ASTROPHYSICS 20/02/09

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LIGHT SPEEDS,
LOOK-BACK TIMES
AND 'SPECIAL EFFECTS'.

Independent Science News
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c/o Physics Department,
University of Auckland,
New Zealand.

LIGHT SPEEDS &
LOOK-BACK TIMES.

CDK 8

LIGHT SPEEDS.

Have you read 'Zones of Thousands Seen in Red-shift Distance Measurements'.? (CDK 7)
You will recall that Mrs H. had noticed a curious fact. She knew that large-scale redshifts are in 'speed jumps' of 72 km/sec. And she had read CDK4 where light speed is calculated as slowing down at 24 km/sec per year.

Mrs H. pointed out that TODAY there should be exactly 3 light years of light travel between speed jumps of 72 km/sec. This 72 km/sec is possibly a little bit approximate. But how absolutely exact were Mrs H's three years ?

The 'lollo lads', Inky, bill and Sparrow were determined to find out ! They decided to calculate three-yearly light speed in absolutely exact terms ! Read on.....

ONE LIGHT YEAR (l.y.) is the DISTANCE that light travels in one year. So that the SPEED of light may be expressed as ONE light year per year. (1 l.y./year)

The speed of light is slowing according to the formula:

$$\text{speed} = \frac{k}{2.\sqrt{\text{years elapsed since cdk* began}}}$$

See: 'Some Calculations of the Speed and Deceleration of Light' (CDK 4)

*cdk = speed of light decay i.e. slowing light speed.

As in CDK4, we can assign a value to k, this time for speed in light years (l.y.) per year.

We KNOW, that at 2006 A.D., the speed of light was..... ONE LIGHT YEAR PER YEAR.

And 'lollo' allows that the years elapsed since cdk began were 6224 years. Thus we may write:

$$\text{ONE} = \frac{k}{2.\sqrt{6224}} \qquad \text{OR,} \quad k = 2.\sqrt{6224}$$

AND THUS,

$$\text{speed in l.y./year} = \frac{2.\sqrt{6224}}{2.\sqrt{\text{cdk years elapsed}}}$$

AND, MORE SIMPLY,

$$\text{speed in l.y./year} = \frac{\sqrt{6224}}{\sqrt{\text{cdk years elapsed}}}$$

Of course this looks <u>far</u> too simple ! But the lollo lads tried it.

$$\text{speed}_{2006} = \frac{\sqrt{6224}}{\sqrt{6224}} = 1 \text{ l.y./year}$$

A no-brainer. Then they tried for a speed 3 years earlier, at 2003 A.D.

$$\text{speed}_{2003} = \frac{\sqrt{6224}}{\sqrt{6221}} = 1.000241 \text{ l.y./year.}$$

AND THERE IT WAS, <u>ABSOLUTELY EXACTLY</u> !!

For '.000241'is the wavelength jump, seen in redshift measurements, that <u>REALLY</u> means 'light slowing down by (some) 72 km/sec'.

The lads tried 6 years earlier, at 2000 A.D.

$$\text{speed}_{2000} = \frac{\sqrt{6224}}{\sqrt{6218}} = 1.0004823 \text{ l.y./year}$$

And 9 years earlier.

$$\text{speed}_{1997} = \frac{\sqrt{6224}}{\sqrt{6215}} = 1.0007237 \text{ l.y./year}$$

.

.

.

And right down to 30 years earlier.....

$$\text{speed}_{1976} = \frac{\sqrt{6224}}{\sqrt{6194}} = 1.0024187 \text{ l.y./year.}$$

Note the doubling at 2000 A.D.

And the tripling at 1997 A.D.

And ten times at 1976 A.D.

The lads have made some '.000241' lists. They are <u>last</u> in this bulletin. But you don't <u>have</u> to read them. You already have the idea, don't you ? Mrs H had hit the nail on the head!

LIGHT SPEEDS IN THE PAST AT DISTANCES FROM US

Please refer to the diagram on the opposite page, and also to Picture 4, page 5, in CDK 7.

<u>DISTANCES</u>: The <u>start</u> of the MILLIONS zone is 1.37 BILLION light years out. For the reasoning on this see CDK 7, page 1. Also CDK 7, picture 1.

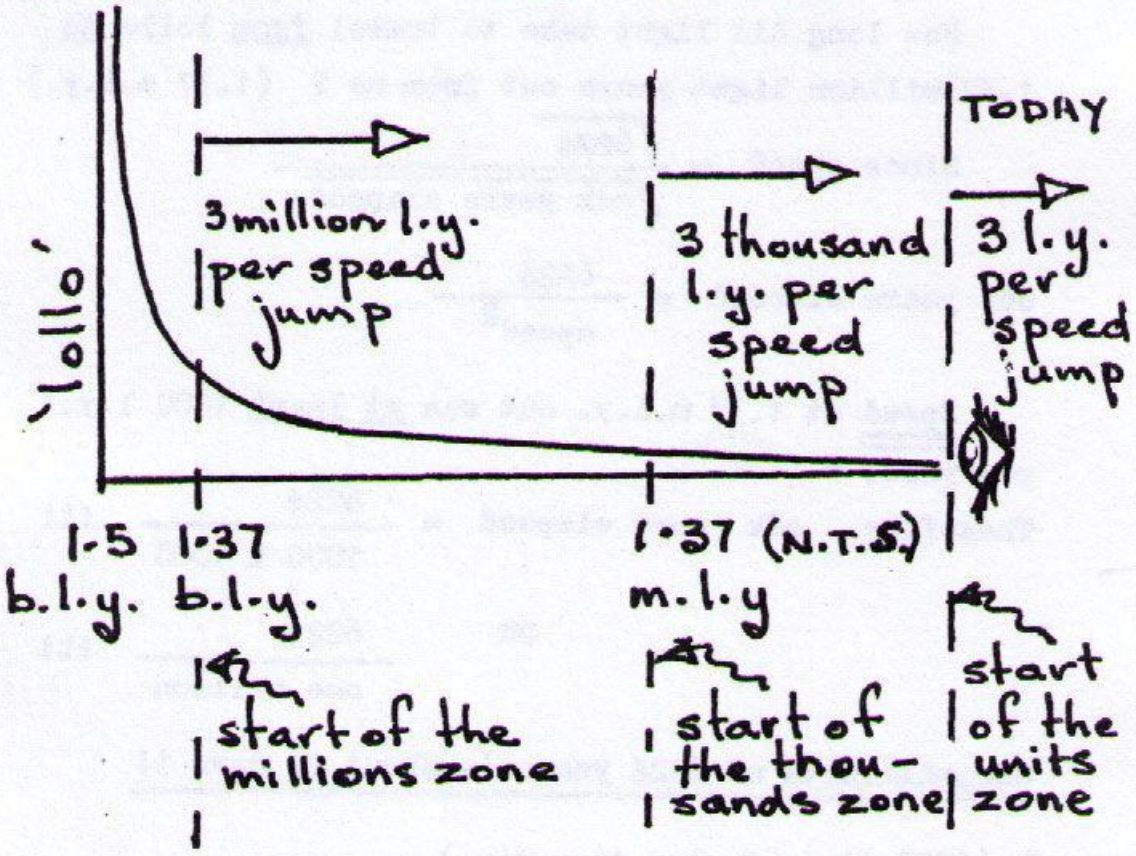
May we assume that the start of the THOUSANDS zone is 1.37 MILLION light years out ? Please consider also Sparrow's ADDITION TRIANGLE, CDK 7, page 9.

SPEEDS: At the start of the millions zone, light (that we see now), was travelling 3 million l.y. per 72 km/sec speed jump. For the reasoning on this, see CDK 7, page 7, paragraph 2.

By the same reasoning, at the start of the thousands zone, light (that we see now), was travelling 3 thousand l.y.per 72 km/sec speed jump.

So that the SPEED OF LIGHT, when it was 1.37 million l.y. out. was at least 1000 TIMES FASTER than now. At least, because the time to slow 72 km/sec in speed may have been faster then. More on this later.

DIAGRAM ONE. LIGHT SPEEDS IN THE PAST, AT DISTANCES FROM US.



LOOK-BACK TIMES:

Light from the lollo distance has taken 6224 years (at 2006 A.D.) to reach us.

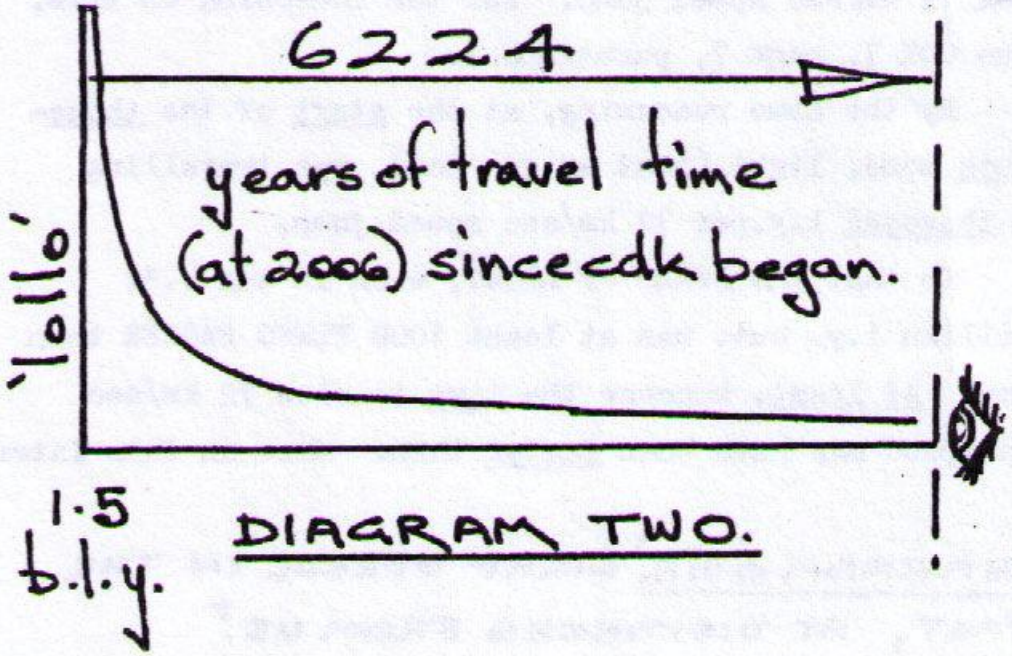


DIAGRAM TWO.

How long did light take to travel <u>from</u> lollo <u>to</u> 1.37 million light years out from us ? (1.37 m.l.y.)

$$\text{Since speed} = \frac{\sqrt{6224}}{\sqrt{\text{cdk years elapsed}}}$$

$$\text{cdk years elapsed} = \frac{6224}{\text{speed}^2}$$

<u>Speed</u> at 1.37 m.l.y. out was <u>at least</u> 1000 l.y. per year. *

Therefore, cdk years elapsed $= \dfrac{6224}{1000 \times 1000}$!!!

OR $\dfrac{6224}{\text{one million}}$!!!

One millionth of 6224 years is about 2¼ days !!

* (1000 times faster than now.)

So about $2\frac{1}{4}$ days AT MOST for light from the lollo distance to reach 1.37 m.l.y. out. So the MINIMUM LOOK-BACK TIME to 1.37 m.l.y. out is 6224 years less $2\frac{1}{4}$ days! ALL but a tiny fraction of the total look-back time is within a 1.37 m.l.y.radius of us !!!

Incidentally, the time from lollo to 1.37 b.l.y. out was 0.2 seconds at most.....

$$\text{cdk years elapsed} = \frac{6224}{\text{one million x one million}}$$

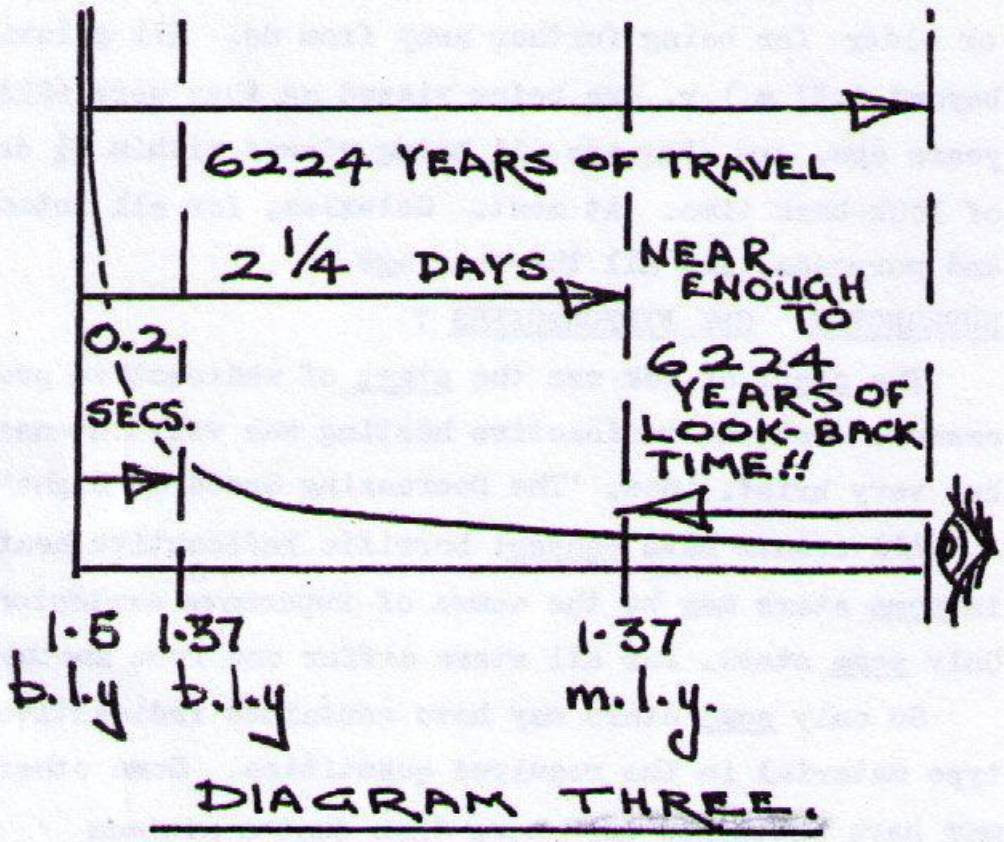


DIAGRAM THREE.

SPECIAL EFFECTS SPECIAL EFFECTS SPECIAL EFFECTS

Slowing Rotation of Spiral Galaxies.

DIAGRAM FOUR.

A light stream, length d, from a distant galaxy, streams out in time t. The light stream reaches the astonomer's eye. It is now taking a longer time, time T, to deliver information on light stream d. Hence the rotation of the galaxy is apparently slowed.

AGE of GALAXIES.

It is observed that galaxies do not look any younger or older for being further away from us. All galaxies beyond 1.37 m.l.y. are being viewed as they were 6224 years ago. And they are all being viewed within $2\frac{1}{4}$ days of look-back time. At most. Galaxies, for all intents and purposes, are all the same age.

SUPERNOVAE: CDK FIRECRACKERS ?

The start of cdk was the start of radioactive processes. Initial radioactive heating was very intense, but very brief. (See, 'The Decreasing Speed of Light')

All events have causes: horrific radioactive heating in some stars may be the cause of supernova explosions. Only some stars. For all stars differ one from another!

So only some stars may have contained radioactive-type material in the required quantities. Some others may have contained much more than just a minimum requirement !

PLEASE NOTE : THE LOOK-BACK PERIOD IS VERY SMALL BEYOND 1.37 m.l.y. THEREFORE, ALL THE DISTANT, OBSERVED SUPERNOVAE ARE OCCURRING AT THE SAME TIME!! (WITHIN A MAX. OF $2\frac{1}{4}$ DAYS)

THIS IS A VERY IMPORTANT POINT, and it is repeated here for emphasis: ALL THE DISTANTLY OBSERVED SUPERNOVAE ARE OCCURRING AT THE SAME TIME.

AND we are viewing them as they were 6224 years ago.

THIS POINTS TO A CDK START FOR SUPERNOVAE EVENTS. They, (distant ones), are (were!) all occurring together not long after cdk commenced.

(For a cdk start to radioactivity see: The Age of Light and the Shape of the Universe' and pages 1,2 and 3 of 'The Decreasing Speed Of Light'.)

LOLLO PREDICTION. There will be NO OLD SUPERNOVAE BEYOND A LIMITING DISTANCE. They will be just in process. Any differences in flare-up will be due to amount of radioactive heating.

LOLLO PREDICTION. Supernovae that have been seen historically (Eta Carina, Crab...) last about 2 weeks in the initial flare-up (very bright) phase.

But DISTANT SUPERNOVAE will be IN SLOW MOTION !! The flare-up phase will go on and on and on and on.....

Compare galaxy rotation discussion, page 7.

HISTORICALLY SEEN SUPERNOVAE

Eta Carina (1843 A.D.)and Crab (1054 A.D.) are just within 6000 l.y. of us. These supernova events have processed through in real time (roughly), not in slow motion. This suggests that most of the available look-back time may lie within just thousands of l.y. of distance from us.

LOLLO PREDICTION. All completed supernova events will lie within a close radius of us. Thousands, not millions of light years away.

SUPERNOVAE AND 'ACCELERATING EXPANSION OF THE UNIVERSE'.

This is one of the latest topics of astronomy journalism. Articles are along the lines of:

...."Observations of distant supernovae appear to show that the universe was expanding more slowly in the past. Hence, things are moving away faster today, and the expansion of the universe has accelerated".

(Of course, nothing is moving away in the sense of 'universal expansion'. Redshifts, said to mean 'moving away', really mean 'decelerating light speed'.)

ACCELERATION OF UNIVERSE = DECELERATION OF LIGHT !!

We know that the further we look out, the slower events seem.. And 'acceleration' effects can be explained by deceleration of light. The Pioneer Anomaly is one of these acceleration 'mysteries'. *

* See 'The Pioneer Anomaly.....' CDK 6.
Website or c/o Univ. of Auckland.

A SEMI-FINAL WORD.

In the 'speeds' discussion, we showed 1000 times the distance travelled per 72 km/sec speed jump. This was at 1.37 m.l.y. out. We called this 1000 times the SPEED.

However, this is a minimum actual speed! Today, light takes a period of 3 years to slow by 72 km/sec. But this period of time may have been much, much faster in the past!! Let us see why.....

FASTER TIMES FOR 72 km/sec SPEED JUMPS in the past!

We have discussed the slow-motion effect of slowing light speed on galaxy rotation speeds. But we have used only a SPEED SQUARED rule to estimate look-back times. And thus the slow-motion effects on galaxy rotation speeds.

But rotational speeds of galaxies are observed to slow according to a FOURTH POWER RULE !!
A faster time of production of 72 km/sec speed jumps in the past is likely. This could give an additional square power factor over and above 'speed squared'. This fourth power would make almost all look-back time very, very local ! And it would not alter our previous conclusions. Just make them more pronounced.

And now for the last final word! For now.

THE PRISTINE UNIVERSE.

A very short 72 km/sec speed jump time in the past means this.... That beyond a relatively close distance,

we really only have a photograph. A snapshot of the universe as it <u>was</u>, before destructive cdk processes began to seriously kick in.

A PRISTINE, pre-digital picture, crammed with beautiful, beautiful galaxy after galaxy after galaxy. More and more distant. Very still.

Cheerio for now, from the Editor and the team,
Inky, Sparrow, Bill....and Mrs H!

'.000241' Lists.

NUMBER, n	A.D. DATE	$\sqrt{\frac{6224}{\sqrt{\text{cdk years elapsed}}}}$	n.(.000241)	$(1.000241)^n$
0	2006	1.000000	0.000000	1.000000
1	2003	1.000241	.000241	1.000241
2	2000	1.0004823	.000482	1.000482
3	1997	1.0007237	.000723	1.0007231
4	1994	1.0009654	.000964	1.0009642
5	1991	1.0012071	.001205	1.0012054
6	1988	1.0014491	.001446	1.0014466
7	1985	1.0016912	.001687	1.0016879
8	1982	1.0019336	.001928	1.0019293
9	1979	1.0021761	.002169	1.0021707
10	1976	1.0024187	.00241	1.0024122