# Henk Reints   &
# Albert Einstein

*two violin playing physicists*
who don't/didn't contrive concoctions.

http://henk-reints.nl/muziek/albert-einstein-plays-violin-mozart-sonata-in-b-flat-maj-kv378.html
(Ctrl+shift+click  or  ctrl+click  or  right-click → new tab).

# Henk Reints MSc. (1957)

Proper Dutch pronunciation of my name:  http://henk-reints.nl/Henk-Reints.mp3

- physicist (Eindhoven University of Technology, 1984);

- job in automation, not much physics at academic level;

- dissatisfied with fantas{tic|ised} theories in cosmology, apparently not deduced from ascertained truths;

- set myself a target (2$^{nd}$ half of 2016):

  o get a consistent view of the universe as a whole;

  o strive for completeness without *any* wild assumption, i.e. **deduce from ascertained truths only**;

  o like Newton:  **hypothefes non fingo**

  *I do not fabricate assumptions*.

- **Ascertained truths / certainties:**
  - <u>abstract truths</u>: mathematics and logic;
    
    ***deduction*** $\Rightarrow$ certainty; hard truth **iff** all premises true;
  - <u>primary physical truth</u>:
    
    ***fact*** $:=$ consistent(ly) & verifyabl{e|y} ***observed*** phenomenon;
  - <u>secondary physical truth</u>:
    
    **observed** persistent **100% regularity** in the ***facts***;
    - ***induction:*** $P(\text{fluke}) < \varepsilon \rightarrow$ considered universal truth;
      - remains: some (low) level of uncertainty (i.e. $\varepsilon$);
  - <u>derived truth</u>: (recursively) deduced from ascertained truth(s).
- Everything else: ***assumption/fabrication/concoction***;
  - not to be accepted as a truth, but rather firmly rejected.

  Restrict term ***hypothesis*** to: *conclusion by induction from facts, but insufficiently certain to consider it a universal truth.*

# *Arguable* (but not now!) *definition:*

# to <u>**KNOW**</u>:

1) having adequately observed,
   fully aware of caveats like optical illusions etc.;

2) having adequately derived
   from such observations,
   using correct statistics and logical reasoning.

# *Arguable* (but not now!) *definitions:*

## TRUTH:

The entirety of all ***FACTS***;
that what we ***KNOW*** for sure.

## REALITY:

TRUTH + the *very most plausible*
we can *conclude* from it + what
we can *flawlessly deduce* from that.
***NOT*** what we can *devise* or *think up*.

# *Arguable* (but not now!) *definitions:*

# Reality :=
## the entire cosmos, including all of its aspects.

# Exist :=
## being part of reality.

(This should deal with rather silly statements like
*"is the cosmos real?"* or *"does reality exist?"*
or whatever flapdoodle that can be devised by
morons without first defining the terms in question).

Assumptions allowed:

☑ if not used as a fundamental premise & clearly marked as an assumption (*not* as a *hypothesis*!);

☑ to falsify them (e.g. proof by contradiction);

☑ as a choice between deduced (almost) certainties.

*Not any* **assumption** is true until proven false !

**It is to be considered a falsity on beforehand, unless confirmed by facts** (& then it's no assumption)**.**

**Assumptions** arise from **nescience** (i.e. *not* knowing), hence they have **no place** in **science** (i.e. knowledge).

Id est: *no* place whatsoever.

*Carl Sagan: I don't want to believe, I want to know.*

# Ex falso sequitur quodlibet.

## From an untruth follows whatever pleases you.

Untruth & contradiction are equivalent qualifications
since any untruth contradicts the truth
and a contradiction cannot be a truth.

| | | | |
|---|---|---|---|
| Premise 1: | $P$ | | (some arbitrary proposition) |
| premise 2: | $\neg P$ | | (contradicting it) |
| deduction 1: | $P$ | $\vdash \ P \vee Q$ | |
| deduction 2: | $\neg P \wedge (P \vee Q)$ | $\vdash \ Q$ | bingo! |

Now **Q** has been deduced *without it having any content yet*.

## "Quodlibet Erat Demonstrandum".

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# Ex fabricationibus sequitur stultorum paradisum.

*From fabrications follows the fool's paradise.*
*Uit verzinselen volgen luchtkastelen.*

# However:

An *unfounded proposition*
in accurate agreement with
a regularity in the facts
can — by *induction* — be
considered a plausible (near) truth
until something better might arise.

Should then be reformulated as credible
*conclusion from* that factual regularity.

One should *not* come up with a *theory*, but with an irrefutable *deduction* from *certainties*.

Or forever remain silent.

*Crotcheteers don't help science.*

*A theory with mathematical beauty is more likely to be correct than an ugly one that fits some experimental data.*
— Paul A.M. Dirac —

*A deduction from ascertained truths is more likely to be correct than whatever theory, independent of its beauty or elegance.*
— Henk Reints —

A **fundamental proposition** must be

# derived from

## observed phenomena.

Only in **2ⁿᵈ instance** it should preferably get

# confirmed by

## other phenomena.

*Do not try to "prove" a brainchild that
has not been deduced from certainties.*

If you didn't see it with your own eyes, or hear it with your own ears, don't invent it with your small mind and share it with your big mouth!

CoolFunnyQuotes.com

Please read *objective measurement device* instead of *eyes/ears*...

# Something incomprehensible does not explain anything.

## Swapping of *space* and *time* inside BH?

Do **YOU**  <u>*understand*</u> that?

(Understanding ≠ being aware of a flawless mathematical deduction).

## Superluminality?

Lorentz contr. of street length: $\beta = 1 \rightarrow s = 0,\ \beta > 1 \rightarrow s =$ **?**
$\beta = 1$ already leaves NO distance to be travelled!

## Disconnected parts of the universe?

**Disconnected parts of the brain!**

Define:

$m$understand := understand $m$athematically;

$p$understand := understand $p$hysically.

A **proper explanation** should yield $p$understanding, not merely $m$understanding, *let alone people just silently taking it for granted because they don't want to  damage their (or your) ego.*

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*An unintelligable formula does most probably not describe a physical reality.*

# Consciously trying to suppress:

## Confirmation bias:

looking primarily for confirming evidence of own
thoughts/ideas/beliefs/~~hypotheses~~assumptions
& devaluating any counter-arguments.

## Wishful thinking:

(subconscious) attribution of reality
to what one wants to be true & denial
of what one does not want to be true,
often hardly or vaguely substantiated.

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*One's defensive arguments cannot be
based on the theory that is "under attack".*

# Very fundamentals of macroscopic physics:

(i.e. not considering quantum mechanics)

## **Newton**'s  laws of motion & grav.:

(I follows from II);   II: $\vec{F} = \dot{\vec{p}}$ ;   III: $\sum \vec{F} = \vec{0}$ ;   $F_g = G \cdot \dfrac{m_1}{r} \cdot \dfrac{m_2}{r}$ ;

## **Maxwell**'s equations:

$\nabla \cdot \vec{E} = \dfrac{\rho_e}{\varepsilon_0}$ ;   $\nabla \cdot \vec{B} = 0$ ;   $\nabla \times \vec{E} = -\dfrac{\partial \vec{B}}{\partial t}$ ;   $\nabla \times \vec{B} = \mu_0 \left( \vec{J} + \varepsilon_0 \dfrac{\partial \vec{E}}{\partial t} \right)$ ;   $c = \dfrac{1}{\sqrt{\varepsilon_0 \mu_0}}$ ;

## **Einstein**'s postulates & equiv.pr.:

[ laws of nat.  &  $c = const.$ ]  same to all obs. indep. of motion;   $T + V = 0$.

Any theory with even the slightest appearance of contradiction to any of these should *never* be considered a truth,

*such as: inflationary universe, disconnected parts & horizon, 93 billion light yeaheaHaHaHah.*

Ceterum censeo superluminalitatem esse delendam

Furthermore, I consider that
(the concept of)
superluminality
is to be destroyed.

Gathered/reworked by Henk Reints 2022

**Sir Isaac Newton:**

Fieri debet ne argumentum inductionis tollatur per hypotheſes.
*Don't come up with fabrications that contradict conclusions from facts.*

# A ~~theory~~ ~~reasoning~~ fabrication, aimed at some desired target,
# **but not built on certainties**

(e.g. *the string ~~theory~~ fabrication*)
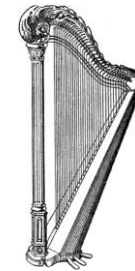


*ceux-ci ne sont pas des violons*

# **yields nothing but speculation.**
(Well, sometimes a purely coincidental success, immediately denoted as "evidence" or "proof").

Presumed rule:     $A \rightarrow B$

Modus Ponens:     $(A \rightarrow B) \wedge \quad A \quad \rightarrow \quad B$

Modus Tollens:     $(A \rightarrow B) \wedge \neg B \rightarrow \neg A$

| Modus Ponens: $A \rightarrow B$ | | | | Modus Tollens: $\neg B \rightarrow \neg A$ | | | |
|---|---|---|---|---|---|---|---|
| Fact $A$ | Fact $B$ | conventional | HR | Fact $\neg B$ | Fact $\neg A$ | conventional | HR |
| FALSE | FALSE | TRUE | EFSQL | TRUE | TRUE | TRUE | confirm |
| FALSE | TRUE | TRUE | EFSQL | FALSE | TRUE | TRUE | EFSQL |
| TRUE | FALSE | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE |
| TRUE | TRUE | TRUE | confirm | FALSE | FALSE | TRUE | EFSQL |

The ONLY *absolute certainty* achievable

= falsification of rule by: $A \wedge \neg B$ .

Conventional logic erroneously interprets **EFSQL** as **TRUE**,  but ***any***
proposition is to be considered **FALSE** until confirmed (by induction).

Induction:

**IFF**    $\#(\neg\text{confirmed}) \equiv 0$    **AND**    $\#\text{confirmed} = n \gg 0$

**THEN**    rule is ***plausible***,  with estim. *uncertainty* $\varepsilon \approx 1/2^n$ .
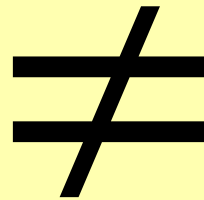
# Deduction

≠
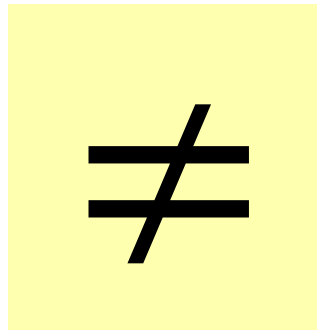
# finding a cause.

(*RE*duction!)

| observed phenomen{on\|a} | ONE WAY ⟶ | conclusion |
| --- | --- | --- |

# Deduction

$$\ne$$

## being unable to
## *think up* anything else.

An *assigned cause* must be an *already known ascertained truth* from which the phenomenon can be deduced!

# Not being able to imagine anything else merely confirms YOUR own ignorance, MORON!

# A proper *deduction* from *truths* *always* yields a *truth* to which *nothing* thought-up should be added.

*Crotcheteers are of no benefit to science.*

# *Deduction* renders *absolute certainty.*

# *Deduction* from *truths* yields *consistent* *truths.*

*Due verità non posson mai contrariarsi.*

*Two truths cannot ever contradict one another.*

Galileo Galilei, letter to Benedetto Castelli, 21 December 1613.

# Don't Doubt DeDuction, Dunce!

## DON'T think you know better!

Isaacus Newtonus,  regulæ philosophandi:

I:  *Cauſas rerum naturalium non plures admitti debere, quam quæ veræ ſint.*

**No more causes of natural things should
be allowed than those that are true.**

IV:  *Fieri debet ne argumentum inductionis tollatur per hypotheſes.*

**No evidence by induction should be gainsaid by assumptions.**

**YOU** have two options:

EITHER: you *deduce* your statement from *ascertained truths*,

OR: you withdraw it.

# QM example:

*Conventional*:

       not observed    ⇒    superposition
                                        of all possible states;

*should be*:

       not observed    ⇒    state is ***UNKNOWN*!**
                                        (and yes, probabilities of all
                                        possible states add up to $1$,
                                        nothing special about that).

Schrödinger's cat is of course ***<u>not</u>***
in a superposition of dead & alive.
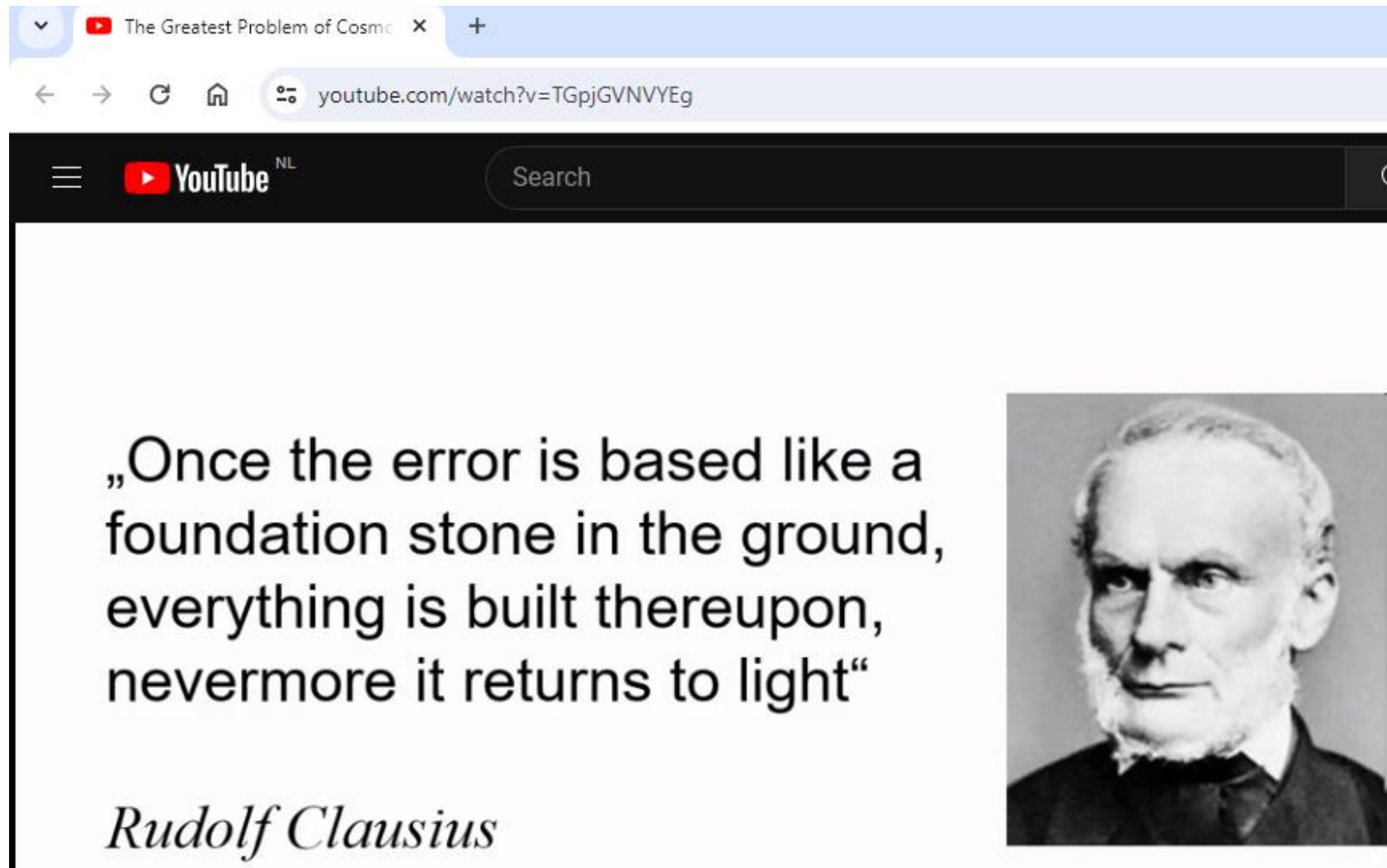
Applesauce!   We just **don't know** its status.

*Wrong terminology may lead you astray.*

# Problem for the human brain:

(which includes ***yours*** if you've got one 😋)

Let go of (flawed) interpretations & "explanations" that are seemingly confirmed by wrongly interpreted observations.

from: "The Greatest Problem of Cosmology is Solved" (HR: *I think it isn't…*)
by Dr. Alexander Unzicker, https://www.youtube.com/watch?v=TGpjGVNVYEg

"One of the saddest lessons of history is this: If we've been bamboozled long enough, we tend to reject any evidence of the bamboozle. We're no longer interested in finding out the truth. The bamboozle has captured us. It's simply too painful to acknowledge, even to ourselves, that we've been taken. Once you give a charlatan power over you, you almost never get it back."

— Carl Sagan, The Demon-Haunted World: Science as a Candle in the Dark

My greatest challenge:

# BREAK CONSENSUS
about wrong concepts.

# Albert Einstein (1901-07-08, aged 22):

Was Sie über die deutschen Professoren gesagt haben, ist gar nicht übertrieben. Ich habe wieder ein trauriges Subjekt dieser Art kennen gelernt – einer der ersten Physiker Deutschlands *(Paul Drude)*. Auf zwei sachliche Einwände, welche ich ihm gegen eine seiner Theorien anführte, und die einen direkten Defekt seiner Schlüsse darthun, antwortet er mir mit dem Hinweis, dass ein anderer (unfehlbarer) Kollege von ihm derselben Meinung sei. Ich werde dem Mann demnächst mit einer tüchtigen Veröffentlichung einheizen *(was er im selben Jahr tat)*. **Autoritätsdusel ist der größte Feind der Wahrheit.** [CPAE, Vol. 1, Doc. 115, S. 310].

## Autoritätsdusel ist der größte Feind der Wahrheit.

*Dizzily relying on authority is the greatest enemy of truth.*

*Duizelig steunen op autoriteit is de grootste vijand van de waarheid.*

**HR: Even if the authority is Albert Einstein himself.**

# Albert Einstein:

*It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.*

"On the Method of Theoretical Physics" The Herbert Spencer Lecture, delivered at Oxford (10 June 1933); also published in Philosophy of Science, Vol. 1, No. 2 (April 1934), pp. 163-169., p. 165.

# Henk Reints:

*Physics must aim to deduce the smallest and simplest possible set of axioms from observed phenomena without making any assumption at all, such that as many observed phenomena as possible can be derived ("explained") without contradicting any fact of experience.*

Homo non satis sapiens' brain has not evolved in order to fathom the universe, but because it increased the chance of survival, hence procreation. For survival, one **must** quickly approve one's own ideas. More or less the only alternative is being eaten.

Dunning–Kruger effect:  89% rank themselves in the top 50%.

In science, one should **not** obsessively try to prove one's own thoughts (confirmation bias). *Saving a theory* should never be a target.

As long as one follows a wrong theory, inconsistencies will keep emerging, raising new questions, for which wrong "explanations" will be fabricated. Such ever arising questions hint a flawed theory.

A deduction from nothing more than ascertained truths — without *any* presumed premises — is always consistent and comprehensible. It is self-explanatory without raising questions about its content.

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*Recht is iets kroms dat verbogen is*[1]. */ Straight is something crooked that has been bent.*
Marten Toonder.

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[1] In Dutch this is a pun. *Recht* is a homonym, meaning *straight*, but also *legislation*, *the entirety of laws and regulations*.

# Reasoning does not render *<u>know</u>*ledge!

# DO NOT:

# ASSUME, PRESUME, SUPPOSE, SUGGEST, COIN, DEVISE, THINK UP

(*or anything similar*)

## pro preparing preferred primary premises pretending precious principal preliminaries!

# Scientia non est!

# Theory: (Ancient Greek θεωρία = **contemplation**, *speculation* & thelike[2])

from: brainchild

follows: **castrum in caelum.**

# Science = scientia = *know*ledge:

from: fact, fact, fact, ...

follow by *induction*: axioms not to be doubted

from which we *deduce*: veritates.

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[2] See https://en.wiktionary.org/wiki/theory#Etymology

I saw some archeologist on TV, who said:
*If I have not excavated a spearhead or any
other artifact, I cannot say anything.* 👍

and I heard a paleontologist say:
*Without a fossil, I'll have to remain silent
about an ancient plant or animal.* 👍

but cosmologists easily come up with:
*I just concoct something without any truth as a premise,
contradicting fundamental laws of nature & I'll simply
push it down their throats.  After all, I'm a scientist.* 👎

Sir Isaac Newton:
*Cauſas rerum naturalium non plures admitti debere, quam quæ veræ ſint.*
*No more causes of natural things should be allowed than truths.*

# Science without concoctions:

| All kinds of phenomena ↓ | Mathematics & logic ↓ | **Deduction** from axioms ∧∨ theorems → **"explainable" phenomena.** | ↑D ↑E ↑D | R↓ E↓ D↓ |
|---|---|---|---|---|
| **Primary Truths**: verifyable observations ↓ | Proper statistics ↓ | **Deduction** from axioms ∧∨ already deduced theorems → new theorems, secondary laws of nature. | ↑U ↑C ↑T ↑I | U↓ C↓ T↓ I↓ |
| **Secondary Truths**: observed 100% regularity in facts → | **Induction**: $P(fluke) < \varepsilon \rightarrow$ | **Axioms, laws of nature, to be considered true** (Newton Reg. Phil. IV.). Underlying causes, i.e. new axioms, turning old ones into theorems. | ↑O ↑N | O↓ N↓ |

*Deduction* actually means *to bring down*, so the above is drawn sort of upside down, but I did not want *under*lying causes at the top...

# IF     mathematically impossible
# THEN   physically impossible.

## DON'T fall into caveat of flawed inversion:
## mathematical possibility
## DOES NOT imply physical reality!

## Murray Gell-Mann:
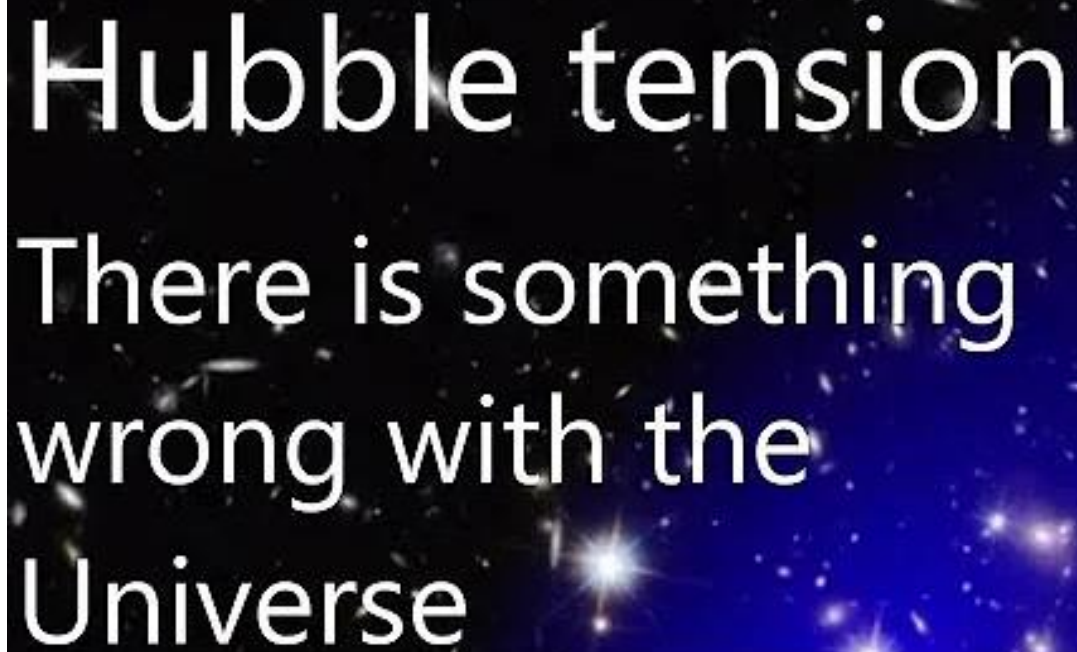## *Everything not forbidden is compulsory.*

## BOLLOCKS!

# NEVER EVER

## say that an

# OBSERVED PHENOMENON

# SHOULD NOT EXIST, dunce!

## It is YOUR theory that should not exist!

### *One and only one counterexample suffices to falsify a theory.*

### Homo sapiens? Homo arrogantissimus!

https://www.youtube.com/watch?v=jzjKSZQTh_Q

# How dare they say this?

## The ***theory*** is wrong!

# Please remove 1$^{st}$ word from questions like:

## Why/how did <whatever>?

**One can only ask *why* or *how* if the remaining question (starting with *did*) can be answered affirmatively.**

And *why* should *never* ask for a *purpose*, but only a *known certainty* that could be a *cause*.

"In science it often happens that scientists say, 'you know, that's a really good argument; my position is mistaken,' and then they would actually change their minds and you never hear that old view from them again. I cannot recall the last time something like that happened in politics or religion."

— Carl Sagan.

I beg **YOU** to be a good scientist.

— Henk Reints.

It is dangerous to be right in matters on which established authorities are wrong.

— Voltaire —

Vide Galileo Galilei.

— Edsger W. Dijkstra, EWD498 —

# My most important finding (based on HUDF, **SDF**, SDSS:**DR16Q**, JWST):

# 𝔐𝔲𝔫𝔡𝔲𝔰 𝔤𝔩𝔬𝔪𝔲𝔰 𝔢𝔰𝔱.



## The universe is a glome,
i.e. a 3-sphere, the 3-surface of a 4-ball.

From the homogeneity implied by the Cosmological Principle follows that its antipodal distance equals the Hubble distance.

See http://henk-reints.nl/astro/HR-Geometry-of-universe-slideshow.pdf

"De waarheid is nooit precies zoals je denkt dat hij zou zijn".
"De hoogste opgave van het menselijk kennen
is om te begrijpen dat hij niet begrijpen kan".
Johan Cruijff (1947-2016)

Jeder sagte es geht nicht, aber einer
wusste das nicht und der hat's gemacht.

Wat niet kan is nog nooit gebeurd.

Antje Reints-Kliphuis (1925-1985).

http://henk-reints.nl/u

Henk Reints

Henk-Reints.nl