The Astronomical Insignificance of Maya Date 13.0.0.0.

by

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As the year 2012 approaches, students of Maya calendrics are increasingly looking for some underlying significance to the ending of one so-called "Grand Cycle" and the beginning of another. A "Grand Cycle" consists of 13 baktuns, each of which numbers 144,000 days, making for a grand total 1,872,000 days. This, in turn, equates to 5,139.44 solar years, and marks the number of days that have elapsed since the supposed beginning of the present world, as determined by some unknown priest in the year 236 B.C. Blending as it does, both a sacred almanac of 260-days and a slightly later secular calendar of 365-days, this ingenious attempt at improved precision has been termed the "Long Count" by archaeologists. (Malmström, 1978, 105-116.)

The individual responsible for devising the Long Count must have himself been an Olmec, for the timing of his calculation pre-dates by fully four centuries any known calendrical glyphs from the area of Maya settlement. This fact, coupled with the geographic distribution of the earliest Long Count glyphs in Mesoamerica, strongly suggests that it was the product of someone resident in what Bernal termed the "Olmec metropolitan area", the vast alluvial lowland which forms the Gulf coastal plain of south-central Mexico (Bernal, 1969, 15.); thus, ceremonial centers such as La Venta and Tres Zapotes emerge as very likely candidates for its birthplace.

The creator of the Long Count necessarily operated within the constraints imposed by his own cultural heritage, and therefore the date he chose for the beginning of the present world was not a totally arbitrary one, as might first be thought. Anyone like himself, acquainted with the sacred almanac and the manner in which it came into being, realized (1) that the Long Count *must* begin on a day equivalent to August 13th in

our present Gregorian calendar, and (2) that it must lie a *"suitable"* distance back in time, as measured by the unique vigesimal numerical system he had inherited. For the purpose of counting days, the Olmecs made an exception to the strictly vigesimal count that they used to count everything else, for the true length of a year (365 days) obviously more closely approximates a value of 18 x 20 (360) than it does 20 x 20 (400). Thus, for measuring time, 20 days formed an uinal, 360 days made up a tun, 7200 days comprised a katun, and 144000 days constituted a baktun.

Because we also know the precise day-number and day-name which the Olmec priest assigned to the "beginning of the world", namely 4 Ahau in the sacred almanac and 8 Cumku in the secular calendar, we can pinpoint the equivalent Gregorian date as having been 13 August –3113 (or 3114 B.C.) (Here we use the Maya names for the of days, inasmuch as their Olmec equivalents are unknown.) This correlation between the Olmec/Maya calendar and our own was first worked out by American John Goodman in 1905, who fixed it at August 11th; in 1926 the Mexican astronomer Juan Martínez Hernández corrected it to August 12th, and a year later Englishman John Eric Sydney Thompson refined it further and settled for August 13th. (Thompson, 1927.) As a result, it is only fitting that we define it by using all three of their names, calling it the Goodman-Martínez-Thompson correlation. The fact that Thompson revised his calculations in 1935, deciding that August 11th was the correct value after all, has only served to muddy the waters and sadly confuse the entire issue. (Thompson, 1935.) (See the present author's paper in *Arqueología* Nr. 21, pp. 115-117, in which he demonstrates the correctness of Thompson's original correlation.)

The fact that the present world is recorded as having begun on a day numbered 4 in the sacred almanac and one numbered 8 in the secular calendar reveals at once that this date was derived from projecting each of the two time counts then in use backwards in time. Otherwise basic logic suggests that both the sacred almanac and the secular calendar would have commenced with days numbered "1". That the two day-numbers themselves differ from each other likewise reveals that the sacred almanac and the secular calendar were developed independently and with different starting dates. Moreover, the fact that the day-name Ahau was that given to the last day of each Maya uinal, or "month", in the sacred almanac, while Cumku was the name of the last uinal of

the Maya year in their secular calendar simply emphasizes the absurdity of its having been anything other than an extrapolation from some later date. In effect, stated in terms more familiar to those of us using the Gregorian calendar, it would be like saying that the beginning of the present world took place on a day numbered "4" which fell on a Saturday about the middle of December, with no thought being given to what had transpired on the first six days of the week or during the first eleven months of the year! This seeming non sequitur appears not to have disturbed either the Olmecs or the Maya.

In 1582 when the Dutch chronologist Joseph Scaliger devised a similar system for counting days consecutively from a fixed beginning point, he made sure that his tally conformed to the logic and constraints of the western European culture to which he was an heir.   Accordingly, his count began on the first day of the week (Sunday) and on the first day of the first month of the year (January 1). He likewise determined that three of the most important cycles of which he was aware – a 28-year solar cycle, a 19-year lunar cycle, and a 15-year tax collection cycle derived from the Romans -- all coincided on January 1, 4713 B.C, so what he termed "Julian Days" (named after his father, and not Julius Caesar!), are numbered from noon on that day. A Julian Period, the counterpart of a Maya "Grand Cycle", thus embraces 7980 years (28 x 19 x 15). Despite Scaliger's naïve idea of incorporating the Roman tax-collection cycle into his computations, modern astronomers continue using Julian Day numbers for measuring intervals such as eclipse cycles, for the lack of anything better.

In 1930, John Teeple, an American mathematician, published a paper in which he outlined his argument for how and when the Long Count had been devised. Having noted that the sacred almanac came back to the same starting date in the secular calendar each time it completed 73 cycles, Teeple then projected this value into multiples of the katun, arguing that the Long Count had been devised in 236 B.C. by projecting the existing calendars 146 katuns back in time to the August 13th date that Thompson had initially established, but without knowing, of course, the astronomical significance of August 13th itself. Thompson, for his part, agreed that the katun was the fundamental temporal building block of the Maya and hailed Teeple's "brilliance" as a mathematician, but pointedly rejected the conclusion he had come to.

In 1978 the present author, employing a computer and approaching the question from quite a different point of view, arrived at the same conclusion Teeple had reached. Setting out to determine how many times in the history of Mesoamerica a katun had ended on a day named 8 Cumku, I discovered that, apart from the day on which the present world supposedly came into being, this occurred on only three occasions. The first time was in 1675 B.C., which I rejected as too early, and the third time, A.D. 1204, was obviously too late, leaving as the only reasonable choice September 18, -235 (or 236 B.C.).

Of course, the Olmec priest who set out to formulate the Long Count did so with the purposeful intent of having its origin coincide with a date that was the equivalent of Gregorian August 13th, just as Scaliger had consciously sought a January 1st beginning for his Julian Day count. But whereas the Olmec priest was motivated to commemorate an actual astronomical event, namely the zenithal passage of the sun over the birthplace of the sacred almanac – the ceremonial center of Izapa in the far south of Chiapas, Scaliger could only hypothesize that the three cycles he used in his construct had in fact coincided at the beginning of the year 4713 B.C. On the other hand, neither man could ever have anticipated what astronomical event – if any -- would take place at the end of the artificial interval he had created. Just as Scaliger had no reason for assuming that anything more meaningful that the coming together of his three cycles will once again take place on January 1st, 3267, the Olmec priest could not possibly have foreseen any event of astronomical significance taking place on December 23, 2012, at the end of Maya baktun 13.0.0.0.0. Therefore, to suggest that this date will have any meaning or importance to anyone but a historian of chronology is to embroider it with a significance it was never intended to have.

Although we may hope that this "non-event" will pass with less notice and hoopla than the "Y2K crisis" which our own calendar engendered a couple of years ago, unfortunately there is mounting evidence that this will not be the case. Among the first "Mayanists" to be seduced by the notion that the end of the Grand Cycle commemorated an astronomical event of some note were Virginia Bricker and Munro Edmonson of Tulane University. Indeed, in his book on Mesoamerican calendrics published in 1988, Edmonson credits Bricker for having discovered that the termination of the Grand Cycle

will occur on the winter solstice of the year 2012. (Edmonson, 1988, 119.) However, this is only true if one employs the discredited *revised* version of Thompson's correlation, as Bricker and Edmonson have consistently done in all their work. Ironically, in so doing, they have also chosen to disregard Thompson's own admonition against attempting to assign astronomical meaning to dates recorded by the Maya, because, he argued, they were not true "astronomers" but really "astrologers" instead.

Indeed, in the book cited above, Edmonson went so far as to totally reverse the explanation for how the Long Count came into being. There he states that the Maya devised the Long Count so that its termination date would serve as a long-range prediction of the solstice, thereby making its *beginning* date purely arbitrary. (Edmonson, 1988, 119-120.) However, inasmuch as the solstices are relatively easy "fixed points" to establish, it is difficult to imagine why the Maya would have felt obliged to predict this particular event some 2367 years -- as Edmonson calculated it -- in advance!

More recently, a writer with far less impressive academic credentials than either Bricker or Edmonson has at last given us the answer: according to John Major Jenkins, the Maya fixed the termination of their Long Count to mark the coincidence of the winter solstice with the "galactic center of the universe." (IMSN, Vol. 31, Issue 10, pp.4-5.) In helping him reach this conclusion, Jenkins gratefully acknowledges the "boost of clarity and insight" which he received from reading Edmonson's work. (IMSN, Vol.31, Issue 12, p.4) He assures us furthermore that it was a relatively simple matter for the Maya to identify the galactic center of the universe because it lies in the middle of the Milky Way, which they visualized as "the birth canal of the Mother Goddess", "a source-point, or creation place." What this has to do with the winter solstice, or how the latter, which can be easily marked by horizon-based astronomy *during the day*, can be shown to coincide with the center of the Milky Way, which can *only be seen at night*, he doesn't inform us. At least unlike Thompson, who put down the Maya as mere "astrologers" rather than "astronomers", our brash new savant has credited a people who had no knowledge that the earth was even round, much less that it wobbled on its axis, with more than supernatural powers. In the process, however, it

would seem that Jenkins has advanced our understanding of the Maya from the sublime to the ridiculous.

But, before rejecting this imaginative hypothesis altogether, I decided to test it to see if, in fact, the Maya themselves would have been able to view this momentous "event" as it takes place on December 21, 2012. For this purpose, I used the Voyager computer program as my "planetarium" and I chose the Mayas' major astronomical center of Edzná in the Yucatán as my viewing point. (Actually, it makes no difference which viewing point is selected within the Maya realm, for the results are the same everywhere in Mesoamerica.) As dawn approaches on that critical day, the Galactic Center, imbedded as it is in the Milky Way, would "appear" above the horizon just as the sun itself does about 6 degrees farther to the north. Of course, the only problem is that, with the Milky Way gone as a point of reference, the Galactic Center is also invisible, and it remains so as long as the sun is above the horizon. Expectantly I looked forward to the sunset, hoping to regain my critical reference point once the sky again darkened. But no such luck. I found that the Galactic Center slipped below the horizon at 4:57 PM that afternoon, exactly half an hour before the sun itself sets some seven degrees farther to the south. So, so much for "much ado about nothing."

It is never a particularly pleasant exercise to point out the fallacy of other people's thinking, but whenever such arguments are presented in the name of "science" they must be held up to careful scrutiny and evaluation. While I cannot spare the conclusions of such shoddy "research" my professional condemnation, I have purposely chosen not to identify the titles of Jenkins' offending publications, lest the resultant publicity contribute to his increased commercial gain – realizing, of course, that he is neither the first nor the last who has sought to profit from "science fiction." However, what I find just as reprehensible, if not more so, is that an organization such as the Institute of Maya Studies in Miami has been so "subverted" by his foolishness that it has permitted him to publish rather extensively in their monthly newsletter in order to promote his books. While it is not a professional organization to be sure, it is certainly not doing the cause of archaeology, anthropology, or astronomy any favors by disseminating such "misinformation."

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