The Dating of Easter

There has been confusion and debate about the dating of Easter since the early days of Christianity. The Jewish nation had celebrated the Passover on 14th Nisan since the time of Moses and the Exodus from Egypt.[1] Early Christians clearly saw a connection between the Last Supper, the Crucifixion and the Resurrection with the sacrificial practices of the principal Jewish festival and would have continued to keep this date, albeit with a different celebratory theme.[2] One difficulty quickly became apparent. Jesus' Resurrection occurred on 'the first day of the week', which, following on from the Sabbath (Saturday) was a Sunday. Sunday subsequently became the principal day of Christian worship, but the 14th Nisan did not necessarily fall on that day.

By the end of the second century there was already division between the churches of Asia and those in the west. Bishop Polycarp of Smyrna (69–156), following a tradition which he claimed had originated with Saint John the Apostle, observed the Festival of the Resurrection on 14th Nisan, regardless of the day of the week on which this fell. Irenaeus (130–202) reported that there was a diversity of opinion on the dating of Easter from as early as the pontificate of Sixtus I (42–125). Towards the end of the second century Pope Victor I (d 199) determined to excommunicate those he referred to as 'quartodecimans', those who followed the Eastern practice of Polycarp and his successors. Eusebius (c260–c340) reported that, after a number of synods had been convened, the matter was still not resolved and the Bishop of Rome suffered a *volte face*.

In AD 314, the Gallic Provincial Council of Arles maintained that Easter Day should be observed on the same day throughout the world and that each year the Bishop of Rome should send out letters setting its date. Later in the early fourth century, at the First Council of Nicaea (325), it was decided that the celebration of Easter should always be held on a Sunday, but that the date should have no connection with the lunar phases which determined the date of the Jewish Passover. Concerns were expressed about which Sunday should be selected because these could occur on any day of the month.

Problems of dating continued. Christians in Roman Syria kept Easter on the Sunday immediately following 14th Nisan. Throughout the rest of the Roman Empire the Church made its own arrangements and calculated a date for Easter with no reference to the Jewish

[1] See: Exodus, 12 and Lev 23: 5.

[2] The synoptic evangelists suggested that Jesus presided over the Last Supper at the time of the slaughter of the Paschal lambs, while Saint John argued that he was crucified on that day. This disparity apparently did not affect the perceived connection with the Jewish Passover celebrations.

lunar calendar. Examples of the confusion caused can be seen from the disagreement between the churches in Antioch and Alexandria. Further misunderstanding was caused in some places where the Jews determined that the 14th Nisan fell before the date of the vernal equinox. In Alexandria it was accepted as a first principle that the Sunday to be kept as Easter Day must necessarily occur after the equinox. It became generally established that, following the Alexandrian pattern, the date of Easter should be determined independently of the Jewish calendar; however it was many years before a conclusive process of computation was agreed and several centuries before there was agreement throughout Christendom.

On arrival on the shores of England in 597 Augustine (534–604), sent by Pope Gregory I (d 604), found that Christianity was well established, particularly in the northern lands. These had been evangelised by missionaries from Ireland, by Ninian (360–432), Columba (521–597), Kentigern (d 614) and others. For these Christians the date of Easter had been established through astronomical considerations. The Venerable Bede (672–735) reported that Easter should be celebrated on the first Sunday after the first full moon after the spring equinox. Thus the feast fell within a seven day period between the 14th and the 20th of the lunar month, according to an eighty-four year cycle. Columba, who established Celtic Christianity from his base on the Isle of Iona, confirmed that Easter should fall between 14th Nisan and 20th Nisan. Thus the calculations were based on a combination of solar and lunar calendars.

By the middle of the seventh century the two strands of Christianity, the Roman from the south and the Celtic from the north, especially in regard to the dating of Easter, were causing discord. The resultant dispute came to a head in the household of King Oswiu (612–670) in the Kingdom of Northumbria. Royal embarrassment was caused when the King and Queen Eanflæd found themselves celebrating Easter on different Sundays. This disparity led, on one occasion to the King celebrating Easter while his wife was still observing her Lenten discipline. A synod was convened at Whitby in 664. Hosted by Abbess Hilda (614–680), and presided over by Oswiu, the synod discussed and adjudicated on such matters as ecclesiastical discipline, the correct form of tonsuring and the calculation of the date of Easter. Christopher Highley reminded his readers that this latter controversy pitted representatives of the Irish Church against representatives of the 'universal' Roman Church, a Church newly embraced by the Anglo-Saxons.[3] The spokesmen of the two factions, Colman of Lindisfarne (605–675) and Wilfrid (633–709), respectively, had some tetchy exchanges.

[3] Christopher Highley, *Catholics Writing the Nation in Early Modern Britain and Ireland*, (Oxford, Oxford University Press, 2008), 120.

King Oswiu, who based his conclusions on the primacy of Saint Peter in the Roman Church, the holder of the Keys to the Kingdom of Heaven, over a few minor Celtic bishops, condemned the Irish dating of Easter. Highley wrote:

> At one stroke, Ireland's religious traditions, as observed by the country's fathers like St Columba, were rejected. Most of the Irish clergy willingly renounced their 'unperfectness' in favour of approved Catholic practices, thus signalling the demise of a semi-autonomous Irish Church with its own indigenous traditions. Ireland … became absorbed into the universal structures of Roman Christendom.

All seemed well in the dating of Easter until October 1582 when Pope Gregory XIII (1502–1585) introduced the Gregorian calendar, a change from the previous Julian one. The Gregorian version of the calendar corrected the length of the year by a small proportion and it stopped its drift in relation to the solstices and equinoxes. The Gregorian calendar restored Easter to the time of the year when it was traditionally celebrated by the early Church. Corrections to the length of the year were made through a redefinition of what constituted leap years. The number of these in four centuries was reduced from 100 to 97. Thus, every year that is exactly divisible by four would be a leap year, except for years that were exactly divisible by 100, but these centurial years would be leap years if they were exactly divisible by 400. For example, the years 1700, 1800, and 1900 were not leap years, but the years 1600 and 2000 were.

While the Gregorian calendar was accepted for use by the Western, Latin Church, the Eastern, Greek Church continued to calculate the date of Easter using the Julian version. In some years the two dates coincided but in others there was a serious disparity. For example, in this century, the two dates coincided in 2001, 2004, 2007, 2010, 2011 and 2014; but in 2005, 2008 and 2013 they were over a month apart.

In a few pages near the front of the *Book of Common Prayer* the compilers have included tables showing the dating of Easter and the methods used for this purpose. This procedure began in the Second Edwardine Prayer Book of 1552. It contained a table entitled 'An Almanack for Nineteen Years'. This comprised a table of six columns, labelled: The Year of our Lord (range 1552–70); The Golden Number; The Epact; The Cycle of the Sun; Dominical Letter and the Date of Easter. There appeared to be no indication of any method whereby these values were connected and no rules were provided for their use. At a time when a significant proportion of the population were illiterate, and probably even more were

innumerate, there seems little reason for the inclusion of the first five columns of data. The Golden Number (*aureus numerus*) is a nineteen year, Metonic cycle by which the phases of the moon recur on the same dates.[4] The cycle begins (Year 1) when the new moon occurs on 1st January. The Epact is a cycles of thirty numbers which correspond to the age of the moon in days on 1st January. The Dominical Letter is based on a system of seven letters (A – G) determined by the day on which 1st January falls. If this is a Sunday then the Dominical Letter is A, if a Monday, then B, etc. The column headed Cycle of the Sun contains numbers in the range 1 – 28. There appears to be no explanation as to what these mean, except to say that the number twenty-eight more likely refers to lunar rather than solar events.

A century later with the publication of the Restoration Prayer Book the number of listed tables had expanded considerably; no fewer than eight were provided, six of them dedicated to the dating process for Easter. The first of these offers its users data to find Easter Day, 'from the present time to the year 2199 inclusive'. A complex set of rules determined the use of the Golden Number and the Sunday Letter. Easter is found to be in the range 21st March to 25th April.[5] The second table is entitled 'Another table to find Easter'. This has columns for the Sunday Letters (A – G) set against rows of Golden Numbers (1 – 19). Each row has a set of consecutive dates but these may begin under any of the Sunday Letters. For example, the row for Golden Number 1 has the dates 15th April to 21st April, but it begins in column G and continues in A, B, C, etc. At Golden Number 9 the dates are 17th April to 23rd April, starting at column B and ending in column A.

These Easter dating tables are followed by two that are titled, 'Tables of the Movable Feasts'. The former of these contains columns headed: Year of our Lord, Golden Number, The Epact, Sunday Letter, Sundays after Epiphany, the dates for Septuagesima Sunday, The First Day of Lent, Easter Day, Ascension Day and Whit-Sunday. It concludes with columns showing the Sundays after Trinity and the date of Advent Sunday.[6] There are rows for about fifty consecutive years, generally beginning with the year of publication of that particular edition of the Prayer Book. The latter table lists the same feasts and numbers of Sundays but determines these by reference to the date of Easter Day (this time in the range 22nd March to 25th April). This table has a complex footnote showing corrections that must be made in Leap Years (also referred to as Bissextile Years).

[4] The Metonic cycle was the basis for the Greek calendar until the Julian calendar was introduced in 46 BC.

[5] It is interesting to reflect on a start date of 21st March. This is normally the date of the vernal equinox and the rules for the dating of Easter suggest that if the full moon coincides with the equinox, then Easter is the Sunday following. However, the published date for the vernal equinox in 2017 is 20th March, so perhaps our forefathers in the faith knew more about such matters than we give them credit for.

[6] This column should be more correctly headed, The First Sunday in Advent.

The next table follows the same structure as the first table but determines the dating of Easter for the years 2200 – 2299 inclusive. Again the start date is 21st March. There then follows three General Tables. The first of these, Table I, uses some quite complex arithmetic and allows users to find the Dominical or Sunday Letter for the opening years of the centuries from 1600 to 8500 and beyond. This is complemented by Table II which determines, 'The Month and Days of the Month to which Golden Numbers ought to be prefixed in the Calendar, in any given years of our Lord'. Again, it lists centuries up to 8500. Table III is not accompanied by any instruction for its use. It is a comprehensive table listing in its first column dates of the Paschal Full Moon (range 21st March – 18th April), a column giving the Sunday Letter (A – G) and a further nineteen columns, headed The Golden Numbers. These list values in the range 0 to 29.[7]

In the modern world the dates of equinoxes and full moons are provided in most calendars and diaries. Often, the Date of Easter Day, and sometimes other Christian festivals are also indicated. We rarely need any arithmetical processes to find these dates. If all else fails there is always a plenitude of computer search engines. Arithmetical calculations increasingly rely on the use of electronic calculators or, for complex problems, spreadsheets. The latter have complex functionality which can be used for computations such as the determination of the dating of Easter. Recently a competition was held to find the shortest spreadsheet function, designed for that purpose. The winning entry was

=FLOOR(DAY(MINUTE(A1/38)/2+56)&"/5/"&A1,7)-34

This function may be used to find the date for Easter between the years 1900 – 2078.[8]

Members of the Prayer Book Society can take some comfort from knowing that the compilers of the 1662 *Book of Common Prayer* considered that it would still be in use until the year 2299, and maybe as far into the distant future as the year 8500 and beyond.

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[7] It is, of course, possible that the lower part of this table, covering the Easter dates of 19th April to 25th April has been lost over the passage of time.

[8] For more details and other entries see: http://www.contextures.com/exceleastercalculation.html (Accessed 10/03/17).

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