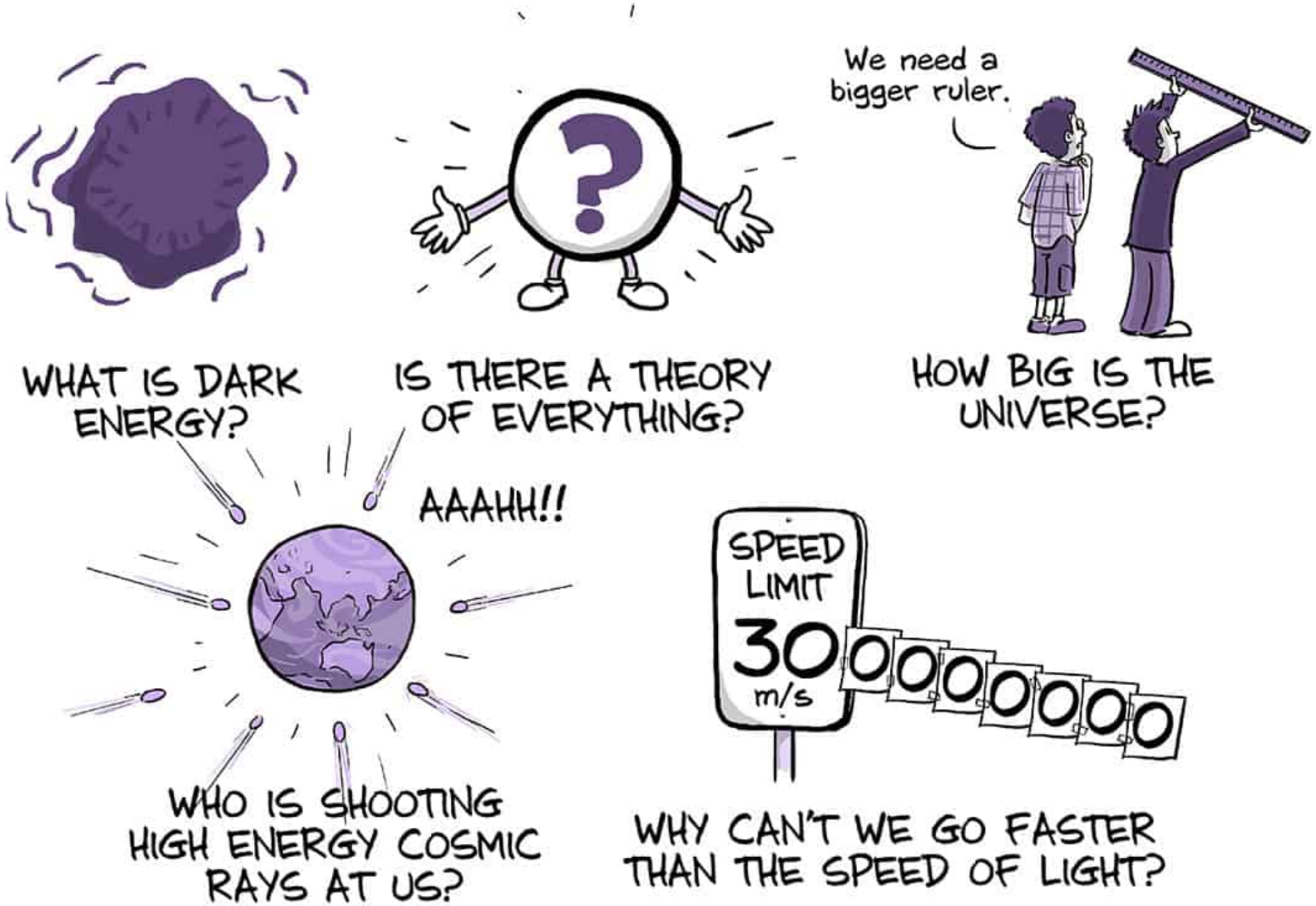
Highly Energetic

IISc Open Day Quiz 2026

Zenia Zuraiq

07/03/2026

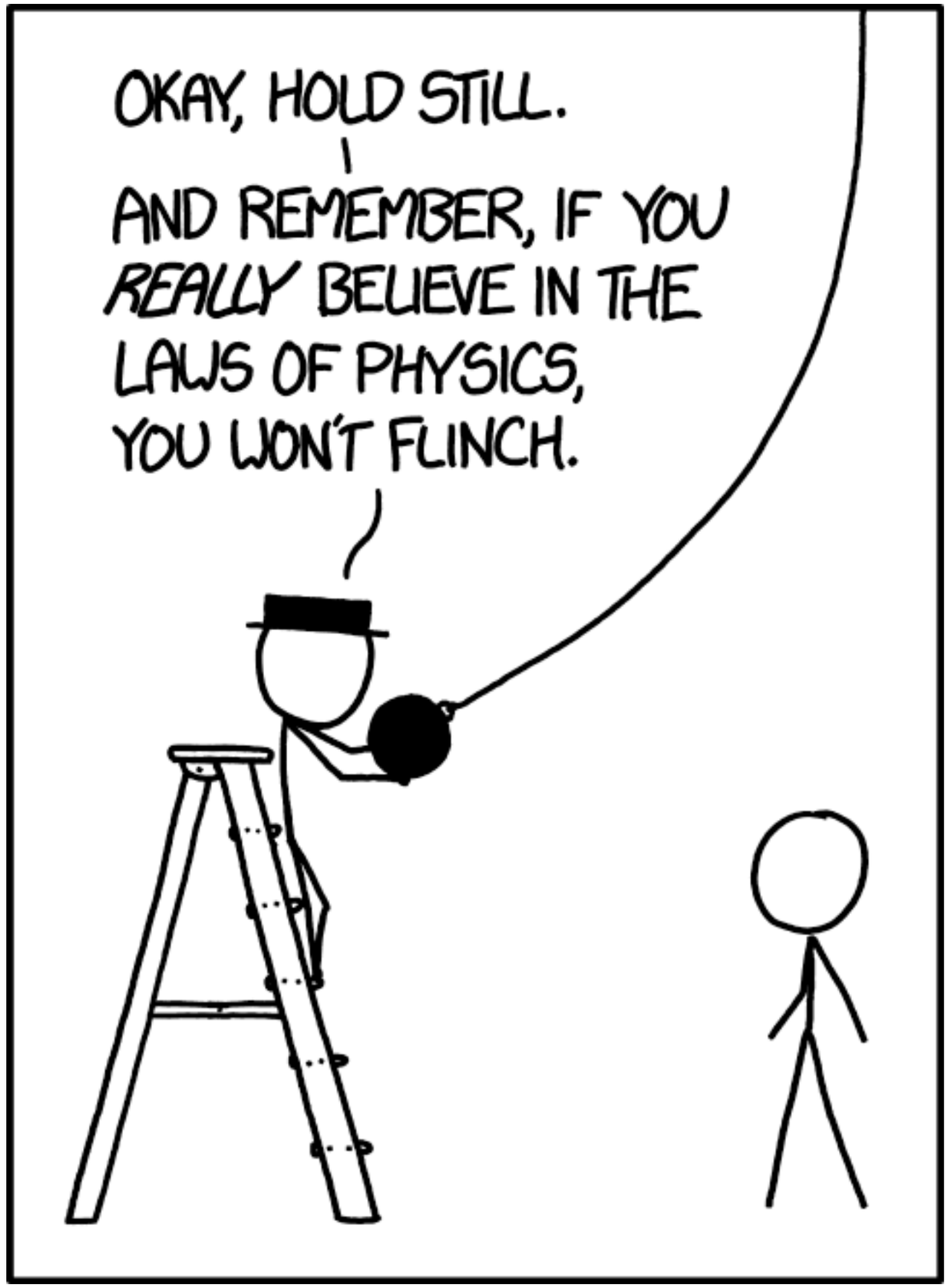
The questions will be easier than these :)



Q.

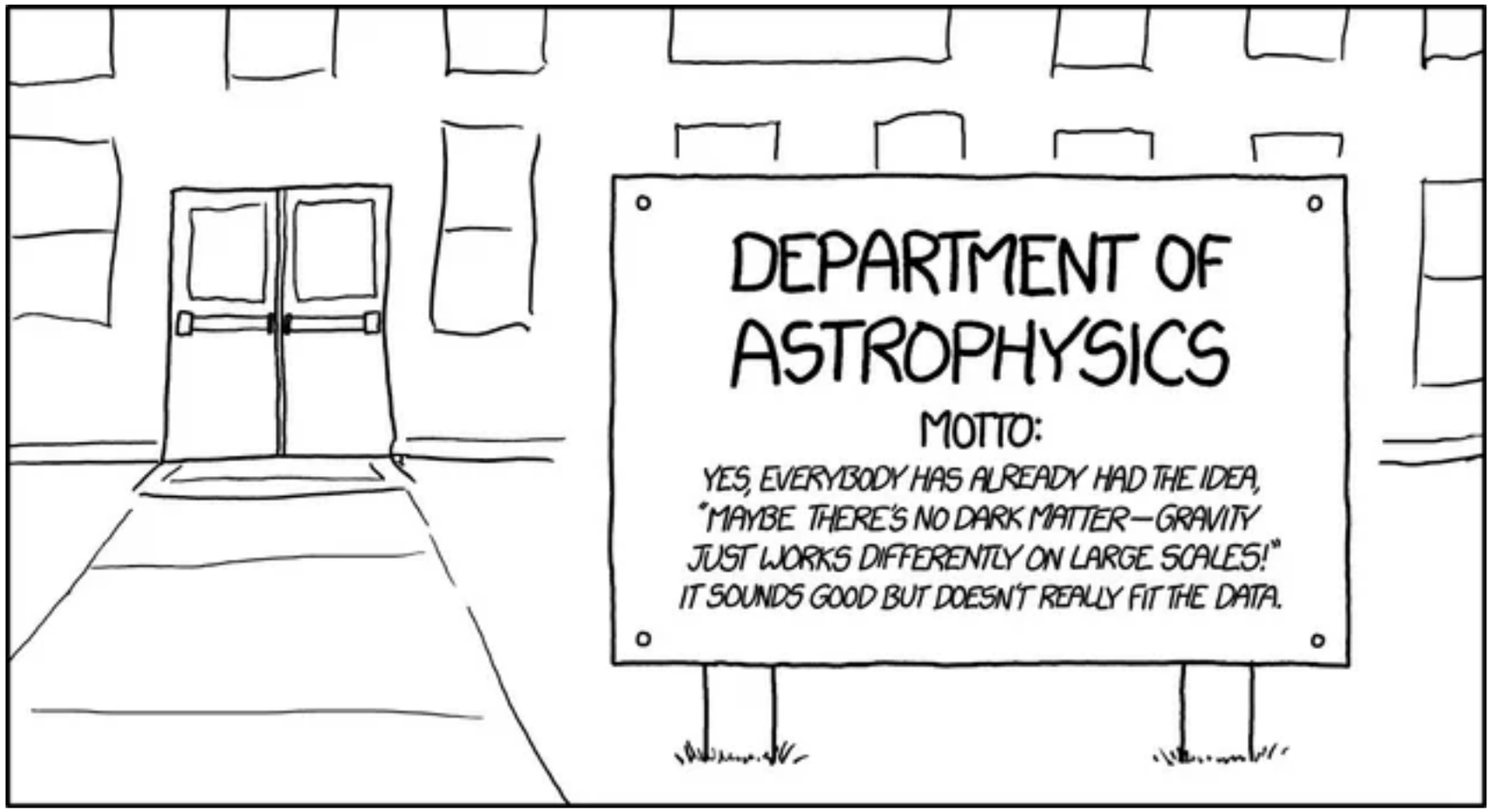
FITB.

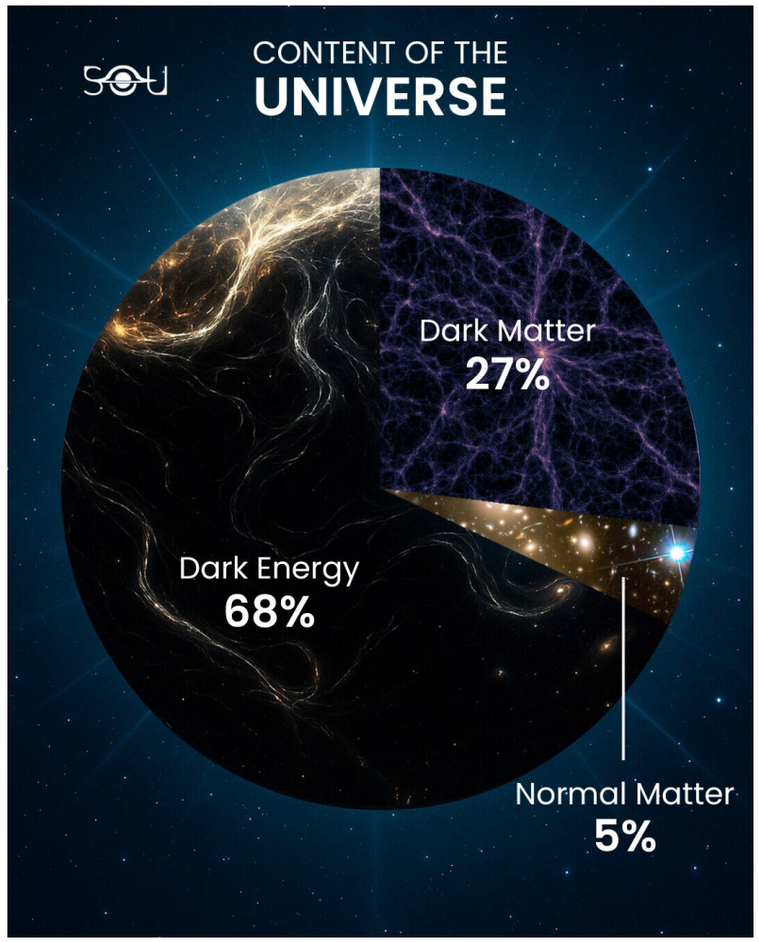

DEPARTMENT OF
ASTROPHYSICS
MOTTO:
YES, EVERYBODY HAS ALREADY HAD THE IDEA,
"MAYBE THERE'S NO [redacted]—GRAVITY
JUST WORKS DIFFERENTLY ON LARGE SCALES!"
IT SOUNDS GOOD BUT DOESN'T REALLY FIT THE DATA.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

Dark Matter



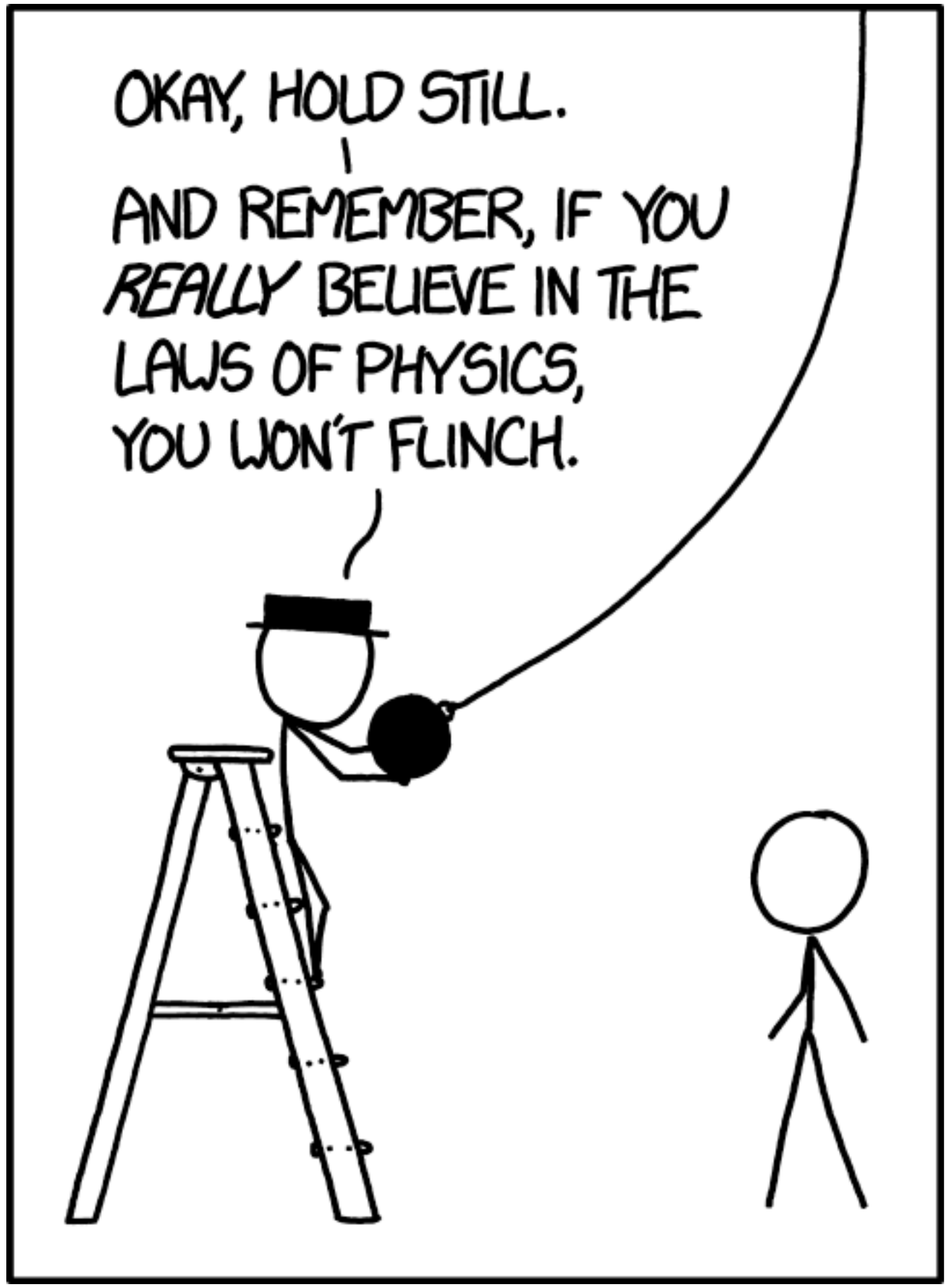


Q.

This was the Google Doodle on 10 September 2008.

What event does it commemorate?



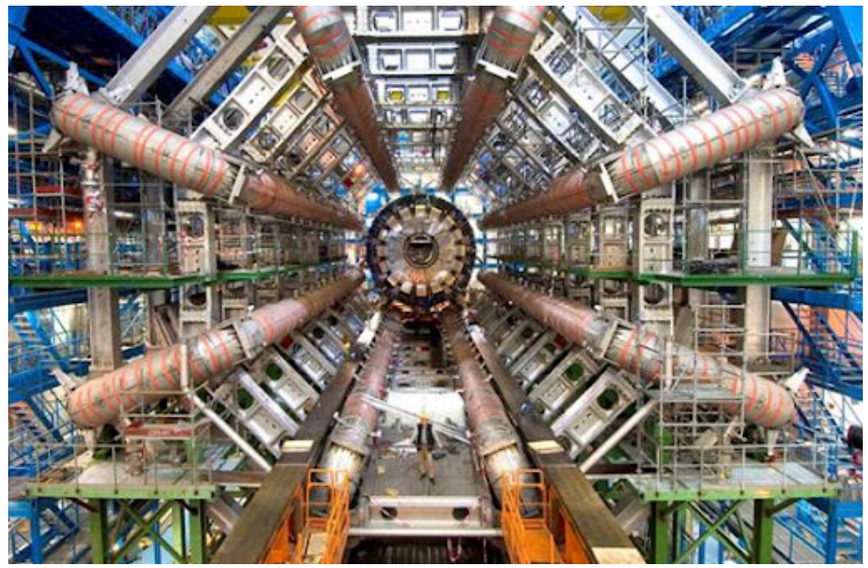

OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

The day the Large Hadron Collider (LHC) started operations

Published: September 10, 2008 at 9:21 am | **Read Time:** 1 minute

Today the first beam was circulated through the Large Hadron Collider, world's largest and highest-energy particle accelerator complex, to test the "big bang" theory or the Standard Model. So Google is sporting a logo of the collider on their homepage: Hitwise has more information about the crazed fever on the Large Hadron Collider tests that [...]



Today the first beam was circulated through the Large Hadron Collider, world's largest and highest-energy particle accelerator complex, to test the "big bang" theory or the Standard Model. So Google is sporting a logo of the collider on their homepage:



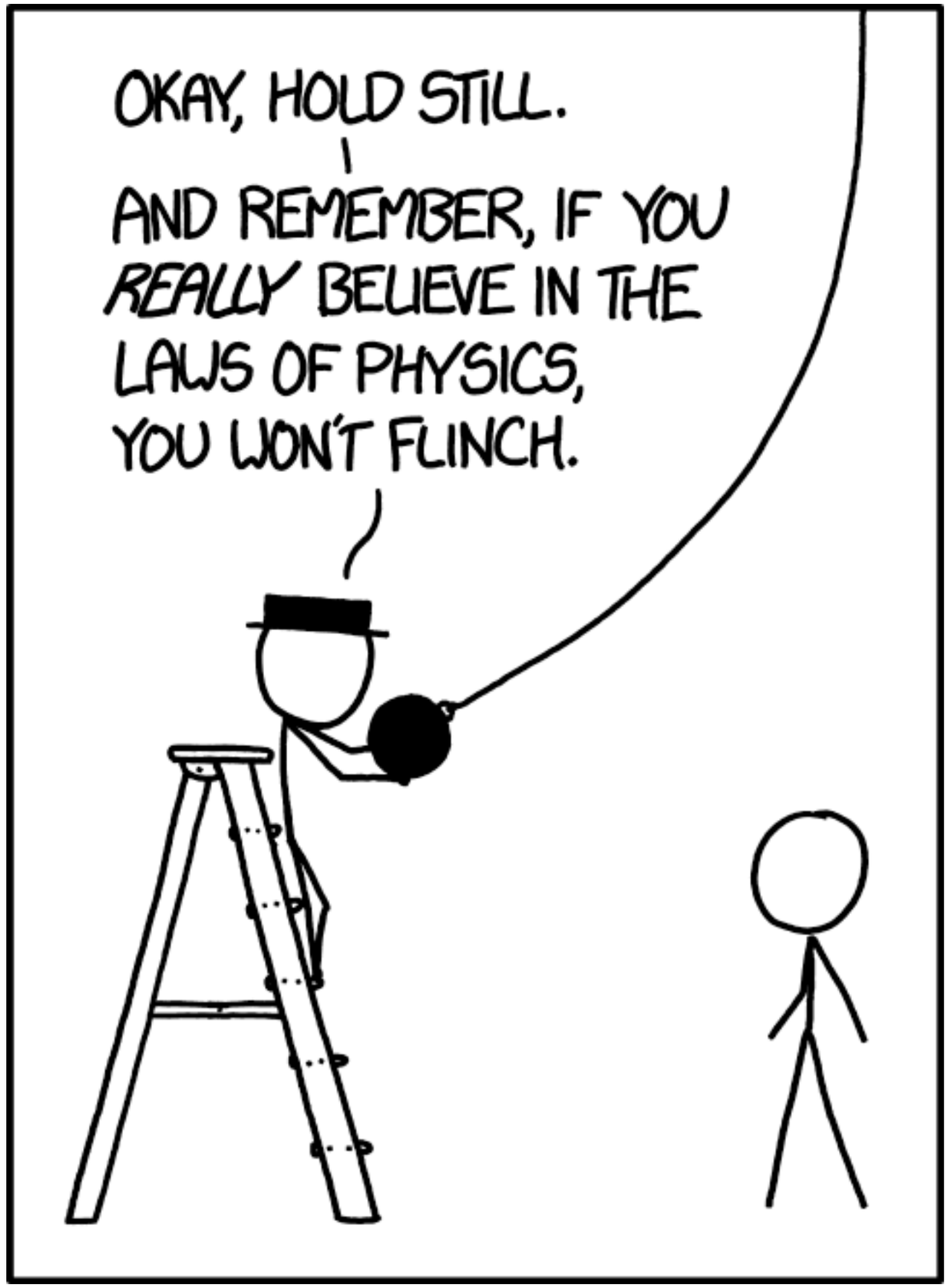
Q.

The Fermilab accelerator is a national laboratory for high-energy particle physics located near Chicago.

When the lab was first being set up, there were problems regarding blockages in the long and narrow vacuum tube. It was 300 ft long, and its diameter was only slightly bigger than that of a tennis ball. Small metal slivers left behind during the construction of the tubes were causing the beam-focussing magnets to fail.

An ingenious and cost-effective solution was reached, inspired by engineer Bob Sheldon's familiarity with hunting. Soon, "Felicia" helped clean out the long and narrow tubes.

What was unique about Felicia/Fermilab's fix?

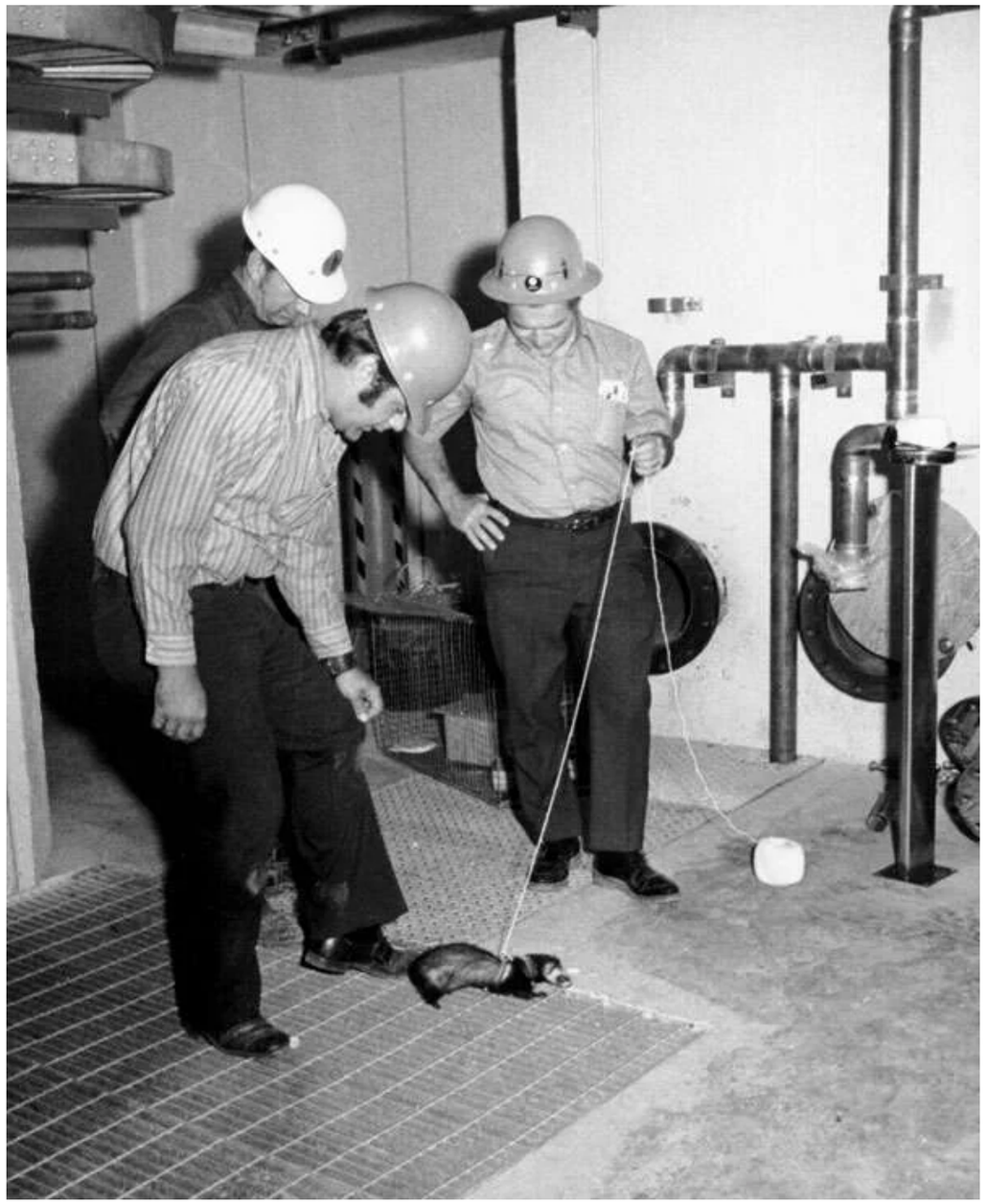

OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

Felicia was a ferret!





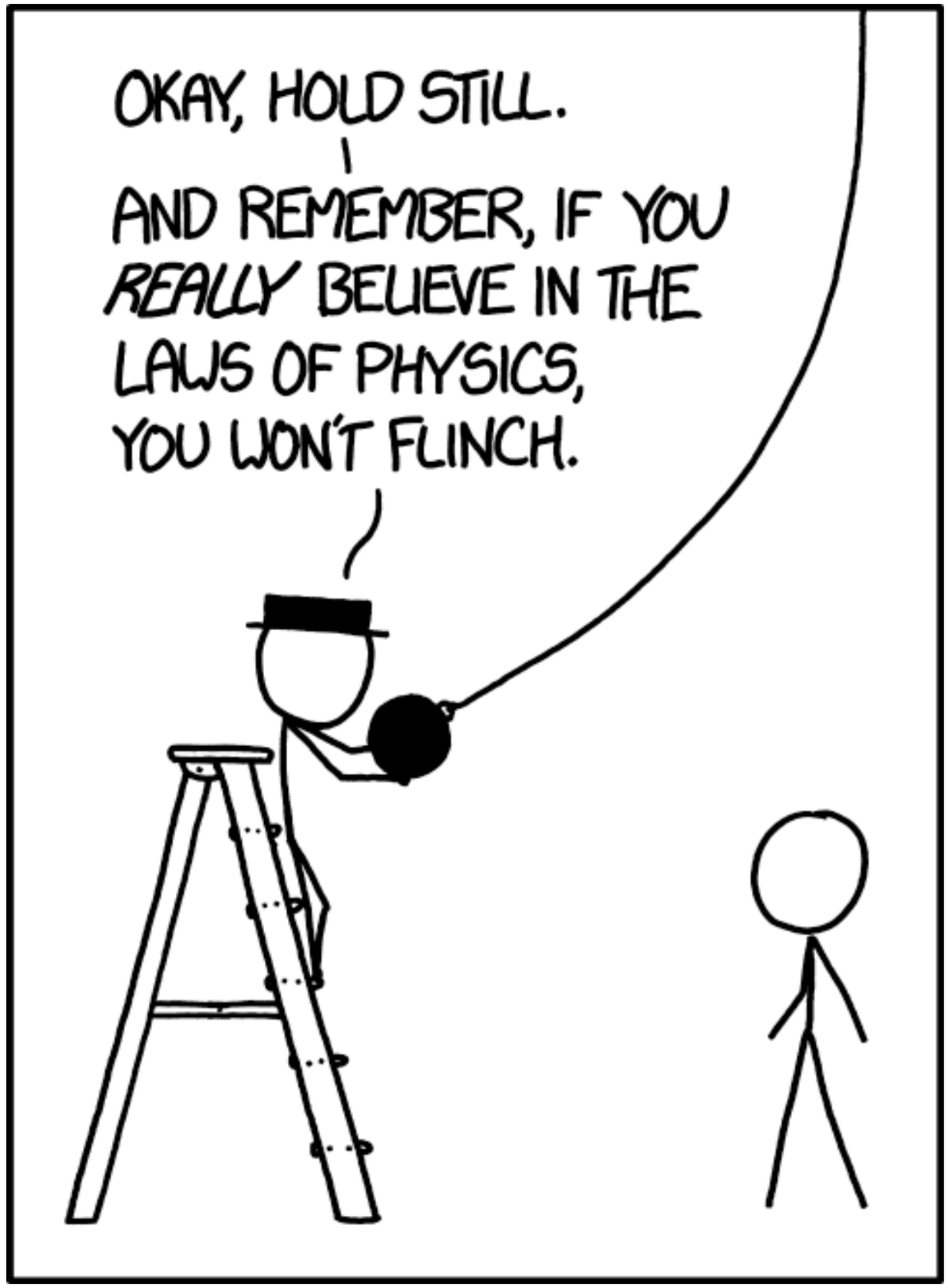


Q.

Of the units of measurement of physical quantities, only **two** non-SI units (and zero SI) are named after women.

One is the **curie (Ci)**, a measure of radioactivity named in honour of Marie (and Pierre) Curie.

Which other physicist, the second woman to ever win the Physics Nobel, lends her name to a physical unit?


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

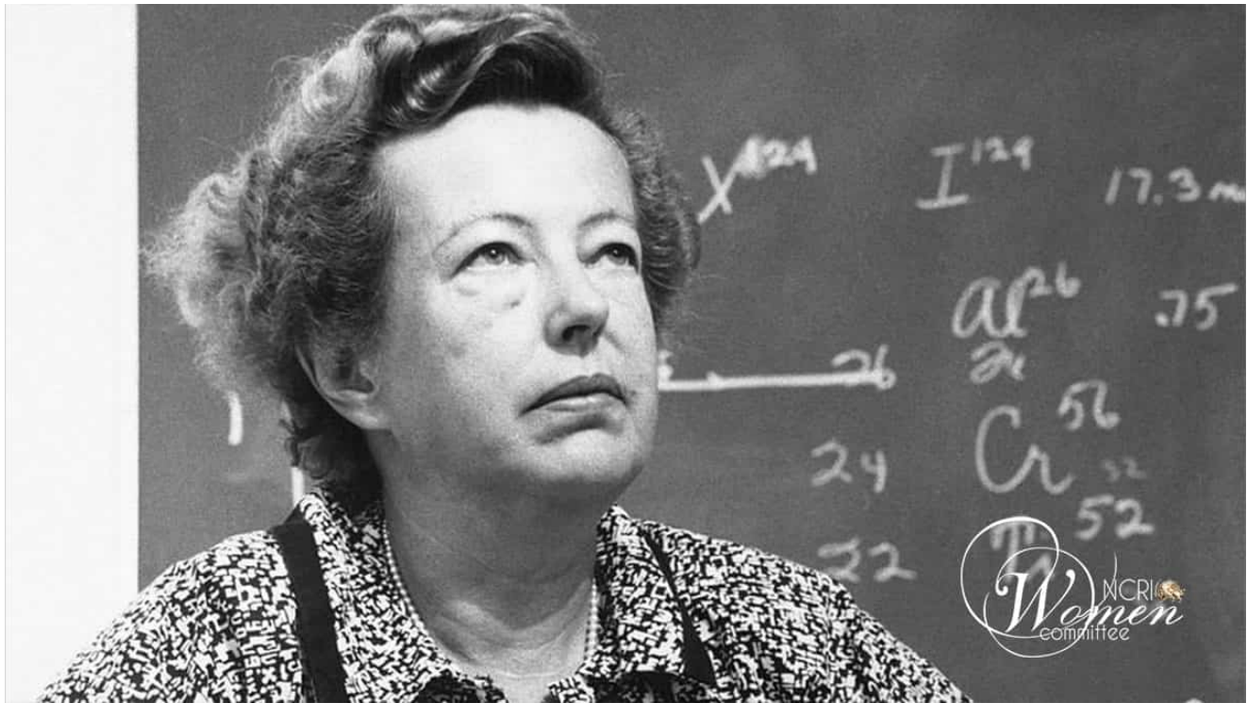
Maria Goeppert-Mayer

Units of cross-section [edit]

The molecular two-photon absorption cross-section is usually quoted in the units of **Goeppert-Mayer** (**GM**) (after its discoverer, Physics Nobel laureate Maria Goeppert-Mayer), where

$$1\ \mathrm{GM} = 10^{-50}\ \mathrm{cm}^4\ \mathrm{s\ photon}^{-1}.$$ [14]

Considering the reason for these units, one can see that it results from the product of two areas (one for each photon, each in cm^2) and a time (within which the two photons must arrive to be able to act together). The large scaling factor is introduced in order that 2-photon absorption cross-sections of common dyes will have convenient values.



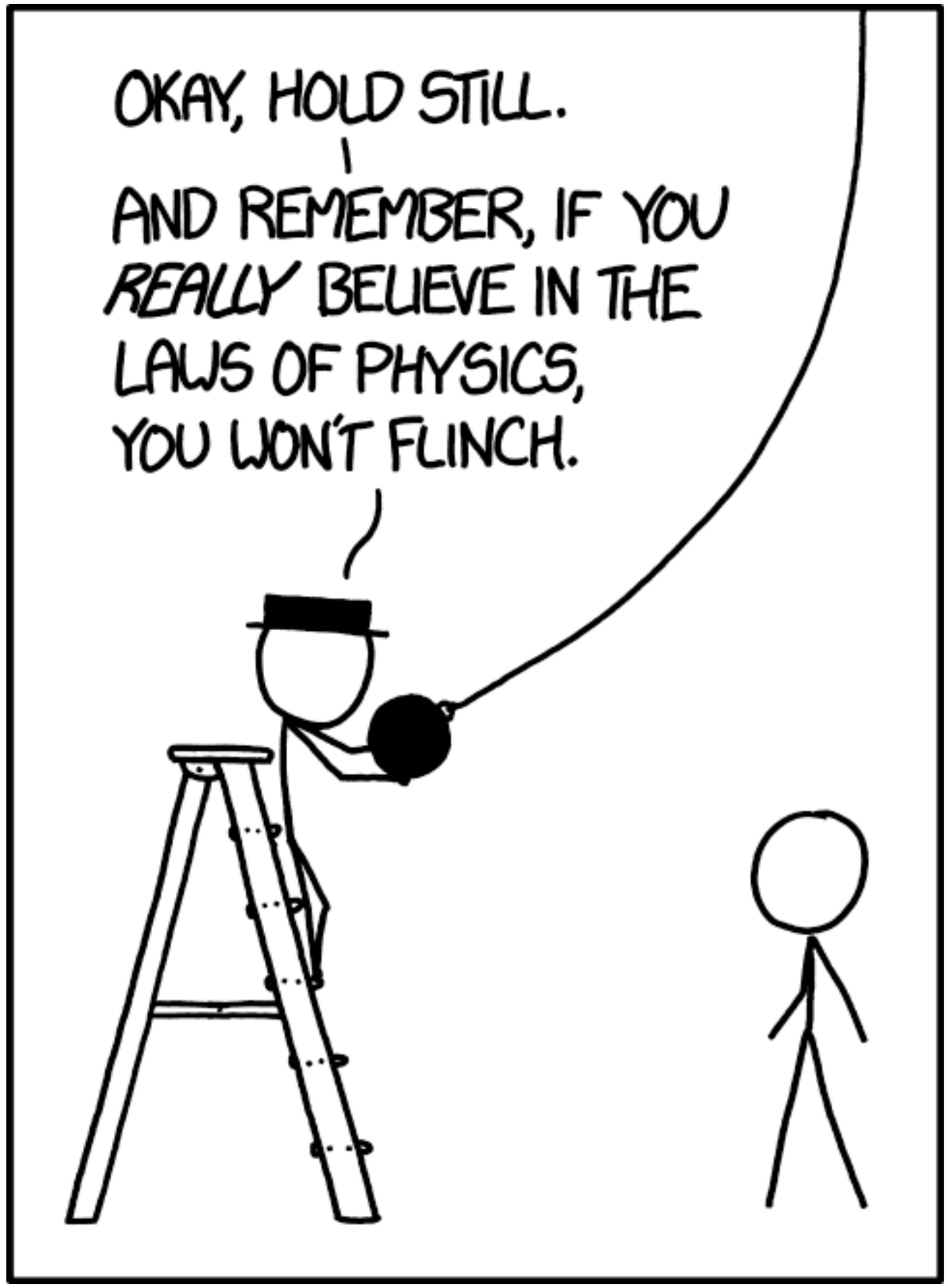
Q.

There are six types of quarks: up, down, charm, strange, top, and bottom. These are called the quark *flavours*.

One of the proponents of the quark model was Murray Gell-Mann.

The idea of using the term “flavour” came from a visit to a **X** store in California, where he was awed by the various colours and flavours of **Y** being sold.

ID **X** and **Y**.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X – Baskin Robbins
Y – Ice Cream

a notation, I still use today in the German language. Once Gell–Mann and I were driving to a lunch restaurant in Pasadena and passed by a Baskin and Robins icecream place, advertising 32 different flavors. Murray suddenly came up with the proposal to use the name "flavor". I did not like this proposal at the beginning, translating it into German, where it means "Geschmack", an expression one could hardly use for the description of a subatomic particle.

The Physics of Flavor is the Flavor of Physics (H. Fritzsch)

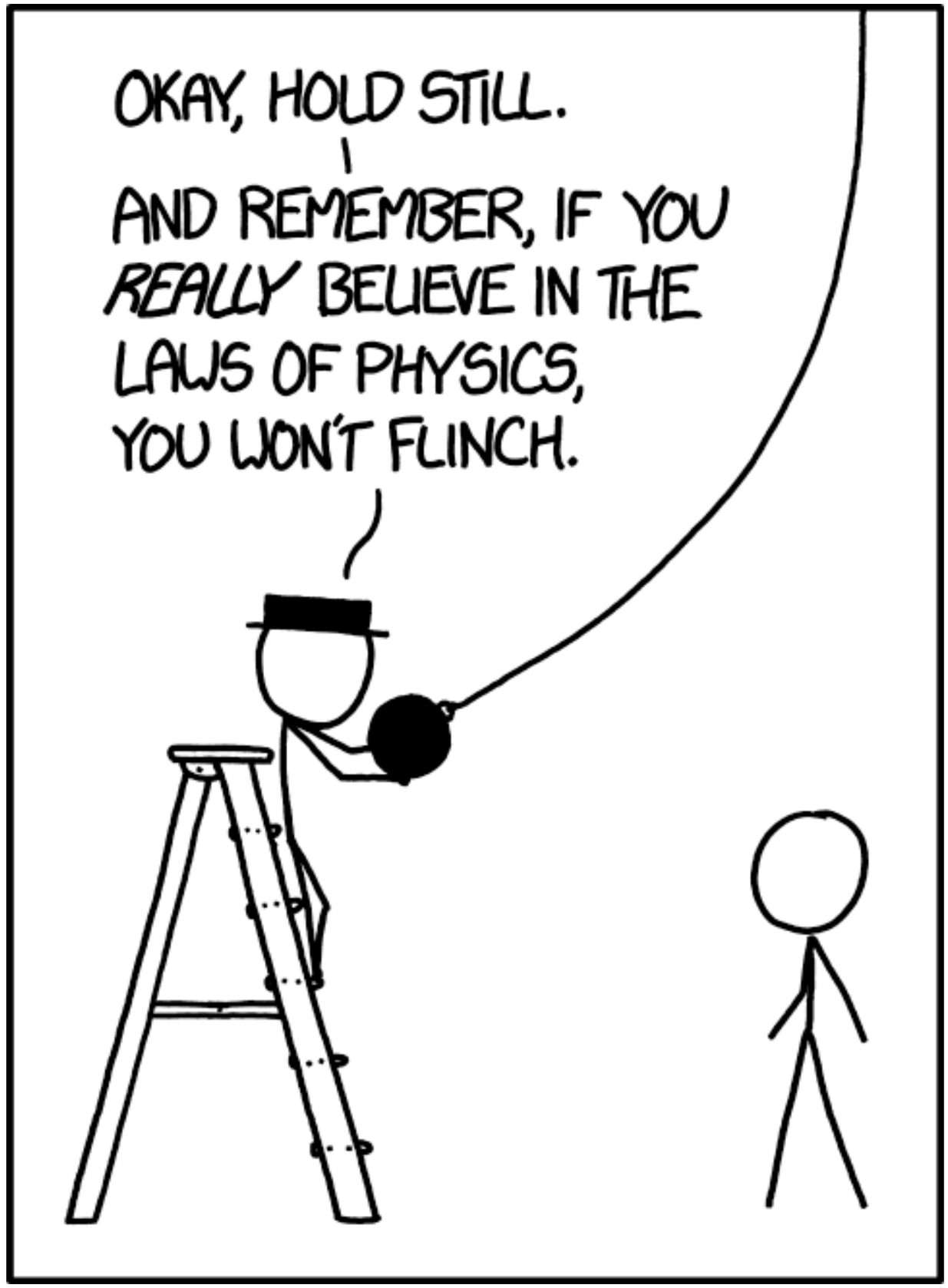


Q.

In 2016, DNA researchers discovered bone fragments that showed a previously unknown hybrid cattle-bison species. Such a species had long been theorised to exist, solving the mystery of how cow genes ended up in the DNA of modern bison.

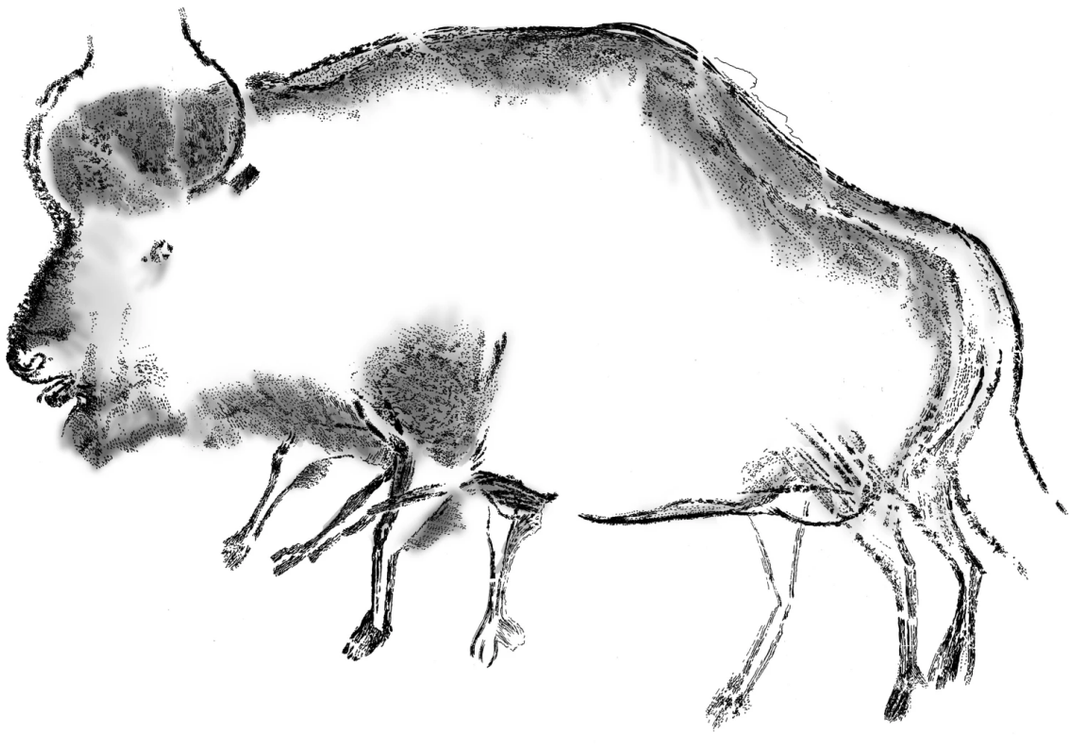
This mystery species was jokingly nicknamed the **“_____ Bison”**, a pun that fit its elusive nature.

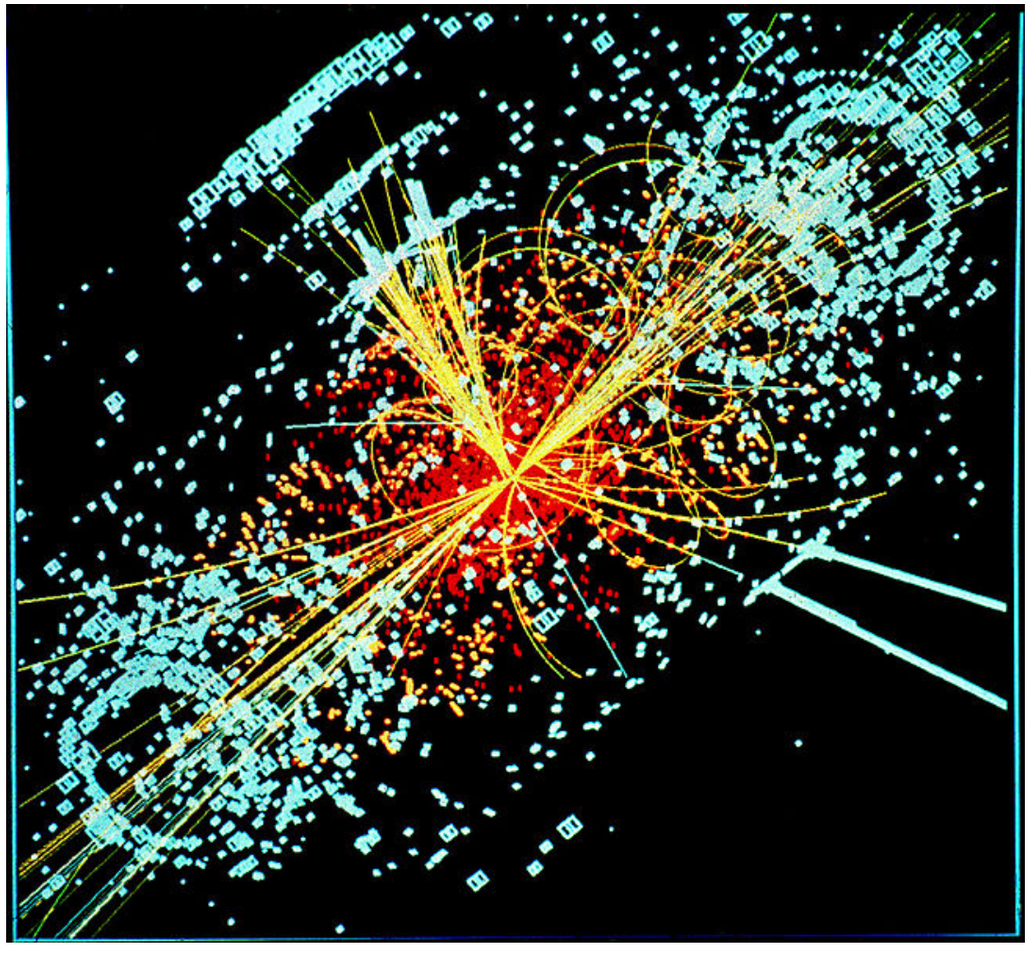
FITB/Give the inspiration for the name.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

The species was named the “Higgs bison” after the “Higgs boson”!

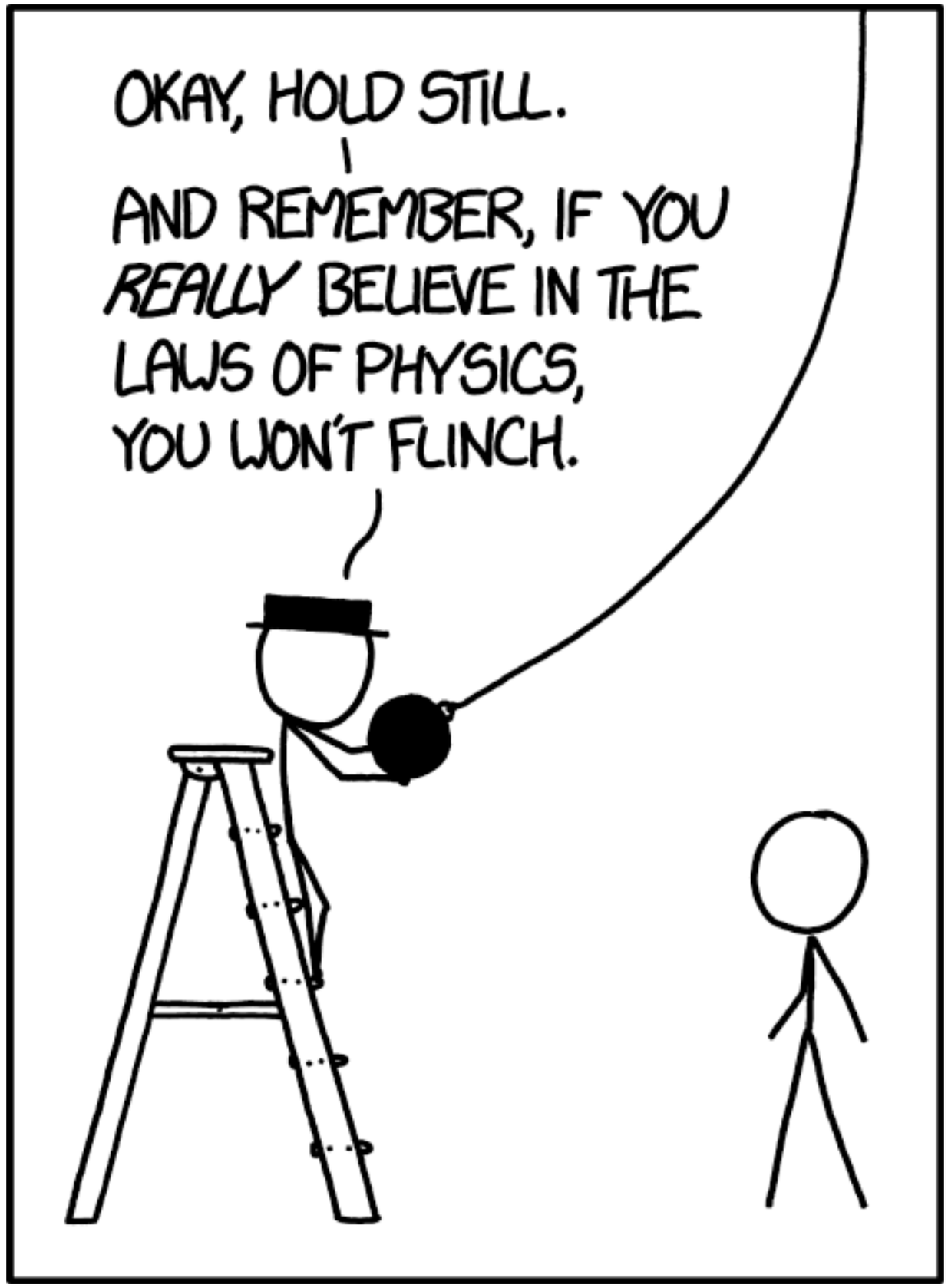




Q.

In the *Spider-Verse* series of movies (and *Spider-Man: No Way Home),* we see multiple dimensions and parallel realities leading to fantastical storylines.

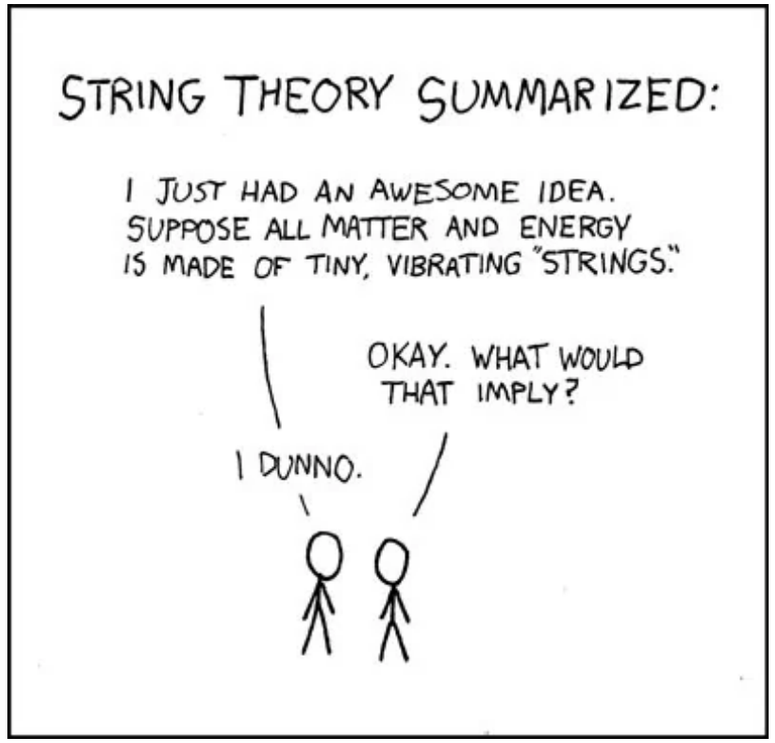
What fundamental theory in physics, that aims to explain **quantum gravity**, requires such extra dimensions of spacetime for mathematical consistency?


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

String theory





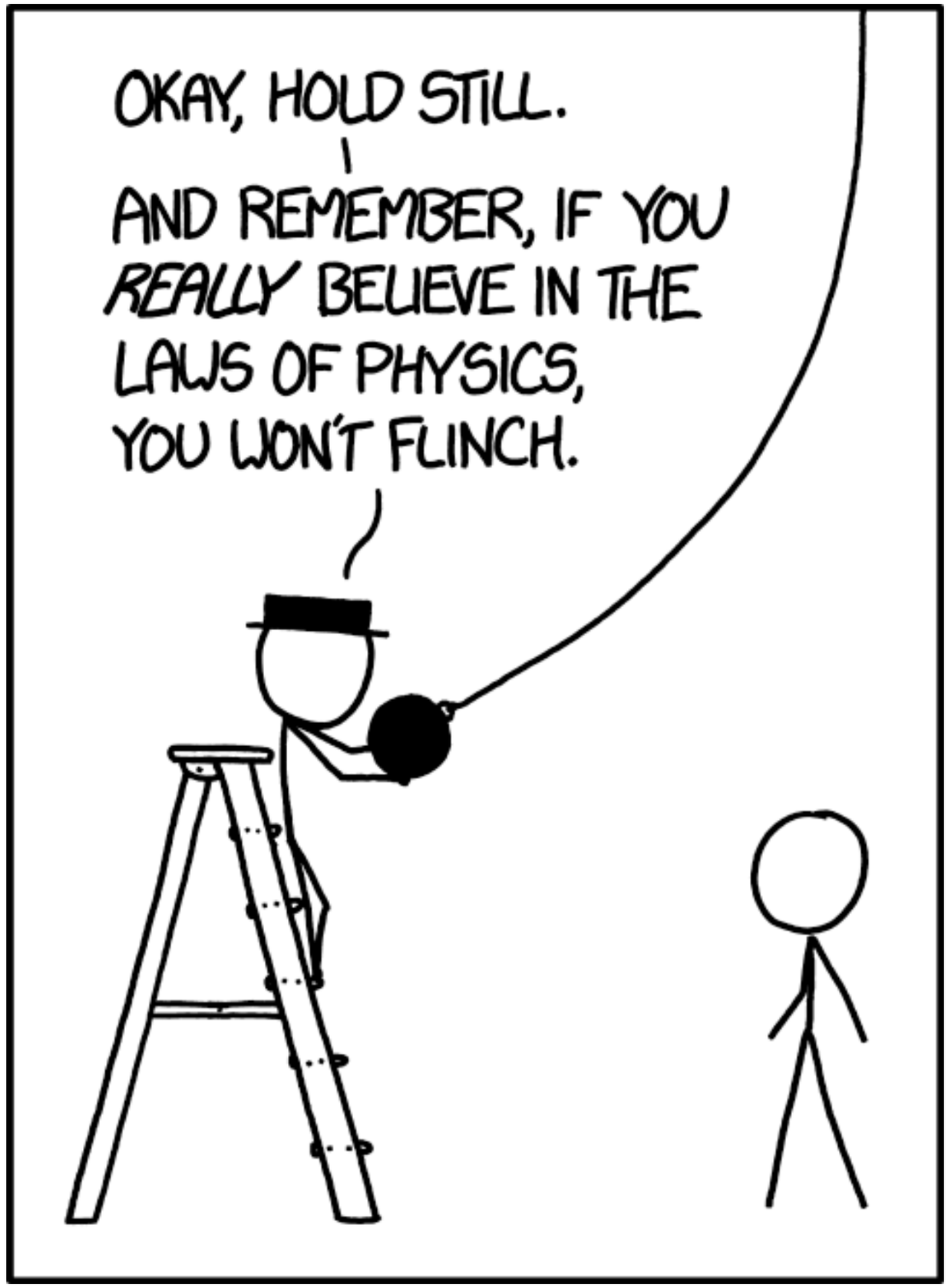
Q.

Trillions of **X** pass through your body every second, without you even knowing it.

X were also the subject of a long-standing puzzle in particle physics. The number of **X** detected coming from **Y** was 1/3rd its predicted value in the Standard Model.

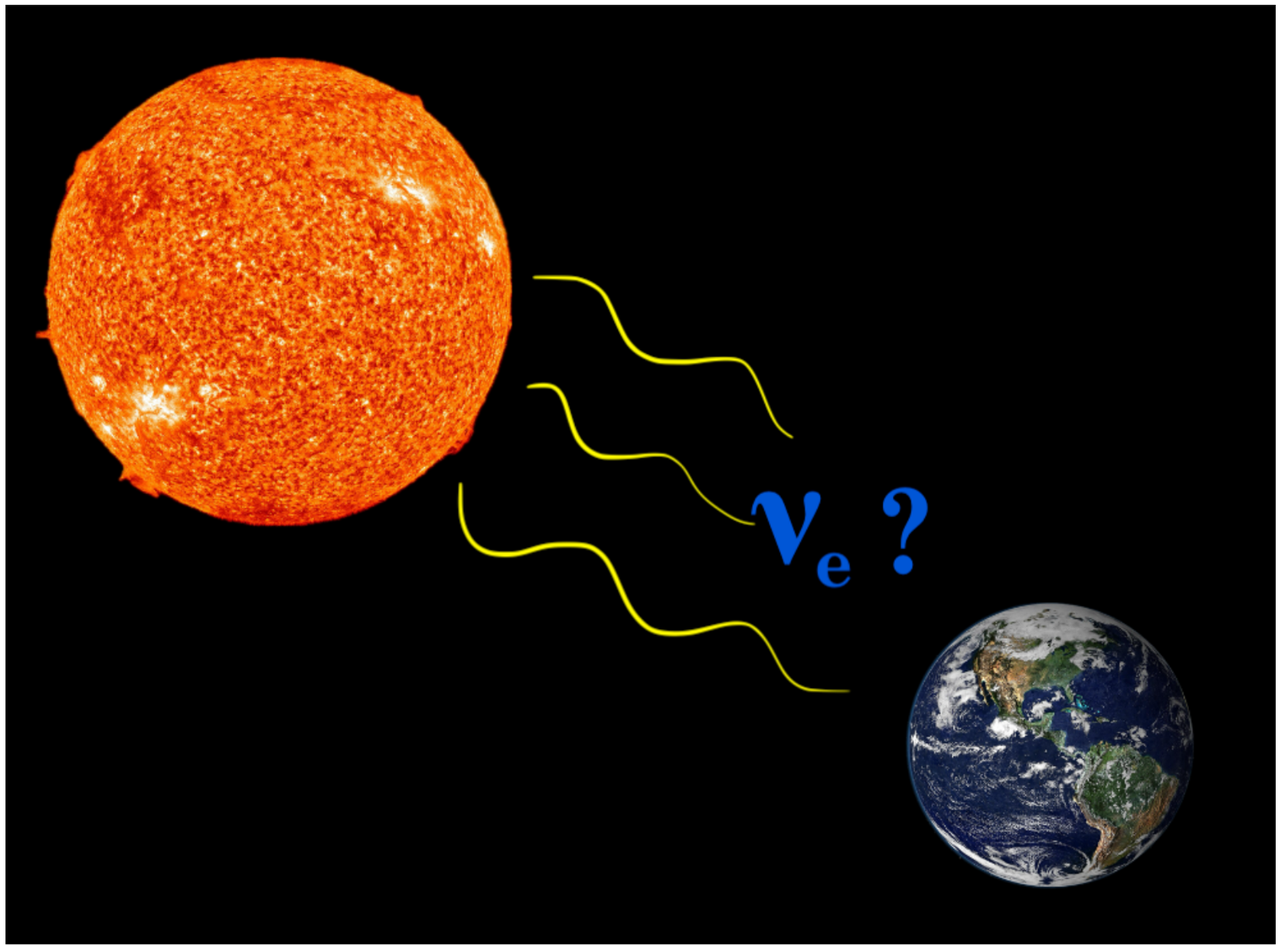
The resolution for the puzzle came in the early 2000s. It was realised that **X** could *oscillate* between different types, resulting in it changing its behaviour in its journey from **Y** to us, and evading detection.

ID **X** and **Y**.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X - Neutrinos,
Y - The Sun

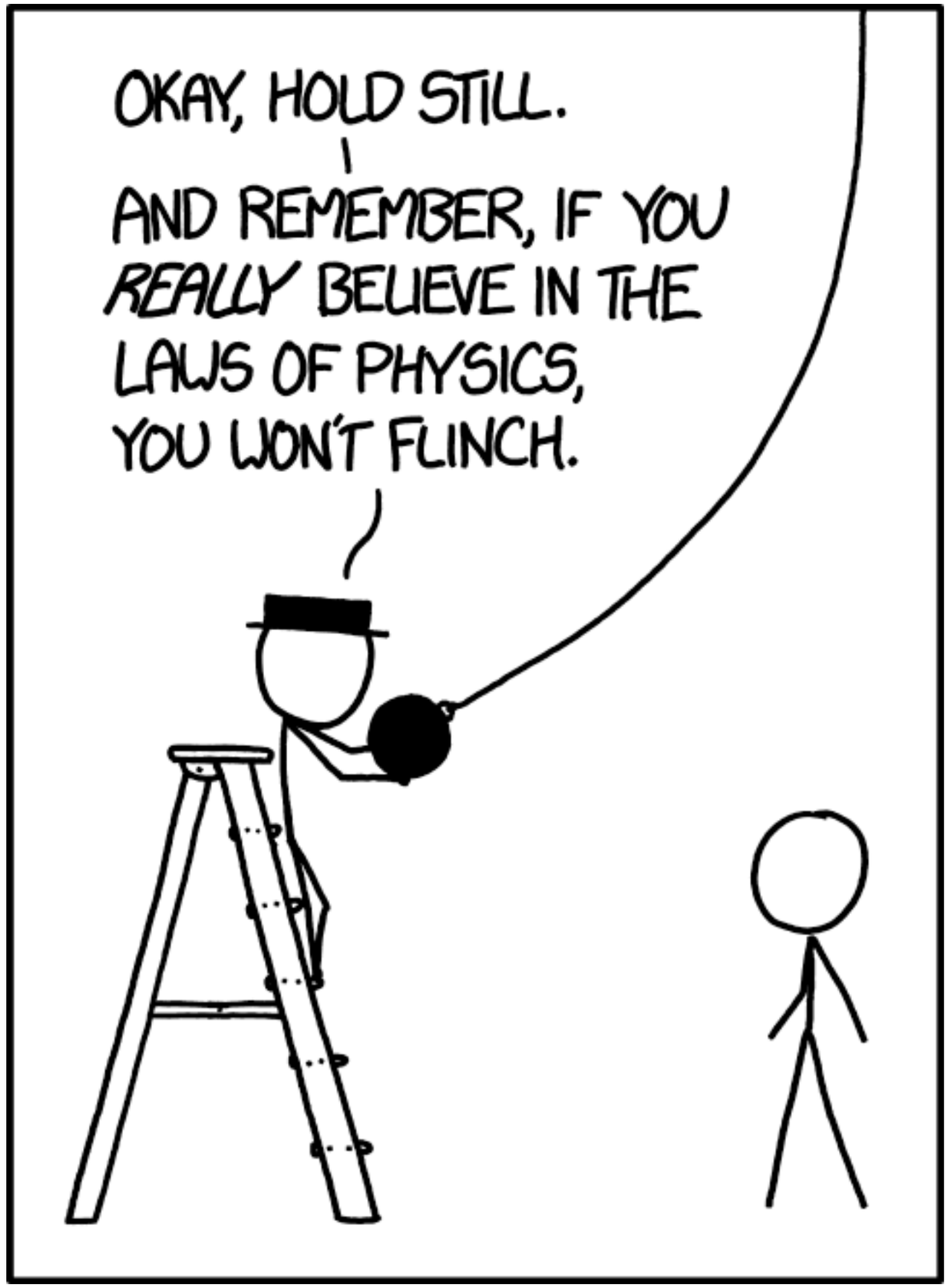


Q.

The Indian physicist **X** was the first to formulate a quantum theory of photons. This marked the start of **quantum statistics**, moving away from the classical Maxwell-Boltzmann picture.

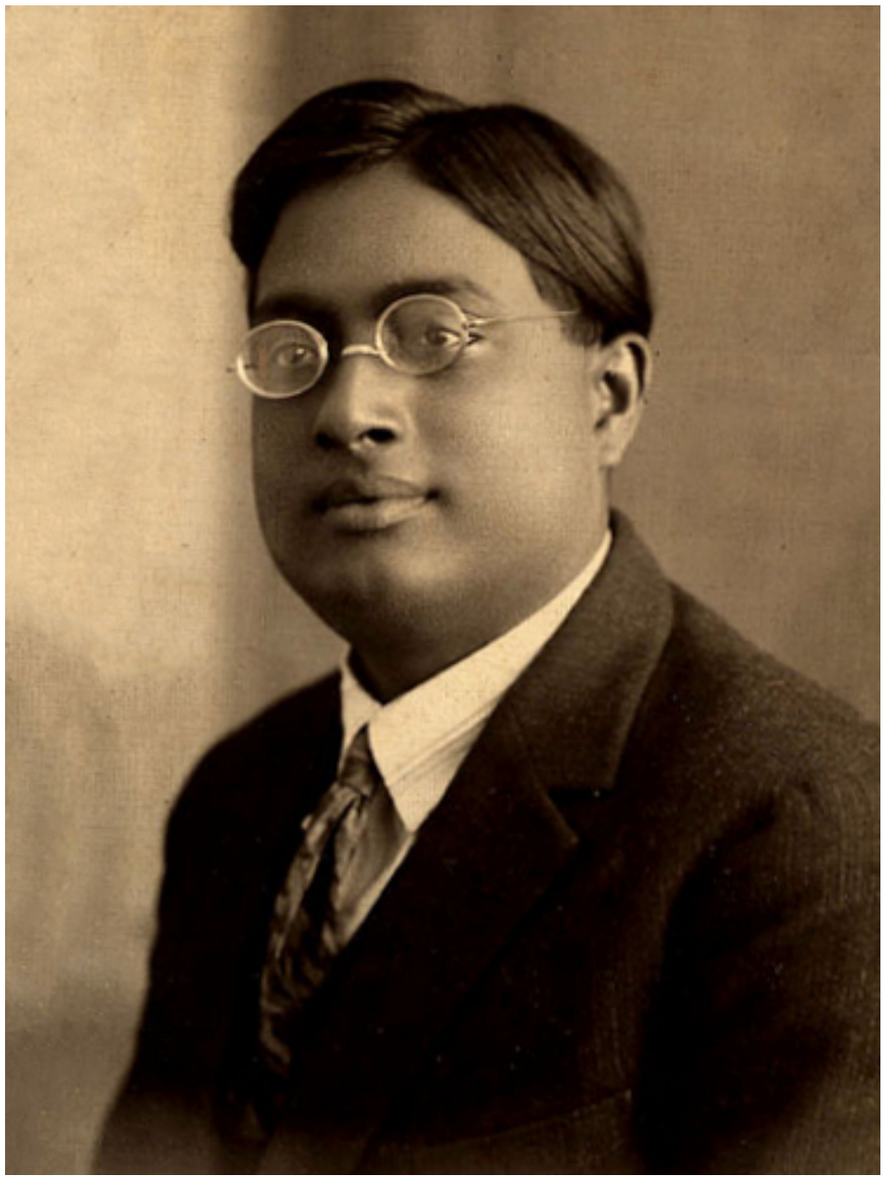
X sent his results to Einstein, who expanded on the idea, ultimately resulting in **X-Einstein statistics**, and the prediction of a “fifth state of matter”.

ID **X** who lends his name to the class of particles that the photon belongs to.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

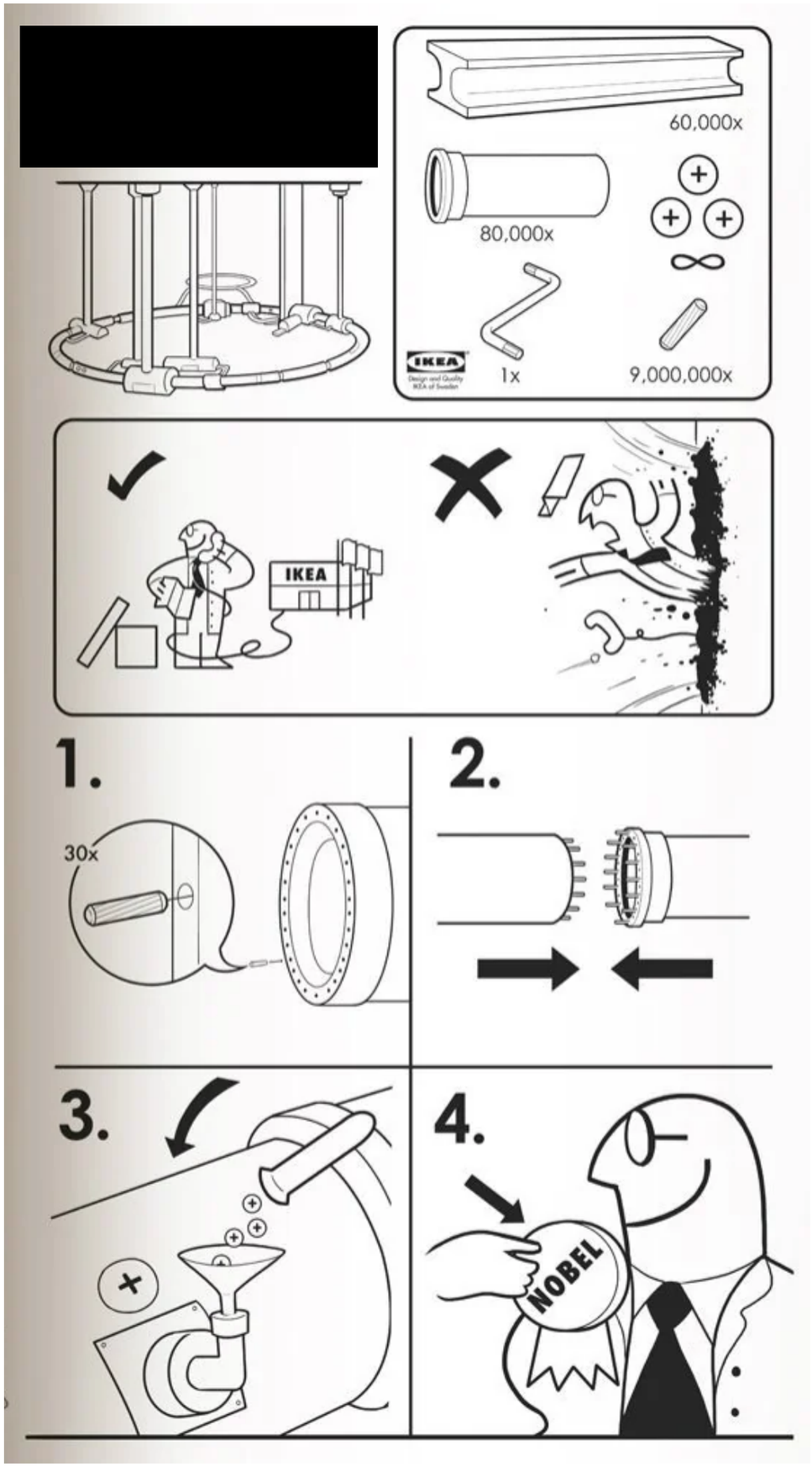
Ans.

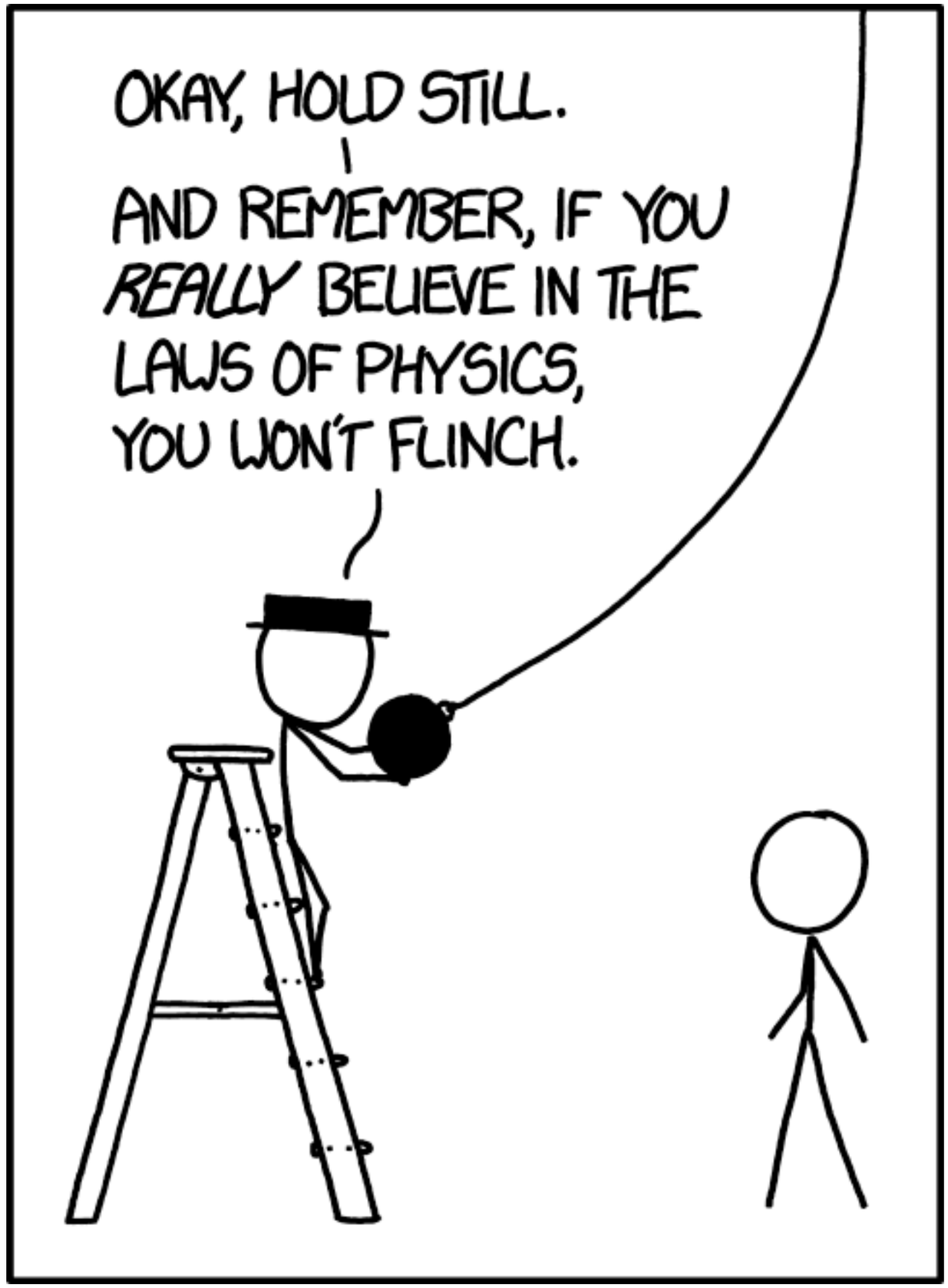
X - Satyendra Nath Bose
Gives his name to Bose-Einstein statistics and Bosons



Q.

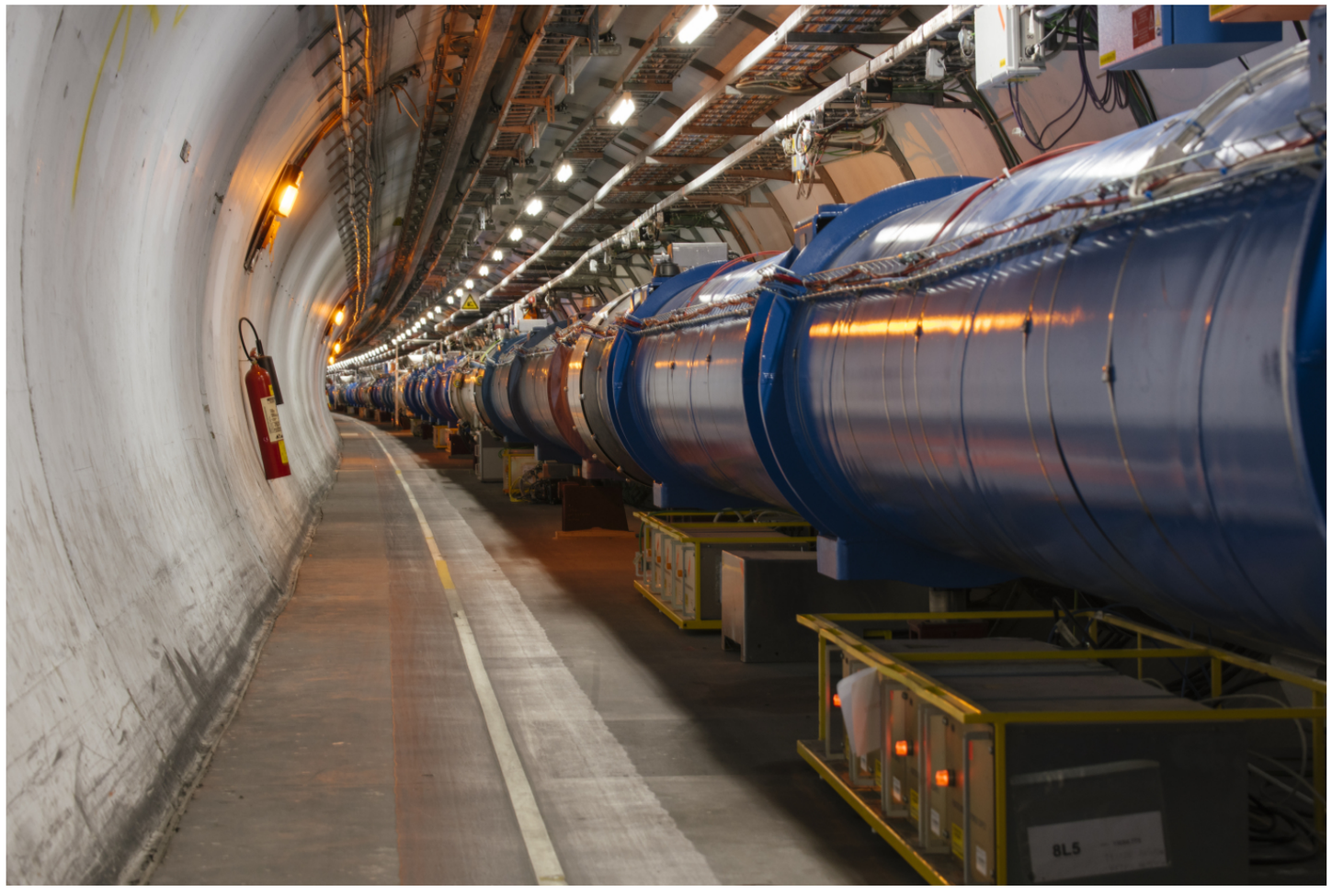
What does this IKEA parody instruct us to build?

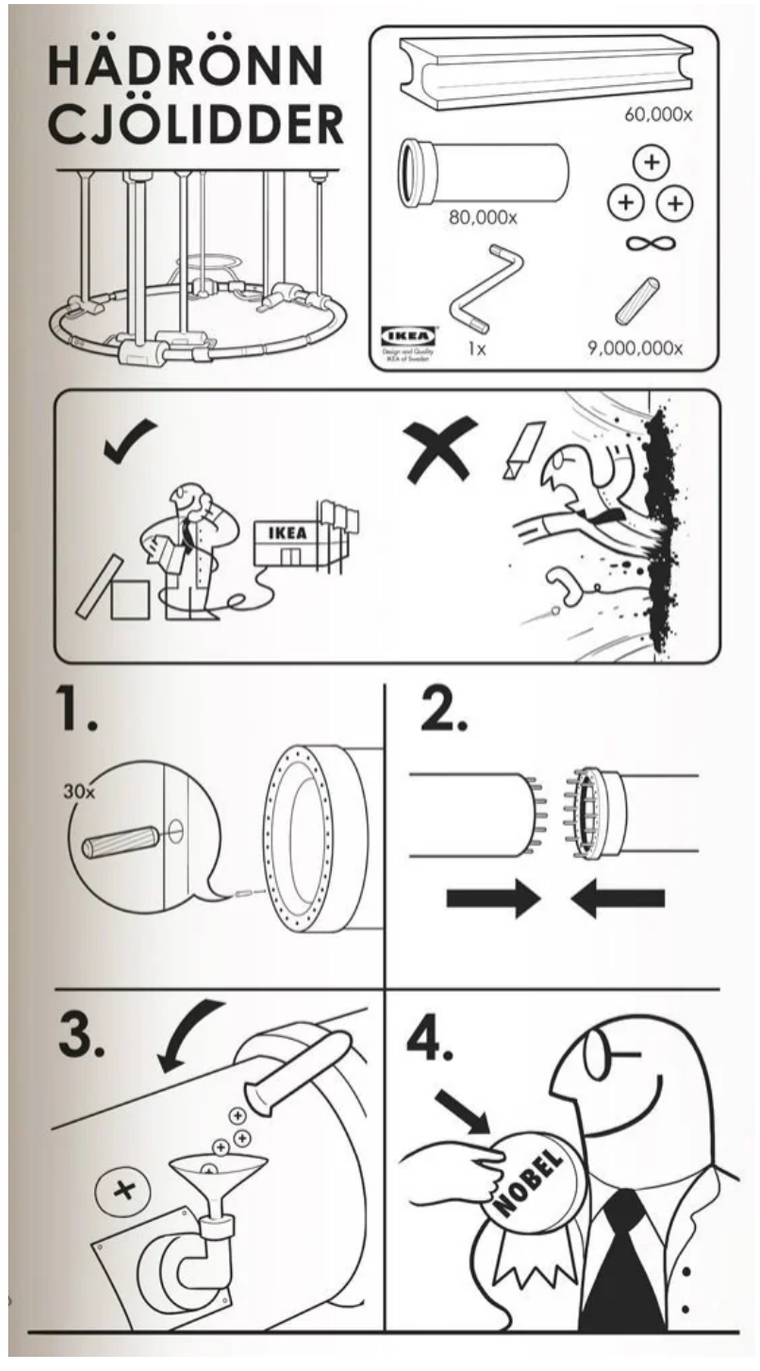



OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

The Large Hadron Collider (LHC)





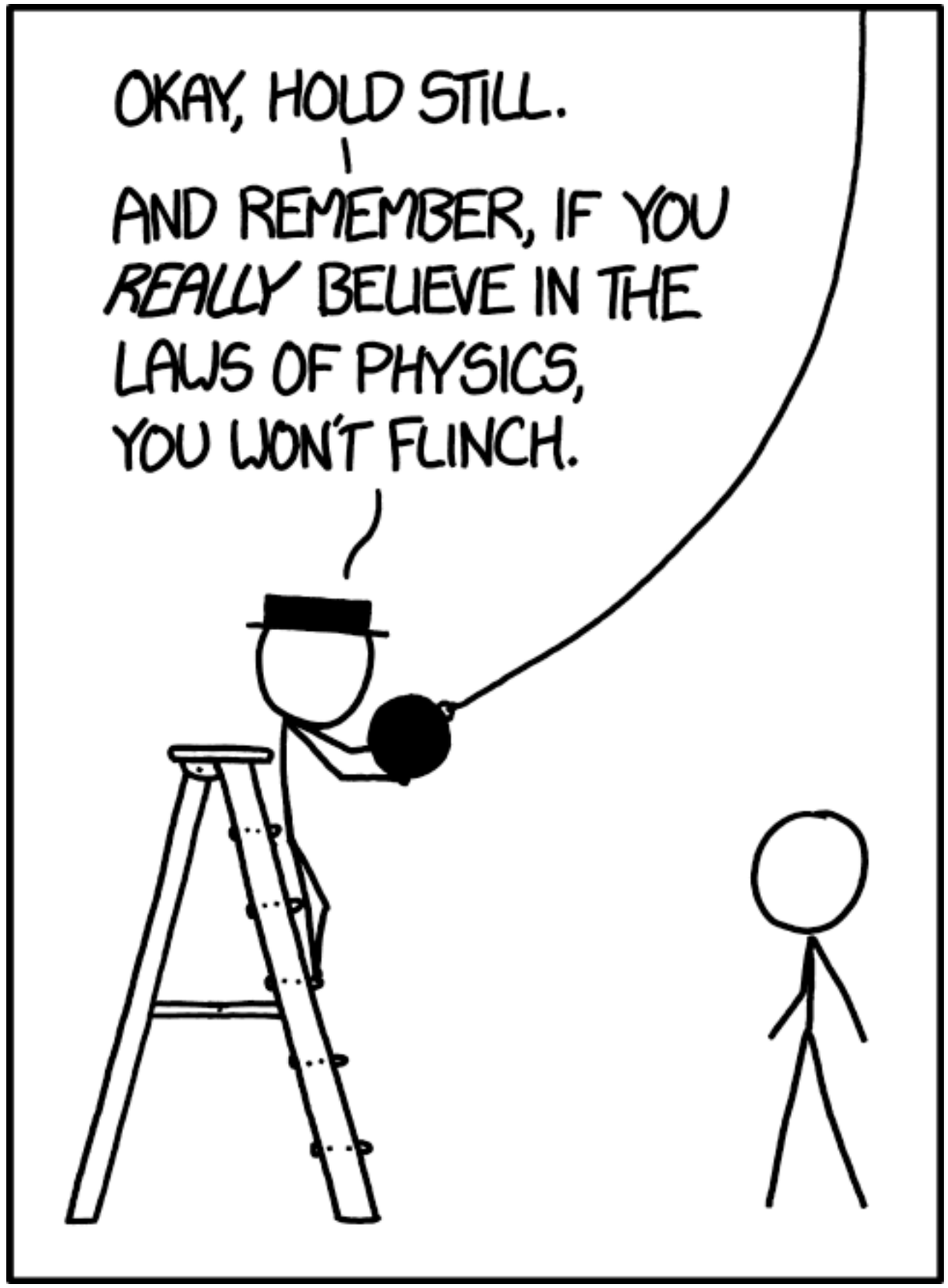
Q.

In 1948, **Ralph Alpher** and his Ph.D. advisor, the theoretical physicist **George Gamow** published a paper titled “The Origin of Chemical Elements”. This paper was about the abundance of different chemical elements in the early Universe.

Gamow noticed an amusing coincidence, and decided to add an additional name to the author list - the physicist **X**.

Today, the paper is commonly called the _____ paper in honour of this joke.

ID **X** / What was the joke?


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X - Hans Bethe

This is the Alpher-Bethe-Gamow ($\alpha\beta\gamma$) paper

The Origin of Chemical Elements

R. A. ALPHER*
Applied Physics Laboratory, The Johns Hopkins University, Silver Spring, Maryland

AND

H. BETHE
Cornell University, Ithaca, New York

AND

G. GAMOW
The George Washington University, Washington, D. C.

February 18, 1948

AS pointed out by one of us,[1] various nuclear species must have originated not as the result of an equilibrium corresponding to a certain temperature and density, but rather as a consequence of a continuous building-up process arrested by a rapid expansion and cooling of the primordial matter. According to this picture, we must imagine the early stage of matter as a highly compressed neutron gas (overheated neutral nuclear fluid) which started decaying into protons and electrons when the gas

Q.

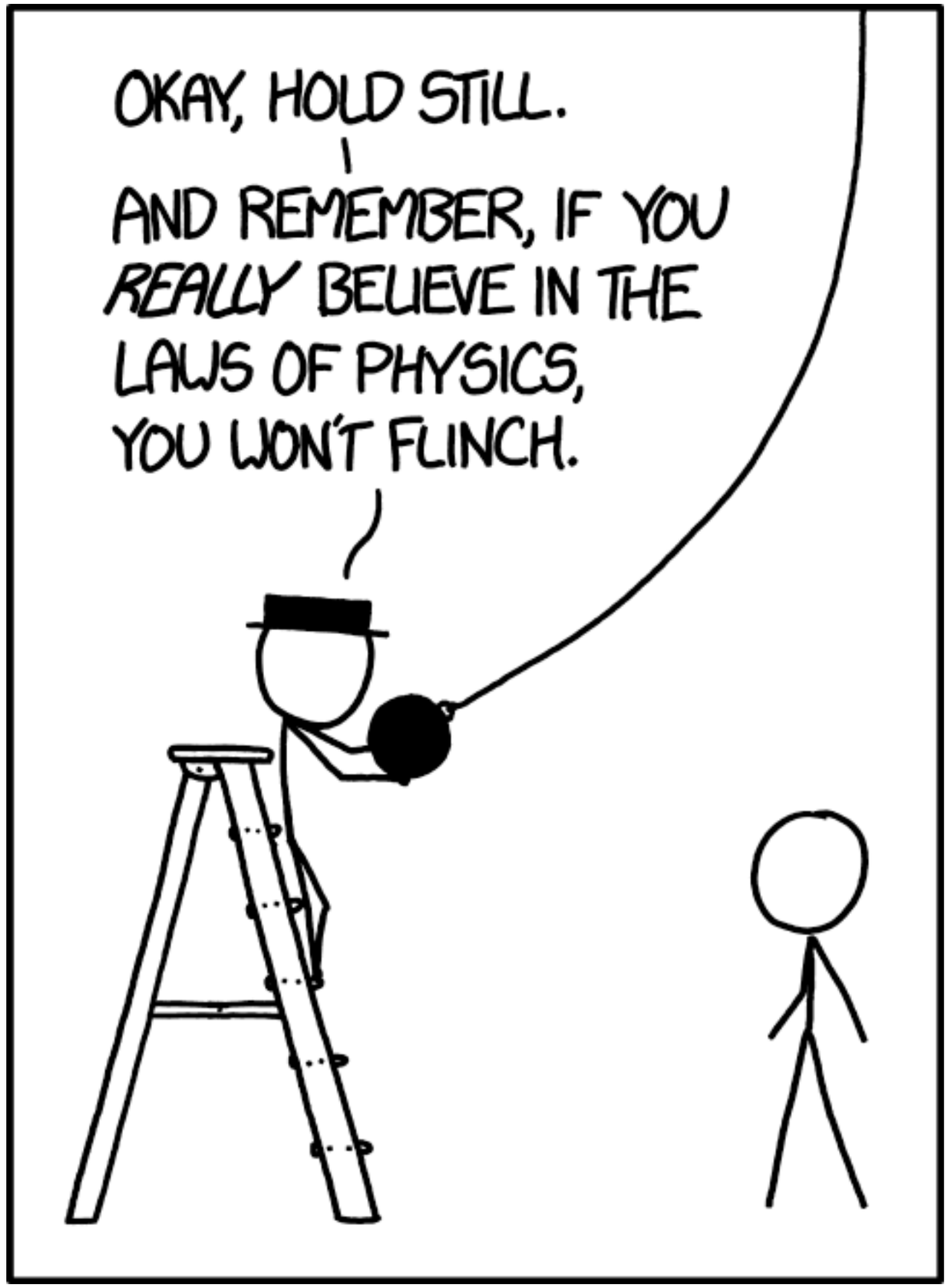
The reason why **X** is used to denote the _____ is sometimes linked to the Latin word *celeritas*, translating to speed, as noted by Isaac Asimov in 1959.

However, this was not always the case.

Maxwell used *V* to denote this quantity. This notation was initially followed by **Y**, who was responsible for arguably the most famous equation involving this quantity. By 1907, however, **Y** also switched his notation from *V* to **X.**

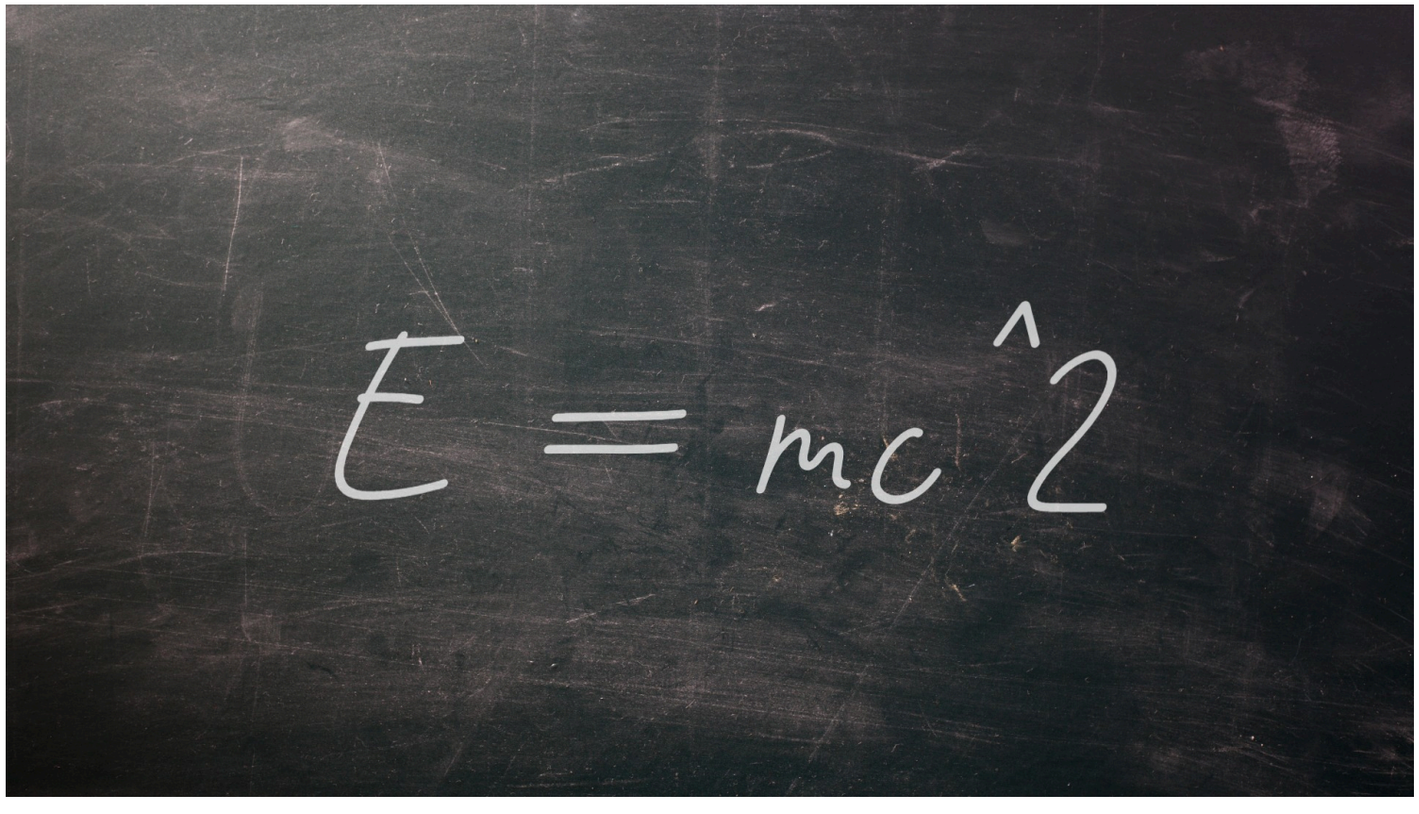
What is being discussed here? ID **X** and **Y**.

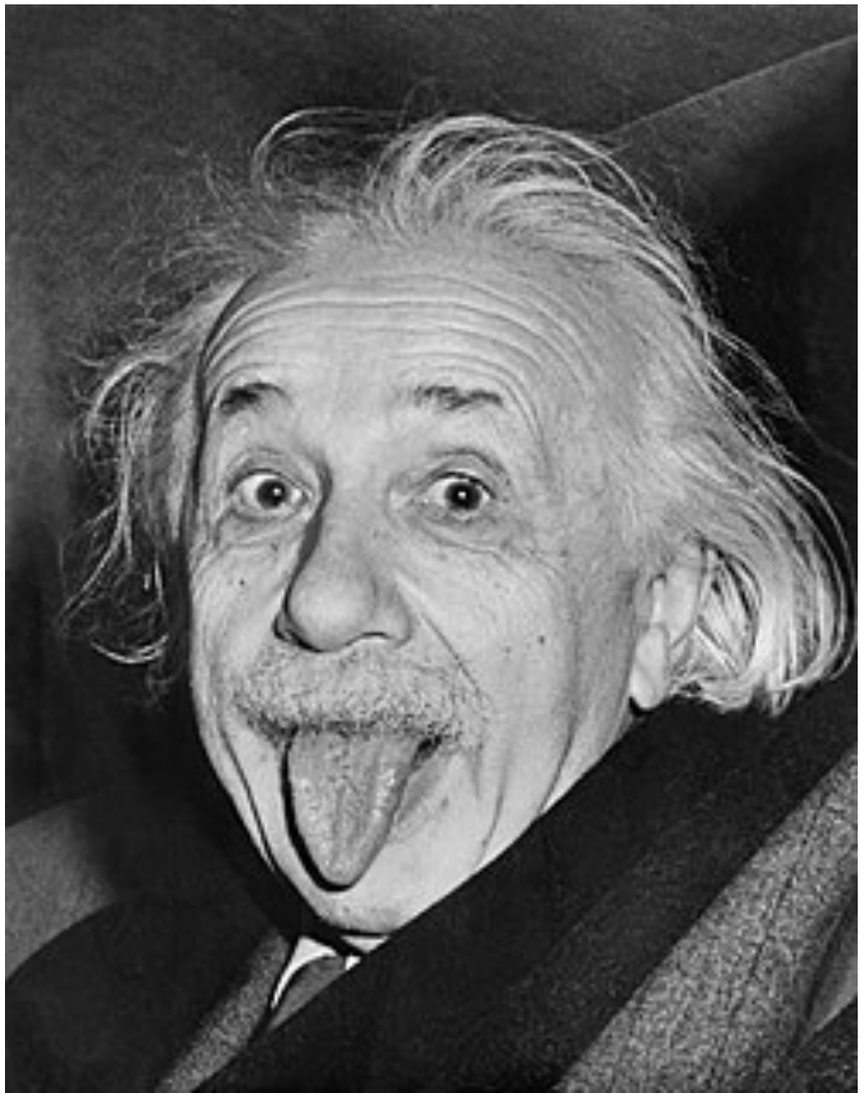
*Hint: Another funda/reasoning behind **X** is “constant”*


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X - “c” used to denote speed of light
Y - Albert Einstein

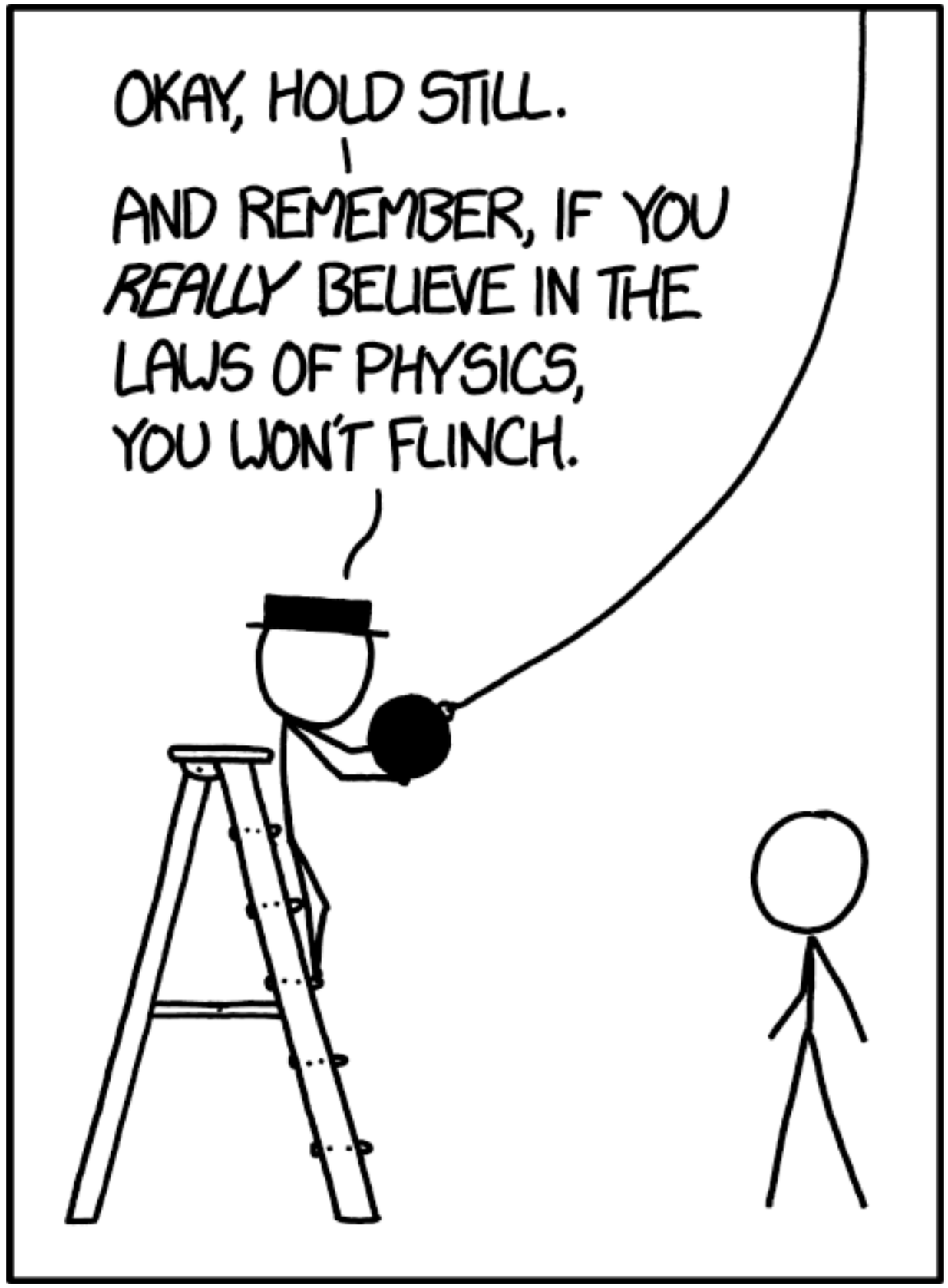




Q.

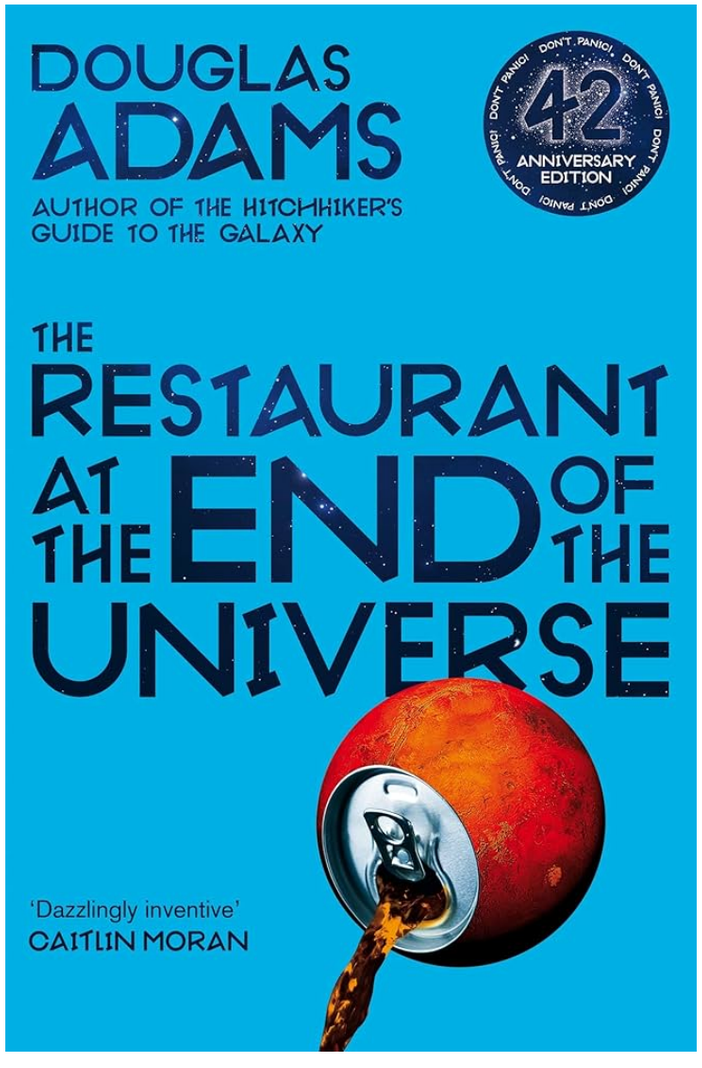
In The Restaurant at _____, one of the novels in Douglas Adams’ The Hitchhiker's Guide to the Galaxy series, there is a restaurant, Milliways, set up to allow patrons to observe _____, also referred to as **Gnab Gib.**

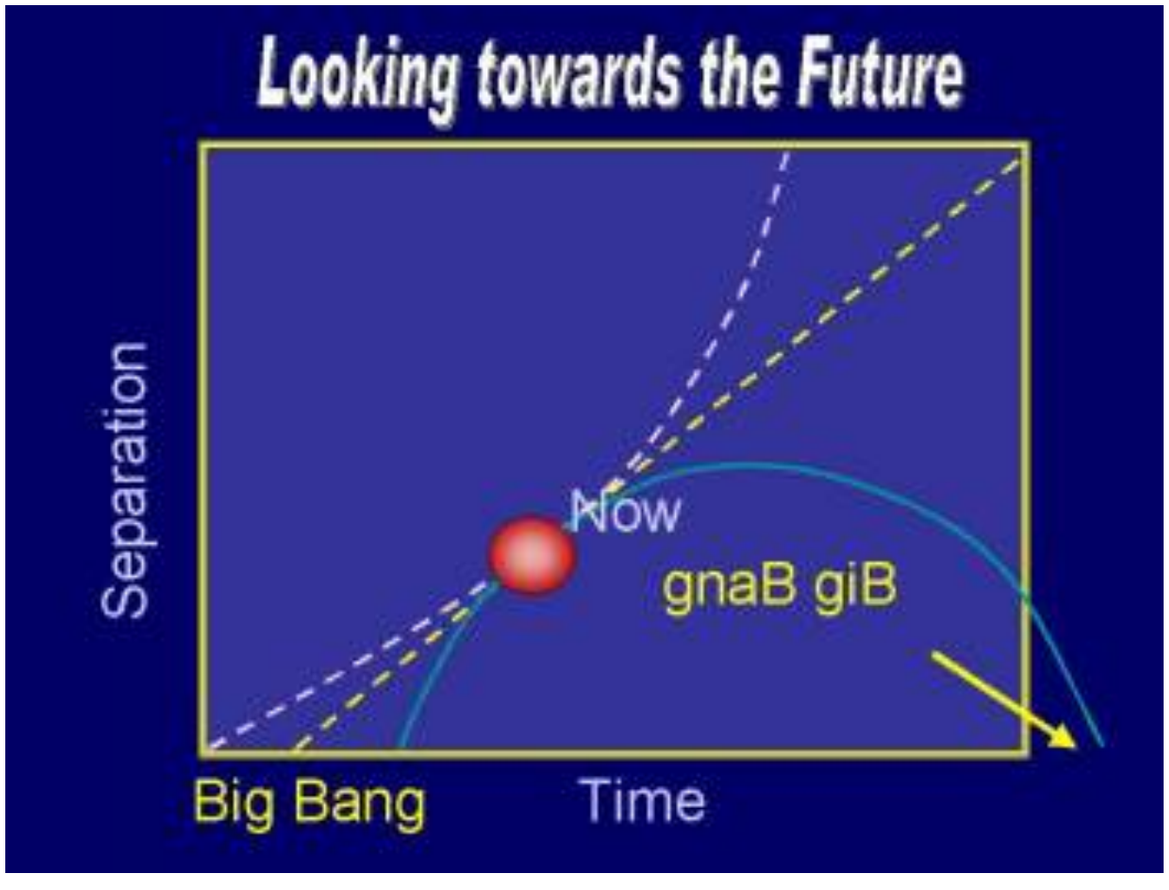
FITB / What is Gnab Gib?


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

The End of the Universe
Gnab Gib = Big Bang backwards





Q.

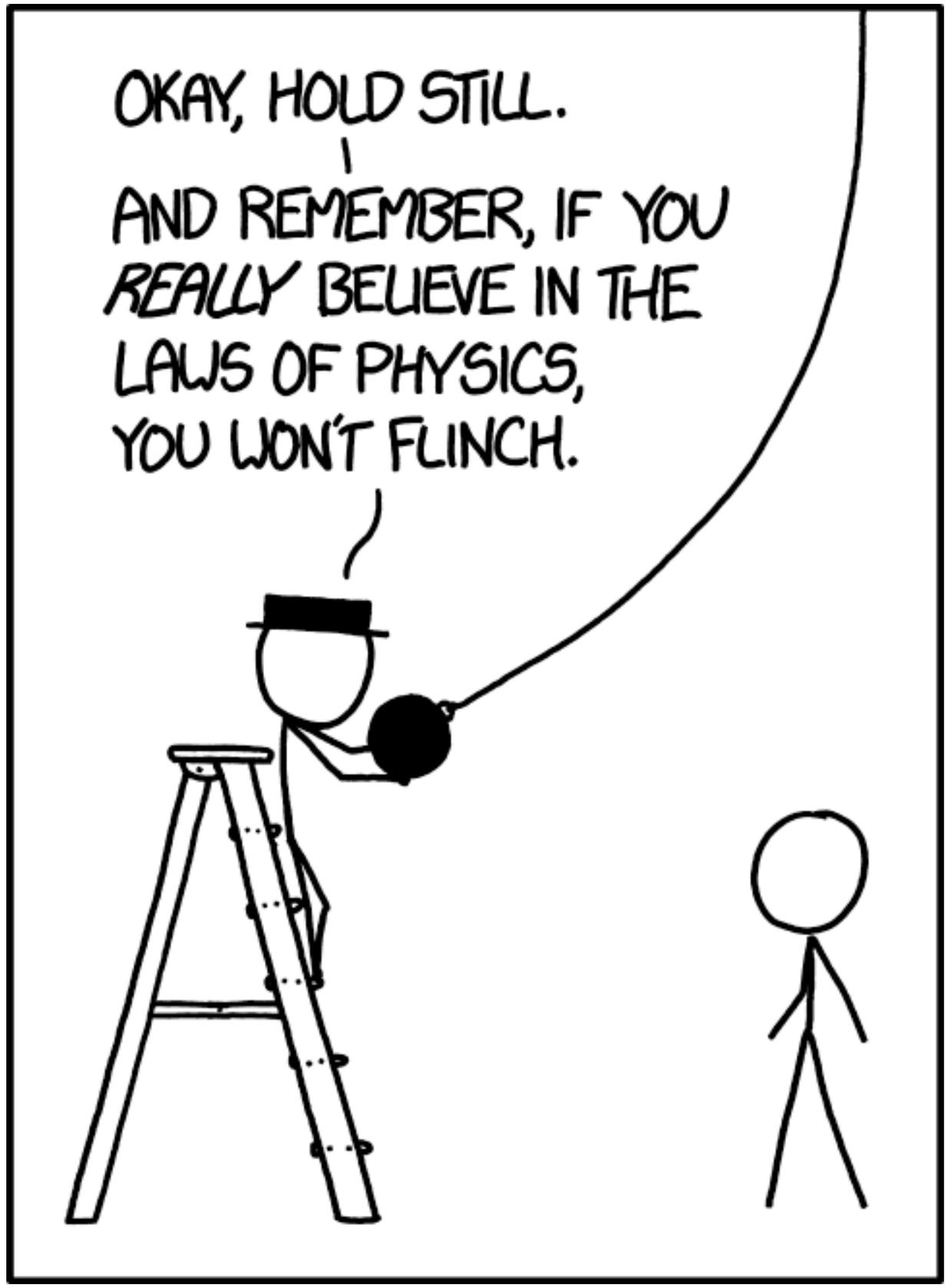
John Keats' poem *Ode on a Grecian Urn* ends with the lines

***Y** is **X**, **X** [is] **Y**—that is all*
Ye know on earth, and all ye need to know.

X and **Y** were adopted as alternative names for fundamental particles called top and bottom quarks respectively.

This was thought to go well with other names for quarks such as charm and strange.

ID **X** and **Y**.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X - Truth,
Y - Beauty

What flavor of quark are you?



Up
- Lightweight
- High all the time
- Turns into Down Quark if left alone long enough



Down
- “D quark”
- dominant in neutrons
- Bare mass not well understood
- Kinda sad



Strange
- found in Strange D mesons
- Sideways
- Could be a strangelet
- Doesn’t really know what’s going on



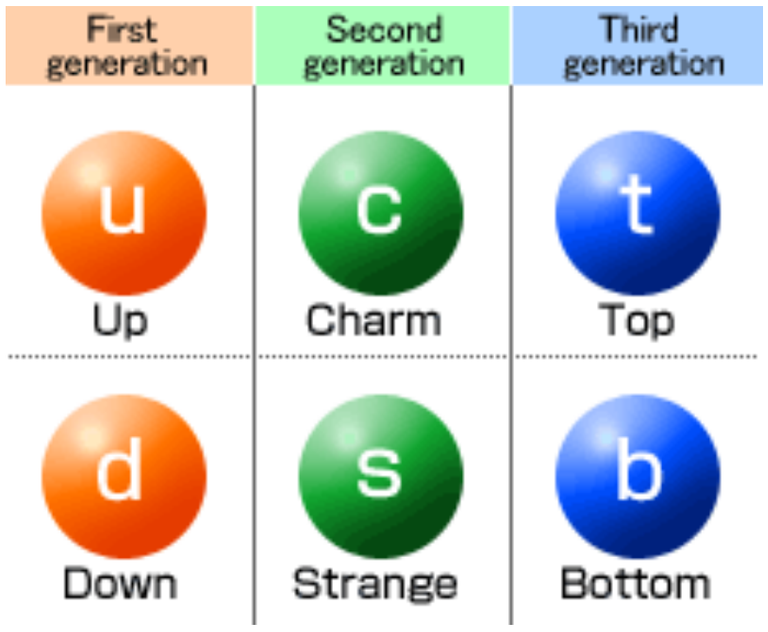
Charm
- Charming
- Second Gen™
- Color: yes :)
- Really just okay
- Happy to be here



Top
- “truth quark”
- Strong interactions
- Hard to find
- Literally over 40 times as big as everyone else



Bottom
- “beauty quark”
- Stable af
- Confident in itself
- Comes from top quarks ;)



Q.

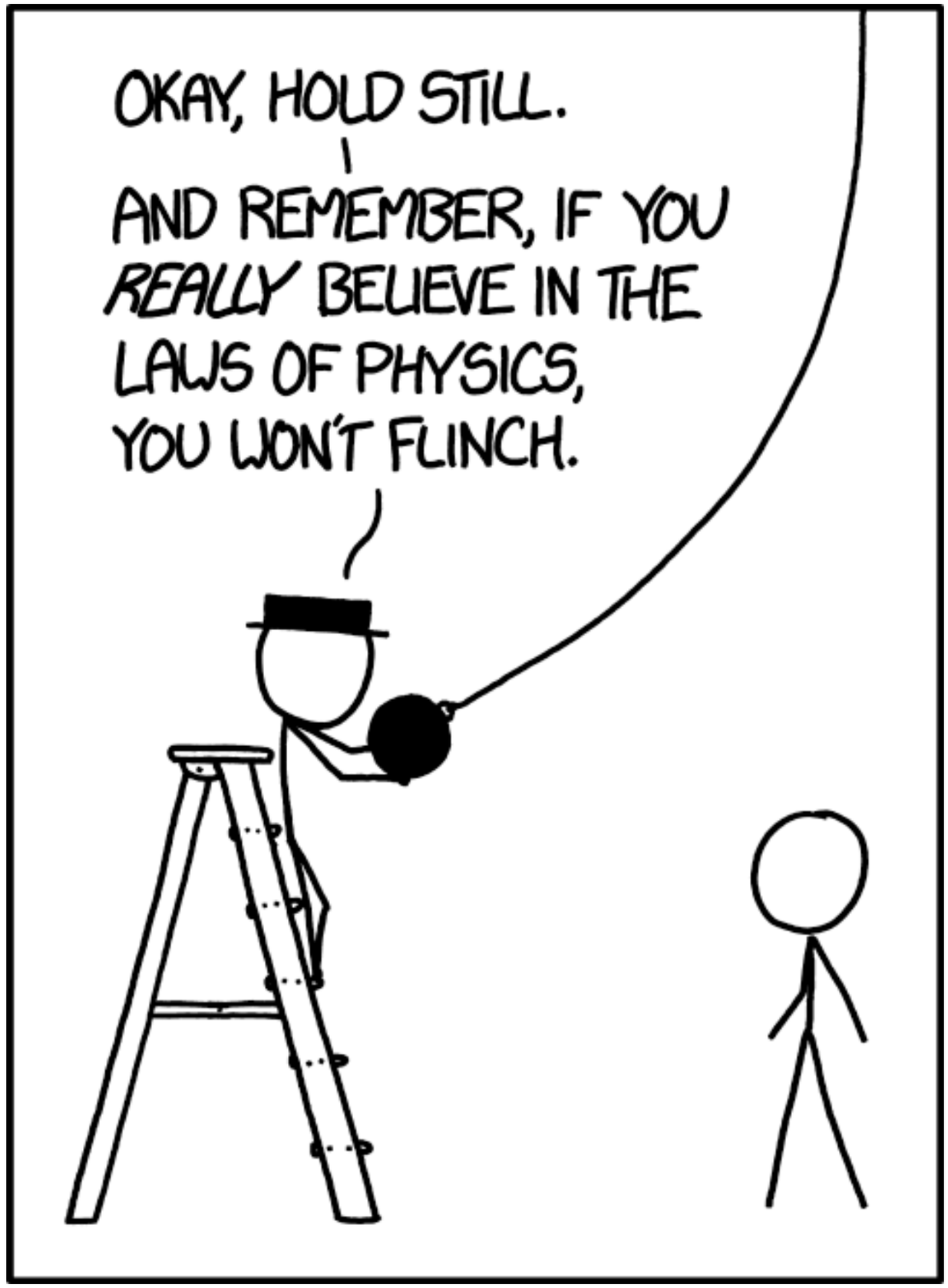
X is often described as a "particle going backward in time".

Your body produces the **X** of an electron every 20 seconds.

Some particles are their own **X**, e.g., the photon.

Italian physicist Ettore Majorana in 1937 showed that a class of particles called fermions can be their own X, and disappeared the next year.

ID **X**.


OKAY, HOLD STILL.
AND REMEMBER, IF YOU *REALLY* BELIEVE IN THE LAWS OF PHYSICS, YOU WON'T FLINCH.

Ans.

X - Antiparticle

