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Chronology of calendar: Human evolution journey

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Abstract

Numerology is a divine science that helps in knowing about the future of a person. The assessment of numerology is based on the date of birth which is in turn based on calendars. Astronomy plays a vital role in many early civilizations, and one of its most important applications is timekeeping. Over centuries of human history, many calendars have been used worldwide to order time systematically. An essential part of timekeeping is calendars, as these are essential in religious practice, agriculture, and governance. To produce a calendar, it is necessary to determine the length of a solar year and a lunar month, known as a lunisolar calendar. In earlier times, calendars were produced by observing the different phases of the moon and sun and their relationship with fixed constellations in the sky. Also, equinoxes and solstices were considered. Today, the Western Gregorian calendar is a global standard for business and diplomatic purposes. People of various religions, nations, and societies still employ ancient calendars to mark the days of religious importance. Knowing the history of calendars helps visualize the progression of events within a given historical narrative. In other words, it helps figure out which calendar came first and what impact it had on the people who followed it. It can also be linked with current practices in numerology and astrology.

Keywords: history of calendars, Julian calendar, Gregorian calendar, oldest calendar, modern calendar, numerology, date of birth

Introduction

The numerology, the mystic science based on study of name and date is heavily dependent on calendar. The study of numerology is dependent on accuracy of calendar system. A calendar is a system that divides time over an extended period such as days, months, or years. It helps us arrange these parts in a specific order. A calendar helps regulate civil life, religious observances and can be used for scientific and historical purposes.

The word *calendar* is the derivative of the Latin word *calendarium*, *calendae* (or *kalendae*). It means “interest register” or “account book”, which in the Roman republican calendar represents the first day of the month. It is the day on which future market days, feasts, and other occasions were proclaimed.

For the study of chronology, it is essential to study how the calendar developed. It will give a clear idea of when historical events were dated and how a civilisation can measure time for survival activities such as agriculture, business, religious practices, organising routine life, and mapping the occurrences of different seasons. The history of calendars has ancient roots since people have been creating and employing unique methods to keep track of days and larger divisions of time.

Archaeologists have dated the attempts of people trying to keep track of time as ancient as the Neolithic period. The most common methods employed were measuring the passing of days, the moon, and the movement of the sun. The first attested and formalised calendars date back to the Bronze Age, which was associated with the development of writing in the Near East. The Sumerian calendar was the earliest, followed by the Egyptian, Assyrian and Elamite calendars.

The initial practical calendar to evolve was the Egyptian which the Romans later developed into the Julian calendar. The new Julian calendar served Western Europe for over 1500 years. Next, the Gregorian calendar was introduced, which was a further improvement and has been almost universally adopted. It capably involves the dating of religious festivals based on the phases of the Moon and the proceedings determined by the movement of the sun. This calendar system is complex since the period of the moon’s phases, and the sun’s

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motion is incompatible. However, by embracing the regular cycles of days and more straightforward rules for their application, the calendar offers a year with an error of less than half a minute.

The Sun, Moon and Human Understanding

Sun has always been a fixed constant and an epitome of understanding various concepts of the evolution of life on earth and the solar system. Its appearance in a repetitive pattern has helped people year after year to improvise on theories meant to understand life. It also has had a crucial role in formulating the calendar.

At the same time, every month, the shape of the Moon changes. It starts as a crescent and then shrinks, taking about thirty sunsets and sunrises. The stars would move across the sky, returning to their original positions every 365 days.

Humans have keenly noticed the night patterns since primaevial times. Furthermore, they have tried to predict and measure those movements too. By counting the days and following the pattern of the Moon, they could predict changes that would take place in the weather.

These people could predict the onset of winter by noticing the length of the days and nights. They could tell when to plant crops, when to look for particular animals, when their animals would give birth, and when to show gratitude to god.

Historic Structures That Calculate Time without the Use of a Clock

Numerous prehistoric structures have been proposed to keep track of time, including the megalithic structures and reconstructed arrangements during the Neolithic period.

Wurdi Youang stone arrangement in Victoria, Australia, dates back to more than 11,000 years to 20,000 years ^[1]. Local archaeologists and media have pronounced a ceramic artefact from Bulgaria, the Slatino furnace model, the oldest known calendar representation, a claim not endorsed in mainstream views ^[2].

In Warren Field, Aberdeenshire, Scotland, a mesolithic arrangement of twelve pits and an arc are present, which roughly dates about 10,000 years ago, appears to be associated with the lunar calendar. In 2013, it was dubbed as "world's oldest known calendar" ^[3]. Stonehenge (discovered in 1978) is an ancient stone circle in the south of England, aligning with the solstices.

The Oldest European calendar is near Vukovar in modern-day Croatia. It is a ceramic vessel bearing inscribed ideograms of celestial objects.

In India, years later, kings have also been known to construct scientifically-proven megastructures to calculate the exact time that is even valid today. Such an example would be the Jantar Mantar in New Delhi, Jaipur, Ujjain, Varanasi and Mathura, India. Dating back to 1724, Maharaja Jai Singh II of Jaipur completed the construction of the largest sundials without any use of machinery that calculates time accurately. He was a scholar fascinated by the movement of celestial bodies ^[4].

The Oldest Calendar in the World

The calendar system introduced by the Sumerians is believed to be the first of the calendars. However, some historians believe that the Europeans had a system that could be even older. A team of researchers found 12 large pits in Aberdeenshire, Scotland. The placement of these pits

mirrored the moon's phases; they are estimated to be about 10,000 years old and maybe the oldest "calendars" globally. This discovery proves that the history of calendars is constantly changing.

Who Invented the Modern Calendar?

The modern calendar is a mix of astronomy, religion, and politics from different ancient civilisations. The former calendars introduced by the countries Mesopotamia, Babylonia, Greece, Egypt, and Rome all contributed in some way or the other to the calendar in use today.

Today, most countries follow the Gregorian calendar invented by Pope Gregory XIII in 1582. It was seen as a way to propagate Catholicism throughout Europe. Before then, people worshipped different gods and goddesses. Regardless, we must know that the Gregorian calendar is not 100% accurate. It is based on Earth's revolution around the sun, which may not always be exactly 365 days. Experts believe there maybe 366 days in the year 4909.

The Sumerian Calendar (Lunisolar Calendar)

The lunisolar calendar was first used by the Sumerians and later by the Babylonians. The Sumerians, by the 21st century B.C., discovered that the solar year consisted of 360 days. They summed up about 12 lunar cycles (approximately 354 days), rounded up to 360, forming about 12 months of 30 days each.

The Sumerians measured time differently than any other lunar calendar. The Sumerian calculations were based on the numbers 6, 12 and 60 and are still used today. Our current year has 12 months with the day in many countries structured as 12 hours am and 12 hours pm. Each hour equals 60 minutes, and every minute has 60 seconds.

The Sumerian astronomers introduced an additional month every four years to harmonise these lunar months with the solar year, the equinoxes (the days and nights are equal) and the solstices (the longest days and shortest days of the year). This modification is currently called a leap year.

The Sumerians have also recorded 'day qualities'. Sumerian and Assyrian scribes compiled a collection of stone tables and oracles called *Enuma Anu Enlil*. The tables depict information about lunar eclipses, weather events, the movement of the stars, planets and constellations. The interpretation of these cosmic events and their importance for life on earth was an essential part of *Enuma Anu Enlil*. These observations were related to the association of stars and the sun with moon cycles.

This information led to the invention of the popular Babylonian calendars. It further shed light on the foundation of houses, star signs and the creation of the circle of animals or Zodiac and formed the basic principles of Western Astrology. The Sumerian calendar was transformed into a suitable lunisolar calendar in 499 B.C. Eventually, it was recognised that 19 solar years equal 235 lunations or moon cycles. Hence, a proper recurrence of the connection between the solar and lunar cycle was established by the Greek Astronomer, Methon of Athens, in 432 B.C.

The Sumerian calendar month began at sunset with the first glimpse of the new crescent moon or the Waxing Moon and ended with the last glance of the descending crescent or the Waning Moon. A period of 'disappeared moon' (New Moon) followed when the moon was absent from the sky. The moon's opposite position - the Full Moon in the lunar cycle, brought a time of gatherings and celebrations.

Even today, the roots of the Sumerian calendar exist in many religious calendar systems.

The Egyptian Calendar

In 2510 B.C., the Egyptians created their own calendar. Their calendar had 12 months of 30 days each, for 360 days per year. They used the moon's cycles and phases along with a star called Sirius to keep track of time. The Egyptian calendar was identical to the Mesopotamian one, except they added five extra days at the end of each year. These five days had become a festival, and it was considered unlucky to work during these days.

The Roman Calendar

King Romulus introduced the first Roman calendar in 738 B.C. Starting in March, this calendar had ten months, with the last month being December. Romans considered even numbers lucky, and thus, they turned around each month to have an even number of days.

The Chinese Lunar Calendar ^[5-9]

The Chinese zodiac included twelve animals that first appeared in the Zhan Guo period in the 5th century B.C. The lunar calendar formed the sequence of the animals of the Chinese zodiac. According to myths, it is said that in 2637 B.C. Emperor Huangdi, the first Chinese emperor, invented the Chinese Lunar Calendar, which follows the moon cycles. The zodiac was used to count years, months, days, and hours in the calendar based on Chinese astrology. It was formed from two components:

- a. Celestial Stem
- b. Terrestrial Branch

Each of the 12 animals represents a year in a 12-year cycle, a day in a 12-day cycle and every 2 hours in a 24-hour day. These were used to name each year along with the animal signs, but now primarily dates are used.

The Mayan Calendar

The Mayan calendar was popularly used in the pre-Columbian Mesoamerica and many modern communities in the Guatemalan highlands¹⁰, Veracruz, Oaxaca and Chiapas, Mexico ^[11].

The use of the Mayan calendar dates back to the 5th century B.C. and shares similar aspects with the Zapotec, Olmec, Mixtec and Aztec calendars.

The Greek Calendar

The Greeks formulated five different calendars used in different regions for specific purposes. From the 3rd Century BCE forward, the Greeks could consult any five separate calendars: Olympiad, Seasonal, Civil, Conciliar, and Metonic for any special events. Athenian or Greek calendars used lunar cycles and solar events such as solstices and equinoxes and certain stars and constellations to affix dates. Their calendars usually ran from midsummer to midsummer, while the days from one sunrise to the next. Every Greek calendar had its own determinates and methodologies. All calendars began on different dates such as:

1. Delphi's years - at the first New Moon after the Summer Solstice
2. Boeotia and Delos - after Winter Solstice
3. Chios - started with the Vernal Equinox

4. Sparta, Rhodes, Crete, and Miletos - began with Autumn Equinox.

Each Lunar (synodic) month contains about 29.53 days or one lunar cycle in Greek calendars. Hence, a twelve-month lunar year has 354.36 days. A solar astronomical year counts about 365.24 days.

Athenians understood time very early with the advent of farming that a lunar year fell approximately 11 days short of a solar year. Any lunar calendar would thus gain just about a single synodic month in 3 years.

Despite the flaws, Athenians continued to use their lunar calendars since most of their annual festivals had become fixed by the moon's phases. After that began the Athenian practice of ongoing periodical intercalations (meaning - deleting/adding days and months) formulated to align the lunar and solar cycles. Scholars, therefore, denote Athenian Calendars as "lunisolar."

Olympiad Calendar

Ancient Greeks used the Olympiad calendar for historical reasons. This calendar counts only years.

The Olympiad Calendar utilised the quadrennial athletic contests held at the Peloponnesian polis Olympia to yield an acceptable count of the years that passed. One Olympiad was constituted by the four years between those successive games. Hence, the Ancient Greeks numbered their years by noting the celebrated Olympic Games' succession and then calculating the individual years until the next celebration.

Olympia initially held these contests during the summer of 776 BCE, as determined by Hippias. Since Greek years ran from one summer to another, history specialists portray the First Olympiad's first year (i.e., Ol. 1.1) as 776/5 BCE. Along these lines ^[12]:

- Ol. 1.2 = 775/4 B.C.E
- Ol. 1.3 = 774/3 B.C.E
- Ol. 1.4 = 773/2 B.C.E
- Ol. 2.1 = 772/1 B.C.E

The exact month and day each year began with, and the nominal starting point for the Olympiad remains unclear.

Parapegma (Seasonal) Calendar

Parapegmata recorded seasonally recurring weather changes related to the first and last appearance of stars, equinoxes and solstices, and phases of the moon. It is also referred to as the Seasonal Calendar or Greek Almanac. This calendar was formed by noting the specific visible astronomical phenomena within a given year. Thus, in the modern sense, it is considered inaccurate.

The main aim of introducing this calendar was to mark the beginning of weather changes to regulate agriculture, warfare and navigation. Some *parapegmata* incorporated observations on periodic phenomena like eclipses, bird migrations, or tracking the sun's path through zodiacal signs. Some aligned the lunar cycles with solar cycles through intercalations of alternating 12 and 13 synodic months in a 19-year cycle. An example of a *parapegma* would be ^[12]:

- We begin with the summer solstice.
- The sun passes over Cancer in 31 days.
- Day 1: Cancer begins to rise - a sign of weather changing
- Day 11: Orion rising as a whole in the morning.
- Day 16: Corona starts to set in the morning.

- Day 23: Sirius first emerges in Egypt
- Day 25: Sirius ascends in the morning
- Day 27: End of Cancer rising, and the Etesian winds blow for the next 53 days.
- Day 28: Aquila sets in the morning. There will be a storm at sea.
- Day 30: Leo begins to rise. The South wind blows next.

The Hebrew Calendar

In 70 B.C., the Hebrew calendar was developed in Israel. This calendar is lunisolar and requires complex mathematics. Today, it is still used for some Jewish religious observations.

The Julian Calendar

In 45 B.C.E., Julius Caesar introduced the Julian calendar, also called the Old Style calendar, to reform the Roman republican calendar. Before it was introduced, the priests in the Roman Empire added days and even months to keep the favoured politicians in office. They hopelessly exploited the calendar for political ends. To put an end to this chaos, Julian Caesar invented the Julian calendar. It was commonly used until the 1500s, after which the modified version - Gregorian Calendar was put to use.

By the 40s BCE, the Roman civic calendar was three months ahead of the solar calendar. As advised by the Alexandrian astronomer Sosigenes, Julian introduced the Egyptian solar calendar, considering the solar year's length to be 365 1/4 days. The year was split into 12 months, 30 or 31 days each, except February, which had 28 days in common years and 29 in every fourth year or leap year. Leap years repeated February 23 and February 29 did not exist in the Julian calendar.

Caesar added days to 46 BCE to align the civic and solar calendars to make it 445 days. Because of these misinterpretations, the calendar was not established in smooth operation until 8 CE. The tropical year in the Julian calendar is approximated as 365 1/4 days which equals 365.25 days giving an error of 1 day in approximately 128 years. The approximation of 365 1/4 is achieved by having one leap year every four years.

The Ethiopian Calendar

Like the Julian calendar, the Ethiopian calendar is the principal calendar used in Ethiopia. It is also considered the official calendar in Orthodox Tewahido Church in Ethiopia and Eritrea. It is based on Earth's time to complete one orbit around the sun, also termed as one tropical year or one solar year. This calendar is solar.

The astronomical calculations behind today's Gregorian calendar and former Julian calendar form the basis of the Ethiopian calendar. It is closely related to the Coptic and Julian calendars, but it is not identical.

A year in the Ethiopian calendar is about 13 months long, with 12 months of 30 days each. The last month of the year has five days in a common year and six days during a leap year. Similar to the Julian calendar, a leap year in the Ethiopian calendar occurs every four years without any exceptions.

The focal point of difference lies in the calculation of the date of the birth of Jesus Christ, which makes the Ethiopian calendar 7 to 8 years behind the latest Gregorian calendar. Most countries celebrate Christmas on December 25th; Ethiopians and Orthodox Christian churches worldwide

observe this festival on January 7th. Many Orthodox churches use the revised Julian calendar even today.

The Islamic Calendar

The Islamic calendar plays a vital role in the Muslim world and is significantly different from today's Christian calendars. The Islamic calendar begins with the most important event in Islamic history. About 1435 years ago, on July 26th, 622 C.E., Prophet Muhammad emigrated from Makkah to Madina to set up his own social hierarchy. Till today, Muslims date all events starting from their migration. The commencement of the new Islamic year is marked by the month of Muharram. In the 638 Christian Era (CE), Hazrat Umar bin Al Khattab, the second Caliph of Islam and one of the closest of Prophet Muhammad, introduced the Islamic calendar. The calendar was introduced in an effort to rationalise the multiple, conflicting dating systems used during that time.

The western convention designating Islamic dates is denoted by AH, which stands for the Latin Anno Hegirae, or 'Year of the Hijrah'. Corresponding to the date of the Hijra, AH represents the date July 15, 622 C.E.

For Muslims, the Islamic calendar is not only of sentimental significance of time estimation and keeping track of important religious events, e.g. fasting and Hajj, but also has a much deeper spiritual and historical importance. Muslims use the Hijra calendar since all the historical events in the history of Islam that act as a reminder of the sacrifices made in the name of religion have not been mentioned in the Gregorian calendar.

Unlike the Christian calendar (based on solar cycles), the Islamic Calendar is purely lunar. The Islamic calendar is about 11 days shorter than the Gregorian calendar because the Islamic year is independent of the seasons or weather conditions.

According to our Islamic calendar, the next day commences from the time of Maghrib or sunset of each day, whereas for solar calendars, a new day starts at 12:00 am each night. This is one of the significant differences between the calendars. The start of each Hijra month is marked by the physical sighting of the crescent moon at a given point on the globe.

Moreover, Muharram, Rajab, Dhul-Qadah, and Dhul-Hijjah are considered sacred months. In traditional Arab culture, these four months were known as the "forbidden months: where fighting was prohibited, and battles were suspended to allow trade and peace.

The Islamic calendar is considered the official calendar in various Muslim countries worldwide, such as Saudi Arabia. Other Muslim countries utilise the Gregorian calendar for civic purposes and turn to the Islamic calendar for matters pertaining to religion. Overall, the Islamic calendar holds immense importance in every Muslim's life.

Iranian Calendar (Jalali Calendar)

The Iranian calendar is a solar calendar used today in Afghanistan and Iran. It is also known as the Persian calendar or the Jalaali Calendar. It has been formulated based on observing the sun, moon and stars. Each year begins on the vernal equinox as precisely determined by astronomical observations from Tehran.

The earliest evidence of the Iranian calendar is from the 2nd millennium B.C. and may even predate the ingress of Prophet Zoroaster^[13].

The Achaemenids, which is a royal dynasty of the 5th century B.C., gave rise to Zoroastrianism. The very first wholly preserved calendar belongs to the Achaemenid dynasty. They were among the earliest cultures to use and favour solar calendars over lunar and lunisolar calendars. The sun is an essentially religious and divine symbol in Iranian culture ^[14].

The Aztec Calendar

Before the Europeans took over central Mexico, the Aztec Empire thrived there. The Aztecs, along with other Mesoamerican people, had their calendar system to keep track of time and mark dates of religious significance ^[15]. They had two main types of calendars, namely:

1. Xiuhpōhualli
2. Tōnalpōhualli

The dating system of the Aztec calendar was used in the Valley of Mexico before the Aztec Empire was destroyed. This calendar was based on the Mayan calendar and consisted of a ritual cycle - 260 days and a civil cycle - 365 days.

The ritual cycle, also known as *tonalpohualli*, consisted of two smaller cycles:

1. An ordered sequence of 20 named days
2. A series of days that were numbered from 1 to 13.

The 13-day cycle was particularly significant for religious observance. Each of the 20 cycles within the ritual year was related to a unique deity. In the same way, every named day was linked with a different deity. Each civil year was divided into 18 months of 20 days each, plus an additional five days called *nemontemi* and considered very unlucky. As in the Mayan calendar, the Aztec ritual and civil cycles returned to the same positions relative to each other every 52 years. This event was celebrated as the binding up of the years or the New Fire Ceremony. In preparation, all sacred and domestic fires were allowed to burn out. At the ceremony's climax, priests ignited a new holy fire on the breast of a sacrificial victim, from which the people rekindled their hearth fires and began feasting.

A circular calendar stone measuring about 12 feet (3.7 metres) in diameter and weighing some 25 tons was uncovered in Mexico City in 1790 and is currently on display in the National Museum of Anthropology in Mexico City. The face of the Aztec sun god, Tonatiuh, appears at the centre of the stone, surrounded by four square panels honouring previous incarnations of the deity that represent the four earlier ages of the world. Circumscribing these are signs that represent the 20 days of the Aztec month.

The Gregorian Calendar

The Gregorian calendar is also called the New Style calendar. It follows the solar dating system. Pope Gregory XIII proclaimed the Gregorian calendar in 1582 as a reformed version of the Julian calendar.

In the year of 1572, Ugo Boncompagni became Pope Gregory XIII. During this time, they faced a crisis of the calendar. Easter, which is celebrated on the day of the vernal equinox (the first day of the Spring season), was falling too early in the month of March, which led to disorder and chaos in society. The calendrical confusion over the 1600-year-old Julian calendar was thought to be the root of the problem. Pope Gregory was thus determined to

find a solution to this issue, and eventually, with the help of astronomers, he formulated the world-famous Gregorian calendar.

Today, it is considered that the tropical year is 365 days, 5 hours, 48 minutes, and 46 seconds, but the Julian calendar is lagging by 11 minutes and 14 seconds. This added up to skipping an entire day every 128 years. To fix this issue, Pope Gregory XIII took help from astronomers to develop a perfect calendar.

The New Leap Year Formula

The Gregorian calendar was initially adopted in Italy, Poland, Portugal, and Spain in 1582 and included the following changes:

- The new formula for calculating leap years is:
 1. The year should be evenly divisible by 4
 2. It is not a leap year if a year can be evenly divided by 100. Except if:
 3. The year should also be evenly divisible by 400. Only then it is a leap year.
- Ten days were dropped in October 1582
- New rules for calculating Easter dates

The Hindu Calendar ^[16]

Various scholars developed the Hindu calendar on the Indian subcontinent in ancient times. The earliest mentions of Hindu time calculations can be found in the *Vedas*, the sacred texts of Hinduism, dating back to around 1200 BCE. The Hindu calendar is also called Panchanga. It is an ancient system used to determine the dates of different Hindu festivals. It is a lunisolar calendar with regional variations.

The Hindu calendar system is intricate and complex. The Hindu calendar offers multi-dimensional methods of structuring time, combines information about lunar and solar days and months, the movement of the Sun and the Moon in relation to stellar constellations, and other astronomically defined time spans. It is built around two basic units of time:

1. The solar days
2. The solar years

The Hindu calendar uses a lunisolar system. All the 12 lunar months comprise the time it takes the Moon to orbit the Earth with respect to the Sun. Each lunar month is divided into 30 days and is further grouped into two fortnights of 15 days each:

1. A "bright" fortnight that consists of the waxing phases of the Moon
2. A "dark" fortnight that has a waning phase of the Moon.

In most parts of Northern India, the month starts on the Full Moon, while the South Indians, count the days from one new Moon to the next.

12 Solar Months

Along with the lunar calendar, the Hindu calendar also tracks solar months. Like the lunar months determine Hindu festivals, the solar months serve as a basis for civil purposes.

In the majority of the regions, the new year begins on the New Moon before the Sun embarks the zodiac sign of Aries or Mesa. This day occurs around the day of March equinox and denotes the commencement of the spring season in the

Northern Hemisphere.

Omitted and Added Months

A leap month in the Hindu calendar is added every three years since the 12 lunar months form 354.367 days. This synchronises the calendar with the time it takes the Earth to orbit the Sun with respect to fixed positions of the stars in the sky. An average sidereal year lasts approximately 365.256 days.

An intercalary month is called *Adhik Maas* or *Purushottam Maas*. It is counted when a lunar month starts and ends before the Sun moves to a new zodiac sign. It seldom happens that the Sun travels across a whole zodiac sign during the course of a lunar month. In such cases, the month is removed from the calendar. Another month may be repeated elsewhere in the year, so the year always has 12 or 13 months.

Conclusion

The calendar has been modified a number of times to adjust to the needs of every civilisation. Primitive calendar makers have resolved the issue of measuring the annual time in a year that has an uneven number of days. We have created one universally used calendar, even as other people use different calendars for religious and cultural events.

We have figured out how to plan and describe events that we know are coming up. Moreover, we now have a way to keep our calendars to share and fill in events, reminders, etc. Nevertheless, we are not done yet. Modern companies like Google and Microsoft have formulated algorithms to provide corporates with time management platforms. However, they are a bit tricky. It is always challenging, for instance, for people to make bookings with staff at companies or healthcare centres. Finding spare time among friends trying to arrange a time to meet can be a challenge. Selling time slots in a calendar is not automatic or available on any leading digital calendar platforms.

A long journey has passed from stone circles marking the solstice to modern digital calendars. However, we are not done with calendar development yet. Coming years show promising developments for more technology and advancement in calendar science.

References

1. Hegarty, Stephanie Stargazing at an 'Aboriginal Stonehenge. BBC News, 6 October 2011. Retrieved 13 January 2019.
2. Bailey D. *Balkan Prehistory: Exclusion, Incorporation and Identity*, London: Routledge, 2000, 325.
3. Scotland lunar-calendar find sparks Stone Age rethink. Phys.org.
4. <https://whc.unesco.org/en/list/1338/>
5. The Chinese Zodiac Chinaorbit.com. 20 July 2007 <http://chinaorbit.com>
6. History, Stories and Structure of the Chinese Zodiac Asian. American Faculty and Staff Association 07/10/05 <http://spirit.dos.uci.edu/aafsa/?q=node/22/>
7. Zhan Guo Ce. Wikipedia. 2007. 30 Jul 2007 http://en.wikipedia.org/wiki/Zhan_Guo_Ce
8. Han Dynasty (206 B.C.-220 A.D.). Timeline of Art History. 200-2007. The Metropolitan Museum of Art, 30 Jul 2007 http://www.metmuseum.org/toah/hd/hand/hd_hand.htm
9. Qin Shi Huangdi, First Chinese Emperor.

EnchantedLearning.com. 200-2007. 30 Jul 2007. <http://www.enchantedlearning.com/subjects/greatwall/Emperor.html>

10. Tedlock, Barbara, Time and the Highland Maya Revised edition (1992 Page 1) Scores of indigenous Guatemalan communities, principally those speaking the Mayan languages known as Ixil, Mam, Pokomchí and Quiché, keep the 260-day cycle and (in many cases) the ancient solar cycle as well⁷.
11. Miles, Susanna W. An Analysis of the Modern Middle American Calendars: A Study in Conservation. In *Acculturation in the Americas*. Edited by Sol Tax, p. 273. Chicago: University of Chicago Press, 1952.
12. The Athenian Calendar - World History Encyclopedia. <https://www.worldhistory.org/article/833/the-athenian-calendar/>
13. Iranian calendars - Wikipedia. https://en.wikipedia.org/wiki/Iranian_calendars
14. Panaino, 1990
15. Aztec Calendars - History Crunch - History Articles <https://www.historycrunch.com/aztec-calendars.html>
16. <https://www.timeanddate.com/calendar/hindu-calendar.html#:~:text=The%20Hindu%20calendar%20was%20developed,back%20to%20around%201200%20BCE.>