

games at Olympia, at the time of first full moon after the summer solstice. For a long time Grecian months alternately comprised 29 and 30 days, but as a lunation is not the exact mean of these numbers, occasional corrections had to be made. The best known of such correctional devices, the cycle of Meton, covered a period of 19 years, 7 of which had 13 and the rest 12 months to the year, a total of 235 months for the cycle. One hundred and ten of these months had 29 days each, and the remaining 125 months of the cycle had 30 days to each month, making altogether 6940 days, 9 hours in excess of 19 tropical years, and 7 hours more than 235 lunations, leaving but a trifling discrepancy for future correction at the end of the cycle, between the three modes of reckoning time, by tropical years, calendar months and lunations. This cycle, called the golden number, because, it is said, the Athenians proclaimed it in figures of gold, is still used to determine the time of Easter, as ecclesiastical authority has decreed the Sunday following the first full moon after the Vernal equinox shall be observed as Easter Sunday. Thus modern Christendom and ancient Heathendom both accepted the moon as an indicator of the precise time for holding their great festivals.

Long years were given to the task of explaining the moon's motion. But modern astronomers have succeeded in shewing that motion accords with, and lucidly illustrates the principles of their science. The reasoning on which astronomical science depends is confessedly intricate, and its thorough mastery may well challenge the devotion of a lifetime. Nevertheless, it requires no special gifts or training to comprehend that the main links in that chain are: the conception of Copernicus that the earth has a daily axial rotation and an annual translation around the sun; and Kepler's laws—that a planet's orbit is an ellipse about its primary as a focus, that the areas swept by the radius vector of a planet are proportionate to the time of its motion, and that the squares of periodic times of planets are proportionate to the cubes of their distance from the sun. Add to these the discovery of Newton, which confirms them, that all bodies attract each other directly as their mass and inversely as the squares of their distance from each other, and we have the axioms on which the whole structure of modern astronomy is built. Kepler's generalizations were epoch-making. They compel all the more admiration that they were conceived in astrological times, and were