

Chasing Easter – and where does our calendar come from?

My page in the first TVE of 2018, about the Star of Bethlehem, attracted quite a few comments, particularly about the date of Christmas, so I thought this time I'd look at the date of Easter and why it moves around so much. It turns out to be quite complicated. You might think science had little to do with it, but important contributions come from astronomy, archaeology (evidence to support the reliability of the New Testament reports), and records of eclipses and earthquakes.

Secular history as well as the Bible tells us that Jesus died at the Jewish Passover festival; his resurrection from death to life occurred two days later on a Sunday, the day between being the Sabbath rest day. From early days the Christian church wanted to celebrate Easter, its most important historical event, always on a Sunday and to retain the calendar link with the Passover.



And here the difficulties begin. For a start, Passover is scheduled on a lunar calendar – based on the moon for easier accurate observation, not the sun. Officially, Passover falls on the first full moon following the Spring equinox in the northern hemisphere; that day of equal length day and night we now recognise as 21 March, though it was once thought to be 25 March (with 25 December as the winter solstice, the shortest day, one reason for its selection as Christmas Day). However, the date of the full moon depends on your time zone, so the calculations are based on a formal calendar rather than actual astronomical observations.



The situation gets more complicated when you recognise that neither a lunar month – about $29\frac{1}{2}$ days for the cycle of the moon's phases – nor a solar year – average slightly under $365\frac{1}{4}$ days for the earth to orbit the sun – has an exact whole number of days, and these two aren't in a simple ratio. And these natural astronomical divisions of time aren't even constant because of variations in the earth's rotational axis, non-circular orbits, and the minor gravitational effects of other planets.

All of this, compounded by limited accuracy of early astronomy, has made the construction and maintenance of calendars a nightmare and a challenging task, and corrections have had to be made over the centuries. It's been important, not only for religious purposes but also for navigation, trade, government, and other communications. Our modern life depends on accurate timekeeping.

In early Roman times, there were ten months (our March to December) with either 29 or 31 days, roughly following the observed lunar cycle and avoiding even numbers which were considered unlucky, and months weren't counted in mid-winter until January and February were included later. This added up to only 355 days for 12 months. The extra days to make up a solar year were inserted as an extra month every three years (which keeps the



months in phase with the moon) until Julius Caesar rearranged the calendar by adding extra days to individual months as we now have them – February lost out because it was the unpopular last month of the year before spring came. The extra quarter of a day per year went into leap years, one every four years.

By the 16th century it was obvious that these calculations were not quite right and the calendar was many days out of synchronisation with the sun. In 1582 the modern Gregorian calendar began to replace the previous

Julian calendar (Britain adopted it in 1752), and 10 days (5 to 14 October inclusive) were skipped over – to some people’s alarm, as they believed 10 days had been stolen from their allotted lifespan. Incidentally, that’s the reason for the otherwise puzzling date of 6 April for the start of the UK tax year; it had originally been set at the supposed equinox of 25 March, and the tax authorities did not want to lose 10 days out of their quarter-year revenue (plus one more for a leap year difference between the calendars).



Easter 2018

Year	Date	Day of the week
Easter 2013	March 31, 2013	Sunday
Easter 2014	April 20, 2014	Sunday
Easter 2015	April 5, 2015	Sunday
Easter 2016	March 27, 2016	Sunday
Easter 2017	April 16, 2017	Sunday
Easter 2018	April 1, 2018	Sunday
Easter 2019	April 21, 2019	Sunday
Easter 2020	April 12, 2020	Sunday
Easter 2021	April 4, 2021	Sunday
Easter 2022	April 17, 2022	Sunday
Easter 2023	April 9, 2023	Sunday

So the western (Roman Catholic and Protestant) churches now take Easter as the Sunday following the first calendar full moon on or after 21 March; this can be as early as 22 March and as late as 25 April. Other ‘movable feasts’ follow suit: Lent beginning on Ash Wednesday in February and occasionally early March, and Pentecost which used to give us the Whit Monday bank holiday before this became one of the fixed May holidays. The eastern (Orthodox) churches continue to use the Julian calendar for their calculations, so their Easter is nearly always later.

I said it was complicated, and now I’ve run out of space. The archaeology, eclipse and earthquake evidence will have to wait for another time, but I’ll say here that they help to provide us with the most likely date for the very first Good Friday and Easter Sunday: 3 and 5 April 33. Of course, the dates themselves aren’t really important; it’s what happened on them that matters.



Bill Clegg

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