as Mormon had serious doubts about his ability to succeed in battle and perhaps even perish himself (Moroni 9:24). So, the two dates that are noted in the text to which we can bracket the epistle is year 347 to 349. It would seem based on the events that happened during these dates (Mormon 2:22 to Mormon 2:28) that year 347 would be the most likely date as to when the Moroni 9 epistle was written, possibly as late as early in year 348.

Next, looking at Moroni 8, again assuming it occurs prior to the Moroni 9 epistle (347-48), we know that a conflict with the Lamanites is thought to be an imminent possibility (Moroni 8:27), so it can be bracketed in the years 344 to 348. If one accepts the premise that $Moroni_2$ was born in a time of peace, using the best fit of the earliest date of 331 for $Moroni_2$'s birth, and considering he did not start his ministry until after he was 15 like Mormon, then the time period is further bracketed to year 346 to 348. Given an assumption of at least a little time lapse between the first and second epistle, a year 346 to early 347 would be reasonable for the Moroni 8 epistle.

The Moroni 7 sermon could technically be any time after Mormon started his ministry (325) and prior to the first epistle in 346. With the reasonable assumption that it did not occur in a time of war when Mormon would have been otherwise engaged, that further brackets it to between years 330-43. Although mostly speculative, a later date might be best accommodated given the theologically developed nature of the sermon, and a later date would also make it possible that $Moroni_2$ may have been present at the sermon and may even have been old enough to record it. So perhaps a year 342-43 date would be the best fit, as $Moroni_2$ would have been 11 or 12 years old.

Mesoamerican correlation with atrocities

Certain wartime atrocities are mentioned in Mormon's book and in the Moroni 9 epistle. Specifically Mormon 4:14 indicates that the Lamanites took Nephite prisoners of women and children "and did offer

them up as sacrifices unto their idol gods" and did it again later in the same military operation (Mormon 4:21). In Moroni 9:7-8 the Lamanites took prisoners of men, women and children, and then killed the men and fed "the flesh" of these men to the women and children. As previously discussed, these are two separate events, in one the Nephite women and children were sacrificed to idols with no mention of the men, and in the second the men were the apparent sacrifices, and not the women and children, and no mention is made of idols. Human sacrifice of wartime captives (including women and children) is well known among the Maya with evidence going back to Mormon's time period (Schele 1979). The portion of the description of this Lamanite (Maya) practice by Mormon is very consistent with Mesoamerican history and has been noted by previous research (Gardner 2007, 81-82). Mormon records that water was withheld to the women and children by the Lamanites. The abuse of captives is documented among the Maya, especially those destined for sacrifice (Schele 1979, 43).

The second instance of consumption of the human flesh by the women and children is generally consistent with Maya practice. De Landa described what happened during a Maya human sacrifice involving the removal of the heart while living (de Landa 1566, 49-50). Once the heart was removed it was laid on a plate and given to the priest, and the dead body was often thrown down from the top steps of the temple. It was then stripped of its skin except for the hands and feet, the skin was then donned by the priest. While the bodies were usually buried at this point, on occasion the flesh was eaten by priests and other celebrants. If the slaves were captured in war, the masters kept the bones and displayed them in dances as a mark of victory. Thus, while the providing of flesh to be eaten by captives does not appear to be specifically documented by de Landa in the Maya of his day, the practice does not appear to be inconsistent, because in order to obtain the bones of the captured men who underwent the sacrificial ritual, the bones would need to be defleshed.

There may also be a ritualistic reason why the women and children may have been fed the "sacred" human flesh, which among the Maya was typically the case for the Maya participants, but not for captives. However, since the women and children were likely to be subject to ritual sacrifice themselves as documented later by Mormon, they may have been allowed to consume the ritualistic human flesh. While hard to imagine, among the Aztec, many captured soldiers, slaves, and Aztec citizens went willingly to the sacrificial altar and were treated in a special fashion and provided special privileges prior to their sacrifice, partly to improve the value to the gods of their sacrifice. Clearly, while there was no apparent willingness by Nephite women and children to be sacrificed by the Lamanites, the concept of a potential sacrificial victim being treated in a religiously preparatory manner is at least consistent with this Mesoamerican concept.

Although the Mesoamerican cannibalism seemed to generally be limited to consumption of human flesh by the priestly or warrior class or other elites, there is some indication at the time of the Spanish conquest that the practice may have been more widespread. Bernal Diaz, a member of Cortes' conquistador, mentions that some of the indigenous people he saw were:

> "… eating human meat, just like we take cows from the butcher shops, and they have in all the towns thick wooden jailhouses, and in them put many Indian men, women and bots to fatten and being fattened they sacrificed and ate them." (Diaz del Castillo 1632, 579)

Another Spanish historian, Diego Muñoz Camargo (1585, 153), corroborates Diaz's description stating "(t)hus there were public butcher shops of human flesh, as if it were of cow or sheep."

Moroni 9:9-10 recounts the Nephites taking the "daughters of the Lamanites" prisoner, raping them, torturing them to death, and then they did "devour their flesh like unto wild beasts" and did it "for a token of bravery," which indicates a ritualistic death. Since the Nephite and Lamanites come from

different culture groups, other Mesoamerican culture groups can be looked at in order to find a type for this practice. Brian Stubbs has found significant linguistic evidence of Egyptian and Semitic languages in the Uto-Aztecan language family (Stubbs 2015), so groups of this culture would be a likely possibility although recognizing that the groups we know much about are far removed in time from Mormon's time. In addition, since there are mentions of multiple migrations to the north of Nephites, with many being apostates, elements of culture of this geographic area may also be indicative. The Aztecs culture spoke Nahuatl, part of the Uto-Aztecan language family, and originated from the north and appears to have inherited forms of this particularly degenerate Nephite practice, and since we have a significant amount of information about them, it is useful to analyze the Aztecs for clues.

The practice of cannibalism amongst the Aztec was reported at the time of the Spanish conquest (Cortés 1908, 1:256-257, 2:244). The Florentine Codex, a 16th-century ethnographic research study in Mesoamerica by the Spanish Franciscan friar Bernardino de Sahagún, recounts the practice of a celebration of the sixth sign, day 1 Death, or day sign of the god Tezcatlipoca. The day was generally considered a good day for slaves; however, the codex identifies that the penalty for the mistreatment of slaves results that the offender "will die sacrificed as a war captive" and "they will cook him in an olla and eat him" (see figure 57) (Sahagún 1957, 33-6, Ill. 31). An olla is a large cooking jar.

The Codex Magliabechiano describes and illustrates the practice of cannibalism in the worship of the Aztec god Mictlantecutli (see also figure 58):

> "After [the sacrifice] they placed many large earthen cooking jars of that human meat in front of the demon that they call Mictlantecutli, which means lord of the place of the dead... And they gave and distributed it to the nobles and overseers and to those who served in the temple of the demon, whom they called tlamacazqui [priests]. And these [persons] distributed among their friends and families that [flesh] which they had given [to the god as a human victim]." (Boone 1983)

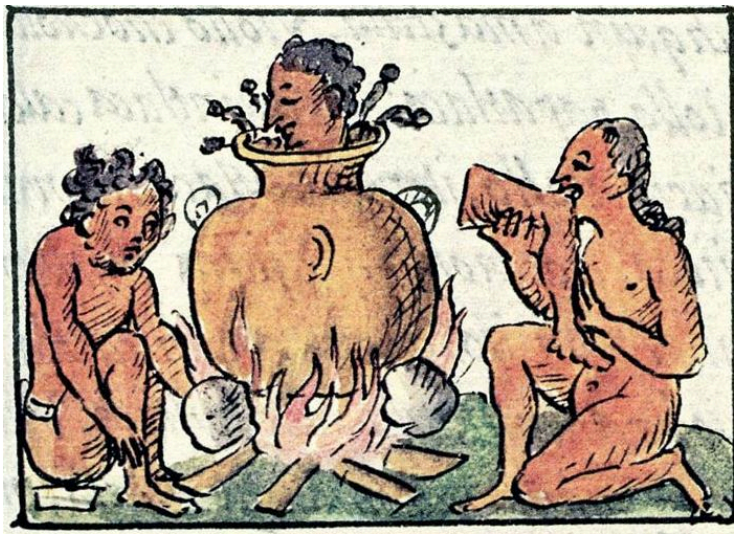


Figure 57 The fate of an Aztec 'bathed victim' on feast day 1-Death sacrificed equivalent to a "war captive" (Sahagún 1569)

Figure 58 A scene depicting ritualistic Aztec cannibalism being practiced in the Codex Magliabechiano, folio 73r (Boone 1983)

Correlation of Religious Practices with Mesoamerican Practices late in Nephite history

Correlations with the Aztec beyond cannibalism are also present. The correlation of the practices of religions mentioned by Mormon at the end of Nephite history is based on the limited information in the text during that time period and thus there will be educated speculation to some extent given the length of time that has passed from the end of Nephite history, and also considering the multiplicity of gods and religious practices in Mesoamerica. However, it is possible to find some realistic possibilities. Contrary to many who have attempted to make correlations from the Book of Mormon with Mesoamerican deity or religious practices (Quetzalcoatl being the most popular) it is not apparent that the Nephite Christian religion would likely have been the primary foundation of any Mesoamerican god or significant religious practice at the time of the Spanish Conquest for a variety of reasons, namely:

1. The Nephite polity was wiped out prior to 400 AD.

2. The Nephite Christian religion followers are not in the majority amongst the Nephites during most of Nephite history with the exception of the 200 years after Christ came, which was after the population numbers of the Nephites had been severely reduced by the destructions described in 3rd Nephi. Other indigenous pagan religions are mentioned as being dominant (i.e., Order of Nehor as previously mentioned).

3. The Nephite polity appears to be relatively small in numbers relative to Mesoamerica for most of its history (i.e., circa 20,000 persons at the time that $Mosiah_1$ fled).

Given that it is unlikely for the Nephites to be the primary source of any Mesoamerican deity found described at the time of the Conquest, the more likely linkage to a Nephite religion would be found in an apostate Nephite religion that had syncretized with an indigenous pagan religion, or in a lesser degree, had borrowings of Nephite religious elements into the indigenous pagan religion. The clues to what those religions were can also be deduced by seeing the practices mentioned in the Book of Mormon corrupting the Nephite Christian religion as alternative religions formed in the Nephite polity in the centuries after Christ came. In trying to differentiate all religious references in the text, Mormon did not

always identify the features of a specific "church" but often commented on the religious conditions generally, so some liberty has been taken to assign the more general statements to what appears to be the most predominant of the churches.

- *The re-formation of the Lamanites*

The period of Nephite righteousness and tranquility after Christ's visit came apart sequentially. Initially, there was a group that had "revolted from the church" and "took upon them the name of Lamanites" sometime between year 110 and year 194 (4 Nephi 1:20). In year 234 there was a formal recognition and definition of "the Nephites" and a redefinition of "the Lamanites" as those who rejected the gospel and it was "because of the wickedness and abomination of their fathers, even as it was in the beginning" (4 Nephi 1:37-39). Implicit in this statement is the premise that there were other populations practicing the "old time" Lamanite religion during the Nephite Christian interlude of righteousness, with a likely explanation that the 3rd Nephi destruction kept the Nephites somewhat isolated from these corrupting forces for some period of time.

As mentioned previously, during the year 345-350 time frame Mormon writes about the likely Lamanite ritual killing of men, feeding their flesh to their wives and daughters (Moroni 9:8). In 366 the Lamanites sacrificed Nephite women and children war captives to their "idol gods" and again in approximately 377 (Mormon 4:14, 21).

- *The wicked corrupted Christian Church*

In looking at the period immediately prior to Mormon, from year 210 to the year 231, there were many churches that professed to "know the Christ, and yet did deny the more parts of his gospel … and did receive all manner of wickedness and did administer that which was sacred unto him to whom it had been forbidden because of unworthiness" (4 Nephi 1:27). This is a pretty straightforward reference to the administration of the Sacrament. Mormon originally described this group as "churches" but shortly afterward describes it as a "church." It was said that this corrupted Church "did multiply exceedingly because of iniquity, because the power of Satan did get hold upon their hearts (4 Nephi 1:28).

Evidence of a corrupted Christian church is present later during Mormon's lifetime as around year 344 some Nephites "cursed God" for their plight (Mormon 2:14) indicative that they had some belief in the Christian god. Between year 345 and 350, Mormon spoke the "word of God with sharpness" (Mormon 9:4), which could only be thought to have any effect if it was addressed to a group of Nephites who might reasonably respond to the Christian god, unlike the anti-Christian church (discussed below). With the likely date of the Moroni 8 epistle being year 346-347, Mormon states that "(i)n this part of the land they are also seeking to put down all power and authority which cometh from God and they are denying the Holy Ghost" (Moroni 8:12), which indicates that there is at least some belief in Christ present at least in that part of the land, even though it is a corrupted form. These repressive actions are exactly what would be expected from a dominant anti-Christian church.

After year 362 some of the Nephites "did swear before the heavens, and also by the throne of God" "that they would go up to battle against their enemies" and cut them off from the face of the land" (Mormon 3:10), which was the final straw for Mormon refusing to lead them anymore because "they had sworn by all that had been forbidden them by our Lord and Savior Jesus Christ that they would go up unto their enemies to battle" (Mormon 3:14). This offense hearkens back to Christ's message when he visited the Nephites: "I say unto you, swear not at all; neither by the heaven, for it is God's throne; (n)or by the earth, for it is his footstool" (3 Nephi 12:34-35). Again, an appeal to God, although with wicked intent, is evidence of the Nephite's belief in Christ in some manner, again corrupted by wickedness.

The ultimate demise of this corrupt Christian church is evident as these Nephites stopped calling on "the Being who created them" even when struggling for their lives (Mormon 5:2). Sometime after the final battle in 384, $Moroni_2$ noted the final demise of any that called themselves Christian (including $Moroni_2$), which ostensibly included those affiliated with the corrupted Christian church. Since all the Nephites (excepting Mormon and Moroni) were wicked at the time of the final battle, for this observation by $Moroni_2$ of Christians still existing after the final battle to make any sense, the only Nephites left who had any believe in Christ were from this apostate Christian church.

Since all forms of the Christian church were apparently eliminated down to the person as described by $Moroni_2$ in the area of the Nephites, there would be little expectation of the survival of any significant Nephite Christian belief system from Mormon's time and area past 400 AD. Other research has derived correlations which have been drawn between Quetzalcoatl, the Maize God and Jesus Christ (Wirth 2002). If these correlations are correct, then they would have likely come from earlier borrowing into other cultures, or were generated from a previous migrant Nephite group or groups, as the Book of Mormon documents various migrations northward, with some being apostates. There was a pre-Columbian custom of eating a form of bread sacramentally as the body of the Aztec god Huitzliopochitli (Frazier 1922, 506). He is not considered by any to have a connection to Christ, but it does at least provide evidence that the corruption of the pure Christian religion may have been influenced by some similar pagan indigenous religion. The god Tezcatlipoca (discussed later) had a form of communion as part of a nocturnal festival in his honor with his body made of corn dough in the shape of a bone (Aguilar-Moreno 2006, 150).

- *The anti- Christian Church*

A second church is mentioned from year 210 to year 231 which "denied the Christ" altogether and "did persecute the true church of Christ" and "did despise them because of the many miracles wrought among them"(4 Nephi 1:29) and did "exercise power and authority over" the three disciples, and cast them into prison and sought to kill the three disciples by "furnaces of fire," and "dens of wild beasts" (4 Nephi 1:29-33). This must have been a dominant religion numerically in order to have the political power to imprison the three disciples.

The people of Nephi, presumably including those of this church, between year 260 and 300 became "proud in their hearts, because of their exceeding riches" (4 Nephi 1:43). During Mormon's life, he notes that between year 321 and 325 that the three disciples were taken away because of wickedness, and while it is because of the wickedness of the whole land, removal is consistent with the prior antagonism of the anti-Christian Church against the three disciples (Mormon 1:13). Between year 325 and 330 Mormon indicates that "the power of the evil one was wrought upon all the face of the land," and after year 330 mentions and identifies the following wicked practices (Mormon 1:19; 2:10):

1. Sorceries
2. Witchcraft(s)
3. Magics and magic art

Just prior to year 344, Mormon witnessed Nephites "in open rebellion against their God" (Mormon 2:15), indicative of an anti-Christian religious position. In year 345 Mormon notes the "wickedness and abominations" of the Nephites and reiterates the same phrase prior to 349. It is during this time period that the Moroni 9 epistle took place. Mormon states in the epistle that amongst the Nephites "Satan stirreth them up continually to anger one with another" (Moroni 9:3), "thirst(ing) after blood and revenge continually" (Moroni 9:5) and while no specifics are given, it is possible there may have been

internal religious strife as religions and politics did not appear to be separated at this juncture of Nephite history (if they ever truly were). Mormon writes in his second epistle that some Nephites did the following to the Lamanite daughter war captives (Moroni 9:9-10):

1. Rape
2. Torturing of their victim's bodies unto death
3. "Devour their flesh like unto wild beasts" "for a token of bravery"

After year 380 and before the final battle, Mormon describes his people who were once delightsome and led by Christ as "led about by Satan, even as chaff is driven before the wind" (Mormon 5:18).

Interestingly, Mormon refers to the "idol gods" of the Lamanites (Mormon 4:14; 4:21) but never mentions any idols among the Nephites. The only evil god that he mentions among the Nephites is Satan (4 Nephi 1:28; Mormon 5:18; Mormon 9:3). In other parts of the Book of Mormon "idol" or "idolatry" are mentioned when present amongst both the Lamanites and Nephites (Enos 1:20; Mosiah 9:12, 11:16-17, 27:8; Alma 1:32, 7:6, 17:15, 31:1, 50:21; Helaman 6:31; 3 Nephi 30:2, Mormon 4:14), thus the lack of mention of idols among the Nephites seems to indicate that idolatry was not a significant feature in the predominant Nephite anti-Christian religion.

As previously mentioned, the Aztecs would be a plausible group to look at for potential correlations with the anti-Christian church described by Mormon. At the decline of Teotihuacan around 750 AD, some substantial small towns are found on the southern lakes and western side of the Valley of Mexico, and seats of power arose and collapsed in neighboring areas including Cacaxtla, Cholula, Xochicalco, and Toltec Tula. From the early 13th century, a long process of acculturation began with the arrival of northern peoples consisting of the Tepanecs, Chichimecs, Acolhua, and Mexica tribes into the area which resulted in the later Aztec culture, with the Aztecs seeking to assimilate the culture memory from the remains of these prior cultures, including Teotihuacan. The existing towns in the area had their own local religion, with some deities and their cults being very old in Mesoamerica. As the Aztec empire expanded, the principal deity of the conquered community was incorporated into the Aztec system (Townsend 2009, 11, 32, 112). As a result, there are nearly 50 different deities found within the Aztec religion, so matching the predominant Nephite anti-Christian cult from more than a thousand years earlier with its associated Aztec cult would not be expected to be a perfect match in all regards.

The most plausible Aztec cult which correlates well with the elements of the predominant anti-Christian church described by Mormon is the god Tezcatlipoca and his associated cult. He was considered the most powerful supreme deity and was the god of discord and vice (Phillips 2008, 128). He is known as "Smoking Mirror" or "Fiery Mirror" and is found among the earlier Toltecs (900 AD), and is the god of sorcery and magic, correlating well with Mormon's description. The Tezcatlipoca figure correlates back to even earlier Mesoamerican deities worshiped by the Olmec and the Maya during Book of Mormon time periods (Carlton 1981, 126). He is known as the wizard who veils himself behind the cloud and bears a magical instrument that is also found with the sorcerers of old Mexico who are also known as the *naualli*. The *naualli* were capable of miracles such as the conjuring of clouds when there is danger of hail, making a stick look like a serpent, a mat like a centipede, a piece of stone like a scorpion and other deceptions. They also practiced divination and astrology (Spence 1994, 50-53, 67-72). It is no wonder that the primary reason that the *naualli* group in 4th Nephi despised the Christian church was "because of the many miracles which were wrought among them" (4 Nephi 1:29), which was a direct challenge to their domain of sorcery and miracles, and no doubt reason that they had to incarcerate and attempt to kill the three disciples in ritual fashions as the disciples were a direct challenge to their divinations, sorcery, and miracles.

Mormon mentioned witchcraft, and the cult of the witch was widespread in ancient Mexico, and interestingly, included flying on brooms to congregate at crossroads, with their divine patroness goddess even depicted with a peaked hat riding naked on a broomstick. The high priest who presided over the witches' revels at the crossroads was the god Tezcatlipoca (Spence 1994, 129-133).

Consistent with the attempt to kill the three Nephite disciples where the anti-Christian church "cast them into furnaces of fire," (4 Nephi 1:32), amongst the Aztecs at the Teotleco, at a movable feast sacred to Tezcatlipoca, the footprint of Tezcatlipoca was looked for by the priests in a heap of maize and when it appeared the chief attendant cried, "The master has arrived." On the following day a huge fire was prepared, and captives were burnt alive. Young men disguised as demons danced around it, hurling the victims into the flames (Spence 1994, 278-9).

In another method to kill the three Nephite disciples they were cast into a den of "wild beasts" (4 Nephi 1:33), which has a fairly straightforward relationship to Tezcatlipoca as Tezcatlipoca is rendered pictorially as a jaguar, and bears a mythical association to the jaguar, as do the *nahualli,* who have the power to shapeshift into a jaguar form (Spence 1994, 181).

In relation to the atrocity described by the Nephite treatment of the daughters of the Lamanites, as has already been noted, cannibalism of a war captive was ritually practiced in celebration of Tezcatlipoca. Tezcatlipoca was one of the principal war gods, and was believed to manifest the most commendable values of a soldier, confidence and courage, so the Nephite warriors consuming the flesh of these war captives "for a token of bravery" is entirely consistent with the cult of Tezcatlipoca. Mormon's description of the torture and then "devour(ing) their flesh like unto wild beasts" (Moroni 9:10) is entirely consistent with participation of shapeshifting jaguar *nahuallis* of the Tezcatlipoca cult. Although not shown to be related to Tezcatlipoca, among the Aztecs it was believed that child victims would be tortured before being sacrificed as the tears of innocent children were particularly favored by the rain god.

The Aztec had classes of elite warrior orders, with one of the highest being the Jaguar Order. One of the privileges given to the Jaguar Order was the right to eat human flesh, so warriors in the Jaguar dress belonging to this order would also have been consistent participants with the atrocity involving the cannibalism of the daughters of the Lamanites (Aguilar-Moreno 2006, 99-102). Tezcatlipoca could also take the form of a coyote (which was also an Aztec military order lesser than the Jaguar Order) (Phillips 2008, 181) which the Aztecs thought had particular sexual potency (Aguilar-Moreno 2006, 202-3), thus is also consistent with this group of Nephite *nahualli* (perhaps of the Coyote Order equivalent) raping the young Lamanite women prior to killing and devouring them like wild beasts. One of Tezcatlipoca's manifestations was Itzli, the knife used in human sacrifice (Olivier 2008, 124), again consistent with this ritual atrocity. Tezcatlipoca has been attributed with the presence on earth of sexual sin.

These classes of animal warriors are attested to in late Book of Mormon times in Teotihuacan, where in the Palace Atetelco, which was believed to be a military academy and barracks, there are murals of warriors in procession costumed as coyotes, netted jaguars, and "eagle knights" (Evans and Evans 2016; Orellana 1971). There are also dancers carrying impaled dripping hearts in one hand, shield and darts in the other, as well as jaguars eating human hearts (see figures 62 and 63). There is also evidence of continuity of these military orders into Aztec times from representations of jaguar and eagle orders on murals at Cacaxtla (400 – 900 AD) and Tula (400 – 1000 AD).

Sahagún, an early Spanish chronicler, writes that Tezcatlipoca was also a "true giver of prosperity" (Spence 1994, 278) and was likely the god of the markets (Olivier 2008, 174-5). He had the power to dispense riches, and was the god invoked by merchants on their return trips from trade expeditions, all

consistent with the “exceeding riches” and the “gold and silver” laid up in conjunction with the Gaddiantons mentioned concurrent with the anti-Christian church (4 Nephi 1:43, 46).

Figure 59 Turquoise mask representing the god Tezcatlipoca, the base for this mask is a human skull (British Museum 2006)

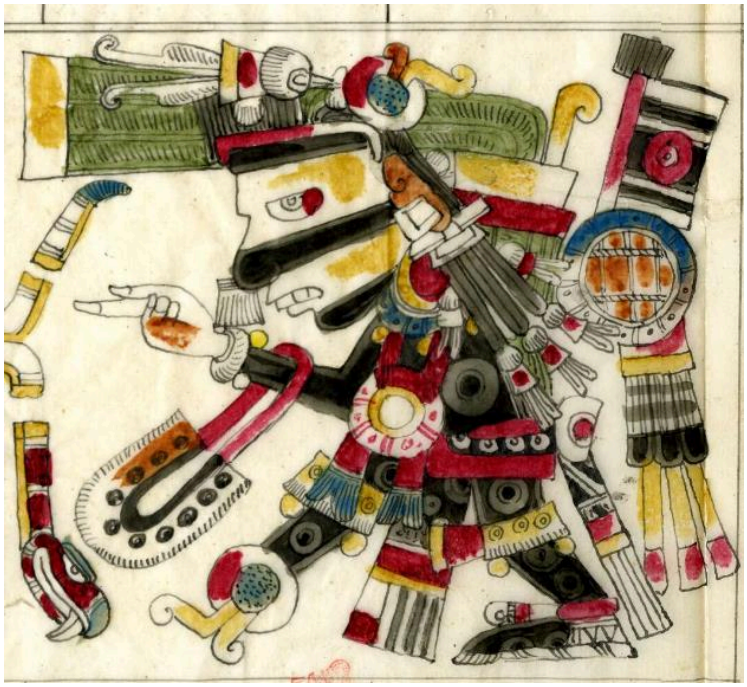


Figure 60 Depiction of Tezcatlipoca from the Borgia Codex, page 21, [16th century] (British Museum 2006)

Figure 61 Tezcatlipoca depicted in the Codex Rios in the aspect of a Jaguar—in this form he was called Tepeyollotl (Codex Rios 16th Century, folio 15v)

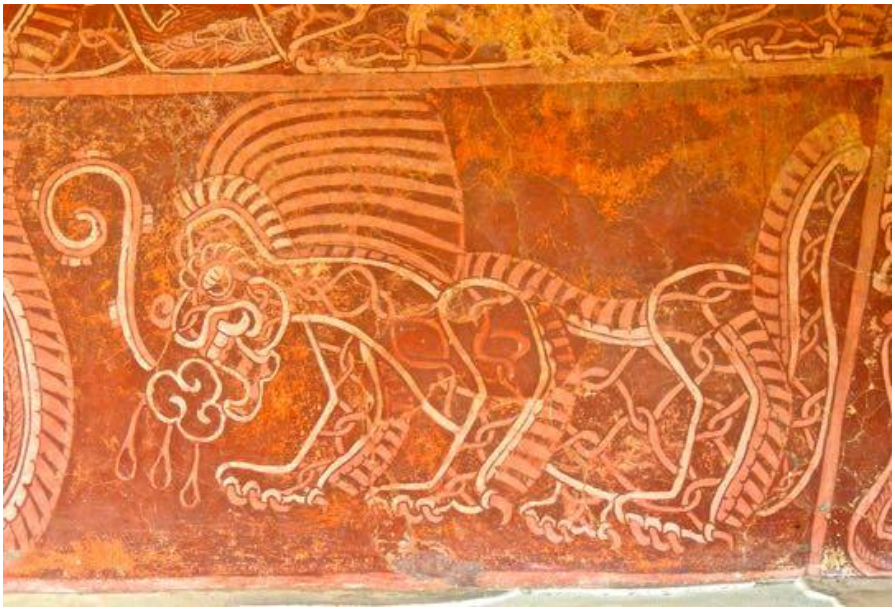


Figure 62 Image from the Palace of Atetelco containing strong military connotations, as do many others in the Palace of Atetelco's murals. The creature appears to be eating a human heart from which three drops of blood fall. This symbolism relates to both warrior cults and human sacrifice. (Evans and Evans 2016; Orellana 1971)

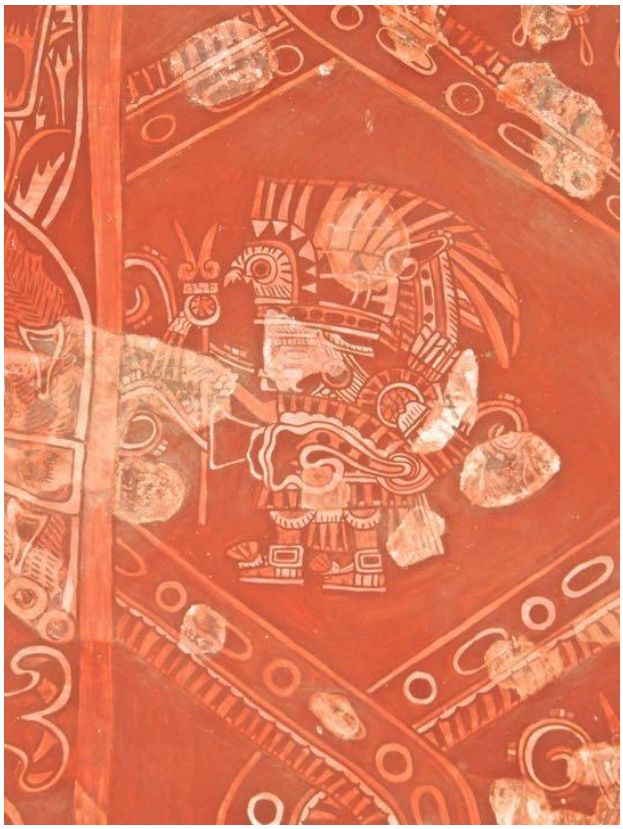


Figure 63 Image from the Palace of Atetelco of a human warrior/priest wearing an eagle-crested head dress. On his back he carries a round shield decorated with a *chimalli*. The feathered ends of a quiver of arrows protrudes from behind the shield. This image may approximate the actual appearance of Teotihuacán's elite Eagle Warriors. A speech scroll indicates a chant or prayer. (Evans and Evans 2016; Orellana 1971)

It seems apparent that Tezcatlipoca would be the equivalent of Satan in the Aztec gods as Sahagún also described Tezcatlipoca as demonic in character, "h[H]e was invisible and was able to penetrate into all places, heaven, earth, hell ... and that he wandered over the earth stirring up strife and war and setting men against one another" (Spence 1994, 278). In Aztec religious myth, Tezcatlipoca in his manifestation of a rooster was the evil one who deceived the first woman, Hueytonantzin, meaning "our great ancient mother" (Spence 1994, 279). Tezcatlipoca was the son of the god Ometéotl, who was the original creator entity. One of Tezcatlipoca's brothers was Quetzalcoatl. Quetzalcoatl and Tezcatlipoca joined forces to create the surface of the earth but later became fierce enemies in the city of Tollan (Phillips 2008, 144-5). Tezcatlipoca is also a god of the wind (along with others) and violent tempests, particularly hurricanes (Phillips 2008, 174), giving Mormon's statements that the Nephites "were led by Satan, even as chaff is driven before the wind" and "tossed about" on the windblown waves without a sail or anchor (Mormon 5:18) a definite context in relation to Tezcatlipoca. Interestingly, amongst the Quiches Maya "the name of the jaguar (*zate*) can be compared with that of the Devil (*zithu*) because both are "devourers of life."

Tezcatlipoca is also known as the "invisible god" and that is the likely reason why there are almost no idols of him that have been found with only a few idols even referenced in texts; only primarily pictorial representations are found (Olivier 2008, 48). Again, this is consistent with Mormon not indicating any idols or idolatry among the Nephites, only amongst the Lamanites.

Consistent with the secret societies that arose again in 4th Nephi and during Mormon's time, a higher caste of the *naualli* were the "master magicians," also known as the *pixqui* and *teotecuhtli* or "sacred companions-in-arms," and the *anahualtin*, "those who know." Entrance into these select orders is attained only after severe and prolonged tests of initiation. This secret society of the Aztec priesthood at the time of the Spanish conquest borrowed and adopted for its chief deity the Old World Satan himself. They had various branches of the society around the country with local brotherhoods or lodges, with a high priest or master magician stationed at these places (Spence 1994, 69-73).

One of the stories of the god Tezcatlipoca has an eerie correspondence with the fall of the Nephites. Tezcatlipoca disguised himself as a peddler and commanded the Toltecs to gather to dance and feast. After gathering, he led them in a song, which caused them to panic and attempt to flee over a stone bridge which sat over a deep gorge and river. Tezcatlipoca destroyed the bridge and watched as the people crushed each other in panic and fell to their deaths in the abyss, and even the few that escaped did not perceive that it was by the sorcery and witchcraft of Tezcatlipoca that had caused the great destruction.

- *Other hostile iniquitous churches*

During the time that the anti-Christian church formed there is mention of "many priests and false prophets" who built up "many churches" "to do all manner of iniquity" and "did smite upon the people of Jesus" with the original Nephite Christians dwindling in "unbelief and wickedness" (4 Nephi 1:34). In year 244 it is noted that the Nephites "did still continue to build up churches unto themselves and adorn them with all manner of precious things" (4 Nephi 1:41). Mormon's reference to "many churches" is certainly consistent with the multiplicity of cults associated with various deities found in Mesoamerica. For example, the Aztec had at least fifty principal gods with their associated cults (Townsend 2009, 115-17).

Mormon notes that the people were led by many "priests and false prophets." Again, this is a perfect fit with Mesoamerica. Although few survive, divinatory codices were numerous in Mesoamerica.

> "Those appointed to look into divinatory codexes in order to see and understand were the diviners and seers. In Nahuatl they were call *tonalpouhque* or "readers (literally 'counters) of the day signs," and *tlapouhque* or "soothsayers (literally 'counters of something'). The Quiche May use the term "daykeeper" for those who divine with the 260-day cycle." (Boone 2007, 20)

There is only a small distinction between the soothsayer and the sorcerers (*nahualli*), as the terms are sometimes used interchangeably. While the soothsayers would be considered by Mormon as false prophets in the sense that they used the divinatory codices, the sorcerers were false prophets in their own right.

The sorcerer is "a knower of the land of the dead, a knower of the heavens, one who knows when it will rain, and foretells plagues and famine." (Sahagún 1997, 212). Second to the use of divinatory books, maize casting was the preferred method of divination, especially for determining and foreseeing the outcome of sicknesses. These practices were also found among the earlier Toltecs. Casting maize involved casting maize into the water to see whether and how the kernels would float or sink. Other divination techniques (some also used for healing) were reading a person's reflection in the water, tying knots along a cord, and then pulling them, measuring parts of the body with one's hand, interpreting dreams, and interpreting the actions of animals (Boone 2007, 27).

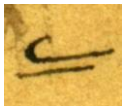
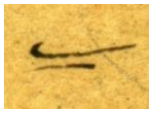
Mormon's characterization of the "false prophets" may not only be because their prophecies were wrong, but because the divination techniques themselves were false or deceitful. Hernando Ruiz de Alarcón, a New Spain born writer from the 17th century, noted that these priests would select the appropriate maize for casting knowing that fresh, firm kernels sink whereas very old kernels tend to float. Knots could be tied along a cord so that they became looser or tighter when pulled (de Alarcón 1984, 155). This statement by Mormon was likely inclusive of all the churches including the anti-Christian and wicked Christian church. While these other churches most likely were cults associated with other indigenous deities, there is not enough information to propose anything specific.

These Mesoamerican diviners were formally trained, and the most accomplished were attached to the major temples and great royal houses, consistent with Mormon's observation that the people "were led by many priests and false prophets to build up many churches and do all manner of iniquity" (4 Nephi 1:34). Sahagún identifies some of the soothsayers as being "a deceiver, a mocker, a false speaker, a hypocrite – diabolical, a scandalous speaker. He disturbs, confounds, beguiles, deceives others." (Sahagún 1970, Bk 10:31). While one may assert that Sahagún's Christian background may have led to the vindictive, Mormon, as a Christian, would be expected to have a more or less equivalent position to Sahagún.

Analysis of the probable correlations between Lamanites and general unbelievers

The Hebrew meaning for $Laman_1$ has been proposed by Matthew L. Brown (2019) as "no faith" (*lō'-'ēmun*) as found in Deuteronomy 32:20. I had evaluated the glyph form for the name $Laman_1$ that was found in the Caractors Document in 2019 but did not have the benefit of utilizing Brown's work which came out after my book. I found good correlations in Mesoamerica for the name but not very good correlations with Hebrew or Egyptian. Knowing the meaning of $Laman_1$ is "no faith," it is now possible to correlate the reformed Egyptian glyph with hieratic Egyptian.

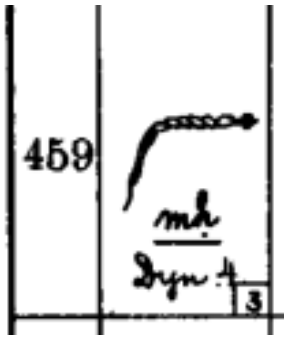
The two glyphs meaning $Laman_1$ from the Caractors Document are C-108 and C-217:

C-108  C-217 

The Egyptian matching the meaning "no faith" is pretty straight forward. The Egyptian word for "to be faithful" is *mḥ* and consists of the hieroglyphs with Gardiner numbers V-22 and D-36, or V-22 and D-40 according to Vygus (2012, 1978) or can also be expressed only by V-22 according to Budge (1920, 316). The hieratic form of V-22 is Möller number 459 (Möller 1965, Bd. I-23-76, pg. I 455-464):

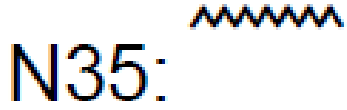
V22: 

Heiroglyphic form of V-22

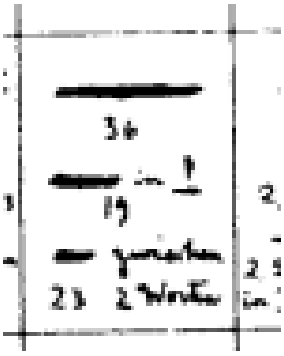


Hieratic form of V-22, Möller 459

Egyptian hieroglyphs can be reversed, and this appears to be the case here. The word for "not" in Egyptian is *n* and is expressed as the hieroglyph with Gardiner number N-35 (Vygus 2012, 1181) with the corresponding Möller number 331 which consists of a straight line (Möller 1965, Bd. III-1-31, pg. III 328-38):

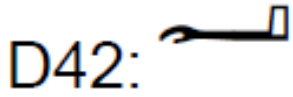


Heiroglyphic form of N-35



Hieratic form of N-35, Möller number 331

So together these two hieratic glyphs mean "no faith" and together make up the Caractors Document reformed Egyptian glyph for Laman. Also, interestingly, phonetically together these words are *mḥn* which is the last syllable of Laman. Egyptian did not have a letter "L" but when transliterating foreign names would subsitute the letter "R". The equivalent Egyptian for Laman$_1$ would be the Egyptian word *rmn* which means in Egyptian the title "Carrier or Bearer" which, using a bit of wordplay, would mean "the carrier or bearer of no faith." (Vygus 2012, 230). The word *rmn* consists of the heiroglyph Gardiner Number D-42 and Möller number 331 (Möller 1965, Bd. II-1-30, pg. II 100-108):



Heiroglyphic form of D-42

Hieratic form of D-42, Möller number 331

This glyph also can be considered part of the “hook” portion of the reformed Egyptian glyph for Laman.

Culturally the Lamanite religious and cultural beliefs have been correlated to the Maya (Grover 2017). Another recently noticed link to that culture in the Book of Mormon is found in the curious phrase in Alma 14:21 where the captors were "gnashing their teeth upon them" and then they made the mocking statement "How shall we look when we are damned?" The key to understanding this verse is found in Mesoamerican culture. In the Mayan language the word *k'ux* means to bite/eat/torture stemming from the fact that Maya torture often involved the final result of consuming human flesh. Maya torture relished techniques to generate blood, so their mocking statement about what the damned looked like provides a pretty horrific picture of what $Alma_2$ and Amulek must have looked liked undergoing Maya torture. The translation of the underlying term to a Hebrew/Biblical phrase would seem to make sense, and also would seem to have a similar juxtaposition as "fire and brimstone" in that gnashing of teeth is used earlier by Abinadi as representing the damned. (Mosiah 16:2).

King Aaron$_3$

On January 16, 378 AD, determined to be one of the most significant historical dates in the Maya city of Tikal located in the Maya heartland of the Petén (modern Guatemala), arrived a warlord named Sihyaj K’ahk’. Records at Tikal indicate his title as “West K’awil.” The primary source for the information discussing Sihyaj K’ahk’ at this location is Mayanist David Stuart (Stuart 2000). This date also appears in records at Uaxactún, a Maya city 15 miles north of Tikal, along with Sihyaj K’ahk’s name glyph. The day after his arrival, the king of Tikal, Jaguar Paw, is dead. Less than a year later a new king assumes power named Nun Yax Ayin. Nun Yax Ayin is depicted on Stela 31 of Tikal as a Teotihuacan warrior. Nun Yax Ayin has been called a foreign king or at least “one who consorted with highland people.” Nun Yax Ayin was the son of an individual known as “Spear-Thrower Owl,” who was not the king prior to Nun Yax Ayin, which king was Jaguar Paw as just mentioned. The clear conclusion is that Jaguar Paw’s death was a direct result of the arrival of Sihyaj K’ahk’, likely by execution, perhaps as part of a military action or coup, followed by the installation of a new king that was not Jaguar Paw’s son. Other inscriptions at Tikal indicate that this new king was lesser in power and subject to Sihyaj K’ahk’.

In the small site of Bejucal, approximately 12 miles northwest of Tikal on a monument corresponding to 393 AD, reference is made of a date 12 years earlier in 381 AD of the accession of a lord named Jaguar’s

Tail. The monument refers to Sihyaj K'ahk' as an overlord to Jaguar's Tail and refers to Sihyaj K'ahk' with the title Kalomte'. This title is also found with Sihyaj K'ahk' on Tikal Stela 4, 31, and on a Teotihuacan styled stone at Marcador in Tikal, and in Mayan it means "high king" or overlord of conquered territories. The latest mention of Sihyaj K'ahk' is in 393 AD in Bejucal. Inscriptions at Bejucal indicate that Sihyaj K'ahk' was also the overlord of El Zotz, a site which is a few miles southwest of Bejucal (Houston 2008). Additional murals at Holcum, located east of Tikal, in a building commemorating the first anniversary of Sihyaj K'ahk''s arrival in Tikal, show Teotihuacan warriors accompanying a new king during his ascension to the throne, with the supposition that the new king was installed at the same time as the Tikal replacement (Wade 2020).

El Zotz, at that time, was considered hostile to Tikal and existed along a borderland between two larger kingdoms of which Tikal was one. Based on a variety of epigraphic evidence, El Zotz is indicated to be politically subordinate to El Peru. Two exalted titles or "Emblem glyphs" associated with the ruler of El Zotz are the same Emblem glyphs linked to the distant mayor dynastic seat of Yaxchilan, Mexico, located on the Usumacinta River. El Peru was an archenemy of Tikal and was an ally of the dynasty of Calakmul, Campeche.

At El Peru, a city 45 miles west of Tikal, Stela 15 references Sihyaj K'ahk' arrival with a date of January 8, 378 AD, just eight days before his arrival in Tikal. The inscription is missing important fragments, so it is not known what took place on that date. Given his title indicating the direction "West" and his travel from east to west, it seems as if he came from the west.

There is no evidence that Spear-Thrower Owl, the father of Nun Yax Ayin, was ever king at Tikal or even went to Tikal. There are numerous associations with his name and Teotihuacan militaristic iconography. In addition, the two components of his name link to a frequent ikon in Teotihuacan known as *lechuza y armas*. Some variants of his name at Tikal are similar to this Teotihuacan motif. The *lechuza y armas* motif appears on circular medallions worn on the collars of warrior figurines at Teotihuacan and is evidence of a militaristic order comparable to the later Jaguar or Eagle Orders of the much later Mexica Aztec. The death of Spear-Thrower Owl is recorded as 439 AD, so he was a king somewhere and ruled for over six decades (374-439 AD), with the conjecture being that he may have been the ruler of Teotihuacan.

The name of the warlord Sihyaj K'ahk' who led the party of arriving foreigners in the Tikal area is found on Glyph C18 of Stela 31 at Tikal. The sign on the left depicts an iguana looking upwards. It is a logograph, conveying the meaning of an entire word, in this case the verb "to be born" (Maya glyph Number T740:126.181). The element on the right represents flames or smoke and is a logograph for "fire" (Maya glyph Number T122). This person's name was thus "Fire is Born," or Sihyaj K'ahk'.

Figure 64 Glyph C18 of Stela 31 at Tikal (www.mesoweb.com 2023)

In the Book of Mormon, Mormon, at the age of 20, indicates that he battled a Lamanite king named Aaron$_3$ just prior to the completion of year 330 (January 10, 325 AD) after the coming of Christ (Mormon 2:9), which given the base date of the Coming of Christ calendar in 6 BC would place this battle at approximately 324 AD. No other Lamanite king is named for the balance of the Nephite/Lamanite war that led to the final destruction of the Nephites. Mormon indicates that before the final battle that he wrote an epistle to the "king of the Lamanites" (Mormon 6:2-3). Is it possible chronologically that Fire is Born is the Lamanite King Aaron$_3$? If the Lamanite king was young as was Mormon when he became head of one Lamanite army, say fifteen, then his birth would have been around 309 AD. With that birth date he would have been around 67 years old when he came to El Peru and Tikal, and 70 years old when he is identified with installing the lord at Bejucan.

Perhaps the best evidence that Sihyaj K'ahk' is in fact Aaron$_3$ is the Hebrew etymology of the name Aaron$_3$. Two of the possibilities involving the formative etymology of the Biblical name Aaron$_3$ is from the verb הרה (*hera*) which means to conceive a child or to be or become pregnant (Genesis 16:4, Exodus 2:2, Isaiah 26:18) with the related masculine noun הריון (*herayon*), meaning conception of pregnancy (Hosea 9:11, Ruth 4:13) and also the masculine noun אור (*'ur*), meaning flame (Isaiah 50:11, Ezekiel 5:2) (Abarim Publications 2021). The Lamanite King Aaron$_3$ and King Sihyaj K'ahk' are one and the same.

This translation intent in the Book of Mormon with regards to names seems to have been a translation with a primary purpose of conveying the actual underlying meaning, and a secondary purpose of remaining true to the original languages of Biblical Hebrew, Egyptian and/or Sumerian (with a few in Greek) while retaining principles of name philology. A similar type of practice is widespread in Mesoamerica and is called "loan translation" (Carmack et al 2007). "Loan translation" (aka calques) is where an expression is translated word for word into other languages. For example, in most Mesoamerican languages the word for 'egg' is 'bird-stone'. The concept was clearly loaned from one language to another, but when it was loaned, it was incorporated by translating it into the language, not by borrowing by transliteration of a foreign word. There were a variety of word types in Mesoamerica where "loan translation" took place:

> Calendrical terms, place names, personal names, and even metaphorical couplets passed from one language community to the other in the form of calques, or semantic loans, in which ideas were translated without the phonological structures associated with them in a given language. (Wright-Carr et al 2013)

The Book of Mormon chronology during this time (see table 3) is consistent with Fire is Born being $Aaron_3$. One thing that is apparent is that the size of the Lamanite overall armies grew progressively larger from being able to be defeated with a Nephite army of 30,000 in year 321 (315 AD), the Nephites being able to clear the land of Lamanites in 349 (343 AD), to being outnumbered by the Lamanites in year 366-367 (360-61 AD), the Lamanites not being able to be numbered in 375 (369 AD) (Mormon 4:17) because there were too many, and in 385 (379 AD) the greatness of their numbers filled every Nephite soul with "terror" (Mormon 6:8). If the growth was by birth rate alone, one would have expected the Nephite military numbers to keep up with the Lamanites.

Since the increase in size of the Lamanite armies was so much greater than the Nephites, it is fairly obvious that the Lamanites were taking control over other armies, or at least were allied with additional armies. This is consistent with the apparent growing power of Fire is Born, especially considering he gained control of Tikal early in 378 AD, just a little over a year before the final Nephite battle (sometime in the year 385, the start of year 385 is December 28, 378 AD). Just before this time around 377 AD, Mormon had asked $Aaron_3$ for time to gather his people at Cumorah for the 379 AD final battle. It would be consistent for $Aaron_3$ to grant a short reprieve as he was also consolidating a huge force of added power during this exact time frame in Tikal and other Maya cities. No wonder this massive increase in forces was unknown to Mormon so the arrival of such a massive force of Lamanites was a surprise and terror to the Nephites (Mormon 6:8). A summary of the Nephite battles during the period of $Aaron_3$ are as follows:

Table 3 Nephite Battle Dates

Nephite years	AD year	Summary
321	315 AD	Number of battles on the borders of Zarahemla by the waters of Sidon 30,000 Nephites, Lamanites withdrew
4 (peace)	315-319 AD	Gaddiantons are noted as among the Lamanites
325	319 AD	General war
325	319 AD	Mormon first went forth against the Lamanites
327-30	321-24 AD	Lamanites attack and Nephites lose territory, the land was filled with Gaddiantons and Lamanites, a Lamanite King $Aaron_3$ came against Mormon's army of 42,000 with an army of 44,000
344-49	338-43 AD	Nephites are attacked flee northward before the Lamanites Lamanites attack again with an army of 50,000, Nephites defeat them with an army of 30,000 and retake the lands of their possession against the Gaddiantons and the Lamanites
350	344 AD	Treaty made where the land southward up to the narrow passage goes to the Lamanites
360	354 AD	The king of the Lamanites ($Aaron_3$) sends an epistle of battle
361-366	355-60 AD	A series of attacks and counterattacks between the Lamanites and Nephites involving primarily the city of Desolation

367	361 AD	The Nephites clear their lands of the Lamanites
375 -379	369-73 AD	Lamanites attack in huge numbers, the Nephites flee and lost territory, Nephites stop them temporarily
380	374 AD	Lamanites come again in great numbers, Nephites flee
381-383	375-77 AD	Nephites march forth before the Lamanites, Mormon writes an epistle to the king of the Lamanites ($Aaron_3$) to meet at Cumorah
385	379 AD	Last battle of the Nephites
401	395 AD	All Nephites have been hunted down, the Lamanites are at war with each other, only Lamanites and Gaddiantons still exist in the land

Also consistent with $Aaron_3$ is the affiliation and influence with Teotihuacan, which itself is also consistent with the Gaddiantons. The correlation of the Gaddiantons with Teotihuacanos was developed by Brant Gardner in 2007 (Gardner 2007a, 17-29). Essentially, the Teotihuacanos operated as trade operatives (including local resident merchants) to maneuver politically to gain control and rulership. The quick removal and death of Jaguar Paw also smacks of a Gaddianton type of tactic and sort of modus operandi of the early Gaddiantons in the book of Helaman, in murdering government officials.

Teotihuacan architectural features started to show up among the Maya from 250-350 AD. The Book of Mormon notes that the Gaddiantons start to appear after year 260 (255 AD) (4 Nephi 1:42) so the correlation is consistent. A recently discovered Teotihuacan "embassy" in Tikal consists of an enclosed courtyard and stair-step pyramid appearing to be a miniature version of a structure called La Ciudadela, or The Citadel, in Teotihuacan. That citadel contained a temple known as the Pyramid of the Feathered Serpent and a 38-acre courtyard large enough to accommodate 100,000 people. The smaller version in the Maya city of Tikal not only has the same layout, but it also has the same orientation. Four months of excavation of this building in Tikal revealed a structure built in six different stages. Researchers do not know much about the first stage of construction yet, but the second stage dated to about 250 AD and is reminiscent of architecture found in Central Mexico. The third stage, built soon after, resembles The Citadel of Teotihuacan. The pyramid and courtyard were even oriented 13 degrees east of true north, very similar to ceremonial structures in Teotihuacan, which were situated 15 degrees east of true north (Pappas 2021).

Between years 300 and 305 (295-300 AD) the Gaddianton robbers spread "over all the face of the land" (4 Nephi 4:46). The Gaddianton's were noted as being among the Lamanites around 318 AD (Mormon 1:18) and in year 330 (325 AD) (Mormon 2:8). The archeological record is completely consistent with the Book of Mormon chronology.

$Aaron_3$ is identified as a Lamanite (Mormon 2:9, Moroni 9:17); however, the military affiliation and alliance of the Gaddiantons and the Lamanites seems to be implied given the fact that the Nephites had to clear both groups from the land southward and then enter into a treaty with both groups (Mormon 2:27-28). While the Nephites considered the Gaddiantons as enemies, they are only mentioned once as sometimes militarily engaging with the Nephites during prior to the peace treaty together with the Lamanites, and never after the peace treaty in the year 350. It seems that the main military force was the Lamanites, with perhaps the Gaddiantons providing strategic support. The Book of Mormon, at the outset of reestablishment of the Gaddiantons, describes the "secret oaths" and "combinations." Once

established, the Gaddiantons are openly identifiable as individuals and as a group, so the Teotihuacanos should not be thought of as needing to be in disguise to be considered Gaddiantons as was the case early in their history. The *lechuza y armas* medallions of the Teotihuacanos amongst the Maya look to be an identifier of an elite militaristic unit, again reminiscent of the Book of Mormon Gaddiantons.

The geography of the area under the influence of Fire is Born is also consistent with the Book of Mormon geography. Under the Sorenson model, the Nephite/Lamanite boundary is somewhere not far west of the Usumacinta River. The shared Emblem Glyphs of El Zotz (where Fire is Born served as overlord) and the dynastic seat of Yaxchilan on the Usumacinta River imply a shared rulership. Thus, the early attacks from $Aaron_3$ against the Nephites when Mormon was younger would indicate that the Usumacinta boundary along which $Aaron_3$ operated are consistent with the Book of Mormon narrative.

It is interesting that the Gaddiantons are not indicated to have broken the year 350 truce that was made with the Nephites, only the Lamanites. The Gaddiantons were not involved in any battle with the Nephites after the truce, and only the Lamanites were implied to have ended the truce. The text seems to indicate that it was more of a 10 year "cease fire" as the Nephites during that time "prepared their lands and their arms against the time of battle" (Mormon 3:1) anticipating an end to the "cease fire." After the end of the tenth year, King $Aaron_3$ provided notice to Mormon that they were coming again to battle, which indicates that notice was to be provided to recommence hostilities at the end of the cease fire.

Considering that the Teotihucanos were interested in trade routes, it is notable that the geographic boundaries of the truce gave the Nephites the land northward "even to the narrow passage which led to the land northward" (Mormon 2:29), so it seems that the narrow passage itself was not included in what the Nephites controlled. The land southward was given to the Lamanites. So, it would seem that a primary trade route was left open for use (or even controlled) by the Gaddiantons, providing a route for these Teotihuacanos to continue to access Teotihuacan and the Maya, even during the Nephite/Lamanite conflict. This also provides a reasonable explanation as to why the Nephites did not flee further north as the Teotihuacanos were to the north and the Nephites were still maintaining a peace treaty with them.

Seasonal Warfare Patterns

In 1990 John Sorenson (1990a, 445-477) made an analysis of warfare patterns in the Book of Mormon to see if there was a preference for dry season warfare which preference has been documented in Mesoamerica. He initially assumed a standard solar year of twelve months, with the year starting at the vernal equinox and indicated that he had found some seasonal correlation. He later somewhat modified his position in 1997 (pg. 156) after the publication of Spackman's chronology (1993), where Spackman utilizes the uncorrected lunar calendar; however, it is not clear whether Sorenson changed his position with regards to his previous analysis, which would have been no longer valid as his was based on the assumption that the entire Nephite chronology was the corrected solar year.

Spackman, whose Lehi departure date was a half a month less than one lunar year later than mine, analyzed the seasonality of warfare (1993, 30) with respect to six passages in the Book of Mormon and found some correlation, and attempted to provide an explanation as to why those that did not correlate could be explained by other factors (surprise attack, etc.).

When looking at the research on the question of seasonality, the primary purpose seems to have been to help establish evidence of the veracity of the Book of Mormon, and then secondarily, to provide evidence of a particular calendar. However, it does not appear that there is sufficient data as to the actual dates of warfare, and there is such potential variability of precipitation rates (drought, delayed

rainy season, longer rainy season, etc.) and variability as to the seasonal warfare (surprise attacks, brief border attacks, and multiple years of extended warfare) in Mesoamerica that this type of analysis at best can really only establish plausibility.

Considering the Sorenson model in Mesoamerica, the rainy seasons of the varying areas and relative precipitation amounts are not identical. Rainy seasons and rates in various modern locations are:

Villahermosa	June into December	12 inches maximum
Guatemala City	May to October	11 inches maximum
Tuxtla Gutierrez	June to September	8 inches maximum
Minatitlan	June to October	15 inches maximum
Tapachula	May to October	18 inches maximum

The problem of trying to statistically establish seasonality using a particular month (assuming 12 months) and a calendar is to recognize, as shown above, the dry season can range from 5 to 8 months. Thus statistically, there is roughly a 50/50 chance that any month mentioned in the Book of Mormon would fall within the dry or rainy season.

In Sorenson's analysis (1997) he identified 85 military type actions or attempted actions, of which 37 had sufficient information where a date within at least a few months was identified in the text or could be extrapolated from the text. This included internal contention, small actions, and anticipated actions that never materialized (often because the defenses were observed to be significant to attempt an attack). In evaluating all of these in light of the calendar identified in this research and the areas where each took place, only 9 occurred during the rainy season. Two "actions" during the rainy season were internal contentions, so would not be expected to be seasonally planned. One was a very minor "intrigue" involving the protection of Lamanite prisoners. Three involved smaller forays into the mountains to root out Lamanites or Gaddiantons. Thus, roughly 90 percent of actions that might have been affected by the rainy season occurred during the dry season using this calendar, therefore providing further evidence that the calendar discussed in this research is correct.

Chapter 13

Jaredite Calendar and Preliminary Chronological Framework

In discussing correlations between the Olmec people and Jaredites, chronology is a good place to start. Unlike other parts of the Book of Mormon, the Jaredite record in the book of Ether does not follow an obvious calendar, although there clearly is some type of timekeeping going on since the record occasionally measures the ages and reigns of kings provided in "years." One technique to possibly estimate time in the Jaredite record is to establish a framework based on the estimated reigns of the kings (or deposed kings) where specific regnal years are not actually listed. Unfortunately, the record of kings is not continuous as there is an undefined break between Riplakish and Morionton (Morianton was spelled Morionton in the Original Manuscript), who is only listed as a descendant of Riplakish (Ether 1:23, 10:9). As a result, two separate chronological periods can be identified: the pre-Riplakish period and the post-Morionton period. The length of the separation between the two is not known except that it is only specified by the "space of many years" (Ether 10:9).
Before trying to establish in what years various events in Jaredite history occurred, a good starting place for this work is to determine the length of a Jaredite "year," as spoken of in the Book of Ether. There is reason to believe this "year" is not the familiar 365-day year, nor a strictly lunar calendar.

Jaredite/Olmec Calendar Comparison

It is apparent that the calendar years referenced in the book of Ether are not solar or even lunar years. Ether 9:23–25 discusses the reign of $Coriantum_1$, who had a wife who died at 102 years of age, after which $Coriantum_1$ fathered more children and finally died at the age of 142. The age of 142 is 26 years older than the oldest documented male (116 years, 54 days) in the modern era, which era has much longer life expectancies (www.wikipedia.org 2017).

As discussed, the Nephite measurement of years in the Book of Mormon involved calendars of both solar years of 365 days and uncorrected lunar years of 354.37 days. Even adjusting $Coriantum_1$'s age to accommodate the shorter lunar year, he would still have been nearly 138 solar years old by the time he died.

There is an additional indication that the Jaredites were operating under a different calendar system as the visit of Jaredite $Coriantumr_2$ to the people of Zarahemla lasted for "nine moons."

> Omni 1:20–22
>
> 20 And it came to pass in the days of Mosiah, there was a large stone brought unto him with engravings on it; and he did interpret the engravings by the gift and power of God.
>
> 21 And they gave an account of one Coriantumr, and the slain of his people. And Coriantumr was discovered by the people of Zarahemla; and he dwelt with them for the space of nine moons.

> 22 It also spake a few words concerning his fathers. And his first parents came out from the tower, at the time the Lord confounded the language of the people; and the severity of the Lord fell upon them according to his judgments, which are just; and their bones lay scattered in the land northward.

The term "moons" is used nowhere else in the Book of Mormon. It has been fairly well established that the people of Zarahemla not only hosted Coriantumr$_2$ but also inherited the tail end of the Jaredite (Olmecoid) culture (Sorenson 2013, 536–42). The mention of "moons" instead of "months" only at this place in the Book of Mormon record is indicative of a different calendar.

260-Day Calendar

In basically all of Mesoamerica, the oldest widespread calendar is the 260-day calendar. Simplistically speaking, the 260-day calendar could be considered to consist of 13 months of 20 days each. This calendar system, however, is actually a bit more complex than that; the individual days in the 260-day year are each identified by one of twenty day names, accompanied by one of 13 numbers in a continuous day count. The 260-day calendar was distributed anciently as far north as Hidalgo, Mexico and as far southeast as Honduras. Among the Aztecs it was known as *tonalpohualli* (count of days). Among the Maya its name is unknown, but modern scholars have assigned it the Yucatec Mayan name *tzolk'in* (division of days).

This calendar is the only one known to have existed in the earlier Olmec times, with linguistic similarities pointing to origination of the day names within the 260-day year perhaps as early as 3500 BC or as late as 2000–1600 BC (Rice 2007, 31–33). So far, the earliest example of the 260-day Olmec calendar is found on an earspool from Cuicuilco, Mexico, dated to 679 BC (see figure 65).

Figure 65 Earspool from Cuicuilco, Mexico with a 679 BC date, Al. 2 Lord (Olmec) (Edmonson 1988, 20)

The 260-day calendar is the calendar that existed during Jaredite times in the Olmec/Jaredite area. Without any other information from the Jaredite record about the Jaredite calendar, it would be appropriate to see if the 260-day calendar is evidenced in the Jaredite time frames given in the Book of Mormon during Jaredite time frames. The biologically impossible age of Coriantum$_1$ is, in fact, evidence of the 260-day calendar. In a 260-day calendar, the actual biological age of Coriantum$_1$, adjusted to our modern 365.24-day solar calendar year, is a little over 101 years, which is within reasonable biological possibility and fairly direct evidence of the consistency of the Jaredite record with the Olmec culture area.

In addition, the Book of Ether has no calendar year counts, as is found elsewhere in the Book of Mormon (e.g., "360 years from the departure of Lehi," etc.), which is consistent with the 260-day calendar, which did not count years from any base date (at least as far as is known).

Moons in the 260-Day Calendar

The mention of "moons" in relation to Coriantumr$_2$'s visit is also consistent with the 260-day calendar. Although the actual lunar cycle is on the order of 29 or 30 days, the 20-day period consisting of a month in the 260-day calendar is consistent with a known lunar period, since 20 days is the time that the moon is actually visible in the sky. Among the Maya, the numbers 20, 13, 7, and 9 are symbolically important numbers and correspond with lunar cycles: The moon is visible for 20 days; it is waxing (period from first visible crescent moon to full moon) for 13 days; it is waning for 7 days (period from full to the third-quarter moon); and then is not visible over the next 9 days before reappearing (Macri 2005).

Further, a nearly closed crescent-moon glyph represents the number 20 in Maya script (Glyph T683) (see figure 66).

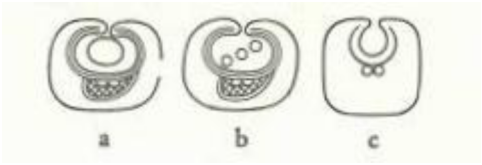


Figure 66 Maya crescent-moon glyphs (T683 a-c) signifying the number 20 (Thompson 1991)

A crescent-shaped symbol similar to the Maya glyph has been identified on the Epi-Olmec La Mojarra Stela as both "20" and "moon" (see figure 67).

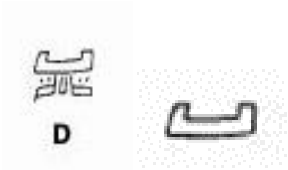


Figure 67 Epi-Olmec symbols for both "20" and "moon" (Justeson et al 1993, figs 6D, 8A, and 8B; Kaufman et al 2001, 2.34)

The numbers 9 and 13 are important in Mesoamerican mythology. The Lords of the Night are a set of nine gods who each ruled over every ninth night forming a calendrical cycle. Each lord was associated with a particular bad or good fortune, which was an omen for the night over which they ruled. The Lords of the Night are known in both the Aztec and Maya calendars, although the names of the Maya Night Lords are unknown.

In Aztec mythology the Lords of the Day are a set of 13 gods who each ruled over a particular day corresponding to one of the 13 heavens. The 13-day periods were cyclical, so the same god recurred once every 13 days.

Coincidentally, nine 20-day "moons" is 180 days, which is half of the 360-day calendar (plus five additional days) also used in Mesoamerica. The Book of Mormon Jaredite account is precisely consistent with the expected calendars of the Olmec area in Mesoamerica.

Beginning of the Jaredite Calendar

Any attempt to determine the beginning of Jaredite history requires one to address the "great tower" at the time the "language of the people" was "confounded," and people were being driven out. Gardner duly notes that there is no mention of the tower being that of Babel (2015, 382–83 and references therein). However, the story is similar and does imply a correlation. Gardner (2015) also indicates that the context of the tower as where the confounding of languages, etc., occurs was an interpretive translation provided by $Mosiah_2$ when he translated the Jaredite record, from which translation $Moroni_2$ was working with in his abridgment (383). Before assuming translation malfeasance, it would be prudent to look at other chronological correlators to see whether the timeframe of the tower of Babel is consistent with that of the Jaredite exodus.

Chronological Correlators

Certain items from the Book of Mormon text and elsewhere are useful in better correlating Jaredite chronology to the chronological framework of the calculated Reign of Kings framework discussed elsewhere. These items include the following:

1. Historical timing of volcanic eruptions and paleoclimate data and comparison with incidents in the Book of Ether
2. Etymological sources and time depth of the Sumerian etymological units for transliterated Jaredite words or names in the Book of Mormon
3. Sources and timeframes of Sumerian Proto-Cuneiform elements from the Caractors Document
4. Mesoamerican archaeological and scientific evidence that correspond to chronological events
5. Post-Jaredite events and commentary from the Book of Mormon

Each of these will be discussed in subsequent chapters.

<u>Historical Timing of Volcanic Eruptions and Its Comparison with Incidents in the Book of Ether</u>

We can establish a basic chronological framework for the events narrated in the Book of Ether by connecting two of those events—the great destructions associated with the reigns of Shiblom and Heth—with volcanic eruptions for which a timeframe can be established. Though there are other possibilities for the natural disasters described here, volcanic activity is a likely fit.

Shiblom Event

There is one event in the Book of Ether, during the reign of Shiblom, that has all the telltale markings of a volcanic eruption and its aftereffects:

> Ether 11:7
>
> And they hearkened not unto the voice of the Lord, because of their wicked combinations; wherefore, there began to be wars and contentions in all the land, and also many famines and pestilences, insomuch that there was a great destruction, such an one as never had been known upon the face of the earth; and all this came to pass in the days of Shiblom.

The volcanic and seismic event that occurred in 3rd Nephi is also described as a "great destruction," although this term is not used exclusively in the Book of Mormon to describe a volcanic eruption (3 Nephi 8:23). $Moroni_2$, in his abridgment of the Book of Ether, utilizes language nearly identical to what was engraved by his father, Mormon, to describe the 3rd Nephi great storm/volcano event, which "such an one as never had been known in all the land" (3 Nephi 8:5).

Volcanic eruptions and subsequent ashfalls impact local climate, ecology, agriculture, and human health and livelihood. Ash blocks solar radiation from reaching the lower atmosphere, and, as a result, modification in precipitation, temperature, cloudiness, and air pressure occurs, which creates localized cooling and warming. Mesoamerican colonial documents indicate a connection between major eruptions and occurrences of drought and subsequent famine (Gill 2000, 199, 235–36). It has recently been recognized, for instance, that local ground-level emissions from volcanic eruptions can cause localized droughts because the reactions of local emissions, SO_2, and other volcanic gases in the local atmosphere can suppress rainfall by inhibiting raindrop formation (USGS 2001). In addition, eruptions and ashfall directly destroy vegetation and crops, buildings, agricultural land, as well as humans and animals.

On a local level, Sorenson (2013) noted that the 1902 eruption of the Santa Maria volcano in Guatemala killed all the birds for hundreds of miles around, with the result that "flies, mosquitos, and rats [multiplied] to such an extent" and caused illnesses "that life for human beings became nearly unbearable" (Dull et al 2001). Moziño (1869) reported a similar effect on wild birds after one of the smaller eruptive events of the 1793 eruption of the San Martín volcano, located in the Olmec area. In that instance, the birds were stunned and immobilized to such an extent that they could be collected by hand.

Dull (pg. 37) also noted that:

> Although post-eruption starvation and disease have caused only 4 percent of the volcano-related deaths worldwide since 1900, this percentage swells dramatically to 49 percent for the pre-industrial period from 1600 to 1899. . . Thus, malnutrition, starvation, and pestilence following the TBJ eruption (*260 AD Tierra Blanca Joven eruption of the Ilopango caldera in central El Salvador*) might have been partly responsible for progressive demographic collapse throughout the abandonment zone.

Sorenson (2013), citing other authors, notes the contamination of water supplies caused by ashfall, essentially stopping agricultural production. Moziño also reported that during the 1793 San Martín eruption, fish were killed, and the Tuxtla River was clogged with mud and sand. Drinking the murky water caused "many grave cases of dysentery and persistent coughing." Thus, volcanic eruptions directly correlate to famines, pestilence, and the "great destruction" mentioned during the reign of Shiblom.

In the Olmec area, during Olmec times, there have been three active volcanoes, with the following eruption timeframes documented by radiometric sampling (see table 4 and figure 68). The San Martín volcano, which is centrally located in the Olmec heartland, erupted in 750 BC +/– 55. The Pico de Orizaba volcano, located on the northern margins of the Olmec heartland, erupted in 780 BC +/– 60. On the southern boundary of the Olmec heartland, the El Chichón volcano had a series of at least three eruptions dating potentially from 777 BC to 645 BC.

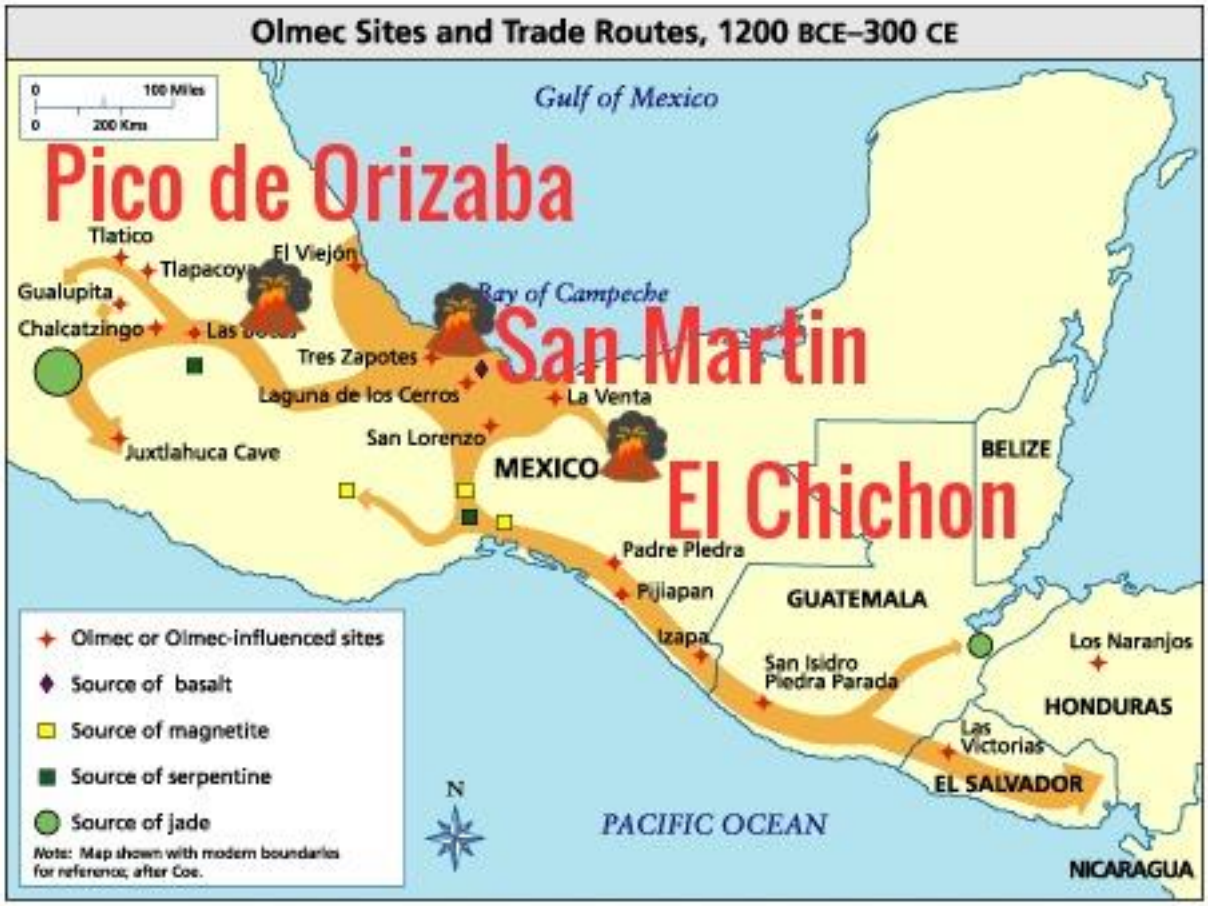


Figure 68 Location of Pico de Orizaba, San Martín, and El Chichón volcanoes in the Olmec heartland (www.latinamericanstudies.org 2015, modified by author)

Table 4 Historical Eruptions of El Chichón, Pico de Orizaba, and San Martín Volcanoes

<u>El Chichón</u>

255 BC +/– 60

340 BC +/– 250

520 BC +/– 50

695 BC +/– 55

700 BC +/– 200 *

722 BC +/– 50 **

1095 BC +/– 105

1175 BC +/– 70

1340 BC +/– 150 *

1357 BC +/– 50 **

1725 BC +/– 80

2030 BC +/– 100 *

(Espíndola 2000, *Smithsonian 2016, **Nooren et al 2015)

Pico de Orizaba

780 BC +/– 60 **

1500 BC +/– 70 **

2110 BC +/– 120 **

2300 BC +/– 75

2500 BC +/– 70 **

2780 BC +/– 75

(Smithsonian 2016, **Del La Cruz-Reyna et al 2002)

San Martín

150 BC +/– 300

750 BC +/– 55 *

1320 BC +/– 250 **

2130 BC +/– 50 *

(Smithsonian 2016, *Espíndola et al 2010, **Nelson et al 1992)

Based on this data, with all three of the major volcanoes in and surrounding the Olmec heartland erupting at the same time, correlating to the Book of Ether, the reign of Shiblom fits somewhere in the 750 BC to 720 BC time frame, perhaps a bit earlier or later. Evidence from pollen cores in a small lake in the Tuxtla Mountains indicates that the lake essentially dried up starting in this same time frame (Goman et al 1993), further corroborating this timeframe with the reign of Shiblom.

Many volcanic eruptions consist of multiple eruption events that take place over months or years, so the effects are not necessarily of short duration, thus fitting well with the description given for the Shiblom event, which suggests the effects of the "great destruction" occurred over a long period.

By thus placing the end of the reign of Shiblom at approximately 715 BC, using the volcanic correlation which happened earlier in his reign, together with the calculated regnal period calendar (discussed later), one arrives at the date of Ether's death at 440 BC, which corresponds fairly well with the demise of the Jaredites/Olmecs somewhere around 400–450 BC.

This framework also places the start of Lib's reign at approximately 1065 BC. The Olmec city of La Venta is a nice match for the "great city" constructed by Lib. An initial layer of occupation at La Venta dates to 1200 BC, but La Venta did not reach its apogee until after 900 BC. After 500 years of preeminence, La Venta was all but abandoned by the beginning of the fourth century BC (Diehl 2004).

Heth Event

The Book of Ether describes another dearth on the land, which occurred when Heth was the ruler, involving a significant ecosystem disruption:

> Ether 9:29–35
>
> 29. But the people believed not the words of the prophets, but they cast them out; and some of them they cast into pits and left them to perish. And it came to pass that they ~~did~~ [done] all these things according to the commandment of the king, Heth.
>
> 30. And it came to pass that there began to be a great dearth upon the land, and the inhabitants began to be destroyed exceeding~~ly~~ fast because of the dearth, for there was no rain upon the face of the earth.
>
> 31. And there came forth poisonous serpents also upon the face of the land, and did poison many people. And it came to pass that their flocks began to flee before the poisonous serpents, towards the land southward, which was called by the Nephites Zarahemla.
>
> 32. And it came to pass that there were many of them which did perish by the way; nevertheless, there were some which fled into the land southward.
>
> 33. And it came to pass that the Lord did cause the serpents that they should pursue them no more, but that they should hedge up the way that the people could not pass, that whoso should attempt to pass might fall by the poisonous serpents.
>
> 34. And it came to pass that the people did follow the course of the beasts, and did devour the carcasses of them which fell by the way, until they had devoured them all. Now when the people saw that they must perish they began to repent of their iniquities and cry unto the Lord.
>
> 35. And it came to pass that when they had humbled themselves sufficiently before the Lord ~~he~~ [the Lord] did send rain upon the face of the earth; and the people began to revive again, and there began to be fruit in the north countries, and in all the countries round about. And the Lord did show forth his power unto them in preserving them from famine. *(strikeout and parentheses reflecting the Book of Mormon Original Text)*

This event during the reign of Heth can be summarized chronologically as follows:

1. There is a great dearth upon the land.
2. Inhabitants are destroyed exceedingly fast because of the dearth; there was no rain on the face of the earth.
3. Poisonous serpents came forth and poisoned many people.
4. Flocks flee “before” the poisonous serpents toward the land southward.
5. Some of the animals perished along the way; some made it into the land southward.
6. Serpents stopped pursuit and hedged up a way so people could not pass without falling to the poisonous serpents.
7. People followed the path of the animals, eating all the ones that had fallen.
8. Rain came back to the earth.
9. Sometime later the serpents were destroyed, so people could pass to the land southward.

In the Jaredite/Olmec homeland, there are five types of poisonous snakes: coral snakes, fer-de-lances (pit vipers), cantils, eyelash vipers, and regionally located pit vipers. There are two varieties of coral

snakes: the variable coral snake and the elegant coral snake. The five types of regional pit vipers are the jumping pit viper, the Olmecan pit viper, the hog-nosed pit viper, Dunn's hog-nosed pit viper, and Rowley's palm pit viper.

Coral snakes prefer wooded areas, marshes, or places with loose soil. Coral snakes remain in their dens for the majority of the day and are rarely spotted by humans during the day. Unlike many other snakes, the coral snake is timid and will try to flee a situation rather than stand its ground. If the animal feels harassed, however, it may strike without warning.

The Mexican cantil lives in a vast range of habitats, including seasonally dry forest, tropical deciduous forest, tropical scrub forest, and savanna. These cantils prefer habitat bordering rivers or streams, but they may also be found in grasslands and cultivated lands. They are generally shy by nature, and if threatened, their first instinct is to rely on camouflage to evade danger. If the camouflage proves insufficient, they will use a threat display to ward off potential predators.

The eyelash viper prefers lower altitudes and humid, tropical areas with dense foliage, generally not far from a permanent water source. It lives in trees and is not known to be an aggressive snake but will not hesitate to strike if harassed.

The fer-de-lance (aka terciopelo) likes moist environments and lives in most life zones at low or middle elevations (up to 600 meters), excluding those with strong seasonal dry periods. These snakes have been described as excitable and unpredictable when disturbed. They can, and often will, move very quickly, usually opting to flee from danger rather than attack, but they are capable of suddenly reversing direction to vigorously defend themselves.

The jumping pit viper lives in moist forests, including tropical moist and wet rainforest, deciduous forest, and lower cloud forest, as well as secondary forest. Their common name alludes to the supposed ability these snakes must launch themselves at an attacker during a strike, thereby bridging a distance that is equal to or greater than the length of their bodies. They are slow moving and nonaggressive.

The Olmecan pit viper lives principally in the Tuxtla Mountains. Its preferred habitat includes upper rainforest and cloud forest, including degraded forest and associated pastureland. It is not known to be quick moving or aggressive.

The hog-nosed pit viper and Dunn's hog-nosed pit viper occupy lowland rainforest and lower mountain wet forest. They have also been found in secondary forest. They are not known for being quick-moving or aggressive.

Rowley's palm pit viper inhabits intermediate elevations in cloud forest and moist ravines in pine-oak forest. It is found in primary forests and coffee plantations. They are also not known to be quick-moving or aggressive.

In trying to identify the most likely species of the "poisonous serpents" referred to in the Book of Ether, we can compare the habitations of the snakes listed above with the description of the Jaredite lands. The Jaredite lands at this time, for instance, were not in the higher mountains but were in lower mountain slope elevations or more low-lying flatlands, likely ruling out pit vipers. The description of the snakes given in Ether indicates that they were fast moving and were apparently somewhat aggressive. Thus, the most likely candidate species is the fer-de-lance (see figure 69). Since the fer-de-lance is

principally adapted to moist habitat, the species would also be likely to migrate en masse to a more suitable habitat in the case of a drought.

Figure 69 Fer-de-lance (www.pariasprings.typepad.com 2014)

The episode of snake migration described in Ether is not in the least far-fetched. Snakes often migrate en masse on a seasonal basis and are known to migrate in search of water during a drought. In 2007, a large migration of venomous brown snakes invaded the city and suburbs of Sydney, Darwin, and other areas of Australia that had been hit by the worst drought in 100 years. The snakes were seeking water and were much more aggressive than normal, biting many people, though normally brown snakes are known for being aggressive.

It has been suggested that the snakes discussed in Ether migrated to follow a food source, namely the flocks (Tvedtnes 1997); however, this does not appear to be consistent with the description that the fleeing animals that died were not eaten by the snakes but were instead left for the inhabitants to collect and eat. It appears that the snakes were looking for water, and perhaps when they encountered water and moist habitat (perhaps a river?), they stopped.

The description in Ether of the snakes maintaining high population densities blocking or “hedging” passage of a particular area for a period of time might be explained by the lack or reduction of snake predators in conjunction with ample food supply. Volcanic eruptions, for instance, have been known to significantly remove local birds, which would have allowed the venomous snake population to grow unhindered by snake-eating bird predators. Without the birds, there also would have been reduced competition for the rodent or lizard food supply, allowing growth in snake populations.

This situation of ample food supply and lack of predation currently exists off the shore of Brazil, almost 93 miles away from downtown São Paulo, on an island called Ilha de Queimada Grande. The island is

untouched by human development because of the snakes. Researchers estimate that there are between one and five snakes per square meter of the island. The snakes live on the many migratory birds (enough to keep the snake density remarkably high) that use the island as a resting point. There are also no natural predators of snakes on the island.

The snakes on Queimada Grande are a unique species of pit viper, the golden lance head. The golden lance heads that occupy the island grow to well over half a meter in length, and they possess a powerful fast-acting poison that melts the flesh around their bites. Golden lance heads are so dangerous that, with the exception of some scientific outfits, the Brazilian Navy has expressly forbidden anyone from landing on the island.

Locals in the coastal towns near Queimada Grande recount grisly tales of death on the island. In one story, a fisherman unwittingly wanders onto the island to pick bananas. Naturally, he is bitten. He manages to return to his boat, where he promptly succumbs to the snake's venom. He is found some time later on the boat deck in a great pool of blood. Another story is of the final lighthouse operator on this island and his family. One night, a handful of snakes enter through a window and attack the man, his wife, and their three children. In a desperate attempt to escape, they flee toward their boat, but they are bitten by snakes on overhead branches. There are some 30 plus species of birds in the Jaredite/Olmec homeland area that prey on snakes and rodents.

Elimination or decimation of these birds would remove serious snake predators and competition for snake prey. There are also perhaps a hundred other species of birds in the Jaredite region, which do not prey on snakes, but they do prey on rodents or lizards, similar to the fer-de-lance. Elimination or depletion of these species would also allow population explosions of snakes for which rodents and lizards are a food source.

Notably, the account in Ether indicates that some time later, the serpents were “destroyed,” but it does not say whether the destruction was caused by humans or natural events; perhaps it occurred naturally through the reestablishment of competing predator populations.

Although the Book of Ether does not enumerate any occurrences directly descriptive of volcanic activity during the Heth period, the volcanic activity concurrent with the “dearth” may have been one of the casualties and may also help to explain the poisonous serpent phenomenon.

Based on the only other volcanic event besides the Shiblom event involving all three surrounding volcanoes (Pico de Orizaba, San Martín, and El Chichón) erupting during the same time period, the indications are that the Heth event took place approximately during some period between 2070 and 2130 BC, which, by using calculated regnal periods (discussed later), would place the departure of the Jaredites at approximately 2600 BC.

Paleoprecipitation Data and the Heth and Shiblom Events

As discussed above, the Heth Event (2070-2130 BC) involved a lack of rain in the land northward with a migration to a more favorable area (from that standpoint of water) into the land southward, while the Shiblom Event (750-720 BC) did not. There are various methodologies to determine the amount of rainfall historically, prime among them are the analysis of stalagmites in caves, as well as river flood deposition patterns. There was no data found directly in the Olmec core area, but data is available

immediately to the west in Mexico (Bernal et al 2011), and data is available for both the Maya highlands and lowlands (Akers et al 2016; Nooren et al 2018).

The Heth Event corresponds chronologically with what is known as the "4.2 ka Event" which was a worldwide aridification event starting around 2200 BC, and it probably lasted the entire 22nd century BC. It has been hypothesized to have caused the collapse of the Old Kingdom in Egypt, the Akkadian Empire in Mesopotamia, and the Liangzhu culture in the lower Yangtze River area. The drought may also have initiated the collapse of the Indus Valley Civilisation, with some of its population moving southeastward to follow the movement of their desired habitat, as well as the migration of Indo-European-speaking people into India, similar to what is described in the Book of Ether at the time of Heth (deMenocal 2001).

For the Heth Event the Bernal stalagmite data (pg. 108) shows that there was a major dearth of precipitation in southern Mexico near Mexico City at Cueva del Diablo at the time of the Heth Event, while showing that in northern Yucatan at Lake Chichancanab there was little change in the rate of precipitation. The Noonan et al cave and river deposit data (pgs. 1259, 1265) do not show a dry period during the Heth Event in the Usumacinta drainage area (land southward Maya highland mountainous area) and the lowland Maya area around Tikal. The Akers et al cave and river deposit data (pgs. 277, 282) do not show a dry period during the Heth Event in the lowland Maya area in Guatemala and Belize.

For the Shiblom Event the Bernal stalagmite data (pg. 108) do not show much deviation at the expected time near Mexico City or northern Yucatan, but does show a drier climate starting after 600 BC. The Noonan et al cave and river deposit data (pgs. 1259, 1265) do not show a dry period during the Shiblom Event in Usumacinta drainage area (land southward Maya highland mountainous area) and the lowland Maya area around Tikal. The Akers et al cave and river deposit data (pgs. 277, 282) do not show a dry period during the Shiblom Event in the lowland Maya area in Guatemala and Belize.

Thus, the paleoclimate data that we have is supportive of a drought during the Heth Event (2070-2130 BC) in the land of the Jaredites and a lack of a drought event in the land southward towards Zarahemla. It is not clear what effect that the volcanic activity during that time had on precipitation rates, as there was a significant worldwide drought event at that time. Because the local Mesoamerican data supports the concept of a local drought event in the Olmec core area while there was no change of precipitation rates in the land southward, the volcanic activity seems to still have had some effect.

The paleoclimate data that we have is not very supportive of a drought during the Shiblom Event (750-720 BC), so the volcanic activity during that time period does not appear to have affected regional precipitation, but the Book of Mormon text in the Book of Ether, unlike the Heth Event, does not indicate that it was necessarily a drought event as there is no mention of a dearth or a restoration by rainfall as took place in the Heth Event. The description is consistent with a volcanic event.

Chapter 14

Chronological Identifiers from Sumerian Etymological Roots of Terms and Names

A previously untapped source for establishing a chronology of Jaredite history is linguistic analysis. Since the Jaredites left Mesopotamia from a particular place at a particular time, their language should display signs of Sumerian language as it existed at the time of their departure. Thus, analyzing Jaredite names, words, and written characters and comparing them with the Sumerian language at different points in its development will establish the window of time in which the Jaredites left Sumer for the Americas. Using linguistic correlations to establish when the Jaredites left the Old World will give us the correct starting point for a chronology of Jaredite history, enabling us to get our chronology off on the right track.
An analysis of the Sumerian etymological roots of all the Book of Mormon names and unknown words was recently completed by the current author (Grover 2017a). Portions of the book discussed Sumerian root words that could be reliably determined and provided some definitive dates, reproduced here. Methodological premises used in that work include:

1. The original location of the Jaredites was somewhere in Mesopotamia (see the great towers and confounding of languages in Ether 1:3, 33). As stated above, Sumer is shown to be the area of origination.
2. The Nephites, after joining with the people of Zarahemla, had, at a minimum, a bilingual society (Omni 1:17–18). Zeniff said he was taught in "all the language of the Nephites" (Mosiah 9:1), indicating multiple languages were in use at the same time. That the Nephites were outnumbered by the people of Zarahemla (Mosiah 25:2–3) indicates the language of the people of Zarahemla was likely more dominant.
3. The fact that names from Jaredite times appear in the Book of Mormon after the demise of the Jaredites clearly indicates the incorporation of the Jaredite language into the Nephite language, likely principally through the people of Zarahemla, but also possibly through other local peoples among whom the Nephites found themselves, even from their first landing.
4. The Caractors Document indicates multiple levels of linguistic meaning in the original name glyphs in the Book of Mormon (Grover 2019). Most of the personal and place names in the Book of Mormon have at least three levels of etymological meaning, in Hebrew, Jaredite/Sumerian, and reformed Egyptian.
5. Many of the names in the Book of Mormon are metonymic, which means the names were created and given after the fact (or at least later in life) and are based on the exploits and characteristics of the individual or place. This concept for explaining Book of Mormon names is not a new one (Thomasson 1994).
6. While well-meaning researchers have tried to find Hebrew names in the Old World and place them in the Book of Mormon, little thought has been given to the fact that most of the Book of Mormon was written after the Lehites were 1,000 years removed from the Old World. In the

case of Jaredites and their names, their records were found and translated approximately 2,500 years after leaving the Old World, and another 500 years passed before they were abridged by Moroni$_2$. Consideration must be given to the Mesoamerican location and the significant passage of time; both factors potentially modify our understanding of the underlying syntax and language.

Since the language of the Jaredite interpreted names is proposed to be Sumerian based, a brief synopsis of the Sumerian language is in order.

Sumerian Language

Sumerian is a peculiar language in that it is not only a dead language but also a language that was not likely spoken already in the period from which most Sumerian texts date. From 2500 to 1600 BC, Sumerian gradually changed from a spoken language to an exclusively literary language (Thomsen 1984). Sumer was one of the ancient civilizations and historical regions in southern Mesopotamia, which is modern-day southern Iraq (see figure 70).

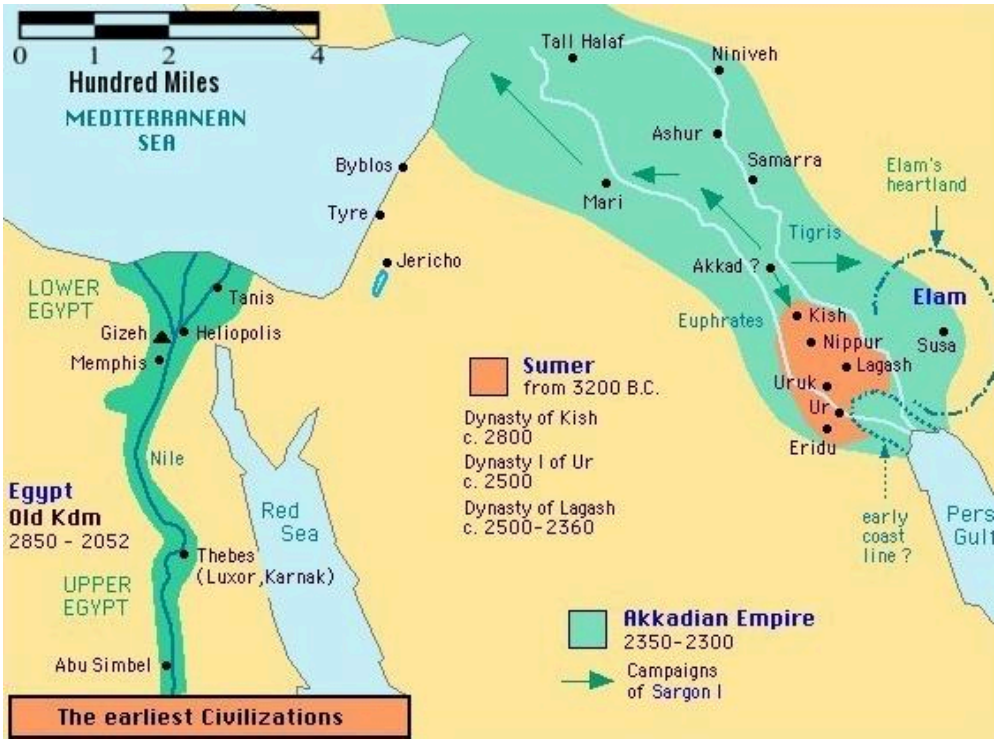


Figure 70 Map of ancient Sumer and Elam (www.hyperhistory.com 2016)

It is not certain when the Sumerians had initial contact with the Akkadians, who were generally located to the northwest of Sumer, but it seems to have been as early as 3000 BC. It is likely that there was a long period of contact, at least in the boundary areas, although there are no written attestations until 2600 BC. Some 2600 BC Sumerian texts include Akkadian personal names, including the names of some of the scribes of the texts. A few loanwords also appeared at that time.

During the reign of Sargon (2334–2279 BC), the official language was principally Akkadian, with royal inscriptions, religious texts, and year dates being bilingual. Elsewhere, however, Sumerian was used only in Sumer proper, so it is surmised that the Sumerian language began to seriously vanish around this time. During the third dynasty of Ur (2112–2004 BC), after Sargon, the use of Sumerian increased in official documents and was almost exclusively used in royal inscriptions, juridical and administrative documents, and correspondence, while the use of Sumerian as a spoken language was very limited.

During the Old Babylonian Period (2000–1600 BC), Sumerian is considered to have been a dead language, with Akkadian being the spoken language, though Sumerian was still used as an official and literary language. Sumerian may have been spoken by scholars and scientists. The death of a language is not a uniform or simple process, so there may have been pockets of Sumerian-speaking people, especially in the south.

Since Sumerian was a dead language at the time of the Akkadians, much of the knowledge of how Sumerian was actually pronounced must be gleaned from Old Babylonian period lexical texts in which the scribes took care to represent the full phonology of the Sumerian words. There are a few limitations to our understanding of Sumerian pronunciation, the first being that the lists represent the pronunciation of Sumerian as filtered through the Akkadian phonological system, and second, the texts we have appear to be practice exercises as part of a scribal training process and so exhibit some errors (Smith 2007).

Structurally, Sumerian features a word structure called agglutination, which, by simplistically speaking, consists of "gluing" different morphemes (simple structures contained in a word) and word modifiers together to form a single, complex (often long) word (Cunningham 2013, 96). Another feature of Sumerian (and other languages) is compounding, or the combining of individual words to form a "compound word." In the case of many Book of Mormon names, construction is through compounding, since one does not contemplate a full sentence as a name. In compounding, different nouns/verbs/adjectives are placed together. For example, *green* and *house* can be compounded to become *greenhouse*.

In evaluating whether Sumerian is a candidate as a source language for Jaredite names, one must compare the phonetic sounds (letters) in Sumerian with known Jaredite names to see if the phonetics of each are compatible. Since there are probably some sounds in ancient Sumerian that are not precisely known, there may be a few defugalties. When looking at the transliteration of words in Sumerian, it must be recognized that the romanized Pennsylvania Sumerian dictionary (2006)(ePSD) used for comparison in this work does not include the English letters *c*, *f*, *j*, *o*, *q*, *v*, or *x*. Comparing Sumerian phonetics to definitively Jaredite names reveals that all of the Sumerian phonetic elements or letters (with the possible exception of *ĝ*) are found in the Jaredite names. In reverse, as in Sumerian, Jaredite names lack the *f*, *q*, and *x*. The Jaredite names have only one instance of *v*, which is in the name Levi, a clearly biblical name, which may have been the result of the translation of the Jaredite plates by Mosiah_2 into the Nephite language or may be a Nephite name assigned after the fact to this particular Jaredite king. Moroni_2 likely consulted the Mosiah_2 translation to make his abridgment. The Jaredite names include *ph*, which does not necessarily equate to an *f* sound; the pronunciation could be a *p* sound followed by an *h* sound. The same may be true for the *th* that is also found in Jaredite names.

That leaves *j*, *o*, and *c* as the only Jaredite sounds or letters unaccounted for in the phonetics found in the ePSD Sumerian dictionary. Academics have accepted the fact that Sumerian transliteration dictionaries missed the *j* sound. As previously averred, modern knowledge of Sumerian phonology is inevitably flawed and incomplete because of the lack of native speakers, the transmission through the filter of Akkadian phonology, and the difficulties posed by the cuneiform script. As I. M. Diakonoff observes, "When we try to find out the morphophonological structure of the Sumerian language, we must constantly bear in mind that we are not dealing with a language directly but are reconstructing it from a very imperfect mnemonic writing system which had not been basically aimed at the rendering of morphophonemics" (Diakonoff 1976).

The existence of various other consonants has been hypothesized, including *j*, based on graphic alternations and loans. Diakonoff lists evidence for two *i* sounds, two *r* sounds, two *h* sounds, and two *g* sounds (excluding the velar nasal) and assumes a phonemic difference between consonants that are dropped word-finally (such as the *g* in zag > za_3) and consonants that are not (such as the *g* in lag). Other "hidden" consonant phonemes that have been suggested include semivowels such as /*j*/ and /*w*/ (www.wikipedia.org 2016). The *j* was lost in Sumerian at or before the Uruk III time period (2112–2004 BC) (Jagersma 2010, 54–55).

Some academics have also argued that a letter *o* phoneme might have existed, a fact concealed by the Akkadian transliteration, which does not distinguish it from the letter *u* (Michalowski 2008, 16). In collecting etymological possibilities from Sumerian in this work, to be thorough, both *a* and *u* will be considered when the letter *o* is present.

The letter *c* in Jaredite names seems to be equivalent to *k*, as far as expected pronunciation and word structure in English goes. A recent publication linking Sumerian to the Uralic language family identifies a phonetic *k* and a tonal *k'* for proto-Sumerian (ca. 4000–3000 BC) and so provides a reasonable explanation for both the *k* and *c* that occur in Jaredite names (Parpola 2016, xxi). In collecting etymological possibilities from the ePSD Sumerian dictionary, *k* will be considered when the letter *c* is present.

In summary, the Jaredite names and Sumerian language appear to be phonetically compatible, so Sumerian, at least from the standpoint of similar sounds, is a good candidate as the source language of Jaredite names.

Attestation Timeframes

An "attestation" is the point in time and place where the word is found in some sort of text. Any attestation that currently is known to be the earliest or latest should not be assumed to be the earliest or latest that the word was ever used or spoken. The Sumerian dictionaries do not identify word attestation by exact dates; they use only archaeological or dynastic periods. Because there is not unanimity among academics as to the exact dating of these periods, for purposes of this work, what is called the Middle Chronology will be used, which is as follows:

Early Dynastic I: 2900–2700 BC
Early Dynastic II: 2750–2600 BC

Early Dynastic IIIa: 2600–2450 BC
Early Dynastic IIIb: 2500 –2350 BC
Old Akkadian: 2340–2200 BC
Lagash II: 2260–2023 BC
Ur III: 2112–2004 BC
Early Old Babylonian: 1950–1776 BC
Old Babylonian: 1950–1530 BC
Middle Babylonian: 1530–1000 BC

The legible Sumerian cuneiform language that developed from the early Proto-Cuneiform, did so around 2600 BC, so attestations would not be expected prior to the Early Dynastic IIIa Period (2600 BC) simply because, other than the numbers and portions of the Sumerian metrological system, most of the Proto-Cuneiform has not been deciphered. With that in mind, the dates of attestation are still generally helpful in evaluating the timeframe of the Jaredites' departure.

Sumerian Writing

The first stages of Sumerian writing are found in Uruk and Gemdet Naṣr around and before 3000 BC. The writing was pictographic or ideographic (Proto-Cuneiform). Sumerian writing was not always written in the order it had to be read. The ideographic writing system without phonetic signs for grammatical elements signifies that the identification of the language behind the written script is not apparent. It was considered a mnemonic language, using rebus principles, and functioned primarily as a memory aid. Even when using the maximum number of phonetic symbols created for its signs, it remained a mnemonic system for which exact renderings of the pronunciation was not the goal:

> Sumerian writing never attempted to render the language phonetically correct, exactly as it was spoken. The very first stages of writing as attested in Uruk and Ǧemdet Naṣr (about 3000 BC) were pictographic or ideographic in nature, thus rendering only the most important words like the catchwords of an account or a literary text… The ideographic writing system without phonetic signs for grammatical elements means that the identification of the language behind the written records is not immediately evident. (Thomsen 1984, 22)

Thomsen (1984) has indicated that reconstructing the complete spoken Sumerian is probably impossible (pg. 24). Thus, texts cannot be taken at face value and read as a detailed grammatical description of the language. Before the death of the language, the Sumerian script was mainly a memory aid, rendering the most important words in an ideographic way, and leaving out many things that were not thought absolutely necessary for the understanding of the text. As a result, knowledge of Old Sumerian grammar is limited. Old Sumerian dates from the early texts in 2600 BC to the end of the Sargonic dynasty in 2200 BC.

By way of note, the small number subscripts on the Sumerian words do not change the pronunciation. Some different Sumerian glyphs carry the same pronunciation, and the number designates which is the underlying glyph. In addition, the phonetic *š* makes an English *sh* sound.

Unknown Words in the Book of Mormon

Paul Y. Hoskisson has written that "the greatest challenge for persons interested in the meanings of proper names in the Book of Mormon has to do with those names whose meanings we already know"

(Hoskisson 2002). In addition to words where a meaning is specifically given, there are other words for which no meaning is provided, but some general understanding of the meaning can be derived through context. The following words in the Book of Mormon are not personal or place names and were not translated, but rather appear to have been transliterated: *amnor*, *antion*, *cumoms*, *cureloms*, *Deseret*, *ezrum* (*ezrom*), *Gazelem*, *leah*, *Liahona*, *limnah*, *neas*, *onti*, *Rameumptom*, *senine*, *senum*, *seon*, *Sheum*, *shiblon*, *shilum* (*shiblum)*, *shum*, and *Ziff*. *Shiblum* has been shown to be a spelling error of *shilum* at the time of the printing of the 1830 edition of the Book of Mormon.

Two of the words, *cureloms* and *cumoms*, specifically pertain to the Jaredites. They are identified as animals: "cureloms and cumoms; all of which were useful unto man, and more especially the elephants and cureloms and cumoms" (Ether 9:16–19). A previous investigation of *Ziff* (another untranslated and presumably transliterated word) determined that the word had an ancient meaning of a specialized metal, and for the time period of the target language of the translation of the Book of Mormon, there was no available English word for that specialized metal (Grover 2016). The same criteria would be applicable for evaluation of *cureloms* and *cumoms*.

In the case of *cureloms* and *cumoms*, it is not certain whether the transliterated words were generated from Hebrew, from the language of the Jaredites, or from some other extant Mesoamerican language. The original Jaredite plates were first interpreted by $Mosiah_2$ and were then abridged by $Moroni_2$, so the words might have a Hebraic genesis. In any event, exploring the possibility of a Mesopotamian language derivation is useful in determining whether any chronological information can be derived from it.

Curelom

A search for *curelom* constructed in Sumerian presented a fairly straightforward definitional compound word etymology. It is assumed that the "s" on the end of both *cureloms* and *cumoms* is indicative of an English plural and was not part of the original transliterated name. The word *kur* or *kurra,* meaning "mountain(s)," is attested to in Sumerian during the Early Dynastic IIIa, Early Dynastic IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, and Old Babylonian Periods, indicating the presence of this word from 2600 to 1600 BC (Pennsylvania Sumerian Dictionary 2006). The word e_3*-li-um* (a form of the word *e*), meaning "sheep" or "a description of ewes or lambs" is attested to in the Early Dynastic IIIb Period, indicating the presence of this word from before or during 2500 to 2230 BC (Pennsylvania Sumerian Dictionary 2006). There is some disagreement over the chronological dates for these various periods, so the longest possible chronology was considered for each element of the word. A similar word, *kura*, is also found in Sumerian and means "a designation of looms," and is thus indicative of an animal that provides the source material for weaving (Pennsylvania Sumerian Dictionary 2006).

One issue involving the construction of this word is that it is not found as an attested compound word in the Sumerian script. The typical construction of this word in Sumerian script (and also in Egyptian, Akkadian, and other Semitic languages) would place the adjective (*kur*) behind the noun, not in front of the noun. However, as has been discussed, the syntax and grammar of early spoken Sumerian cannot be accurately constructed from the Sumerian logograms. More importantly, the translation of the Caractors Document (Grover 2019) indicates that one of the changes made in the reformed Egyptian was that the

adjectives were moved in front of the nouns. Mormon indicated that modifications to the Egyptian syntax was to be expected:

> Mormon 9:32–33
>
> 32 And now, behold, we have written this record according to our knowledge, in the characters which are called among us the reformed Egyptian, being handed down and altered by us, according to our manner of speech.
> 33 And if our plates had been sufficiently large we should have written in Hebrew; but the Hebrew hath been altered by us also; and if we could have written in Hebrew, behold, ye would have had no imperfection in our record.

This method of compounding or agglutinating different words to make a name was used in Mesoamerica. For example, the typical way to form an Aztec place name is to combine nouns, typically by dropping a portion of one or more of the nouns, and sometimes adding a place particle at the end. Book of Mormon place names do not appear to have a place particle included, but this may be an artifact of translation where the particle was replaced by the English form or word such as "city" or "land." For example, the Aztec place name Acamilixtlahuacan is translated as "where are level fields of rushes." The name is a compound of *aca*(*tl*) (reed); *mil*(*li*) (field); *ixtlahua*(*ca*) (level expanse); and *can* (place particle). The letters in parentheses are the letters that are dropped from each word when it is compounded (Starr 1920). An example of an Aztec place name that does not have a definitive place particle is Teocalhueyac, translated as "in the high or upreared temple," consisting of *teocal*(*li*) (temple) and *hueyac* (high, prolonged). Personal names in Nahuatl (the language of the Aztecs) are typically compound names as well. For example, the Nahuatl name Kozkakuahtli was created from *kozka*(*tl*) (necklace) and *kuauhtli* (eagle).

Many Maya names are compound names as well. For example, the Maya name Sachihiro is made of *'sachi*, which means "happiness," and *'hiro*, which means "vast." Zoque place names are typically compound names, and some also have place suffixes like the Aztec (Wonderly 1946). The Mixe also have compound names, such as Naaxwiiñ, the name of a Mixe god, which is made of *naax* (earth) and *wiiñ* (face, surface).

Interestingly, the two languages whose proto language was most likely spoken among the Olmec are Mixe and Zoque (Campbell et al 1976). Both languages generally place the adjective (or adjective equivalent) in front of the noun (Faarlund 2012; Romero-Mendez 2008). The Nahuatl and the Maya languages exhibit this same feature. This may indicate that the word *curelom* was constructed by the Jaredite record-keepers sometime after their arrival and linguistic assimilation into the existing Mesoamerican population. According to the calculated chronology, the word *curelom* (and *cumom*) appears at the time of Emer, approximately 300 years after the Jaredites' arrival.

Strictly speaking, based on the etymology of word *curelom*, meaning "mountain sheep," the departure of the Jaredites would have been between or before 2500 BC and 2230 BC. There is of course some give and take for that timeframe, since the data is based on what has been found archaeologically—there may be some earlier or later examples of the word that have not yet been unearthed.

Other Sumerian etymological units found within the word *curelom* are:

u: sheep or ewe	2600–1000 BC
u_8-*ra* (form of *u*)	1950–1530 BC
ur: harness	2600–2450 BC, 1950–1530 BC
ur: to roam around	1950–1530 BC
re: that	2112–2004 BC, 1950–1530 BC
lah: to full (cloth, wool)	unknown

Following the identification of etymological units and analysis, a constructed compound word is proposed that is equivalent or close to the Book of Mormon name or term. Some letters or sounds may be shared more than twice, for example the "u" in "Kur-e_3-li-um" is actually shared by the words *kur*, *u*, *ur* (harness), and *ur* (to roam around). This superposition of multiple words phonetically allows language to pack a lot of meaning into a few letters. In this book, when listing proposed compound words, bold font indicates potentially overlapping letters and/or words. Letters that are dropped when forming the compound appear inside parentheses. Compound construction presumes the name is metonymic, and so only etymological units consistent with the meaning in the Book of Mormon context are considered. This does not mean I have represented all the potential constructs from the Sumerian etymological units, just the one(s) that are closest to the Book of Mormon spellings and meanings. If one assumes that a name is not metonymic, then it is probably possible to construct nearly all Book of Mormon names without dropping letters.

Constructed Compound Word: K**ur**-e_3-li-um

Cumom

Like *curelom*, *cumom* is also an animal whose name is a constructed compound word in Sumerian, with the adjective preceding the noun. The first part of the word, KU, means "plough" or "plow" and is attested to in Sumerian during the Early Dynastic IIIb, Ur III, Early Old Babylonian, and Old Babylonian Periods (2500–2350 BC, 2112–2004 BC, 1950–1600 BC) (Pennsylvania Sumerian Dictionary 2006). When transcribing Sumerian syllabic signs into English, archaeologists use subscripts to mark different signs that have the same phonetic value. So, for example, *gu* is "flax," gu_2 is "neck," and gu_3 is "voice." When transcribing logograms, capital letters are used, such as MUSHEN for "bird" or, as just mentioned, KU for "plow." The roots *ku-/*k(u)- are also found in Indo-European and Semitic languages.

The second part of the word *cumom* is the Sumerian word u_2-*ma*-*am* (form of the word *umamu*), meaning "beasts," which is attested to in the Old Babylonian Period (1950–1530 BC). While not a perfect match chronologically, variants of the word have attestations dating potentially back to 2120 BC (Pennsylvania Sumerian Dictionary 2006).

Based on the etymology of *cumom*, meaning "plow beast," the departure of the Jaredites would have been between or before 2500 BC and 2230 BC. Like the timeframe for *curelom*, there is some give and take for this date.

Other Sumerian etymological units found within the word *cumom* are:

u: sheep or ewe	2600–1000 BC
u_8-am_3 (form of *u*)	1950–1530 BC
mah: milk producing (of cows)	2600–1530 BC

Constructed Compound Word: K**U**-ma-am

For the remainder of this section, the Sumerian dictionary consulted is the online Pennsylvania Sumerian Dictionary, typically referred to as the ePSD. For Semitic and Egyptian references, the Book of Mormon Onomasticon (2023) and the online Abarim Publications website (www.abarim-publications.com) for Hebrew biblical names are the primary sources consulted.

Gazelem

Alma 37:23

> And the Lord said: I will prepare unto my servant Gazelem, a stone, which shall shine forth in darkness unto light, that I may discover unto my people who serve me, that I may discover unto them the works of their brethren, yea, their secret works, their works of darkness, and their wickedness and abominations.

The punctuation seems to indicate that *Gazelem* is the name of the stone, not the servant, but this interpretation is not universal. However, since punctuation was added to the Book of Mormon later, it is possible that the term refers to the servant instead of the stone, or perhaps to both.

The actual identification of *Gazelem* is not certain, but the most likely candidates are the interpreter stones used by $Mosiah_2$ and Joseph Smith as the interpreters were what was being discussed in that passage of scripture. The Jaredites are the people whose secret works *Gazelem* brings to light, and both $Mosiah_2$ and Joseph Smith are supposed to have used seer stones to translate the Jaredite record.

The Book of Mormon Onomasticon (2023) offers potential Hebrew etymologies for *Gazelem* that appear to be promising but does not explore any Sumerian possibilities. There is a fairly direct Sumerian etymology for the word. When considering the timeframes listed for the attestations of each word, one should recognize that each word was probably used earlier than the time period listed. As discussed previously, the Book of Mormon words with Sumerian etymology may have some variations in order and syntax based on the New World setting. In addition, it became apparent in the translation of the Caractors Document that all the personal and place names contain multiple meanings (sometimes in the complete name and sometimes in a portion of the glyphs). That fact should be kept in mind when approaching any search for meaning in Book of Mormon names.

The multiple Sumerian words from which *Gazelem* can be derived are:

ĝizzal: wisdom, understanding, hearing	2600–2450 BC, 1950 BC–1530 BC
lum: to shine	2500–2004 BC, 1950–1530 BC
za'am: piece of stone	unknown
zal: to shine	1950 –1530 BC
le'um: writing board	unknown

za: gem 2340–2023 BC, 1950–1530 BC

Constructed Compound Word: Ĝiz**zal**um

It would appear that the definition of this word would not include that of "servant," favoring the punctuation that implies the name *Gazelem* refers to the stone. However, it should be noted that the word for "priest" in Sumerian is *lumah*, which is similar to the last syllable of *Ĝiz**zal**um*.

Rameumptom

In the first century BC, $Alma_2$ and a group of missionary companions visited the Zoramites, who were practicing an apostate form of religion that involved an elevated place in the center of their synagogue where one person could recite a prayer. This elevated place was referred to as *Rameumptom*, which was interpreted as "the holy stand."

Alma 31

12 Now, when they had come into the land, behold, to their astonishment they found that the Zoramites had built synagogues, and that they did gather themselves together on one day of the week, which day they did call the day of the Lord; and they did worship after a manner which Alma and his brethren had never beheld;

13 For they had a place built up in the center of their synagogue, a place for standing, which was high above the head; and the top thereof would only admit one person.

14 Therefore, whosoever desired to worship must go forth and stand upon the top thereof, and stretch forth his hands towards heaven, and cry with a loud voice, saying:

15 Holy, holy God; we believe that thou art God, and we believe that thou art holy, and that thou wast a spirit, and that thou art a spirit, and that thou wilt be a spirit forever.

16 Holy God, we believe that thou hast separated us from our brethren; and we do not believe in the tradition of our brethren, which was handed down to them by the childishness of their fathers; but we believe that thou hast elected us to be thy holy children; and also thou hast made it known unto us that there shall be no Christ.

17 But thou art the same yesterday, today, and forever; and thou hast elected us that we shall be saved, whilst all around us are elected to be cast by thy wrath down to hell; for the which holiness, O God, we thank thee; and we also thank thee that thou hast elected us, that we may not be led away after the foolish traditions of our brethren, which doth bind them down to a belief of Christ, which doth lead their hearts to wander far from thee, our God.

18 And again we thank thee, O God, that we are a chosen and a holy people. Amen.

19 Now it came to pass that after Alma and his brethren and his sons had heard these prayers, they were astonished beyond all measure.

20 For behold, every man did go forth and offer up these same prayers.

21 Now the place was called by them Rameumptom, which, being interpreted, is the holy stand.

> 22 Now, from this stand they did offer up, every man, the selfsame prayer unto God, thanking their God that they were chosen of him, and that he did not lead them away after the tradition of their brethren, and that their hearts were not stolen away to believe in things to come, which they knew nothing about.

The Book of Mormon Onomasticon (2023) provides a reasonable Hebraic etymology for *Rameumptom*, but a Sumerian etymology is also apparent:

ra: to be pure	unknown
me: Being, divine properties enabling cosmic activity; office; (cultic) ordinance	2500–2023 BC, 1950–1530 BC
e: temple; room	2600–2023 BC, 1950–1776 BC
e: perfect plural and imperfect stem of *dug* [to speak]	2500–1530 BC
u: to voice, cry	2340–2200 BC
me'am: term of endearment, dear	unknown
mi-am (form of *mi*): to praise	2500–2350 BC
ama: cell or chamber	2500–2350 BC, 2112–2004 BC
pu: lower course, footing; depth	2500–2350 BC, 2112–1000 BC
pu_2-*ta* (form of *pu*)	1530–1000 BC
tam: to be pure, to be clean	2340–2200 BC, 1950–1530 BC
tum: suitable, acceptable	2500–2004 BC, 1950 –1530 BC

Constructed Compound Word (among other possibilities): Ram**e**amaputum

The Nephite Metrology (Measuring) System

The Book of Mormon identifies how values of gold and silver were compared against the "measure of barley, and also for a measure of every kind of grain."

> Alma 11:3–19
>
> 3 And the judge received for his wages according to his time—a senine of gold for a day, or a senum of silver, which is equal to a senine of gold; and this is according to the law which was given.
>
> 4 Now these are the names of the different pieces of their gold, and of their silver, according to their value. And the names are given by the Nephites, for they did not reckon after the manner of the Jews who were at Jerusalem; neither did they measure after the manner of the Jews; but they altered their reckoning and their measure, according to the minds and the circumstances of the people, in every generation, until the reign of the judges, they having been established by king Mosiah.
>
> 5 Now the reckoning is thus—a senine of gold, a seon of gold, a shum of gold, and a limnah of gold.
>
> 6 A senum of silver, an amnor of silver, an ezrom of silver, and an onti of silver.
>
> 7 A senum of silver was equal to a senine of gold, and either for a measure of barley, and also for a measure of every kind of grain.
>
> 8 Now the amount of a seon of gold was twice the value of a senine.

9 And a shum of gold was twice the value of a seon.

10 And a limnah of gold was the value of them all.

11 And an amnor of silver was as great as two senums.

12 And an ezrom of silver was as great as four senums.

13 And an onti was as great as them all.

14 Now this is the value of the lesser numbers of their reckoning—

15 A shiblon is half of a senum; therefore, a shiblon for half a measure of barley.

16 And a shiblum is a half of a shiblon.

17 And a leah is the half of a shiblum.

18 Now this is their number, according to their reckoning.

19 Now an antion of gold is equal to three shiblons.

A delineation of silver and gold values in terms of relative standard barley measures, as described in the above scripture, appears in the following table:

Nephite Metrological Comparisons

Table 5

Measures of Barley	Amount of Gold	Amount of Silver
7	limnah	onti
4	shum	ezrum
2	seon	amnor
1.5	antion	
1	senine	senum
.5		shiblon
.25		shilum
.125		leah

So far, no past research, as represented in the Book of Mormon Onomasticon (2023), has successfully identified etymological sources for these terms of measurement. Sumerian provides direct etymology for most of the terms and reasonable etymologies for all the terms. Sorenson (2013) suggested that the Akkadian or Sumerian morpheme *she* (which signifies “barley” or “grain”) was a possible etymological source, given the fact that the morpheme has a secondary meaning of “unit of measure” (pg. 305).

The spelling of *ezrum* and *shiblon* are taken from Skousen’s analysis of the Original and Printer’s Manuscript of the Book of Mormon (Skousen 2009). The Sumerian etymologies of the Nephite measurement system are as follows:

limnah

la: to weigh	2500–2004 BC, 1950 –1530 BC
imin: seven	2500–2350 BC, 2260–2004 BC, 1950–1530 BC
imin-na (form of *imin)*	2112–2004 BC

As can be seen from table 5, a *limnah* is equivalent to seven measures of grain, an excellent match.

Other Sumerian etymological units related to measurement found in the word *limnah* are:

na: stone weight	2500–1530 BC
na$_4$-*a* (form of *na*)	1950–1530 BC
i: container for oil	2600–1530 BC
i$_3$-*am*$_3$ (form of *i*)	2112–2004 BC

Constructed Compound Word: l(a)im**i**n-**na**

shum

še: barley, grain; a unit weight/volume/length/area	2500–2004 BC, 1950 –1000 BC
še-am$_3$ (form of *še*)	2112–2004 BC, 1950–1530 BC
še-me (form of *še*)	2112–2004 BC

Other Sumerian etymological units related to measurement found in the word *shum* are:

šu: basket	2500–2350 BC
šu: a stone or shell (pestle)	1950–1530 BC
šuhum: a stone or shell	1950–1530 BC
u: grain	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u$_2$-*am*$_3$, *u*$_2$-*um* (forms of *u*)	1950–1530 BC

Constructed Compound Word: **š**(**e**)-(*a*)***u****m*$_3$ (the sound of *š* is “sh” in English)

seon

še: barley, grain; a unit weight/volume/length/area	2500–2004 BC, 1950–1000 BC
še-ni (form of *še*)	2340–2200 BC, 2112–2004 BC

Other Sumerian etymological units related to measurement found in the word *seon* are:

e: barley?	1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e$_3$-*a-ni* (form of *e*)	1950–1530 BC
e: chaff	2500–1530 BC
e$_3$-*ni* (form of *e*)	2112–2004 BC

u: grain	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u₂-ni, *u₂-ne*, *u₂-na* (forms of *u*)	2340–2200/1950–1530 BC, 2112–2004 BC, 1950–1530 BC
un: (to be) high	1950–1530 BC

Constructed Compound Word: ***še-on***

antion

ana: as much as; equivalent to (mathematically)	2500–2200 BC, 2112–2004 BC, 1950–1530 BC
te-am₃ ta-am₃, ta, te, na₂ (forms of *ana*)	

Other Sumerian etymological units related to measurement found in the word *antion* are:

ana: upper	2600–2450/1950–1530 BC
anta: upper	2600–2450/1950–1530 BC
u: grain	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u₂-ni, *u₂-ne*, *u₂-na* (forms of *u*)	2340–2200/1950–1530 BC, 2112–2004 BC, 1950–1530 BC
un: (to be) high	1950–1530 BC
i: container for oil	2600–1530 BC
i₃-ni, *NI* (form of *i*)	1950–1530 BC
na: stone weight	2500–1530 BC
na₄-a (form of *na*)	1950–1530 BC

Constructed Compound Word: ***ant(a)ion*** (The unit "o" can be represented as either "a" or "u.")

senine

še: barley, grain; a unit weight/volume/length/area	2500–2004 BC, 1950–1000 BC
še-ni (form of *še*)	2340–2200 BC, 2112–2004 BC
NE: designation of silver	2500–2350 BC, 2112–2004 BC
NE-NE: designation of silver	2500–2350 BC, 2112–2004 BC

Other Sumerian etymological units related to measurement found in the word *senine* are:

e: barley?	1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e₃-a-ni (form of *e*)	1950–1530 BC
e: chaff	2500–1530 BC
e₃-ni (form of *e*)	2112–2004 BC
i: container for oil	2600–1530 BC
i₃-ni, *NI* (form of *i*)	1950–1530 BC

Constructed Compound Word: ***še-niNE***

onti

anta: upper	2600–2450 BC, 1950–1530 BC
unta: to be high	1950–1530 BC

The *onti* was described as being "as great as them all" (Alma 11:13).

Other Sumerian etymological units related to measurement found in the word *onti* are:

u: grain	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u_2-*ni*, u_2-*ne*, u_2-*na* (forms of *u*)	2340–2200/1950–1530 BC, 2112–2004 BC, 1950–1530 BC
i: container for oil	2600–1530 BC
i_3-*ni*, *NI* (form of *i*)	1950–1530 BC

Constructed Compound Word: ***ont(a)i*** (The unit "o" can be represented as either "a" or "u.")

ezrum

eš rah: to measure	1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e_3-*zu* (form of *e*)	1950–1530 BC
rum: perfect, ideal	2112–2004/1950–1530 BC
u: grain	unknown

Other Sumerian etymological units related to measurement found in the word *ezrum* are:

e: barley?	1950–1530 BC
e: chaff	2500–1530 BC
e_3-*a*-am_6, e_3-*a*-am_3, e_3-am_3 (forms of *e*)	2500–2350 BC, 2340–2200/2112–2004 BC, 2340–2200 BC
zar: sheaf (of barley); stack of sheaves	2500–2350/2112–2004 BC
zar-ra (form of *zar*)	1950–1530 BC
u: bread, loaf; food; grass, herb	2500–1530 BC
u_2-*um*, u_2-am_3, u_2-*mu* (forms of *u*)	1950–1530 BC, 2112–2004 BC

Constructed Compound Word: ***e₃-z(u)rum***

amnor

ama: cell; chamber	2500–2350 BC, 2112–2004 BC
a-min-ni (form of *ama*)	2112–2004 BC
mana: unit of weight	2600–2004 BC, 1950–1530 BC
na: stone; stone weight	2500–1530 BC

u: grain	unknown
ur: that, this same; one; corresponding (to one another); like (one another)	2260–1530 BC

Other Sumerian etymological units related to measurement found in the word *amnor* are:

na: pestle; a stone	1950–1530 BC
nir: valuable stone	2112–2004 BC, 1950–1530 BC
nu: (to be) not, no; without, un-	2500–1530 BC
nu-ur$_2$, *a-ma-nu* (forms of *nu*)	2112–2004 BC
u: bread, loaf; food; grass, herb	2500–1530 BC
u$_2$*-ra* (form of *u*)	2112–2004 BC
ur: (to be) abundant	1950–1530 BC

Constructed Compound Word: ***am****(a)****n****(a)****or*** (The unit "o" can be represented as "a" or "u.")

senum

šenumun: seed	2500–2200 BC, 2112–2004 BC, 1950–1530 BC
še: barley; grain; a unit weight/volume/length/area	2500–2004 BC, 1950–1000 BC
[še]-nim (form of *še*)	1950–1530 BC
še-ni (form of *še*)	2340–2200 BC, 2112–2004 BC
še-am$_6$ (form of *še*)	2112–2004 BC, 1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e$_3$*-a-ni* (form of *e*)	1950–1530 BC
u: grain	unknown

Other Sumerian etymological units related to measurement found in the word *senum* are:

e: barley?	1950–1530 BC
e: chaff	2500–1530 BC
e$_3$*-ni* (form of *e*)	2112–2004 BC
u: bread, loaf; food; grass, herb	2500–1530 BC
u$_2$*-um*, *u*$_2$*-am*$_3$, *u*$_2$*-mu* (forms of *u*)	1950–1530 BC, 2112–2004 BC
nu: (to be) not, no; without, un-	2500–1530 BC
nu-ma (form of *nu*)	2340–2200 BC

Constructed Compound Word: **še**n**u**m(un)

shiblon

še: barley; grain; a unit weight/volume/length/area	2500–2004 BC, 1950–1000 BC
še-bi-am$_3$ (form of *še*)	2112–2004 BC
še-ba-am$_3$ (form of *šeba*) grain ration	2340–2200 BC
ib: middle	2340–2200/2112–1530 BC
iba: ration	1950–1530 BC

ba: to divide into shares, share, halve; to allot	2500–1530 BC
i_3-ba, *ib_2-ba* (forms of *ba*)	2500–2200/2112–1530 BC, 2112–1530 BC
ba: half; thirty	1950–1530 BC
bala: conversion (math.)	2600–1530 BC
bal, šu-bal, i_3-bal, u_3-bal-e, bal-a-na, i_3-bal-la, bala-a-na, bala-a-ni, bil_2-a, i_3-bal-a, ib_2-bal-a (forms of *bala*)	
bala: wastage (in processing grain)	unknown
la: to supervise, check; to weigh, weigh (out), pay; to hang, balance, suspend, be suspended; to winnow (grain)	
la_2-e, *bi_2-la_2*, *ib_2-la*, *i-ib_2-la_2*, *la_2-a-na*, *ba-la_2-a, la_2-a-ni* (forms of *la*)	2600–1530 BC

As can be seen in table 5 above, a *shiblon* is equal to half a measure, so the Sumerian etymology of *ib* (middle), *iba* (ration), and *ba* (half) is exactly correct.

Other Sumerian etymological units related to measurement found in the word *shiblon* are:

i: container for oil	2600–1530 BC
i_3-bi, *i_3-be_6* (forms of *i*)	2500–1530 BC, 2340–2200 BC
lu: (to be) abundant	2600–1530 BC

Constructed Compound Word: *š(e)**ibalo-**n(i)* (The unit "o" can be represented as "a" or "u.")

shilum

še: barley, grain	2500–2004 BC, 1950–1000 BC
sila: a unit of capacity; a vessel	2600–1530 BC
$sila_3$-um (form of *sila*)	2112–2004 BC
$sila_3$-am_3 (form of *sila*)	2112–2004 BC, 1950–1530 BC
u: grain	unknown

Other Sumerian etymological units related to measurement found in the word *shilum* are:

i: container for oil	2600–1530 BC
il: a basket	unknown
il: to raise, carry	2500–1530 BC
il_2-la-am_3, *il_2-am_6*, *il_2-am_3* (forms of *il*)	1950–1530 BC, 2500–2350 BC, 2112–2004 BC
lu: (to be) abundant	2260–1530 BC
lum: a small drinking vessel	1950–1530 BC
le'um: writing board	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u_2-um, *u_2-am_3*, *u_2-mu* (forms of *u*)	unknown

Constructed Compound Word: *š(e)(s)**il**(a)**um***

leah

la: to weigh, weigh (out)	2600–1530 BC
la$_2$-*a* (form of *la*)	2500–2200 BC, 2112–2004 BC, 1950–1530 BC
la$_2$-*a*-*e*, *la*$_2$-*e* (forms of *la*)	1950–1530 BC
e: barley?	1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e$_3$-*a*-*ni* (form of *e*)	1950–1530 BC

Other Sumerian etymological units related to measurement found in the word *leah* are:

le'um: writing board	unknown
e: chaff	2500–1530 BC
e$_3$-*a* (form of *e*)	1950–1530 BC
ea: a qualification of bitumen	1950–1530 BC
ah: (to be) dried (out), dry; to dry	2500–1530 BC

Constructed Compound Word: *l(a)**e**ah*

As is apparent, this metrological system is directly derived from one of the Sumerian metrological systems. Interestingly, the actual measurement value for those Nephite measurements beginning with "sh" or "se" do not overlap in value between gold and silver except for *senine* and *senum*, with those being "equal." That is consistent with the presence of a continuous Sumerian grain system of measurement. It is important to note the particular terminology utilized in the description. A "reckoning" refers to each of the individual measurements (gold, silver, and barley). The relationship of the individually measured amounts is only given internally to each system. The value tie between each of the three systems is set at the *senum-senine* measure of barley. The value is reiterated in the smaller amounts with the *antion-shiblon*-half measure of barley, which clarifies the relationship of the lower amounts of silver, where no lower gold amounts exist.

At this point, it is important to highlight a portion of the above-mentioned scripture:

> … for they did not reckon after the manner of the Jews who were at Jerusalem; neither did they measure after the manner of the Jews; but they altered their reckoning and their measure, according to the minds and the circumstances of the people, in every generation, until the reign of the judges, they having been established by king Mosiah.

As the scripture indicates, the system was altered through the generations by the "circumstances of the people, in every generation." The Nephites combined with the people of Zarahemla roughly 110 years prior to the commencement of the Reign of the Judges, so there was at least a couple of generations of contact and mixing of the Nephites with a people that had direct contact with the end of the Jaredite era. It is possible that other Mesoamerican groups like the Maya incorporated Olmec/Jaredite elements into their measurement systems as well. When King Mosiah$_2$ apparently standardized the existing practices, the system exhibited both Hebraic and Jaredite/Sumerian elements.

Summary of Sumerian Grain-Measurement System and Other Numerical Systems

Approximately 1,200 different signs and sign variants have been isolated in the Sumerian archaic Proto-Cuneiform texts. Approximately 60 of them have been identified as numeric signs (see figure 71). The Sumerians had a complex assortment of incompatible archaic number systems, and each city had its own local way of writing numerals. Around 3200 BC, or slightly before, in the city of Uruk, there were more than 15 different numeric systems (see figure 72). In this city, there were separate number systems for counting discrete objects (such as animals, tools, and containers), cheese and grain products, volumes of grain (including fractions), beer ingredients, weights, land areas, and time and calendar units. Furthermore, these systems changed over time; for instance, numbers for counting volumes of grain changed when the size of the baskets carrying the grain changed.

The state adjacent to Sumer, Elam, also had a system of glyphs. Although most of the Elamite glyphs are different, the sequence of basic signs in the Proto-Elamite numerical notations corresponds to that of the Sumerian Proto-Cuneiform notations (Damerow 1989, 21).

The actual Sumerian grain volume unit measurement has not yet been determined (meaning we do not know how many cubic inches a grain “measure” was). All that is known is the ratio between the different units in the system, which is all we really know about the Nephite gold/silver system as well. As has been discussed, the Nephite gold/silver system, implemented by $Mosiah_2$, is consistent with the Israelite weight system ratios.

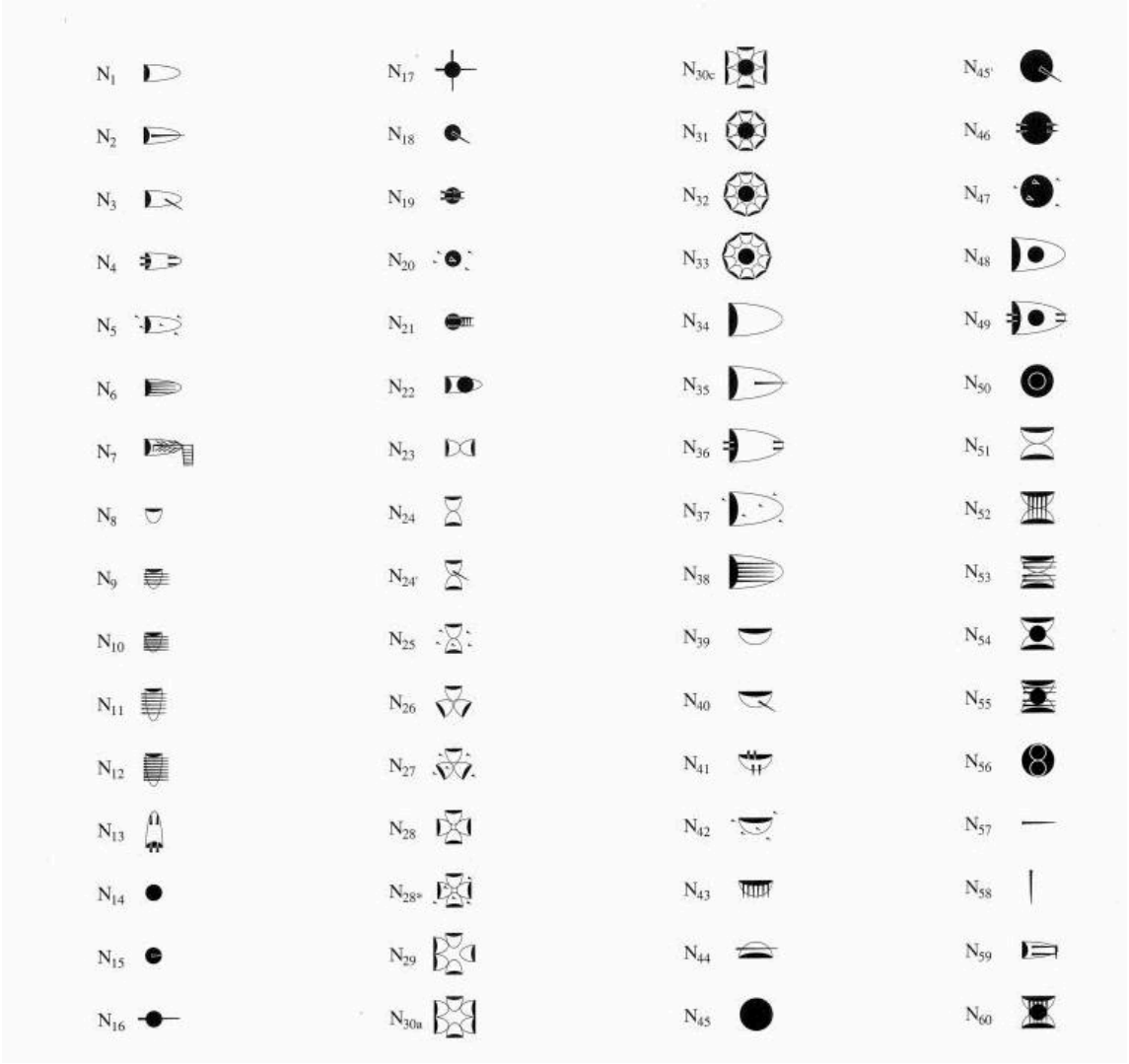
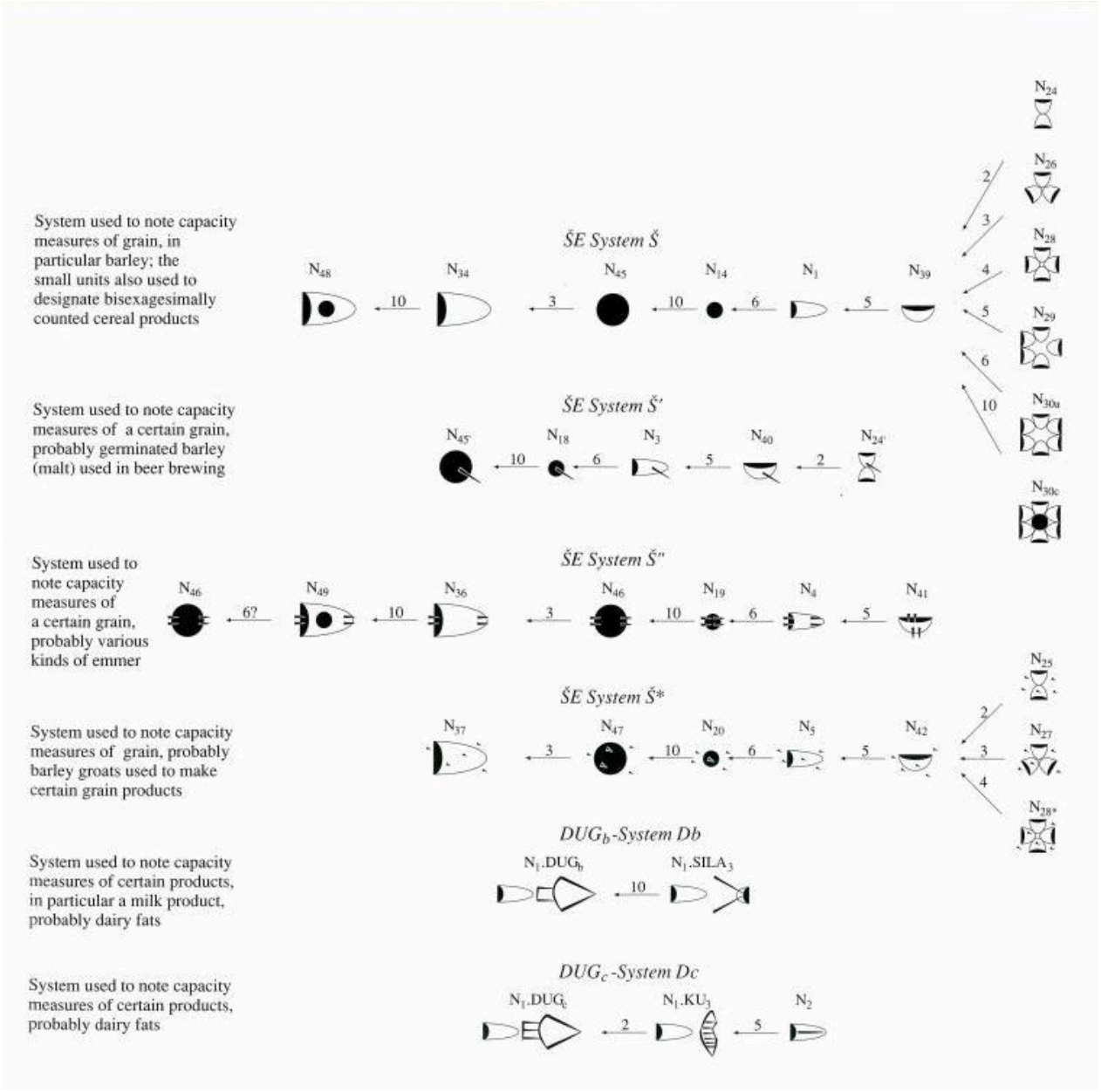


Figure 71 The numerical signs of the Proto-Cuneiform texts from Uruk (Nissen et al 1993, 26)

Since the Nephite measuring system is close to 3,000 years removed from the Uruk system, one would not expect complete similarity. Also, Mormon indicated that the system had been "altered" even during Nephite times. The ratios in the Nephite measuring system do not appear to be consistent with any of the Uruk metrological systems. Perhaps there are a few ratios consistent with EN System E shown in figure 72. Alma 11:3 indicates that the names *senine* and *senum* for the gold/silver units were given by the Nephites; we do not know for sure who named the other units. At this point, it is clear that the Nephite measuring practice is consistent with the concept of having different metrological systems for each type of good or material and so is consistent with the Sumerian-Uruk archaic system in that respect. The Nephites used Sumerian/Jaredite names, with the meaning of some of the names containing descriptions consistent to the ratios. The system is also apparently derived, with some consistency, with Hebraic practice and Jaredite names. The change in "reckoning" and "measure" may also indicate a move from measurement of weight to one of volume.


System used to note capacity measures of grain, in particular barley; the small units also used to designate bisexagesimally counted cereal products
ŠE System Š
N48 10 N34 3 N45 10 N14 6 N1 5 N39
2 N24
3 N26
4 N28
5 N29
6 N30a
10 N30c
System used to note capacity measures of a certain grain, probably germinated barley (malt) used in beer brewing
ŠE System Š'
N45' 10 N18 6 N3 5 N40 2 N24'
System used to note capacity measures of a certain grain, probably various kinds of emmer
ŠE System Š"
N46 6? N49 10 N36 3 N46 10 N19 6 N4 5 N41
System used to note capacity measures of grain, probably barley groats used to make certain grain products
ŠE System Š*
N37 3 N47 10 N20 6 N5 5 N42
2 N25
3 N27
4 N28*
System used to note capacity measures of certain products, in particular a milk product, probably dairy fats
DUGb-System Db
N1.DUGb 10 N1.SILA3
System used to note capacity measures of certain products, probably dairy fats
DUGc-System Dc
N1.DUGc 2 N1.KU3 5 N2

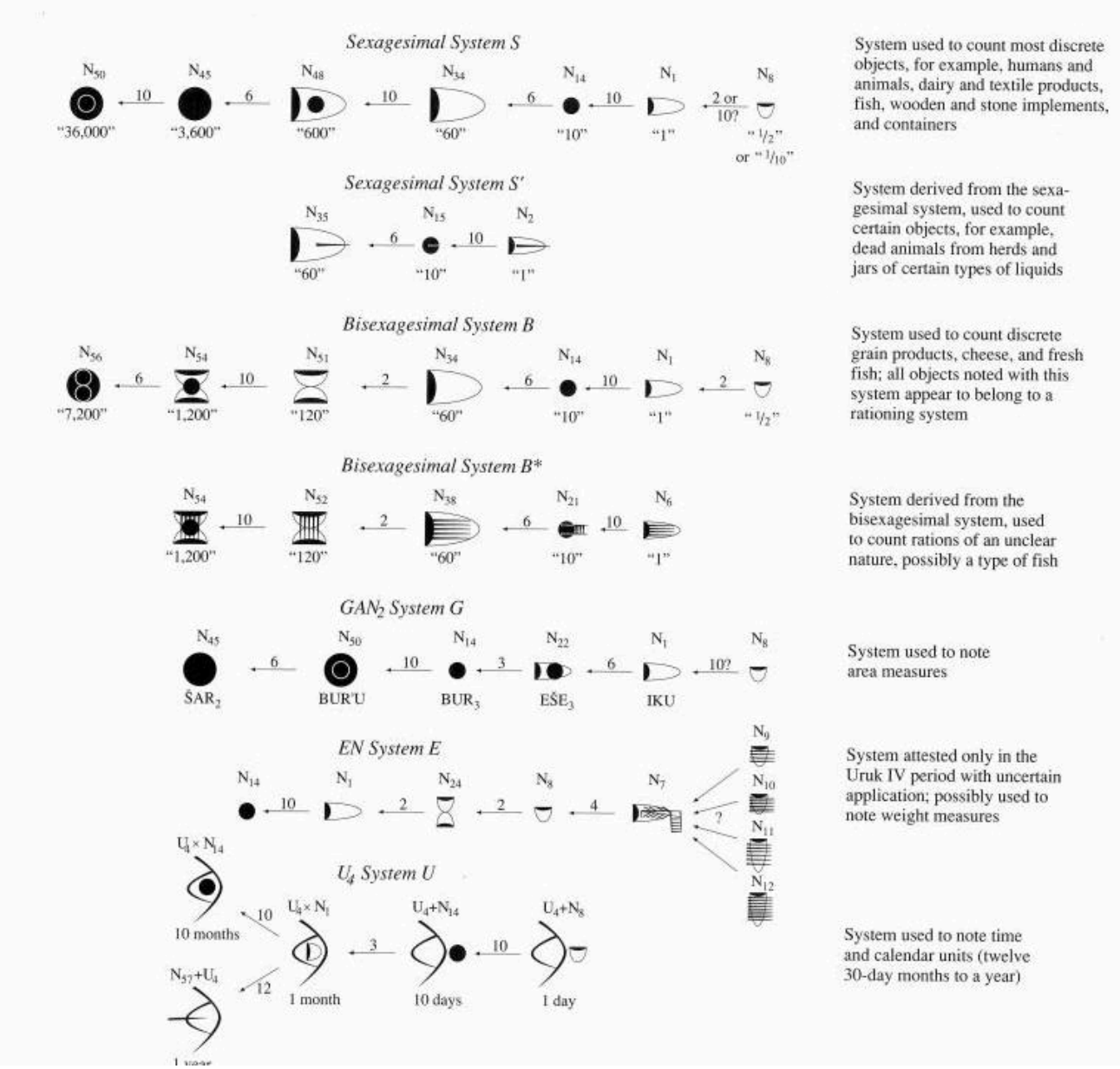


Figure 72 The numerical sign systems of the Proto-Puneiform texts from Uruk (Nissen et al 1993, 28-29)

Nephite/Jaredite Terms Derived from Sumerian

Sheum

The agricultural product *Sheum* was noted in Mosiah 9:9 while discussing what the party of Zeniff had commenced to plant circa 163 BC in the land of Nephi (in the neighborhood of the Valley of Guatemala, using the Sorenson model):

> And we began to till the ground, yea, even with all manner of seeds, with seeds of corn, and of wheat, and of barley, and with neas, and with sheum, and with seeds of all manner of fruits; and we did begin to multiply and prosper in the land.

As was just indicated, the word *Sheum* has an exact Sumerian etymology of some type of grain:

še: barley, grain; a unit weight/volume/length/area	2500–2004 BC, 1950–1000 BC
še-am₃ (form of *še*)	2112–2004 BC, 1950–1530 BC

Additional Sumerian etymological units for or related to grain contained in the word *Sheum* are:

e: barley?	1950–1530 BC
e: to measure (grain) roughly (with a stick)	2600–1530 BC
e₃-am₃, *e₃-a-am₃* (forms of *e*)	2340–2200 BC, 2340–2200/2112–2004 BC
e: chaff	2500–1530 BC
e₃-a-am₆, *e₃-a-am₃*, *e₃-am₃*, *e₃-a-me* (forms of *e*)	2500–2350 BC, 2340–2200/2112–2004 BC, 2340–2200 BC, 2112–2004 BC
u: grain	unknown
u: bread, loaf; food; grass, herb	2500–1530 BC
u₂-am₃, *u₂-um* (forms of *u*)	1950–1530 BC, 2112–2004 BC

Constructed Compound Word: ***Še****u₂*-***u****m* (the sound of *š* is "sh" in English)

Neas

Sumerian words and morphemes that provide a reasonable etymological construction for *neas* are:

us: a qualification of grain	2500–2004 BC, 1950–1530 BC
na-an-us (form of *us*)	2112–2004 BC
e: to sow	2600–1530 BC
nu-e₃ (form of *e*)	2112–2004 BC, 1950–1530 BC
na-e₃-e (form of *e*)	1950–1530 BC
na-e₃ (form of *e*)	1950–1530 BC
na-e₃-e₃ (form of *e*)	2112–2004 BC
i'iz: seed	unknown
ANIŠ: a plant	unknown
NIa: a plant	2600–2450 BC
NEhan: type of tree	2500–2004 BC, 1950–1530 BC
NE: designation of trees	1950–1530 BC
eš: a tree	1950–1530 BC

Constructed Compound Word: *NE****e****š* or *NIa(u)s*

Liahona

Since the *Liahona* was found by Lehi while still in the Old World, one might expect that the word would have a reasonable Semitic etymology. However, the actual name of the directional ball or compass made of fine brass is not indicated in the Book of Mormon until hundreds of years later, in Alma 37:38:

> And now, my son, I have somewhat to say concerning the thing which our fathers call a ball, or director—or our fathers called it Liahona, which is, being interpreted, a compass; and the Lord prepared it.

The Book of Mormon Onomasticon (2023) does not identify any reasonable Hebrew or other etymology behind this term—those listed appear to be quite tortured. Jonathan Curci, however, does provide a reasonable Hebraic etymology with "direction of the Lord," (Curci 2007). A compound etymology for *Liahona* is also found in Sumerian:

la: to supervise, check; to show, display; to balance	2600–2004 BC, 1950–1530 BC
la₂-a, la₂-e, la₂-a-e, la₂-a-na, la₂-a-ni (forms of *la*)	2500–2004 BC, 1950–1530 BC
i: oil, container for oil (indicates priestly function)	2600–1530 BC
i₃-a (form of *i*)	1950–1530 BC
hunu: to be helpless	2112–2004 BC, 1950–1530 BC
al-hu-nu, hu-nu-a (forms of *hunu*)	1950–1530 BC
a: power	2600–1530 BC
an: heaven	2600–1530 BC
a-na, *an-na*, (forms of *an*)	2600–1530 BC
un: to arise	1950–1530 BC
u₃-na, *un₃-na*, (forms of *un*)	1950–1530 BC
anna: approval	1950–1530 BC
anna: metal (interpreted as tin or lead)	2500–2004 BC, 1950–1530 BC

The word for "brass" does not exist in Sumerian, so *anna* would appear to be a reasonable substitute.

> Constructed Compound Word: *L(a)i**a**h**on**(u)a* (The unit "o" can be represented as "a" or "u.")

Deseret

> Ether 2:3, 5–6
>
> 3 And they did also carry with them deseret, which, by interpretation, is a honey bee; and thus they did carry with them swarms of bees, and all manner of that which was upon the face of the land, seeds of every kind.
>
> 5 And it came to pass that the Lord commanded them that they should go forth into the wilderness, yea, into that quarter where there never had man been. And it came to pass that the Lord did go before them, and did talk with them as he stood in a cloud, and gave directions whither they should travel.
>
> 6 And it came to pass that they did travel in the wilderness, and did build barges, in which they did cross many waters, being directed continually by the hand of the Lord.

No word for bee has yet been located in Sumerian. However, the words for honey (*lal*), beekeeper (*lu-lal*), and honeycomb (*gab-lal*) exist. Honey was used in Sumerian rituals, as indicated by cylinders that describe the building of a new temple for the god Ningirsu by Gudea, the ruler of the city of Lagash in about 2450 BC (Ransome 1937, 35). The Book of Mormon Onomasticon (2023), citing Hugh Nibley, indicates a possible Egyptian etymology for *deseret* as *dšr.t*.

There may also be a biblical Hebrew root element in the word *Deseret* that is consistent with the honeybee in the form of the word *sharats*, which can mean "to swarm" and is found in Exodus 8:3 and other locations in the Bible.

One question that arises in regard to *Deseret* is why the Jaredite word *Deseret* would need clarification to the Nephites when the Twenty-Four plates of the Jaredites were interpreted and translated. It is likely because the honeybee is described as a "stinging insect" in the Old World in the Sumerian form of *Deseret*. All the bees used for production of honey in ancient Mesoamerica were stingless bees native to America. A description of a "stinging insect" would not be consistent with the domesticated honeybees of ancient Mesoamerica known to the Nephites, so even if they did understand the Sumerian roots of the word, the term would need to be interpreted to be understood.

> The Maya cultural practice of bee husbandry dates back thousands of years. In the ancient Maya culture, honey was used as a sweetener, antibiotic, and as an ingredient in the Maya version of mead, a fermented drink. Of the 500 or so species of stingless bees in the tropical world, the favorite species among Maya beekeepers has been *Melipona beecheii.* Its traditional name, xunan kab (or *kolil kab* in the Mayan language), means "royal lady."
>
> In the Maya tradition, a priest harvested stingless bee honey as part of a religious ceremony twice a year. To increase the number of hives and honey production, beekeepers would regularly divide existing nests. (Lovgren 2005)

The stingless bees (*Melipona Beecheii* and *Melipona Yucatanica*) are the only native bees cultured to any degree in Central America, have been kept by the Maya people for thousands of years, and, as mentioned, are part of their traditional religious ceremonies. The bees are kept like family pets in log hives or pots passed down from generation to generation. The religious use of the honeybee by ancient Mesoamericans and *Deseret*'s capitalized first letter is also consistent with the capitalization of the words for other religious terms in the Book of Mormon (e.g., *Liahona*, *Rameumptom*, etc.).

There is no indication in the Book of Mormon that the Jaredite honeybees were transported to the New World. *Deseret* is mentioned only in the Old World in the valley of Nimrod (Ether 2:1–3), and the bees appear to have been carried with the Jaredites only over the first leg of their journey "into the quarter where there never had man been." It is possible bees were carried as far as the stop the Jaredites made "beyond the sea in the wilderness" on their trip in barges (Ether 2:5–7) if they were periodically near land where the bees could successfully forage. On the last leg of their journey, consisting of a long voyage on the open sea, it is unlikely that honeybees could have survived. Notably, there is no specific reference to taking bees aboard the Jaredite ships when other animals are mentioned (Ether 6:4). The Jaredites were traveling in barges that needed to be airtight at times when the seas were rough, so swarms of bees would have been poor shipmates. Finally, Old World bees were not found in the pre-Columbian New World.

Like other Book of Mormon names, *Deseret* also seems to incorporate other elements of the Jaredite honeybee story into the Sumerian word such as "to carry," "to go," "to leave," and, perhaps, "water":

de: to carry	2500–2004 BC, 1950–1000 BC
de$_6$-a-še$_3$, de$_6$-a-aš (forms of *de*)	2112–2004 BC
sa: to sting	2500–2350 BC, 2112–2004 BC, 1950–1530 BC
eh: insect, bug	2600–2450 BC, 1950–1530 BC, 1000 BC
re, er, ere: to go	2112–2004 BC
e: to leave	2600–1530 BC

e-ta-a$_3$ (form of *e*)	2500–2350 BC
e$_3$-ta (form of *e*)	1950–1530 BC
a: water	2600–1000 BC
a-ta (form of *a*)	2112–2004 BC, 1950–1530 BC

Constructed Compound Word: *Des(a)**e**(h)re$_3$t(a)*

Ziff

I completed an extensive analysis of *Ziff* in a recent book, *Ziff, Magic Goggles, and Golden Plates* (Grover 2016), which established a likely Aramaic and biblical Hebrew etymology involving the Aramaic and Arabic word *zyf*. I determined that *Ziff* was a false gold-gilded metal with religious significance, specifically because of its reddish color, likely indicative of the Mesoamerican religious significance of blood. A similar meaning is derived from Sumerian, with the condition that the "ff" is reflected as a "b" sound. Taken together, it can literally mean the color of life, which, in a Mesoamerican context, can mean blood.

zib: a mark; mark, token; color, paint

Additional etymological units for or related to the religious significance of *Ziff* from Sumerian are:

zi: life	2600–1530 BC
zi-ba, zi-bi (forms of *zi*)	1950–1530 BC
i: oil; container for oil (royal or priestly anointing, discussed later)	2600–1530 BC
i$_3$-be$_6$ (form of *i*)	2340–2200 BC
i$_3$-bi (form of *i*)	2500–2200 BC, 2112–1530 BC

Constructed Compound Word: ***zi**b*

Additional "Glossed" Words

There are certain names and words in the Book of Mormon that are "glossed," meaning that specific definitions are provided for the terms. In such cases, it is not entirely necessary to look at all possible etymological units, just those related to the definition already given. The following are Book of Mormon, post-Jaredite words that are considered "glossed":

Rabbanah

> Alma 18:13
>
> And one of the king's servants said unto him, Rabbanah, which is, being interpreted, powerful or great king, considering their kings to be powerful; and thus he said unto him: Rabbanah, the king desireth thee to stay.

rabianum: commander, high official	1950–1530 BC
a: strength, power	2600–1776 BC
a$_2$-a (form of *a*)	2112–2004, 1950–1530 BC
he: be it, be he	2500–2200 BC

Constructed Compound Word: *Rabian(um)ah(e)*

Irreantum

1 Nephi 17:5

And we beheld the sea, which we called Irreantum, which, being interpreted, is many waters.

ir: mighty	1950–1530 BC
ir$_9$-*ra* (form of *ir*)	1950–1530 BC
re: that	1950–1530 BC
re-a (form of *re*)	1950–1530 BC
iri: high	2340–2200 BC
ene: the plural suffix marker	1950–1530 BC
anta: upper	1950–1530 BC
a: water	2600–1530 BC
a-am (form of *a*)	2112–2004 BC, 1950–1530 BC
tam: to be bright; to be pure; to be clean	2340–2200 BC, 1950–1530 BC

Constructed Compound Word: *Irreant**a**m*

Oneidah

Alma 47:5

. . . they fled to Onidah, to the place of arms.

The Original Manuscript and the Printer's Manuscript of the Book of Mormon both identify the correct spelling of Onidah as "Oneidah" in Alma 47:5. A very good gloss that includes meanings similar to a place of arms where the Lamanites fled is found in the Sumerian:

a: arm; strength; wage; power
a: arm; strength; wage; power
A: a weapon or a leather holder for a weapon
an: sky, heaven; upper; crown (of a tree)
an-e, *an-ne*, *an-ne*$_2$ (forms of *an*)
an: date spadix (shape of a javelin)
un: to arise; sky; (to be) high
un$_3$-*e* (form of *un*)
e: estate
e: to leave, to go out; to remove, take away; to bring out; to enter; to bring in; to winnow
e$_3$-*i*$_3$ (form of *e*)
da: edge, side
he: be it

Constructed Compound Word: **One**i$_3$dah(e) (The unit "o" can be represented as either "a" or "u.")

Ripliancum

Ether 15:8 provides a meaning for the word *Ripliancum:* "the waters of Ripliancum, which, by interpretation, is large, or to exceed all." Sumerian provides essentially an exact etymology as specified

in the Book of Mormon, with additional related terms**:**

ri: to be distant
  ri-a (form of *ri*)
ri, RI: to pour out
  RI-a (form of *ri*)
rib: (to be) surpassing, outstanding; (to be) strong, massive
li: branch
la: flooding
la: to stretch out
a: water
  a-ni, *a-na*, *a-ka, a-ke*$_4$ (forms of *a*)
an: upper
  an-na, *an-ne*$_2$, *an-na-ke*$_4$, *an-e*, *an-na-ka*, *an-na-kam*, *an-kam* (forms of *an*)
ana: upper
ana: as much as
  a-na, *a-na-a*
ku: to spread, discharge
  ku-um (form of *ku*)
kam: to alter
kaman: irrigation work

Constructed Compound Word: **Ri**bli**a**ncum

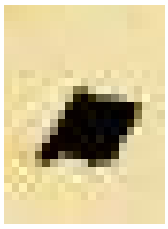
The fact that some name forms in the Book of Ether contain the letter [H] is important for Jaredite chronology because the sounds for Sumerian [H] and the Akkadian [h], [ḫ], and [ʿ] were lost to the language by Ur III times (2119–1940 BC) at the latest (Edzard 2003, 175), meaning that the Jaredite departure would have to have been before 2000 BC. In addition, all Akkadian words that have an *m* ending (called mimation) lost the *m* endings after 1600 BC, which is evidence of a departure prior to 1600 BC (end of the Old Babylonian) (Layton 1990).

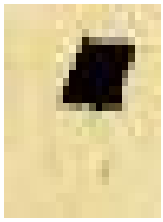
Because the names almost universally have Sumerian roots, it can be assumed that the common language of the Jaredites at the time of their departure was Sumerian. Based on the dates when Sumerian was in common usage and based on the dates of attestation of the various words identified above, a departure date prior to 2500 BC is the only viable option.

Forms of the Nephite Numbers 20, 30 and 300 in the Sumerian Proto-Cuneiform

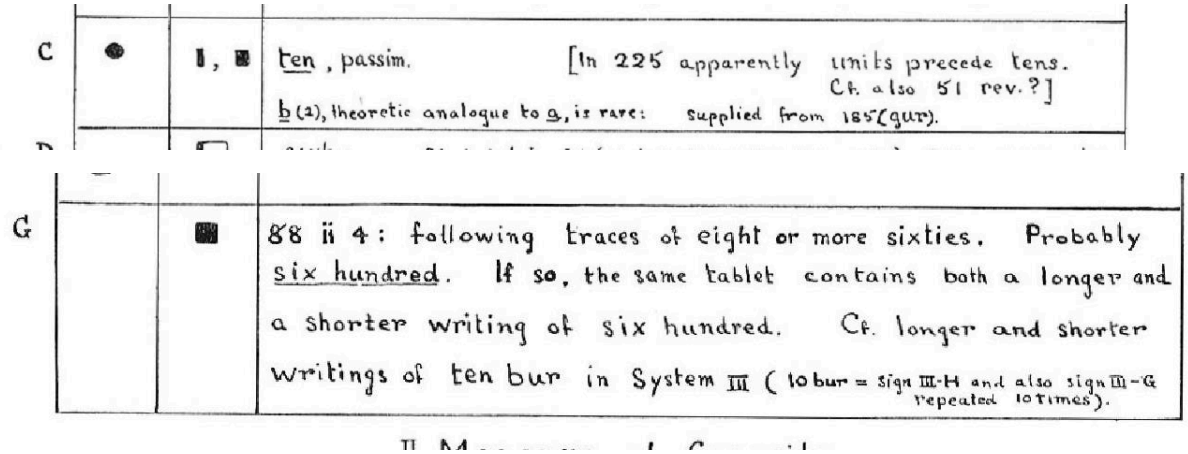
In my initial translation of the Caractors Document, certain number glyphs found in the reformed Egyptian did not appear to have a strong base in Egyptian. Further investigation has determined that these numbers originated in the Sumerian/Elamite Proto-Cuneiform, and similar forms are also found in Mesoamerica. Each is discussed here. The C-# designation was the method used to identify each character in the Caractors Document.

Numbers 30 and 300

Number “30” C-158 

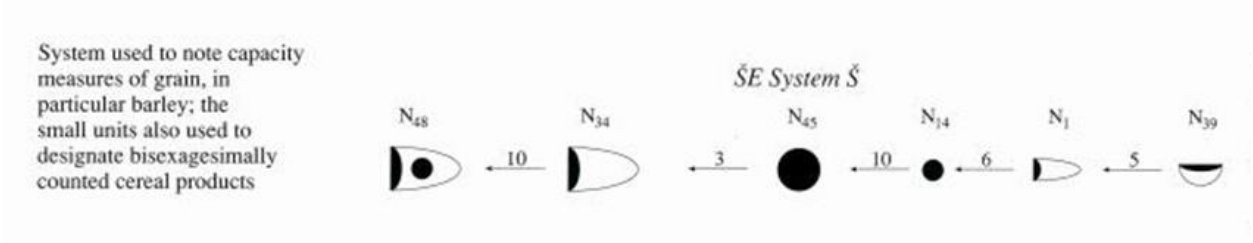
Number “300” C-225 

This number glyph form is found in Sumerian Proto-Cuneiform in the Early Dynastic I Period (ca. 2800–2700 BC) in a list known as the Burrows Archaic Texts Sign List (Burrows 1935). The relevant sections are extracted and shown here.



Number 20

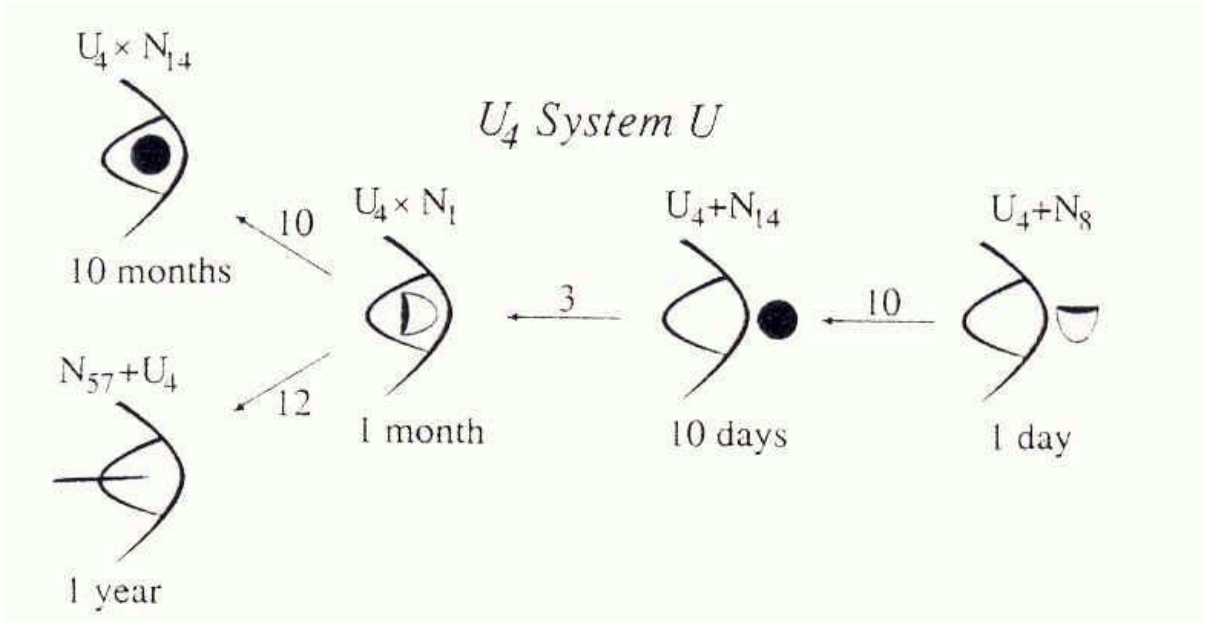
The number 20 in reformed Egyptian has the form of the cone-shaped Sumerian Proto-Cuneiform number and has the general form for the Mesoamerican “shell” glyph, which can either represent 0 or 20. In the Sumerian ŠE grain number system, 10 empty shells create a number that consists of a shell with a dot in it. Ten small dots create a large dot.



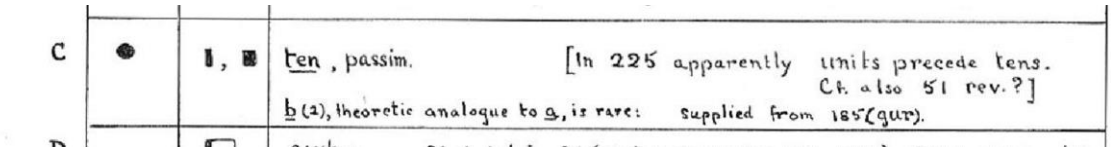
(Nissen et al 1993)

Sumerian Proto-Cuneiform Dots as Tens and One

Similarly, in the Sumerian U_4 calendar number system, 10 days is signified by a dot adjacent to an empty shell; ten months is the empty shell with a dot inside of it. The number 20 in reformed Egyptian consists of a shell with two dots inside of the shell.

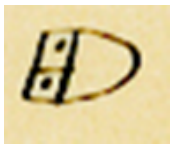


(Nissen et al 1993)



(Burrows 1935)


C-32


C-73


C-91

Number “20” glyphs from the Caractors Document

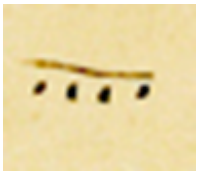
Proto-Cuneiform Bar Dot Number System (Elam)

The bar dot number system in Mesoamerica also has glyph forms that are found in the Elamite Proto-Cuneiform and documented from the Proto-Elamite Period (ca. 3100–2900 BC).

M001+M379~c

M001+M379~d

(Dahl 2006)



C-92

Caractors Document, number 9 (bar-dot)

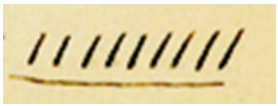
Proto-Cuneiform Tally Number System (Elam)

M001+M379~d MO41

M041~c

M041~d

(Dahl 2006)

C-47 

Caractors Document, number 9 (rebus)

Since Proto-Cuneiform was not used after 2500 BC, this is a clear indicator that the Jaredite migration occurred prior to 2500 BC. The timeframe attestations of Sumerian roots of Jaredite names and words in the Book of Mormon are also consistent with a departure prior to 2500 BC.

Chapter 15

Mesoamerican Evidence Indicative of Jaredite Chronological Events

Following the method when looking at destructions in the Jaredite narrative in tandem with volcanic eruptions in Mesoamerica, we can correlate various other Jaredite events with incidents in the natural history of the region and the cultural history of the Olmec.

Opening the Land Southward for Game

Based on the approximate date of 1095 BC for Lib, from the chronological framework calculation (discussed later), and the founding of the great city by the narrow neck, which corresponds with the Olmec city of La Venta, there was an opening up of the land southward (at least in that area) for the principal purpose of preserving the land for hunting. There are no mentions of any previous migrations into the land southward since the time of Heth (ca. 1635 BC) and no indication there had been any (due to the proliferation of venomous serpents).

> Ether 10:19, 21
>
> 19 And in the days of Lib the poisonous serpents were destroyed. Wherefore they did go into the land southward, to hunt food for the people of the land, for the land was covered with animals of the forest. And Lib also himself became a great hunter.
>
> 21 And they did preserve the land southward for a wilderness, to get game. And the whole face of the land northward was covered with inhabitants.

From a chronological and cultural standpoint, this practice is consistent in time with the Olmec chronology. A variety of studies cited by Christopher Pool (2007) indicate that by the end of the Early Formative Period (1000 BC), maize-based agriculture had been established through the Olmec culture area, augmented with other resources (pg. 64). The Olmec consumed a wide array of animal species including red brocket deer, white-tailed deer, rabbits, raccoon, peccary, duck, turkey, armadillo, boa constrictor, ocelot, and various types of fish (Vanderwarker 2006).

When sedentary agriculture becomes established, habitat and food (insects) for smaller game increase. While some larger mammals that browse (such as deer) can benefit from the new landscape partially devoid of forest, other large game becomes scarce. Several archaeological studies concentrated on the southwestern United States have shown that as people become more committed to farming, they actually increase their exploitation of larger prey (Speth et al 1989, 76; Szuter and Bayham 1989, 89). These studies indicate that these groups selectively focused on larger species and suggest that when farmers were faced with a local depletion of large prey, they extended their hunting ranges and shifted from an individual-based to a communal-based hunting strategy. With the combined effort, they spent less time on long-distance hunts while procuring a higher return on preferred prey.

This approach is also consistent with other studies that show when a society becomes dependent on sedentary agriculture, it utilizes "trekking," a strategy for dealing with fluctuations in productivity in which large segments of the population leave their permanent villages for extended periods to hunt and forage in distant areas. This practice has been documented in the Amazonian rainforest (Werner 1983).

A specific study regarding Olmec sustenance patterns revealed that, toward the end of the Early Formative Period and into the Middle Formative (ca. 1000 BC), people in the Tuxtlas became more sedentary and altered the faunal subsistence practices away from aquatic resources and toward terrestrial mammals (Vanderwarker 2006, 195).

The description provided in the Book of Ether for the "game preserve" in the land southward is completely consistent with the Olmec situation, both in time and in practice.

Post-Jaredite Events and Commentary from the Book of Mormon

Tail End of the Jaredite Calendar

We do know that the last Jaredite king, Coriantumr$_2$, visited the people of Zarahemla and stayed for nine moons, so a look at the time constraints of the people of Zarahemla and at the end of the Jaredite culture is in order. As discussed earlier the people of Mulek/Zarahemla arrived at approximately 540 BC.

Without the benefit of this work, Gardner places the end of the Jaredites at "around 200 BC" and the beginning of the Jaredites at "about 1100 BC" (Gardner 2015, 216, 390–92). John Sorenson (2013) conjectured a date from 2500 to 2800 BC for the arrival of the Jaredites and around 570 BC for the end of Jaredite culture (27, 31), with the arrival of the people of Mulek around 575 BC. Sorenson (1992) indicates that a long period of overlap between the Jaredites and the people of Mulek was not likely. He also suggested that the final destruction of the Jaredite ruling line could have occurred as early as 580 BC or as late as 400 BC (Sorenson 1985, 119).

The chronology in the Caractors Document indicates that the Nephites arrived in Zarahemla in year 388 (213 BC) (Grover 2015, 205). It is clear that the discovery of Coriantumr$_2$ by the people of Zarahemla (Omni 1:21) and the "burial by them" (Ether 13:21) must have occurred sometime before 213 BC. As previously discussed, a reasonable date for the encounter of the people of Mulek/Zarahemla with Coriantumr$_2$ is 380 BC.

Chronological Information Provided by Recovery of the Jaredite Plates

Based on information in the Book of Mormon and the Caractors Document, we know that a large stone stela discussing Coriantumr$_2$ was recovered at year 435 (167 BC) and that the Jaredite plates were recovered and returned around year 478 (125 BC).

"Dry Bones" as a Chronological Indicator

The Limhite expedition which recovered the Jaredite plates encountered "a land which was covered with dry bones" and was "covered with the bones of men, and of beasts" (Mosiah 8:8). Certain online publications have made the case for a chronological period of 100 years or less from the death of the Jaredites to the discovery of the bones in the neighborhood, based on bone decomposition rates (www.moriancumr2.blogspot.com 2016):

> In a humid, wet, semi-tropical environment (*sic*) bones left on the surface of the ground tend to decompose rather quickly. If there are a lot of predators and scavengers, they tend to accelerate

> the process. If the soil is of volcanic origin, and therefore acidic, this also accelerates the decay. One of the experts in this field (*taphonomic studies*), Ann Behrensmeyer, has observed the disintegration of bones exposed on the surface in Kenya for at least 30 years. She has broken the process down into five stages: stage 1 (1–3 years) the bone exhibits fine cracking; stage 2 (3–5 years) the surface of the bone begins to flake off; stage 3 (5–10 years) the fibrous interior bone is exposed; stage 4 (10–15 years) deep cracks develop in the bone; stage 5 (15–30 years) the bone disintegrates into splintered fragments. Once again, this is for bone lying on the surface and exposed to animals, bugs, and the elements. This was the case with the Jaredite bones that the Limhites found. Bone size is also a factor with smaller bones disintegrating first and larger bones lasting longer. But the thing to note is that within 30 years the bones are all decomposing. We can safely assume that within one hundred years all evidence of the Jaredite bones which had been on the surface would have disappeared.

The Behrensmeyer study referenced (Behrensmeyer 1978), however, was not done in a humid, wet, semitropical environment; it was completed in the Amboseli National Park, where the climate is actually hot and dry, positioned in the rain shadow of Mount Kilimanjaro. In fact, bone weathering in a tropical environment is much slower. Tappen (1994) conducted a study in 1994 in the Ituri rainforest in Zaire. That study observed 118 elephant bones with known or estimated death dates. After seven years of exposure, the bones were still at stage 0 (no weathering). A second site indicated bones still at stage 0 after 16 years (no weathering), while a third site with remains greater than 15 years old indicated stages 1 to 3 of weathering. The study indicated that heavy vegetation cover protects the bones and blocks the sun, significantly slowing the speed of bone weathering. Other subsequent studies have confirmed these findings and determined that buried flesh or skeletal tissue takes roughly eight times longer to degrade (Ross et al 2011).

While there is no discussion of burial, it is probable that for much of the final Jaredite war, which lasted at least eight "years" (six years under the Olmec Calendar Round calendar), battle casualties were buried. It was only in the very last stage of the war that bodies were mentioned to have remained on the surface (Ether 14:21–23). It is possible that after hundreds of years some of these burials may have become exposed or scavenged.

In addition, it is curious that the Limhites described the land as also being covered with the bones of "beasts." There is no mention of the final Jaredite war entailing the killing of beasts. It's possible that some of the dry bones they observed may have been the result of the deaths of subsequent people and animals resulting from a volcanic eruption. There were two possible eruptions of the San Martín volcano within the potential intervening timeframe (400–130 BC) (Smithsonian 2016), which could have resulted in the deaths of both humans and beasts. After 200 years, fully preserved skeletons, covered by volcanic eruptive material, were excavated in 2008 from deposits of the 1811 eruption of the Tambora volcano (Johnston 2012). It is noteworthy that the early editions of the Book of Mormon, up until 1920, rendered this verse as "the bones of men, and of beasts, etc." (Skousen 2005, 574), so the likely interpretation of the "etc." would be bones of other vertebrates (perhaps even birds, reptiles, and fish), which would certainly be indicative of remains within a volcanic eruption.

If the dry bones observed on the surface were, in fact, from unburied bodies left in a wet, semitropical environment, one might expect dry bones (up to stage 5) to be present from at least a minimum of 150 years and perhaps several hundred years after death, based on extrapolations of the above-listed

studies. If the bodies were initially buried by purposed burial or by volcanic material and then exposed to the surface, the time would be much longer. If one considers the Limhite expedition encountering dry bones at approximately year 475 (128 BC), the Jaredites' demise at 440-420 BC is certainly very reasonable based on the "dry bones" chronological criteria.

Bones scattered in the land northward were noted by Amaleki (Omni 1:22), who it seems obtained that knowledge when a large stone (presumably from the land northward) containing information about Coriantumr$_2$ was brought to Mosiah$_1$ (Omni 1:20). This event would have had to occur after the Zeniff party left Zarahemla (Limhi had no prior knowledge of these bones, after the expedition thinking they were from the people of Zarahemla, who he thought had been destroyed). The bringing of the large stone would have had to have been sometime prior to Mosiah$_1$'s death and so would have been approximately 425 years after Lehi left Jerusalem, or 177 BC. Amaleki does not mention that the bones were "dry," but they may have been (Limhi did not mention that the bones were "dry" on his first recounting of the bones either [Mosiah 8:8]). The time period between the large stone being brought to Mosiah$_1$ and the Limhite expedition is approximately 50 years, and bones were observed by both groups, which is fair proof that the decomposition of the bones was much slower than some have asserted. Trying to place the Jaredites' demise after 280 BC would be suspect, since the remaining bones would not have reached a dry state in the semitropical climate.

The Limhite expedition also returned with "swords, the hilts thereof have perished, and the blades thereof were cankered with rust" so it is tempting to try to establish an approximate date of the Jaredite destruction based on the rate of corrosion of metal. However, the breastplates that were obtained with the plates and the swords were "of brass and of copper, and are perfectly sound" (Mosiah 8:11). The swords were clearly not of the same age as the breastplates. Thus, we are not looking at weapons and breastplates collected on the field of battle, but these religious relics are in fact a Mesoamerican sacred bundle of the Jaredites. The swords were likely the near mythical ancient swords of Shule. In addition, they were not collected off the battlefield but were obtained with the Twenty-Four plates from "a remnant of the people who have been destroyed, from whence these records came" (Mosiah 8:12). That is the reason that a mistaken conclusion was reached (although Limhi had his doubts) that this Jaredite sacred bundle was the partially plundered Nephite sacred bundle in that it contained sacred records (large plates, presumably also made with a pure gold surface) and sacred weapons (Sword of Laban). After nearly 500 years, the blade of the Sword of Laban, being made of steel, also likely featured some element of corrosion, so had some similarity to the Swords of Shule which were also made of this rare steel metal (Ether 7:9). There is no mention of steel beyond the generation of Nephi$_1$, so it appears that this metal was not known to the Nephites (and the Limhites) beyond the presence of the Sword of Laban in the Nephite sacred bundle, so the presence of steel swords in this sacred bundle, given that the Limhites had no knowledge of the existence of the Swords of Shule, was presumably evidence (or "testimony" as stated in Mosiah 7:9) of the Nephite sacred bundle. The interpreters at this point in time are thus indicated to have the configuration of being mounted in spectacles that could be attached to a breastplate by a flip up bar, so the Jaredite breastplates also seemed to match the Nephite sacred bundle in this regard as well. Only missing from this presumed Nephite sacred bundle was the Liahona and the interpreters themselves.

Timber Deforestation Chronological Criteria

The chronological correlation of the post-Jaredite era is further corroborated in statements made by Mormon regarding the repopulation of the land northward over time.

> Helaman 3:3–11
>
> 3 And it came to pass in the forty and sixth, yea, there was much contention and many dissensions; in the which there were an exceedingly great many who departed out of the land of Zarahemla, and went forth unto the land northward to inherit the land.
> 4 And they did travel to an exceedingly great distance, insomuch that they came to large bodies of water and many rivers.
> 5 Yea, and even they did spread forth into all parts of the land, into whatever parts it had not been rendered desolate and without timber, because of the many inhabitants who had before inherited the land.
> 6 And now no part of the land was desolate, save it were for timber; but because of the greatness of the destruction of the people who had before inhabited the land it was called desolate.
> 7 And there being but little timber upon the face of the land, nevertheless the people who went forth became exceedingly expert in the working of cement; therefore they did build houses of cement, in the which they did dwell.
> 8 And it came to pass that they did multiply and spread, and did go forth from the land southward to the land northward, and did spread insomuch that they began to cover the face of the whole earth, from the sea south to the sea north, from the sea west to the sea east.
> 9 And the people who were in the land northward did dwell in tents, and in houses of cement, and they did suffer whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses, yea, their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings.
> 10 And it came to pass as timber was exceedingly scarce in the land northward, they did send forth much by the way of shipping.
> 11 And thus they did enable the people in the land northward that they might build many cities, both of wood and of cement.

Verses 3 and 4 discuss an initial specific migration and settlement to a land that was at "an exceeding great distance," where there were "large bodies of water and many rivers." This location has been postulated by others to be the Valley of Mexico, which is the only place that reasonably meets the description given (Gardner 2015). Also provided in the above passage is a more general discussion of the spreading of the population from the land southward into the land northward (verses 5–11). The text does not indicate that all of this migration and population spreading into the land northward occurred in the 46th year of the Reign of the Judges—it is just an indication of the initial migration and the general population expansion that occurred, presumably, up until Mormon's day.

Verse 6 does indicate that, at least initially, portions of the land northward were not significantly settled and that portions were "without timber, because of the many inhabitants who had before inherited the land." The first migration occurred in the 46th year of the Reign of the Judges, which is equivalent to 51 BC. The word *timber* has no official definition, but it is indicated that houses of wood could not be built without it and that "tents," and "houses of cement" were able to be built even though timber was lacking. In addition to wooden houses, "their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings" were unable to be built without timber.

Because of the timber deficiency, a special forest-preservation program had to be implemented (verse 9) to guarantee that the trees to be used for timber reached maturity. In addition to the tree-preservation program, it was necessary to import timber from the land southward (verse 10).

Mormon's Statements on Structural Timber and Cement in the Land Northward

The statement that tents and some small cement houses could be built without timber squares with Mesoamerican practices. Although the preferential practice for manufacturing cement in Mesoamerica involves the burning (at high temperatures) of lumber (typically softwood pine), other sources of fuel (e.g., bound brush limb faggots) could have been used to manufacture cement. A "tent" in the Book of Mormon context would be assumed to be some sort of thatched lean-to (Sorenson 2013, 322–23).

A typical Maya house (which is assumed to be representative of other Mesoamerican wood houses) requires a lashed timber skeleton frame that is then covered with a thatched roof and wattle walls (see figure 73).

The use of cement has been documented in Central Mexico and corroborates the date provided by Mormon (Sorenson 2013, 322 and references cited there). Charcoal found in mounds at Teotihuacan radiocarbon dates between 50 BC and 110 AD (Millon et al 1961). This same date range was reconfirmed by radiocarbon dating of charcoal that was found under concrete slabs under the Temple of the Sun (Sload 2007). Maya builders were knowledgeable of the process for fabricating hydraulic cement prior to 300 BC and were using it in building projects (O'Kon 2012, 139). The term for cement in the Book of Mormon could also reasonably be interpreted to include structural mortar, plaster, and stucco.

The statement by Mormon that "their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings" were unable to be built without timber also squares with Mesoamerican practice. High-strength structural timber from tropical hardwoods were used in the construction of larger buildings where high-tensile strength was needed in features such as lintels and beams.

Specifically, the Maya arch was a basic building tool used in the construction of large building projects because it had multifaceted capabilities and could span between supports to create interior spaces in buildings, span a gateway, create large vault-like interior spaces, or be vertically positioned to form multistory vaulted buildings. As a structural mechanical element, the Maya arch is not a true structural arch, in that it requires additional structural, tensile truss elements in order to be self-supporting. It was necessary for the Maya to use high-strength timber trusses in their arches to make them self-supporting.

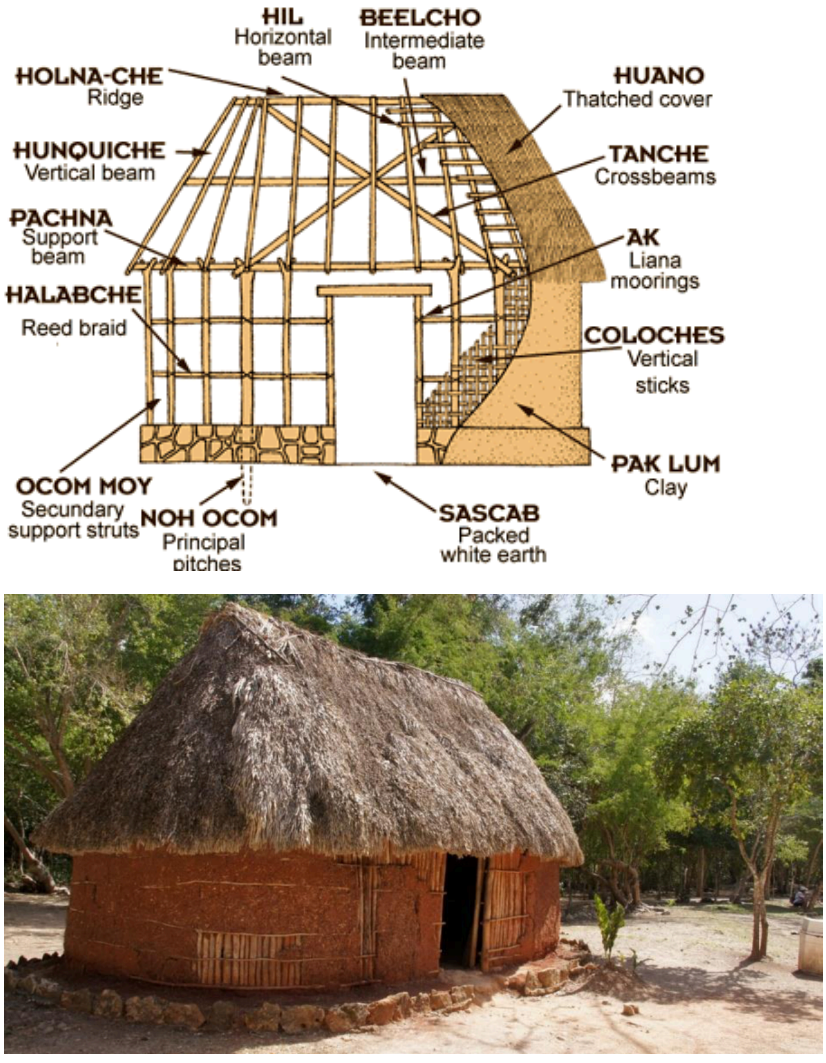


Figure 73 Typical Maya house and structure (clio.missouristate.edu 2015)

Figure 74 Maya arch structure showing cross-timber structures in Ti'kal, Guatemala (www.maya.nmai.si.edu 2015)

High-strength timber was used in other structural applications that would certainly qualify as "cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings":

> High strength tropical timber was used by Maya engineers for spanning bridges, roofs, and floors. Examples of these structures include the bridge at Pusilha, the palace tower at Palenque, and the sweat house at Piedras Negros. In several cases, the timber beams were used with a concrete topping. This system then became a composite structural material, and the total strength exceeded the sum of parts. (O'Kon 2012, 163)

It is interesting that temple structures placed on top of solid Mesoamerican pyramid piles (made from mass fill of rubble encased with precast concrete) do not require timber. It is thought that the principal use of the word *tower* in the Book of Mormon is the word used for these pyramids, so Mormon's failure to mention the word *tower* supports this interpretation, since Mesoamerican pyramids, or "towers," do not require timber.

Aside from the structural support provided by high-strength timber, the ability to build larger cement/stone projects would also be inhibited if cement production was scarce due to lack of timber, a fact that also supports Mormon's description.

Mormon's Statements on Prior Deforestation in the Land Northward

The primary purpose of this particular discussion is to better tie in the chronological tail end of the Jaredite era, and one of Mormon's statements potentially pertains to the Jaredite era, namely, Mormon's assertion that "the many inhabitants who had before inherited the land" had rendered parts of the land "desolate and without timber." Mormon clarifies what was meant by "desolate" here, namely that the land had vegetation but lacked timber. Mormon further indicates that the name for the land itself was called "desolate" because of "the destruction of the people who had before inhabited the land." The land is referred to elsewhere in the Book of Mormon as the land of "Desolation," so the description here is consistent. There is no specific reference to the Jaredites here, so the reference to prior inhabitants may include others besides (and perhaps after) the Jaredites.

There are scientific techniques to determine events of ancient deforestation. The primary method involves obtaining cores of sediment from historically stable soils (ones that would reliably accumulate soil layers as opposed to ones that sporadically accumulate or experience periods of soil loss). These locations would typically be sediment columns in stable lakes or marshlands. Once the cores are obtained, layers are then evaluated for the presence and types of pollen present. Also of interest are any layers of charcoal that may indicate forest burning (typical of the slash-and-burn agriculture that was practiced anciently) or layers of volcanic ash indicative of volcanic eruptions, which could, of course, have caused deforestation within the range of the eruption.

There are two studies of this sort that have taken place within what would reliably be considered to have occurred within the land northward. The first study took place in 1998 where core studies were completed from the lake sediments of Laguna Pompal, a small lake four miles east of Lake Catemaco on the western flank of the Volcan Santa Marta in the Tuxtla Mountains. This study is also corroborated by an earlier 1989 study of cores taken from Lake Catemaco.

These studies showed that circa 650 BC, arboreal (tree-derived) pollen started to drastically decrease and by 500 BC (+/– 70 years), pollen from individual-measured species of trees (Ulmus, Alchornea, and

Liquidambar) were nearly nonexistent (Goman et al 1998; Byrne et al 1989). These studies showed that arboreal pollen stayed low until circa 650 AD and that the largest driver of the deforestation was agriculture, evidenced by the increase in agriculturally based pollen and charcoal. Based on later data, following a decrease or cessation in agriculture, the tropical forest recovery was fairly rapid, with arboreal pollen peaking within 300 years. The studies also indicated a large increase in grass and weed pollen during the timeframe when the forest pollen was low.

In 2006, an additional pollen core study of the area north on the Veracruz coastal plain, north of the city of Veracruz, was published. It showed a similar drop in arboreal pollen that started circa 800 BC (Sluyter et al 2006).

Figure 75 Location of pollen core studies

With three data points, more research would be helpful to establish complete certainty about deforestation in the entire region since pollen counts may reflect only the condition of a more localized region. Although tree pollen has been measured to travel hundreds and even thousands of miles, the majority of pollen is deposited closer to the pollen source. In light of the data so far, Mormon's statement is entirely accurate with respect to the existence of deforestation in 48 BC that continued up through his time in portions of the land northward. He is also accurate in stating that the land was "desolate" with respect to trees but not "desolate" in regard to other vegetation; in fact, the other types of vegetation increased.

Gardner (2015) makes a case that Mormon is primarily talking about Teotihuacan in the passages cited above, based on historical recitation technique (pgs. 328–33). Part of the error made in this approach is that it appears to be based on the widely held beliefs that the use of cement in Teotihuacan must have caused the deforestation, since wood would have been needed as fuel, and that deforestation in Teotihuacan at the time of Mormon is all that has apparently been documented on the matter. While the use of cement for large-scale structures in the land northward may have been a contributing factor later in time closer to Mormon's time, the pollen core studies indicate that the deforestation started much earlier and was primarily caused by agricultural practices and populations, although cement/plaster manufacture may have also played a role.

The large Jaredite populations that were clearly in the land northward prior to their demise rendered a reasonable explanation for the deforestation, which is consistent with an extended civil war, which may have contributed to the conflict by creating competition for limited resources.

The Book of Mormon text indicates that the location of the Jaredites' initial migration is the Valley of Mexico, but the rest of the passage is a summary of the continued growth and migrations from the land southward into the land northward that occurred up and through Mormon's time.

Chapter 16

A More Exact Jaredite Chronology

Having established a basic chronology above, we can further refine it by estimating the lengths of the reigns of the various Jaredite kings, based on the information given about them in the Book of Ether. The resulting chronology can then be confirmed and further developed by comparing it with major developments in Olmec settlement, as detailed by the archaeological record.

In the Book of Ether, the passing of kingship from father to son appears to follow the pattern of the last-born son receiving the kingship. This pattern began with the first generation, when Jared and his brother approached old age; none of the sons of the brother of Jared would accept the role, which was also rejected by all of Jared's sons, except the youngest, Orihah (Ether 6:14, 21–27). Further in the record of Ether, there were six older sons who rebelled against their predecessors (Ether 7:4, 14–16; 8:2–3; 10:3, 13–14; 11:4) and 10 sons, who were born in the king's "old age," who replaced their fathers (Ether 7:3, 7, 10, 26; 8:1; 9:14, 23–25; 10:4, 13-16; 11:4).

Another factor affecting the ages of the youngest sons in relation to the father is polygyny (one man with multiple wives). Jared had 12 children, and his brother had 22 children (Ether 6:20). Orihah had 31 children, 24 of whom were sons and Kib, the youngest of them all became the ruler (Ether 7:2-3). Many kings are said to have had "many sons and daughters" (Ether 7:12, 14; 9:21; 10:17). King Riplakish had "many wives and concubines" (Ether 10:5), and Jaredite men in general had "wives and children" (Ether 14:2).

Given this information, it is possible to at least estimate the chronology of the two separate Jaredite time periods, with a few assumptions. In order to attempt an estimate, the following assumptions will be made:

1. A descendant king takes the throne at an average age of 15 (if the average were much younger than that, in many cases he may not have been capable of retaining the throne, given the Jaredite propensity for violent usurpation by older brothers).
2. The death ages of the kings are assumed as follows unless otherwise indicated in the text:
   a) Unless otherwise indicated, the age of death is 70.
   b) When the terms "good old age" or "old age" are used, the age of death is 80.
   c) When the term "exceedingly old" is used, the age of death is 90.
   d) If an individual was held entirely in captivity (which could cause a shortened lifespan based on poor treatment) or there was reference to a shorter life, then a "reign" of 35 years is assumed. An exception was made for Coriantor, since a variety of events occurred while he was in captivity.
3. On average there are no time lapses between the death of the old king and the ascendancy of the new king.
4. Where any age or reign is listed in the text, the years are adjusted to the 260-day calendar.
5. For Seth, since the text indicates his days were short, it is assumed he died at 55.

6. Jared and the brother of Jared were assumed to be 45 years old when they departed the Old World; the actual departure date is approximately 2650 BC.

These initial date assumptions are not out of line with known ages of Maya kings:

> Elites tended to have longer life spans because they had access to better quality food and they didn't wear their lives out with physically taxing work the way non-elites did. We only have data for both the birth dates and death dates of 17 Classic period Maya rulers, and their average age at death is 64.7 years. Some of the longest lived Maya kings were Itzamnaaj B'alam II of Yaxchilan who was between 94.8 and 98.5 years old when he died, Calakmul's king Yukno'om the Great lived to be 85, Chan Imix K'awiil of Copan was about 83 when he died, a ruler of El Cayo named Chak Lakamtuun lived to 82, K'inich Janaab' Pakal from Palenque was 80, Aj Wosal of Naranjo was at least 78, and K'an Joy Chitam (also from Palenque) lived until he was 74. (Wright 2016)

One permutation of these assumptions is that, often, the "kings" listed were in captivity, so it would not be necessary for their offspring to be of sufficient age to defend the throne. This would provide for a longer term for that particular king. That may be offset by the death of a king earlier than the estimate.

With the parameters establishing that the Jaredites departed prior to 2500 BC, and the radiometric dating of the Heth and Shiblom volcanic events and other corollary evidence and events discussed elsewhere, it is possible to establish a reasonable Jaredite chronology. Given these parameters, table 6 identifies the Jaredite calendar timeline, showing the years passed to the end of a particular king's reign.

Table 6 Calculated Jaredite Chronology Framework

King/Ruler	Length of Reign	Calendar Dates	Significant Correlative Event(s) during Reign
First Chronological Period			
Jaredite Departure		2651 BC	
Jared	55 years	2651–2596 BC	Great tower, arrival in the New World
Orihah	65 years	2596–2531 BC	"days were exceedingly many"
Kib	75 years	2531–2456 BC	"exceedingly old"; land of Moron and city of Nehor first mentioned
Shule	55 years	2456–2401 BC	Shule was begat in Kib's old age; land of first inheritance first referred to; idolatry mentioned; swords made by Shule at hill of Ephraim
Omer	65 years	2401–2336 BC	"began to be old"; begat Emer in old age; anointed Emer king and died two years later; secret oaths/combinations first mentioned; population reduced to 30 persons plus the house of Omer

Emer	55 years	2336–2281 BC	In 62 years (44 years adjusted), people prospered; Coriantum anointed and Emer died two years later; elephants, cureloms, and cumoms; saw Son of Righteousness
Coriantum	86 years	2281–2195 BC	"exceedingly old"; lived 142 years (101 years adjusted), did build many mighty cities
Com	35 years	2195–2160 BC	Reigned 49 years (35 years adjusted)
Heth	30 years	2160–2130 BC	Great dearth; serpents died in famine; multiple volcano eruptive events (2070–2130 BC)
Shez	75 years	2130–2055 BC	Lived to an exceedingly old age; built up many cities on the face of the land; people began to spread all over the face of the land.
Riplakish driven	30 years	2055–2023 BC	reigned 42 years (30 years adjusted), then out
**********			
Gap years		2023–1420 BC	"space of many years," city states government
**********			

Second Chronological Period

Morionton	75 years	1420–1345 BC	Was at an exceedingly old age and then begat Kim; died eight years after Kim was installed; there are "many cities" when Morionton took power; Morionton then built up many cities.
Kim	65 years	1345–1280 BC	In old age begat Levi
Levi	65 years	1280–1215 BC	In captivity 42 years (30 adjusted years); lived to "good old age"
Corom	65 years	1215–1150 BC	"saw many days"
Kish	55 years	1150–1065 BC	
Lib	65 years	1065–1000 BC	Lived many years; built a "great city" near narrow neck;poisonous serpents destroyed; preserved the land southward as wilderness for hunting game; whole face of land northward covered with inhabitants

Hearthom	45 years	1000–955 BC	Reigned 24 years (17 adjusted years), then served many years in captivity
Heth	35 years	955–920 BC	In captivity
Aaron$_2$	35 years	920–885 BC	In captivity
Amnigaddah	35 years	885–850 BC	In captivity
Coriantum	35 years	850–815 BC	In captivity
Com	65 years	815–750 BC	Reigned half the kingdom 42 years (30 adjusted years); took the rest of the kingdom; lived to a "good old age" then begat Shiblom
Shiblom	35 years	750–715 BC	Calamity in the land; great destruction such a one never had been known in all the land; famines and pestilences; Shiblom slain; multiple volcano eruptive events
Seth	35 years	715–680 BC	In captivity
Ahah	20 years	680–660 BC	"few were his days"
Ethem	55 years	660–605 BC	
Moron	55 years	605–550 BC	
Coriantor	55 years	550–495 BC	In captivity
Ether	55 years	495–440 BC	

Gardner (2015) has argued for a shorter timeframe for the Jaredites—a total of 900 years, with an average reign of 30 years—based on the length of reigns of some known Maya kings, with no gap years between Riplakish and Morionton. Sorenson has indicated a span of 2,000 to 2,300 years (Sorenson 2013). Sorenson did not provide the methodology behind his most recent estimation, so comparisons of his method in that work is not possible. In a previous work, he did identify a Jaredite chronology starting in 3100 BC and extending to 570 BC (Sorenson 1969). In that 1969 work, he included a gap period of 100 years and, of necessity, gave many kings lifespans well beyond 100 years. Palmer (1982) also proposes a Jaredite chronology, extending from 2700 BC to 600 BC, assuming reigns of 70 years and a gap period of 130 years.

It is important to note that the chronology in table 6 is a calculated framework also based on known volcanic events as well as a known departure date range.

The First Jaredite Chronological Period

The first Jaredite chronological period in the New World is 2600–2023 BC. Based on the description given for the founding Jaredite group, consisting of 24 individuals and their families (Ether 6:16), it is not likely that there would be any archaeological evidence found for this initial group. We know that the

brother of Jared had 22 children, and Jared had 12. Assuming that each had 2 wives, the average family is assumed to be 20. With 24 families the initial population would be 480 people. If one assumes a standard annual population growth rate for ancient peoples of 1.5 percent per year, within 200 years, a population of 9500 people would be expected. After 200 years (2400 BC), there is mention of a couple of "lands," one city, and an "army" raised by an individual dissident exile (Ether 8:6). The word "army" is not mentioned again in the Book of Ether until the time of Morionton (Ether 10:9), which was in 1420 BC.

While one should not read too much into this terminology in relation to size (an early city may just be an agricultural village or hamlet, and an army could be only 100 people or so), it does seem very probable that the Jaredite group at this point was involving other native populations, since an "army" was raised by an exiled dissident.

According to our timeline, in 2401–2336 BC, the Jaredite population was reduced through warfare to 30 persons, plus Omer and his family with whom he escaped, so perhaps 50 to 60 people were left. Shortly thereafter, from 2336–2281 BC, the "house of Emer" prospered agriculturally and utilized some domesticated or semi-domesticated animals. From 2281–2195 BC, "many mighty cities" were built as the people began to spread over "all the face of the land." Again, using average population growth rates, over roughly 120 years, a population that started with 60 people would be expected to grow to 358 people. As indicated previously, the reference made to population growth and population centers indicates there was an increase in the local indigenous population, over which the Jaredites possibly exerted some political influence. Again, these areas were likely agriculturally based hamlets or villages.

In 2160–2130 BC, there was a severe famine in which the "inhabitants were destroyed exceedingly fast" (Ether 9:30). No mention is made of the number of the surviving population after the famine, however, from 2130–2055 BC, many cities were built up "on the face of the land," and people "began to spread all over the face of the land." The fairly short period of recovery time in which cities were built indicates again that the size of a city from the perspective of the Jaredite record-keeper was quite different from modern perceptions or even later Jaredite perspectives. The text itself is indicative of limited population centers.

From 2055–2023 BC, during Riplakish's reign, he built an "exceedingly beautiful throne," levied taxes, and built many tax prisons (Ether 10). The people rebelled and waged war, and Riplakish was killed, and his descendants driven "out of the land." Though there was some higher level of cultural sophistication in the beginning, it appears that the ensuing war was still a tribal family affair. To this point in the Book of Ether, the only lands mentioned were Nehor and Moron, so it can be assumed that the geographic area was still quite limited, probably encompassing or in close proximity to the area of the Tuxtla Mountains.

In Mesoamerican archaeology this period falls into the Archaic Period (ca. 3500–2000 BC). During the Archaic Period, agriculture was developed in the region and permanent villages were established. Late in this era, use of pottery and loom weaving became common and class divisions began to appear. Many of the basic technologies of Mesoamerica such as stone-grinding, drilling, pottery making, etc., were established during this period.

In the area of the Olmec, excavations at San Andres (near later La Venta) indicate domestication of manioc in 4600 BC, and in 2500 BC, people were practicing a mixed economy of foraging and farming,

with the domestication of maize, sunflowers, and cotton; they presumably used canoes, weapons, digging sticks, net baskets, and ritual objects fashioned from wood or other objects (Diehl 2004, 24). Although this archaeological period is largely ignored, in the Tuxtlas, pollen of plants indicative of agriculture has been dated to 2880 BC. The Mesoamerican archaeological record is generally consistent with the limited description found in the Book of Ether.

Gap Period

The gap in the Jaredite record occurs in the time period encompassing 2023–1420 BC. All that is known about this period is that no primary king was in power (at least none is mentioned) and that at the end of the period there existed "many cities." The Olmec archaeological record indicates, depending on the archaeologist consulted, that the Olmec culture started between 1450 BC and no later than 1250 BC.

In the Coatzacoalcos River basin, 105 sites have been identified with Ojochi and Bajío ceramic phases (ca. 1750–1450 BC). The earliest occupation identified at San Lorenzo was 1800 BC (Cyphers et al 2014, 73). More than three-quarters of these sites are clustered within 90 kilometers of San Lorenzo (Pool 2007, 125).

The Second Chronological Period

1420–1065 BC

In the Jaredite chronology, the period of 1420–1065 BC starts with Morionton and an army of outcasts giving battle "unto the people." Morionton gained power over many cities, and then, over the space of many years, gained power over all the land and made himself king (Ether 10:9). During this period many cities were built, and the people became rich in buildings and other worldly goods, and the people "did prosper in the land" (Ether 10:16). During this period there continued familial vying for political control by force.

The archaeological evidence in the Olmec heartland for this period mirrors the Book of Mormon description. San Lorenzo grew from 1400 BC until its demise in 1000 BC (Cheetham and Blomster 2017, 16), as did the regional settlements, with the total area of permanent settlement increasing 10-fold (Pool 2007, 126). At Laguna de los Cerros and the Upper San Juan Basin, prior to 1400 BC, settlement was sparse. Laguna de los Cerros was founded sometime between 1400 BC and 1200 BC. Settlement densities increased drastically after 1400 BC, reaching 35 settlements by 1200 BC and 153 settlements by 1000 BC (Pool 2007, 128). Some local settlements also existed in the La Venta area as well.

1065–750 BC

In the Jaredite chronology, the period of 1065–750 BC starts with Lib building a "great city" near the narrow neck where the sea divides the land. By some mechanism, poisonous serpents that had infested the area for a thousand years disappeared, opening up a hunting area in the adjacent land southward. Initially the whole face of the land northward was covered with inhabitants. There were a variety of products manufactured including "all manner of fine work," "all manner of cloth," agricultural tools, and "all manner of work of exceedingly curious workmanship." During the latter part of this period there was conflict, war, robbers, and changes in kingship lines.

The archaeological evidence in the Olmec heartland for this period mirrors the Book of Mormon description. The fluorescence of the city of La Venta is dated from 1000 BC to 400 BC (Pool 2007, 158).

The city of Tres Zapotes found its origin sometime in the centuries before 1000 BC and emerged as a regional center early in the Middle Formative Period, perhaps 900–800 BC, roughly coinciding with the decline of San Lorenzo Tenochtitlan. San Lorenzo experienced its serious demise around 1000 BC, as did the San Juan River Basin, where Laguna de los Cerros was located, which continued through the end of the Middle Formative Period (1000–400 BC). All that remained of San Lorenzo was a medium-sized village, and the regional population fell by nearly 92%. In the adjacent San Juan River Basin, the number of identified inhabited sites fell by 63% (Pool 2007, 152). Military conflict is one of the suspected causes of the decline of San Lorenzo (Diehl 2004).

750–400 BC

In the Jaredite chronology, for the period of 750-400 BC, the first decades included an "exceedingly great war," followed by pestilence, famine, and a "great destruction." The next three centuries included ongoing political and military conflict within and between kingdoms, which resulted in the final great civil war, and the destruction of the Jaredite nation. A king named Moron arose during the middle of this period, whose name likely makes reference to the early land of Moron.

The archaeological evidence in the Olmec heartland for this period mirrors the Book of Mormon description. San Lorenzo continued its demise, as did the San Juan River Basin. During the middle of the period, the population migrated to the outskirts of Tres Zapotes and La Venta. At the end of the period, La Venta (along with San Lorenzo and the rest of the Olmec heartland area) was also essentially abandoned. Tres Zapotes is not abandoned in 400 BC, but over the next few centuries, cultural changes result in the Olmec remnant Epi-Olmec culture.

The calculated Jaredite chronology outlined in table 6 corresponds well with the Olmec archaeological chronology.

Chapter 17

Chronology of Mulek and the People of Zarahemla

The interesting thing about the text of the Book of Mormon is that it does not mention Mulek at all when the “people of Zarahemla” came out "from Jerusalem" at the time Zedekiah was deposed (Omni 1:15). He is also conspicuously not mentioned as a king at the time of the first landing as well. Only the "people of Zarahemla" are mentioned as discovering the land northward area later known as Desolation upon that first landing (Alma 22:30). It does mention that the "Lord did bring Mulek into the land north." (Helaman 6:10). According to the Book of Mormon Onomasticon (2023), Mulek is a diminutive form of a personal name meaning "little king." The Caractors Document form in the Egyptian indicates something to the effect of "young male chief." Zarahemla is a direct descendant of Mulek, but he himself is not a king, and Mulek is not referred to as a king.

The situation best reflected in the text is that Mulek was an unborn child recently conceived at the time that Zedekiah was deposed, and thus avoided being slain like the rest of Zedekiah's sons. That is why he is not mentioned as coming out of Jerusalem as he was born later. The text as to whether he was born prior to his arrival in the New World does seem to indicate that he was born prior to arrival, but theoretically, it could be interpreted that he was brought by the Lord to the land in the womb of his mother. This scenario would of course indicate that the travel from Jerusalem to the New World would have been less than 9-10 months, which is possible. This arrival in the womb scenario does not seem likely, given the Jaredite chronology and Olmec archeology, as will be discussed shortly.

Whatever his arrival time, there is little doubt that he could have been considered some kind of king and still have his group accepted into the Olmec/Jaredite territory where there was already one ruling line and another competing ruling line. In the context of what we know of Mesoamerica, Mulek would likely have been summarily dispatched by the Olmec ruling line if some attempts were made to be a king. However, ending up being a vassal chief of his people with respect to the Olmecs/Jaredites is certainly a reasonable possibility. In addition, with the name Sidon being a Phoenician name and with a few Greek sounding names (Lachoneus and Timothy) which appear in the Book of Mormon after contact with the people of Zarahemla, it appears that the group that arrived was not culturally homogenous, so the situation may not have been conducive to the reign of a Hebrew king even amongst the people that he arrived with.

As far as the chronology of the people of Zarahemla, the father of Mulek, Zedekiah, fled Jerusalem after it fell to Babylon (586 BC), but he was captured as he fled, and all his sons were killed. Presumably the ancestors of the people of Zarahemla (perhaps even being led by another person named Zarahemla) fled at the time or perhaps earlier. We do not have any information about how long they remained in the Old World, just that they “journeyed in the wilderness” (Omni 1:16). Nor do we know the transoceanic travel time to the New World, only that they arrived in the land later known as Desolation, which was then occupied by the Olmec/Jaredites. From the description in Omni, it does not appear that they spent many generations on the coast when they landed, as the text seems to imply that they migrated out of the land of Desolation towards the land of Zarahemla early on. It is indicated that they moved from

their initial landing point up to the "south wilderness," which was later known as the land of Bountiful, which appears to be the place they encountered Coriantumr$_2$. They were fairly well established in the land of Zarahemla when the followers of Mosiah$_1$ encountered them.

During the days of Coriantor, it was prophesied that if the people of that time did not repent, then the Lord would "send or bring forth another people to possess the land" (Ether 11:20-21). Later, Ether warned Coriantumr$_2$ that if he did not repent, all his household would be destroyed, except for him, and that he would "see the fulfilling of the prophecies which had been spoken concerning another people receiving the land for their inheritance, and Coriantumr$_2$ should receive burial by them" (Ether 13:20-21). Thus, the earlier prophecy at the time of Coriantor is referring to the people of Zarahemla (not the Lehites) since they were the ones who "discovered" Coriantumr late in his life (Omni 11:21). Also, since Ether knew that there was a city of Jerusalem just prior to the final series of battles that destroyed the Jaredites (Ether 13:5, 15), he must have encountered the people of Zarahemla and Mulek, although it is possible that he got that knowledge from a divine source as well. Note that unlike the prophecy made to Coriantor that the Lord would "bring forth" another people, the prophecy to Coriantumr just indicated that this people would "receive" the land for their inheritance, just as they would "receive" Coriantumr$_2$ before his death, which is consistent with the people of Zarahemla/Mulek already being present at the time of Coriantumr$_2$.

A bit later in the chronology of the people of Zarahemla, they "had had many wars and serious contentions, and had fallen by the sword from time to time" (Omni 1:17). They also discovered Coriantumr$_2$ before the end of his life, and "the days of Ether were in the days of Coriantumr," so it can be extrapolated that Coriantumr$_2$ and Ether had significant lifespan overlaps. Since the people of Mulek were friendly towards Coriantumr$_2$, and it is known that they headed to the south wilderness, it is also a plausible theory that they were forced to move further south to the wilderness in order to avoid those who rose against Coriantumr$_2$ and their followers, who had a base of support in the southern portion of the Jaredite realm where Shiz located (at the place of Ogath) for four years gathering military support before the final battle with Coriantumr$_2$ to the north. Although not exact, there are some lengths of time found within Coriantumr$_2$'s reign in the Book of Mormon text, and considering that the measurement of "years" is likely the shorter Olmec year, and events happening between these time periods, a minimum time from Ether's initial preaching to Coriantumr$_2$ and the end of the Jaredites is 20 solar years.

Thus, these are the premises by which we can approximate a rough skeletal chronology of Mulek and the people of Zarahemla:

1. Arrival must be during a reasonable lifetime of Mulek between 586 and 510 BC.
2. Arrival must not be in the beginning stage of the Coriantor reign (technically he was in captivity during his entire reign) (550–495 BC) as there was prophesying of a future arrival after rejection of the prophets to have occurred. It may be a bit earlier as the Coriantor reign approximation may be plus or minus a decade or so, thus arrival not prior to 540 BC, perhaps a few years earlier than that is also possible.
3. The people of Zarahemla must be present in the lands of the Jaredites sometime during the adult life of Ether (495–440 BC). If Ether lived to be much older, say 90, then it would be (495-420 BC).
4. The people of Zarahemla had moved to the south wilderness prior to or concurrent with the commencement of the final Jaredite battles.

5. The people of Zarahemla encounter Coriantumr$_2$ at the end of his life. A birthdate is not known for Coriantumr$_2$, but he was capable of extreme hand-to-hand combat at the end of the Jaredites (440 – 420 BC), so likely he was born no earlier than 470 BC. If Coriantumr$_2$ lived to be 90, then the latest he could encounter the people of Zarahemla would be 380 BC.
6. The principal city of Zarahemla was somewhat well established at the time that Mosiah$_1$ encountered them (year 388, or 213 BC).

With this information, we are able to approximate a chronology for the people of Zarahemla and Mulek:

586 BC	Birth of Mulek
540 BC	Arrival of Mulek's group in the New World in Jaredite/Olmec lands
540 – 470 BC	Mulek (and his successor chiefs) and followers live as vassal entity to Jaredite/Olmec kings in the proximity of La Venta
470 – 370 BC	People of Zarahemla (perhaps a subset of the original Mulek group) move to and live in the south wilderness (which may have included the peripheral boundaries of the later land of Zarahemla)
440 – 420 BC	Jaredite/Olmec destruction
380 BC	People of Mulek encounter Coriantumr$_2$ in the south wilderness
330 BC	People of Mulek/Zarahemla expand to Zarahemla
213 BC	People of Zarahemla encountered by Mosiah$_1$

Thus, the information regarding Mulek and on the people of Zarahemla is consistent with Olmec chronology and geography.

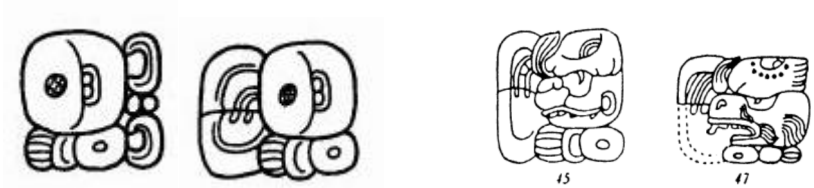
<u>Mesoamerican archeological correlation with the Mulek chronology</u>

As has been pointed out by various authors, Monument 13 and Stela 3 at the Olmec city of La Venta, in what is known as Complex A, also provide support for the arrival of Mulek and his group during the 540-470 BC chronological time frame. Although the chronology of La Venta is complex and inexact at points, Complex A suggest dates of the later stages of construction starting from 600 BC, with a final radiocarbon date of the adjacent pyramid mound C-1 at 400 BC (Pool 2007, 160). Specifically, Monument 13 shows a bearded figure in Near Eastern garb that also features the Mesoamerican glyph of a footprint which means "traveler" (see figure 76).

Egyptian hieratic glyphs closely matching part of Mulek's name as shown in the Caractors Document are the signs for fish (Gardiner Number K-3) and walking legs (Gardiner Number D-55). In Egyptian, certain verbs involving the notion of movement add the walking legs ideogram. The walking legs ideogram can also indicate backward movement when oriented as in the Caractors glyph. It could have been interpreted as "moving fish," but normally a designation for fish does not include some addition for movement since a fish is presumed to be able to move by swimming.

Figure 76 La Venta Monument 13 showing a bearded man in Near Eastern garb with the symbol of a footprint

In relation to the meaning of the name Mulek, corresponding with Stela 3, the Maya PDI and ADI glyphs almost always feature the glyph called in the Maya "Muloc," which depicts a fish, or "Xoc," which is a shark.



ADI and PDI, including the Muluc fish glyph and the PDI Xoc shark glyph (Stuart 1990 217)

Famous Mayanist David H. Kelley (1960) noted a Hebrew connection to the Maya calendar involving three sequential Maya day names that corresponded with three sequential Hebrew letters. The day names are Manik, Lamed, and Muluc. The Manik glyph is of a hand and corresponds with the Yucatec Mayan word for hand, *kab*. The corresponding Hebrew letter is *kaph*. The next Hebrew letter in the

Hebrew alphabet is *lamed*, or *l*, and the next Maya calendar day name is *Lamat*. The next Hebrew letter in sequence is *mem*, which means water, and the next sequential Maya calendar day name is *Muluc*, which features a fish as its glyph.

Acknowledging the fish theme for the Maya glyph Muluc and the correlation with the Paleo-Hebrew letter, there is a correlation with Stela 3 at La Venta and Mulek. John L. Sorenson (2013, 539) has provided some convincing arguments that the bearded Semitic-looking individual with a large aquiline nose on La Venta Stela 3 is, in fact, Mulek and that the scene depicts the arrival of Mulek (see figure 77). One detail apparently overlooked in Stela 3 by Sorenson is that the headdress that the individual identified as Mulek is wearing is in the form of a big fish. The designation in the Caractors Document as "walking fish" as either part of his name or as a ceremonial title is exactly consistent with the Maya glyph Muluc, the ADI featuring Muluc, and the La Venta Stela 3, also featuring Mulek.

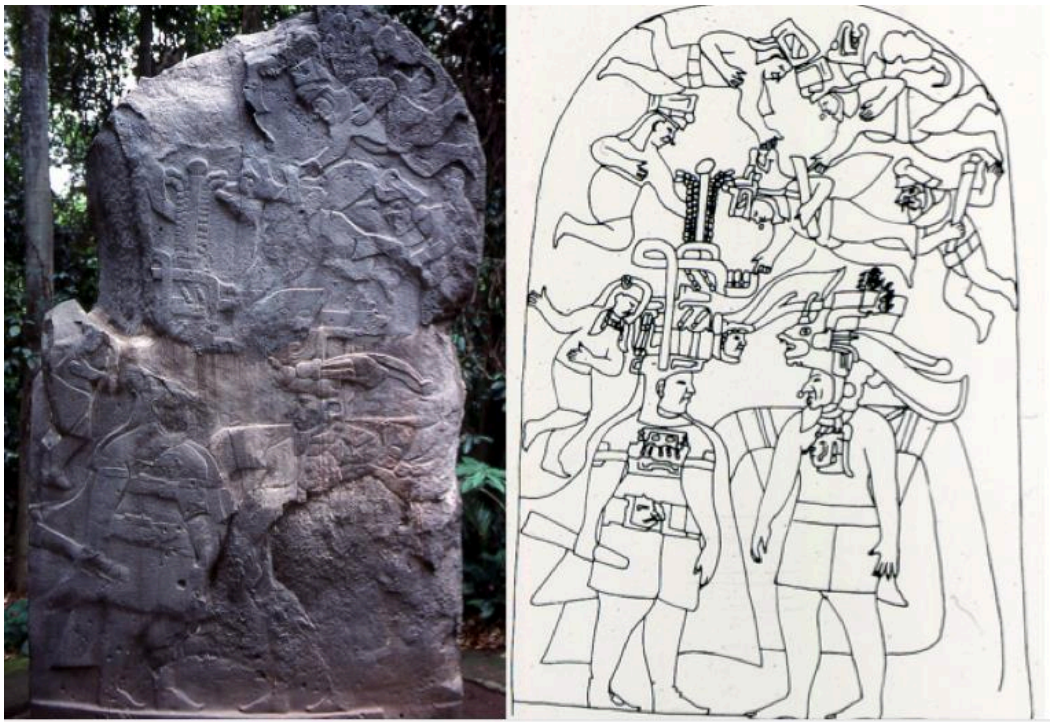


Figure 77 La Venta Stela 3 (Studyblue.org 2015)

The movement of the descendants of the Mulek/Zarahemla group out of the Olmec area towards Zarahemla has some supporting evidence chronologically as represented by an artifact at an ancient city that the Sorenson geographic model correlates with the Book of Mormon city of Sidom. During a standard archaeological excavation in 1957, the New World Archaeological Foundation excavated a cylinder seal at Chiapa de Corzo, Mexico (see figure 78). An impression of the cylinder seal was submitted to Dr. William F. Albright, an expert at the time in Egyptian language among other things, and he observed that the seal contained "several clearly recognizable Egyptian hieroglyphs" (Warren et al 1987, 203).

Figure 78 Cylinder seal 1 from Pit 78 at Chiapa de Corzo, excavated in 1958 (600–300 BC) (Warren et al 1987, 272)

The subject cylinder seal was discovered during the excavation of Mound 4c at the Chiapa de Corzo site; the excavation was identified as Pit A-78 (Lowe 1962, 35, 40–42), and the seal itself was assigned the number A-78-6b (Lee 1969, 73). The Chiapa III strata, in which the cylinder seal in Mound 4c was found, contained burials and dedicatory offerings (although slightly higher stratigraphically) (Warren 1961, 78–79).

The archeological history of Chiapa de Corzo is consistent with the presence of both Olmec and early Maya cultural features during the time horizon (Chiapa III) of the cylinder seal (750-400 BC)(Bachland 2013, 14). A portion of this time frame is consistent with the movement of the people of Zarahemla into the south wilderness area and closer to Zarahemla in 470 – 370 BC. In my work on the Caractors Document, I rendered a reasonable translation of the seal from hieratic.

Chapter 18

Near Eastern History and Archaeology Consistent with the Jaredite Departure

This chapter parallels a previous chapter in that it seeks to place the beginning of the Jaredite chronology using evidence outside the Book of Mormon, in this case by anchoring that chronology to its founding event, the "confounding" of language.

Any discussion of Jaredite chronology will necessarily have to deal with the Jaredite origin in the Old World. The Jaredites initially originated from the "great tower, at the time the Lord confounded the language of the people and swore in his wrath that they should be scattered upon all the face of the earth" (Ether 1:33). The Book of Mormon does not specifically identify the great tower as the biblical tower of Babel; however, Moroni$_2$ indicates that the account of Adam to the great tower is "had among the Jews" (Ether 1:3), so there is at least some implication that the great tower is the tower of Babel, or at least a similar tower from that timeframe.

It is generally accepted that the best candidate for the biblical tower of Babel is a ziggurat, a rectangular stepped tower sometimes surmounted by a temple located in ancient Mesopotamia. In order to try to better understand the potential event involving the great tower, it will be necessary to look at events that took place in Mesopotamia that involve both population dislocation and language transitions or difficulties, all of which are consistent with Jaredite chronology constraints.

Importantly, the Book of Mormon recitation of the tower event is markedly different from the Bible Babel event in that it indicates a confounding of "the language of the people," not the "whole earth" (Genesis 11:1), so it appears to be a more accurate reference to a local event of localized language capability instead of the myth-type language of the "whole earth." In regard to the confounding of language, it seems doubtful that each specific individual began speaking a different language; there are other possible reasonable explanations.

Brant Gardner (2007) reads the biblical story of the tower of Babel as a remembrance of an event of ancient temple building, not as the true origin of multiple languages (6:164). Gardner summarizes: "In this reading of the text, the confounding of languages is related to the mixing (confounding) of different peoples in creating this great tower in Babylon. From such a mixing of people who were attempting to build a temple to the heavens, Yahweh removed some of His believers [e.g., the Jaredites and, at some point, Abram] for His own purposes." (6:164)

Since Sumerian has been identified as the language of the original Jaredites, it is helpful to look there for some possibilities. In this regard, a segment of a Mesopotamian epic entitled *Enmerkar and the Lord of Aratta* is of special interest. *Enmerkar and the Lord of Aratta* is a legendary Sumerian account from preserved, early post-Sumerian copies, composed in the Neo-Sumerian Period (ca. 21st century BC).

The account speaks of a time when there are no predators and there is peace between nations and rulers. The section ends with a statement about people speaking the same language. Jacobsen (1992) translated it as referring back to a past event: “In those days . . . did Enki . . . estrange the tongues in their mouths as many as were put there. The tongues of men which were one.” (pg. 194). B. Batto agrees with the translation in the past, but considers it a description of an inchoate, primitive, uncivilized condition rather than an idyllic or paradisiacal one (Bradshaw 2014).

If Jacobsen is correct, this section of the epic may stand as a parallel to the Babel account in providing an account of the disruption of languages. It would not be out of character, however, for Genesis to have a far different assessment of language diversity than that encountered in the rest of the ancient Near East. Just as paradise was a negative condition in the ancient Near East and a positive one in the Bible, so the unified language is positive in the Bible and negative in the ancient Near East.

The departure of the Jaredites in the 2500–2600 BC timeframe falls within the Early Dynastic Period. The entire Early Dynastic Period is generally dated to 2900–2350 BC according to the Middle Chronology, or 2800–2230 BC according to the Short Chronology. The chronology of this Early Dynastic era is particularly uncertain due to difficulties in our understanding of the text, our understanding of the material culture of the Early Dynastic Period, and a general lack of radiocarbon dates for sites in Iraq. Also, the multitude of city-states makes for a confusing situation, since each had its own history.

Looking to other possibilities to explain the confounding of language, from a scientific standpoint, there are diseases that might alter speech, such as insect-borne Lyme disease that can result in facial palsy, or various viruses that can cause Bell’s palsy. In addition, the confounding of language may be referring to the written language, not the spoken language. When the brother of Jared received the interpreter stones, it is clear that the reference to a confounding of language refers only to written language.

> Ether 3:22–24
>
> 22 And behold, when ye shall come unto me, ye shall write them and shall seal them up, that no one can interpret them; for ye shall write them in a language that they cannot be read.
>
> 23 And behold, these two stones will I give unto thee, and ye shall seal them up also with the things which ye shall write.
>
> 24 For behold, the language which ye shall write I have confounded; wherefore I will cause in my own due time that these stones shall magnify to the eyes of men these things which ye shall write.

This being the case, if the language being referred to as being confounded is the written script, one plausible explanation from within the timeframe when the Jaredites departed, in 2500–2600 BC, is the haphazard transition from the Elamite or Sumerian Proto-Cuneiform to the cuneiform script.

Although more research is needed here, there is at least a plausible likelihood, based on the Mesopotamian archaeological record, that the Jaredites left their Sumerian homeland around 2600–2700 BC.

Chapter 19

Religiosity of Numeric Notation in the Caractors Document and in the Book of Mormon

The Nephite numeric notation system in which chronological dates are written is partially structured based on the religious significance of various numbers from the two main cultures from which the numbers arose, Hebrew and Mesoamerica. Since a few Sumerian/Elamite Proto-Cuneiform numbers are also found, there is a potential for some numbers of religious significance to Mesopotamia that may also be preferred. The peculiar combinations of numbers in the Caractors Document makes perfect sense when one considers this aspect of the system.

Biblical Hebrew

From the Hebrew standpoint, the numbers 5, 7, and 10 are well established as having biblical religious significance.

The significance and use of 5 is found in the Pentateuch, the five primary offerings, and various features found in the tabernacle in the wilderness, including the tabernacle itself. The five offerings are Burnt Offering (Leviticus 1; 8:18–21; 16:24), Sin (Leviticus 4; 16:3–22), Trespass (Leviticus 5:14–19; 6:1–7; 7:1–6), Grain (Leviticus 2); and Peace Offering (Leviticus 3; 7:11–34). The tabernacle, the design for which was given directly by God, contained five curtains (Exodus 26:3), five bars (Exodus 26:26–27), five pillars, five sockets (Exodus 26:37), and a wooden altar that was five-cubits long and five-cubits wide (Exodus 27:1). The height of the court within the tabernacle was five cubits (Exodus 27:18). The holy anointing oil (Exodus 30:23–25), the ingredients of which were given directly from God, was used to consecrate the furniture of the tabernacle. The oil comprised five parts. The proportion of spices used in making the oil were a multiple of five, which then had a hin of olive oil added to it.

The significance and use of the number 7 is found extensively in the Bible, including the seven days of creation, the seventh Sabbatical year, the seven steps to Solomon's Temple (whose construction lasted seven years), Noah's dove staying away for seven days, the flood preparing its arrival for seven days, and the seven brooks dividing the Euphrates. Recompenses and punishments are repeated seven times, and seven blessings are part of the marriage ceremony, which lasts seven days. During the sacrificial expiation, blood was sprinkled seven times, and as most feasts lasted for seven days, a seven-day sacrifice was made when Solomon's temple was inaugurated. Also featuring 7 are Joseph's prophecy of seven years of plenty followed by seven years of famine, the Israelites taking of Jericho by circling the city seven times on the seventh day, Namaan washing himself seven times in the Jordan River to be cured of his leprosy (2 Kings 5:10, 140), and the sevenfold sneezing of a person revived from death (2 Kings 4:35). Proverbs praises the seven pillars of wisdom (9:1), and Zechariah speaks of the seven eyes of the Lord (4:10). In the seventh generation after Adam appears Lamech, who lives for 777 years and should be avenged seventy-seven-fold (Genesis 4:24), and Cain's murder will be avenged seven times

(Genesis 4:15) (Schimmel 1993, 131–133). The text of the Book of Mormon itself features the number 7, beginning with the number of Lehite tribes, with other examples present (Volluz 2014).

The significance and use of 10 is also found throughout the Bible, starting with the Ten Commandments. Also featuring 10 are the ten words of the priestly decalogue, the law of tithing, which involves a tenth (this concept of 10 in tithing is also found in Egyptian and Mesopotamia), and the ten plagues of Egypt, among other examples (Welch 2003).

As the sum of 5 and 10, 15 is a religious Hebrew number, and the Old Testament counts the generations of Israel between Abraham and Solomon as 15, and from Solomon to Zedekiah again as 15 (Schimmel 1993, 213–214).

As a multiple of 5 and 10, 50 is also a significant religious Hebrew number, as the number of total years of one Jubilee festival cycle. The Jubilee is evidenced in the Book of Mormon, and the Jubilee glyph is found in the Caractors Document.

Mesoamerica

With a base-20 system, the numbers 20 and 400 are naturally significant numbers in Mesoamerica, and 20 is also the basis of a month (20 days) in Mesoamerican calendars. The Maya connected 20 with the solar deity (Schimmel 1993, 226). Among the Aztec the number 400 was given special significance in Aztec mythology and is incorporated into deity names and is incorporated into the title of the Mexican gods of pulque (Payne and Closs 1986, 218–221). The astrological significance of the number 20 is directly linked linguistically in Mesoamerica to the lunar month. The other symbolically significant numbers in addition to 20 in Mesoamerica are 13, 7, and 9, all of which are based on the average segments of lunations:

> The moon is visible for a period of twenty days: waxing for thirteen days (*the trecena*) from first visible crescent to full moon, then waning for seven days to the third quarter moon (cumulatively, *the veintena*). Then over the next nine days the moon becomes invisible before reappearing in the west as the thin crescent of the new cycle. This explanation accounts for the Maya belief in thirteen levels and gods of the celestial world and nine lords of the Underworld. (Rice 2007, 38)

This same concept is reflected in the Aztec mythology with the Thirteen Lords of the Day and the Nine Lords of the Night, with the whole cosmos divided into nine layers in the netherworld and thirteen heavenly layers; thus, the number 9 became a symbol of the netherworld (Schimmel 1993, 169). In the ancient Maya religion:

> In one variant of the 19 numbers plus zero, called the “headed” variant, 13 numbers are distinguished by the sign of 13 different headed deities. The 20 signs for the days of a month were combined with the numbers from 1 to 13, and thus a special calendar was devised for use in prognostication. Time was divided into periods of 52 (= 4 x 13) solar years of 365 days each; these in turn were summed up in 72 holy years, each of which consisted of 52 weeks with 5 days each (260 = 20 x 13). (Schimmel 1993, 206)

The number 7 was sacred in Mesoamerica, as the Maya believed in a seven-layered sky and considered 7 to be the number of orientations in space (Schimmel 1993). The number 19 is also considered to be a

number of special significance in Mesoamerica, based on the astrological significance of the Metonic cycle:

> Doubtless, the coincidence of lunar and solar cycles every nineteen years did not go unnoticed, because a full moon occurring, say, on the summer solstice would be seen again on the solstice nineteen years later (Milbrath 2000:106), a phenomenon known as the Metonic cycle. Similarly, the recording and tracking of eclipses and their correlation with lunar cycles might go back to the Late Preclassic period (Justeson 1989:87–88). (Rice 2007, 38)

Since 19 consists of the sum of a Hebrew sacred number (10) and another Mesoamerican sacred number (9), one might expect this number to have even more importance. As already discussed, the Egyptian glyph for 19 also means "the sun," "day," and "god of the Sun," so the correlation of the solar cycle with the number 19 is obvious.

Like in Hebrew, 5 is also an important calendrical number in Mesoamerica. The Maya Haab calendar comprises eighteen months of twenty days each, plus an additional period of five days ("nameless days") at the end of the year, known as the Uayeb (Wayeb' under current orthography), although in contrast the Uayeb are generally considered important for being unlucky. The number 5 is also a key number for the Maya, who consider it to be at the center of the four cardinal directions. There are Maya deities who are fivefold in form and consist of the five colors red, white, black, yellow, and bluish green, with all of these connected with the cardinal points. Even today the number 5 is found in placenames in the Yucatan (Schimmel 1993).

Since the Nephites, combined with the Jaredite influenced people of Zarahemla, were also their own unique culture, certain religiously symbolic numbers may have been unique to them. The number 24 would appear to be a good candidate. The Twenty-Four plates feature the number. The Twenty-Four plates correspond with the number of Jaredite rulers capable of record keeping. There are six individuals ($Heth_2$, $Aaron_2$, Amnigaddah, Coriantum, Seth, and Coriantor) mentioned in the lineage from Jared to Ether, in addition to the twenty-four that constituted the Jaredite record, but they were born in captivity and dwelt all their days in captivity, so they would not have generated any record. There are some other unidentified persons that were descendants of Riplakish and ancestors of Morianton, but they were "driven out of the land" (Ether 10:8) so would have left no record either.

Taking from the Jaredite "type," the number 24 was included by Mormon and $Moroni_2$ as a civilization founding and destruction theme in the Book of Mormon. The initial number of the founding group of families of the Jaredites was twenty-four (Jared, the brother of Jared, and twenty-two friends and their families) (Ether 6:16). The first king, Orihah, had twenty-four sons (Ether 7:2–3). The destruction of the Jaredites is represented in the Twenty-Four plates, which were hidden by Ether.

For the destruction of the Nephites, at the final battle of the Nephites on the last day before the remainder of the Nephite army was hunted down and wiped out (Mormon 8:7), Mormon calls out that there were only twenty-four survivors (Mormon 6:11, 15). It is also interesting that there were only twenty-three Nephite final battle groups, but a twenty-fourth is indicated, from which some escaped to the south (all of the other twenty-three groups in the text were said to be killed in the final battle) (Mormon 6:15; 8:2). For the founding of the Nephites, the initial number of the followers of $Nephi_1$ that broke off from $Laman_1$ and Lemuel have been calculated to be twenty-four people (Sorenson 1992), and

while we do not have the 116 lost pages, I would presume that Mormon included a summary of that number.

The founding number of Amulonites, which consisted of the priests of $Noah_3$, was twenty-four (assuming they each married one of the Lamanite daughters who they carried away [Mosiah 20:5]). The Amulonites were eventually hunted, driven, and slain (Alma 25:4). Another interesting use of 24 with the beginning and ending theme was Hearthom's reign of twenty-four years, after which he lost his kingdom (Ether 10:30).

It is also interesting that Mormon was first approached by Ammaron to be responsible for the sacred records at "about ten years of age" (Mormon 1:2); at fifteen years of age he was "visited of the Lord" (Mormon 1:15), and then he received the sacred records at twenty-four years of age (Mormon 1:3–4), reflecting the numbers 10, 15, and 24—all part of the Twenty-Four plate glyph. Other examples of 24 as a sacred number related to demise are the Nephite destruction being 24 years after the calendar change, and the Nephite disciples who were promised by Christ to see death at 72 years, which is a multiple of 24.

Mesopotamia

In regard to the importance of Mesoamerican numbers related to the moon, the same is also found in Mesopotamia. Sin (Akkadian) or Nanna (Sumerian) was the god of the moon in the Mesopotamian mythology of Akkad, Assyria, and Babylonia. Nanna is a Sumerian deity, the son of Enlil and Ninlil, and became identified with the Semitic Sin. The two chief seats of Nanna's/Sin's worship were Ur in the south of Mesopotamia and Harran in the north.

The Semitic moon god Sin is in origin a separate deity from the Sumerian Nanna, but from the Akkadian Empire period, the two underwent syncretization. The occasional Assyrian spelling of *DNANNA-ar DSu'en-e* is due to association with the Akkadian *na-an-na-ru,* "illuminator, lamp," an epitheton of the moon god. The name of the Assyrian moon god Su'en/Sîn is usually spelled *DEN.ZU*, or simply with the numeral 30 (www.wikipedia.org 2018; Ebeling et al 1997, 360). The earliest attestation of this name dates back to the very beginning of written documentations.

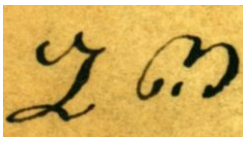
The number 7 is also known for its mystical importance in Mesopotamia, which is the location of origin of the Jaredites, so their scriptures may have also reflected its importance, reinforcing the importance of the number in biblical Hebrew (Muroi 2014). The ancient Mesopotamian *ziggurat* (likely a tower from which the Jaredites fled) were step pyramids with seven stories (Schimmel 1993, 130).

Egypt

Though one would not expect the Nephites to incorporate the symbolic use of numbers from cultures from which they did not derive, it is at least useful to identify any significant Egyptian numbers, given that Egyptian is the principal source language of the Nephite script. In ancient Egypt certain numbers were considered sacred, holy, or magical, particularly 2, 3, 4, 7, and 10 and their multiples and sums (Wilkinson 1999, 126–138). While present, the numbers unique to Egyptian outside of biblical Hebrew, Mesoamerican, or Mesopotamian are 2, 3, and 4, and there is no evidence in the Caractors Document that these numbers were used with any priority.

With this in mind, an analysis of each of the number sequences can be accomplished. Unlike the factor (or multiple numbers), the final value of the number is typically fixed, since it represents a number of

years or persons, so a particular number would not be preferentially used except perhaps when the author (Mormon) decided to feature a particular event. While the knowledge of other religiously symbolic numbers may be unknown, the analysis here will identify the symbolic numbers, with any other number being classified as “residual.”

C-5, C-4  6 + 13 = 19

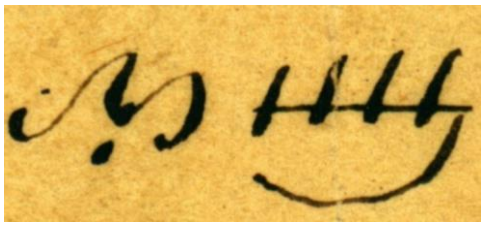
This number features the symbolic Mesoamerican number 13 with 6 as a residual. The final number is 19, which also is a Mesoamerican symbolic number.

C-26, B26b  4 + 7 = 11

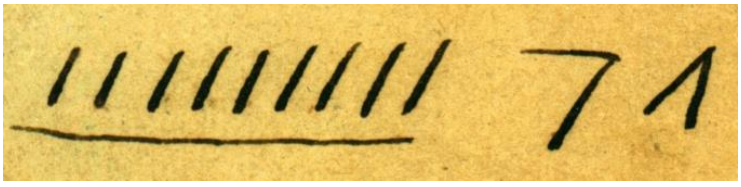
This number features the symbolic and sacred Mesoamerican, Hebrew, Mesopotamian, and Egyptian number 7 with 4 as a residual, which is also a symbolic Egyptian number.

C-33, C-32  1 + 20 = 21

This number features the symbolic Mesoamerican number 20 with 1 as a residual.

C-39, C-38  13 + 40 = 53

This number features the symbolic Mesoamerican numbers 13 with 40 as a residual. As a multiple of 20, the number 40 likely has Mesoamerican importance as a symbolic number.

C-47, C-46, C-45  9 + 5 + 10 = 24

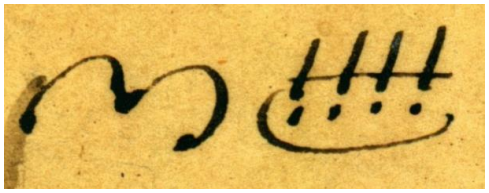
This number features the symbolic Mesoamerican number 9 with the Hebrew sacred numbers 10 and 5. The number 24 is also a Nephite symbolic number.

C-74, C-73, C-72, C-70, C-72, C-71, C-70  1 + 20 + 400 + 5 + 10 = 436

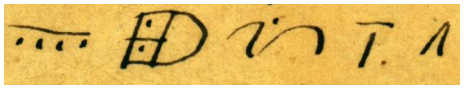
This number features the symbolic Mesoamerican numbers 20 and 400, with the symbolic and sacred Hebrew numbers 10 and 5, and with 1 as a residual.

C-78, C-77, C-76  1 + 1/3 = 1 1/3

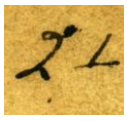
The number 3 is a symbolic Egyptian number.

C-86, C-85  3 + 80 = 83

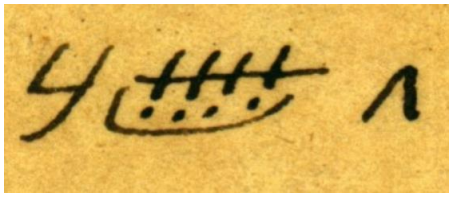
As a multiple of 20, the number 80 likely has Mesoamerican significance as a sacred number. The number 3 is a residual and is a symbolic Egyptian number.

C-92, C-91, C-90, C-89, C-88  9 + 20 + 400 + (5 x 10) = 479

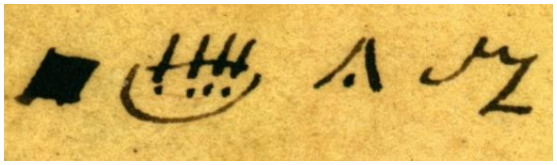
This number features the symbolic Mesoamerican numbers 9, 20, and 400, with the Hebrew sacred numbers 10 and 5.

C-102, C-101  60 + 1/2 = 60 1/2

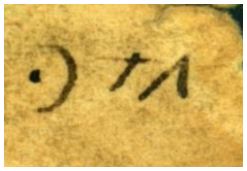
As a multiple of both 20 and 30, the number 60 may also have Mesoamerican and Mesopotamian derived significance as a symbolic number because Mesopotamian number systems are a base-60 system. The fraction 1/2 is the residual, and 2 is a symbolic Egyptian number.

C-124, C-123, C-122  2 + 80 + 10 = 92

The number 10 is a sacred Hebrew number. As a multiple of 20, the number 80 likely is a symbolic Mesoamerican number. The number 2 is a residual and is also a symbolic Egyptian number.

C-158, C-157, C-156, C-155  30 + 80 + 11 + 4 = 125

As a multiple of 20, the number 80 may also have Mesoamerican significance as a symbolic number. The number 30 is a symbolic Mesopotamian number. The number 4 is a residual and is also a symbolic Egyptian number. The number 11 as expressed in this particular number set, is actually evidenced here as a symbolic number likely unique to the Nephites, not because of its numeric value, but because the number is found in the calendar date of Christ's appearance to the Nephites. It is significant because the non-numeric meaning of the glyph is "to descend or to come." It also incorporated in its form the number 10, a sacred Hebrew number. Notably, the sum of the 11 and the 4 is 15, which duplicates the leading 15 (10 and 5) pattern seen on the other dates and therefore does not violate the established sequence of the numbers running from larger to smaller, except in the case of the leading 10s and 15s.

C-176, C-177, C-178  19 + 5 + 10 = 34

The numbers 10 and 5 are sacred Hebrew numbers. Number 19 is a symbolic Mesoamerican number. As noted elsewhere, the 19 here also forms the Egyptian word *R*, meaning "sun," "day," and "god of the Sun." The date here is the year that Christ visited the Nephites and then ascended to heaven, so the number 19, as in other dates, has a dual meaning.

C-223, C-224, C-225  300 + 80 + 4 = 384

As a multiple of 20, the number 80 likely has Mesoamerican significance as a symbolic number. The number 300, as a multiple of 30 (with the other multiple being the sacred number 10) and in form identical to the number 30 (excepting in vertical position), is a symbolic Mesopotamian number. The

number 4 is a residual and a symbolic Egyptian number. This number sequence is the calendar date for the last Nephite battle where the Nephites and Lamanites have been overcome by Satan. The sequence looks to clearly be mirroring the date of the appearance of Christ, as the same number forms are there with the exception of the 11 (which served a unique double-meaning purpose in that number set). Also of interest symbolically is that this is the only number sequence that violates the rule of the numbers running from largest to smallest, as this date goes from the smallest to the largest, which is likely a representative message related to the reversal and final destruction of the Nephite nation. Also, by keeping this order, it partially mirrors the date of the destruction when Christ died.

Individual Numbers

The numbers used as individual glyphs that qualify as symbolic or sacred numbers or their multiples are 7, 9, 50, 60, 80, 1,000, 20,000, and 1,000,000.

Individual calendrical marker numbers and combinations

The Caractors Document calendrical markers also incorporate numbers into the glyph. These also contain sacred numbers or are of themselves sacred and symbolic numbers. They are as follows:

Reign of the Kings calendar marker—consists of 50 + 5 = 55

> The number 5 is a Hebrew sacred number, and 50 is a multiple of 10 and 5, both Hebrew sacred numbers.

Seven Tribes Calendar marker—consists of the number 7, a sacred number

Lehi Departure Calendar marker—consists of 200 x 3 = 600

> The numbers 200 and 600 are multiples of sacred numbers (10 x 20, 20 x 30), and 5 and 10 are factors.

Reign of Judges Calendar marker—consists of the number 7, a sacred number

Coming of Christ calendar marker

> The number 1,000,000 is a multiple of 5, 10, 20, and 400.

1,000 Year Calendar marker

> The number 1,000 is a multiple of 5, 10, and 20.

Number 9 is the number of death with 13 as a corollary

As discussed above, the number 9 in Mesoamerica correlates to death and the Underworld with the Nine Lords of the Night, drawing from the time span that the moon is not visible in the sky. Its use in the Caractors Documents is exclusively only in dates associated with death.

The Twenty-Four plates glyph contains the number 9 and is the prototypical example of death in the Book of Mormon as those plates contain the record of a people whose entire civilization was killed off. The number 9 glyph appears in the death date of King Benjamin. The number 9 glyph represents the number of years that the Nephite calendar was retroactively corrected, and it is correlated directly in the text with the date at which the Nephites concluded that $Nephi_2$'s earlier disappearance was final, and he was likely assumed dead (3 Nephi 2:9). In addition, the 9 disciples of the 12 appointed by Christ

when he visited were promised to die and come to Jesus in his kingdom, all at the age of 72. Of course, 9 is a multiple of 72 (9 + 9 + 9 +9 + 9 + 9 + 9 + 9).

The number 9 is also found associated with the death of Coriantumr$_2$. At the end of his life, he was discovered by the people of Zarahemla and was with them for "nine moons" (Omni 1:21) before being buried by them (Ether 13:21).

The number 13, although not specifically associated with daytime as in Mesoamerican thought, does appear to be found in dates associated with Exodus-type events in the Book of Mormon, as it is found in the number sequence of the departure of Mosiah$_1$ and the number of individuals who accompanied Zeniff.

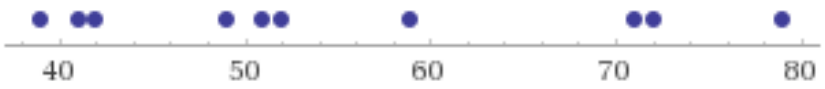
As previously discussed, the number 19 in the Caractors Document is another name for day, sun, or the god of the Sun in the Egyptian hieratic.

4th Nephi number sequence

In looking for evidence of the sacred number calendar system in the Book of Mormon, we obviously do not have the underlying glyph numbers outside of the Caractors Document. For the most part, the dates in the Book of Mormon are dictated by specific events, so one would not expect the ability to extrapolate the sacred number sets except by their specific reference to specific items (such as the Twenty-Four plates), names, or number of event occurrences. However, 4th Nephi contains a curious pattern and sequence of years, starting with year 39 and ending with year 79, which is not dictated by specific events:

> 3 And they had all things common among them; therefore there were not rich and poor, bond and free, but they were all made free, and partakers of the heavenly gift.
>
> 4 And it came to pass that the thirty and seventh year passed away also, and there still continued to be peace in the land.
>
> 5 And there were great and marvelous works wrought by the disciples of Jesus, insomuch that they did heal the sick, and raise the dead, and cause the lame to walk, and the blind to receive their sight, and the deaf to hear; and all manner of miracles did they work among the children of men; and in nothing did they work miracles save it were in the name of Jesus.
>
> 6 And thus did the thirty and eighth year pass away, and also the thirty and ninth, and forty and first, and the forty and second, yea, even until forty and nine years had passed away, and also the fifty and first, and the fifty and second; yea, and even until fifty and nine years had passed away.
>
> 14 And it came to pass that the seventy and first year passed away, and also the seventy and second year, yea, and in fine, till the seventy and ninth year had passed away; yea, even an hundred years had passed away, and the disciples of Jesus, whom he had chosen, had all gone to the paradise of God, save it were the three who should tarry; and there were other disciples ordained in their stead; and also many of that generation had passed away. (4 Nephi 1:3–6, 14)

The pattern generated by the years that would be listed without regard to an event are:



This number set reflects in great complexity the sacred number system, especially considering that the sequence is during the time of greatest happiness after the visit of Christ and falls under the Coming of Christ calendar period. Since the year 34 under this calendar in the Caractors Document contains the number 19, representing Christ, it is reasonable to assume that the following years, in the underlying reformed Egyptian glyphs, are required to accommodate the 19 glyph. As it happens, all of these years can be *exclusively* and *exactly* constructed in the reformed Egyptian number system using only the sacred numbers, with the requirement that 19 must be used.

A few additional rules apparent in the Caractor numeric notation also apply—namely:

1. A number set does not use the same number twice.

2. The number 5 appears only adjacent to the number 10, never by itself.

3. Though 24 may be a sacred number, it is not used to construct any Caractors Document number sets as an individual number.

Considering that each number must include the number 19, and following these rules, the sacred number sets for all the years are as follows (some have more than one possibility).

39 19 + 20 or 19 + 13 + 7

41 19 + 5 + 10 +7

42 19 + 13 + 10

49 19 + 20 + 10 or 19 + 30

51 19 + 10 + 9 + 13 or 19 + 19 + 13

52 19 + 20 + 13

59 19 + 30 + 10

71 19 + 30 + 10 + 5 + 7

72 19 + 30 + 13 + 10

79 19 + 30 + 13 + 10 + 7

It is noteworthy that in all of the number sequences, the number of death, 9, cannot be accommodated with the exception of 51, in which case, if one allows a double 19 (which might be considered more sacred), then it need not be used. Thus, exclusion of the number 9 seems to be a feature of the years listed.

The next question that arises is whether these years are exclusive, meaning, whether the years that are omitted cannot be constructed following this set of rules and utilizing 19. Of the omitted numbers, the numbers 40, 43, 44, 45, 48, 50, 53, 55, 57, 58, 60, 63, 65, 68, 70, 73, 74, 75, and 78 cannot be constructed in this system. However, some of the omitted numbers can be constructed, including 46, 47, 54, 56, 61, 62, 64, 66, 67, 69, 76, and 77. This is an indication that there may be another numeric characteristic necessary to the sequence that is being applied to feature the particular sequence of 4th Nephi numbers, which we will now examine.

In 2009 Brant Gardner noted the irregular 4th Nephi sequence and the threefold repetition of a seven-year gap of time in this sequence:

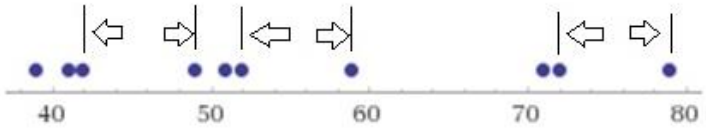
> Nevertheless, what is interesting isn't the empty information but the empty years. Mormon has marked empty years before, but never so many in sequence. What is most fascinating is that these sets of empty years repeat the very same numerical sequence of noninformation.
>
> This repeating pattern occurs three times in 4 Nephi and never anywhere else in the Book of Mormon. The triple repetition confirms that it is not random and not associated with Mormon's source text. Mormon is telling us something. Actually, he is telling us nothing. Intentionally and markedly. I hypothesize that he names years for which there are no events to signal that these empty years are placeholders in a pattern. He has moved from "real time" into "symbolic time," or from history into story. The repetition of seven-year gaps (42–49, 52–59, 72–79) suggests that he is deliberately using the spacing symbolically, likely to mark a "week of years."

While Gardner was onto something, the underlying reformed Egyptian whose symbolic meaning did not make it through the translation is significantly more than nothing. Calendar intervals that form a highly patterned sequence are found in the Maya Dresden Codex, so the inclusion of calendar year count intervals by Mormon is consistent with Mesoamerican practice (Bricker and Aveni 2014). The Maya had a preoccupation with intervals in calendrical notation. The manner in which Maya daykeepers of the Maya codices sequenced the intervals followed well-defined patterns. This involved the need to arrive at lucky days (often by calculation) and to avoid unlucky days. In the Maya realm of timekeeping, the duration between ritual events mattered as much as the actual time of an event (Aveni 2011 187, 190).

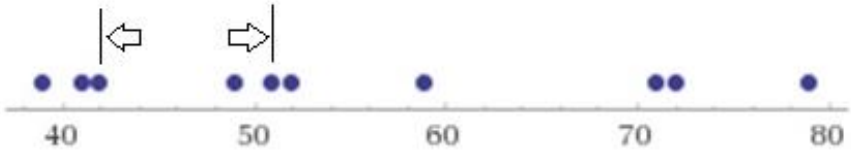
The Maya preoccupation with intervals in calendrical notation incorporates the notion that the beginning of a cycle is as important as the end, with these points in time precisely noted and connected. Within the Maya sequences are also found intervallic mirror sequences. It is wondered whether the events determined the intervals in the Maya almanacs or whether the intervals fixed the events. The Maya interval sequences were likely designed to arrive at or avoid a particular date (Aveni 2011, 210–11).

Gardner's observation of the seven-year interval as a "week of years" is not exactly correct; it is actually an interval of the sacred number 7. In fact, more than the number 7 interval is found—*all* of the sacred numbers less than 40 (with the exception of 5, which does not occur alone) are found as point or gap intervals in the sequence (gap intervals being defined as the interval between the sequential year numbers):

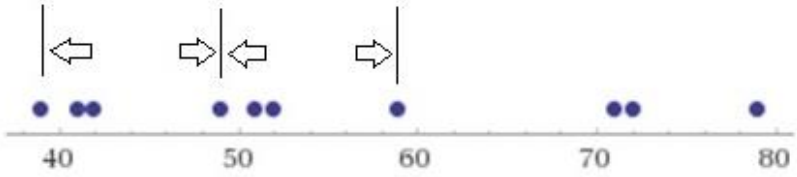
Intervals of 7



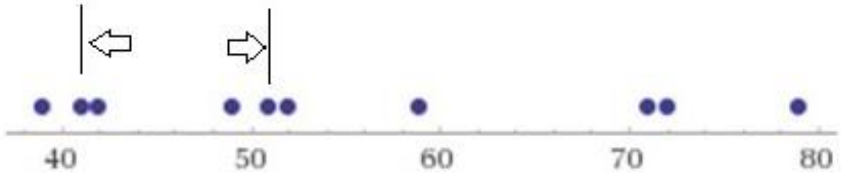
Interval of 9



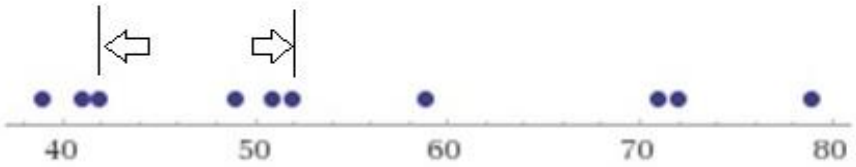
First Intervals of 10



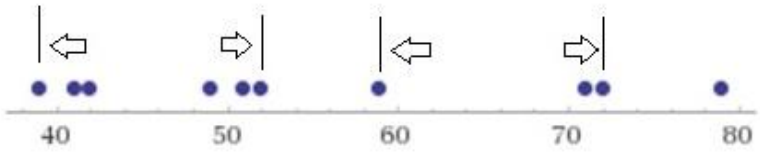
Second Interval of 10



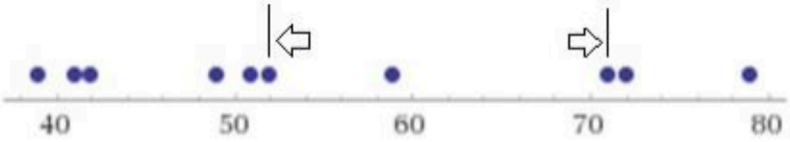
Third Interval of 10



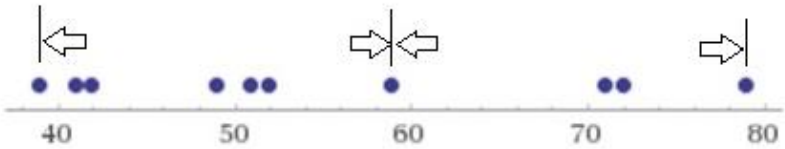
Intervals of 13



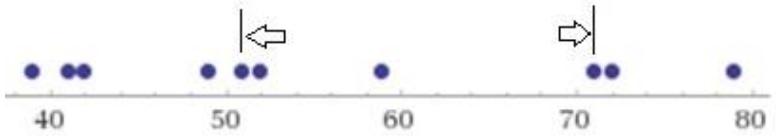
Interval of 19



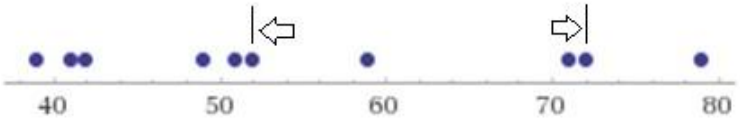
First Intervals of 20



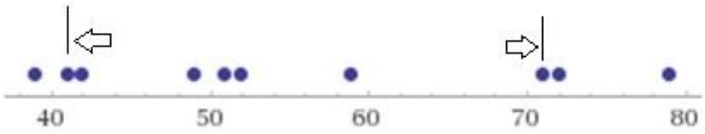
Second Interval of 20



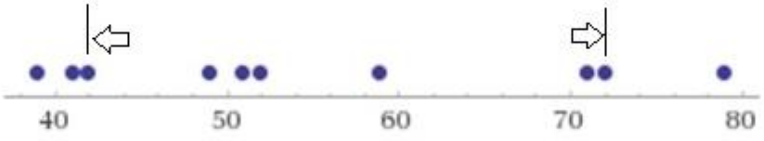
Third Interval of 20

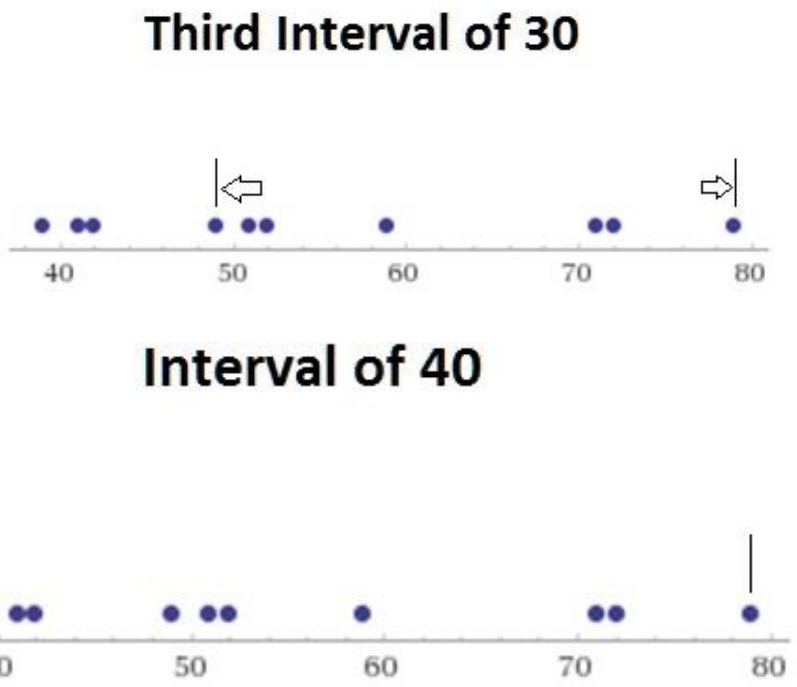


First Interval of 30



Second Interval of 30





With this graphical representation of the intervals present in the first portion of 4th Nephi, all of the intervals in 4th Nephi are evaluated below (non-graphically).

Gap intervals and year analysis of 4th Nephi

The year gap intervals for all the years identified in 4th Nephi after Christ's ascension at the end of the thirty-fourth year are shown here.

Year	Gap Interval
35	1
36	1
37	1
38	1
39	1
41	2
42	1
49	7
51	2
52	1
59	7
71	12

72	1
79	7
100	21
110	10
194	84
200	6
201	1
210	9
231	21
244	13
250	6
260	10
300	40
305	5
320	15

Evaluating the above sequence, the following sacred numbers are observed individually in the sequence: 7, 7, 7, 10, 9, 13, 10, and 5.

The following individual numbers in the sequence can be formed additively from the sacred numbers:

5 + 7 = 12

7 + 7 + 7 = 21

7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 84

7 + 7 + 7 = 21

10 + 10 + 10 + 10 = 40

5 + 5 + 5 = 15 or 5 + 10 = 15

Looking at just the gap intervals in light of the sacred numbers, the additive sequences presented in order of occurrence (some of which were noted in the previous section) are as follows:

1 + 1 + 1 + 1 + 1 = 5

1 + 1 + 1 + 1 + 1 + 2 = 7

1 + 1 + 1 + 1 + 2 + 1 = 7

1 + 1 + 1 + 2 = 5

1 + 1 + 1 + 2 + 1 + 7 = 13

1 + 1 + 2 + 1 = 5

1 + 2 + 1 + 7 + 2 = 13

2 + 1 + 7 = 10

2 + 1 + 7 + 2 + 1 = 13

2 + 1 + 7 + 2 + 1 + 7 = 20

2 + 1 + 7 + 2 + 1 + 7 + 12 + 1 + 7 = 40

1 + 7 + 2 = 10

1 + 7 + 2 + 1 + 7 + 12 = 30

7 + 2 = 9

7 + 2 + 1 = 10

7 + 2 + 1 + 7 + 12 + 1 = 30

2 + 1 + 7 = 10

2 + 1 + 7 + 12 + 1 + 7 = 30

1 + 7 + 12 = 20

7 + 12 = 19

7 + 12 + 1 = 20

12 + 1 = 13

12 + 1 + 7 = 20

9 + 21 = 30

6 + 1 = 7

1 + 9 = 10

13 + 6 = 19

5 + 15 = 20

Thus, every gap interval in 4th Nephi is either a sacred number, a number that is additively formed from sacred numbers, or is part of an additive sequence to form a sacred number. Other additional additive sequences can also form sums of sacred numbers. In addition, repeating patterns or mirror patterns exist or can be additively formed within the sequence:

2, 1, 7 and 2, 1, 7

21, 10, 90(84 + 6), 10(9 + 1), 21

21(1 + 7 + 12 + 1), 7, 21

It is also useful to see if there are any correlations between the number of sequential years in a sequence (years where each year is named) when compared to the gaps (period where no years are identified). For 4th Nephi the consecutive year sequences versus the gaps are as follows:

Sequences	Gaps
5	
	2
2	
	7
2	
	7
1	
	12
2	
	7
1	
	21
1	
	10
1	
	84
1	
	6
2	
	9
1	
	21
1	

13

1

6

1

10

1

40

1

5

1

15

Multiple-year sequencing in 4th Nephi results in extensive sequencing, and gap additive combinations relate to the sacred numbers:

5 + 2 = 7

5 + 2 + 2 = 9

5 + 2 + 2 + 7 + 2 + 7 + 1 + 12 + 2 = 40

2 + 2 + 7 + 2 = 13

2 + 2 + 7 + 2 + 7 = 20

2 + 7 = 9

2 + 7 + 2 + 7 + 1 = 19

2 + 7 + 2 + 7 + 1 + 12 = 30

2 + 7 + 2 + 7 + 1 + 12 + 2 + 7 + 1 = 40

7 + 2 = 9

2 + 7 = 9

2 + 7 + 1 = 10

7 + 1 + 12 = 20

7 + 1 + 12 + 2 + 7 + 1 = 30

1 + 12 = 13

2 + 7 = 9

2 + 7 + 1 = 10

7 + 1 + 21 + 1 = 30

7 + 1 + 21 + 1 + 10 = 40

1 + 6 = 7

1 + 6 + 2 = 9

1 + 6 + 2 + 9 + 1 = 19

1 + 6 + 2 + 9 + 1 + 21 = 40

6 + 2 + 9 + 1 + 21 + 1 = 40

9 + 1 = 10

13 + 1 + 6 = 20

1 + 6 = 7

1 + 6 + 1 + 10 + 1 = 19

6 + 1 = 7

1 + 5 + 1 = 7

One number, 84, is larger than any sacred number, so it would not seem to be a participant like all of the other numbers that are either sacred numbers or participate in a sacred number additive sequence. However, it forms an additive sequence: 84 + 1 + 6 = 91. The number 91 is the sum of 13 + 13 + 13 + 13 + 13 + 13 + 13 or 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7. This amazing and complex numeric pattern was clearly intentionally and carefully crafted by Mormon or his predecessor recordkeepers.

Mormon's book calendar sequences and intervals

Mormon continued the same gap interval patterns (although not quite as pronounced) in his own book of his history, which follows the patterns in 4th Nephi and that was continued by $Moroni_2$ through the brief Book of Moroni. The years and gaps are as follows:

Year	Gaps	
(300)		from 4th Nephi
(305)	5	from 4th Nephi
(320)	15	from 4th Nephi
326	6	
327	1	
330	3	
344	14	

345	1
346	1
349	3
350	1
360	10
361	1
362	1
363	1
364	1
366	2
367	1
379	12
380	1
384	4
400	16
420	20

The following sacred numbers are observed individually in this sequence: 10 and 20.

The following individual numbers in the sequence can be formed additively from the sacred numbers:

5 + 5 + 5 = 15 or 5 + 10 = 15

7 + 7 = 14

7 + 5 = 12

9 + 7 = 16

Looking at just the gap intervals in light of the sacred numbers, the additive sequences present in order of occurrence:

5 + 15 + 6 + 1 + 3 = 30

15 + 6 + 1 + 3 + 14 + 1= 40

6 + 1 = 7

6 + 1 + 3 = 10

6 + 1 + 3 + 14 + 1 + 1 + 3 + 1 = 30

6 + 1 + 3 + 14 + 1 + 1 + 3 + 1 + 10 = 40

1 + 3 + 14 + 1 = 19

1 + 3 + 14 + 1 + 1 = 20

1 + 3 + 14 + 1 + 1 + 3 + 1 + 10 + 1 + 1 + 1 + 1 + 2 = 40

3 + 14 + 1 + 1 = 19

3 + 14 + 1 + 1 + 3 + 1 + 10 + 1 + 1 + 1 + 1 + 2 + 1= 40

14 + 1 + 1 + 3 = 19

14 + 1 + 1 + 3 + 1 = 20

14 + 1 + 1 + 3 + 1 + 10 = 30

1 + 1 + 3 = 5

1 + 1 + 3 + 1 + 10 + 1 + 1 + 1 = 19

1 + 1 + 3 + 1 + 10 + 1 + 1 + 1 + 1 = 20

1 + 1 + 3 + 1 + 10 + 1 + 1 + 1 + 1 + 2 + 1 + 12 + 1 + 4 = 40

1 + 3 + 1 = 5

1 + 3 + 1 + 10 + 1 + 1 + 1 + 1 = 19

3 + 1 + 10 + 1 + 1 + 1 + 1 + 2 = 20

1 + 10 + 1 + 1 = 13

1 + 10 + 1 + 1 + 1 + 1 + 2 + 1 + 12 = 30

10 + 1 + 1 + 1 = 13

1 + 1 + 1 + 1 + 2 + 1 = 7

1 + 1 + 1 + 1 + 2 + 1 + 12 = 19

1 + 1 + 1 + 1 + 2 + 1 + 12 + 1 = 20

1 + 1 + 1 + 1 + 2 + 1 + 12 + 1 + 4 + 16 = 40

1 + 1 + 1 + 2 = 5

1 + 1 + 1 + 2 + 1 + 12 + 1 = 19

1 + 1 + 2 + 1 = 5

2 + 1 + 12 + 1 + 4 = 20

1 + 12 = 13

12 + 1 = 13

1 + 4 = 5

4 + 16 = 20

4 + 16 + 20 = 40

Just like in 4th Nephi, the evaluation of multiple year sequencing in Mormon's book results in extensive sequencing and gap additive combinations related to the sacred numbers. The sequencing and correlating gaps for Mormon's book and Moroni as well are:

Sequences	Gaps	
	5	(overlap in 4th Nephi)
1		(overlap in 4th Nephi)
	15	(overlap in 4th Nephi)
1		
	6	
2		
	3	
1		
	14	
3		
	3	
2		
	10	
5		
	2	
1		
	12	
2		
	14	
1		
	16	
1		

20

1

Multiple-year sequencing in Mormon's book results in extensive sequencing and gap additive combinations related to the sacred numbers:

5 + 1 + 15 + 1 + 6 + 2 = 30

1 + 6 = 7

1 + 6 + 2 = 9

1 + 6 + 2 + 3 + 1 = 13

1 + 6 + 2 + 3 + 1 + 14 + 3 = 30

2 + 3 = 5

2 + 3 + 1 + 14 = 20

1 + 14 + 3 + 3 + 2 + 10 + 5 + 2 = 40

14 + 3 + 3 = 20

3 + 3 + 2 + 10 + 5 + 2 + 10 + 5 = 40

3 + 2 = 5

3 + 2 + 10 + 5 = 20

2 + 10 + 5 + 2 = 19

2 + 10 + 5 + 2 + 1 = 20

10 + 5 + 2 + 1 + 12 + 2 = 30

5 + 2 = 7

5 + 2 + 1 + 12 = 20

1 + 12 = 13

1 + 12 + 2 + 14 + 1 = 30

In summary, it is very clear that the year sequences in 4th Nephi, Mormon's book, and Moroni were constructed based on the presence of sacred numbers as gaps, additive gaps that arrive at sacred numbers, and additive sequences and gaps that also arrive at sacred numbers. These are all part of the Coming of Christ calendar, after Christ appeared to the Nephites. To complete the look of this calendar, it is necessary to look at the year sequences and gaps in the beginning of this calendar as found in 3rd Nephi.

<u>3rd Nephi calendar sequences and intervals in Coming of Christ Calendar prior to Christ's Ascension</u>

The Coming of Christ calendar only has year counts from year 9 on, since up to that point in the Book of

Mormon, the count was still following the Reign of the Judges calendar (3 Nephi 2:8). There are only two gaps of three years each, so nearly all of the 3rd Nephi gap series consists of 1s, which does not differentiate the use of sacred numbers much since any number can be generated from a long series of 1s. However, the analysis of the additive sequences and gaps is indicative of the use of sacred numbers:

Sequences	Gaps	
2		
	3	
6		
	3	
26		(includes the sequence of 21 that extends 5 more years into 4th Nephi)
	2	(in 4th Nephi)
2		(in 4th Nephi)
	7	(in 4th Nephi)
1		(in 4th Nephi)
	2	(in 4th Nephi)
2		(in 4th Nephi)

Multiple-year sequencing in 3rd Nephi results in sequencing and gap additive combinations related to sacred numbers:

3 + 2 = 5

2 + 26 + 2 = 30

2 + 26 + 2 +7 + 1 + 2 = 40

26 + 2 + 2 = 30

26 + 2 +7 + 1 + 2 + 2 = 40

So, it is very clear that year counts in the entire Coming of Christ calendar are premised on Mesoamerican style interval and gap arithmetic designed around the Nephite sacred number system. The other year counts in the other calendars will now be looked at.

Reign of the Judges Calendar sequences and intervals

The unique feature that anyone would notice reading the books of Alma and Helaman, and the first portion of 3rd Nephi, is that virtually all the sequential years running from 1 to 100 are named. In the case of this calendar, the sacred number representations come from a combination of the sequences and the few gap intervals. The years in sequence versus the gaps is as follows:

17

3

19

2

13

3

19 (to Christ's birth)

9 (from Christ's birth to the change of the calendar)

This calendar sequence contains the sacred numbers 19, 13, 19, and 9. Also, the number 17 is the sum of 10 and 7. By adding each sequence to the subsequent gap, one arrives at the addition following sacred number sums:

2 + 3 = 5

17 + 3 = 20

19 + 2 = 21 (which can consist of 7 + 7 +7)

13 + 3 = 16 (which can consist of 9 + 7)

The total run of years up until Christ was born was 91 years, and until the calendar is replaced by the Coming of Christ calendar (to be discussed later), the run of years is 100.

The total year run of 100 is the sum of 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 and could also consist of 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5. The total year run up to Christ's birth is 91 years, being the sum of 13 + 13 + 13 + 13 + 13 + 13 + 13 or 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7. The sequence of 19 just prior to the birth of Christ is no coincidence, since this number, as previously mentioned, also relates directly to Christ.

The Lehi Departure Calendar in the small plates

One would not expect to find the Mesoamerican practice of intervals relating to divination much in the small plates, since the majority were authored early in the history of the Nephites. There are only a few references to the year counts under this calendar. The years identified and the associated gaps are as follows:

Years	Gaps
30	(30)
40	10
55	15
179	124

200 21

238 38

276 38

282 6

320 8

1 Nephi 17:4 indicates that the Lehite group sojourned in the wilderness for "the space of many years, even eight years in the wilderness," but does not clearly tie in textual context to the departure itself.

As expected, there is no definitive early evidence of any Mesoamerican sacred numbers in the small plates. There may seem to be some representation of the Hebrew sacred numbers of 5, 7 and 10 and possibly the Sumerian number 30. The number 10 is present as a gap.

Sacred numbers or summands are represented in the year counts. However, the significance and uniqueness of this fact decreases as the number gets larger as larger numbers can accommodate a variety of numbers as summands, perhaps all numbers, so the larger numbers are less determinative in looking for evidence of sacred numbers and not included here. However larger numbers that can consist entirely of summands of one or two sacred numbers do have more significance, so those are included in the evaluation of the larger numbers:

30 is a sacred number

20 + 20 = 40

13 + 9 + 9 + 9 = 40

19 + 7 + 7 + 7 = 40

30 + 10 + 15 = 55, which is also divisible by the sacred number 5

19 + 19 + 10 + 7 = 55

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 19 = 179

20 + 20 + 20 + 20 +20 + 20 + 20 + 13 + 13 + 13 = 179

20 + 20 + 20 + 20 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 179

20 + 20 + 20 + 20 +20 + 20 + 10 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 179

10 x 20 = 200 which is also divisible by the sacred number 5

20 + 20 + 20 + 20 +20 + 20 + 10 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 200

20 + 20 + 20 + 20 +20 + 10 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 200

20 + 20 + 20 + 20 +20 + 10 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 = 200

10 + 19 + 19 + 19 + 19 + 19 + 19 + 19 + 19 + 19 = 200

7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 =238

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 276

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 20 + 9 + 9 + 9 + 9 = 276

20 + 20 + 20 + 20 +20 + 20 + 13 +13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 +13 = 276

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 19 + 19 + 19 +19 = 276

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 + 7 + 7 + 7 + 7 + 7 + 7 = 282

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 10 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 282

7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 282

20 + 20 + 20 + 20 +20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 +20 + 20 + 20 + 20 = 320

20 + 20 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 320

20 + 20 + 20 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 = 320

The other sacred numbers are only indicated by additive method to reach each gap number and are as follows. Again, any number that includes 10 also includes 5 by default.

10 + 10 + 10 = 30 (other possibilities involve the use of 5 and/or 10)

10 is a sacred number

5 + 5 + 5 = 15 or 10 + 5 + 15

7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 5 = 124

20 + 20 + 20 + 10 + 9 + 9 + 9 + 9 + 9 + 9 = 124

13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 13 + 7 = 124

10 + 19 + 19 + 19 +19 + 19 + 19 = 124

7 + 7 + 7 = 21

7 + 5 + 9 = 21

20 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 76

20 + 20 + 9 + 9 + 9 + 9 = 76

20 + 20 + 10 + 13 + 13 = 76

19 + 19 + 19 + 19 = 76

6 - no possible sacred number combinations

8 - no possible sacred number combinations

The consideration of sequential gap numbers might indicate the presence of some sacred number constructs as follows:

30 + 10 = 40, which is divisible by the sacred numbers 5, 10, or 20

30 + 10 + 15 = 55 which is divisible by the sacred number 5

30 + 10 + 15 + 124 + 21 = 200 which is divisible by the sacred numbers 5, 10, or 20

30 + 10 + 15 + 124 + 21 + 76 + 6 + 8 = 290 which is divisible by the sacred numbers 5 or 10

10 + 15 = 25, which is divisible by the sacred number 5

10 + 15 + 124 + 21 = 170 which is divisible by the sacred numbers 5 or 10

10 + 15 + 124 + 21 + 76 + 6 + 8 = 260 which is divisible by the sacred numbers 5, 10, 13, or 20 (also the number of days in the Sacred Calendar)

15 + 124 + 21 = 160 which is divisible by the sacred numbers 5, 10, or 20

15 + 124 + 21 + 76 + 6 + 8 = 250 which is divisible by the sacred numbers 5 or 10

124 + 21 = 145 which is divisible by the sacred number 5

124 + 21 + 76 = 221 which is divisible by the sacred number 13

124 + 21 + 76 + 6 + 8 = 235 which is divisible by the sacred number 13

76 + 6 + 8 = 90, which is divisible by the sacred numbers 5, 9, 10, or 30

The year numbers themselves are not that definitive, as the larger numbers can accommodate a variety of configurations, including numbers that are not sacred numbers. There is, however, in looking at the gap sequences, an obvious pattern in that the only sacred numbers as divisors are 5, 10, 13, and perhaps 20 (it appears when 10 appears). It is not until one arrives at the Omni gap numbers that 13 appears. This likely is because the number 13 is the number of months (of 20 days each) in the Calendar Round calendar, which is ubiquitous in Mesoamerica and predates all other calendars. This likely shows that after 276 years, there had been some Mesoamerican cultural influence on the Nephite polity. The number 9, and potentially 30, appears shortly thereafter, with the addition of the date 282 years, again likely showing additional Mesoamerican influence.

The numbers 7 and 19 do not appear as interval sacred numbers in the small plates.

It seems apparent that the small plates did contain some use of sacred numbers, especially in the sequential gap analysis. Mesoamerican sacred numbers did not appear until later in the record. The utilization is clearly much different than the complexity that Mormon (and $Moroni_2$) utilized, which is exactly what would be expected with the Mesoamerican acculturation of the Nephites.

The Lehi Departure Calendar year count in Mormon's abridgment

There are not many year counts of the Lehi Departure Calendar in Mormon's abridgment, but they are as follows:

Years	Gaps
467	
509	42
600	91
609	9

Unlike the small plates, the Lehi Departure Calendar, constructed by Mormon, uses the Mesoamerican sacred numbers. The number 9 is a sacred number. The other indications of the use of sacred numbers are as follows:

7 + 7 + 7 + 7 + 7 + 7 = 42

13 + 13 + 13 + 13 + 13 + 13 + 13 or 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 91

42 + 91 = 133, a number which can be constructed of 19 + 19 + 19 + 19 + 19 + 19 + 19 or 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7

91 + 9 = 100, a number which can be constructed of 20 + 20 + 20 + 20 + 20 or 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 or other multiple combinations of 5, 10, and 20

Here one sees the use of all the complex sacred numbers (5, 7, 9, 10, 13, 19, and 20), with only three gap numbers. The only sacred numbers missing here are the larger numbers 30 and 40. Since we lack the preceding dates that were lost with the 116 pages, it is likely that 30 and 40 were also used by Mormon.

Lengths of time in the Book of Ether

There was no year count calendar in the Book of Ether, likely because the original Jaredite record had none. However, in the Book of Ether, $Moroni_2$ identifies throughout the book a few lengths of reigns and ages of individuals. There is no apparent textual reason for why this only occurs with a few individuals, which may indicate that something about the reign and age numbers themselves are significant. It appears that, using the sacred number numeric system, all feature the number 19 (in bold):

Hearthom Ether 10:30	24 years of reign	**19** + 5
Corihor Ether 7:4	32 years of age at rebellion	13 + **19**
Riplakish Ether 10:8	42 years of reign	7 + 7 + 7 + 7 + 7 + 7 or **19** + 10 + 13
Levi	42 years of reign	7 + 7 + 7 + 7 + 7 + 7 or **19** + 10 + 13

Ether 10:15		
Com_2 Ether 10:32	42 years of reign	7 + 7 + 7 + 7 + 7 + 7 or **19** + 10 + 13
Com_1 Ether 9:25	49 years of reign	7 + 7 + 7 + 7 + 7 + 7 + 7 or 10 + 20 + **19** or 10 + **19** + 13 + 7 or 30 + **19**
Emer Ether 9:16	62 years of reign	**19** + **19** + **19 + 5** or 10 + 20 + **19** + 13 or 30 + 13 + **19**
Coriantum's wife Ether 9:24	102 years old at death	**19** + **19** + **19** + **19** + **19 + 7** or **19** + 30 + 40 + 13 or 30 + 40 + 13 + **19** or **19** +20 + 60 + 13
Coriantum Ether 9:25	142 years old at death	**19** + **19 + 19** + **19** + **19 + 19 + 19 + 9**

The numbered years identified in Ether do verify the use of the Nephite sacred number system within the Book of Mormon. The numeric sequences involve the use of the number 19, which is reserved for indicating righteousness. In the case of Corihor, his date involves his age at the time he rebelled. However, Corihor is noteworthy because he was one of the only Jaredite kings who is noted to have repented (Ether 7:13).

In the case of Emer, there is a number sequence that contains a triple 19, satisfying the description of his great righteousness. Knowing that the Caractors Document glyph for 19 also means "the sun" or "the god of the sun" in Egyptian, the verse Ether 9:22 becomes quite interesting. In the current version of the Book of Mormon, this verse indicates that Emer "even saw the Son of Righteousness." Skousen (2014, 3801) indicates that the original text likely read "the Sun of Righteousness," matching Skousen's version of the original text in 2 Nephi 26:9 and 3 Nephi 25:2. The Sun of Righteousness is an alternate name for the Savior, quoting Malachi 3–4. Thus, the inclusion of the triple 19 in the Emer date also satisfies the scriptural reference in Ether to both the Savior and the Sun of Righteousness. Emer's son Coriantum and his wife also feature multiple 19's indicating righteousness. Although the Book of Mormon text is not clear, Emer may have seen the Sun of Righteousness in the four years after the kingdom was passed to Coriantum, thus implying a similar level of righteousness to him.

Book of Mormon Chapter Sacred Numbers

The chapters in the current version of the Book of Mormon are not the same as the chapters that were found in the Original Manuscript, the Printer's Manuscript, or the 1830 edition of the Book of Mormon. Royal Skousen noted that the Original Manuscript suggests there was something seen by Joseph Smith that indicated chapter breaks, presumably representative of the script structure found on the plates (Skousen 1994, 137). Brant Gardner analyzed these chapter configurations and noted that some are anomalous, meaning there was no observable literary pattern (Gardner 2020, 62). These chapter break anomalies can now be said to be caused (at least in part) by the structuring of the number of chapters to reflect the usage and sequences of sacred numbers. The number of original chapters in each book in the Book of Mormon are as follows:

Book	Number of Chapters
1st Nephi	7
2nd Nephi	15
Jacob	5
Enos	1
Jarom	1
Omni	1
Words of Mormon	1
*** end of Small Plates ***	
Mosiah	13
Alma	30
Helaman	5
3rd Nephi	14
4th Nephi	1
Mormon	4
Ether	6
Moroni	10

Sacred number occurrences in the small plates chapters

The expected Hebrew sacred numbers are 5, 7, and 10, including summands of these numbers. The Hebrew sacred numbers found in the small plates chapters are as follows: 1st Nephi – 7 chapters and 2nd Nephi – 15 chapters (10 + 5), also the Egyptian hieratic for the numbers 5 and 10 match the symbols for the compass and the square (the temple was constructed in 2nd Nephi); Jacob – 5 chapters; and the 5 writers in Omni. Also, the entire small plates' summands and resulting sums are 7 + 15 + 5 + 1 + 1 + 1 = 30. 30 is a Mesopotamian (Jaredite) sacred number and would thus be expected to be associated with Mormon's abridgement, but it is also a multiple or summand of the Hebrew sacred numbers (10 + 10 +10, and 5 + 5 + 5 + 5 + 5 +5). Since it has potential for sacred number construction in Hebrew, it does not necessarily require that the small plates reflect Jaredite number influences, as the cultural ties to the Jaredites would not be expected until the Book of Omni, in which the Jaredite culture, or those influenced by direct contact with the Jaredite culture, were encountered.

The addition by Mormon of the book Words of Mormon (also constituting an additional chapter) adds Mesoamerican sacred number elements. As 24 is a civilization founding and ending number, 2nd Nephi constitutes the formation of the Nephite tribes, the construction of the first temple, and $Nephi_1$ being appointed as the first king. Words of Mormon discusses the destruction and death of the Nephites, so the number of chapters of 2nd Nephi through Words of Mormon is 15 + 5 + 1 + 1 + 1 + 1 = 24. The

number 9 is unlucky and associated with death. Jacob starts out with the death of the first prophet Nephi, and Words of Mormon ends with the death of his civilization, so the intervening summands and sum is 5 + 1 + 1 + 1 + 1 = 9.

There is no clear indication of the use of any Mesoamerican sacred numbers in the year count early on in the small plates. However, there is evidence of utilization of the Hebrew sacred numbers early on. The numbers 20 and 30 may be Mesoamerican possibilities, but because these numbers are also divisible by 5 and 10, both Hebrew sacred numbers, this is not an absolute conclusion.

The utilization of sacred numbers in the small plates is clearly much less complex than Mormon and $Moroni_2$ utilized, which is exactly what would be expected with the Mesoamerican acculturation of the Nephites.

Mormon's abridgement of sacred number chapter occurrences

The expected sacred numbers in Mormon's abridgment are Hebrew, Mesoamerican, and Mesopotamian: 5, 7, 9, 10, 13, 19, 20, and 30 or multiples of these numbers.

Mosiah has 13 chapters, which is a Mesoamerican sacred number, but some have proposed the likelihood that there were originally 15 chapters (Gardner 2013). This number is also a combination of sacred numbers (5 + 10 or 5 + 5+ 5). The numbers 5 and 10 correspond with the compass and square with temple implications, which is consistent with the book of Mosiah wherein the record recounts when the new temple was built. It could be conjectured, given the missing content from the book of Mosiah that presumably started with the reign of $Mosiah_1$, that a length of 19 chapters could also be an appropriate number for the book of Mosiah, which would be consistent with the number 19, correlating with the Messiah. $Mosiah_1$'s name in the reformed Egyptian means Messiah, or God's Son (Grover 2019, 218).

The book of Alma has 30 chapters, another sacred number, particularly related to the Jaredites as a Mesopotamian sacred number. Alma starts out by relating the arrival of Nehor, which is also one of the initial lands of the Jaredites and also the descriptor for the indigenous religion.

Helaman has 5 chapters, again a sacred number.

3rd Nephi has 14 chapters, which consists of a doubling of another sacred number (7 + 7).

In addition, the combination of Helaman and 3rd Nephi provides the sacred number 19 (14 + 5), which is associated with Christ. The book of Helaman is self-described in its preface as containing the prophecies of the birth of Christ and provides the record up to the coming of Christ. 3rd Nephi, of course, contains the recounting of the coming of Christ, so the sacred number 19, which represents Christ, is completely consistent with the inclusion of this chapter's numbering. The books from 3rd Nephi through Mormon also add up to the sacred number 19 (14 + 1 + 4).

4th Nephi only has 1 chapter, but when combined with the previous books of Helaman and 3rd Nephi, forms the Mesoamerican sacred number 20 (5 + 14 + 1).

Mormon has 4 chapters, and when combined with the one chapter from the previous book of 4th Nephi, forms the sacred number 5 (4 + 1). In addition, as the account of Mormon ends with the destruction of the Nephites, one might expect some permutation of the number 24, which represents civilization

foundations and endings. In fact, considering the three books prior to Mormon and moving forward (Helaman, 3rd Nephi, and 4th Nephi), the total is the number 24 (5 + 14 + 1 + 4). In addition, with Mormon in combination with 4th Nephi, the total indicates the sacred number 5 (1 + 4), and considering the addition of 3rd Nephi, one arrives at the sacred number 19 (14 + 1 + 4).

Ether has 6 chapters, but when combined with the prior books of Helaman, 3rd Nephi, 4th Nephi, and Mormon, the Jaredite sacred number of 30 appears again, entirely consistent with the book of Ether (5 + 14 + 1 + 4 + 6 =30). Also, considering that the book of Alma, occurring just before Helaman, has 30 chapters, this creates consecutive occurrences of the number 30.

There is also a series of escalating sacred number sum sequences in sequential chapters starting with Helaman to Moroni, the concluding book in the Book of Mormon:

5 + 14 = 19

5 + 14 + 1 = 20

5 + 14 + 1 + 4 = 24

5 + 14 + 1 + 4 + 6 = 30

5 + 14 + 1 + 4 + 6 + 10 = 40

Also occurring are a series of escalating sacred number sum sequences in sequential chapters starting with 3rd Nephi to the end of the Book of Mormon in Moroni, where the sum is either a sacred number or is visible by sacred numbers:

14 + 1 = 15 (5 + 5 + 5)

14 + 1 + 4 = 19 (19 is a sacred number)

14 + 1 + 4 + 6 = 25 (5 + 5 +5 + 5 + 5; in this case, sacred numbers are also multiples [5 x 5])

14 + 1 + 4 + 6 + 10 = 35 (5 + 5 +5 + 5 +5 + 5 +5 or 7 + 7 + 7 +7 +7; also serving as multiples [5 x 7])

A series of escalating sacred number sum sequences in sequential chapters is found, starting with Mormon to the end of the Book of Mormon in Moroni, where the sum is a sacred number:

4 + 6 = 10, a sacred number

4 + 6 + 10 = 20, a sacred number

Summary

The chapter structure in the Book of Mormon reflects the use of sacred numbers throughout, seen in chapter numbers, translations, and revelations, consistent with the book's nature as a Hebrew- and Mesoamerican-constructed sacred text.

Appendix A

Jubilee, Lehi Departure, Reign of Kings, Reign of Judges, and Coming of Christ Calendars

Table Legend:

LD: Lehi Departure Calendar

Dates for the Reign of the King, Reign of the Judges and the Lehi Departure are identified as the New Year's Day of the lunar year, and are a scientific New Moon date.

In the Jubilee Calendar BOLD = a Jubilee Year

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
			6/21/600	BC	9:02				
			6/11/599	BC	22:58				
			5/31/598	BC	16:06				0
			5/20/597	BC	7:52				**1**
			5/9/596	BC	18:03				**2**
			4/28/595	BC	21:12				3
			4/17/594	BC	22:02				4
			4/6/593	BC	3:42				5
			3/26/592	BC	16:22				6
			3/16/591	BC	9:02				7
			3/6/590	BC	1:06				8
			2/23/589	BC	12:04				9
		1	2/11/588	BC	15:39				10
		2	1/31/587	BC	15:24				11
		3	1/20/586	BC	18:52				12
		4	1/10/585	BC	5:23				13
		5	12/30/585	BC	20:33				14
		6	12/19/584	BC	11:52				15
		7	12/8/583	BC	22:48				16
		8	11/28/582	BC	2:29				17
		9	11/16/581	BC	1:34				18

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
		10	11/5/580	BC	3:34				19
		11	10/25/579	BC	12:48				20
		12	10/15/578	BC	3:23				21
		13	10/4/577	BC	18:59				22
		14	9/23/576	BC	7:00				23
		15	9/12/575	BC	12:07				24
		16	9/1/574	BC	12:07				25
		17	8/20/573	BC	14:07				26
		18	8/9/572	BC	23:16				27
		19	7/30/571	BC	14:25				28
		20	7/20/570	BC	7:20				29
		21	7/8/569	BC	21:25				30
		22	6/28/568	BC	4:54				31
		23	6/17/567	BC	6:23				32
		24	6/6/566	BC	8:18				33
		25	5/25/565	BC	16:40				34
		26	5/15/564	BC	7:28				35
		27	5/5/563	BC	1:45				36
		28	4/24/562	BC	15:55				37
		29	4/13/561	BC	0:57				38
Nephi 1		30	4/2/560	BC	3:10				39
1		31	3/22/559	BC	4:01				40
2		32	3/11/558	BC	10:18				41
3		33	2/28/557	BC	23:18				42
4		34	2/17/556	BC	15:37				43
5		35	2/7/555	BC	6:43				44
6		36	1/27/554	BC	16:14				45
7		37	1/16/553	BC	18:28				46
8		38	1/4/552	BC	17:57				47
9		39	12/24/552	BC	22:08				48
10		40	12/14/551	BC	9:24				**49**
11		41	12/4/550	BC	0:48				**50**
12		42	11/22/549	BC	15:43				51
13		43	11/12/548	BC	1:40				52
14		44	11/1/547	BC	4:22				53
15		45	10/21/546	BC	3:32				54
16		46	10/9/545	BC	6:49				55
17		47	9/28/544	BC	17:29				56

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
18		48	9/18/543	BC	8:56				57
19		49	9/8/542	BC	0:39				58
20		50	8/27/541	BC	12:05				59
21		51	8/16/540	BC	16:29				60
22		52	8/5/539	BC	16:36				61
23		53	7/25/538	BC	19:46				62
24		54	7/14/537	BC	6:10				63
25		55	7/3/536	BC	21:57				64
Nephi II	ROK begins	56	6/23/535	BC	14:49				65
?		57	6/13/534	BC	4:13				66
?		58	6/1/533	BC	10:49				67
?		59	5/21/532	BC	11:59				68
?		60	5/10/531	BC	14:30				69
?		61	4/29/530	BC	23:44				70
?		62	4/18/529	BC	15:01				71
?		63	4/8/528	BC	8:14				72
?		64	3/28/527	BC	22:46				73
?		65	3/18/526	BC	6:40				74
?		66	3/6/525	BC	8:02				75
?		67	2/23/524	BC	9:04				76
?		68	2/12/523	BC	16:09				77
?		69	2/2/522	BC	5:43				78
?		70	1/22/521	BC	21:55				79
?		71	1/11/520	BC	12:08				80
?		72	12/31/520	BC	20:11				81
?		73	12/20/519	BC	21:13				82
?		74	12/9/518	BC	20:46				83
?		75	11/28/517	BC	1:53				84
?		76	11/17/516	BC	13:53				85
?		77	11/7/515	BC	5:19				86
?		78	10/27/514	BC	19:36				87
?		79	10/16/513	BC	4:25				88
?		80	10/5/512	BC	6:14				89
?		81	9/24/511	BC	5:46				90
?		82	9/13/510	BC	10:22				91
?		83	9/1/509	BC	22:16				92
?		84	8/22/508	BC	14:23				93
?		85	8/12/507	BC	6:09				94

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		86	8/1/506	BC	17:07				95
?		87	8/20/505	BC	21:02				96
?		88	7/9/504	BC	21:30				97
?		89	6/29/503	BC	1:54				**98**
?		90	6/18/502	BC	13:36				**99**
?		91	6/8/501	BC	6:09				100
?		92	5/28/500	BC	23:07				101
?		93	5/18/499	BC	11:54				102
?		94	5/7/498	BC	17:34				103
?		95	4/25/497	BC	18:24				104
?		96	4/14/496	BC	21:30				105
?		97	4/4/495	BC	7:30				106
?		98	3/24/494	BC	22:57				107
?		99	3/13/493	BC	15:37				108
?		100	3/3/492	BC	4:56				109
?		101	2/20/491	BC	11:21				110
?		102	2/9/490	BC	11:47				111
?		103	1/29/489	BC	12:58				112
?		104	1/18/488	BC	20:42				113
?		105	1/7/487	BC	10:33				114
?		106	12/28/487	BC	2:27				115
?		107	12/17/486	BC	15:47				116
?		108	12/5/485	BC	22:31				117
?		109	11/24/484	BC	22:44				118
?		110	11/13/483	BC	22:46				119
?		111	11/3/482	BC	5:11				120
?		112	10/22/481	BC	18:17				121
?		113	10/12/480	BC	10:11				122
?		114	10/2/479	BC	0:12				123
?		115	9/21/478	BC	8:13				124
?		116	9/8/477	BC	9:33				125
?		117	10/29/476	BC	9:47				126
?		118	8/18/475	BC	15:00				127
?		119	8/8/474	BC	4:57				128
?		120	7/27/473	BC	21:33				129
?		121	7/17/472	BC	13:04				130
?		122	7/6/471	BC	23:14				131
?		123	6/26/470	BC	2:29				132

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		124	6/14/469	BC	3:13				133
?		125	6/2/468	BC	8:36				134
?		126	5/23/467	BC	21:06				135
?		127	5/13/466	BC	13:55				136
?		128	5/2/465	BC	6:33				137
?		129	4/21/464	BC	18:29				138
?		130	4/10/463	BC	23:12				139
?		131	3/30/462	BC	23:43				140
?		132	3/19/461	BC	3:26				141
?		133	3/8/460	BC	13:13				142
?		134	2/26/459	BC	6:59				143
?		135	2/15/458	BC	22:18				144
?		136	2/5/457	BC	10:33				145
?		137	1/24/456	BC	15:32				146
?		138	1/13/455	BC	15:15				**147**
?		139	1/2/454	BC	16:55				**148**
?		140	12/23/454	BC	1:31				149
?		141	12/11/453	BC	15:43				150
?		142	12/1/452	BC	7:13				151
?		143	11/20/451	BC	19:28				152
?		144	11/10/450	BC	0:51				153
?		145	10/29/449	BC	0:28				154
?		146	10/18/448	BC	1:16				155
?		147	10/7/447	BC	8:56				156
?		148	9/26/446	BC	22:52				157
?		149	9/14/445	BC	14:56				158
?		150	9/5/444	BC	4:34				159
?		151	8/25/443	BC	11:51				160
?		152	8/14/442	BC	12:56				161
?		153	8/2/441	BC	14:04				162
?		154	7/22/440	BC	21:36				163
?		155	7/12/439	BC	11:53				164
?		156	7/2/438	BC	5:04				165
?		157	6/25/437	BC	20:31				166
?		158	6/10/436	BC	6:04				167
?		159	6/28/435	BC	23:33				168
?		160	6/18/434	BC	0:22				169
?		161	6/6/433	BC	3:24				170

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		162	5/26/432	BC	13:23				171
?		163	5/16/431	BC	5:01				172
?		164	5/6/430	BC	22:09				173
?		165	4/24/429	BC	12:11				174
?		166	4/14/428	BC	19:30				175
?		167	4/3/427	BC	20:44				176
?		168	3/23/426	BC	22:25				177
?		169	3/11/425	BC	6:29				178
?		170	2/28/424	BC	20:48				179
?		171	2/18/423	BC	13:25				180
?		172	2/7/422	BC	3:42				181
?		173	1/28/421	BC	11:33				182
?		174	1/16/420	BC	12:33				183
?		175	1/5/419	BC	12:36				184
?		176	12/25/419	BC	18:33				185
?		177	12/15/418	BC	7:13				186
?		178	12/3/417	BC	22:53				187
?		179	11/23/416	BC	12:57				188
?		180	11/12/415	BC	21:01				189
?		181	11/1/414	BC	22:19				190
?		182	10/20/413	BC	21:46				191
?		183	10/10/412	BC	2:40				192
?		184	9/29/411	BC	14:42				193
?		185	9/19/410	BC	6:28				194
?		186	9/7/409	BC	21:28				195
?		187	8/28/408	BC	7:19				**196**
?		188	8/17/407	BC	10:13				**197**
?		189	8/5/406	BC	10:22				198
?		190	7/25/405	BC	15:06				199
?		191	7/15/404	BC	3:07				200
?		192	7/4/403	BC	19:42				201
?		193	6/24/402	BC	12:18				202
?		194	6/13/401	BC	0:27				203
?		195	6/2/400	BC	5:27				204
?		196	5/22/399	BC	6:15				205
?		197	5/11/398	BC	10:10				206
?		198	4/29/397	BC	21:10				207
?		199	4/19/396	BC	13:22				208

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		200	4/9/395	BC	6:20				209
?		201	3/29/394	BC	19:29				210
?		202	3/18/393	BC	1:32				211
?		203	3/7/392	BC	2:04				212
?		204	2/24/391	BC	4:05				213
?		205	2/13/390	BC	12:47				214
?		206	2/3/389	BC	3:14				215
?		207	1/23/388	BC	19:16				216
?		208	1/12/387	BC	8:18				217
?		209	1/1/386	BC	14:34				218
?		210	12/21/386	BC	14:34				219
?		211	12/9/385	BC	14:55				220
?		212	12/28/384	BC	21:48				221
?		213	12/18/383	BC	11:05				222
?		214	11/8/382	BC	2:47				223
?		215	10/27/381	BC	16:16				224
?		216	10/17/380	BC	23:29				225
?		217	10/6/379	BC	0:09				226
?		218	9/25/378	BC	10:21				227
?		219	9/13/377	BC	6:48				228
?		220	9/2/376	BC	20:10				229
?		221	8/23/375	BC	12:40				230
?		222	8/13/374	BC	3:40				231
?		223	8/1/373	BC	12:55				232
?		224	7/21/372	BC	15:23				233
?		225	7/10/371	BC	16:05				234
?		226	6/29/370	BC	22:05				235
?		227	6/18/369	BC	11:09				236
?		228	6/8/368	BC	4:04				237
?		229	5/29/367	BC	20:16				238
?		230	5/18/366	BC	7:27				239
?		231	5/6/365	BC	11:30				240
?		232	4/25/364	BC	12:11				241
?		233	4/14/363	BC	16:42				242
?		234	4/4/362	BC	4:17				243
?		235	3/24/361	BC	20:31				244
?		236	3/13/358	BC	12:57				**245**
?		237	3/3/359	BC	1:02				**246**

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		238	2/20/358	BC	5:48				247
?		239	2/9/357	BC	5:44				248
?		240	1/28/356	BC	8:15				249
?		241	1/18/355	BC	17:47				250
?		242	1/7/354	BC	8:38				251
?		243	12/28/354	BC	0:23				252
?		244	12/16/353	BC	12:25				253
?		245	12/5/352	BC	17:21				254
?		246	11/24/351	BC	16:46				255
?		247	11/13/350	BC	17:52				256
?		248	11/2/349	BC	1:59				257
?		249	10/22/348	BC	16:01				258
?		250	10/12/347	BC	7:43				259
?		251	10/2/346	BC	20:31				260
?		252	9/20/345	BC	2:43				261
?		253	9/9/344	BC	3:03				262
?		254	8/29/343	BC	4:09				263
?		255	8/18/342	BC	11:58				264
?		256	8/7/341	BC	2:15				265
?		257	7/28/340	BC	19:02				266
?		258	7/17/339	BC	9:45				267
?		259	7/6/338	BC	18:20				268
?		260	6/24/337	BC	20:26				269
?		261	6/13/336	BC	21:44				270
?		262	6/3/335	BC	4:54				271
?		263	5/23/334	BC	18:56				272
?		264	5/12/333	BC	12:14				273
?		265	5/2/332	BC	4:12				274
?		266	4/21/331	BC	14:30				275
?		267	4/10/330	BC	17:39				276
?		268	3/30/329	BC	18:16				277
?		269	3/18/328	BC	23:31				278
?		270	3/8/327	BC	11:43				279
?		271	2/26/326	BC	3:53				280
?		272	2/15/325	BC	19:30				281
?		273	2/4/324	BC	6:08				282
?		274	1/24/323	BC	9:25				283
?		275	1/13/320	BC	8:50				284

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		276	1/2/321	BC	11:54				285
?		277	12/21/321	BC	22:04				286
?		278	12/11/320	BC	13:00				287
?		279	12/1/319	BC	4:12				288
?		280	11/20/318	BC	15:09				289
?		281	11/9/317	BC	18:55				290
?		282	10/29/316	BC	18:07				291
?		283	10/17/315	BC	20:17				292
?		284	10/7/314	BC	5:47				293
?		285	9/26/313	BC	20:46				**294**
?		286	9/15/312	BC	12:48				**295**
?		287	9/5/311	BC	1:15				296
?		288	8/25/310	BC	6:49				297
?		289	8/13/309	BC	7:10				298
?		290	8/2/308	BC	9:24				299
?		291	7/22/307	BC	18:42				300
?		292	7/12/306	BC	9:58				301
?		293	7/1/305	BC	3:01				302
?		294	6/20/304	BC	17:14				303
?		295	6/10/303	BC	0:56				304
?		296	5/30/302	BC	2:33				305
?		297	5/19/301	BC	4:19				306
?		298	5/8/300	BC	12:21				307
?		299	4/28/299	BC	2:48				308
?		300	4/17/298	BC	19:54				309
?		301	4/6/297	BC	11:04				310
?		302	3/26/296	BC	20:09				311
?		303	3/15/295	BC	22:18				312
?		304	3/4/294	BC	22:51				313
?		305	2/22/293	BC	4:47				314
?		306	2/10/292	BC	17:33				315
?		307	1/31/291	BC	9:43				316
?		308	1/21/290	BC	0:42				317
?		309	1/10/289	BC	10:05				318
?		310	12/29/289	BC	12:08				319
?		311	12/18/288	BC	11:26				320
?		312	12/7/287	BC	15:28				321
?		313	11/27/286	BC	2:38				322

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		314	11/15/285	BC	17:55				323
?		315	11/5/284	BC	8:44				324
?		316	10/25/283	BC	18:39				325
?		317	10/15/282	BC	21:25				326
?		318	10/2/281	BC	20:45				327
?		319	9/22/280	BC	0:08				328
?		320	9/11/279	BC	10:53				329
?		321	9/1/278	BC	2:28				330
?		322	8/20/277	BC	18:25				331
?		323	8/10/276	BC	6:15				332
?		324	7/30/275	BC	11:07				333
?		325	7/19/274	BC	11:34				334
?		326	7/7/273	BC	14:53				335
?		327	6/27/272	BC	1:23				336
?		328	6/16/271	BC	17:25				337
?		329	6/6/270	BC	10:39				338
?		330	5/26/269	BC	0:27				339
?		331	5/15/268	BC	7:22				340
?		332	4/4/267	BC	8:35				341
?		333	4/23/266	BC	10:56				342
?		334	4/15/265	BC	19:54				**343**
?		335	4/1/264	BC	10:54				**344**
?		336	3/22/263	BC	3:49				345
?		337	3/12/262	BC	18:04				346
?		338	2/29/261	BC	1:43				347
?		339	2/17/260	BC	2:48				348
?		340	2/6/259	BC	3:23				349
?		341	1/26/258	BC	19:53				350
?		342	1/15/257	BC	23:00				351
?		343	1/4/256	BC	14:47				352
?		344	12/25/256	BC	4:44				353
?		345	12/14/255	BC	12:39				354
?		346	12/3/254	BC	13:36				355
?		347	11/21/253	BC	13:05				356
?		348	11/10/252	BC	18:12				357
?		349	10/31/251	BC	6:21				358
?		350	10/10/250	BC	22:03				359
?		351	10/9/249	BC	12:41				360

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
?		352	9/28/248	BC	21:54				361
?		353	9/18/247	BC	0:05				362
?		354	9/7/246	BC	23:57				363
?		355	8/26/245	BC	4:51				364
?		356	8/15/244	BC	17:03				365
?		357	8/5/243	BC	9:29				366
?		358	7/26/242	BC	1:33				367
?		359	7/14/241	BC	12:49				368
?		360	7/3/240	BC	17:01				369
?		361	6/22/239	BC	17:37				370
?		362	6/11/238	BC	21:55				371
?		363	5/31/237	BC	9:22				372
?		364	5/21/236	BC	1:42				373
?		365	5/10/235	BC	18:33				374
?		366	4/30/234	BC	7:23				375
?		367	4/18/233	BC	13:10				376
$Mosiah_1$		368	4/7/232	BC	13:53				377
1		369	3/27/231	BC	16:37				378
2		370	3/17/230	BC	2:14				379
3		371	3/5/229	BC	17:27				380
4		372	2/23/228	BC	10:02				381
5		373	2/12/227	BC	23:19				382
6		374	2/2/226	BC	5:38				383
7		375	1/22/225	BC	5:51				384
8		376	1/10/224	BC	6:46				385
9		377	12/30/224	BC	14:18				386
10		378	12/20/223	BC	6:59				387
11		379	12/9/222	BC	6:59				388
12		380	11/28/221	BC	8:54				389
13		381	11/17/220	BC	15:33				390
14		382	11/6/219	BC	15:45				391
15		383	10/26/218	BC	15:49				**392**
16		384	10/14/217	BC	22:15				**393**
17		385	10/4/216	BC	11:22				394
18		386	9/24/215	BC	3:18				395
19		387	9/13/214	BC	17:30				396
20		388	9/2/213	BC	1:49				397
21		389	8/22/212	BC	3:30				398

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
22		390	8/11/211	BC	4:00				399
23		391	7/31/210	BC	10:13				400
24		392	7/19/209	BC	23:29				401
25		393	7/9/208	BC	16:23				402
26		394	6/29/207	BC	8:22				403
27		395	6/19/206	BC	19:03				404
28		396	6/6/205	BC	22:40				405
29		397	5/26/204	BC	23:30				406
30		398	5/16/203	BC	4:48				407
31	7 Tribes Begins	399	5/5/202	BC	17:13				408
32		400	4/25/201	BC	10:00				409
33		401	4/15/200	BC	2:35				410
34		402	4/4/199	BC	14:29				411
35		403	3/24/198	BC	19:04				412
36		404	3/12/197	BC	19:18				413
37		405	3/1/196	BC	22:33				414
38		406	2/19/195	BC	8:46				415
39		407	2/9/194	BC	0:01				416
40		408	1/28/193	BC	15:51				417
41		409	1/18/192	BC	3:46				418
42		410	1/7/191	BC	8:31				419
43		411	12/27/191	BC	7:58				420
44		412	12/16/190	BC	9:22				421
45		413	12/4/189	BC	17:47				422
46		414	11/24/188	BC	7:55				423
47		415	11/13/187	BC	23:31				424
48		416	11/3/186	BC	11:57				425
49		417	10/22/185	BC	17:35				426
50		418	10/11/184	BC	17:28				427
51		419	9/30/183	BC	18:30				428
52	Zeniff	420	9/20/182	BC	6:29				429
53		421	9/8/181	BC	16:48				430
54		422	8/29/180	BC	9:18				431
55		423	8/18/179	BC	23:22				432
56		424	8/8/178	BC	7:03				433
57		425	7/27/177	BC	8:29				434
58		426	7/16/176	BC	9:47				435
59		427	7/5/175	BC	17:20				436

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
60		428	6/25/174	BC	7:33				437
61		429	6/14/173	BC	0:41				438
62		430	6/6/172	BC	16:09				439
63		431	5/24/171	BC	1:50				440
64		432	5/13/170	BC	4:39				**441**
65		433	5/1/169	BC	5:35				**442**
66		434	4/30/168	BC	11:34				443
67		435	4/10/167	BC	0:29				444
Benj 1		436	3/30/166	BC	17:11				445
2		437	3/19/165	BC	9:07				446
3		438	3/8/164	BC	19:50				447
4		439	2/26/163	BC	23:12				448
5		440	2/14/162	BC	11:05				449
6		441	2/4/161	BC	2:58				450
7		442	1/23/160	BC	13:56				451
8		443	1/13/159	BC	5:25				452
9		444	1/2/158	BC	20:50				453
10	Noah ?	445	12/23/158	BC	7:38				454
11		446	12/11/157	BC	11:06				455
12		447	11/30/156	BC	10:13				456
13		448	11/19/155	BC	12:30				457
14		449	11/8/154	BC	22:08				458
15		450	10/28/153	BC	12:32				459
16		451	10/18/152	BC	4:19				460
17		452	10/7/151	BC	15:55				461
18		453	9/27/150	BC	20:35				462
19		454	9/14/149	BC	20:21				463
20		455	9/3/148	BC	22:28				464
21		456	8/24/147	BC	7:47				465
22		457	8/13/146	BC	22:53				466
23		458	8/2/145	BC	15:33				467
24		459	7/23/144	BC	5:10				468
25		460	7/12/143	BC	12:10				469
26		461	7/1/142	BC	13:26				470
27	Limhi?	462	6/19/141	BC	15:31				471
28		463	6/9/140	BC	0:15				472
29		464	5/29/139	BC	15:19				473
30		465	5/19/138	BC	8:44				474

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
31		466	5/7/137	BC	23:51				475
32		467	4/27/136	BC	8:37				476
33		468	4/16/135	BC	10:41				477
34		469	4/5/134	BC	11:49				478
35		470	3/24/133	BC	18:37				479
36		471	3/14/132	BC	8:04				480
37		472	3/3/131	BC	22:35				481
38		473	2/21/130	BC	15:35				482
39		474	2/11/129	BC	0:48				483
40	7 Tribes ends	475	1/30/128	BC	2:50				484
Mos_2 1		476	1/19/127	BC	2:27				485
2		477	1/8/126	BC	6:57				486
3		478	12/28/126	BC	18:27				487
4		479	12/17/125	BC	9:50				488
5		480	12/3/124	BC	0:32				489
6		481	11/26/123	BC	10:08				**490**
7		482	11/15/122	BC	12:29				**491**
8		483	11/3/121	BC	11:38				492
9		484	10/23/120	BC	15:09				493
10		485	10/13/119	BC	0:01				494
11		486	10/2/118	BC	17:32				495
12		487	9/21/117	BC	9:09				496
13		488	9/10/116	BC	20:18				497
14		489	8/31/115	BC	0:22				498
15		490	8/20/114	BC	0:24				499
16		491	8/8/113	BC	3:50				500
17		492	7/28/112	BC	14:35				501
18		493	7/18/111	BC	6:35				502
19		494	7/7/110	BC	23:23				503
20		495	6/26/109	BC	12:26				504
21		496	6/15/108	BC	18:34				505
22		497	6/4/107	BC	19:33				506
23		498	5/24/106	BC	22:19				507
24		499	5/13/105	BC	7:53				508
25		500	5/2/104	BC	23:17				509
26		501	4/22/103	BC	16:22				510
27		502	4/12/102	BC	6:35				511
28		503	4/1/101	BC	14:07				512

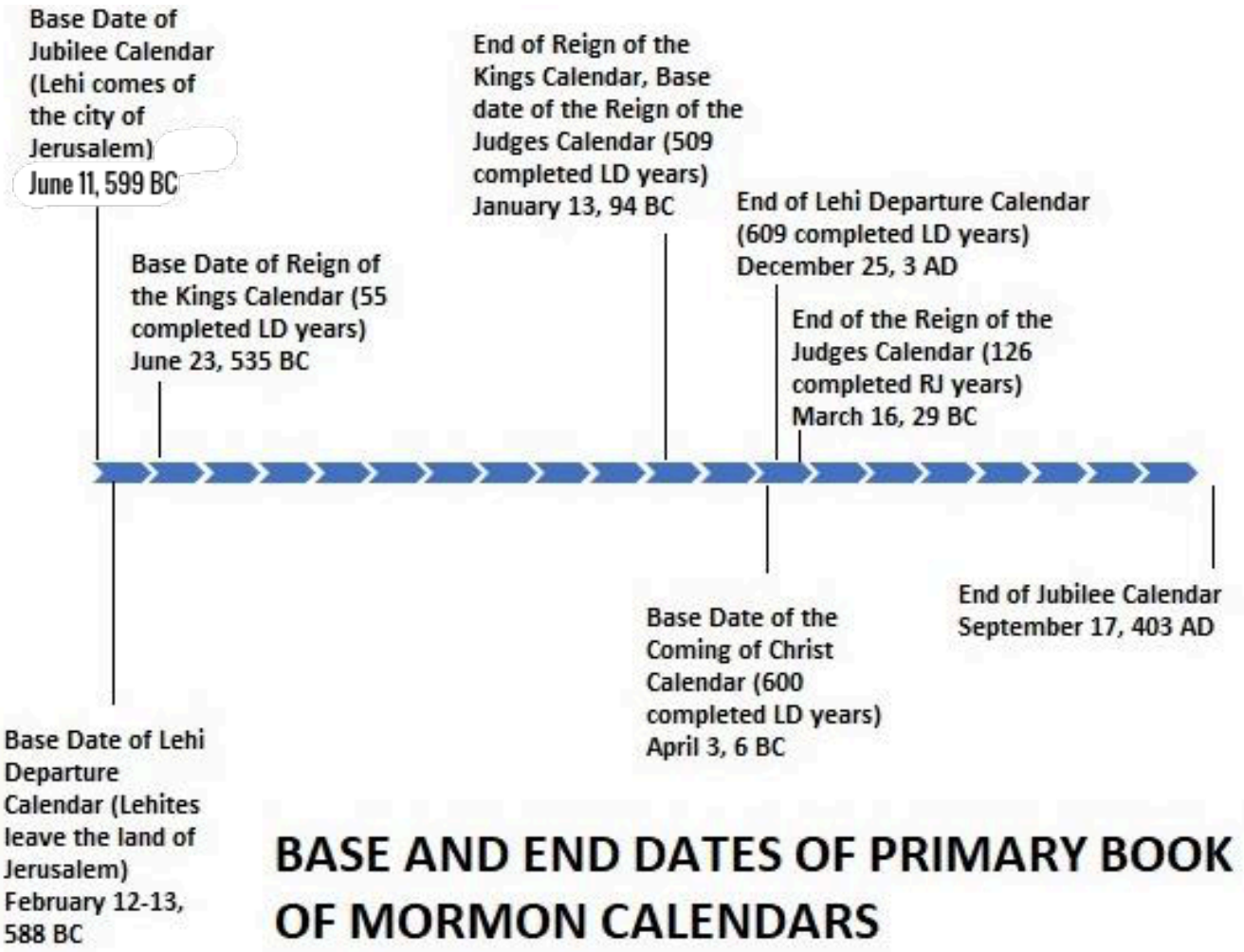
Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
29		504	3/21/100	BC	15:21				513
30		505	3/10/99	BC	16:37				514
31		506	2/28/98	BC	0:07				515
32		507	2/17/97	BC	14:01				516
33	Reign of	508	2/6/96	BC	6:24				517
34	Judges	509	1/26/95	BC	20:37				518
	1	510	1/13/94	BC	4:31				519
	2	511	1/5/93	BC	5:28				520
	3	512	12/24/93	BC	5:14				521
	4	513	12/13/92	BC	12:47				522
	5	514	12/2/91	BC	23:10				523
	6	515	11/22/90	BC	14:45				524
	7	516	11/11/89	BC	4:54				525
	8	517	10/31/88	BC	13:22				526
	9	518	10/20/87	BC	14:51				527
	10	519	10/9/86	BC	14:23				528
	11	520	9/27/85	BC	19:13				529
	12	521	9/17/84	BC	7:13				530
	13	522	9/6/83	BC	23:12				531
	14	523	8/27/82	BC	14:35				532
	15	524	8/16/81	BC	1:01				533
	16	525	8/5/80	BC	4:28				534
	17	526	7/25/79	BC	15:13				535
	18	527	7/14/78	BC	14:57				536
	19	528	7/2/77	BC	21:21				537
	20	529	6/22/76	BC	12:59				538
	21	530	6/12/75	BC	6:51				**539**
	22	531	6/2/74	BC	19:23				**540**
	23	532	5/21/73	BC	0:46				541
	24	533	5/10/72	BC	1:35				542
	25	534	4/29/71	BC	5:05				543
	26	535	4/18/70	BC	15:36				544
	27	536	4/7/69	BC	7:26				545
	28	537	3/28/68	BC	0:15				546
	29	538	3/17/67	BC	13:26				547
	30	539	3/7/66	BC	19:34				548
	31	540	2/23/65	BC	19:57				549
	32	541	2/11/64	BC	21:27				550

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
	33	542	2/1/63	BC	5:36				551
	34	543	1/22/62	BC	19:38				552
	35	544	1/11/61	BC	11:28				553
	36	545	12/31/61	BC	0:31				554
	37	546	12/20/60	BC	6:55				555
	38	547	12/9/59	BC	6:57				556
	39	548	11/28/58	BC	7:07				557
	40	549	11/16/57	BC	13:46				558
	41	550	11/6/56	BC	2:58				559
	42	551	10/26/55	BC	18:48				560
	43	552	10/16/54	BC	8:36				561
	44	553	10/4/53	BC	14:16				562
	45	554	9/23/52	BC	17:19				563
	46	555	9/12/51	BC	17:39				564
	47	556	9/2/50	BC	0:03				565
	48	557	8/21/49	BC	13:24				566
	49	558	8/11/48	BC	6:06				567
	50	559	7/31/47	BC	21:28				568
	51	560	7/21/46	BC	7:16				569
	52	561	7/9/45	BC	10:10				570
	53	562	6/28/44	BC	10:56				571
	54	563	6/17/43	BC	16:40				572
	55	564	6/7/42	BC	5:27				573
	56	565	5/26/41	BC	22:16				574
	57	566	5/16/40	BC	14:38				575
	58	567	5/6/39	BC	2:09				576
	59	568	4/25/38	BC	6:29				577
	60	569	4/12/37	BC	7:01				578
	61	570	4/2/36	BC	10:03				579
	62	571	3/23/35	BC	22:00				580
	63	572	3/12/34	BC	14:04				581
	64	573	3/1/33	BC	6:24				582
	65	574	2/19/32	BC	18:31				583
	66	575	2/7/31	BC	23:19				584
	67	576	1/27/30	BC	23:03				585
	68	577	1/17/29	BC	1:05				586
	69	578	1/5/28	BC	10:10				587
	70	579	12/26/28	BC	0:42				**588**

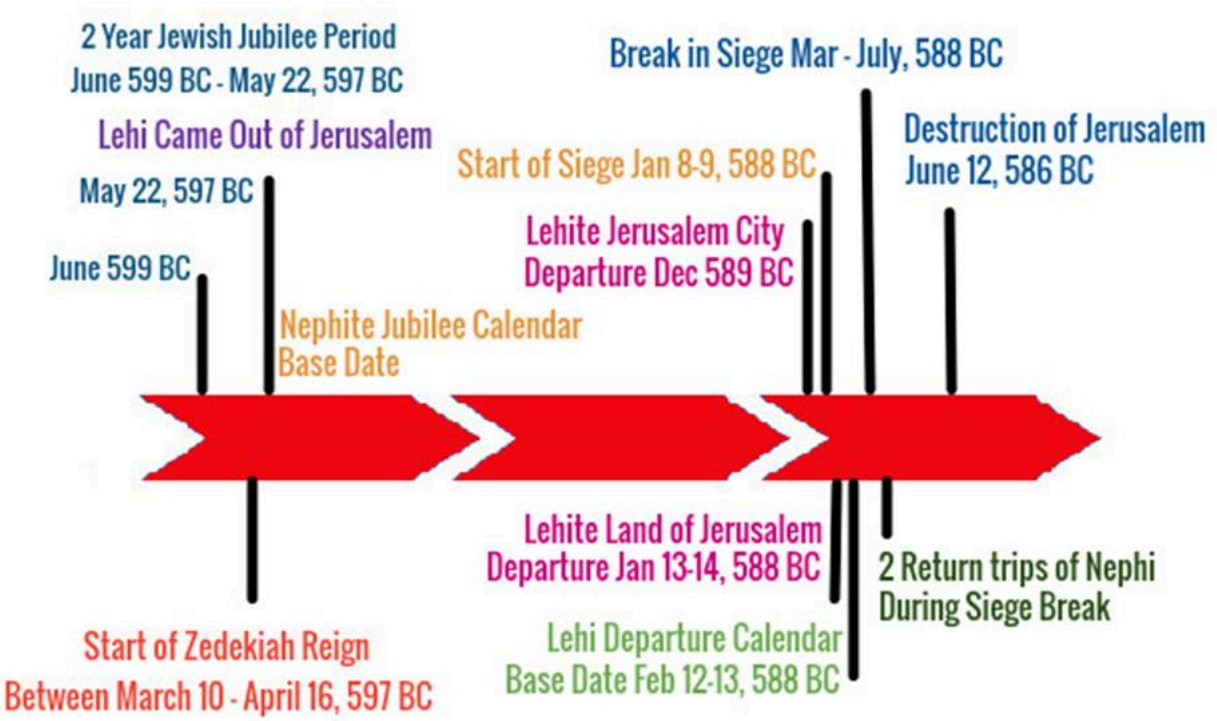
Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
	71	580	12/15/27	BC	16:20				**589**
	72	581	12/5/26	BC	4:28				590
	73	582	11/23/25	BC	9:35				591
	74	583	11/12/24	BC	9:05				592
	75	584	11/1/23	BC	10:04				593
	76	585	9/22/22	BC	6:35				594
	77	586	9/11/21	BC	22:35				595
	78	587	8/31/20	BC	14:03				596
	79	588	8/21/19	BC	0:36				597
	80	589	8/10/18	BC	4:07				598
	81	590	7/29/17	BC	4:23				599
	82	591	7/18/16	BC	8:45				600
	83	592	7/7/15	BC	20:22				601
	84	593	6/27/14	BC	12:45				602
	85	594	6/16/13	BC	5:27				603
	86	595	6/5/12	BC	18:01				604
	87	596	5/25/11	BC	23:32				605
	88	597	5/15/10	BC	0:22				606
	89	598	5/3/9	BC	3:41	Coming of Christ			607
	90	599	4/22/8	BC	14:00	New Years Day			608
	91	600	4/12/7	BC	5:48	Nephite Calendar			609
	92	601	4/1/6	BC	23:17	1	4/3/6	BC	610
	93	602	3/21/5	BC	12:17	2	4/3/5	BC	611
	94	603	3/11/4	BC	18:46	3	4/3/4	BC	612
	95	604	2/27/3	BC	19:20	4	4/3/3	BC	613
	96	605	2/16/2	BC	20:20	5	4/3/2	BC	614
	97	606	2/6/1	BC	4:51	6	4/2/1	BC	615
	98	607	1/25/1	AD	19:03	7	4/2/1	AD	616
	99	608	1/15/2	AD	11:03	8	4/2/2	AD	617
	100	609	1/5/3	AD	0:18	9	4/2/3	AD	618
	101	610	12/25/3	AD	6:54	10	4/2/4	AD	619
	102	611	12/13/4	AD	7:02	11	4/1/5	AD	620
	103	612	12/2/5	AD	7:05	12	4/1/6	AD	621
	104	613	11/21/6	AD	12:29	13	4/1/7	AD	622
	105	614	11/11/7	AD	2:26	14	3/31/8	AD	623
	106	615	10/30/8	AD	18:03	15	3/31/9	AD	624

Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
	107	616	10/20/9	AD	7:48	16	3/31/10	AD	625
	108	617	10/9/10	AD	15:32	17	3/31/11	AD	626
	109	618	9/28/11	AD	16:38	18	3/30/12	AD	627
	110	619	9/16/12	AD	16:46	19	3/30/13	AD	628
	111	620	9/5/13	AD	22:50	20	3/30/14	AD	629
	112	621	8/26/14	AD	11:56	21	3/30/15	AD	630
	113	622	8/16/15	AD	4:33	22	3/29/16	AD	631
	114	623	8/4/16	AD	20:02	23	3/29/17	AD	632
	115	624	7/25/17	AD	6:04	24	3/29/18	AD	633
	116	625	7/14/18	AD	9:09	25	3/29/19	AD	634
	117	626	7/3/19	AD	9:54	26	3/28/20	AD	635
	118	627	6/21/20	AD	15:30	27	3/28/21	AD	636
	119	628	6/11/21	AD	4:16	28	3/28/22	AD	**637**
	120	629	5/31/22	AD	23:12	29	3/28/23	AD	**638**
	121	630	5/21/23	AD	13:46	30	3/27/24	AD	639
	122	631	5/10/24	AD	1:29	31	3/27/25	AD	640
	123	632	6/29/25	AD	6:59	32	3/27/26	AD	641
	124	633	4/18/26	AD	6:33	33	3/26/27	AD	642
	125	634	4/7/27	AD	10:28	34	3/26/28	AD	643
	126	635	3/26/28	AD	21:23	35	3/26/29	AD	644
		636	3/16/29	AD	13:09	36	3/26/30	AD	645
			3/6/30	AD	5:24	37	3/25/31	AD	646
						38	3/25/32	AD	647
						39	3/25/33	AD	
						40	3/25/34	AD	
						41	3/28/35	AD	
						42	3/24/36	AD	
						49	3/23/43	AD	
						51	3/22/45	AD	
						52	3/22/46	AD	
						59	3/20/53	AD	
						71	4/17/65	AD	
						72	3/17/66	AD	
						79	3/15/73	AD	
						100	3/10/94	AD	
						110	3/8/104	AD	
						194	2/26/188	AD	
						200	2/14/194	AD	

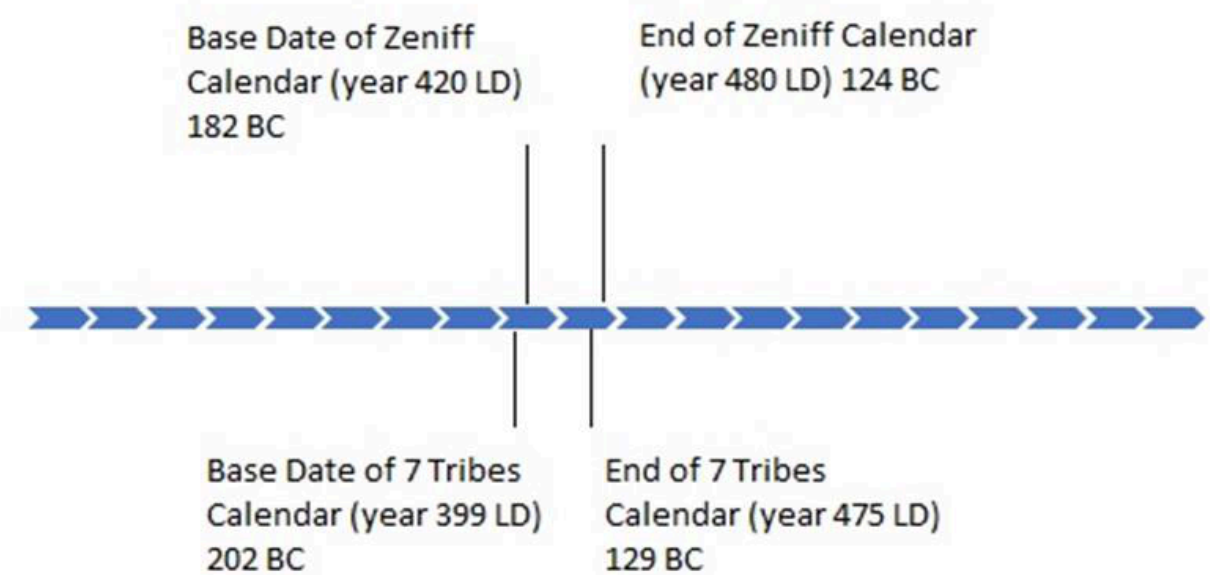
Reign of Kings	Reign of Judges	LD Year	Gregorian Date	Era	Time	Coming of Christ Calendar	Gregorian Date	Era	Jubilee Count
						201	2/14/195	AD	
						210	2/13/204	AD	
						231	2/7/225	AD	
						244	2/4/238	AD	
						250	2/3/244	AD	
						260	1/31/254	AD	
						300	1/21/294	AD	
						305	1/20/299	AD	
						320	1/17/314	AD	
						326	1/16/320	AD	
						327	1/15/321	AD	
						330	1/15/324	AD	
						344	1/11/338	AD	
						345	1/11/339	AD	
						346	1/11/340	AD	
						349	1/10/343	AD	
						350	1/10/344	AD	
						360	1/7/354	AD	
						361	1/7/355	AD	
						362	1/7/356	AD	
						363	1/6/357	AD	
						364	1/6/358	AD	
						366	1/6/360	AD	
						367	1/5/361	AD	
						379	1/2/373	AD	
						380	1/2/374	AD	
						384	1/1/378	AD	
						400	12/27/393	AD	
						420	12/23/413	AD	



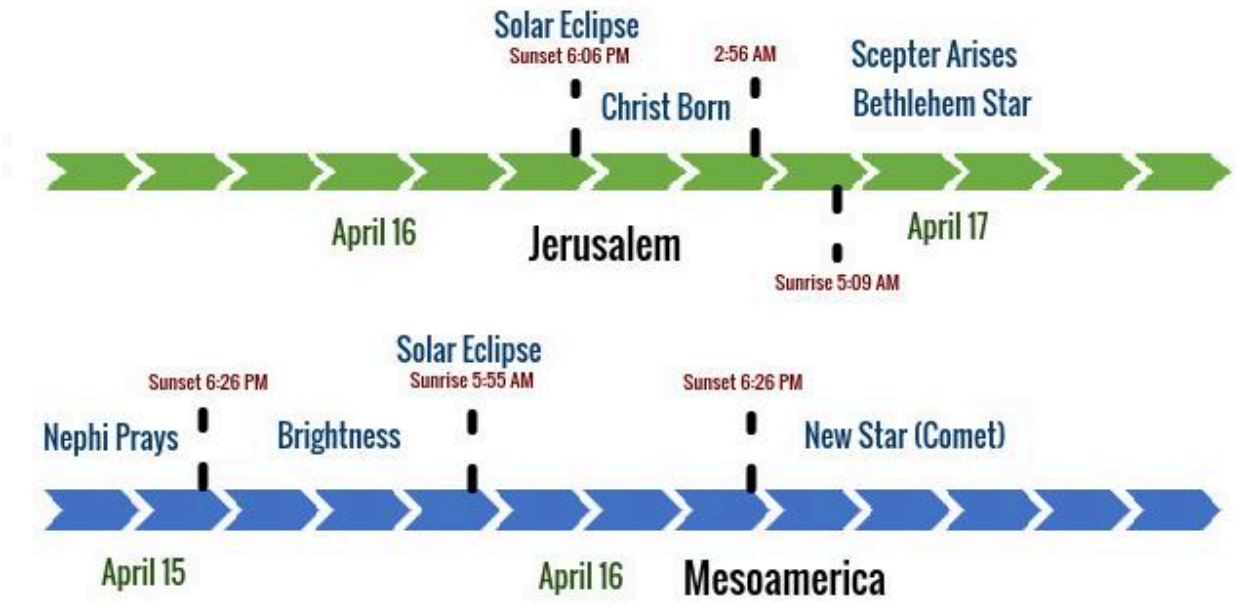
BASE AND END DATES OF PRIMARY BOOK OF MORMON CALENDARS



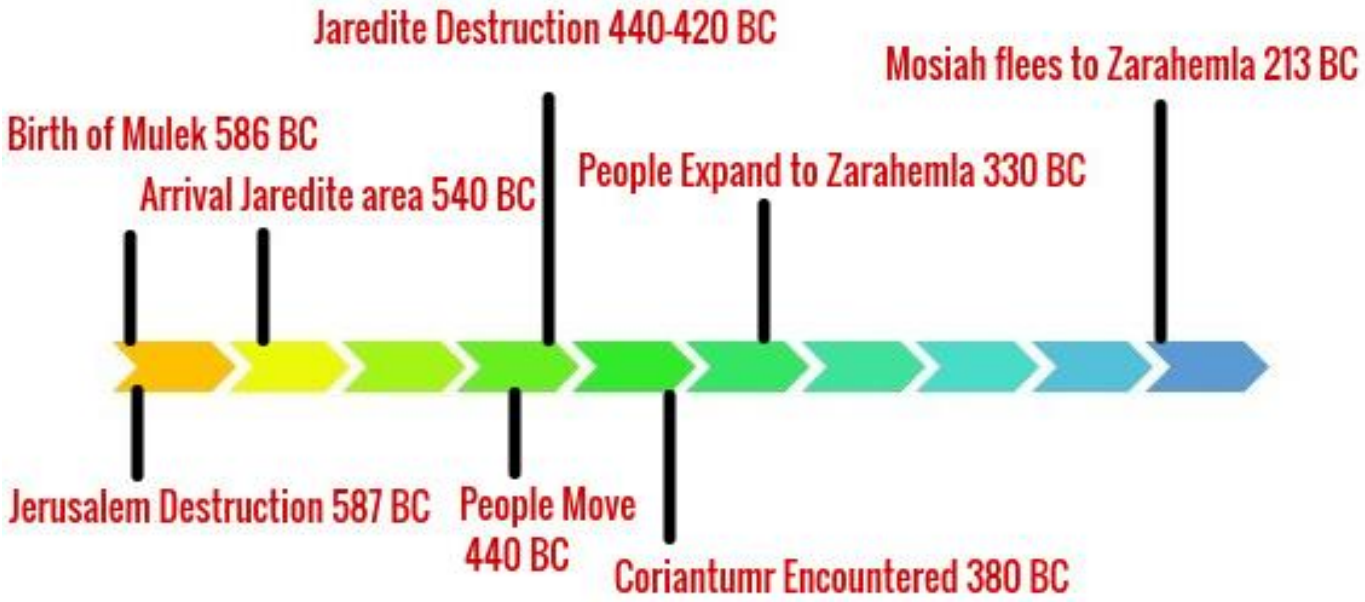
Events in Jerusalem



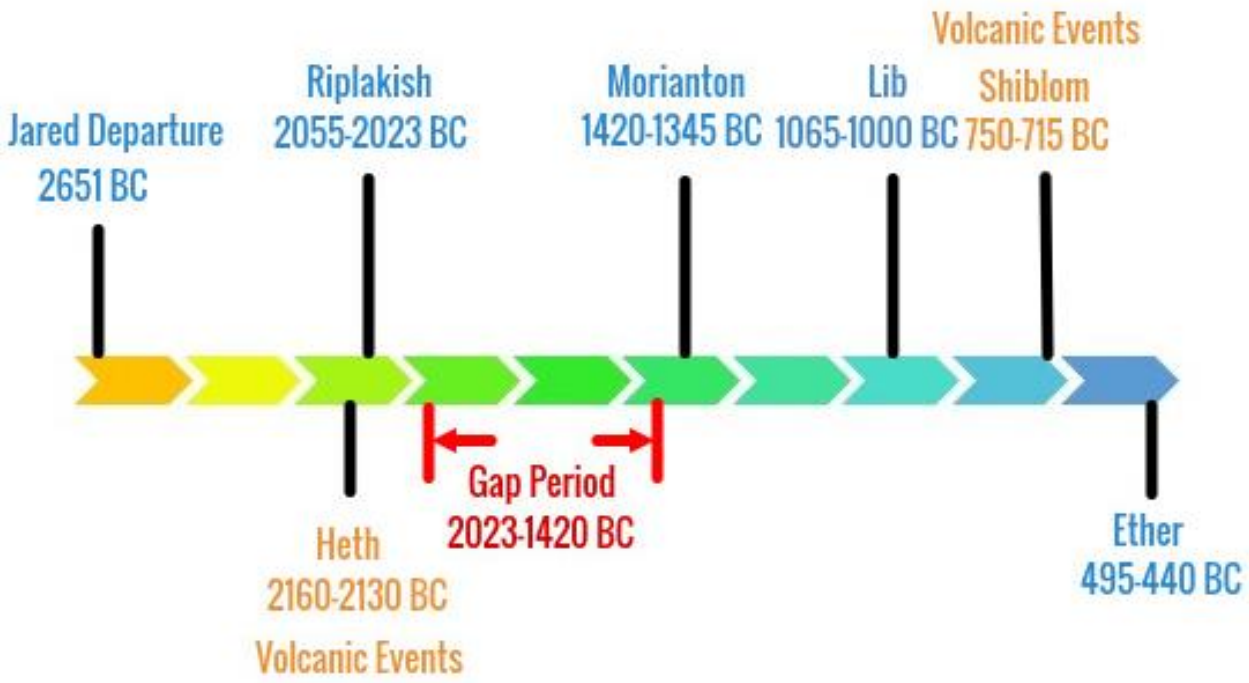
ZENIFF AND 7 TRIBES CALENDARS



Birth of Christ Timeline



Mulek/People of Zarahemla Chronology



Jaredite Timeline

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