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The Jewish/Nephite Lunar Calendar

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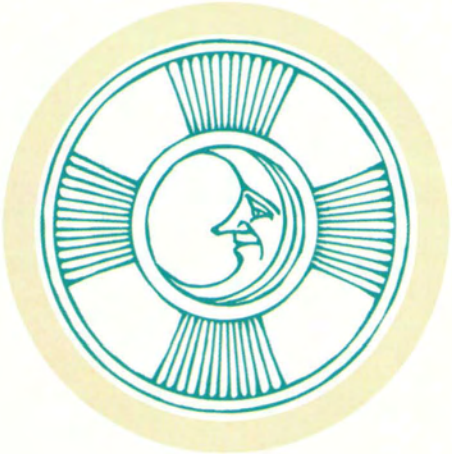
Abstract Nephite record keepers were very meticulous in monitoring the passage of time. Lehi's departure from Jerusalem in the reign of Zedekiah marks the beginning of one formal reckoning of time. The prophesied 600-year window to the birth of Christ could well have been measured in lunar years. Lehi must have drawn on familiar Israelite calendrical practices to establish his calendar. Lehi's descendants likely used twelve lunar months for their calendar without adding an occasional thirteenth month to adjust for the length of a solar year, which would solve the chronological problem of dating Lehi's departure 600 years before the birth of Christ.

THE
Jewish/Nephite Lunar Calendar



IN ANCIENT AMERICA, as the time of the Savior's birth drew near, believers searched the night skies for the signs foretold to herald that long-awaited event. The timely appearance of those signs, concluding with a striking new star, marked—with impressive chronological accuracy—the fulfillment of the prophet Lehi's 600-year-old messianic prophecy. This climactic episode and numerous other time-related passages in the Book of Mormon reveal how religiously the Nephite record keepers monitored the passage of time. Their constant recording of time in terms of days, months, years, and eras throughout their sacred chronicle shows that measuring time was an important feature of Nephite history and culture.

RANDALL P. SPACKMAN

PHOTOGRAPHY BY JOHN SNYDER • MOON ILLUSTRATION BY McRAY MAGLEBY

Yet we are hard-pressed to explain how the Book of Mormon writers measured time. Their scriptural record does not expressly define their time-reckoning tools or calendars. Determining the methods they used is further complicated by the fact that other ancient societies are known to have used more than one method to track time for religious and civic purposes.

Despite these challenges, a close study of clues in the Book of Mormon suggests that one of the principal time-reckoning tools used by the Nephites was a twelve-moon year. This lunar calendar appears to have been used to count the 600 years preceding the Lord's birth and nine additional years, an era defined in terms of Lehi's departure from Jerusalem (see 3 Nephi 2:6–8), the last 100 years of which were also known as the era of "the reign of the judges" (Alma 1:1; see 3 Nephi 2:5). This view finds good support in circumstantial evidence from the Book of Mormon. In addition, if correct, it helps resolve a chronological problem associated with Lehi's so-called 600-year prophecy.

Lehi and His Descendants Count the Years

The Book of Mormon narrative begins in Judah with an account of Lehi's prophetic ministry, which he apparently undertook in the first year of Zedekiah's reign (see 1 Nephi 1:4–15, 18). Lehi was one of God's prophets sent to warn the Jews of the impending destruction of Jerusalem. Before the fall of the city to Babylonian forces, the Lord commanded Lehi to escape with his family into the wilderness (see 1 Nephi 2:2).

Lehi's day of departure began one formal counting of time in the Book of Mormon. For many generations Lehi's descendants used his departure from Jerusalem as a reference point (see, for example, 2 Nephi 5:28; Jacob 1:1). Lehi's prophecy that 600 years after he left Jerusalem "a prophet would the Lord God raise up among the Jews—even a Messiah, or, in other words, a Savior of the world" (1 Nephi 10:4), although based on faith in a future event, served as an additional reference point. Nephi's use of this time-related prophecy in three separate passages (1 Nephi 10:4; 19:8; 2 Nephi 25:19) suggests its importance in Nephite religion and time reckoning. They looked forward to the Messiah's coming in fulfillment of Lehi's words (see 2 Nephi 6:13; Jacob 4:4; Jarom 1:11; Mosiah 3:5; Alma 13:25–26; Helaman 8:13, 16–22). For the record keepers among Lehi's descendants, long-range time reckoning began with their ancestor's departure from Jerusalem.

A Chronological Problem

In counting and recording the passage of time for hundreds of years, Lehi's descendants obviously used some type of calendar accurately. We are led to ask what kind of calendar they used because dates derived from well-attested external history establish a time window several years too small to allow for the full 600 years stipulated in Lehi's prophecy. Did Lehi mean that the Savior would come in *about* 600 years, or must we look elsewhere for an explanation?

Evidently, Lehi was not simply approximating the time of the Lord's birth, because the Book of Mormon records that the heavenly signs marking that event appeared after the passage of an even 600 years—that is, in the 601st year, matching the prophesied time frame with precision (see 3 Nephi 1:4, 21, 26). This brings us back to the Nephite calendar, which was surely quite different from our modern method of reckoning time, and a crucial question arises: How long was a Nephite year?

Most readers of the Book of Mormon probably assume that the Nephite year was a solar year—that is, a year based on the sun's movement through its solstices, equinoxes, and zenith passages and the seasonal changes linked with those solar events. That is how the modern world calculates time. However, unlike the Hebrew scriptures, which often mention seasons of the year (see Genesis 8:22; Psalm 74:17), the Book of Mormon, which speaks of seasons when fevers were prevalent (see Alma 46:40) and when wild beasts infested the land (see Mosiah 18:4), as well as seasons of fruit and grain (see Helaman 11:6, 13, 17), tells us little about the seasons of the year in terms of a constant calendar. In fact, historical information indicates that the principal Nephite calendar, at least for the first 609 years, could not have been based on a solar year.

The Book of Mormon narrative appears to date Lehi's vision and the beginning of his prophetic ministry to the first year of Zedekiah's reign (see 1 Nephi 1:4–6, 18). The Neo-Babylonian ruler Nebuchadnezzar placed Zedekiah on Judah's throne in 597 B.C., a date determined from the Hebrew scriptures and other ancient historical sources,[1] some of which recorded astronomical events that can be accurately dated.

The descendants of Lehi counted precisely 600 years between his departure from Jerusalem and the time when they viewed the heavenly signs that immediately preceded and followed the Lord's birth (see 3 Nephi 1:1–22). If the calendar used to measure those years was a solar calendar, it would place the Lord's birth in A.D. 3 or 4 at the earliest. This seems contrary to scriptural and historical sources, which indicate that Jesus Christ was born in the spring of 5 B.C.

The Gospel of Matthew records that "Jesus was born in Bethlehem of Judaea in the days of Herod the king" (Matthew 2:1). The Magi met with Herod in Jerusalem and with Jesus' family in Bethlehem before Herod's death (see Matthew 2:2–12). Josephus reports that at the Passover feast following Herod's death, a riot broke out and many were killed. Varus, the Roman governor of Syria, marched his forces to Jerusalem and left one of his legions there to maintain order. Because coins bearing Varus's name indicate he was governor of Syria from 6 B.C. through 4 B.C., the death of Herod very likely occurred before Passover in the

year 4 B.C.—and hence the birth of Christ earlier than that.

Chinese annals describe a long-lasting (and, by implication, bright) "broom star" that first appeared in March of 5 B.C. This star, probably a comet with a tail, could have been the star of the Magi (see Matthew 2:2, 9–10) and the new star mentioned in the Book of Mormon as one of the signs of the Messiah's birth (see Helaman 14:5; 3 Nephi 1:21). If Herod died shortly before Passover in the year 4 B.C. and the broom star of 5 B.C. was in fact a sign of the Messiah's birth, then between Zedekiah's enthronement in 597 B.C. and Christ's birth in the spring of 5 B.C. there was not enough time for Lehi's descendants to have measured more than 592 solar years.

If the Nephites measured the 600-year period preceding Christ's birth with a lunar calendar composed of twelve "moons," there is no discrepancy at all in the counting of 600 years. A twelve-moon calendar averages only 354.367 days per year, eleven days fewer than a solar calendar, which averages 365.2422 days per year. Between 597 B.C. and 5 B.C., ample time existed for this lunar calendar to measure all 600 years. Of course, two key questions are whether the Book of Mormon provides convincing evidence for a lunar calendar and how Lehi's year of departure from Jerusalem can be correctly adjusted to narrow the 597 B.C.–5 B.C. period to cover precisely 600 lunar years. Before pursuing these issues, it will be helpful to consider lunar calendars in general and the implications for our present study.

Measuring Time with the Moon

Today most people know enough about the moon to understand how simple lunar calendars work. We have observed the moon's bright display first appear as a thin crescent and then expand to a full moon, contract into another thin crescent, and disappear for about four nights around the time we call the new moon. We know that one moon cycle or period can be added to another and so on to form longer periods of "moons" or moon-based years.

Christian, Jewish, and Muslim calendars still measure lunar time. In the Christian calendar, Easter Sunday is determined each year in part by the moon. Easter is set on the first Sunday after the first full moon that occurs on or after the spring equinox. The Jewish calendar, too, follows both the moon and the sun, so that lunar festivals such as the spring feast of Passover occur during an appropriate moon-marked season each year. The Muslim twelve-moon calendar cycles forward without regard to the seasons. Over the course of time, all these calendars became structured mathematically by experts or councils so that night-to-night lunar observation is no longer necessary to maintain the count.

Multiple Calendars

In the ancient world, sophisticated cultures sometimes used multiple calendars. Some aspects of ancient life were

This fragmentary ostracon, written on both sides in Coptic, offers an Easter calendar that was current in Egypt perhaps as early as the fourth century A.D. On the visible side of the ostracon, the recto, one can read five separate references to the "fourteenth [day] of the moon." On the back side, the verso (not pictured), one finds a series of Coptic springtime dates that agree with the timing of Easter through a ten-year period. Photo by S. Kent Brown.

defined by the moon, others by the sun or the seasons, and some by schematic calendars based on mathematical cycles. This overlapping calendrical system may seem rather odd until we recall that today we follow multiple calendars too: our fiscal year and our school year may differ from our calendar year, yet we manage to keep them straight.

During the life of Lehi, the kingdom of Judah was a vassal first to Egypt and then to Babylonia. The Egyptians maintained three distinct calendars; the Babylonians used two calendars. Most of these calendars were based on the moon. Moreover, the calendar used in the Hebrew scriptures before the Babylonian exile was a twelve-moon calendar (see 1 Kings 4:7; 1 Chronicles 27:1–15). The Israelites celebrated the start of each lunar month at the time of the new moon (see Numbers 28:11–15; Isaiah 1:13–14; Hosea 2:11).

Implicit in the Hebrew scriptures is the use of one lunar calendar that began in the spring (see Exodus 12:1–14; Leviticus 23:5; Numbers 9:1–5; Joshua 4–5; 2 Chronicles 35:1) and another that began in the autumn (see Exodus 23:16; 34:22). A small limestone tablet found north of Jerusalem at Gezer and predating Lehi by more than 300 years was engraved with a twelve-moon calendar coordinated to agricultural tasks that began in the autumn. As far as we know, the official use of a twelve-moon calendar had not been discontinued in the kingdom of Judah by the time of Lehi.

Lehi's Calendrical Knowledge

Whatever calendar Lehi followed when he and his family departed into the wilderness was probably drawn from familiar Israelite practices and the scriptures on the brass plates.

For hundreds of years, Lehi's descendants followed the law of Moses (see 2 Nephi 5:10–13; Jarom 1:5, 11; Mosiah 2:3; Alma 25:15–16; Helaman 13:1; 4 Nephi 1:12). Scriptures on the brass plates were likely available to the leaders of Lehi's people and may have influenced aspects of their worship as well as the kind of calendar they used.

Lehi also knew "the language of the Egyptians" (1 Nephi 1:2) and thus may have been acquainted with Egyptian calendrical terms. Two of the three Egyptian calendars in use in Lehi's day were lunar calendars, and the oldest was a twelve-moon religious and agricultural calendar that was also oriented to the stars and seasons. Every July the Nile River rose high enough to water the fields along its course. Because the star Sirius became visible at dawn just after the middle of July, the Egyptians started their twelve-moon calendar on the new moon that followed the annual reappearance of Sirius. This calendar was based on direct observation of that star and the subsequent new moon. The other lunar calendar was not tied to the appearance of a star, but was adjusted occasionally to keep the lunar count in harmony with a schematic 365-day calendar. Each year, this schematic calendar fell about one-fourth of a day out of agreement with the solar year.[2] Despite this discrepancy, the schematic calendar was never adjusted by the insertion of a leap day every few years. Lehi's knowledge of Egyptian may have introduced him to this type of calendrical complexity.

Although we do not know the extent of Lehi's calendrical knowledge, he certainly was familiar with the basic aspects of the Israelite lunar calendar. We may reasonably assume that in a world where divisions of time were so often measured by the moon, Lehi and his followers in the wilderness would have initially gone on counting time in the same way as in their homeland.[3]

Naming and Numbering the Moons

Each of the twelve months in the Egyptian religious and agricultural calendar was identified by its numerical position in the three Egyptian seasons of the year. Each moon was either the first, second, third, or fourth moon of the season of flooding, seedtime, or harvest. Although the Israelites may have understood this practice, Egypt's three seasons were not applicable in the land of Canaan. Rather, months in the Israelite lunar calendar were numbered from the first to the twelfth (see 1 Chronicles 27:1–15), with the first month associated with the spring feast of Passover since earliest times (see Exodus 12; 13:3–10; 23:15; Deuteronomy 16:1; Joshua 4:19; 5:10–12). Lehi probably would have been familiar with the numbering of lunar months.

After the Israelites settled in Canaan, the lunar months they counted may also have been identified by the Canaanite names associated with their seasonal or agricultural context. Only four Canaanite month names clearly appear in the Hebrew scriptures: *Abib* (meaning "fresh ear of barley," Exodus 13:4), *Zif* ("splendor of flowers," 1 Kings 6:1), *Ethanim* ("permanent streams," 1 Kings 8:2), and *Bul* ("rain," 1 Kings 6:38). Lehi's knowledge of Hebrew scripture and the seasons in the land of Judah probably would have brought such names to his attention.

Nonetheless, once Lehi left his homeland and traveled in the wilderness for some eight years in the southwestern and southern regions of the Arabian Peninsula, his frame of reference for the seasons would have been modified by the change in climate. In some parts of that general region, years without rainfall often occurred. In other parts monsoons created a summertime rainy season, whereas in Judah the rainy season occurred in winter. The Canaanite names for months did not fit the new seasons. In these circumstances Lehi and his followers likely numbered the "moons" from the first to the twelfth, in accordance with the scriptures. The numbering of months in the Book of Mormon (see, for example, Alma 52:1; 3 Nephi 8:5) is entirely consistent with this practice.

Spring and Autumn Calendars

During Lehi's life in Judah, four important agricultural feasts marked the year. Three of these feasts served to divide the year into halves. One half of the year began with the lunar month in which the spring feasts of Passover and Unleavened Bread occurred (see Leviticus 23:5–8; Numbers 9:5; 28:16–25; 33:3; 2 Chronicles 35:1–19). These feasts occurred in the first month of a lunar calendar that began in the springtime. Six moons later, in the seventh month (the beginning of the second half of the spring-oriented year), the Israelites celebrated the autumn feast of Ingathering (see Leviticus 23:33–44). The seventh month also began the measurement of the autumn-oriented year (see Exodus 23:16; 34:22), the other half of which presumably was understood to begin in the month of Passover and Unleavened Bread.

Lehi surely would have been familiar with the most important feasts of Judah. He would have understood that the year was divided into halves, with the great feasts of spring and autumn marking the divisions caused by the two lunar calendars. Scriptures recorded on the brass plates probably would have assisted Lehi's descendants to maintain some understanding of these Israelite practices. However, as Lehi's descendants settled in Mesoamerica, a physical and agricultural environment very different from that in Judah, the seasons could not have been counted in the same way.

Within 30 years after departing from Jerusalem, several of Lehi's sons and their followers built a temple "like unto the temple of Solomon," although not so resplendent (2 Nephi 5:16). Because Lehi's people sought to live the law of Moses, which prescribed a complex sequence of ceremonial events throughout each year, the temple likely was associated with sacrifices and feasts. The people must have used some sort

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of calendar for scheduling, planning, and holding the feasts. While the scriptures provided an important tool for creating such a calendar, the spring and autumn harvest festivals of the land of Judah could not have been applicable to the agricultural seasons where the Nephites lived in tropical Mesoamerica. Thus some modification of Mosaic law and the Israelite calendar was inevitable.

In the process of adaptation, Lehi's descendants understood they were to be guided by the scriptures on the brass plates (see, for example, Mosiah 1:1–7). These scriptures preserved the commandments of the Lord (see 1 Nephi 5:21–22). Nevertheless, new circumstances required an adaptation process, the essence of which was described by Lehi's son Nephi: "I did read many things to them, which were engraven upon the plates of brass, that they might know concerning the doings of the Lord in other lands, among people of old.... I did liken all scriptures unto us, that it might be for our profit and learning" (1 Nephi 19:22–23). Hence, while it may be reasonable to assume that Lehi and his descendants maintained a twelve-moon calendar, we need not expect that they slavishly attempted to follow the festival schedule of ancient Israel.

Coordinating the Seasons and the Moon

Because a twelve-moon year is about eleven days shorter than a solar year, after only three years a strict twelve-moon calendar would fall about one moon out of coordination with the solar year. The ancients understood this fact, both in Mesoamerica and the Near East, hundreds (if not thousands) of years before the time of Lehi. The Mesoamericans, Egyptians, and Israelites rectified this problem by adding a thirteenth moon every three years or so. This adjustment kept the starting point of their lunar calendars near the time when their agricultural and seasonal years normally began. However, because the Hebrew scriptures do not describe this practice, Lehi and his descendants may not have understood it very well.

After the Jews returned from Babylonian captivity (about 50 to 60 years after Lehi fled Jerusalem), the methods used by religious authorities to determine when to add a thirteenth moon were kept secret for hundreds of years. According to later Jewish records, the thirteenth moon was added in the spring so that the people could celebrate Passover and the feast of Unleavened Bread at the beginning of the winter grain harvest. This additional moon was not to be added before the autumn moon when the feast of Ingathering was held. It is not known if this practice of keeping Passover and Ingathering exactly six moons apart was followed in Lehi's day.

While Lehi may have had a general understanding of the need to add a thirteenth moon to the calendar every few years, his understanding probably would have been limited to the agricultural and seasonal context of Judah. He and his followers would have had no reason to adopt this practice immediately after they left Judah, for they were nomads in Arabia and then voyagers, probably for a dozen years or more before they reached the shores of Mesoamerica and began to till the earth (see 1 Nephi 18:24). The most simple calendar for desert nomads and sea voyagers is a twelve-month calendar based on direct observation of the moon.

Once Lehi's group began farming in Mesoamerica, it seems unlikely they would have taken up the practice of adding a thirteenth moon to their established way of reckoning time. To do so would have upset their accurate count of the 600 years. Like their ancestors who settled in the land of Canaan, they likely would have adopted the agricultural practices, though not the religious ritual and calendar, of the indigenous population. The local agricultural calendar was no longer based on the moon. In the centuries before Lehi's arrival, Mesoamerican calendar keepers had developed a schematic 260-day calendar for religious and agricultural purposes. In addition, they maintained a schematic 365-day civil calendar. Neither of these vital Mesoamerican calendars appears to have been formally adjusted in accordance with the seasonal year.

The most significant reason for thinking that Lehi's descendants did not adopt the practice of adding a thirteenth moon is purely chronological. In the 592 solar years between 597 B.C. and 5 B.C., there were not enough days to count all 600 years prophesied by Lehi unless the twelve-moon calendar was maintained religiously for nearly 275 years before the change was adopted. If Lehi did not leave Jerusalem until immediately before the fall of the city (see 2 Nephi 25:9–10), the twelve-moon calendar must have been maintained for more than 500 years prior to Lehi's descendants changing their calendrical practice. Under such conditions, it appears quite unlikely that Lehi or his descendants would have seen any value in adjusting their lunar calendar by the periodic addition of a thirteenth moon.

Textual Evidence for a Lunar Calendar

The preceding discussion has shown that the Israelites used a twelve-moon calendar that would have provided a convenient and scriptural model for Lehi and his descendants to adopt for their own unique circumstance. We now turn to the question of whether the lunar calendar hypothesis finds adequate support in the Book of Mormon.

Moons and Months

In the Book of Mormon, the word *moons* appears once as a term for measuring time. Amaleki, a Nephite record keeper who composed a short section of the Book of Mormon, noted that:

> In the days of Mosiah [the Nephite king] 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.

> 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.* (Omni 1:20–21)

Amaleki's report was written by a Nephite for Nephites. It is evidence that the Nephites and the people of Zarahemla shared a basic understanding of lunar observation, dividing time into moons, and adding moons to mark off longer periods of time. While Amaleki does not state that the Nephites and the people of Zarahemla used a lunar calendar, his report clearly shows that such a calendar would have been understood.

Amaleki used the term *moons* around 200 B.C., about four centuries after Lehi left Jerusalem. Mormon, the Nephite abridger of the Book of Mormon record, used the words *month* and *months* when he wrote the books of Alma and 3 Nephi after about A.D. 350. Although neither author defined the calendrical terms *moons* and *months,* the appearance of the two English cognate terms in the Book of Mormon translation implies that the underlying Nephite words had different meanings, however slight.

The cognate Hebrew words for *moon* and *month* refer to the heavenly body and to the time required for the moon to return to its same appearance or phase. On average, this reappearance occurs every 29.530588 days. This recurring pattern is called the synodic cycle of the moon. Normally, a first crescent moon will seem to reappear after 30 days and then again after 29 days. Because of the wobbly orbits of the earth and moon, a synodic cycle can vary between about 29.3 and 29.8 days. It is not uncommon to observe two 29-day moons or two 30-day moons occurring in sequence. Of course, actual observation of the moon's phases is affected by the viewer's height above sea level and such things as clouds, smoke, dust, trees, hills, and mountains.

If we assume that the terms *moons* and *months* as used in the Book of Mormon refer to essentially similar periods, we might still find subtle reasons for using two different terms. For example, Amaleki and Mormon were writing some 550 years or more apart. Perhaps in the intervening half millennium, minor differences in concept had arisen between the terms sufficient to justify a distinction.

By the time of Mormon, Mesoamerican cultures had developed a long history of measuring time and calculating its divisions, and several kinds of calendars were used. The Mesoamerican lunar calendar counted months of either 30 or 29 days. Thus Mormon's use of the term *months* instead of *moons* might have referred to a conventional time scheme used in the culture of his day, rather than to actual observations of the moon.

Another possible variation in meaning between the words *moons* and *months* might have to do with a change in how the calendar keepers defined the moon's synodic cycle. The Israelite practice before the Babylonian exile started each lunar month at the time of the new moon, that is, on the morning when the old crescent moon was no longer visible because of its visual proximity to the sun. The most common practice in Mesoamerica seems to have been to count each moon from the evening appearance of the first lunar crescent after the new moon. If Amaleki followed the Israelite pattern and Mormon followed the Mesoamerican pattern, the words *moons* and *months* might reflect those differences. Yet none of these differences in meaning and practice would have had a significant impact on the Nephites' long-term reckoning of time.

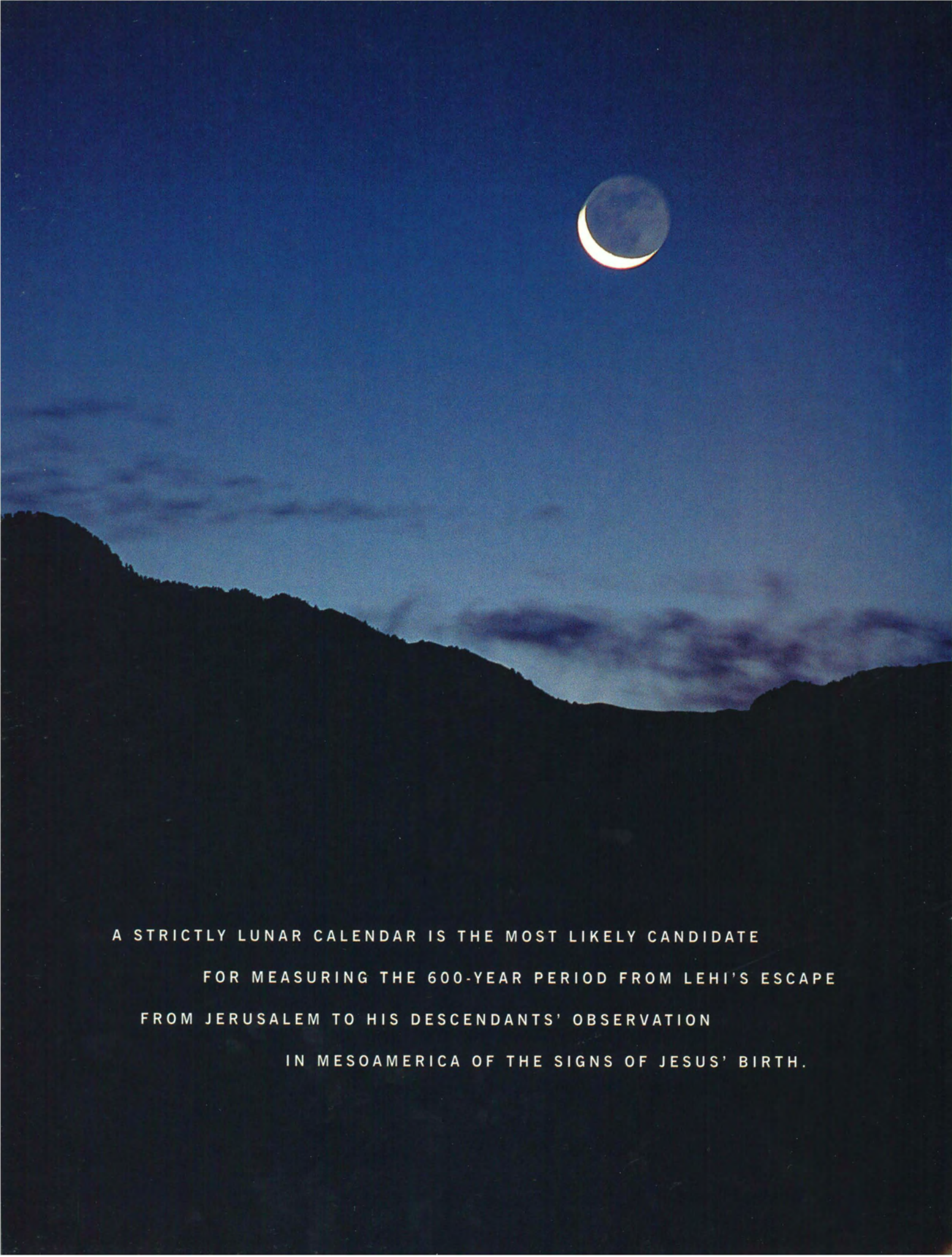
THE ANCIENT MONTHS

Jewish number, in sacred year	Hebrew name	Canaanite name	Babylonian name	Modern equivalent
First	Nisan	Abib	Nisanu	Mar./Apr.
Second	Iyar	Zif	Ayaru	Apr./May
Third	Sivan		Siwanu	May/Jun.
Fourth	Tammuz		Du'uzu	Jun./Jul.
Fifth	Av		Abu	Jul./Aug.
Sixth	Elul		Elulu	Aug./Sep.
Seventh	Tishri	Ethanim	Tisritu	Sep./Oct.
Eighth	(Mar)ḥeshvan	Bul	(W)arah-samnu	Oct./Nov.
Ninth	Kislev		Kisliwu	Nov./Dec.
Tenth	Tevet		Tebitu	Dec./Jan.
Eleventh	Shəvat		Sabatu	Jan./Feb.
Twelfth	Adar		Addaru	Feb./Mar.
	(Vəadar)			"Leap" month

Dividing the Year

The Book of Mormon narrative provides several clues about the number of months that composed the Nephite year. This information is important as we weigh the lunar calendar hypothesis against the textual evidence.

The account of Amalickiah's foiled attempt to become the Nephite king and his subsequent treachery that landed him on the Lamanite throne contains several references to time periods within the same year. Passages from Alma 46:37 ("*nearly the end*



A STRICTLY LUNAR CALENDAR IS THE MOST LIKELY CANDIDATE FOR MEASURING THE 600-YEAR PERIOD FROM LEHI'S ESCAPE FROM JERUSALEM TO HIS DESCENDANTS' OBSERVATION IN MESOAMERICA OF THE SIGNS OF JESUS' BIRTH.

of the nineteenth year of the reign of the judges"), 48:2 ("in the *latter end* of the nineteenth year"), and 49:1 ("in the *eleventh month* of the nineteenth year") tell us that the eleventh month of the year was in the "latter end" of the year and at "nearly the end" of the year. Other months of the year are mentioned in the books of Alma and 3 Nephi (e.g., Alma 10:6; 3 Nephi 4:7), but none is later in the year than the eleventh month.

Thus the principal Nephite calendar during the reign of the judges included at least eleven months, with the eleventh month coming near the end of the calendar. Again, the evidence is consistent with, but does not explicitly define, the Nephites' use of a twelve-month lunar calendar.

The Book of Mormon also describes divisions within the year with terms other than *moons* or *months.* Two such expressions are *the more part of the year* (see 3 Nephi 7:26) and *the remainder of the... year* (see Helaman 3:32), yet they do not appear to represent calendrical periods. Two other phrases are used many times to refer to parts or divisions of the year. The frequent use of these phrases suggests that they might have calendrical meaning.

The phrase *in the commencement of the... year* appears 26 times in the Book of Mormon. Virtually all of these occur in the books of Alma, Helaman, and 3 Nephi. The only exception is in the small plates of Nephi (see 1 Nephi 1:4). In addition, the phrases *in the commencement of this year* and *in the commencement of this, the... year* occur in 3 Nephi 7:26 and 6:17. The phrase *in the latter end of the... year* appears 8 times, all in Alma, Helaman, and 3 Nephi. Because the Nephite year was characterized as having a commencement and a latter end (apparently different from "nearly the end"), a logical possibility is that the year was divided in two.

Alma 30:5–6 also may suggest that the year was divided into a "commencement" half and a "latter end" half: "And it came to pass that in the *commencement* of the seventeenth year of the reign of the judges, there was continual peace. But it came to pass in the *latter end* of the seventeenth year, there came a man into the land of Zarahemla." The dispute with this man, Korihor, his death at the hands of the Zoramites, the mission of Alma and Amulek to the Zoramites, the expulsion of the believers, and the preparations for war by the Nephites and Zoramites—all this is recorded in Alma 30–35 before the end of the year is marked with the words: "And thus ended the seventeenth year of the reign of the judges over the people of Nephi" (Alma 35:12). To include all the events recorded in Alma 30–35, the "latter end" of the year may have covered the entire second half of the year.

The frequent use of the terms *commencement* and *latter end* to describe halves of a twelve-moon year is consistent with later Mesoamerican calendrical practice, in which months were joined to form six-month periods. Moreover, the Nephites' two-part year may reflect their attempt to maintain a sense of calendrical continuity with the Israelite spring- and autumn-oriented lunar calendars described in the Hebrew scriptures and discussed earlier.

When Lehi Left Jerusalem

Admittedly, the proposal that Lehi and his descendants used a strict twelve-moon calendar has been largely constructed from inferences and suggestions in the Book of Mormon. The text does not expressly describe *any* calendar, but the record keepers clearly used some kind of calendar. Careful review of the passages bearing on the possible choices for a Nephite calendar indicates that a strictly lunar calendar is the most likely candidate for measuring the 600-year period from Lehi's escape from Jerusalem to his descendants' observation in Mesoamerica of the signs of Jesus' birth.

One last set of scriptures may provide additional support for the validity of this lunar calendar proposal. If we assume, as suggested earlier, that Jesus was born in the spring of 5 B.C. and we measure time in reverse for 600 strict lunar years, or 7200 moons, we are required to place Lehi's escape from Jerusalem between the spring of 588 B.C. and that of 587 B.C. This placement is consistent with the two passages in the Book of Mormon (1 Nephi 7:14 and 2 Nephi 25:10) that help us pinpoint a narrow time period when Lehi left Jerusalem.

The Argument in the Desert

After Lehi's escape into the wilderness, he twice sent his sons back to Jerusalem from their base camp near the Red Sea. On their first return trip, they eventually obtained the Hebrew scriptures engraved on brass plates (see 1 Nephi 3–4). Lehi's sons were able to enter the city during the day, and one night Nephi crept into the city and later returned to his brothers, who were waiting outside the city walls. The reason for the second return trip was to persuade Ishmael's family to join Lehi in the wilderness (see 1 Nephi 7). The Lord softened the hearts of Ishmael's family, and soon they were on their way to meet with Lehi near the Red Sea. Thus, at the time Lehi's sons obtained the brass plates, travel could be undertaken without particular hindrance from the Red Sea to Jerusalem and into the city itself. A bit later, when Ishmael's family was persuaded to leave the land,[4] travel was still possible between the kingdom of Judah and the Red Sea.

Before Lehi's sons and Ishmael's family joined Lehi near the Red Sea, Lehi's two eldest sons, two of Ishmael's daughters, and Ishmael's sons and their families revolted (see 1 Nephi 7:6–21). Nephi sought to convince them that there was no future for them in the land of Jerusalem, which would be destroyed as the prophets had foretold. If Nephi's brothers and their friends returned to the city, they would perish. As part of his argument, Nephi exclaimed:

> For behold, the Spirit of the Lord ceaseth soon to strive with them [the Jews in Jerusalem]; for behold, they have rejected the prophets, *and Jeremiah have they cast into prison.* And they have sought to take away the life of my father, insomuch that they have driven him out of the land. (1 Nephi 7:14)

This passage presents important evidence for dating the time of Lehi's escape from Jerusalem. Nephi connects the actions taken against Jeremiah and the other prophets with the threats on Lehi's life. This was not a pleasant discussion between brothers, but an intense argument involving life-and-death issues. The contention became so vicious that Nephi's brothers overpowered and bound him, and threatened to leave him in the desert to die (see 1 Nephi 7:16–19).

Jeremiah in Prison

During the reign of Zedekiah, access to Jerusalem was interrupted only by the Babylonian siege that preceded the destruction of the city. In the autumn of 589 B.C., the Babylonian army invaded Judah to punish Zedekiah for his revolt and alliance with Egypt. The Babylonians systematically destroyed the fortified cities of Judea until Jerusalem was surrounded. The siege of Jerusalem itself began in January 588 B.C., on the tenth day of the tenth month of Zedekiah's ninth regnal year (see 2 Kings 25:1; Jeremiah 39:1; 52:4; Ezekiel 24:1).

From the beginning of Zedekiah's rebellion, the Jews knew they would need military support from the Egyptians. Ezekiel 17:15 reports that Zedekiah's rebellion consisted of sending "ambassadors into Egypt, that they might give him horses and much people." Judah's preparation of its military force was still inadequate when the Babylonians attacked in 589 B.C. As the Babylonian encirclement of Jerusalem increased, Zedekiah sent an envoy to obtain immediate help from the Egyptians. Egypt responded with its military might.

As the army of Egypt approached Judah, the Babylonians temporarily withdrew from laying siege to Jerusalem and marched to meet their new foes. This allowed Jerusalem to open its gates for a short period and add to its siege provisions. Jeremiah tried to leave the city at that time, but at one of the city gates he was seized and charged with desertion. He denied the charge but was quickly brought before the princes, who beat him and placed him in a cistern to die. Through the pleadings of one of Zedekiah's servants, Jeremiah was saved from the cistern, though he remained in prison until the city was finally sacked by the Babylonians (see Jeremiah 38–39). Jeremiah 37:4 records that before the Egyptians marched to attack the Babylonians, "Jeremiah came in and went out among the people: for they had not put him in prison." Thus the knowledge Lehi's sons had concerning Jeremiah's imprisonment places the journey of Ishmael's family to join Lehi after the time when the Egyptian army was approaching the land of Judah.

The period when the Babylonian siege was lifted is estimated from dates given by Ezekiel. Some three months after warning that the Egyptian army would be destroyed, Ezekiel wrote of a partial defeat of the Egyptians (see Ezekiel 29:1–16; 30:20–26). After another two months, he described their convincing defeat (see Ezekiel 31:1–18). According to one theory, Ezekiel heard the news in Babylonia after the events occurred and then wrote his oracles against the Egyptians. If the dates given by Ezekiel refer to when he heard the news and wrote the oracles, and if there was a time lag of one to four months between the time of the events and when the news reached Ezekiel, the five-month period when the siege was lifted would fall somewhere between about August 588 B.C. and May 587 B.C. According to a second theory, each of Ezekiel's dates refers to the time of the recorded event. If this theory is correct, then the siege of Jerusalem was lifted between early January and mid-June 587 B.C. No matter which theory is chosen, these dates are consistent with the placement of Lehi's escape from Jerusalem between the spring of 588 B.C. and that of 587 B.C., in accordance with the use of a twelve-moon calendar.

We do not need to assume that Lehi's sons had to enter the city of Jerusalem to learn of Jeremiah's imprisonment. Ishmael's family could have told them the news at their home in the land of Jerusalem. However, if Lehi's departure from Jerusalem occurred after Jeremiah's life was threatened, Lehi's family may have had direct knowledge that the prophet had been put in prison.

Immediate Destruction

That Lehi escaped Jerusalem during the lifting of the Babylonian siege may be inferred from his sons' knowledge of Jeremiah's imprisonment and the associated dates. This idea is also supported by the Lord's commendation of Lehi for his faithful service that apparently extended to the very last days of the kingdom of Judah (see 1 Nephi 2:1). However, stronger support comes from Nephi's explicit statement that his father's departure from Jerusalem occurred very near the end of the city's existence.

> And as one generation hath been destroyed among the Jews because of iniquity, even so have they been destroyed from generation to generation according to their iniquities; and never hath any of them been destroyed save it were foretold them by the prophets of the Lord.
>
> Wherefore, it hath been told them concerning the destruction which should come upon them, *immediately after my father left Jerusalem;* nevertheless, they hardened their hearts; and according to my prophecy they have been destroyed, save it be those which are carried away captive into Babylon. (2 Nephi 25:9–10)

The destruction of the city began soon after the Babylonian army returned to Jerusalem after defeating the Egyptians. This appears to have occurred in June 587 B.C. at the latest. The siege was applied until the city's provisions were exhausted. Then, with savage retaliation for Zedekiah's rebellion, the Babylonian army breached the walls of Jerusalem in July 586 B.C. The decimated city was burned about a month later.

Nephi also stated that this destruction fulfilled his own prophecy in addition to those of the other prophets (see 2 Nephi 25:10). The prophecy to which Nephi apparently referred is found in 1 Nephi 7:8–15, which begins with Nephi's rebuke of his older brothers for wanting to return to Jerusalem. Nephi not only mentioned Jeremiah's imprisonment, but he prophesied to his brothers: "Ye shall know at some future period that the word of the Lord shall be fulfilled concerning the destruction of Jerusalem; for all things which the Lord hath spoken concerning the destruction of Jerusalem must be fulfilled" (1 Nephi 7:13).

Nephi's prophecy to his rebellious brothers indicates that they probably were not aware of any Babylonian victory that might have increased the risk of returning to Jerusalem. Hence, the journey of Ishmael's family to meet Lehi near the Red Sea probably began before any news was received of an Egyptian defeat. In that case, Lehi's sons and Ishmael's family probably left the kingdom of Judah before the date given by Ezekiel for the first of the Babylonian victories over the Egyptian army, April 587 B.C. at the latest. Again, this date is consistent with the placement of Lehi's escape from Jerusalem between the spring of 588 B.C. and that of 587 B.C., immediately before the Babylonians imposed the final siege and destroyed Jerusalem.

Mormon's Introduction to 3 Nephi

When Mormon abridged the Nephite records, he divided them into various books (see, for example, his comment in Helaman 2:13–14). He gave each of these books a title and a superscription. For the book known today as Third Nephi, Mormon wrote: "The Book of Nephi, the son of Nephi, who was the son of Helaman. And Helaman was the son of Helaman, who was the son of Alma, who was the son of Alma, 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."

This text is the only place in the Book of Mormon where Lehi is said to have left Jerusalem in the first year of the Zedekiah's reign. Nephi does not record in his own writings that Lehi left Jerusalem at that time, only that the city was destroyed immediately after Lehi's departure (see 2 Nephi 25:10). According to 2 Kings 25:2 and generally accepted historical records, Jerusalem was sacked in July 586 B.C., during the eleventh year of Zedekiah's reign.

Writing more than 900 years after Lehi left Jerusalem, Mormon did not have the Jewish history and other sources available to us today that would have enabled him to know when Lehi escaped. Because the Hebrew scriptures available to Mormon ended with the commencement of Zedekiah's reign (see 1 Nephi 5:12), his comment seems to have been based on his assumption that Lehi escaped from Jerusalem in the same year that the prophets began calling on the people of Jerusalem to repent (see 1 Nephi 1:4). Mormon's dating of Lehi's departure appears to be one of those inaccuracies that Mormon's son, Moroni, stated we might find in the Book of Mormon: "And now, if there are faults they are the mistakes of men; wherefore, condemn not the things of God, that ye may be found spotless at the judgment-seat of Christ" (preface to the Book of Mormon).

Assessing the Evidence

This article began with the hypothesis that the Nephite record keepers used a simple lunar calendar to measure the 600 years preceding the Lord's birth and nine additional years—an era they defined in terms of Lehi's departure from Jerusalem. Evidence gleaned from the Book of Mormon was presented in support of the idea that the Nephite calendar comprised twelve lunar months numbered from one through twelve. It was noted that this calendar provides a solution to the apparent chronological problem in Lehi's 600-year prophecy. This solution was shown to be consistent with Nephi's own description of the time when Lehi left Jerusalem.

The evidence for the lunar calendar hypothesis is inferential. For the simple reason that the Book of Mormon writers did not describe in their record how they measured time, any calendar proposed to be a Nephite time-measuring tool must be based on inferences drawn from the text. Although the Book of Mormon contains passages that suggest other calendars, the weight of evidence favors the idea that a simple twelve-moon calendar was the principal tool used for measuring the 609-year period following Lehi's departure from Jerusalem. □

[NOTES ON PAGE 71]

sixth Dynasty of Egypt.

2. This is why a leap day is added every fourth year to our modern calendar.
3. Amaleki's use of the term *moons* in Omni 1:21 suggests that even four centuries after the time of Lehi, his descendants were still familiar with a simple lunar calendar based on direct observation of the phases of the moon.
4. 1 Nephi 7:2 and the surrounding context (which does not mention that Nephi and his brothers entered the city on their second return trip to the "land of Jerusalem") suggest that Ishmael and his family probably lived outside the city.

The Jewish/Nephite Lunar Calendar
Randall P. Spackman

1. See, for example, 2 Kings 24:17–25:21. Other sources include the Neo-Babylonian chronicles, Ptolemy's *Almagest,* and records from the Twenty-