

Addendum to Part III, GQM-VI, “World Constants”

Beside world constant $k_{1,e,p}$, another “magic” number “ β ” shapes the structure of the universe.

$$\beta = \frac{M_p}{m_e} = \frac{1.67 \times 10^{-24}}{0.911 \times 10^{-27}} = 1.836 \times 10^3$$

In the Absolute System of Reference (see GQM-VI, Part III) the parameter values of the most fundamental material object in the universe – the electron – represent absolute standards:

$$\left. \begin{array}{l} m_e = 1 \\ R_e = 1 \\ T_e = 1 \\ c = \frac{R_e}{T_e} = \frac{1}{1} = 1 \\ e = 1 \end{array} \right\} \text{in ASR}$$

$$\beta = \frac{M_p}{1} = M_p = 1.836 \times 10^3, \text{ in ASR}$$

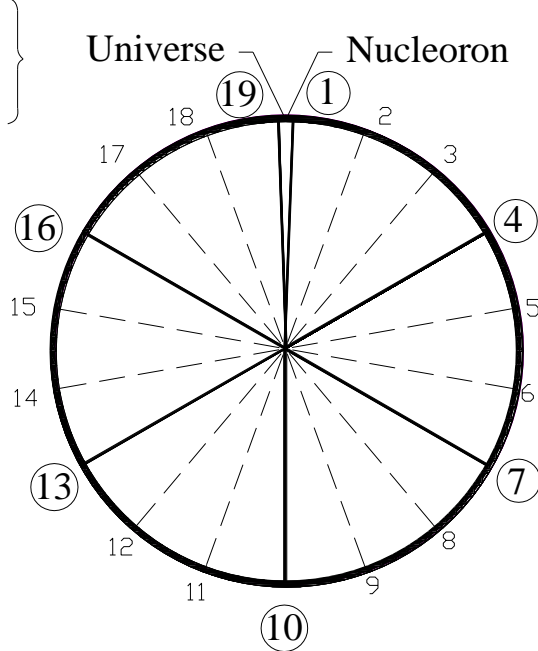
In ASR “ β ” represents the mass of proton!

World constant of proportionality $k_{1,e,p} = \sqrt[18]{A_{e,p}} = 153$ determines the 18-quantum sectors, or, 19-quantum levels in the Great Circle of *Primary Reality*. See Figure 1.

"k_{1,e,p}" - Quantum Symmetry

$$k_{1,e,p} = \sqrt[18]{A_{e,p}} = 153$$

$$\left. \begin{aligned} M_{un} &= 2.8 \times 10^{55} \text{ g} \\ \widehat{R}_{un} &= 0.65 \times 10^{28} \text{ cm} \end{aligned} \right\}$$



$$\left. \begin{aligned} M_{nucl} &= 1.67 \times 10^{-24} \text{ g} \\ R_{nucl} &= 2.87 \times 10^{-12} \text{ cm} \end{aligned} \right\}$$

$$x k_{1,e,p} = 153$$

$$\begin{aligned} &\text{Alive Observer} \\ \bar{R}_{obs} &= 1.37 \times 10^8 \text{ cm} \end{aligned}$$

Fig. 1

The central place (the central quantum level “10”) of the Alive Observer (Life on Earth) makes its parameter values absolute standards too.

In my earlier publications I wrongly named the visible, real, unique, universe *Proton Matter* universe. There is only “Universe” (both “*Proton*” and “*Electron Matter*”). Electron and Nucleoron (in fact the Proton) are the most basic (quantum) bricks of the material world. Their combination makes up the Hydrogen Atom.

The second “magic” number (world constant of proportionality) is “ β ”. This constant calibrates the structure of the universe in another way, but both calibrations ($k_{1,e,p}$; β) are pretty compatible. See Figures 2,a; 2,b

"β" - Quantum Symmetry

$$\beta = \frac{M_p}{m_e} = 1,836$$

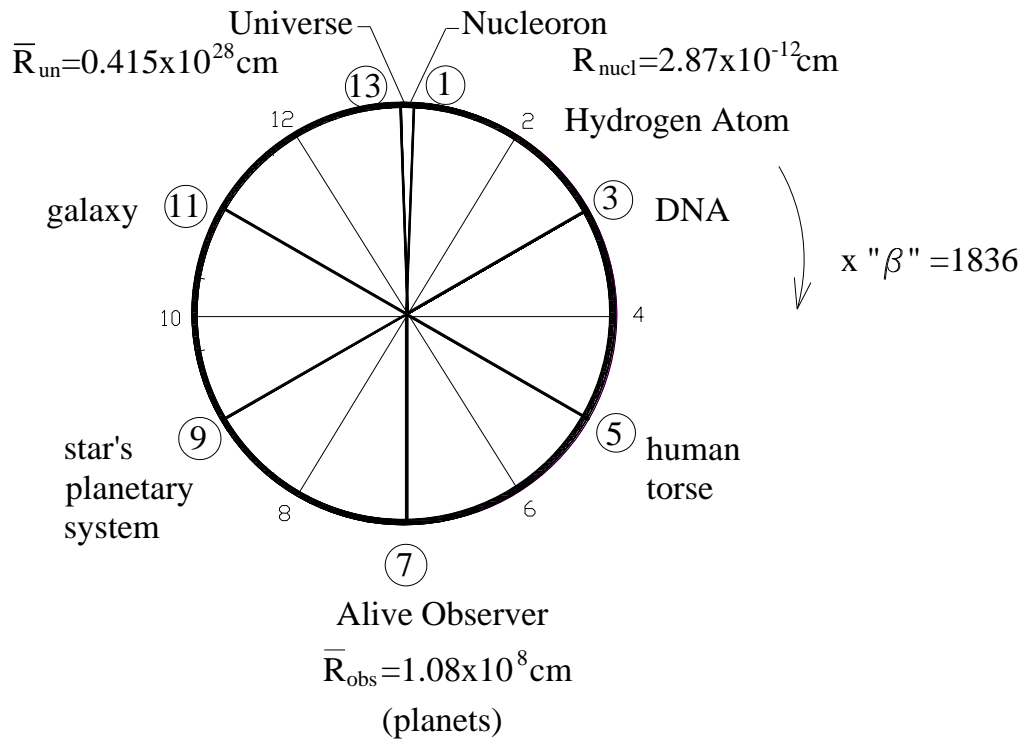


Fig. 2,a

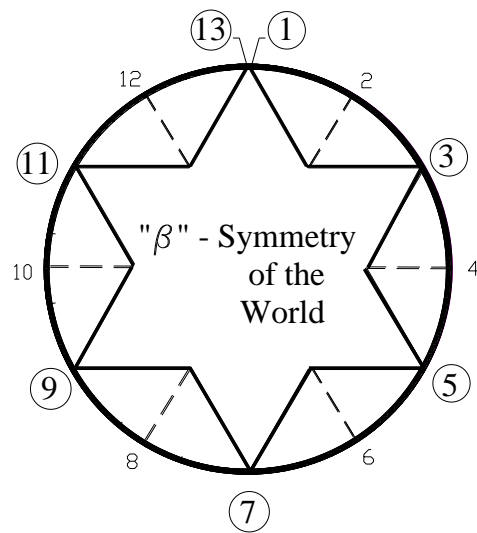


Fig. 2,b

Bellow is shown the quantum sequence of spatial dimensions in the Universe.

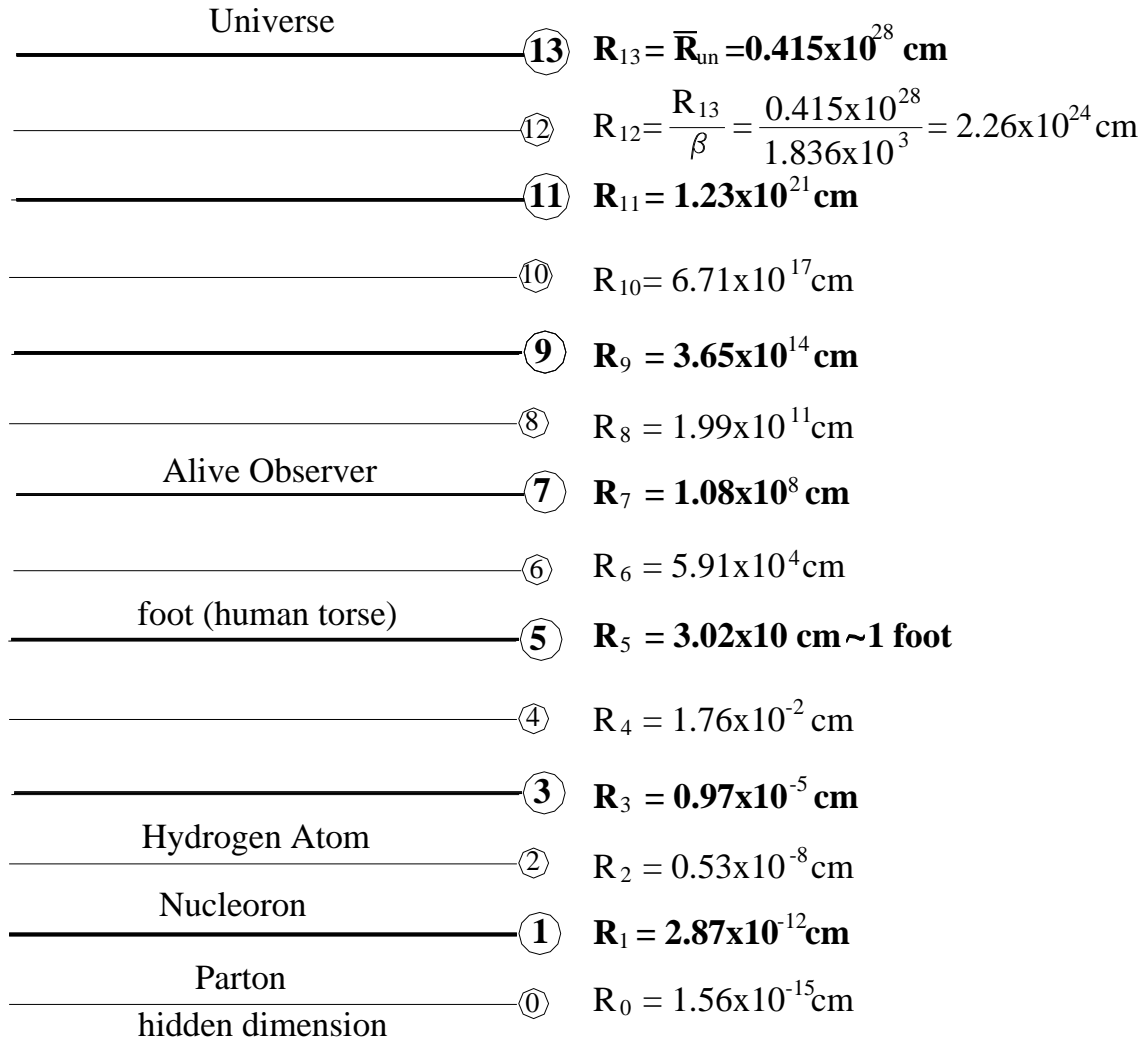


Fig. 3

As seen from the above sequence of quantum spatial dimensions, the “ β ” - symmetry perfectly fits with all quantum spatial dimensions determined by “ $k_{1,e,p}$ ” - symmetry.

1. **Nucleoron** – the basic material object-element of the Universe

$$\frac{\bar{R}_{un}}{\beta^{12}} = R_{nucleoron} = 2.87 \times 10^{-12} \text{ cm}$$

$$\left. \begin{aligned} \bar{R}_{un} &= \frac{\hbar_p^2}{\pi / 2 \times G \times M_p^2 \times m_e} \\ R_{nucleoron} &= \frac{\hbar_p^2}{M_p \times e^2} \end{aligned} \right\} \text{ see GQM – V, VI}$$

Hence,

$$\frac{\hbar_p^2}{\pi / 2 \times G \times M_p^2 \times m_e \times \beta^{12}} = \frac{\hbar_p^2}{M_p \times e^2}$$

$$\frac{1}{\pi / 2 \times G \times m_e^2 \times \beta^{13}} = \frac{1}{e^2}$$

$$G = \frac{e^2}{\pi / 2 \times \beta^{13} \times m_e^2} \quad [1]$$

Where,

e , β , m_e – determine the structure of the Micro-World, and
“ G ” determines the structure of the Cosmos (Mega-World).

Hence, formula [1] represents link between Micro- and Mega-World.

$$\widehat{R}_{un} = A_{e,p} \times R_{nucl} = A_p \times R_{atom} = \dots = 0.654 \times 10^{28} \text{ cm}$$

Where,

$$\left. \begin{aligned}
 A_{e,p} &= \frac{e^2}{G \times m_e \times M_p} = 2.27 \times 10^{39} \\
 A_p &= \frac{e^2}{G \times M_p^2} = 1.238 \times 10^{36} \\
 A_e &= \frac{e^2}{G \times m_e^2} = 4.19 \times 10^{42}
 \end{aligned} \right\} \text{see GQM - II - VI}$$

The following formulae are deduced also:

$$\left. \begin{aligned}
 \pi / 2 \times \beta^{11} &= A_p = \frac{e^2}{G \times M_p^2} = 1.238 \times 10^{36} \\
 \pi / 2 \times \beta^{12} &= A_{e,p} = \frac{e^2}{G \times M_p \times m_e} = 2.27 \times 10^{39} \\
 \pi / 2 \times \beta^{13} &= A_e = \frac{e^2}{G \times m_e^2} = 4.19 \times 10^{42}
 \end{aligned} \right\} [2]$$

#2. Atom.

$$R_{atom} = R_2 = \frac{\bar{R}_{un}}{\beta^{11}} = \frac{\hbar_p^2}{\pi / 2 \times G \times M_p^2 \times m_e \times \left(\frac{M_p}{m_e} \right)^{11}}$$

$$R_{atom} = \frac{\hbar_p^2}{\pi / 2 \times G \times \beta^{13} \times m_e^3}$$

Hence,

$$\frac{\hbar_p^2}{\pi / 2 \times G \times \beta^{13} \times m_e^3} = \frac{\hbar_p^2}{m_e \times e^2}$$

$$G = \frac{e^2}{\pi / 2 \times \beta^{13} \times m_e^2} \quad - \textit{the same!}$$

Calculation:

$$G = \frac{(4.8 \times 10^{-10})^2}{1.57 \times (1.836 \times 10^3)^{13} \times (0.911 \times 10^{-27})^2}$$

$$G = 6.6 \times 10^{-27} \approx 6.67 \times 10^{-27} \text{ [CGS]}$$

Very close results!

From GQM-VI, Part III, we know also that the value of gravity constant “G” is linked to the parameter values of the most basic elementary brick of the animate matter – the living cell.

$$M_{\text{cell}}^{\text{living}} \approx \frac{e}{\sqrt{G}} = 1.89 \times 10^{-6} \text{ g}$$

$$G = \frac{e^2}{M_{\text{cell}}^{\text{living}^2}} \quad [3]$$

#3. Alive Observer – central position “7” in the “ β “-symmetry quantum sequence:

$$\bar{R}_{obs} = \bar{R}_7 = \frac{\bar{R}_{un}}{\beta^6} = \frac{\hbar_p^2}{\pi / 2 \times G \times M_p^2 \times m_e \times \left(\frac{M_p}{m_e} \right)^6}$$

$$\bar{R}_{obs} = \frac{\hbar_p^2 \times m_e^5}{\pi / 2 \times G \times M_p^8} = \dots = 1.08 \times 10^8 \text{ cm}$$

As we know from GQM-V, VI, the Alive Observer is situated in the central position “**10**” of the Great Circle of *Primary Reality* determined by the world constants $k_{1,e}; k_{1,e,p}$! It is Super-Symmetry!

#4. Alive Observer’s Quantum Time:

$$\bar{T}_{obs} = \bar{T}_7 = \sqrt{\frac{\bar{R}_{obs}}{\hat{a}_{0,p}}} = \sqrt{\frac{1.08 \times 10^8}{8.744 \times 10^{-8}}}$$

$$\bar{T}_{obs} = 3.51 \times 10^7 \text{ s} \approx 3.16 \times 10^7 \text{ s} = 1 \text{ year} - \text{Close results!}$$

#5. “Lucky” coincidences of quantum levels.

As seen from the “ $k_{1,e,p}$ ” and “ β ” quantum sequences, quantum values of both sequences are in perfect (very, very close) coincidence each with another (see Figures 4; 5):

$$\frac{\pi}{2} \times \beta^{12} = A_{e,p} = k_{1,e,p}^{18}$$

$$\sqrt{\frac{\pi}{2}} \times \beta^6 = k_{1,e,p}^9; \quad \text{or} \quad 1.25 \times \beta^6 = k_{1,e,p}^9$$

$$\sqrt[6]{\frac{\pi}{2}} \times \beta^2 = k_{1,e,p}^3; \quad \beta^2 \approx k_{1,e,p}^3$$

$$\sqrt[12]{\frac{\pi}{2}} \times \beta = k_{2,e,p}^3; \quad \beta \approx k_{2,e,p}^3$$

$$k_{2,e,p} = 12.37; \quad (12.37)^3 = 1892$$

close to 1836!

$$\sqrt[24]{\frac{\pi}{2}} \times \sqrt{\beta} = k_{3,e,p}^3 = (3.517)^3 = 43.5$$

$$\sqrt{\beta} = \sqrt{1836} = 42.85! \quad \text{And so on}$$

In ASR “G” has value:

$$G = \frac{1^2}{\pi/2 \times \beta^{13} \times 1^2} = \frac{1}{1.57 \times (1.836 \times 10^3)^{13}} = \frac{1}{A_e} !$$

$$G = \frac{1}{4.19 \times 10^{42}} = 2.387 \times 10^{-43}$$

Very small number!

In the micro-world gravitational effects are extremely weak and can be neglected; they are practically ZERO.

$$G \approx \frac{1}{\beta^{13}}$$

The value of “ G ” is very sensitive to any little changes of

$$\beta = \frac{M_p}{m_e} = \frac{M_p}{1} = M_p$$

$$G \approx \frac{1}{M_p^{13}}; \quad \text{in ASR}$$

Theoretical analysis of the forces acting upon material objects in the universe show that any small change of the observed value of “ G ” will lead to existing of universe impossible to sustain Life in it. Therefore, the value of the mass of the proton M_p cannot be even though a slightly different from the observed one!

As we know from GQM-IV, V, VI, the values of quantum times are determined by the relation:

$$\bar{T}_q = \sqrt{\frac{\bar{R}_q}{a_{0,p}}}$$

$$\frac{\bar{T}_{q,n}}{T_{q,n-1}} = \frac{\sqrt{\bar{R}_{q,n}}}{\sqrt{\bar{R}_{q,n-1}}} = \sqrt{\beta}$$

"k_{1,e,p}" - Symmetry

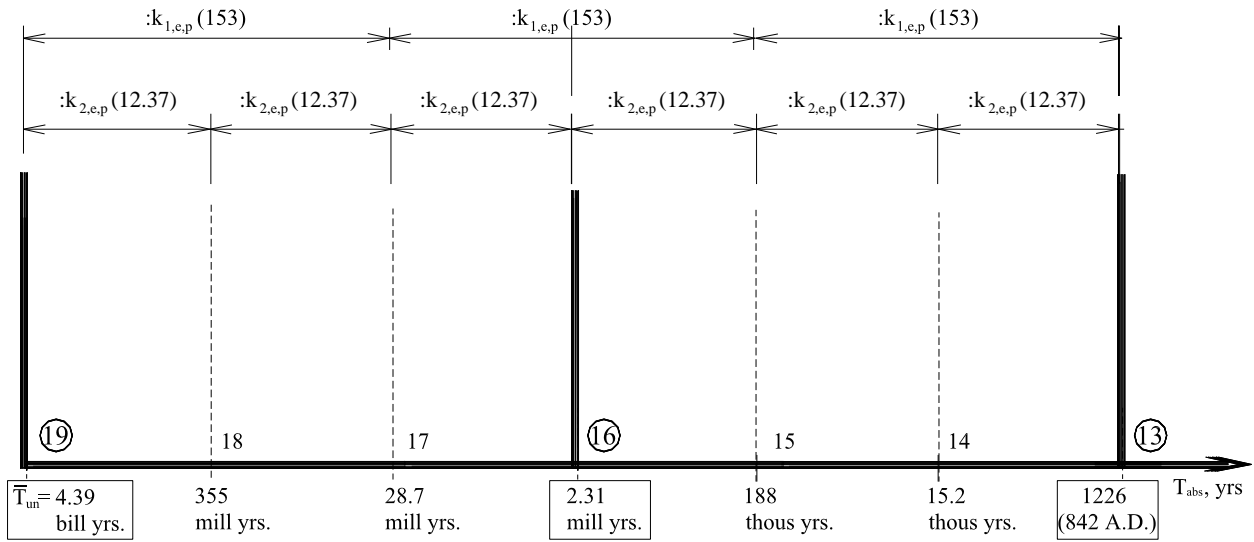


Fig. 4

"β" - Symmetry

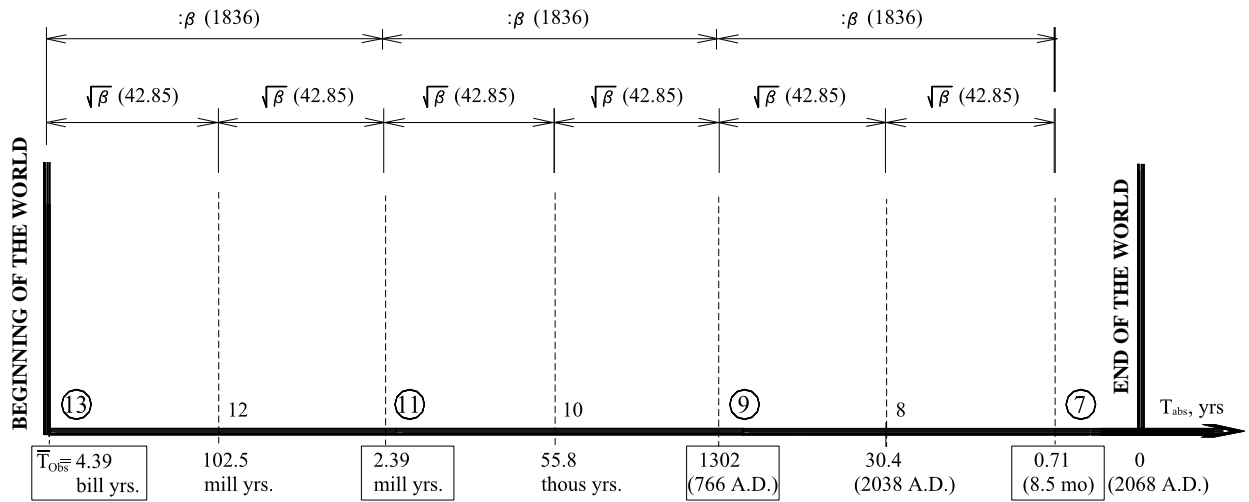


Fig. 5

Quantification of Time

On Figure 4 is shown the quantum sequence of *Time* with coefficient of proportionality “ β ”. On Figure 3 is shown the quantum sequence of *Time* with coefficient of proportionality $k_{1,e,p}$.

As seen from the above figures, every second quantum level of *Time* in the “ β ” quantum sequence coincides with every third quantum level of *Time* in the “ $k_{2,e,p}$ ” quantum sequence. Both quantum sequenced of *Time* are well tuned each to other!

To the central quantum level “10” in the “ $k_{2,e,p}$ ” sequence corresponds the min quantum time of the Alive Observer: 8 months. The corresponding quantum value in the “ β ” sequence (quantum level “7”) is 8.5 months (~ 9 months). Both values are very close! Also, see Fig. 6.

$$\bar{T}_7 \text{ (in } \sqrt{\beta}) = 0.7 \text{ years} = 2.27 \times 10^7 \text{ s}$$

$$\bar{T}_6 = \frac{2.27 \times 10^7}{42.85} = 5.3 \times 10^5 \text{ s} \approx 6.13 \text{ days (working week)}$$

$$\bar{T}_5 = \frac{5.3 \times 10^5}{42.85} = 1.24 \times 10^4 \text{ s} \approx 3.4 \text{ hrs}$$

$$\bar{T}_4 = \frac{1.24 \times 10^4}{42.85} = 289 \text{ s} \approx 5 \text{ min}$$

$$\bar{T}_3 = \frac{289 \text{ s}}{42.85} = 6.8 \text{ s}$$

$$\bar{T}_2 = \frac{6.8 \text{ s}}{42.85} = 1.58 \times 10^{-1} \text{ s}$$

$$\bar{T}_1 = 0.38 \times 10^{-2} \text{ s}$$

Minimum quantum time!

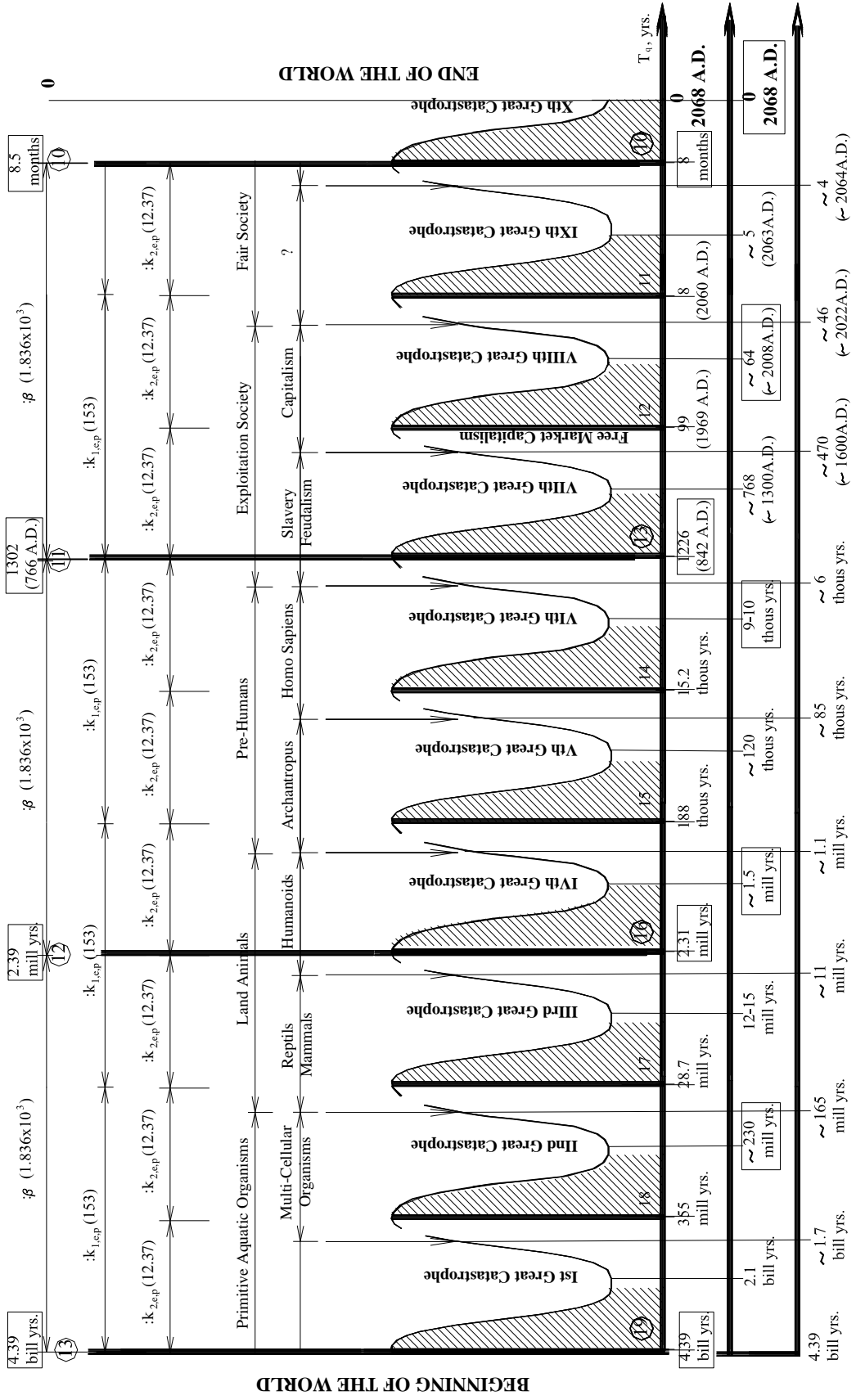


Fig. 6