

The Passover Computation

Precise astronomical calculation and historical reasoning are used to date the crucifixion

Every year at Christmas come the articles and talks suggesting what the star of Bethlehem might have been. Astronomical records are searched for planetary conjunctions, novae, etc. Such activity seems nowadays more interesting to planetarium directors and newspaper columnists than to religious scholars. The latter long ago concluded that the narratives of the birth of Jesus are so loaded with typology and mystical symbolisms that it is impossible to tell which of the events (except the birth itself) actually took place.

The gospel accounts of the crucifixion have a much different tone. They read like straight narrative, and although some of the events are typologically interpreted, the events themselves are quite plausible. The star of Bethlehem may be metahistorical, but the crucifixion is generally accepted as a historical datum. The date on which it occurred is thus important for a number of historical, theological and symbolic reasons.

The Gospels are ambiguous about the day of the month. John states explicitly (13:1) that "it was before the Passover festival," that is Nisan 14 in the Hebrew calendar. The synoptics (Matthew, Mark and Luke) indicate the first day of Passover, Nisan 15. None of the Gospels numbers the year according to any of the counting methods then in use. Debate and discussion over the day and the year have raged for 16 centuries or longer.

Now come Colin J. Humphreys and W.G. Waddington of Oxford University in England to say that previously unconsidered astronomical evidence leads them to conclude that Friday, April 3, A.D. 33 is the only possible date. Their argument appears in the Dec. 22/29 *NATURE*.

For more than 16 centuries Christians have recited that Jesus was crucified "under Pontius Pilate." Pilate's procuratorship in Judea lasted from A.D. 26 to 36. The next step in the determination is to find out in which of those years Nisan 14 or 15 fell on Friday. This means more than simply looking up the calendar. Jewish months begin at the new moon. The new moon is by definition invisible, and in those days they couldn't calculate the lunar cycle as easily as they can now. They had to determine the first of the month by observing the first



tiny sliver of the crescent and count from there.

The modern investigator thus has to calculate the hour and minute at which the first bit of the waxing moon of Nisan would have been visible in Jerusalem for each of these years, taking into account the time of moonrise and atmospheric conditions likely at different hours. Matters are further complicated by the possibility that an extra month might have been inserted in some of those years. This leap month was thrown in now and then to shift the lunar months back to the proper solar seasons after they had drifted out of synchrony. However, taking it all into account, Nisan 14 could have been a Friday on April 11, A.D. 27, April 7, A.D. 30 and April 3, A.D. 33. Nisan 15 could have fallen on Fridays April 11, A.D. 27 and April 23, A.D. 34. The confusion over whether April 11, A.D. 27 was Nisan 14 or 15 is a typical uncertainty of Jewish dating.

In any case A.D. 27 seems too early for the crucifixion. Luke (3:1,2) dates the start of the ministry of John the Baptist in the 15th year of Tiberias Caesar. This could have been no earlier than autumn A.D. 28-29. Jesus's own ministry started after his baptism by John and lasted at least two

and more likely three years. A.D. 34 is too late due to a conflict with the conversion of St. Paul. Paul had necessarily to be converted at some date after the crucifixion. The later events of Paul's life can be dated externally. Intervals of time he quotes himself — and nobody supposes he couldn't count — would put his conversion before A.D. 34.

Now we are left with two possibilities: April 7, A.D. 30 and April 3, A.D. 33. Humphreys and Waddington point out this means, not so incidentally, that the crucifixion took place on Nisan 14. "We remark that by this means, a scientific argument has been used to distinguish between different theological interpretations of the Last Supper," they say. This is, whether or not the Last Supper was a Seder. If it was held on the evening before the crucifixion, and the crucifixion took place on Nisan 14, it could not have been a Seder. Humphreys and Waddington also point out that this dating puts Jesus's death at the hour when the Passover lambs were being slaughtered, another point of theological and symbolic significance.

But in which of the two years, A.D. 30 or 33, did it take place? Here is where the new evidence comes in. In a speech given seven weeks after the crucifixion (on the first Christian Pentecost), St. Peter referred to a blood-red moon (Acts 2:20). The context can be read to indicate that he was referring to a recent event, one that in fact took place the night after the crucifixion. Humphreys and Waddington cite the New Testament scholar F.F. Bruce in defense of this interpretation.

An eclipsed moon often looks red. Sunlight refracted through the earth's atmosphere enters the shadow and illuminates the moon slightly. This light is red, as the refraction separates away the blue and green. Humphreys and Waddington calculated all the lunar eclipses visible from Jerusalem between A.D. 26 and 36. There were in fact 12. One happened on the night of April 3, A.D. 33. On that night an already partially eclipsed moon rose above the horizon in Jerusalem, geometrically and atmospherically very favorable conditions for it to look red. On that basis Humphreys and Waddington opt for April 3, A.D. 33. □