

Table 5: The revolution of the earth and Venus and Mars

Planet	Rotations and revolutions	Earth mean sun days	Earth tropical years	Power of two
Venus	3 rotations	729.06 days	1.9961 years	1
	13 revolutions	2921.16 days	7.9979 years	3
Mars	17 revolutions	11678.77 days	31.9754 years	5

The ratios of  $s_u$  to clock is made to become strict; the error with respect to the actual rotation of the earth is adjusted at the end of each universal century by means of one negative leap clock (from the current trend, one clock will be deleted just about every universal century, and only to that extent will no deviation arise). In the far future the error with respect to the actual ratio of tropical year to day will be adjusted by omitting a leap day at the end of each universal century.

### D.1.1 Calendar 1

A normal year has 365 days(=30+31+30+31+30+31+30+31+30+31+30+30 days) and a leap year has 366 days(=30+31+30+31+30+31+30+31+30+31+30+31 days). The leap days are inserted at the end of every 4 years except at the end of every 2 universal centuries. Four universal centuries have 93502 days. This length is almost equal to 13 Mayan katuns(=93600days). If we make the epoch of ‘the Universal Unit System Calendar’ December 21<sup>st</sup>, 2012,<sup>16</sup> the end of every 4 centuries roughly coincides with the end of ‘Katun 4 Ahau’ of the Mayan calendar.

There are following relationships between clock and other time units.

$$\begin{aligned}
 1 \text{ clock} &= 11 \text{ minutes and } 15 \text{ seconds} \\
 4 \text{ clocks} &= 45 \text{ minutes} \\
 10_{(12)} \text{ clocks} &= 2 \text{ hours and } 15 \text{ minutes} \\
 100_{(12)} \text{ clocks} &= 27 \text{ hours} &= 1 \text{ day and } 3 \text{ hours}
 \end{aligned}$$

If a day begins at 0 o’clock AM, then 9 o’clock AM is 40<sup>th</sup><sub>(12)</sub> clock, 6 o’clock PM is 80<sup>th</sup><sub>(12)</sub> clock, and 3 o’clock AM of the next day is 100<sup>th</sup><sub>(12)</sub> clock.

### D.1.2 Calendar 2

I describe an alternative calendar which covers not only tropical year but also anomalistic year. In this calendar the months which consist of 31 days are continuously set around aphelion point. The complete rule of this calendar is defined in the next page. The leap days are inserted at the end of every 4 anomalistic years except at the end of universal centuries whose remainder of order number divided by 27 is odd number. The epoch of this calendar is same as calendar 1.

Instead of clock, this calendar uses universal minute and hour. There are following relationships between universal minute, hour and other time units.

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a clock which is approximately 12<sup>6</sup>. Actually,  $3^6/2 = 364.5$ . Surprisingly, this value of  $3^6/2$  was used in the Tàì Xúan calendar of Yáng Xíng(53BC–AD18).<sup>(14)</sup> Incidentally, the Tàì Xúan calendar was never used in real history.

<sup>16</sup> This date is the winter solstice of year 2012 for almost all time zones, and according to G.M.T.’s 2<sup>nd</sup> modification, the date is the end of ‘Baktun 4 Ahau’ of Mayan Calendar whose long count is 13.0.0.0.0.