The Evolution of the Roman Calendar and the Cultural Legacy of the Julian Calendar

FIELD, Mark E.

(出版者 / Publisher)
法政大学言語・文化センター
(雑誌名 / Journal or Publication Title)
Journal for Research in Languages and Cultures / 言語と文化
(巻 / Volume)
20
(開始ページ / Start Page)
111
(終了ページ / End Page)
151
(発行年 / Year)
2023-01-27
(URL)
https://doi.org/10.15002/00026726

The Evolution of the Roman Calendar and the Cultural Legacy of the Julian Calendar

ローマ暦の進化とユリウス暦の文化遺産

Mark E. Field

If hunting gave us mastery over space,
farming forced us to master time,
to synchronize the movements of the stars
and the sun with the agricultural cycle.[1]

But the gods, taking pity on mankind, born to work, laid down the succession of recurring Feasts to restore them from their fatigue, and gave them the Muses, and Apollo their leader, and Dionysus, as companions in their Feasts, so that nourishing themselves in festive companionship with the gods, they should again stand upright and erect.[2]

I. Introduction

Modern humans are, in many ways, obsessed with the passing of time, as is evident from the many English metaphors, idioms, collocations, and aphorisms using the simple four-letter word "time." Benjamin Franklin supposedly coined the metaphor: "Time is Money,"[3] and it would be logical to believe that our ability to 'spend time' and 'save time' are natural consequences of Franklin's well-known aphorism, although the causality could be the opposite and perhaps the collocations gave rise to the aphorism. The origin of the expression, "Time flies" is supposedly over two thousand years old and a paraphrase of a line attributed to the Roman poet, Virgil, "*fugit inreparabile tempus*" possible English "Irreparable Time has flown away."[4] In the modern world, the speed of communication and transportation

has progressed and the measurement of smaller and smaller units of time has followed suit. Nonetheless, it seems we are always "losing time" or "running out time" as the race for speed has continued to accelerate. The Rolling Stones' song "Time Waits for No one"[5] is a paraphrase of the earlier aphorism, "Time and tide wait for no man," supposedly inspired by the actions of King Canute of England, Denmark, and Norway.[6] Both time's flight and its inability to wait were immortalized into Middle English during the 14th century Geoffrey Chaucer's *Canterbury Tales*, where the clerk tells us: "For thogh we slepe, or wake, or rome, or ryde, Ay fleeth the tyme; it nyl no man abyde." Paraphrased into modern English as: "For though we sleep, or wake, or roam, or ride, Ever flee the time; it will wait for no man."[7]

Our human inclination to symbolize and personify the abstract concept of time has truly deep roots, but our ancient ancestors' experience of time would have been much more empirical, or experiential in the sense of lived through. The representation of 'day' as 'the sun'「日」and 'month' as 'the moon'「月」in Asian languages such as Chinese and Japanese are just historical linguistic remnants of how all traditional societies began to measure time. The movement and tracking of heavenly bodies, sun, moon, planets, and stars along with weather cycles we now call seasons, provided early humans with the first visual resources to measure time. Moreover, it was the development of systems of measuring and tracking the movement of these heavenly bodies over longer periods of time that gave rise to what we now call calendars. There doesn't seem to be any expressions to memorialize calendars like the hundreds of metaphors, idioms, and aphorisms related to the abstract concept of time. Nonetheless, the astronomical bodies used to measure the passing of time were surround by myths, and the planets and stars were once personified as gods in many ancient societies. Many ancient religious practices were developed upon the movement of those bodies, and it was once thought astrology, the tracking of the movement of those heavenly bodies, had an impact on people's fortunes and daily lives. In fact, many people still do follow their horoscopes based on these ancient astrological concepts.

Calendars are the organizing tools of societies and the cultural activities their members engage in. As Stern pointed out, calendars were not just "*used* by society and culture, but rather *constitutive* of them."[8] In the early stages of development, 'all calendars are local,' to paraphrase the famous expression on politics. This is quite rational and perhaps interconnected since the word politics is rooted in the concept of the *polis* or 'city', and all early cities had their own patron gods or goddesses. Moreover, the feasts and festivals that were the focus of urban communities' celebrations and worship of the gods that were supposed to protect their cities would have been regulated by the calendars managed by their local political and/or religious leaders.

As political units became larger and expanded beyond the boundaries of individual cities, in a few cases the purpose of some calendars expanded with greater administrative necessities. Cultural contact would spread not only cultural and religious ideas, but also astronomical knowledge and expertise, leading in some cases to hybridization of calendars. Nonetheless, the resilience of local cultures and local calendars based on local religious customs are evident to this very day.

This paper will explore the history behind and the development of the Roman calendar, the predecessor to the Julian Calendar of the Roman Empire, which was put into use before the birth of Jesus of Nazareth. The Julian Calendar became the standard calendar in the early Roman Empire when Rome still practiced its traditional polytheistic religions. It continued to be used through the early Christian era, and was the standard calendar of Europe in general for over 1500 years until the Julian Calendar began to be superseded by the Gregorian Calendar, named for Pope Gregory XIII in AD1582.[9] In this paper, we will first examine the basic problems of the incommensurate natural cycles of the season, sun, and moon.[10] Second, we will review how some ancient societies developed their calendars and how they managed those cyclical differences. After that, we will investigate the early formation of the Calendars of Rome and its relationship to traditional Roman religious cults and the festivals of the Roman Republic. Next, we will

overview the history of Rome leading up to the reforms of the Julian Calendar and examine the historical context of the calendar that would go forward with Rome as it was transformed form a Republic to Empire. Finally, we will look at how the Julian calendar has been use as an instrument to synchronize time in the study of historical events across the ancient world.

II. The Basic Problems of Making Reliable Calendars Using Natural Cycles

From the ancients' perspective and perhaps our own, the sun rules the day, and the moon rules the night. The sun was usually personified in the male form and the moon in the female form. In Greek and Roman mythologies, *Helios* or *Sol*, the Sun god, was a charioteer driving the sun depicted as a *quadriga*, a four-horse chariot across the sky from east to west. The four horses represented the four seasons the sun travels through. *Luna*, the Moon goddess, drove a *biga*, a two-horse chariot across the night sky, drawn by a white horse and a black horse yoked together, symbolizing the twin course of the sun and moon,[11] as well as the cycle of the moon itself.

The cycle of the moon from one new moon to the next, also known as the synodic month, is approximately 29 to 30 days. The calculated average is usually 29.53 days, or as gauged by the most modern precision clocks 29.530588 days.[12] A tropical year, defined as the period between successive vernal equinoxes,[13] is approximately 365 days. The calculated average year from the time of implementation of the Julian Calendar on January 1, 45BC has been 365.25 days.[14] However, it is believed that even *Sosigenes*, the Alexandrian astronomer that advised Julius Caesar on the reform of the Roman Calendar, was aware that the tropical year was slightly shorter.[15] The most modern precision estimate of the tropical year is 365.2417 days, which means there is no simple multiple to reconcile the approximately 12.37 synodic months in a tropical year.[16] The hours of daylight per day vary throughout the year with the change of seasons and with one's position on the Earth as well. As a result, the moon became the preferred heavenly

body to measure longer periods of time and the basis for most traditional calendars. However, a twelve-month lunar year is only about 355 days, and so 10 or 11 days shorter than the average solar year.[17] Consequently, to keep *Luna's biga* and *Sol's quadriga* together over longer periods of time and keep the moon synchronized with the seasons, most early societies had to adjust their calendars through a process of adding days or months to their typical lunar calendar year known as intercalation.[18]

III. The Major Calendars of Western Antiquity: Babylon, Egypt, and Greece

Although the Mesopotamian basin, the land between the Tigris and Euphrates rivers, is in the temperate zone of the Northern Hemisphere between 30° and 37° north, the region was not known for extreme weather changes during the times of the ancient Sumerian, Akkadian, Assyrian, and Babylonian empires. Consequently, these great agricultural civilizations only recognized two seasons: one for planting and the other for harvesting.[19] Like all ancient calendars the early Mesopotamian calendars would have started out as purely lunar calendars based on monthly observations of crescent moon signaling the beginning of a new month, but these simply lunar calendars later evolved into intercalated lunisolar calendars like the Babylonian calendar that will be overviewed here.

Another advantage of the mild climate and less extreme weather of the region was that nightly observations of the phases of the moon and the movement of planets and stars across the night sky throughout the year would have been easier to make, due to fewer completely cloudy nights. The early development of writing and numerical systems in the region also aided in the recording of astronomical observations over longer periods of time. The observation and recording of such data were the responsibility of temple scribes, who made recommendations to the king concerning crescent moon sightings and when a month started and any potential need for intercalations. Ultimately, the decision for calendar manipulations was with the kings though.[20]

The two seasons usually consisted of 6 lunar months each for a normal year of 12 lunar months. Each month was supposed to start from the first sighting of the new crescent moon. The day would start at twilight as the stars and moon became visible and was divided into 6 watches of variable length according to the season.[21] In addition to the twelve lunar months, the Babylonians tracked twelve constellations of stars across the night sky that would rise in the east as the sun set in the west. These twelve constellations would progress across the night sky until they would disappear in the west for roughly 5–6 months and then rise again in the east 5–6 month later. The Babylonians named each of these constellations, and this 12-part division of the night sky became the solar/stellar 'months' that served as the foundation for Babylonian astrology. Through contact with the Babylonian, the Greeks became familiar with these 12 constellations and solar months and translated these named stellar figures into Greek. The Greek names were subsequently translated into Latin by the Romans, and the modern names such *Ares*, the ram, *Taurus*, the bull and *Gemini*, the twins, etc., became the basis of what is commonly known as the Zodiac and the cornerstone of popular modern Astrology in many western countries.[22]

Due to the accumulated data and experience observing the celestial bodies, the ability and practice of predicting the new moon was well established by the neo-Assyrian period, the 8th to 7th centuries BC. However, such predictions were limited to astrological purposes and not used to determine the calendar month until later. There seems to have been considerable interaction between the Assyrian kings and their astrologers in various cities around their expanding empire. New months were based on reports of the new moon from across Mesopotamia, and the king's centralized control over the calendar was intended to produce a common time frame for all cities under his rule, allowing for the imperial calendar to have a unifying effect across the empire.[23]

The practice of intercalating a thirteenth month to keep the lunar calendar in sync with the seasons is believed to go back to Sumerian times. There are records from around 2400BC that document inserting an extra

month to keep the barley harvest within the first month of the year that began in the spring.[24] Initially, the decision to add a month or not must have been the choice of the king, as in the decree from Hammurabi to the delivery of annual tax on the 24th of the second month of *Ululu*, an intercalated 7th month of a 13-month year, rather than the 24th of *Tashritu*, which was the seven month of the year in normal 12-month years.[25] The practice seems to have been regularized over time due to astronomical observations, as is implied by astronomical treaties from around 1000BC stating no intercalation month should be added if the moon is near *Pleiades*, a cluster of stars in the constellation of *Taurus*, on the 1st of *Nisanu*.[26]

After the conquest of Babylon by Cyrus the Great in 539BC,[27] the Persian conquers adopted many Babylonian practices including the use of Aramaic as the language of administration across their vast empire that stretched from modern Afghanistan in the east to the Mediterranean Sea and modern Turkey and Egypt in the west.[28] During this period, the Babylonian calendar was also adopted and retained for administrative purposes, and the practice of predicting the new moon became an accepted and legitimate way of setting the beginning of months.[29] A 19-year cycle of intercalating months was beginning to be used by the time of Darius' reign around 500BC.[30] However, the final version of adding intercalated months after *Adaru*, the usual 12th month of the Babylonian year in the 3rd, 6th, 8th, 11th, 14th, and 19th years in the cycle, and one month after *Ululu*, the 6th month of the Babylonian year, in the 17th year was established slightly later. This 19-year cycle has become known as the Metonic cycle named after *Meton*, who learned about it in Babylon and introduced it to the people of Athens.[31]

The adoption of standardized calculated new moons and months along with the Metonic cycle led to the institution of a regularized and essential fixed lunisolar calendar that was diffused across the Persian Empire.[32] After Alexander the Great defeated Darius III in 331BC and subsequently dies without leaving a viable heir, *Seleucis Nicator*, one of Alexander's generals, defeated his rivals in 312BC and established the Seleucid Empire. Although

the Seleucids renamed the Babylonian months with their traditional Macedonian names, the Seleucid Era began in 311BC with the wholesale adoption of the Babylonian Calendar and its 19-year intercalation cycle.[33] This calendar dating system was used widely throughout the Middle East until the Islamic calendar was set by the first Caliph, *Umar I* in AD639 and established 16 July AD622 in the Julian Calendar as the flight from Mecca and the beginning of the Islamic Era.[34]

It is worth noting as an aside that the Islamic calendar is the only true lunar calendar still in widespread use. The Chinese lunar calendar is, in fact, lunisolar with intercalated 13th months resembling those of the Metonic cycle.[35] The Islamic calendar with 12 lunar months and roughly 355 days means that its sacral times and rituals are allowed to move through the tropical year. This is a situation that traditionally may not have had much significance in Mecca, which is in the tropics, as are most of the areas where Islam initially spread to like central and northern Africa to the west and India and Indonesia in the east. However, the movement of the holy month of Ramadan that requires the faithful to observe daily sunrise-sunset fasts throughout the lunar month, has proved challenging to Muslims in more northern regions where days can be significantly longer during certain times of the tropical year.[36]

Ancient Egypt was always dominated culturally and socially by the flow of waters of the Nile River. It should, therefore, be no surprise that its three seasons of four month each, *Akhet*, inundation, *Peret*, germination and growth, and *Shemu*, the time of harvest, reflect the cycles of the river itself and the agricultural system that supported Egyptian civilization.[37] Most scholars assume that the Egyptian calendar was originally lunar, since the hieroglyph for month includes a crescent moon; however, the Egyptian civil calendar of twelve 30-day months, and five additional epagomenal days, i.e., 365 days, dating back to the third millennium BC was clearly meant to follow a solar cycle.[38] The only problem was this calendar was roughly one quarter of a day short of a full year.

The Egyptians originally referred to their months as *Akhet I-IV*, *Peret*

I–IV, and *Shemu I–IV*, but over time they were given popular names derived from festivals.[39] This renaming of the months may well have been due to the continual drifting of the civil calendar away from the original three seasons. The drift would have been slow, though, with a movement of only 15 days over a 60-year lifespan.[40] Moreover, there would have been no noticeable difference climatically or in terms of the length of days as the calendar wanders along, due to Egypt's proximity to the tropics. Egypt had no official eras; years were numbered according to the reign of each Pharaoh in reginal years. Religious officials were conservative and in charge of the calendar and apparently each Egyptian king prior to the Hellenic period of the Ptolemaic Empire, after Alexander the Great conquered Egypt in 330BC, was required to swear an oath not to change the calendar before taking office.[41]

Herodotus and several other Greek authors praised the regularity of the Egyptian calendar.[42] However, this was probably due mainly to the extreme variations of the many lunar calendars in the Hellenic area, including the island of Sicily know to the Romans as *Magna Graecia*, Greater Greece.[43] Like many calendars around the world, all the Greek city-state calendars would have started out as lunar, but became lunisolar in attempts to keep their local festivals aligned with the seasons they were intended to commemorate. Each *polis* had different names for their months, their lunisolar years were counted in various ways and started at different times of the tropical year, and they managed their intercalation differently. Consequently, it is often difficult to discern how months in various city-states corresponded.[44]

The most well-documented Greek calendar was the festival calendar of Athens.[45] This calendar was managed by the archons, the political authorities who established and maintain the city's calendrical consensus.[46] The calendar was intended to regulate religious celebrations and festivals and thus provided a framework for the political calendar as well, due to the aversion of holding political meetings on festival days.[47]

There were normally twelve lunar months in a year, but to coordinate the calendar with the seasons an intercalated 13th month, *Poseidon* II, was

often added after the 6th month, *Poseidon*, named for the god of the sea in the Greek pantheon. The last month of the year of the Attic calendar was *Skirophorion*. The summer solstice was supposed to occur in the month of *Skirophorion*, so that the new year could start on the first day of the month of *Hekatombaion* upon the first evening sighting of the crescent moon after the solstice.[48] The calendar consisted of both full months of thirty days and hollow months of twenty-nine days. The months were further divided into three decades of 10 days each for the full months.[49] In a hollow month, the 29th day of the month would be omitted from the last decade known as the 'dying' part of the month.[50]

As noted earlier, calendars in Athens and the Hellenic world in general were controlled by political authorities. Moreover, political authorities were known to use their ability to intercalate months, add or suppress days, or change the names of days or months for more than just seasonal considerations. Cases of intercalating an extra month to receive additional taxes, adding a few days to avoid fighting in a holy month or suppressing a few days in a holy month so war plans could proceed according to allies' plans were not unknown. Consequently, calendar tampering for reasons of war, foreign relations, religious, or economic factors were normally seen as part of the political process.[51] The most famous ancient criticism of these manipulations come in Aristophanes' comedies, something akin to American political satire on late night television. In Aristophanes' play, *the Clouds*, Selene (the moon) complains of the misalignment of the calendar with the proper lunar feasts and fast days causing the gods to miss feasts and to fast in mourning when humans are pouring libations and laughing.[52]

IV. The Calendars of the Roman Republic

The calendars from Attica were the main historic models used by the Romans in setting up their calendars that noted days for religious celebrations, legal proceedings, and weekly markets. In turn, most modern Western Calendars are direct descendants of the calendar format established

by the Romans.[53] Moreover, the resemblance of the Latin names of the 12 primary months of the year are quite striking when one compares them to calendars produced for the English-speaking world.[54]

It is believed that the earliest unpublished Roman calendar had "twelve genuinely lunar months, six of which incorporated the names of the gods, while six bore numeric names."[55] In this system, the midpoint of the month would have been the full moon (*idus*), the Ides, commemorated by the ritual sacrifice of a white ram to *Jupiter*, the king of the gods, by the *Flamen Dialis*, the high priest of Jupiter. The corresponding start of the month was the appearance of the new moon (*kalendae*), the Kalends. The observation of the new moon was made by a (*pontifex minor*), minor priestly scribe that would relay the information to the (*rex sacrorum*), the king of sacrificial acts, at the Temple of Jupiter Optimus Maximus on the Capitole Hill of Rome.[56]

The Romans used a unique inclusive counting system for their monthly dates, counting backwards from designated points in the future like the Ides or the Kalends. They also had a unique week system known as the (*nundinae*), the Roman nundinal week of nine days with inclusive counting, which corresponds to eight days in modern counting. The Romans had another use of the number nine in their monthly counting system in establishing the (*nonae*), the Nones of a month. The Nones were announced on the Ides after the *Pontifex Minor* and *Rex Sacrorum* made sacrifices at the *Curia Calabra* observatory at the Temple of Jupiter. The Nones were always a *nundinae*, nine days (inclusive counting) before the Ides and so varied depending on the length of the month, which could last from 28 to 31 days, like our modern months.[57] The days of the month were designated by the Kalends, Nones, and Ides, so that dates between the Kalends and Nones were x-days before the Nones, dates between the Nones and Ides were y-days before the Ides, and dates between the Ides and the Kalends of the next month were z-days before the Kalends of the next month.

What we call the Roman Calendar was traditionally referred to in Latin as the *Fasti*. The first version of the *Fasti* was posted prominently in the Roman Forum in 304BC by Gnaeus Flavius, the *curule aedile*, an elected

magistrate in charge of regulating public markets.[58] The Roman Calendar took its name from the *dies fasti*, days unconstrainted by religion when legal business could be transacted in contrast to *feriae*, holidays reserved for the gods, when no legal activities could take place.[59] According to Rupke, the *censor* and *pontifex* Appius Claudius and his assistant, Gnaeus Flavius viewed "the calendar as a municipal instrument intended to define the boundaries of a 'public' religion relevant to all."[60]

The Roman calendar year went through several phases of subtle evolution. By the time Gnaeus Flavius issued the first published *Fasti*, the Roman calendar was no longer lunar, but not truly lunisolar either since the Kalends were no longer determined by the sighting of the new crescent moon. Moreover, the Ides were no longer associated with the full moon. The Kalends was simply the first day of the month, and the Ides divided each month into two slightly uneven parts. By this time, most months were assigned either 29 days or 31 days due to the Roman aversion to even numbers that were seen as unlucky.[61]

As mentioned earlier, the English names for the 12 months of the year are rooted in their Latin counterparts and are strikingly similar. The first month of Gnaeus Flavius' *Fasti* may have been *Mensis Martius*, March, rather than *Mensis Ianuarius*, January, though.[62] However, the *Fasti* of the late Republic, before Julius Caesar's reforms, started with *Mensis Ianuarius*, January as the *Fasti Antiates Maiores* makes clear.[63] Fowler reconstructed the earlier *Fasti* in an effort to categorize the festivals of the Roman Republic. In his reconstruction, the year beginning from March 1st and ending on February 28th was based on several different considerations related to the names of the months, the nature of the festivals held in different months, and seasonal considerations.[64] As mentioned earlier, six months had numeric names *Quinctilis*, *Sextilis*, *September*, *October*, *November*, *and December*, which correspond to the numbers five, six, seven, eight, nine and ten in Latin and July, August, September, October, November, and December in our modern calendar.[65] Counting backwards *Martius*, *Aprilis*, *Maius*, *Iunius* (March, April, May, and June), would appear logically to have

been the first four months of the year.

The new year for many ancient agricultural societies often began in the spring around the Vernal Equinox. The god *Martius* (Mars) is usually thought of only as the god of war, but originally *Mars* was also associated with vegetation. Consequently, prayers and sacrifices for the prosperity of vines and fruit trees and the growth of seed crops were most often addressed to *Mars* in his month, *Mensis Martius* (March). March 1st was originally New Year's Day for the Romans, the day which the sacred fires of *Vesta* that protected Rome were rekindled and fresh laurels fixed to many buildings with special religious significance. On March 14th, an *Equirra*, horse-race, was held celebrating the festival of *Mars*.[66] *Mensis Aprilis* (April) is not clearly connected with one deity like March, but many ancient rituals related to young seed crops and animals, and thus many female or male-female deities related to fertility. In later times, April was associated with *Aphrodite*, the goddess of love, and her Roman counterpart, *Venus*, but the etymological root of April is supposed to be related to the Latin verb, *aperio*, to open. In fact, many of the Roman deities celebrated in April have foreign roots like *Ceres*, *Liber and Libera*, the counterparts of *Demeter*, *Dionysus*, *Persephone* in the Greek Patheon. However, *Parilia*, one of the oldest and best documented festivals of the year celebrated on April 21st named after the male-female deity *Pales*, the shepherd's deity associated with Rome's pastoral roots, was known as the Birthday of Rome. The last festival of April was the *Ludi Florae*, celebrating *Flora*, the goddess of fertility and bloom. *Ludi Florae* was seen to be one of the most hedonistic festivals of the year and continued until May 3rd.[67]

Mensis Maius (May) was either named for the goddess, *Maia*, known only to priests. or was perhaps just a pseudonym for the goddess *Bona Dea*, the Good Goddess, a female Earth deity. The Temple of *Bona Dea* was dedicated on the Kalends of May. Her temple was a kind of *Herbarium* with medicinal herbs. *Bona Dea*'s cult was celebrated only by women and her temple cared for solely by women. There were three days of *Lemuria* on May 9th, 11th, and 13th. These days were not *feriae* days reserved for the

gods, but *Nefasti* days where no legal business could be held. Apparently *lemures* were the ghostly spirits of the dead and those known as *larvae* could haunt homes. Rituals at people`s homes using black beans to pacify these spirits are somewhat akin to the Japanese purification rituals preformed on *Setsubun* in early February. From May 7th through 9th, the *Vestal Virgins* of the cult of *Vesta*, the goddess of the hearth, were busy preparing the *mola salsa*, the sacred saltcakes, used at three times in the year: the *Vestalia* in June, on the Ides of September, and the *Lupercalia* in February. On May 15th, the Ides of May, a *feriae* day for *Jupiter* as all Ides initially were, a procession to the *Pons Sublicius*, the earliest known bridge across the Tiber River, took place. The *Pontifices* and *Vestals* were part of the procession, as was the *Flaminica Dialis*, the high priestess of *Jupiter*, the wife of the *Flamen Dialis*. The *Flaminica Dialis*, who usually appeared in her bridal dress, wore mourning attire since the procession was in a sense a funeral rite for the ghosts of the *Lemuria* as well as a purification ceremony for the city and surrounding countryside. Apparently, the priestly title of *pontifex* is derived from the Latin word *pons*, which means bridge, and the *Pons Sublicius* was under the *Pontifices* care and had strong religious implications. The final event of the procession has the *Vestals* throwing puppets into the Tiber River from the bridge.[68] The exact meaning of the immersion of the puppets in the Tiber is uncertain, but the mixing of the departure of the dead and the arrival of the first fruits is reminiscent of the Egyptian practices of sprouting seeds in clay figures of *Osiris*' dead body.[69]

Mensis Iunius (June) is believed to be named for the Goddess *Juno*, *Jupiter's* wife, the queen of the gods in the Roman Patheon, and both *Vestalia* and *Matralia* were very much related to women and their roles in ancient Roman society and culture. Women did not swear oaths to the hero, *Hercules*, like men. They swore oaths to *Vesta*, the goddess of the hearth. The key roles of the *Vestal Virgins* were to keep the sacred flames of *Vesta* burning, which were thought to protect the city and to preserve and protect the most sacred and valuable objects and documents of the Roman state. The *Vestal Virgins* were under the paternal powers (*patria potestas*) of the

Pontifex Maximus and, during later Republican times due to the sacred right (*ius sacrum*), the *Pontifex Maximus* represented the legal powers of the *Rex*, which is to say, the power of kingship which had been abolished with the advent of the Republic. No man except the *Pontifex Maximus* had the right to enter the *Penus Vestae*, the storehouse of *Vesta*. *Vestalia* started on June 9th and for several days the *Penus Vestae* section of the temple of *Vesta* that was normally shut throughout the year was open to all matrons. During this period, most likely prayers for the blessing of households were offered and the *Vestals* offered sacred cakes made from the first early grain picked at an earlier ritual in May and the *mola salsa* mentioned earlier. *Matralia* started on June 11th and celebrated the founding day of the Temple of *Mater Mauta*, the ancient deity of matrons, a goddess also associated with childbirth and dawn, which was thought to be the best time for childbirth. From the beginning of *Vestalia* until the 15th of June the *Flaminica Dialis* was in another period of mourning and was forbidden to have any intercourse with her husband or cut her hair or nails. In addition, marriages were prohibited during this period. On the 15th of June, the house of *Vesta* was swept and the *Penus Vestae* was closed for another year. The period of mourning for the *Flaminica Dialis* as well as the moratorium on marriage was also ended.[70]

Mensis Quinctilis (July) and *Mensis Sextilis* (August) were at the height of the summer heat in Italy and a busy time for farmers with various crops being harvested. Although several festivals with ancient roots are listed in the *Fasti* for both months, none of them seemed to have been particularly important and were somewhat obscure, according to Fowler's accounts.[71] Perhaps, that was why they were initially just months Five and Six. At the end of the Republican period, *Mensis Quinctilis* would be renamed for *Mensis Julius* (July) to commemorate Julius Caesar's birthday and *Mensis Sextilis* would be renamed for *Mensis Augustus* (August) after Augustus Octavian Caesar to commemorate his defeat of *Marcius Antonius* and *Cleopatra*.[72]

Mensis September (September) has no festivals listed in all capital letters in Fowler's reconstructed *Fasti*, and he believed the absence of major events signified a period of relative rest after the busy grain harvest season and the

traditional end of the campaigning season when the legions would return home. Many *Ludi Romani*, Roman Games, were held between September 5th and 19th though, and are believed to be historically rooted in the *Vota Consul*, wishes of the *Consul* after the close of wars.[73] From early on in the history of the Republic two *Consuls* were elected the leaders of government for the year. The names of the two elected *Consuls* were also used in the counting of Roman years even after the *Consuls* ceased to have real political power.[74] Traditionally, one of the elected *Consuls* would stay in Rome and the other would lead the Roman legions in foreign wars. The Ides of September, on the 13th of the month, was also the foundation day of the Capitoline Temple and the Feast of *Jupiter* held there. It seems that the feast took the form of a common religious meal where magistrates and senators served as representatives of the state and people of Rome.[75] *Jupiter*, and his companions in the Capitoline Temple *Juno*, and *Minerva*, the goddess of crafts, war, and wisdom, equivalent to *Athena* in the Greek Patheon, were at the center of Roman state religion from around 300BC onward, and are sometimes referred to as the *Capitoline Triad*.[76]

Mensis October (October) has three festivals listed in all capital letters in the *Fasti*. *Meditrinalia* on October 11th, *Fontinalia* on October 13th, and *Armilustrium* on October 19th. October was traditionally the month for the vintage of new wines and *Meditrinalia* was when new wines were tasted, but no specific god not even *Bacchus*, the god of wine and wild behavior, seems to be associated with the day. *Fontinalia* was an ancient festival related to the holiness of springs and wells, and no doubt, our modern English word 'fountain'. The first three letters of *Armilustrium* are related to our modern English word 'arms' in the sense of weapons. On March 19th, there was a festival call *Quinquatrus*, a *feriae* day to *Mars* in his more military guise, where young male dancers, called *Salii*, danced through the city with their sacred shields marking the beginning of both the agricultural and campaign seasons. Apparently, *Armilustrium* was the counterpart closing festival to *Quinquatrus*, and the last day when the *Salii* would appear with their sacred shields before their arms were purified and put away for

the winter.[77]

Mensis November (November) has no festivals listed in all capital letters either, and was apparently not important religiously. However, it would have been a busy time of ploughing and sowing seed crops in the countryside around the city. Many *Ludi Plebeii*, *Plebeian* Games, were held between November 4th through 17th and took place in the Circus Flaminius from 220BC when it was opened. It seems these games were sort of the counterpart for commoners to the *Ludi Romani*, which would have, no doubt, been primarily a *Patrician* affair in the beginning. In later years when Rome became more of a cosmopolitan center and less connected to its rural roots, imported deities from the eastern Mediterranean such as the cult of *Isis* became popular in November.[78]

Mensis December (December) and *Mensis Ianuarius* (January) in the middle of winter would have been the slowest time of year in terms of agricultural tasks, and there are several ancient but lesser-known festivals connected to rural life. On December 3rd, there was another women-only sacrifice to the *Bona Dea* followed by a couple of minor events related to Rome's rustic past. On December 15th, there was the *Consualia*, a ceremony related to the mid-winter inspection of grain-stores. On December 17th, the first day of *Saturnalia*, specific religious rites were celebrated, but at one point this popular winter festival leading up to the winter solstice was extended up to seven days until the emperor Augustus had it shortened to allow for more legal business days to be held in late December. The 18th and 19th were general holidays where the visiting of friends, games, and the exchange of gifts were apparently quite common.[79] The *Saturnalia* was, of course, related to the god *Saturnus* (Saturn), who in the later Roman Patheon is the god of Agriculture.[80]

Mensis Ianuarius (January) was named after the god *Janus*, the god of doors or gates. The earliest Rome religion was centered around the family and the home. The most sacred and important parts of the house were the door (*ianus*) and the hearth (*vesta*). Consequently, in Roman religious custom *Janus* and *Vesta* were the first and last deities to be invoked in religious

ceremonies. On January 9th, the ceremony of *Agonia* and its sacrifice of a ram by the *Rex Sacrorum* in the *Regia*, Royal Residence, took place. According to Fowler, it is not quite clear if the sacrifice was to *Janus* or not, but *Janus*' spiritual role as the guardian of entrances and the invocation of *Janus* and *Vesta* as the first and last deities in both public and private religious rituals point to the house and family as the foundation of Italian civilization and religion. After the last Roman kings were banished and the establishment of the Republic, the *Rex Sacrorum* lived in the *Regia*, and symbolized the head of the State. The role of *Rex Sacrorum* as the head of the State would have been analogous to the *paterfamilias*, the head of the family in the home. There was no other priest for *Janus* except the *Rex Sacrorum* like the *Flamines*, the high priests for other deities. In the ancient order of the priesthoods, the *Rex Sacrorum* initially came first, followed by the *Flamines Maiores*, the three great priests, the *Flamen Dialis* (of Jupiter), *Flamen Martialis* (of Mars), and *Flamen Quirinalis* (of Quirinus), and then the *Pontifex Maximus* with his *patria potestas* for the *Vestal Virgins*. This hierarchy of priesthoods appears to reflect the traditional hierarchy of the family: father, sons, and then daughters, but only in their role as possessions of the father, as symbolized by the final position of the *Pontifex Maximus*.[81] The importance of the *Rex Sacrorum* and *Pontifex Maximus* would be inverted over time, and by the middle Republic the *Pontifex Maximus* was at the top of the hierarchy and had his office in the *Regia*. Moreover, the office of *Pontifex Maximus* had fewer constraints for *Patricians* with political aspirations, such as the prohibition of holding secular office for the *Rex Sacrorum* and the multiple duties required of the *Flamines* and their wives.[82]

Menius Februarius, February, was named for the magical purification tool known as the *februum* used in rituals during the month, especially the *Lupercalia* held on February 15th. The early Romans believed the spring season began on February 7th and most of the rituals of the month appear to be focused on communing with, showing respect for, and enlisting the goodwill of everyone's dead ancestors to ensure the future prosperity of the community and its crops.[83] The earliest communal deities in the Roman

Patheon were basically an outgrowth of the worship of dead ancestors in the home where the paterfamilias was essentially the head priest of the family cult.[84] The *Dies Parentales*, days of worshipping the dead, began on February 13th, the Ides of February and lasted until the public holiday of *Feralia* on February 21st.

The *Lupercalia* was an ancient rite that started at a cave called the *Lupercal* at the south-west corner of the Palatine Hill, where according to legend the flooded Tiber River deposited the twins, *Romulus, and Remus*, who were raised by a wolf, *lupus* in Latin. The wolf was supposedly the sacred animal of the god *Mars*, and *Mars* was the god of the earliest settlers on the Palatine Hill, so calling *Lupercalia* the festival of the wolf is quite apt. The rite of young men running a circuit around the Palatine Hill was apparently well-known and well documented, since in 44BC, one month before his assassination, Julius Caesar took some interest in it, and later Augustus Caesar rebuilt the aging *Lupercal*, enhancing its image and ensuring it popularity into the Christian era.

On February 17th, the *Quirinalia*, the festival for the god *Quirinus*, was held, and the cult of *Quirinus* had its temple on the Quirinal hill. The origin of the god *Quirinus* is somewhat obscure, but *Quirinus* was later associated with *Romulus*. The Latin term *Quirites*, which was an expression that referred to Roman citizen in their civic capacity, seems to point to the evolution of communal deities in the Roman Patheon from the earlier ancestor worship mentioned above. On February 23rd, *Terminalia*, the festival of *Terminus*, the god of boundaries was held. Boundary-stones were ritually sanctified yearly by the two or three owners that shared them, and the stones were believed to have the spirits of sacrifices in them. Apparently, at one time there was a boundary-stone between the Palatine Hill of *Mars*, the Quirinal hill of *Quirinus*, and the Capitoline Hill of *Jupiter*.[85] The High Priests of *Jupiter*, *Mars*, and *Quirinus* made up the *Flamines Maiores*, the three great priests, mentioned earlier, and the gods *Jupiter*, *Mars*, and *Quirinus* are sometime referred to as the *Archaic Triad*, pointing to the earliest roots of the Roman state religious cults.[86] On February 24th,

there was the ceremony of *Regifugium*, the flight of the king, followed by the *Equirria*, a set of celebratory horse-races held on February 27th corresponding to those held on March 14th.[87]

There is a thirteenth month in the *Fasti Antiates Maiores* called *Mensis Interkalaris* that Fowler does not deal with since it is technically a month without festivals. The name of the month is derived from the Latin expression *inter-calare*, 'to call in between'. As mentioned earlier, the Republican calendar and its lunar predecessor would have been 355 or 354 days long and thus about 11 days short of a solar year. The inclusive counting back from a future point for dates in the month besides the Kalends, Nones, and Ides, prevented the Romans from taking what moderns would consider to be the simple solution of adding a month or a few days to the end of a month or months to lengthen the year. Although the Colleges of Pontiffs and specifically the *Pontifex Maximus* would eventually have control over the calendar and the decision of when it was intercalated, the *Rex Sacrorum* continued to be in charge of making the call, so to speak, since the declaration of intercalation was a verbal sacred act. The question was when and how the *Rex Sacrorum* could do that without disrupting the normal cycle of the festivals and the dating of months themselves. The *Regifugium*, the flight of the king on February 24th the day after the *Terminalia*, was symbolic of the banishing of the Roman kings, and the ritual literally had the *Rex Sacrorum* running away after making a sacrifice. During the early Republican era when the calendar was still lunar and the year was deemed too out of sync with the seasons, after the *Rex Sacrorum* made his sacrifice, he would verbally 'intercalate' a new month rather than fleeing. The unexpected, intercalated month would have no sacral or legal obligation since it was a *momentum temporis*, or just a moment in time. The end of the *Mensis Interkalaris* would end with a replay of the *Regifugium* where the *Rex Sacrorum* did flee after the sacrifice on the 24th of the intercalated month or the 6th day before the Kalends of March in Roman reckoning. The *Equirria* horse-races were then held as planned 3 days later, on the 27th of the intercalated month, technically the 3rd day before the Kalends of March

in Roman reckoning. Order would have been restored after the departure of the king and festivities of the New Year in March could go ahead as normal.[88]

As the Roman calendar transitioned from its lunar observed months to fixed months of 29 or 31 days, a whole month was no longer intercalated but a period of 22 or 23 days was added approximately every two years in the same fashion as described earlier.[89] The problem with this system was it apparently produced an average year of 366.25 days instead of 365.25 days.[90] By the late Republic, intercalations were irregular and unpredictable, possibly the result of decisions being made by committees such as the College of Pontiffs, where different members could easily have had different agendas and preferences for reasons other than the seasons.[91] A solar eclipse recorded on the Republican calendar as *Quinctilis* (July) 14th has been backdated to March 14th 190BC on the Julian calendar, a four-month difference. Whereas a lunar eclipse observed on the night of September 4th on the Roman calendar has been backdated to June 21st 168BC on the Julian calendar a difference of almost two-and-half months.[92] A law governing the intercalation of the calendar enacted in 191BC known as the *lex Acilia* is often pointed to as the reason for the shortening of the difference between the Roman date and the Julian date of the two eclipses.[93] Nonetheless, intercalation or perhaps the lack thereof continued to be a problem until Julius Caesar's reforms.

V. The Historical Periods of the Republic and the Roman Fasti

The History of the Rome Republic is normally divided into three parts: the Early Republic (507–264BC), the Middle Republic (264–133BC), and the Late Republic (133–30BC).[94] If we take the view that calendars reflect in some way the organizing principles of the society and culture that created them, then *Gnaeus Flavius*' first *Fasti* would be a snapshot of a point in the Early Republic, the *Lex Acilia*, which tried to deal with the slippage of the Roman calendar could perhaps provide us with another snapshot of the Middle

Republic, and the *Fasti Antiates Maiores* might offer a third snapshot of the Late Republic before the Julian Calendar became the standard calendar for the Roman Empire and the basis of all future European calendars.

The Early Republic starts with the banishing of the king of Rome in 507BC and ends with Rome's first attempt at overseas conquest that begins in 264BC with the First Punic War between Rome and Carthage. Gnaeus Flavius' first *Fasti* does indeed give us a pretty good picture of Roman culture and society as it struggles for supremacy of the Italian Peninsula. The events of February like the *Lupercalia* rite discussed earlier represent its mythical past. Just as the rituals of the *Regifugium* display its beginning as some sort of mixed polity. The festivals of *Armilustrium* and *Quinquatrus* seem to embody the early traditions of the community where the rich would bring heavy metal arms and the poor would equip themselves with just sling and stones in defense of the city which developed into seasonal campaigns as the city strove to overcome and rule its neighbors.[95] The Romans would be a militaristic class-conscious people throughout their history. The two *Ludi*, or Games show us the early roots of the martial traditions and the class division between *Patricians*, city fathers and *Plebian*, commoners that would haunt Roman society throughout its history. Gnaeus Flavius' *Fasti* also marked community tragedies like the first sacking of Rome known as the "Gaulish Catastrophe" noted down on *Quinctilis* (July) 18th as *dies Alliensis*.[96]

The Middle Republic seems to be demarcated by the opening of the First Punic Wars with Carthage in 264BC and the attempted reforms by the *Tribune Tiberius Sempronius Gracchus* in 133BC. *Tribunes* were special elected representatives of the *tribes* coming exclusive from the *Plebian* class, who were supposed to be beyond *Senate* pressure and able to protect the *Plebs* from injustice. The system was enacted by the *Senate* in 494BC, the same year as the *Plebian Secession*, which was Italy's first known general strike, but certainly not its last.[97] The Middle Republic was a time of almost constant war, which required many armies to be raised by the drafting of men with small landholdings from across Italy who could be granted Roman

citizenship without the vote (*civitas sine suffragio*).[98] At the same time, conquest allowed large tracks of land to be purchased by the rich that found it expedient to purchase slaves that also became abundant since captured enemy soldier and rebellious peoples unwilling to accept Roman overlordship could be turned into slaves. Consequently, powerful Roman citizens became extremely wealthy as the slave class grew, and poor freemen became more impoverished since they were still required to pay taxes and provide military service.[99] Slavery is as old as humankind, but Roman slavery was a curious brew of cruelty and/or kindness depending on the owner and/or the enslaved person's skill set. The first Servile War, which began in Sicily and lasted for three years, was accompanied by other slave rebellions in Rome and several Greek cities. These slave revolts were probably emblematic of the cruelty that slaves employed in hard manual labor in agriculture or mining endured. The class of educated slaves that existed in many Roman households that could be transformed from a piece of property to a human being with a single action by the owner reflects the latter.[100] The *Lex Acilia* by itself does not reflect on any of these issues directly. However, it may point to various problems underneath the surface. The regulation of *Lex Acilia* could not control the seasons. It apparently did not correct the problems of the dependability for the *Fasti* either because the *pontifices* charged to use this regulation did not or could not use it to synchronize the calendar and the seasons.[101] By analogy it may be possible to say the Roman legal mechanism embodied in the Senate and its elaborate system of magistrates, governors, and the appointed or elected military leaders such as the *Consuls*, which were created to provided checks and balances in the city, could not or did not control itself well either. As a result, the traditional legal framework was incapable of dealing with the greater issues that Rome and its expanding empire would have to face.[102]

The Late Republic begins in 133BC after the *Tribune Tiberius Sempronius Gracchus* proposed agrarian reforms were vetoed by his fellow *Tribunes*. These reforms would have transferred land from the Roman state to the poor and deprived the wealthy of some opportunities to build more

estates. It was believed that the veto of this legislation by other *Tribunes* was the result of bribes from wealthy interests. Then extralegal means were used to force through the reforms and political violence soon followed. The period ends with Octavian Caesar's victory over *Marcus Antonius* in 30BC.

The Late Republic was full of political intrigue, extralegal actions, and military maneuvers as the Republic continued to expand outward. Julius Caesar was born in 100BC when the popular Roman General *Gaius Marius* was *Consul* and used extralegal means to award full Roman citizenship to thousands of Italian allies that had served with him in various battles. This only applied to his soldiers, however. The *Senate* continued to resist granting full citizenship to all the Italian allies in general. This resulted in anti-Roman sentiments and a struggle that was a sort of civil war with ethnic overtones known as the "Social War" that started in 91BC and ended in 88BC. At the end of this internal conflict, Rome was once again the master of the peninsula, but the Italian cities were granted full Roman citizenship as well. The Roman General *Sulla*, one of *Gaius Marius* former assistants came out of the conflict as a hero while the aging *Gaius Marius* fell ill and retired before the end. Apparently, *Gaius Marius*, who may have also suffered from mental issues, became physically well enough that his jealousy over the successes of his former subordinate brought him out of retirement though. A dispute over who would lead an army to more conquests in Asia subsequently resulted in several bloodbaths within the city by *Gaius Marius*' privately armed supporters. To stop the melee, *Sulla* had to violate the Roman constitution and tradition by leading his legions into the city. An action that broke the sanctity of the *pomerium*, the walls that had protected the domain of the *Senate*. Something an elected *Consul* and his troops had never done before, but this would not be the last time either. *Sulla's* actions had restored order but had also verged on military dictatorship. To rectify things, a new election for *Consuls* were held, and *Sulla* and *Lucius Cinna* were elected. *Sulla* and his legions were assembled outside the walls and then they marched off to the East. *Lucius Cinna* was not *Sulla* friend, but *Sulla* left the city assuming the *Senate* and the new *Consul Lucius Cinna*

could manage without him. Unfortunately, *Gaius Marius* had escaped to northern Africa and would eventually return.[103]

After *Sulla* and his legions left Italy, *Gaius Marius* returned and with the help of *Lucius Cinna* took over Rome again and the bloodbath of extralegal vengeance resumed. *Gaius Marius* died in 86BC, but *Lucius Cinna* remained in control of the city until *Sulla* returned to Italy in 83BC. *Lucius Cinna* gathered an army to stop *Sulla's* return to the city, but *Lucius Cinna's* forces mutinied and killed him. *Sulla* and his legions still had to fight their way into the city though as *Gaius Marius*' son and his father's supporters put up fierce resistance. *Sulla* would execute thousands of political opponents and many of the friends and relatives of *Gaius Marius* and *Lucius Cinna* would die unless they fled the city. *Cinna's* son-in-law, a young man by the name of Julius Caesar eventually left the city. Two of *Sulla's* younger officers *Pompey* and *Crassus* would go on to become leading citizens and serve as *Consuls* after *Sulla's* death in 78BC.[104]

There were many casualties of the political upheavals of the late Roman Republic and the civil wars that finally ended it. It could be tempting to think that one of the casualties was the traditional Roman *Fasti*, and *Cicero*, one of Caesar's most vocal critics, seems to have had that viewed of the Julian reforms.[105] Nonetheless, the traditional Roman *Fasti* had been seriously neglected and/or manipulated due to years of war and political turmoil. The Roman calendar year was very much out of sync with the solar year, festivals were being celebrated in the wrong seasons, and it must have been becoming problematic as a planning and administrative tool to manage Rome's holdings around the Mediterranean Sea.

The clear and tidy format of *Fasti Antiates Maiores* of the pre-Julian reforms would seem to have no connection to the chaotic nature of the Late Republic, but perhaps it points to something else. Apparently, many Roman orators of the time had a longing for an imaginary "Golden Age of Rome" before the destruction of Carthage when the *Senate* and people shared the government peaceably together, and the fear of their common enemy promoted restraint and the good morals of the state.[106] The *Fasti Antiates*

Maiores seems to reflect the idealized dream of the Late Republic instead of the organizing or rather disorganizing principles of the age. There must have been many considerations at play leading up to the Julian reforms. It, therefore, seems necessary to look at the broader historical context where conservative and progressive forces were at work within Roman society at that time.

VI. The Last Rites Leading to the Julian Calendar

There were a variety of political and religious positions *Patrician* men would want to hold as they built their careers or were groomed by others for future purposes. In this context, Julius Caesar's earlier career would not have been completely usual. Julius Caesar was installed as the *flamen Dialis*, the high priest of Jupiter, at the age of fifteen probably at the behest of his father-in-law, *Lucius Cinna*. After his return to Rome, *Sulla* tried to force the separation of Julius Caesar and his bride. Julius Caesar did eventually relinquish the office of the *flamen Dialis* after the College of Pontiffs ruled he had been installed wrongfully. No one else would be appointed as the *flamen Dialis* until 14BC. Julius Caesar then left Rome but he was later co-opted as a minor *pontifex* around 73BC during his absence from the city. After his return to Rome, he became a *quaestor* in 69BC.[107] He was elected to be an *aedile* in 65BC and then elected as *Pontifex Maximus* in 63BC. He was also appointed as a *praetor* in 63BC.[108] He would hold the office of *Pontifex Maximus* until his death in 44BC, even though he spent many years outside of Rome but this was apparently not uncommon in the Late Republic.[109]

Securing elected political or religious offices in Rome could be quite expensive though and Julius Caesar's electoral campaigns apparently left him in deep debt. He had secured a lucrative appointment as governor of Hispania to repair his finances, but apparently his creditors were reluctant to let him leave Rome. At this point, *Crassus*, one of *Sulla's* former officers who had done extremely well financial in real estate over the years, stepped in and guaranteed Julius Caesar's debts. Julius Caesar time in Hispania was

indeed profitable, and he was able to pay off his creditors by the time he returned to Rome. After Julius Caesar returned to Rome in 60BC, he met with *Crassus* and his colleague *Pomey*, another of *Sulla's* former officers who had created a reputation as a military general, and together the three of them formed an unofficial coalition that would later be known as the *Triumvirate*. With *Crassus* and *Pomey's* support, Julius Caesar was elected Consul in 59BC and both *Crassus* and *Pomey* received preferential treatment in *Senate* business during Julius Caesar's Consular year. In 58BC, Julius Caesar was appointed governor of Transalpine Gaul, and from this base Julius Caesar started to build his own military reputation by expanding Rome's territories north and west and making sure the *Senate* received regular reports and knew of all his victories. During this period, Julius Caesar also built a camp at Luca on the Rubicon River the border between Gaul and Italy. From this camp, Julius Caesar was able to enhance his political base in Rome and receive visitors from the city like *Crassus* and *Pomey*, who visited in 56BC. In 55BC, *Crassus* and *Pomey* were both elected *Consuls* for a second time and Julius Caesar was awarded another five years as governor in Gaul. Julius Caesar made his first exploratory expedition from Gaul to Britain the same year, and in 54BC he returned with his legions to conquer it. Julius Caesar returned from Britain to Gaul a glorious conqueror, but he was greeted back with terrible news that his beloved daughter *Julia*, who had been betrothed to *Pomey* to seal their alliance, had died in childbirth. After his year as *Consul*, *Crassus* traveled east to Syria to led another Roman army against the Parthians (the successors to the Persian), but his invasion ended in disaster with *Crassus* and most of his forces dead in 53BC. The *Triumvirate* was now down just two men that probably saw themselves more as competitors rather than allies as Julius Caesar military reputation had grown to rival *Pomey's* own.[110]

Julius Caesar campaigns in Gaul ended in victory in 51BC with the Gaul's leader *Vercingetorix* in chains.[111] Julius Caesar's first traditional victory parade in Rome known as a *Triumph* would not occur until 46BC though.[112] Julius Caesar and his troops waited on the other side of the Rubicon as he

exchanged messages with the *Senate* in hopes of being able to have his first *Triumph*, but *Pomey* convinced them to refuse. *Pompey* and the *Senate* feared Julius Caesar had desires to be a dictator, and Julius Caesar feared he might be assassinated if he returned to Rome unprotected.[113] In 49BC he and his legions crossed the Rubicon,[114] after he did, he supposedly shouted the gambler's traditional call. "Let the die be cast!" (*Alea icta est!*). *Pompey* immediately left Rome for the port of Brundisium in southern Italy and told the *Senate* to follow him. Many Senators did, but not all. *Pompey* with a sizeable army and fleet established a rump government across the Adriatic Sea in the Greek City of Dyrrhachium. Julius Caesar decided not to chase *Pompey* to Greece immediately and entered Rome to find a good part of the *Senate* in residence and amicable to his arrival. In 48BC, Julius Caesar's legions finally crushed *Pompey's* calvary with techniques they had acquired in previous campaigns against Britons in the northern Europe. The expatriate resistance was over. *Pompey* escaped, but he was later caught and killed by Egyptians hoping to please Julius Caesar. Julius Caesar had followed *Pompey* to Egypt, but he was supposedly furious when Egyptian officials of the male heir to the Pharaoh's throne *Ptolemy XIII* brought him *Pompey's* head. However, this gave Julius Caesar a reason to insert himself into Egyptian politics and punish *Ptolemy XIII* by making his sister, *Cleopatra* the ruler of Egypt under his supervision. *Ptolemy XIII* rebelled and he and his forces were annihilated by Julius Caesar and his troops. After leaving Egypt, Julius Caesar took a military tour around the outskirts of the Roman Republic's territories winning additional victories in Asian minor, northern Africa and visiting the Iberian Peninsula before return to Rome. During his absence from the city, Julius Caesar was reelected *Consul* four time in absentia by his supporters in the capital.[115]

On September 21, 46BC. Julius Caesar finally celebrated his first *Triumph* for his victory in Gaul. The Gallic leader *Vercingetorix* had spent the years since his defeat in prison waiting for his ritual execution, which would be part of the finale of the parade. *Triumphs* were celebrations for the whole city and Julius Caesar would have three more over the next two

weeks celebrating his victories in Egypt, Asia Minor and North Africa. The *Triumphs* would be followed by horse-races, games, and other forms of entertainment. Julius Caesar even distributes bread and gave 400 sesterces (the equivalent to 25 coins of silver) to every citizen. This type of generosity would endear Julius Caesar to the Roman masses, but it would also lead to the plot to assassinate him 18 months later, on the 15th of March 44BC (the Ides of March).[116]

Julius Caesar was the *Dictator* of Rome from 46BC until his death in 44BC, and *Marcus Antonius* served as his *magister equitum*, Master of the Horse, throughout that time.[117] Julius Caesar apparently enacted several needed reforms during this period, but we will only look his calendar project.[118] Julius Caesar held at least two other offices simultaneously, he had been the *Pontifex Maximus*, chief priest, since his election in 63BC. He had also been elected in absentia to be an *augur*, a kind of Roman priest responsible for interpreting natural auspicious and inauspicious signs, in 48BC. He would have formally taken office by the beginning of 46BC after his return to Rome.[119] Julius Caesar may have met the Alexandrian astronomer, *Sosigenes* during his time in Egypt.[120] Julius Caesar appointed a commission of mostly foreign experts headed up by *Sosigenes* to develop the new calendar. It was Julius Caesar dual roles as *Dictator* and *Pontifex Maximus* that allowed him to enact his calendar reforms. In other words, Julius Caesar inaugurated and defined the Julian Year as Dictator, but it was Caesar as the Pontifex Maximus who ensured that it worked almost seamlessly with the pre-Julian calendar. The reforms started with an edict known as the *dictator iterum*. The *Senate* was informed of this edict but played no part in making the decision to enact it or the reforms that followed.[121] The year 46BC was eventually referred to as the *annus confusionis ultims*, the last year of confusion, but the process of reshaping the calendar was done very prudently. Moreover, Julius Caesar took the utmost care to respect existing religious institutions when configuring the reforms. The first step was to reestablish a precise synchronicity with the solar year with the spring equinox fixed on the new civil calendar as March 25th. To do that 46BC

needed to be extend from the usual Republican year of 355 days by 90 days to 445 days in total. Apparently, in addition to inserting the traditional intercalary month after February, two additional intercalary months were inserted between November and December. The precise method of how this was done is still obscure. However, inserting days without consequence, i.e., intercalated periods of time with no sacral or legal obligations that were *momentum temporis*, or just a moment in time near the end of these months were probably called for. Such moments in time that would not have changed the basic dating structure at the end of months, as described earlier, would probably have been the trick.[122]

The reformation of the new Julian months must have been simple in comparison to the intercalation process. The *Fasti* of the Republic had four months of 31 days *Martius*, *Maius*, *Quinctilis*, and *October* (March, May, July, and October), seven months of 29 days, and one month with 28 days *Februarius* (February).[123] February, which had always been used for intercalation, retained its 28 days and its position as solar synchronizer as the leap year month of 29 days. What we call a leap year in English was initially known as the *bisextilis annus* or bissextile year, since the 24th of February, i.e., the 6th day before the Kalends of March was originally repeated twice. Two days were added to *Januarius*, *Sextilis*, *and December* (January, July, and December) to make them 31 days, and one day was added to *Aprilis*, *Junius*, *September*, *and November* (April, June, September, and November) to make them 30 days.[124] Once the calendar was implemented it was apparently accepted with no significant enthusiasm or resistance. However, birthdays for anyone born in those exceptionally long intercalary months must have been problematic since their birthdays would never occur again.[125] Julius Caesar lived through the first full year of his namesake, but it is not clear if he had any idea or plan for what would follow after his death. We do know, however, according to Julius Caesar's will he had divided his huge fortune among the citizen or Rome, and that probably made the common people of Rome love him even more.[126]

VI. The Early Implementation of the Julian Calendar

In the decades following the initiation of the Julian Calendar, the College of Pontiffs continued to oversee the need for intercalation, in this case, the announcement of the leap year.[127] Apparently, the calendar was meant to be fixed from its enactment onward, but the political situation was still unsettled until *Octavian Caesar*, Julius Caesar's nephew and adopted son, defeated *Marcus Antonius* at the battle of Actium in 31BC and the 'First Settlement' with the Roman *Senate* that "restored" the Republic in 27BC. *Octavian Caesar* was elected consul every year between 31BC and 23BC, retaining the title *Imperator*, the Latin word for commander that evolved into the English word Emperor. He also received the name *Augustus*, a somewhat archaic term meaning sacred or revered. The titles of *Augustus* and *Imperator* would be held by all major future Emperors[128] that were not simply raised to *Imperator* status by the acclaim of their legions and subsequently were assassinated by rivals or died on the battlefield.

It seems that the College of Pontiffs either did not understand the new leap year system well, or other concerns initially led to the addition of a leap year every three years rather every four years. One explanation is that due to the Roman inclusive counting, the 4-year leap year was interpreted to mean every three years. Another explanation is that an additional day was intercalated in 41BC to prevent the *nundinae*, market day, from falling on January 1st 40BC, which would have been inauspicious. In any case, the practice of the 3-year leap year continued until 12BC when *Octavian Caesar* become the *Pontifex Maximus* himself and stepped in to remedy the error by suspending all leap years until AD4.[129]

VI. The Julian Calendar and the Synchronization of Historical Time

As Feeney pointed out, we tend to think of dates in terms of numbers, but really there was no such word for 'date' in the early Greek and Latin

languages. In ancient times, a date was effectively the correlation of two or more recorded 'events' in the past. Consequently, ancient writers were not connecting numbers in a preexisting time frame as we do, but basically linking significant people and events to construct a time frame where the events had meaning. Ultimately, the foundation of our modern chronological system is based in the correlation of past events, but that that foundation has been hidden under the abstraction of numbers we view as a coherent framework.[130]

From ancient times, years were usually designated by significant events that happened in them. This system gave way to reginal dating in many places. In the case of Mesopotamia, the first year of a king would begin on the 1st of *Nisanu* (the first month of the Babylonian New Year), following his ascension to the throne. The practice apparently goes back to King *Nabonassar*, and in the 2nd century AD, the Greek astronomer, *Ptolemy* was able to reconstruct the so-called 'canon of kings' that has been used to correlate Babylonian years to later eras. Using this list, the beginning of King *Nabonassar's* reign has been dated to 747BC.[131]

Roman years were named after the two *Consuls* elected every year until AD537, when the emperor Justinian introduced reginal dating. There is wide agreement that procedural reforms, which caused the two elected *Consuls* to assume office on January 1st were initiated in 153BC. Before the reforms, *Consuls* took office on March 15th from at least 222BC, and before that they could and did enter and leave office on any day. The consulate office in Republican time was primarily a military position, and so being ready for campaigning season was what matter most. Apparently, guerilla warfare in Spain that required the attention of legions that had to walk there forced the innovation to be made.[132] From that time forward, the civil year would have begun on January 1st and the god *Janus* received their first sacrifice of their year in office.[133]

As mentioned very early in this paper the Greek cities all had their own calendars, which could be very difficult to match up. The Olympic Games was one institution all Greek cities shared and provided the backbone for

Panhellenic history. The Olympiads have been extremely valuable for scholars in terms of synchronization of events.[134] The early Christian chronographers such as *Eusebius of Caesarea* and *St. Jerome* did their best to find the proper synchronization of Biblical times with parallel timelines of all the ancient empires of the Mesopotamia and Egypt, along with Rome and Athens using the Olympiads as a supporting strand.[135]

Throughout this paper, I have used the older Christian notion of time BC (Before Christ) and AD (*Anno Domini*), traditionally paraphrased into English as the Year of Our Lord. The modern equivalents are BCE (Before the Current Era) and CE (Current Era). Both sets of notations are based in the same synchronizing system first developed by *Dionysius Exiguus*. His initial task was to construct an Easter cycle going forward in time for ninety-five years. Easter was/is the most important event in the Christian calendar and is calculated using the cycle of full moons after the spring equinox. The Alexandrian Church had used a yearly counting system that started from the first year of the reign of Emperor Diocletian, who was one of the last Emperor to widely persecute Christians. This counting system is sometime referred to as the Era of the Martyrs as opposed to (*Anno Diocletiani*). *Dionysius Exiguus* used an Easter cycle table produced by *Cyril of Alexandria* covering *Anno Diocletiani* 153–247. *Dionysius Exiguus* simply borrowed the last Metonic cycle of 19 years from Cyril's table (*Anno Diocletiani* 229–247) and added his own 5 cycles of 95 years starting from *Anno Diocletiani* 248. The reasons why are not exactly clear, but *Anno Diocletiani* 248 became synchronized with *Anno Domini* 532 after that.[136] So now if you check when Emperor Diocletian's reign started, you will find AD284.[137] This appears to be a simple calculation of 248+284=532. I will not go further, but as Stern points out in one of his footnotes the use of the Julian Calendar projected backward in time is what modern historian use when talking about ancient time.[138] This has been coupled with the *Dionysius Exiguus*' *Anno Domini* going forward ever since AD532. It has also been used for backdating synchronized time as BC since probably the eighth century AD when the Venerable Bede noticed the apparent miscalculation of the

birth of Jesus of Nazareth when synchronized with other events.[139] This may give further support for using the CE and BCE notations in addition to their neutral secular connotations.

VII. Conclusion

The Julian Calendar was meant to be a continuation of the Roman *Fasti*. The type of festivals and holidays which have since been marked down on the Julian Calendar have, no doubt, changed as Rome transitioned first from the Roman Republic to the Roman Empire, and then from the Roman Empire to the Christian Roman Empire as the prevalent cultural and religious norms evolved. Nonetheless, the basic 12-month structure of the Early Roman *Fasti* and most of the names of the months have prevailed and continued with us into the modern era in the form of derived calendars in use today based on Julius Caesar's calendar inaugurated in 45BC. When I first started this study, I noticed the term, the kalends, which signify the beginning of a month, seemed to be etymologically similar to the English word calendar itself. According to Rukpe, *Isidore of Seville* was the first person to use the Latin word *calendarium* in the modern sense of our word 'calendar'. Apparently, prior to that *calendarium* simply meant 'a register of debt'.[140] It seems the concept of "Time is Money" is much older than Benjamin Franklin and his advice to the young tradesman.

Note:

1 Reza Aslan, *God: A Human History*, (London: Bantam Press, Transworld Publishers, 2017), 59.

2 Plato, *Laws*, 353 C–D, cites in Josef. Pieper, Translated by Alexander Dru, *Leisure: The Basis of Culture and the Philosophical Act*, (San Francisco, CA: Ignatius Press, 2009), 1.

3 Benjamin Franklin, "Advice to a Young Tradesman, [21 July 1748]," *Founders Online*, National Archives, accessed 22 August, 2022, <https://founders.archives.gov/documents/Franklin/01-03-02-0130>. [Original source: *The Papers of Benjamin Franklin*, vol. 3, *January 1, 1745, through June 30, 1750*, ed. Leonard W. Labaree. New Haven: Yale University Press, 1961, pp. 304–308.]

4 Virgil, Georgics, Book 3 Line 284. Vergilius Maro, Publius. *Georgicon*, III. c. 29 BC. Hosted at Wikisource. (in Latin), <https://la.wikisource.org/wiki/Georgicon/Liber_III>, accessed 28 September 2022.
5 Rolling Stones, "Time Waits for No One," *Album It is Only Rock 'n Roll*, October 18, 1974, Rolling Stones Records.
6 King Canute (995 – 1035) was the king of England, Denmark, and Norway. The story has it that he commanded the tide to stop. Most people thought he was being arrogant and presumptuous. According to the original story though, he knew he couldn't stop the tide and was trying to demonstrate to his subjects the limits of a king's power.
7 Geoffrey Chaucer, *The Canterbury Tale*, "The Clerks Prologue" Lines 118–199, Harvard's Geoffrey Canterbury Tales Website, Harvard University, accessed 12 October, 2022, <https://chaucer.fas.harvard.edu/pages/clerks-prologue-tale-and-envoy>.
8 Socha Stern, *Calendars in Antiquity: Empires, States, and Societies*, (Oxford, UK: Oxford University Press, 2012), 169.
9 E.G. Richards, *Mapping Time: The Calendar and its History*, (Oxford, UK: Oxford University Press, 1999) 245–248.
10 Chad Orzel, *A Brief History of Timekeeping: The Science of Marking Time, from Stonehenge to Atomic Clocks* (London, England: Oneworld Publications, 2022), 39.
11 Isidore, *Etymologies* 18.26, as translated by Stephen A. Barney et al., *The Etymologies of Isidore of Seville* (Cambridge University Press, 2006), 368.
12 Chad Orzel, *A Brief History of Timekeeping: The Science of Marking Time, from Stonehenge to Atomic Clocks* (London, England: Oneworld Publications, 2022), 39.
13 E.G. Richards, *Mapping Time: The Calendar and its History*, (Oxford, UK: Oxford University Press, 1999) 410.
14 Socha Stern, *Calendars in Antiquity: Empires, States, and Societies*, (Oxford, UK: Oxford University Press, 2012), 211.
15 E.G. Richards, *Mapping Time: The Calendar and its History*, (Oxford, UK: Oxford University Press, 1999) 239.
16 Chad Orzel, *A Brief History of Timekeeping: The Science of Marking Time, from Stonehenge to Atomic Clocks* (London, England: Oneworld Publications, 2022), 39
17 Orzel, (2022), 40.
18 Richards, (1999) 89.
19 Richards, (1999) 147.
20 Socha Stern, *Calendars in Antiquity: Empires, States, and Societies*, (Oxford, UK: Oxford University Press, 2012), 73–74.
21 Richards, (1999) 147.
22 Robert Hannah, *Greek and Roman Calendars: Construction of Time in the Classical World*, (London: Bloomsbury Academic, 2005), 9–12.
23 Stern, (2012), 78–83.
24 Richards, (1999), 148.
25 Stern, (2012), 93.

26 Richards, (1999), 148.
27 Richards, (1999), 146.
28 Chul-hyun Bae, "Aramaic as a Lingua Franca During the Persian Empire (538–333 B.C.E)," *The Journal of Universal Language*, *Volume 5*, March 2004, Pages 1–20, PDF download, accessed 28 September, 2022, <https://www.sejonjul.org>.
29 Stern, (2012), 92.
30 Stern, (2012), 105.
31 Richards, (1999), 148.
32 Stern, (2012), 169.
33 Richards, (1999), 149.
34 Richards, (1999), 233.
35 Richards, (1999), 165.
36 Orzel, (2022), 40.
37 Nicholas Grimal, Translated by Ian Shaw, *A History of Ancient Egypt*, (Oxford, UK: Blackwell Publishers, 1994), 51.
38 Stern, (2012), 129.
39 Richards, (1999), 154.
40 Stern, (2012), 133.
41 Richards, (1999), 150–156.
42 Stern, (2012), 126–128.
43 Denis Feeney, *Caesar's Calendar: Ancient Time and the Beginnings of Histor*,. Berkeley, CA: University of California Press, 2007, 97.
44 Richards, (1999), 196.
45 Robert Hannah, *Greek and Roman Calendars: Construction of Time in the Classical World*, (London: Bloomsbury Academic, 2005), 42.
46 Stern, (2012), 29.
47 Hannah, (2005), 42.
48 Hannah, (2005), 43.
49 Richards, (1999), 197.
50 Hannah, (2005), 43.
51 Stern (2012), 64–67.
52 Richards, (1999), 197, Stern (2012), 35.
53 Jorg Rupke, Translated by David M.B. Richardson. *Patheon: A New History of Roman Religion*. Princeton, NJ: Princeton University Press, 2018, 102–103.
54 W. Warde Fowler, The *Roman Festivals of the Period of the Republic: An Introduction to the Calendar and Religious Events of the Roman Year*. (Oxford, UK: Pantianos Classics, Reprint first published in 1899), 20–33.
55 Jorg Rupke, Translated by David M.B. Richardson. *The Roman Calendar from Numa to Constantine: Time, History and the Fasti*, (Chichester, UK: John Wiley & Sons Ltd., 2011), 23.
56 Rupke, (2011), 24.
57 Rupke, (2011), 24–32.
58 W. Warde Fowler, The *Roman Festivals of the Period of the Republic: An*

Introduction to the Calendar and Religious Events of the Roman Year. (Oxford, UK: Pantianos Classics, Reprint first published in 1899), xiii.

59 Jorg Rupke, Translated by David M.B. Richardson. *Patheon: A New History of Roman Religion*. Princeton, NJ: Princeton University Press, 2018, 103. Fowler, (1899 Reprint), xiii.
60 Rupke, (2018), 103.
61 Fowler, (1899 Reprint), xiii.
62 Fowler, (Reprint first published in 1899), 34.
63 Rupke, (2011), 6–7.
64 Fowler, (Reprint first published in 1899), 20–33.
65 Richards, (1999), 211.
66 Fowler, (Reprint first published in 1899), 42.
67 Fowler, (Reprint first published in 1899), 51.
68 Fowler, (Reprint first published in 1899), 67–80.
69 Manfred Lurker, *The Gods and Symbols of Ancient Egypt: An Illustrated Dictionary*, (London: UK: Thames and Hudson, 1980) 13–16.
70 Fowler, (Reprint first published in 1899), 85–101.
71 Fowler, (Reprint first published in 1899), 109–132.
72 Richards, (1999), 215.
73 Fowler, (Reprint first published in 1899), 132–135.
74 Denis Feeney, *Caesar's Calendar: Ancient Time and the Beginnings of Histor*,. Berkeley, CA: University of California Press, 2007, 167.
75 Fowler, (Reprint first published in 1899), 132–135.
76 Scott C. Littleton, *World Book Encyclopedia, M Volume 1, 1975 ed*., s.v. "Mythology," (Chicago: World Book Encyclopedia, 1975) 820–821.
77 Fowler, (Reprint first published in 1899), 144–152.
78 Fowler, (Reprint first published in 1899), 152–153.
79 Fowler, (Reprint first published in 1899), 154–164.
80 Littleton, (1975) 820.
81 Fowler, (Reprint first published in 1899), 166–173.
82 Ronald T. Ripley, "The Absent Pontifex Maximus." Historia: Zietschrift für Alte Geschichte, 2005, Bd. 54, H.3 (2005), pp. 275–300. Access 5 October 2022, <https://www.jstor.org/stable/4436775>.
83 Fowler, (Reprint first published in 1899), 178.
84 Larry Siedentop, *Inventing the Individual: Origins of Western Liberalism*. (UK: Penguin Random House UK, 2015), 12–15.
85 Fowler, (Reprint first published in 1899), 178–193.
86 Scott C. Littleton, *World Book Encyclopedia, M Volume 1, 1975 ed*., s.v. "Mythology," (Chicago: World Book Encyclopedia, 1975), 821.
87 Rupke, (2011), 77.
88 Rupke, (2011), 69–82.
89 Stern (2012), 209.
90 Rupke, (2011), 83.

91 Rupke, (2011), 70.
92 Stern (2012), 207.
93 Rupke, (2011), 69.
94 Feeney, (2007), 75.
95 Susan Wise Bauer, *The History of the Ancient World: From the Earliest Accounts to the Fall of Rome*, (New York, NY: W.W. Norton & Company, 2007), 474–475.
96 Rupke, (2011), 151.
97 Bauer, (2007), 555–557.
98 Bauer, (2007), 587.
99 Bauer, (2007), 663–664.
100 Bauer, (2007), 662.
101 Rupke, (2011), 68–69.
102 Bauer, (2007), 668.
103 Bauer, (2007), 670–673.
104 Bauer, (2007), 676–678.
105 Rupke, (2011), 112.
106 Bauer, (2007), 668.
107 Rupke, (2018), 124.
108 Bauer, (2007), 685.
109 Ronald T. Ridley, "The Absent Pontifex Maximus." Historia: Zietschrift für Alte Geschichte, 2005, Bd. 54, H.3 (2005), pp. 275300, Accessed 5 October 2022, <https://www.jstor.org/stable/4436775>, 296.
110 Bauer, (2007), 685–690.
111 Kristin Baird Rattini, "Who was Julius Caesar?" *National Geographic*, February 21, 2019, Access 11 October 2022, <https://www.nationalgeographic.com/culture/article/julius-caesar>.
112 Andea Frediani, "Julius Caesar came. He saw. He conquered. This is how he celebrated." *National Geographic*, July 10, 2019, Access 11 October <https://www.nationalgeographic.com/history/history-magazine/article/rome-celebrate-julius-caesar-four-triumphs>.
113 Bauer, (2007), 690.
114 Chris Scarre, *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*, (London: Thames and Hudson Ltd., 1995) 8.
115 Bauer, (2007), 690–693
116 Andea Frediani, "Julius Caesar came. He saw. He conquered. This is how he celebrated." *National Geographic*, July 10, 2019, Access 11 October <https://www.nationalgeographic.com/history/history-magazine/article/rome-celebrate-julius-caesar-four-triumphs>.
117 Ronald T. Ridley, "The Absent Pontifex Maximus." Historia: Zietschrift für Alte Geschichte, 2005, Bd. 54, H.3 (2005), pp. 275–300, Accessed 5 October 2022, <https://www.jstor.org/stable/4436775>, 275. A term also have the meaning of Roman calvary commander, personal body guard, and lieutenant to a dictator.
118 Richards, (1999), 212.

119 Rupke, (2018), 124.
120 Richards, (1999), 212.
121 Rupke, (2018), 110.
122 Rupke, (2011), 108–119.
123 Fowler, (Reprint first published in 1899), 20–33.
124 Stern, (2012), 213.
125 Rupke, (2011), 119.
126 Bauer, (2007), 697.
127 Stern, (2012), 214.
128 Chris Scarre, *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*, (London: Thames and Hudson Ltd., 1995) 18–19.
129 Stern, (2012), 214–216.
130 Denis Feeney, *Caesar's Calendar: Ancient Time and the Beginnings of Histor*,. Berkeley, CA: University of California Press, 2007, 15.
131 Richards, (1999), 148–149.
132 Denis Feeney, *Caesar's Calendar: Ancient Time and the Beginnings of History*, (Berkeley, CA: University of California Press, 2007), 167–171.
133 Feeney, (2007), 168.
134 Feeney, (2007), 85.
135 Feeney, (2007), 28–42.
136 Steven L. Ware, *When was Jesus Really Born? Early Christianity, the Calendar, and the Life of Jesus*, (St. Louis, MO: Concordia Publishing House, 2013), 103–105.
137 Chris Scarre, *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*, (London: Thames and Hudson Ltd., 1995) 197.
138 Stern, (2012), 214.
139 Ware, (2013), 105.
140 Rupke, (2011), 1.

Bibliography

Aslan, Reza. *God: A Human History*. London: Bantam Press Transworld Publisher, 2017.

Bae, Chul-hyun, "Aramaic as a Lingua Franca During the Persian Empire (538–333 B.C.E)." *The Journal of Universal Language*, *Volume 5*, March 2004, Pages 1–20, PDF download, accessed 28 September, 2022, <https://www.sejonjul.org>.

Barney, Stephen A. et al., *The Etymologies of Isidore of Seville*. Cambridge, UK: Cambridge University Press, 2006.

Barton, Tamsyn. *Ancient Astrology*. New York, NY: Routledge, 1994.

Bauer, Susan Wise. *The History of the Ancient World: From the Earliest Accounts to the Fall of Rome*. New York, NY: W.W. Norton & Company, 2007.

Bauer, Susan Wise. *The History of the Ancient World: From the Conversion of Constantine to the First Crusade*. New York, NY: W.W. Norton & Company, 2010.

Chaucer, Geoffrey. *The Canterbury Tales*. "The Clerks Prologue." Harvard's Geoffrey Chaucer Website, Harvard University, accessed 12 October, 2022, <https://chaucer.fas.harvard.edu/pages/clerks-prologue-tale-and-envoy>.

Christie, Siobhan. "AEDES DIVI IVLI: The Temple to the Deified Julius." *Ancient History Blog. Macquarie University Department of Ancient History*, 2018, accessed 1 October, 2022, <https://ancient-history-blog.mq.edu.au/cityOfRome/Temple-Deified-Julius>.

Feeney, Denis. *Caesar's Calendar: Ancient Time and the Beginnings of History*. Berkeley, CA: University of California Press, 2007.

Fowler, W. Warde. The *Roman Festivals of the Period of the Republic: An Introduction to the Calendar and Religious Events of the Roman Year*. Oxford, UK: Pantianos Classics, Reprint first published in 1899.

Franklin, Benjamin. "Advice to a Young Tradesman, [21 July 1748]," *Founders Online*, National Archives, accessed 22 August, 2022, <https://founders.archives.gov/documents/Franklin/01-03-02-0130>. [Original source: *The Papers of Benjamin Franklin, vol. 3, January 1, 1745, through June 30, 1750*, ed. Leonard W. Labaree. New Haven: Yale University Press, 1961, pp. 304–308.].

Frediani, Andrea. "Julius Caesar came. He saw. He conquered. This is how he celebrated. National *Geographic*, July 10, 2019, accessed 11 October <https://www.nationalgeographic.com/history/history-magazine/article/rome-celebrate-julius-caesar-four-triumphs>.

Eclogues ; Georgics ; Aeneid I-VI. - Rev. ed. - Cambridge, Mass : Harvard University Press. - London : William Heinemann , 1967. - (The Loeb classical library ; 63 . Virgil : in two volumes / with an English translation by H. Rushton Fairclough ; 1)

Grimal, Nicholas. Translated by Ian Shaw. *A History of Ancient Egypt*. Oxford, UK: Blackwell Publishers, 1994.

Hannah, Robert. *Greek and Roman Calendars: Construction of Time in the Classical World*. London: Bloomsbury Academic, 2005.

Littleton, Scott C. *World Book Encyclopedia, M Volume 1, 1975 ed*., s.v. "Mythology." Chicago: World Book Encyclopedia, 1975.

Lurker, Manfred. *The Gods and Symbols of Ancient Egypt: An Illustrated Dictionary*. London, UK: Thames and Hudson, 1980.

Orzel, Chad. *A Brief History of Timekeeping: The Science of Marking Time, from Stonehenge to Atomic Clocks*. London, England: Oneworld Publications, 2022.

Pieper, Josef. Translated by Alexander Dru. *Leisure: The Basis of Culture and the Philosophical Act*. San Francisco, CA: Ignatius Press, 2009.

Rattini, Kristin Baird. "Who was Julius Caesar?" *National Geographic*. February 21, 2019. Accessed 11 October 2022, <https://www.nationalgeographic.com/culture/article/julius-caesar>.

Richards, E.G. *Mapping Time: The Calendar and its History*. Oxford, UK: Oxford University Press, 1999.

Ridley, Ronald T. "The Absent Pontifex Maximus." *Historia: Zietschrift für Alte Geschichte*, 2005, Bd. 54, H.3 (2005), pp. 275–300. Access 5 October 2022, <https://

www.jstor.org/stable/4436775>.
Rupke, Jorg. Translated by David M.B. Richardson. *The Roman Calendar from Numa to Constantine: Time, History and the Fasti*. Chichester, UK: John Wiley & Sons Ltd., 2011.
Rupke, Jorg. Translated by David M.B. Richardson. Patheon: *A New History of Roman Religion*. Princeton, NJ: Princeton University Press, 2018.
Scarre, Chris. *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*. London: Thames and Hudson Ltd., 1995.
Siedentop, Larry. *Inventing the Individual: Origins of Western Liberalism*. UK: Penguin Random House UK, 2015.
Snodgrass, Mary Ellen. *Signs of the Zodiac: A Reference Guide to Historical, Mythological, and Cultural Associations*. Westport, CT: Greenwood Press, 1997.
Stern, Sacha. *Calendars in Antiquity: Empires, States, and Societies*. Oxford, UK: Oxford University Press, 2012.
The Colchester Archeological Trust Online, "25th December: The Roman Festival of the Sun God Sol Invictus," *The Colchester Archeologist*, December 25, 2015, accessed 22 September, 2022, <https://www.thecolchesterarchaeologist.co.uk/?p=22534>.
Vergilius Maro, Publicus. *Georgicon*, III, c. 29 BC. Hosted at Wikisource. (in Latin). accessed 28 September 2022, <https://la.wikisource.org/wiki/Georgicon/Liber_III>.
Ware, Steven L. *When was Jesus Really Born? Early Christianity, the Calendar, and the Life of Jesus*. St. Louis, MO: Concordia Publishing House, 2013.
Williams, Stephen and Gerard Friell. *Theodosius: The Empire at Bay*. New Haven, Conn: Yale University Press, 1995.

（異文化コミュニケーション・西洋思想史・経済学／国際文化学部教授）