Evidence of a seven-day week in the Ancient Near East—part 1

Andrew Sibley

This paper will discuss evidence for use of a seven-day week in the Ancient Near East. These cultures were utilizing an approximate seven-day week, what has been termed a *quasi*-week, prior to the giving of the Law of Moses. The evidence is that the month, of 29- or 30- days duration, was divided into four parts according to the moon's orbit; that is the new moon, full moon, and the two intermediate half moons. The proposal here is that these cultures were following a tradition that could have been passed down through the patriarchs; from Adam to Noah, and to the people living in the immediate post-Flood period. Later this was codified in the Mosaic Law for the Israelites. The paper also briefly outlines how the week we use today was developed by the Romans, with influence from Egypt, Babylon, the early Christians, and Jews. Knowledge of a *quasi*-week spread as far as the Pacific Islands.

An interesting question is the origin of the week, in terms of it being a period of seven days, and how it was incorporated into the practices of cultures from the Ancient Near East. Is there any astronomical feature that dictates the seven-day week, or was it determined *solely* by the order of creation in Genesis 1 and 2? There are a couple of biblical passages of relevance to this discussion; that God put the sun and moon in place to help mankind determine the 'seasons', 'days', and 'years,' and that He declared the seventh day holy.

> "And God said, 'Let there be lights in the expanse of the heavens to separate the day from the night. And let them be for signs and for seasons, and for days and years, and let them be lights in the expanse of the heavens to give light upon the earth.' And it was so. And God made the two great lights—the greater light to rule the day and the lesser light to rule the night—and the stars" (Genesis 1:14–16).
>
> "So God blessed the seventh day and made it holy, because on it God rested from all his work that he had done in creation" (Genesis 2:2).

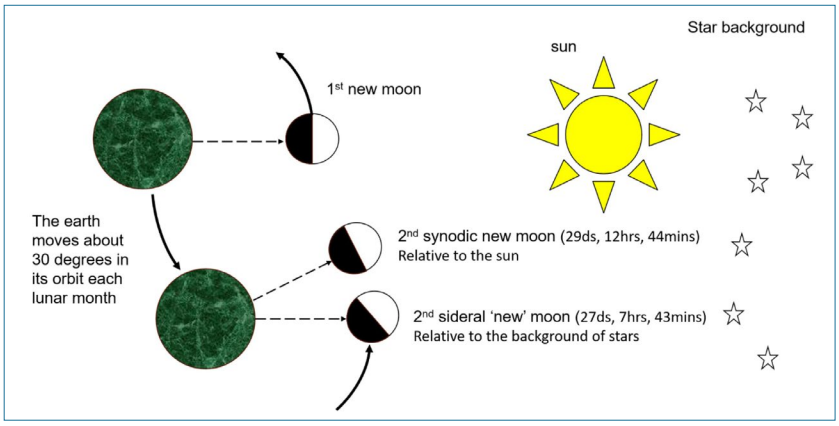
However, these Scriptures were given later to Moses. The historical evidence for the existence of a seven-day week will be considered from extra-biblical records among non-Hebraic cultures in this paper; particularly that of the Sumerian, Babylonian, Egyptian, and Roman cultures. A second paper will discuss this in relation to the Hebrew nation and the Mosaic Law.

A number of different calendars were used by these ancient cultures, but one involving an approximate seven-day week was notably also in use, and this was prior to the giving of the Mosaic Law to the Israelites. This calendar was particularly used for religious purposes based on the cycles of the sun and moon; i.e., they can be said to be *luni-solar*. These beliefs even spread across Asia, likely through the influence of Hinduism and Buddhism, with recognizable pollination of ideas extending to east Asia and even the Pacific Islands.

However, some commentators have stated that the week is not associated with any astronomical feature,[1,2] which suggests it is derived solely from religious texts and observance. Zerubavel also denied that the seven-day week is connected directly to a physical cycle, although he does acknowledge the existence of a *quasi*-week that is related to the quarter phases of the lunar orbit. The reason for this *quasi*-week is that the quarter phase of the moon's orbit only approximates seven days (it is about 7.4 days), and a lunation (a monthly period of the moon's orbit) is either 29 or 30 days in duration.[3] Copeland has proposed that the week was initially determined either by the phases of the moon or by the seven clearly-visible stars in Pleiades, or those in Ursa Major, or by the 'planets' moving through the Zodiac. However, he favoured the former explanation relating to the orbital period of the moon.[4] Box 1 and figure 1 explains the difference between the sideral and synodic month. The following sections are a brief overview of the evidence, which highlights the existence of seven-day periods in antiquity related to the phases of the moon.

Sumerian calendar

The early Ur III Sumerian civilization influenced the later Babylonian and Egyptian calendars, with evidence showing them to be based upon the cycles of the sun and moon; the moon being the god Nanna (figure 2). This luni-solar calendar was followed in Mesopotamia from the 3rd to 1st millennium BC for sacrificial purposes.[5,6] The Sumerian (Ur III) year was



Box 1 and Figure 1. The sidereal month versus the synodic month. In many ancient calendars the orbit of the moon around the earth marks out the period of each month. In terms of definitions, the sidereal month is the time it takes for the moon to return to the same place relative to the background of stars; which is, on average, 27 days 7 hours and 43 minutes. But because the earth is moving around the sun in its orbit, it takes longer for the moon to return to the same place relative to the sun—about two days longer each month. This is referred to as the 'synodic month', and is, on average, a period of 29 days 12 hours and 44 minutes. In terms of the number of whole days, it implies that the synodic lunar month must be either 29 or 30 days long. A lunar quarter-phase is then approximately 7.4 days long, or seven or eight whole days. However, we may note that the moon is invisible for about a day and a half at the end of the lunar orbit as it approaches the sun's relative position, occasionally through a lunar eclipse. This leads to a monthly period of *visibility* of close to 28 days. Another way of measuring the length of the month is the observance of the passage of the sun through the astrological signs of the Zodiac, until the sun returns to its original position. There are twelve in all, approximately between 29 and 31 days in length.
The phases of the moon still influence the Western Julian/Gregorian calendar in terms of approximate length, although the monthly cycle is out of sync with the lunar cycle in the West. Typically, Western months now retain periods of 30 or 31 days, which are slightly longer than that of the moon's cycle. Each year covers a period of nearly 365.25 days. When we seek to fit the cycles of the moon into the solar year, there is a discrepancy—there are approximately twelve and one third lunar cycles in a year. Different cultures have used occasional leap, or intercalary days, or months to keep the count of months and the beginning of the year aligned.

established upon 12 lunar monthly cycles of 29 or 30 days each, together with an additional intercalary month every few years. Each month appears suggestively to have been divided into four periods according to the phases of the moon, with certain days of the month ascribed designations (as denoted below by the Cuneiform Digital Library Initiative):[7]

u_4-sakar gu-la ("great crescent")

u_4-sakar u_4 1(u)-5(diš) ("crescent of day 15")

e_2-u_4-1(u)-5(diš) ("house of day 15")

e_2-u_4-7(diš) ("house of day 7").

The major division was between the new moon and the full moon, with intermediate divisions of seven or eight days. Like the Hebrews, the Sumerians saw significance in the number seven.[8,9] The Enuma Elish (or Enūma Eliš) myth probably dates to around the second dynasty of Isin (12th century BC),[10] although it relays an earlier account (the earliest tablet probably dates to the 9th century BC). In Tablet V (table 1) there is a division of the month into four periods, which are related to the phases of the moon. The moon is described as waxing to half brightness at day 7 and full at day 15 when it is in opposition to the sun. The moon is said to wane at the same pace as its prior waxing, before disappearing and completing its cycle by day 30. The moon is inferred to have completed its orbit within 30 days.[11] We see, then, that there is some evidence for the existence of an approximate seven-day week in the earliest cultures, and this evidence extended to Assyria and Babylon.

Assyrian and Babylonian calendars

The city of Kültepe, or ancient Kaneš, in Central Anatolia (modern Turkey) has yielded thousands of Old Assyrian cuneiform tablets, most of which are loan contracts from merchant houses. They are dated to as early as the 19th century BC, and give glimpses of the structure of the Old Assyrian calendar. In these, there were 12 months of 29 or 30 days, with an occasional intercalary month. The weekly period was denoted by the word *hamuštum,* although scholars disagree on its length, with possible periods given of 5, 6, 7, or 10 days.[14] However, the period of 7 days is considered more likely because of a complete list of 50 or 52 *hamuštum* in one almanac (Kt g/k 118), representing that of a full year.[15] These documents record the first day of the month as the appearance of the moon god (*nāmarti ilim*), the end of the month when the moon god disappears (*ilum ūbilma*), and the *Šapattum* in the middle of the month, day 15, when the moon is full.[7]

Some of the calendar texts from Assyria and Babylon date from the 12th century BC (for example, one calendar was produced for the Kassite king, Nazimaruttash), but the bulk have been attributed to a period later than the 8th century BC, a timeframe which covered the Israelite exile in Assyria and Babylon. Some texts included knowledge of an economic or administrative calendar with 12 months of 30 days each.[16] However, George Smith found a particular tablet at Warka (Erech) which recorded monthly sacred sacrificial days on the 7th, 14th, 21st, and 28th day of each month (and also the

Table 1. Enuma Elish Tablet V

Enuma Elish, Tablet V (Heinrich)	Enuma Elish, Tablet V (King)
12 He made the Moon [nannāra] appear, entrusted (to him) the night. 13 He assigned to him the crown jewel of nighttime to mark the days (of the month), 14 Every month, without ceasing, he exalted him with a crown. 15 "At the beginning of the month, waxing over the land, 16 "You shine with two horns to mark the naming of six days, 17 ""At the seventh day, the crown is [ha]lf. 18 "At the fifteenth day, you shall be in opposition, at the midpoint of each [month]. 19 "When the Sun can see you on the horizon, 20 "Wane at the same pace and form in reverse. 21 "At the day of di[sappeara]nce, approach the Sun's course, 22 "On the thirtieth day, you shall be in conjunction with the Sun as a double.	12. The Moon-god he caused to shine forth, the night he entrusted to him. 13. He appointed him, a being of the night, to determine the days; 14. Every month without ceasing with the crown he covered(?) him, (saying): 15. "At the beginning of the month, when thou shinest upon the land, 16. "Thou commandest the horns to determine six days, 17. "And on the seventh day to [divide] the crown. 18. "On the fourteenth day thou shalt stand opposite, the half [...]. 19. "When the Sun-god on the foundation of heaven [...] thee, 20. "The [...] thou shalt cause to ..., and thou shalt make his [...]. 21. "[...] ... unto the path of the Sun-god shalt thou cause to draw nigh, 22. "[And on the ... day] thou shalt stand opposite, and the Sun-god shall ... [...]
18, "A (sabbath) [sa]pattu shall thou then encounter mid-[month?]ly" (Pinches).[11] The word [sa]ppatu (sabbath) possibly appears in line 18, but is not clear due to a broken letter—it is inferred from the context.	

19th, which is 49 days from the beginning of the previous month—although sometimes occurring a day early depending upon the length of the lunar month).[16] Whether these days were properly considered days of rest in Babylon has not been firmly established.[17]

As noted, the Babylonian calendar was influenced by the Sumerian, and Assyrian examples, with the lunar phases tracing out the week. The 'sabbath' (it's uncertain and unclear whether the Hebrew term is related to the Akkadian *sapattu* or *sabattu* meaning heart rest or mid rest) was ascribed to the 15th day of the month, when the moon reached its peak brightness, thus 'resting,' before waning towards the second half of the month. The moon was said to rest at peak brightness.[6] The Babylonians, possibly following the Assyrians, ascribed a specific meaning to the weekly day of rest, which they termed 'evil days'; essentially days of bad omens when work was discouraged. Instead, it was necessary to sacrifice to appease the gods. The month then could be divided into four weeks: which included three seven-day weeks, and a fourth week adjusted by a day to complete the lunar month of 29 or 30 days. The requirement to know the beginning of each month was initially determined by observations of the new moon, but due to occasional inclement weather, there was a greater desire to predict the length of each month in the neo-Babylonian and Achaemenid period of the 1st millennium BC. The luni-solar calendar continued into the Seleucid and Parthian periods.[5] In terms of the necessity for the insertion of an intercalary month, use was later made of the Metonic Cycle.[18,19]

Incidentally, we ought to note two further points. An idealized calendar of 30 days per month, over a 12-month period, or 360 days, arose in Babylon for administrative purposes. It was later used for Hebraic prophetic purposes; e.g., see Daniel 7:25, 11:3. There is another calendar known from the Near East. This was the *Pentecontad* calendar used by the Amorites and Canaanites. This divided time into periods of fifty days, with seven seven-day weeks, and an extra day; the *atzeret*.

Egyptian calendar

The Egyptians used both a solar calendar of twelve 30-day months, and a ceremonial/religious one that was luni-solar. Scholars generally agree that the lunar calendar preceded the civil one, although it is believed that for centuries they ran side-by-side.[20,21] Based on an annual 360-day year, the civil calendar added five extra days to the end of the year, and each month was divided into three-weekly periods of 10 days each. There were three seasons of four months each, based upon the flood cycle of the Nile, and the year began with the rising of the star Sirius (Sopdet). However, because the Egyptians did not intercalate for the additional quarter day, the seasons gradually moved out of sync with the civil calendar.

Each month of the luni-solar calendar, of 29-or 30-days duration, began with the new moon. The months were divided into four equal weeks, based upon the quarter lunar phases. Twelve months completed the year, with an additional intercalary month added every second or third

Figure 2. Ur III cylinder seal impression, possibly of King Ur-Nammu, seated on an elaborate throne beneath the crescent moon—the moon was considered a god, Nanna-Suen. Located in the British Museum.

year to maintain synchronicity with earth's solar orbit. The new month is thought to have begun on the morning on which the waning crescent moon disappeared from view, and reappeared on the 2nd day of the month, although with some disagreement over the known detail.[4] According to a New Kingdom text from the Temple of Karnak, the moon became visible on the 2nd of each month, reaching its fullness on the 15th of the month.[22] Centuries earlier, as recorded in the Coffin Texts of the Middle Kingdom, a further reference to the cycles of the moon stated: "I know, O souls of Hermopolis, what is small in the 2nd day and what is great on the 15th day; it is Thoth [god of the moon]" (figure 3).[11] This seems to mirror the Sumerian example described above, again evidently arising before the giving of the Mosaic Law.

Roman observance

The Roman Republic's (c. 509–27 BC) calendar was originally luni-solar, at least in part, being developed from an earlier Greek system (which was itself influenced by the Babylonian and Egyptian luni-solar examples described above). However, the early Roman calendar seems to have amalgamated more than one tradition, evidenced by its complexity, before gradually changing into the Western solar one we have today. The semi-legendary account of the development of the earlier Roman Kingdom's calendar is that it was established by Romulus (possibly born 771 BC). Originally the organization of the year consisted of 10 months (March to December) of 30 or 31 days length beginning and ending with the new moon; 304 days in total, divided into 38 'weeks' of eight days each.[23] There were four 'long' or 'full' months, and six 'short' or 'hollow' months, which corresponded, to some extent, with that of the Alban state (although Plutarch suggested the lengths of the months were more irregular at this time). The 51-day winter period was considered unimportant for the harvest, and not counted in the year. Livy and Plutarch point to the second king, Numa Pompilius (753–672 BC), as the one who introduced a 12-month year, adding January and February to the calendar, being 29 and 28 days respectively.[24,25] The six short months each lost a day; the six days were then added to the 51-day period of January and February (even numbers were considered unlucky, and so the preference was for months (except February) to be either 31 or 29 days in length). This led to a year of 355 days length, which is longer than the lunar year by one day. Every other year, an intercalary month of 22 days was added to adjust the lunar to the solar cycle (355 + (22/2) = 366), but there was a gradual disjunction between the cycles, and the Roman civil calendar moved out of phase with those calculated from the natural cycles.[26]

Later, in 153 BC, the beginning of the year was moved to January.[27] This is why the numerical names of some of the months are out of sequence with the beginning of the solar year. For example, September, October, November, and December are now the ninth to twelfth months, and not the seventh to tenth as their names suggest. July and August were originally called Quintilis and Sextilis, later being named after Caesars Julius and Augustus. However, for decades the priests, or pontiffs, controlled the calendar, and kept March as the first month for offerings to their idols. And without a consistent intercalary scheme the passage of the months moved out of sequence with the solar year. Sometimes this was due to political reasons.[28]

The Roman calendar fixed special days (*Kalends*, *Nones*, *Eides*) in each month approximately to the phases of the moon: for the new moon at the beginning of the month, the *Kalends*; to the time of the first phase of the moon, the *Nones*; and to the full moon, the *Eides* (figure 4). The Nones, which were once set aside for official notices and markets, were either 5 or 7 days after the beginning of the month, the Eides 13 or 15 days after. Days in the month were

identified in relationship to the next special day; e.g., three days before Eides.

But the calendar also ran with an eight-day period, or 'week', which progressed from month to month without readjustment to the moon's cycle. This was known as the *Nundinae or Nundinal Cycle* (not to be confused with the *Nones* as described above). The eighth day was essentially a market day, when farmers would sell their goods and wares in the towns and cities, and other official business was set aside. Children were also free from school. The eight days of the week were ascribed letters A to H (although the noun *nundinae* is based on the number nine because the Romans counted the start and end days inclusively for an eight-day week).[29–31]

There were ongoing problems with the complexity of the Roman system, especially through synchronization with the solar cycle, and it was open to abuse for political reasons. Various adjustments were made, particularly by such figures as Julius Caesar in 46 BC, who tied the calendar more closely with the solar cycle. Ten days were added to the calendar to bring it in line with the 365-day solar year, together with an extra day every four years to account for the quarter-day. Effectively, this broke the connection to the cycle of the moon, but retained the *nundinal* system that determined the market days.

Influence from Babylonian and Egyptian astrological sources was imported into the Roman calendar in the first or second century AD, more specifically in terms of the development of a seven-day week, and the pagan names given to each day. This development, probably cultural as opposed to formal at first, was certainly simpler than the traditional Roman calendar. The emerging seven-day calendar was based upon the number of the ascribed wandering 'planets' (which depended upon their distance from Earth in the Ptolemaic system; the order being Saturn, Jupiter, Mars, Sun, Venus, Mercury, and the moon). For complex mathematical and astrological reasons, as discussed by Dio Cassius, the days of the sun and moon actually fell upon days two and three, with Saturn's day the first of the week.[32] There is also some suggestion that Jewish and Christian migration influenced the development of the seven-day week in Rome (although early Christians resisted the astrological names for the days at first).[33,34]

In the fourth century (AD 321) Constantine formally adopted the seven-day week, with Sunday promoted to the first day, and named as an official Christian holiday and day of rest. So, the Roman Saturday or Saturn's day, essentially the Jewish sabbath in exile, was moved to the last day of the week, which also suited the Rabbis.[35] Combined, these developments effectively broke the link between the new moon and the start of the month in Roman thinking. This forms the basis for our Western calendar today, with the only major adjustment being that made by Pope Gregory in the

Image: Diego Delso, delso.photo / CC-BY-SA 4.0

Figure 3. The moon god Thoth, depicted with the moon-disk resting on his head. Located in the Tomb of Ramses V and Ramses VI, Valley of the Kings, Luxor, Egypt.

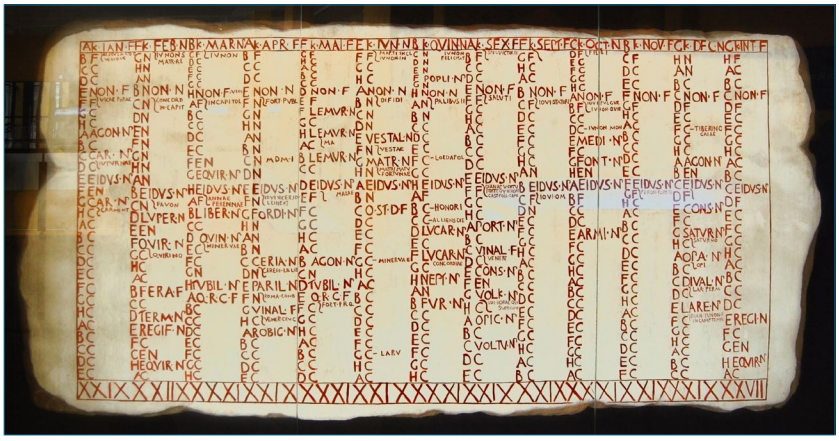


Figure 4. Reproduction of the Anzio Calendar *(Fasti Antiates Maiores)* dated to between 84 and 55 BC, prior to Julius Ceasar's reforms. It is located in the *Museo del Teatro de Caesaraugusta,* Zaragoza, Spain. The original is in the Museo Nazionale Romano, Baths of Diocletian. It was painted on a plaster wall, with about 300 fragments found in 1915.

16th century, who moved the calendar forward ten days, and added a small correction to keep the beginning of the year near to the winter solstice.

Hindu, Buddhist and Islamic calendars

Observance of an approximate seven-day week, linked to the cycles of the moon, spread more widely than the Middle East, although with the Babylonian commitment to a seven-day 'week' gradually attenuated through time and distance. Hinduism, with its influence from the ancient Babylonian religious system, relies upon a luni-solar calendar, which also passed to Buddhism. Within Buddhist' culture, holy or *Uposatha* days are set aside each month for worship; these days are related to the lunar phases, although different branches of Buddhism have slightly different practices. For Theravada Buddhists, the new and full moons are considered the most sacred days, but the more devout also commemorate the quarter periods, ascribed to the 8th and 23rd days of the month.[36] Buddhist culture may have influenced other parts of the Far East with regard to the luni-solar calendar before the spread of Islam. For the majority of Muslims, a lunar calendar is followed; one without an intercalary month to adjust to the solar year. Thus, the year is 354 or 355 days long, and the months, such as Ramadan, move relative to the solar year.

Polynesian calendars

Many Polynesian cultures historically observed special days, with prohibition of work on those dates; these are referred to as *Tabu*. For the Hawaiians this was closely linked to the cycle of the moon, observing tabu at the new and full moons with worship to their gods. Intermediate days were also observed in the month, but offset somewhat from the half-moon period. The Bontoc community of Northern Luzon (Philippines) observed days of rest approximately every 10 days when work was discouraged, with worship directed towards their supreme deity, Lumawig.[37]

Discussion and summary

So, there is evidence from the earliest times, specifically in Sumer and Egypt, that early post-Flood cultures held to an approximate seven-day *quasi*-week, and one linked to the phases of the moon. However, some modification was necessary to fit to the lunar cycle, which is slightly longer than 28 days, by the addition of one or two extra days each month. These ancient calendars evidently pre-date the giving of the Mosaic Law. How do we account for this? As noted, we read in Genesis 1:14–16 that God gave the sun and moon as a means of determining times and seasons for humanity.

We also see in Genesis the creation taking place over the period of seven days, and the number 7 was considered to possess special symbolism by the people of Ur, as it was for the later Hebrews. We can conceive that such knowledge, that the sun and moon may be used to determine the calendar to observe a sabbath rest, may feasibly have been passed down from Adam to later generations via the prophet Noah, and been retained in the developing Egyptian and Sumerian cultures.

Knowledge of the *quasi-week* has also passed around the world through religious sources, with the idea that some days are to be treated as more holy than others, or *tabu* in some of the Pacific Islands. However, adherence to a seven-day week was weakened due to loss of knowledge with greater distance from the Ancient Near East, with *quasi*-weeks evidently being between five and ten days long.

Although some commentators have, in the past, suggested that the seven-day week is not related to any astronomical feature, the evidence does seem to indicate that it is related to the phases of the moon. Of course, a seven-day week was ordained by God according to the order of creation in Genesis 1 and 2—and this is also consistent with Genesis 1:14–16. The way in which the modern week developed in Roman culture has also been outlined, with influence from the Hebrew Scriptures possibly being one component through Jewish exile, and the growth of Christianity. How the Hebrew

people understood and operated the seven-day week will be discussed in a second part.

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36. Kariyawasam, A.G.S., Buddhist ceremonies and rituals of Sri Lanka, *The Wheel Publication* no. 402/404, Buddhist Publication Society, Kandy, Sri Lanka, 1995.
37. Zerubavel, ref. 3, p. 10.

Andrew Sibley *is a Chartered Meteorologist, based in the UK, and has published a number of papers in the field. He has a B.Sc. (Hons) and completed an M.Sc. in Environmental Decision Making in 2003 with the Open University. He also has an M.Phil. in theology from Exeter University (UK); his dissertation was* Intelligent Design: Scientific and Theological Perspectives. *He is the author of several books, including* Restoring the Ethics of Creation and Cracking the Darwin Code: Exploring the non-scientific foundations of deep-time and evolution. *Already a frequent contributor to CMI's publications, he joined the staff of CMI-UK/Europe as a speaker and writer in August 2021.*