Neutron-Proton Mass Difference, the Avogadro Constant *and* the Ancient Maya *Alautun*

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The ancient Maya had a Long Count system of reckoning space and time. One of the most intriguing numbers within that system was called the **Alautun**, which was expressed as **23,040,000,000.** According to archaeologists this number supposedly referred to a day-count, which would represent 64,000,000 years or 63,123,287.67 years, depending on the day-count chosen. There were other options, as 260 day-count would represent 88,615,384.62 years.

The Maya also had what was called a **companion number** cited as **1366560**. Again this was possibly a day-count category. But the meaning of either of these concepts has long been lost, yet much speculated about.

Supposing the Maya were counting something else, and not just Earth-bound time.

In 2004, I published a book entitled **Particle Mass Difference**, and derived the difference between the neutron mass and the proton mass. This resulted in a number, based on the CODATA of the time, set at **2.3055/6** fractal expression. Obviously, it suggested immediately the Maya *Alautun* number. It is difficult to consider the idea that the Maya may have been counting atomic particle mass, nearly impossible in fact.

But, look at some of the numerical relationships of the physical constants.

The CODATA-2010 now offers a precise value for the neutron-proton mass difference for the first time in the recommended fundamental physical constants. In 2004, I made the proposal to include this constant in the CODATA. I doubt my proposal served as the basis for its inclusion, as innumerable physicists have researched the mass difference for years. But, it is significant to note that for so long this particular constant was excluded from the CODATA list of fundamental physical constants. The numerical value given today is **2.30557392** x10^{-30}.

Now, consider the following.

2.30557392 *divided by* **2.304 = 1.000683125**

Now, double the 1.000683125 value till you reach: **2.00<u>136625</u>**

That is a powerful derivation to see a value near the Maya companion number, 136656, appear accompanying the unit 1.0, 2.0 series.

This is not the only derivation that may cause surprise between the ancient reckoning numbers and today's numerical expressions of the fundamental physical constants.

Alautun 2.304 fractal *doubles to* the value **2.176066475** fractal, which is extremely close to the Planck mass constant value, **2.17651** x10^{-8}, given in the CODATA today.
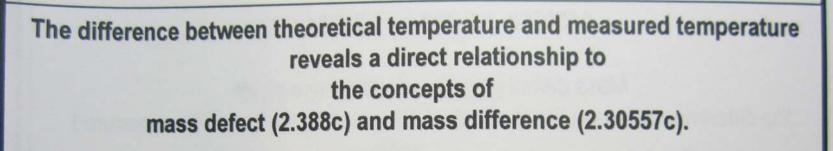
The reciprocal of Planck Mass **2.17651** *doubles to* **6.022117978**

The Avogadro constant value is **6.02214129** listed in the CODATA. Therefore, the ***Planck Mass constant*** value and the ***Avogadro constant*** value are near exact fractal multiples of one another.

The reciprocal of the 2.30557392 mass difference value represents also a mid-point fractal multiple of the thermodynamic temperature scale:

1 / 2.30557392 = 4.33731485 *halves down to* **323.1551386**

Mid-point between **373.15 BPW** *and* **273.15 FPW** on the Celsius temperature scale lies **323.15.** As illustrated in my book, ***Particle Mass Difference***, it is significant that the neutron-proton mass difference reflects fractal multiples of other physical constants and particular spacetime/motion events, such as the thermodynamic temperature scale.

The difference between theoretical temperature and measured temperature reveals a direct relationship to the concepts of mass defect (2.388c) and mass difference (2.30557c).

The exact expression of the values of the different constants vary because of the different constant values offered by various sources in physics and chemistry. However, in spite of the variations in exact decimal numbers (the mantissa), the fractal expressions suffice to obtain a view of the interrelated nature of the numbers. One may consider then viewing the fractal expressions as 2.3055, 2.30557, 2.30558 or 2.3056, etc., for the mass difference value.

Excerpt from my book, *Particle Mass Difference,* published in 2004, Earth/matriX Editions, New Orleans, Louisiana.

The relationships among fractal numbers of the speed of light (expressed in miles or kilometers), the cosmic microwave background temperature (2.7281), the different temperature scales, the fractal expression of the mass defect constant (2.388c) and the mass difference constant (2.3056c), the solar constant, the expression of the masses of the proton, neutron and electron, along with ancient Maya numbers, defy any concept of random coincidence. It is far too easy to translate from one system to another, from the ancient past to the contemporary present of physics and chemistry.

If the ancients perceived spacetime/movement as it exists, then there should be no surprise in finding coincidences in numbers that express matter-energy.

The only surprise that I find is that which relates to the mass difference number (ca. 2.3056c), which has evidently not been shared until now.

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