

DRAFT PAPER:  
WORKING TITLE,  
UNDERGROUND  
ASTRONOMY;

GRAVITY NUMBERS, AND THEIR  
SIMILARITY TO THE NUMBERS  
CONNECTING REDSHIFTS WITH  
RADIO DECAY; A POSSIBLE NUMERICAL  
LINK BETWEEN THE ACCELERATION  
of Gravity, the DECELERATION  
of Light, and the DECAY  
of Matter.

GRAVITY NUMBERS, Page 4....  
Prime Numbers, pages 16, 17

21/06/21 etc...

CDK 25

Interesting (transient?) similarities to the numbers to See margin, Page 7

ACCELERATION OF GRAVITY  
DECELERATION OF LIGHT  
DECAY OF RADIOACTIVE MATTER

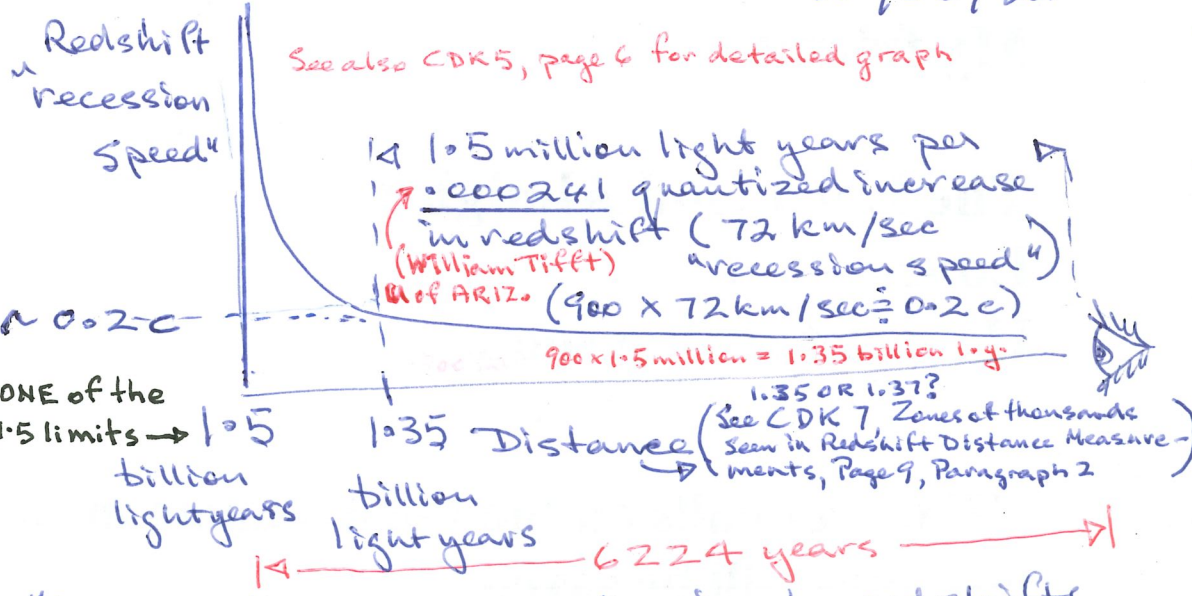
Lollo foundation -al premise. No longer connected to quantization directly. But numbers still relevant. See Page 8

6224. @ 2006 A.D. the elapsed time since CDK began, and since radioactivity (421982) began.

GRAVITY NUMBERS, AND THE NUMBERS CONNECTED WITH REDSHIFTS AND RADIODECAY.

CDK 25  
21/06/21

REDSHIFT NUMBERS



These are the numbers pertaining to redshifts....

$\frac{10}{9}$     $\frac{1}{2.41}$    1.5   6224

THE NUMBERS EXPLAINED

$\frac{10}{9}$  is  $\frac{1.5}{1.35}$ . 1.35 billion l.y. is Fred Hoyle's limit to redshift measurements. See CDK 5, espec P2. \*  $1.5^{10^9}$  l.y. is one of the "lollo" limits. See CDK 7, P11 of last light out (lollo)

ONE OF THE MAXIMUM 1.5 DISTANCES LIGHT COULD HAVE TRAVELLED SINCE CDK BEGAN. 1.5 is a constant AVERAGING seen in redshift measurements. From a decay series of thirds?  $1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \dots = 1.5$ . Also,  $1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16} - \dots = \frac{1}{1.5}$  (A "negative half" series) Compare the above series with those on P 7

1 is 1.5 million l.y. of light travel. 2.41 per 0.000241 quantized redshift. @ 2006 A.D. 0.000241 is a compression of  $1.5 \times 10^9$  into 6224 years of decay. Power of 10 is disdained. 2.41 earlier distance in l.y. 0.000241. 6224 to handle

Note that Redshifts are the result of a slowing speed of light, NOT from galaxies speeding away. OLDER light has greater wavelength, hence greater redshift.

Redshift QUANTIZATION IDENTICAL TO RADIODECAY QUANTIZATION. Redshift = Decay (slowing) of light.

ACTUAL HALF TIME CALC IS...  
 $\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2}$   
 (A NUMBER)  $\times 2.41$   
 THE "2.41" IS DECREASING OVER TIME.  
 THIS IS WHERE DISCREPANCIES IN OBSERVED DECAY CREEP IN.

Quantized Decay Rate  
 $\cdot 693$

(2)

RADIO DECAY NUMBERS

It was found that all examined radioactive decay rates were quantized, either at  $\cdot 000241$  or  $1.5$  (OR  $\frac{10}{9}$  in the case of  $^{23}\text{C}14$ ?)  
 (Paper CDK 14, Quantization in Radio Decay)  
 (Rate is attached (part of - see website for complete paper))

Further, it was found that the product of  $\frac{10}{9} \times \frac{1}{2.41} \times 1.5 = \cdot 693$  (=  $\log_e 2$ ) (approx)

Half Times are calculated using the formula.

Half Time =  $\frac{\cdot 693}{\text{Decay Rate}}$

So that all Radio decay measurements can be expressed in red shift numbers.

SLIMMING DOWN THE NUMBERS.

$$\frac{10}{9} \times \frac{1}{2.41} \times 1.5 = 10 \cdot \frac{1}{3} \times \frac{1}{3} \times \frac{1}{2.41} \times \frac{3}{2}$$

$$= \frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2}$$

(Powers of 10 disdained)

This is a simpler expression to use when substituting for  $\cdot 693$ .

NOTES

Note that 2.41 is reducing over the years.  
 Around 2.41 at 2006 AD  
 And 2.40625 at 2015 AD. See Page 8 →

See that  $\frac{1}{2.40625} \times \frac{1}{3} \times \frac{1}{2} = \cdot 69264 \dots$   
 Powers of 10 disdained.

For those interested in temporal aspects of kollo thinking, at 2015 AD, See margin

$\frac{1.5}{6233.766\dots} = \cdot 000240625$  AND  $\frac{1}{3} \times \frac{1}{3} \times 6233 = 6925$   
 where 6233 is elapsed years of CDK

See Page 8, where,  
 $\cdot 69311 @ 2020 AD$   
 $\cdot 69322 @ 2021 AD$   
 $\cdot \ln 2 = \cdot 693147 \dots$

(3)

A HALF TIME WRITTEN IN REDSHIFT NO'S

Table 1b in Paper EDK14 (part is attached) has ~~both~~ half times & radio decay rates written in redshift numbers.

Half times  
Table 1a can be rewritten in redshift numbers too.

Here is an example. (All the rest can be treated the same way.)

From Table 1a

$$\text{Lu 176 Half time} = 3.6$$

$$\text{Decay Constant} = .8 \times 2.41$$

$$\text{Using } .693 = \frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2},$$

$$\text{Lu 176 Half Time} = \frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2}$$

$$= \frac{1}{(2.41)^2} \times \frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$$

$$\text{Using } 2.41 = 2.40625 @ 2015,$$

$$\text{This calculator to } \dots 3.598 \dots$$

All other half times can be similarly treated, both in Table 1b & Table 2, eg In 1115, Table 1b,

$$\text{Half time (5-1)} = \frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$$

... Powers of 10 disdained

See Page 6A  $\rightarrow$   
for more ...

(4)

## FRACTIONAL RELATIONSHIPS OF HALF TIMES.

Table 1a shows that half times are spaced out by fractions,

$$\frac{2}{3} \quad \frac{1}{2} \quad \frac{2}{3} \quad \frac{3}{4}$$

and that these repeat.

Note that

$$\frac{2}{3} \times \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} = \frac{1}{3} \times \frac{1}{2}.$$

Compare  $\frac{1}{3} \times \frac{1}{2}$  with  $\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2}$ .

## GRAVITY NUMBERS

Euler (pronounced OILER), centuries ago, found that

$$\frac{\pi^2}{6} = 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \frac{1}{5^2} + \dots$$

This is

$$\pi^2 \times \frac{1}{3} \times \frac{1}{2} = 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \frac{1}{5^2} \dots$$

COMPARE!

$$\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2} \neq$$

$$\pi^2 \times \frac{1}{3} \times \frac{1}{2}$$

⑤, again, centuries ago, ————  
 Christiaan Huygens found that  
 $a = \frac{v^2}{r}$  in orbital motion.  
 where  $a$  = acceleration,  $v$  = velocity,  
 $r$  = radius of orbit. ↳ Pre-dates Newton.

$$\text{Now } v = \frac{2\pi r}{t}, \quad v^2 = \frac{4\pi^2 r^2}{t^2}$$

$$\text{and so } a = 4\pi^2 r / t^2$$

In orbital motion  $a = g$ , where  $g$  = gravity

$$\text{So } g = 4\pi^2 r / t^2.$$

$$\text{OR } g = 24 \frac{\pi^2}{t} r / t^2$$

$$\text{OR } g = 24 \left( 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \frac{1}{5^2} + \dots \right) r / t^2$$

### EXTENDING THE GRAVITY NUMBERS

$$g = \left( 24 + 6 + \frac{8}{3} + (\text{See next page} \dots) \right) r / t^2$$

⑥

### EXAMINING THE GRAVITY NUMBERS.

$$24 = \left(\frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}\right)^{-1} \left\{ \begin{array}{l} \text{Compare } \frac{1}{2} \text{ time} \\ \text{example L176} \\ \text{on page 3, U235 page 6A} \\ \text{Table 11} \end{array} \right\}$$

$$\frac{24}{4} = 6 = \left(\frac{1}{3} \times \frac{1}{2}\right)^{-1} \left\{ \text{RECIPROCAL OF } \frac{1}{6} \right\}$$

$$\frac{24}{9} = \frac{8}{3} \text{ William Tiff's smallest quantized redshift measurement}$$

See paper CDK 10, Bill Tiff's Redshift Conclusions 1991, Page 1

$$\frac{24}{16} = 1.5 \text{ 1.5 averaging in redshift.}$$

$$\frac{24}{25} = 24 \times \left(\frac{1}{2} \times \frac{1}{2}\right)^{-1} = \left(\frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}\right)^{-1}$$

ALSO, 9.6, see TH231, Table 2 in CDK14, attached.

$$\frac{24}{36} = \frac{1}{1.5} \text{ per 1.5 averaging in redshift.}$$

$$\frac{24}{49} = ? = \left(\frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}\right)^{-1} \times \underline{0.0204081632}$$

$$\frac{24}{64} = \frac{3}{8} \text{ RECIPROCAL OF Bill Tiff's smallest quantized redshift measurements. Bi. 2.14. half-time Table 2 (attached)}$$

$$\frac{24}{81} = \frac{8}{27} = \left(\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}\right)^{-1} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \text{ (Page 13)}$$

$$0.24 = 24. \text{ Powers of 10 discarded.}$$

$$\frac{24}{121} = ?^{24} \times \frac{1}{11 \times 11} \text{ approx} = 24 \times \frac{9}{10} \times \frac{9}{10}$$

$$\frac{24}{144} = \frac{1}{6} = \frac{1}{3} \times \frac{1}{2}$$

PRIME NUMBERS:  
7 & 11 not fitting.  
3 and 5 are.

See appended, pages 16 & 17

The reciprocal of the gravity number (prime)

ends in either  $\frac{1}{24}$  OR  $\frac{3}{8}$

ie  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$  eg  $\frac{7^2}{24} = 2 \frac{1}{24}$

OR  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times 3$  eg  $\frac{3^2}{24} = \frac{3}{8}$

24.  $\rightarrow$   
See comment  
on U235,  
page 6A.

$$\frac{1}{2.0416}$$

$\uparrow$

$$\frac{1}{5.0416}$$

A RESEMBLANCE  $\rightarrow$   
See pages 16 & 17

COMPARING THE GRAVITY NUMBERS WITH RADIO-DECAY NUMBERS EXPRESSED IN REDSHIFT NUMBERS ONLY.

LIGHT DOMINANT

TABLE 1 (DECAY CONSTANTS ARE ALL MULTIPLES OF 2.41, SHIFT NO)

Nuclide	Half Time	Half Time expressed in Redshift No's
LIGHT	86.4	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2}$ (i.e. $\frac{1}{2}$ per 2.41 per 2.41)
?	43.2	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2}$
?	28.8	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{3}$
Nd144	21.6	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$
Th232	14.4	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$
U235	7.2	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$ Compare '24', page 6
Rb87	4.8	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3}$
Lu176	3.6	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$
?	(2.4)	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3}$
K40	1.2	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3}$
Sm148	0.8	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$
Pt190	0.6	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3}$
Re187	0.4	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$
Hf174/ Te130	0.2	$\frac{1}{2.41} \times \frac{1}{2.41} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$

HALFTIMES IN REDSHIFT NUMBERS.

$\frac{6224}{1.35}$

$\frac{10}{9} \times \frac{6224}{1.35}$

$\frac{9}{6}$

$\frac{10}{9}$

TABLE 1 b

Nuclide	Half Time	Fractional Half Time	Decay Constant
U238	4.6	$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{2.41}$	$(\frac{1}{3}(\frac{1}{3})^{-1}) \times \frac{1}{2}$
In115	5.1	$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{2.41}$	$(\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3})^{-1} \times \frac{1}{2}$
Cd113	9	$(\frac{1}{3} \times \frac{1}{3})^{-1}$	$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{2} \times \frac{1}{2.41}$
Se82 La138 Sm147 Gd152	1.11	$\frac{1}{3} \times \frac{1}{3}$	$(\frac{1}{3}(\frac{1}{3})^{-1}) \times \frac{1}{2.41} \times \frac{1}{2.41}$

Powers of 10 disdained  
Use 2.41 = 2.40625 @ 2015 A.D.



7

A FINAL COMPARISON. using his calculus. See CDK II, page 4. Bill Tift's

Newton (Sir Isaac) showed that

$$0.693 = 1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \dots$$

(see paper CDK II)

AND we have seen that

$$\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2} = 0.693.$$

00024 Divides Decay Series of Thorium to give Uranium Decay Half Time 4

So that **RADIO DECAY (IN REDSHIFT NUMBERS)**

$$\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2} = 1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \dots \quad (i)$$

AND we know that

$$\pi^2 \times \frac{1}{3} \times \frac{1}{2} = 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \frac{1}{5^2} + \dots \quad (ii)$$

**GRAVITY**

Please compare these two expressions. Note that if each fraction in expression (i) was squared, the result would be the same as the series in expression (ii).

An interesting comparison. The 0.693 will not change (ie loge 2 or ln 2) but the 2.41 is a reducing number. A transient likeness? radio decay and redshifts, compared to gravity 3. (See margin)

If this series is still extending, then the 2.41 will be reducing. And the 2.41 is reducing, so the series is extending.

Note: Because  $\frac{1.5}{6224} = 2.41$   
Then  $\frac{1}{2.41} \times \frac{1}{3} \times \frac{1}{2} = 6224 \times \frac{1}{3} \times \frac{1}{3} = 0.693.$

used on page 8 for 2020 & 2021 Timeline Cales

See also! margin above

Another interesting comparison.

Now that we have the half lives of radioactive elements expressed in terms of  $2.41$ , (we see at once that the  $\frac{1}{2} \times \frac{1}{2.41^2}$  value for light is DOMINANT: there is no simpler, smaller value available) we can make the following interesting comparison.

- ①  $\frac{1}{2} \times \frac{1}{2.41^2} = \frac{1}{2}$  LIFE OF LIGHT
- ② and  $\frac{1}{2} \times \frac{k}{\sqrt{6224}} = \text{SPEED OF LIGHT}$

FURTHER MORE,  
because  $\frac{1.5}{6224} = 2.41$ ,

$k = 4707 \times 10^7$   
 (@ 2006 A.O.  $\rightarrow$ )  $6224^2$  Use elapsed time  
 • gives m/sec.  
 • see CDK 4

① can be transposed to  $\frac{1}{2} \left( \frac{1.5}{6224} \right)^{-2} = \frac{1}{2} \left( \frac{6224}{1.5} \right)^2$   
 $= \frac{1}{2} \times 6224^2 \times \frac{2}{3} \times \frac{2}{3}$   
 $= 6224^2 \times \frac{1}{3} \times \frac{2}{3}$

Now  $\frac{1}{3} \times \frac{1}{3} = \frac{10}{9}$   $\therefore = \frac{10}{9} \times 2 \times 6224^2$   
 (powers of 10 disdained - See CDK 12)

AND, ② can be written  $k \times \frac{1}{2} \times 6224^{-\frac{1}{2}}$

AGAIN,

①	$\frac{10}{9} \times 2 \times 6224^2$	(e.g. $6.233 \times 10^3$ @ 2015) HALF LIFE OF LIGHT (use $6.224^3$ ) (Zones of thousands)
②	$k \times \frac{1}{2} \times 6224^{-\frac{1}{2}}$	SPEED OF LIGHT
A CONSTANT	RECIPROCAL	NEGATIVE RECIPROCAL

TIMELINE OF LOLLO NUMBERS

Time line of lollo numbers:

**2004 AD**  
 4219 BC  
 START FOR  
 CDK & RADIO  
 DECAY  
 DETERMINED  
 UPON.

**2006 AD.**

- $\frac{1.5 \times 10^9}{6224} = 0.000241 \times 10^9$
- $(6224)^3 = 0.000241 \times 10^{15}$
- $(6224)^4 = 1.5 \times 10^{15}$

ALSO: The integral of the function  $y = \sqrt{x}$  is  $\frac{x^{1.5}}{1.5}$

**2015 AD.**  
 "2.41" now 2.40625

Table 1a, showing quantization of 2.40625 in radioactive decay rates, gives "perfect" conversions from decay rate to half time....

For example,  
 Rb87, Half Time:  $\frac{0.693}{\text{Decay Rate}} = \frac{0.693}{0.6 \times 2.40625} = 4.8$  (precisely)

Handy for Table  
 1b as well, for example, Se82 etc,  
 Se82, Half Time:  $\frac{0.693}{\frac{1.5 \times 1}{2.40625}} = 1.116875$  ie 1.111... (near enough)

- paper avail. on request.  
 EMAIL: Independent Science News@ gmail.com

**2020 AD**

6238 elapsed years of cdk

$$\frac{1.5}{6238} = 0.00024046168$$

$$\frac{*10}{2.4046168} \times \frac{1}{3} \times \frac{1}{2} = 0.6931112966... (*10, OR, 1)$$

$$6238 \times \frac{1}{3} \times \frac{1}{3} = 0.69311$$

$$\ln 2 = 0.693147... \quad \text{BRACKETED!}$$

**2021 AD**

6239 years elapsed

$$6239 \times \frac{1}{3} \times \frac{1}{3} = 0.69322$$

$$\frac{1.5}{6239} = 0.00024042314$$

$$\frac{*10}{0.00024042314} \times \frac{1}{3} \times \frac{1}{2} = 0.69322223587...$$

**2030 - 2031 AD**

"2.41" will be exactly 0.00024  
 0.00024 BRACKETED by values of these years.

CALCS  
LINE NO

- ①  $2020 = 6238 \frac{1.5}{6238} = 2.4046168 \times \frac{1}{2} \times \frac{1}{3} = .6931111 \left( \frac{1}{2} \times \frac{1}{3} \times \frac{1}{2.41} = \ln 2 \right)$
- ②  $2021 = 6239 \frac{1.5}{6239} = 2.4042314 \times \frac{1}{2} \times \frac{1}{3} = .6932222$
- ③  $\text{sol } 2020 = \frac{k}{2\sqrt{6238}} = k/157.962020751 = 297,983.020071 \text{ km/sec}$
- ④  $\text{sol } 2021 = \frac{k}{2\sqrt{6239}} = k/157.974681515 = 297,959.138442$
- ⑤
- ⑥  $\text{sol } 2021 - \text{sol } 2020 = -23.881 \text{ km/sec. this (2021) year } \rightarrow \text{Rounds to } 23.882$
- ⑦  $\text{sol } 2020 \approx .00024043278 \text{ (per 3 years) } \rightarrow \text{change in light speed.}$
- ⑧ This shows that  $1.5/6239$  is pretty close!! for "2.41" calculation
- ⑨  $\frac{\text{sol } 2021 - \text{sol } 2020}{\text{sol } 2021} = .00024044571$
- ⑩
- ⑪
- ⑫  $\text{try } \Delta c \rightarrow 2020 \rightarrow 2023 \text{ (6241 years)}$
- ⑬  $\text{per 3 yrs } \text{sol } 2023 = \frac{k}{2\sqrt{6241}} = \frac{k}{79 \times 2} = \frac{k}{158} = 297,911.392405.$
- ⑭  $\text{sol } 2020 - \text{sol } 2023 = 71.627666 \text{ km/sec.}$
- ⑮  $\frac{\text{sol } 2020}{\text{sol } 2023} = .00024037499$

Next  
try  
per 3 yrs

Some Yearly Calculations of 2.41, .693, & slowing c

CALCS EXPLAINED  
LINE NO

(TQN = Tiffit Quantization Number (A Compression,  $1.5/6224$ ))

- ① At 2020 AD, 6238 elapsed yrs of cdk  $\text{TQN} = 2.404 \dots \ln 2 = .6931111 \dots$
- ② At 2021 AD, 6239 " " " " " " = 2.404...  $\ln 2 = .693222$
- ③ Speed of light calculation by Speed =  $4707 \times 10^7 / 2 \sqrt{\text{years elapsed}}$
- ④ " " " " for 2021. In km/sec.
- ⑤ Going to use ③ & ④ now to calculate "2.41" by using slowing light speeds.....
- ⑥ Speed slows by 23.881 km/sec, 2020-2021 [By  $1.5/6224$  OR by sol. calcs, 2.41 comes up the same]
- ⑦  $(23.881 / \text{sol } 2020) \times 3 = .00024043278$ . Compare 2.404.. lines ①, ②
- ⑧ EITHER  $1.5/6224$  OR S.O. as in lines ⑥ & ⑦ may be used for 2.41 TQN calcs
- ⑨ VOID
- ⑩ Similar to lines ⑥ & ⑦, but uses "upon sol 2021" instead of "upon sol 2020"
- ⑪ VOID  $\rightarrow$  Compare 2.41 results lines ⑩ & ⑦ with 2.41 results lines ② & ①
- ⑫ Going to check speed change 2020  $\rightarrow$  2023 (6238  $\rightarrow$  6241 elapsed yrs)
- ⑬ sol for 2023. Note  $79 \times 79 = 6241$
- ⑭ Speed of light reduced by 71.6... km/sec in 3 years (Bill Tiffit's 72 km/s)
- ⑮  $71.627666 / (\text{line } ③) 297,983.020071 = .00024037499 \text{ per 3 years.}$

CONCLUSIONS:

for any years  
"2.41", the TIFFIT QUANTIZATION NUMBER, can be found by  
EITHER  $\frac{1.5}{c \text{ dk years elapsed}}$  OR  $\frac{\text{sol}^{\text{"6224"}} - \text{sol}^{\text{"6224"}+1} \times 3}{\text{sol}^{\text{"6224"}}$   
"6224" is elapsed cdk years @ 2006 AD



The Age, and Speed, of Light.

22/07/21  
(at bus stop, hospital)

**LIGHT**  
k =  
4707 x 10<sup>7</sup>  
gives  
m/sec

$k \times \frac{1}{2} \times 6224^{-\frac{1}{2}}$

**SPEED**

$\frac{10}{9} \times 2 \times 6224^2$

**HALF LIFE**

ie.  $\frac{1}{3} \times \frac{1}{3} \times 2 \times 6224^2$   
compare

$\frac{k}{10^9}$  - both constants  
 $\frac{10}{9} \approx 10 \times \frac{1}{3} \times \frac{1}{3} = \frac{1}{3} \times \frac{1}{3}$   
Powers of 10 discarded

**URANIUM 235**

$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{2}$

$6224^2$

**HALF LIFE** (use 6,224<sup>2</sup>)

**URANIUM 238**

$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times 2 \times 6224$

**HALF LIFE**

compare pages 16 & 17  
where  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$   
&  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times 3$

7/09/21

This is  $\frac{1}{13.5} \times 6224$

\* 1.37, but for theoretical reasons, 1.35 shown to be correct.

ie.  $6224^2 / 13.5$  (per 13.5)

- Note that  $1.35 \times 10^9$  light years is Fred Hoyle's old redshift measurement limit. See paper CDK5, Speed of Light Exceeded and Distance Limited in Redshift measurements.
- Hubble Law goes well until this limit. Redshifts ROCKET UP PAST THIS POINT. CDK5, Page 5, last paragraph
- Both REDSHIFTS and RADIODECAY are all about  $\frac{1}{3}$ s and  $\frac{1}{2}$ s
- Note that Bill Tift's  $\frac{8}{3}$  is the  $\frac{1}{27}$ th part of 72 km/sec quantized "recession speed" (redshift) See CDK

See next pages, CDK 26 for more on 1.35.

Black Pen

TABLE 1a The 2.41 group of radioactive nuclides.  
Note the decay constant of 2.41

Nuclide	Half Time	Fractional Relationship	Decay Constant
Light	86.4	$2/3 \times 129.6$	$.03 \times 2.41$
?	43.2	$1/2 \times 86.4$	$.06 \times 2.41$
?	28.8	$2/3 \times 43.2$	$.1 \times 2.41$
Nd 144	21.6	$3/4 \times 28.8$	$.13 \times 2.41$
Tm 232	14.4	$2/3 \times 21.6$	$.2 \times 2.41$
U 235	7.2	$1/2 \times 14.4$	$.4 \times 2.41$
Rb 87	4.8	$2/3 \times 7.2$	$.6 \times 2.41$
La 176	3.6	$3/4 \times 4.8$	$.8 \times 2.41$
?	(2.4)	$2/3 \times 3.6$	$1.2 \times 2.41$
K 40	1.2	$1/2 \times 2.4$	$2.4 \times 2.41$
Sm 148	.8	$2/3 \times 1.2$	$3.6 \times 2.41$
Pt 190	.6	$3/4 \times .8$	$4.8 \times 2.41$
Re 187	.4	$2/3 \times .6$	$7.2 \times 2.41$
Hf174/Te130	.2	$1/2 \times .4$	$14.4 \times 2.41$
?	.13	$2/3 \times .2$	$21.6 \times 2.41$
?	.1	$3/4 \times .13$	$28.8 \times 2.41$

All ENQUIRIES to:  
Physics Department,  
University of Auckland,  
New Zealand.

www.lollo.org.nz

TABLE 1b The 1.5 group of radioactive nuclides.  
Note the decay constant of 1.5

Nuclide	Half Time	Fractional Half Time	Decay Constant
U 238	4.6	$10 \times \frac{1}{9} \times \frac{1}{2.41}$	1.5
In 115	5.1	$\frac{10}{9} \times \frac{10}{9} \times \frac{1}{2.41}$	$\frac{9}{10} \times 1.5$
Gd 113	9	$\frac{9}{10} \times \frac{10}{9}$	$\frac{10}{9} \times 1.5 \times \frac{1}{2.41}$
Se 82 Ia 138 Sm 147 Gd 152	1.11	$\frac{10}{9}$	$1.5 \times \frac{1}{2.41}$

(c) Independent Science News

NOTES.

1. 'Powers of ten' excluded. These may be found from the standard half life listings.
2. Decay constant = .693 / half life  
Half life = .693 / decay constant
3. K 40. Published decay constant = 5.8  
Half life = 1.2  
U 238. Published decay constant = 1.5  
Half life = 4.6
4. 2.41 approximate. Use 2.406(25)

TABLE 2 Quantization in the radioactive decay rates of the members of the three naturally occurring radioactive transformation series.

Compiled 13/1/2015

(Compare Table 1a)

Parent Nuclide	Transformation Series Member	Quantized $\frac{1}{2}$ Time Position	Quantized Decay Rate x 2.406(25)	Half Time in Years	Fractional Relationships of New $\frac{1}{2}$ Times e.g. 57.6/86.4 = 2/3 43.2/57.6 = 3/4	Comments
		172.8				
		129.6				
Light		86.4	.033			
	Ra228	(57.6)	.05	5.8	2/3, 3/4	
	Po218	"	"	$5.7 \times 10^{-6}$	" "	
	Po215	"	"	$5.7 \times 10^{-11}$	" "	
		43.2	.066			Independent Science News
		28.8	.1			for www.lollo.org.nz
Nd144	Ac227	21.6	.133	22		c/o Univ of Auckland, N.Z.
	Pb210	"	"	22		
	Th228	(19.2)	.15	1.9	8/9, 3/4	
Th232	Bi215	14.4	.2	$1.44 \times 10^{-5}$		
U235		7.2	.4			
Rb87	At218	4.8	.6	$4.75 \times 10^{-8}$		
	Po216	"	"	$4.75 \times 10^{-9}$		
Lu176		3.6	.8			
	Pa234 m	2.4	1.2	$2.28 \times 10^{-6}$		Or, 21.6 position?
	Rn220	(1.8)	1.6	$1.77 \times 10^{-6}$		3/4, 2/3
	Ra226	(1.6)	1.8	1600		2/3, 3/4
	Po211	"	"	$1.58 \times 10^{-8}$	" "	
K40	Pb212	1.2	2.4	.00121		
	Bi212	"	"	.000114		1.1 on Table 1b?
Sm148	Th230	.8	3.6	80,000		
	Tl206	"	"	$7.99 \times 10^{-6}$		
Pt190	Tl208	.6	4.8	$5.89 \times 10^{-6}$		
Re187	Fr223	.4	7.2	$4.18 \times 10^{-5}$		Or, 43.2 position?
	Bi211	"	"	$4.18 \times 10^{-6}$		Or, 43.2 position?
	Th231	(.3)	9.6	.00297		3/4, 2/3
	Ra223	"	"	.0301	" "	
Hf174		.2	14.4			
Te130		"	"			
	Bi210	.133	21.6	.0137		
	Ra224	.1	28.8	.0101		
	Rn222	"	"	.0104		
	Rn218	"	"	$1.11 \times 10^{-10}$		1.1 on Table 1b?
	Po212	"	"	$9.51 \times 10^{-15}$		
	Tl207	"	"	$9.13 \times 10^{-6}$		9/10 on Table 1b?
	Pa234	(.075)	38.4	.000764		3/4, 8/9
	Th234	.066	43.2	.0657		
	Ac228	"	"	.000696		
	Pb211	"	"	$6.84 \times 10^{-5}$		
	Th227	(.05)	57.6	.0520		3/4, 2/3: 5.1 on Table 1b?
	Pb214	"	"	$5.13 \times 10^{-5}$	" " " " " "	
	Po214	"	"	$5.07 \times 10^{-12}$	" " " " " "	
See P. 6, 24/64	Bi214	(.0375)	78.6	$3.80 \times 10^{-5}$		(3/4), 8/9: (.0375/.05)
	Po210	"	"	.378	" "	
	Pa231	.033	86.4	33,000		
	U234	(.025)	115.2	250,000		3/4, 8/9
	Tl210	"	"	$2.47 \times 10^{-6}$	" "	
		.022	129.6			
	At219	.0166	172.8	$1.71 \times 10^{-6}$		Or, 172.8 position?
	Rn219	(.0125)	230.4	$1.27 \times 10^{-7}$		3/4, 8/9: 129.6 position?
		.011				Connects Table 1a to Table 1b



HALTON ARP'S QUANTIZED QUASAR REDSHIFTS RESEMBLE RADIO DECAY RATES\*

\*Radio decay rates are quantized. See "Systematic Fractional Relationships in Radioactive Decay Measurements". View [www.lollo.org.nz](http://www.lollo.org.nz)

QUANTIZED QUASAR REDSHIFTS

"(Halton) Arp believes that the observed redshift value of any object is made up of two components: the inherent component, and the velocity component... The inherent redshift is a property of the matter in the object... (Arp) suggests that quasars are typically emitted from their parent galaxies with inherent redshift values of up to  $z = 2$ ... In addition, these inherent redshift  $z$  values of quasars seem to be quantized!" (Internet source. Search redshift quantization)

QUANTIZATION OCCURS AT...

$$z = 0.061, 0.3, 0.6, 0.96, 1.41, 1.96$$

Such that

$$1.23(1 + z_1) = (1 + z_2)$$

e.g.  $1.23(1 + 0.061) = (1 + 0.3)$

and  $1.23(1 + 0.3) = (1 + 0.6)$  and so on (H. Arp)

REWRITING INTERVALS

Note that 1.23 is, in fact,  $10/9 \times 10/9$

So we can write.....

$$\begin{aligned} 10/9 \times 10/9 \times 1.061 &= 1.3 \\ 10/9 \times 10/9 \times 1.3 &= 1.6 \\ 10/9 \times 10/9 \times 1.6 &= 1.96 \\ 10/9 \times 10/9 \times 1.96 &= \underline{2.41} \\ 10/9 \times 10/9 \times 2.41 &= \underline{2.96} \end{aligned}$$

Please compare the above table with Tables 1a and 1b, attached over page. And please read Systematic Fractional Relationships in Radioactive Decay Measurements. See website.

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CDK 14

TABLE 1a The 2.41 group of radioactive nuclides.  
Note the decay constant of 2.41

Nuclide	Half Time	Fractional Relationship	Decay Constant
?	86.4	$\frac{2}{3} \times 129.6$	$.03 \times 2.41$
?	43.2	$\frac{1}{2} \times 86.4$	$.06 \times 2.41$
?	28.8	$\frac{2}{3} \times 43.2$	$.1 \times 2.41$
Nd 144	21.6	$\frac{3}{4} \times 28.8$	$.13 \times 2.41$
Th 232	14.4	$\frac{2}{3} \times 21.6$	$.2 \times 2.41$
U 235	7.2	$\frac{1}{2} \times 14.4$	$.4 \times 2.41$
Rb 87	4.8	$\frac{2}{3} \times 7.2$	$.6 \times 2.41$
Lu 176	3.6	$\frac{3}{4} \times 4.8$	$.8 \times 2.41$
?	(2.4)	$\frac{2}{3} \times 3.6$	$1.2 \times 2.41$
K 40	1.2	$\frac{1}{2} \times 2.4$	$2.4 \times 2.41$
Sm 148	.8	$\frac{2}{3} \times 1.2$	$3.6 \times 2.41$
Pt 190	.6	$\frac{3}{4} \times .8$	$4.8 \times 2.41$
Re 187	.4	$\frac{2}{3} \times .6$	$7.2 \times 2.41$
Hf174/Te130	.2	$\frac{1}{2} \times .4$	$14.4 \times 2.41$
?	.13	$\frac{2}{3} \times .2$	$21.6 \times 2.41$
?	.1	$\frac{3}{4} \times .13$	$28.8 \times 2.41$

TABLE 1b The 1.5 group of radioactive nuclides.  
Note the decay constant of 1.5

Nuclide	Half Time	Fractional Half Time	Decay Constant
U 238	4.6	$\frac{10}{9} \times \frac{1}{2.41}$	1.5
In 115	5.1	$\frac{10}{9} \times \frac{10}{9} \times \frac{1}{2.41}$	$\frac{9}{10} \times 1.5$
Gd 113	9	$\frac{9}{10}$	$\frac{10}{9} \times \frac{10}{9} \times 1.5 \times \frac{1}{2.41}$
Se 82 La 138 Sm 147 Gd 152	1.11	$\frac{10}{9}$	$1.5 \times \frac{1}{2.41}$

'Powers of ten' excluded. These may be found from the standard half life listings.

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New Zealand.

PAGE 16  
 RECIPROCAL OF PRIME NUMBERS  
 IN THE GRAVITY SERIES

The remainders produced:

either  $\frac{1}{24}$  or  $\frac{3}{8}$ .

Page 16

Both red shift numbers

No. RECIPROCAL  $\left[ \frac{24 - 2^2}{24} = \frac{1}{6} = \frac{1}{2} \times \frac{1}{3} \right]$  11/20/21  
 PRIME NUMBERS IN THE GRAVITY SERIES  
 of Sept.

$\frac{24}{32}$	$\frac{3^2}{24} = \frac{3}{8}$	$= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times 3$	
$\frac{24}{5^2}$	$\frac{5^2}{24} = 1.041\bar{6}$	$= 1 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	The square of the prime number, divided by 24, leaves $\frac{1}{24}$ th over.
$\frac{24}{7^2}$	$\frac{7^2}{24} = 2.041\bar{6}$	$= 2 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{11^2}$	$\frac{11^2}{24} = 5.041\bar{6}$	$= 5 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{13^2}$	$\frac{13^2}{24} = 7.041\bar{6}$	$= 7 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{17^2}$	$\frac{17^2}{24} = 12.041\bar{6}$	$= 12 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{19^2}$	$\frac{19^2}{24} = 15.041\bar{6}$	$= 15 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{23^2}$	$\frac{23^2}{24} = 22.041\bar{6}$	$= 22 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{29^2}$	$\frac{29^2}{24} = 35.041\bar{6}$	$= 35 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{31^2}$	$\frac{31^2}{24} = 40.041\bar{6}$	$= 40 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{37^2}$	$\frac{37^2}{24} = 57.041\bar{6}$	$= 57 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{41^2}$	$\frac{41^2}{24} = 70.041\bar{6}$	$= 70 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{43^2}$	$\frac{43^2}{24} = 77.041\bar{6}$	$= 77 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	
$\frac{24}{47^2}$	$\frac{47^2}{24} = 92.041\bar{6}$	$= 92 + \left( \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \right)$	

and so on. continued over page 17

P. 17

15  
 7  
 7

$\frac{51^2}{24} = 108.375$	$\leftarrow$	$\div 6$ in each case
$\frac{53^2}{24} = 117.0416$	$\frac{1}{2}$	48, 6, 6, 24
$\frac{57^2}{24} = 135.375$	$\frac{3}{8}$	3, 51, 57, 63, 87
$\frac{59^2}{24} = 145.0416$	$\frac{5}{24}$	end in $\frac{3}{8}$ ths
$\frac{61^2}{24} = 155.0416$	$\frac{7}{24}$	others in $\frac{1}{24}$ ths
$\frac{63^2}{24} = 165.375$	$\frac{9}{24}$	
$\frac{67^2}{24} = 187.0416$	$\frac{11}{24}$	
$\frac{71^2}{24} = 210.0416$	$\frac{13}{24}$	
$\frac{73^2}{24} = 222.0416$	$\frac{15}{24}$	
$\frac{79^2}{24} = 260.0416$	$\frac{17}{24}$	

$$\frac{3}{8} = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times 3$$

$$\frac{1}{24} = \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{3}$$

31 → 37

15

$\frac{83^2}{24} = 287.0416$	$\frac{19}{24}$
$\frac{87^2}{24} = 315.375$	$\frac{23}{24}$
$\frac{89^2}{24} = 330.0416$	$\frac{25}{24}$
$\frac{91^2}{24} = 345.0416$	$\frac{29}{24}$
$\frac{97^2}{24} = 392.0416$	$\frac{31}{24}$
$\frac{101^2}{24} = 425.0416$	$\frac{35}{24}$
$\frac{103^2}{24} = 442.0416$	$\frac{37}{24}$
$\frac{107^2}{24} = 477.0416$	$\frac{41}{24}$

$\frac{1}{24}$  divisible by 6

48 6 6 24  
3 51 57 63 87

Primes that produce the  $\frac{3}{8}$  remainder.  
Useful for primes study?  
(Differences divisible by  $(\frac{1}{2} \times \frac{1}{3})^{-1}$ )

$$\frac{3}{2} = \frac{6224}{2}$$

$$= 2.41$$

$$.000241 \times 6224 = 1.5 = \frac{3}{2}$$

$$\frac{1.5524}{1.7320 \times 1.4142} = 0.6337$$

$$x4707 = 298,32463 \text{ km/sec}$$

Page 18

$$\frac{1}{2 \times .00024} = \frac{6224}{3}$$

$$\frac{1}{2} \times \frac{1}{.000241} = 6224 \times \frac{1}{3}$$

$$\frac{1}{2} \text{ per } .000241 = 6224 \times \frac{1}{3}$$

$$\frac{1}{3} \times \frac{1}{2} \times 2.41 = \ln 2 = .693$$

$$\frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{2}} \times \sqrt{2.41} \times k = 5.01$$

where  $\ln 2 = \frac{1}{3} \times \frac{1}{2} \times 2.41$

Sol

$$5.01^2 = \frac{1}{3} \times \frac{1}{2} \times 2.41 \times k$$

$$\frac{1}{2} \text{ per } 6224 = \frac{1}{3} \times .000241$$

(decay rate of light per year)

$$\frac{1}{2} \times \frac{1}{6224} = \frac{1}{3} \times .000241$$

$$\frac{1}{2} \times \frac{1}{\sqrt{6224}} = \frac{1}{3} \times .000241 \times \sqrt{\frac{1.5}{.000241}}$$

$$= \frac{1}{3} \times .000241 \times 6224 \rightarrow \text{speed of light}$$

$$= \frac{1}{3} \times \sqrt{.00024} \times \frac{\sqrt{3}}{\sqrt{2}} \times \sqrt{.000241} \times k$$

$$\sqrt{\frac{.000241}{3 \times \sqrt{3}}} \times k = 5.01$$

Speed of light

$$Sol^2 = \frac{1}{3} \times \frac{1}{2} \times 2.41 \quad \overset{10/6/21}{2.41 = 3 \times 2 \times Sol^2}$$

$$Ln2 = \frac{1}{3} \times \frac{1}{2} \times \frac{1}{2.41} = \frac{1}{3} \times \frac{1}{2} \times \frac{1}{3 \times 2 \times Sol^2}$$

$$= \frac{1}{3} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{2} \times \frac{1}{Sol^2}$$

$$\therefore \sqrt{Ln2} = \frac{1}{3} \times \frac{1}{2} \times \frac{1}{S.O.I.}$$

For any year, half time is the above conversion rate / decay rate.

$$OR \quad \underline{\underline{Ln2}} = \left( \frac{1}{3} \times \frac{1}{2} \times \frac{1}{S.O.I.} \right)^2 \times k$$

$$\left( S.O.I. = \frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{2}} \times \sqrt{2.41} \right) \times k$$

$$\underline{\underline{from:}} \quad Sol = \frac{1}{2} \times \frac{k}{\sqrt{6224}}$$

$$\rightarrow OR, (2 \times 3 \times S.O.I.)^2 \times \text{decay rate.}$$

$$\ln 2 = \frac{1}{3} \times \frac{1}{2} \times \frac{1}{2.41} \quad 10/09/21.$$

$$\text{Sol}^2 = \frac{1}{3} \times \frac{1}{2} \times 2.41$$

$$\text{Sol} = \sqrt{\frac{1}{3} \times \frac{1}{2} \times 2.41}$$

(x k to give  
~~k~~ / sec<sup>2</sup>  
 (m) / sec<sup>2</sup>)  
 $k = 4707 \times 10^7$

$$\text{Sol} = \frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{2}} \times \sqrt{2.41} \times k$$

Please Note!

$$\ln 2 \text{ or } .693 = \frac{1}{3} \times \frac{1}{2} \times \frac{1}{2.41}$$

$$(\text{speed of light})^2 = \frac{1}{3} \times \frac{1}{2} \times 2.41$$

$$\text{gravity} = \frac{1}{3} \times \frac{1}{2} \times \pi^2$$

TQN is always 1-5

elapsed years  
 time 4219 B.C.

$$\text{Sol}^2 \text{ always } \frac{1}{3} \times \frac{1}{2} \times \text{TQN} \times k$$

TQN = Tiffit Quantization Number = "00024" (2.41)  
 @ 2006 A.D.  
 (A COMPRESSION NUMBER.)

LIGHT YEAR VALUES COMPRESSED INTO ACTUAL YEARS