

# CECILIA PAYNE

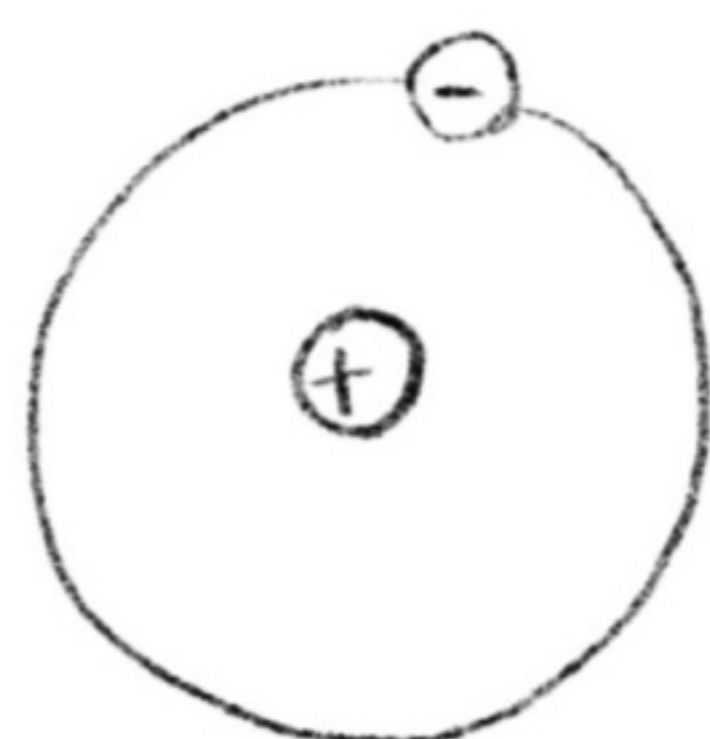
The outstanding discrepancies between the astrophysical and terrestrial abundances are displayed for hydrogen and helium. The enormous abundance derived for these elements in the stellar atmosphere is almost certainly **not real**. Probably the result may be considered, for hydrogen, as another aspect of its abnormal behavior, already alluded to; and helium, which has some features of astrophysical behavior in common with hydrogen, possibly deviates for similar reasons. **The lines of both atoms appear to be far more persistent, at high and low temperatures, than those of any other element.**

*Beyond Curie Four women in physics and their remarkable discoveries, 1903 to 1963 Scott Calvin*

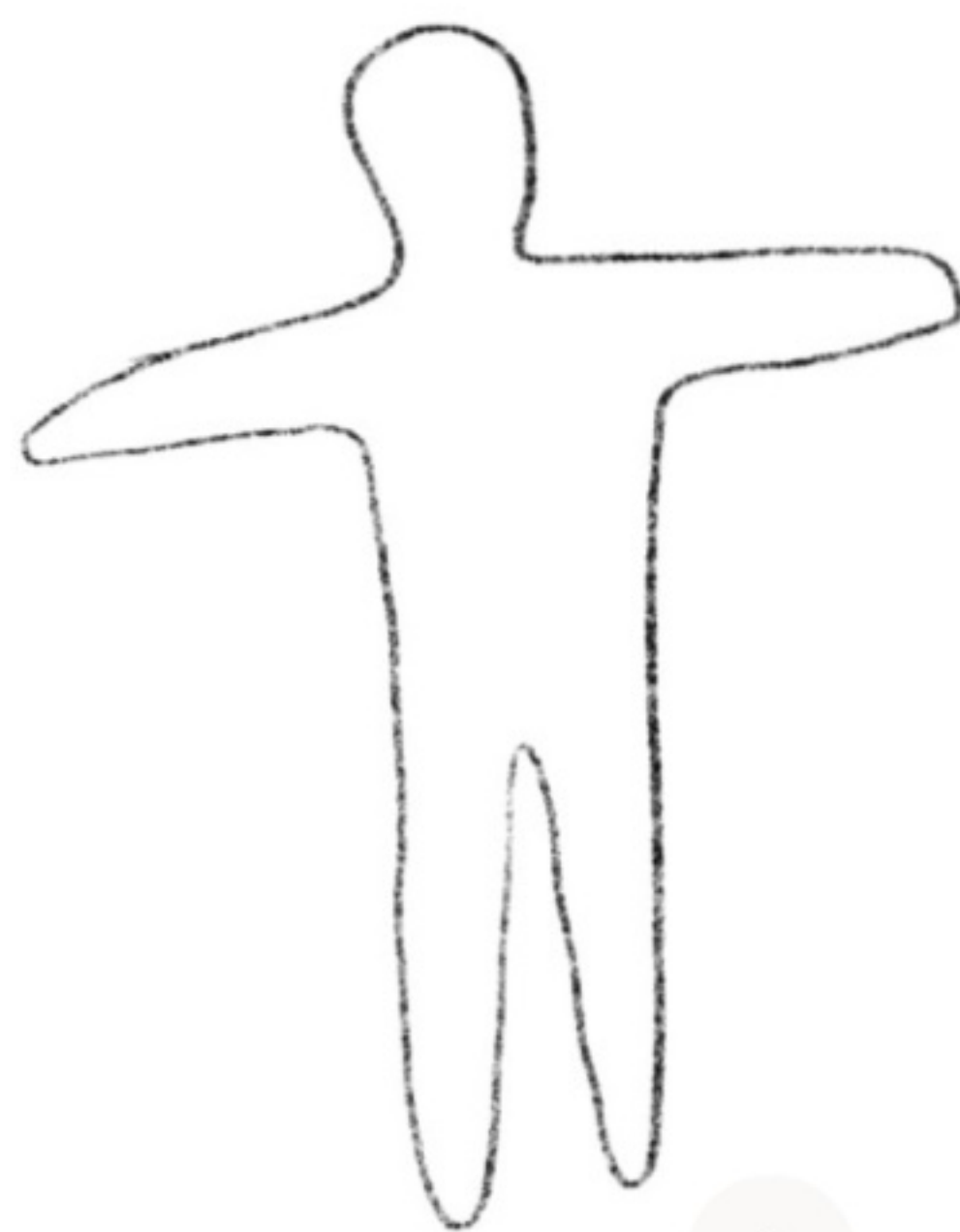
1925



^



NUCLEAR Fusion



LHC

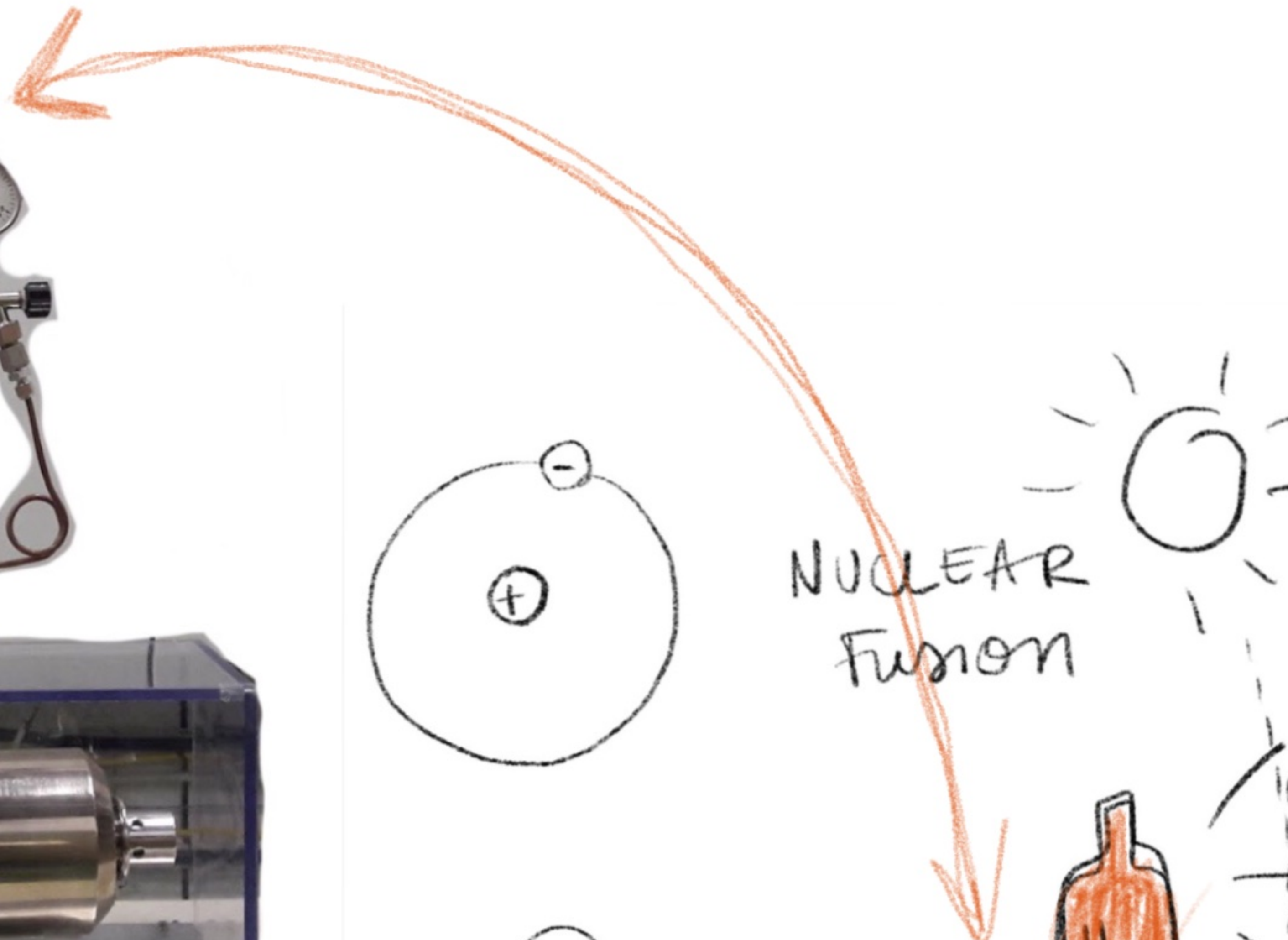
INTERNET

3mg x year  
protons

ORIGIN

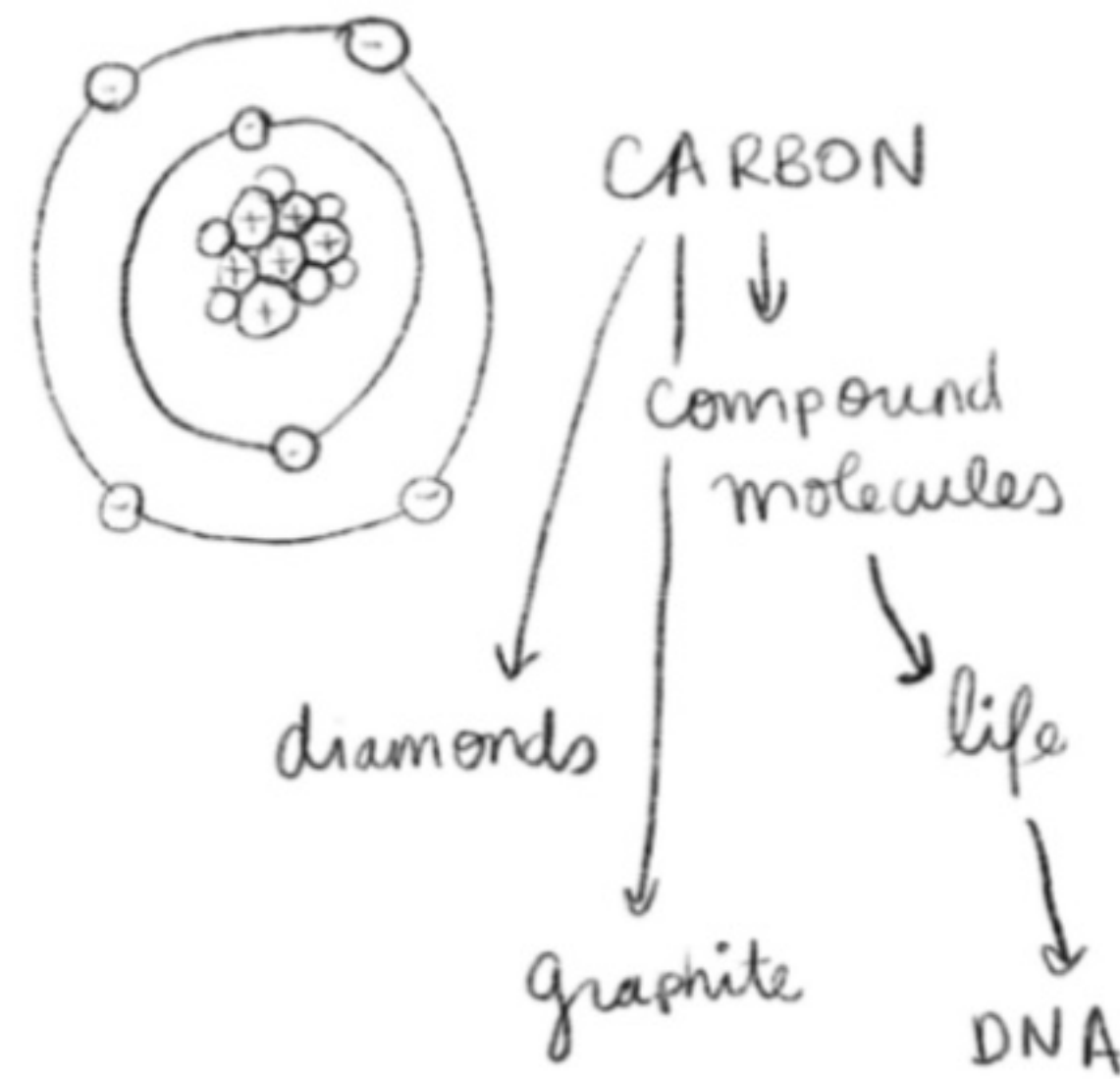
Human body

Cosmic origin  
Internet



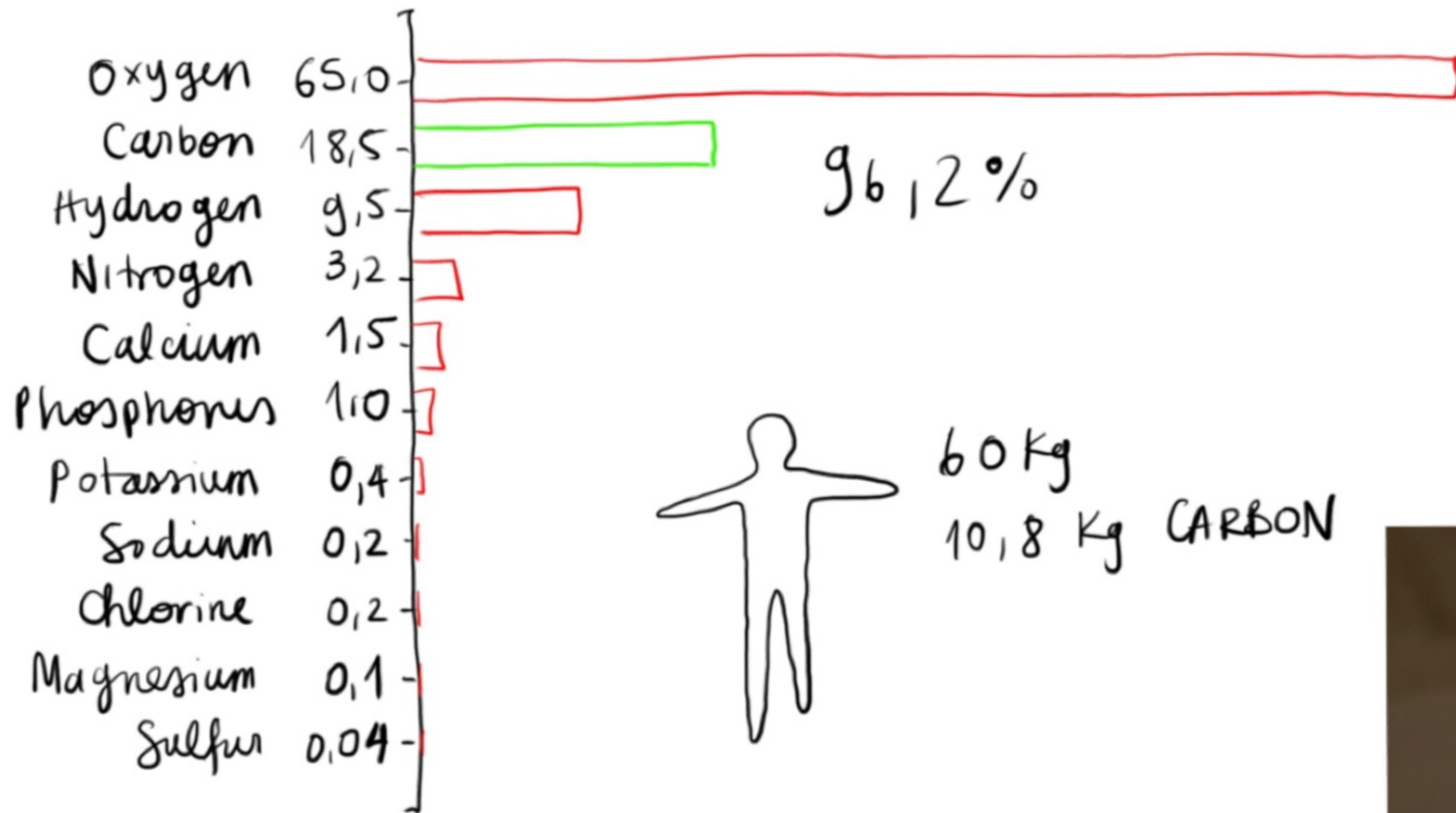
than we should expect. I shall argue that the distinction between a 'living planet' – one that is geologically active – and a living cell is only a matter of definition. There is no hard and fast dividing line. Geochemistry gives rise seamlessly to biochemistry. From this point of view, the fact that we can't distinguish between geology and biology in these old rocks is fitting. Here is a living planet giving rise to life, and the two can't be separated without splitting a continuum.

NICK LANE  
THE VITAL  
QUESTION





ELEMENT % OF TOTAL BODYWEIGHT



DNA Structure Activity

Problem 10: Review of the Features of the Watson-Crick Model for DNA Structure

Components of DNA

DNA is a polymer. The monomer units of DNA are nucleotides, and the polymer is known as a "polynucleotide." Each nucleotide consists of a 5-carbon sugar (deoxyribose), a nitrogen containing base attached to the sugar, and a phosphate group. There are four different types of nucleotides found in DNA, differing only in the nitrogenous base. The four nucleotides are given one letter abbreviations as shorthand for the four bases.

- A is for adenine
- G is for guanine
- C is for cytosine
- T is for thymine

DNA Bases

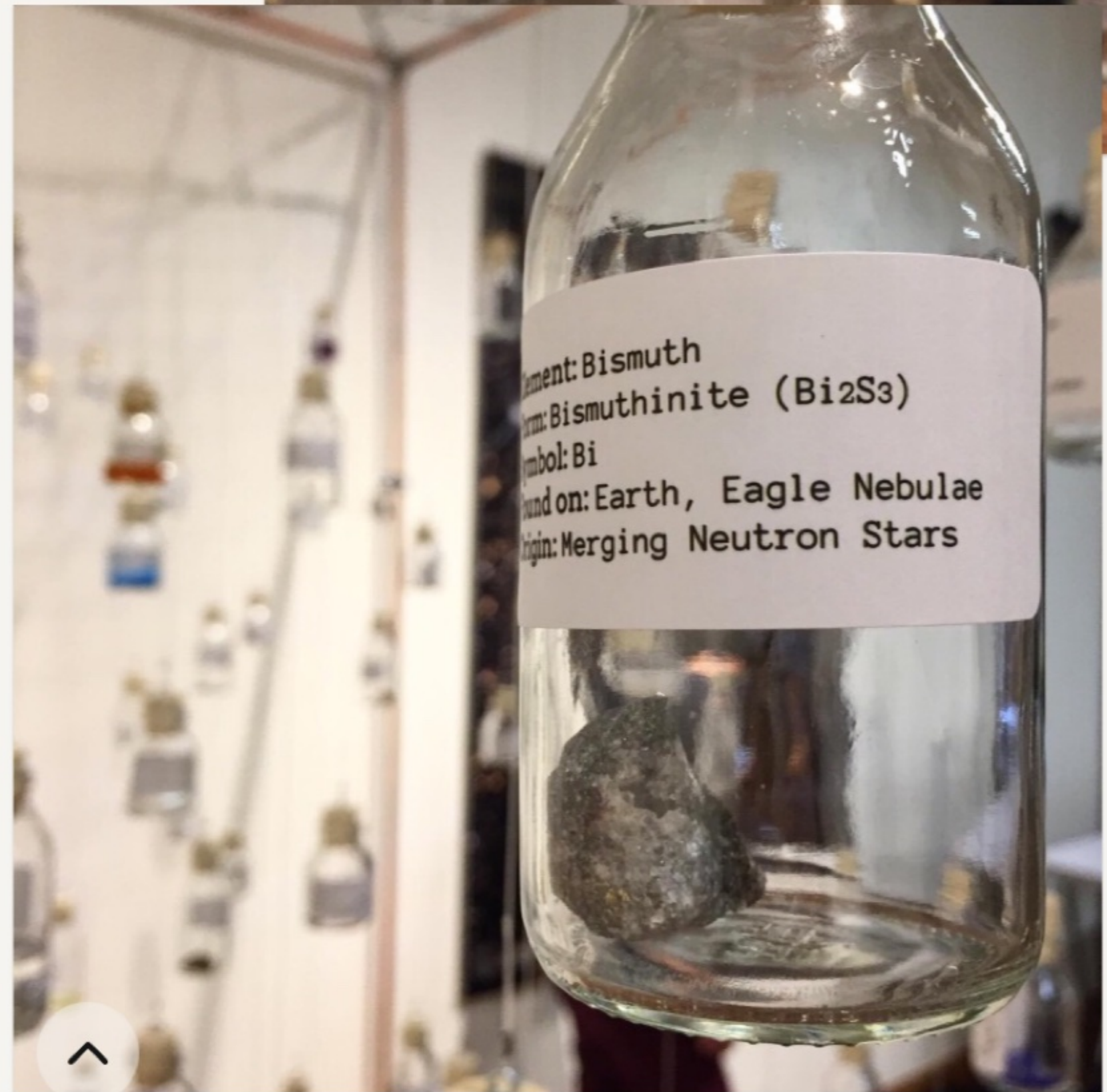
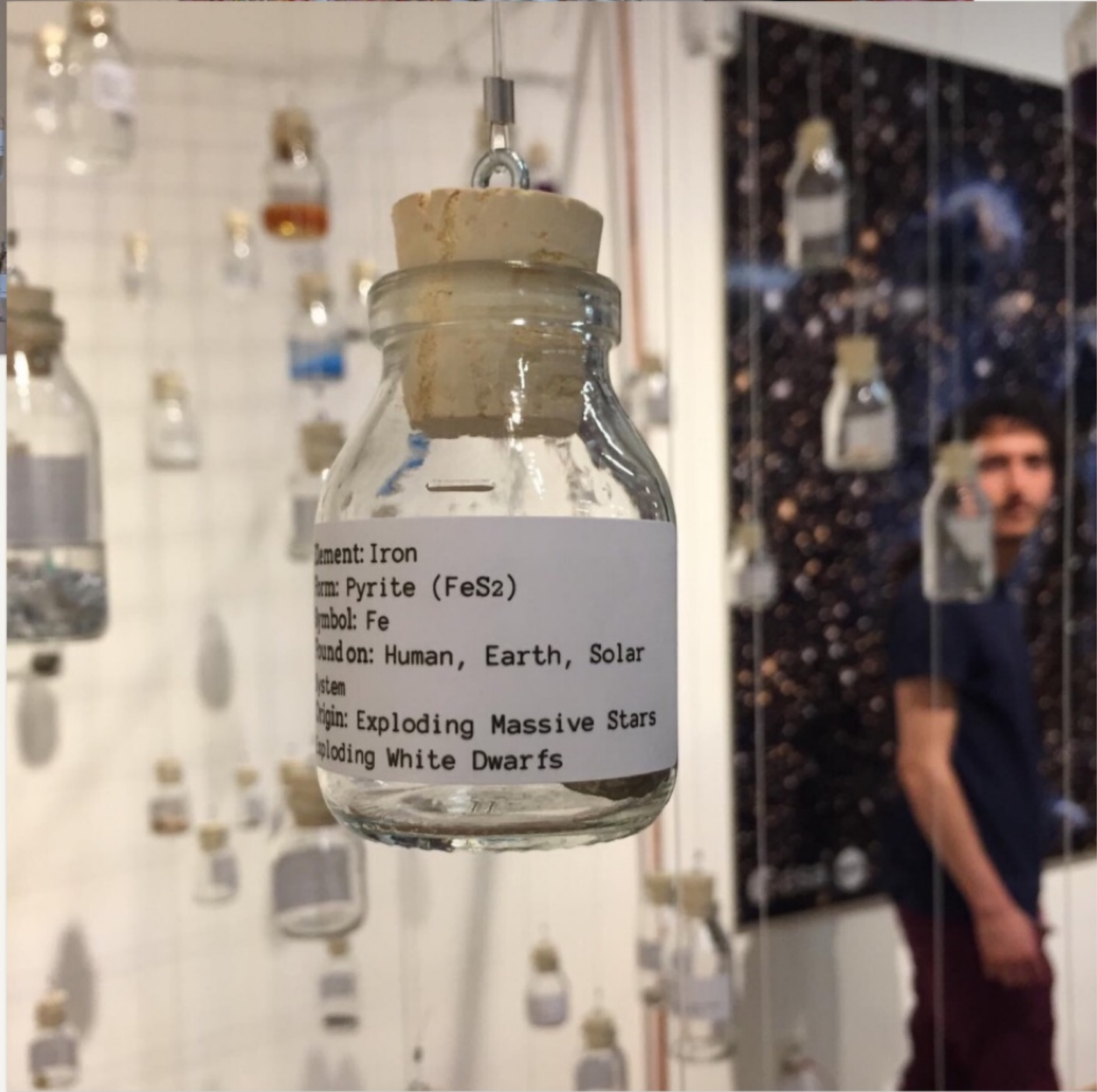
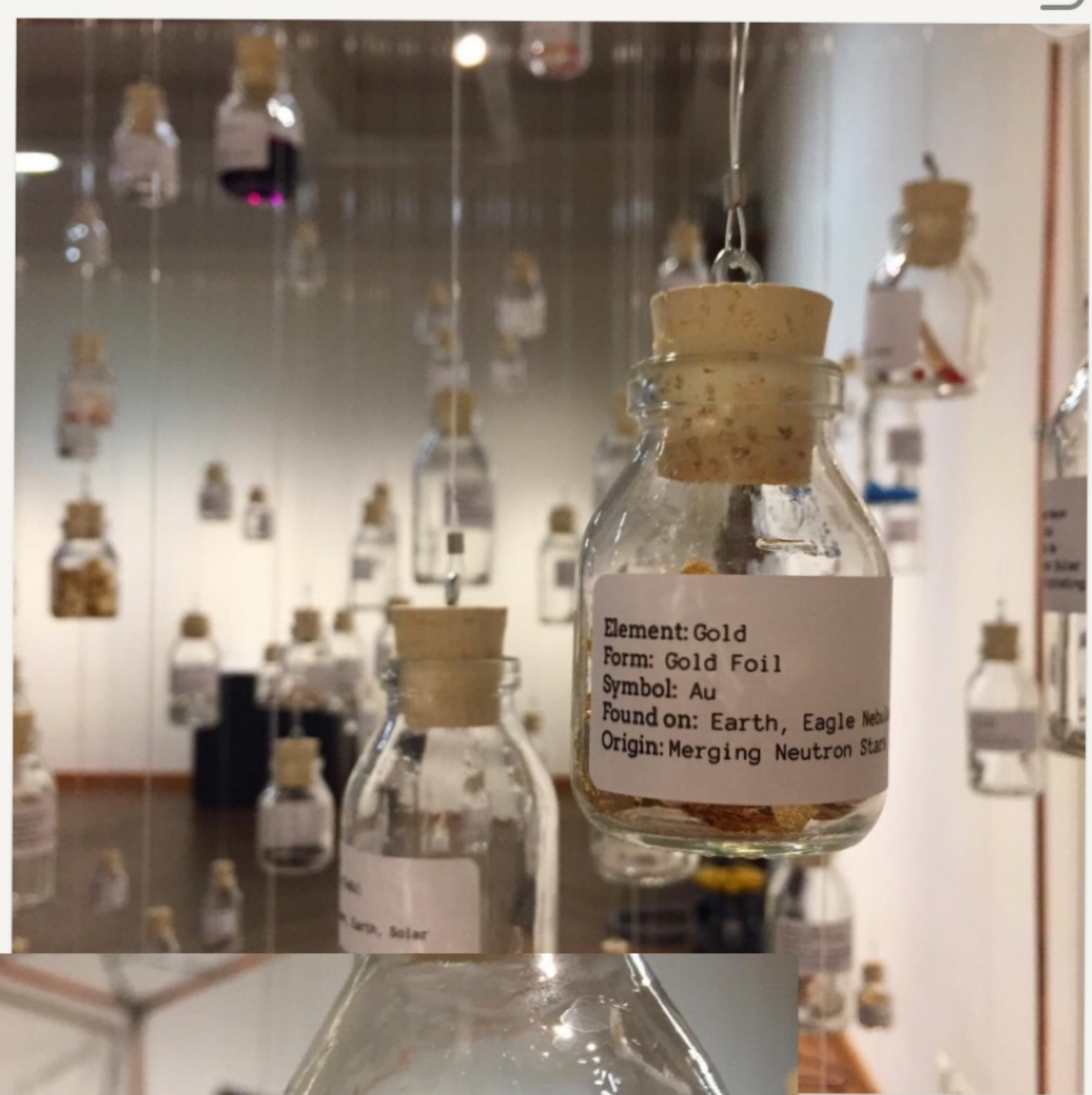
Adenine and guanine are purines. Purines are the larger of the two types of bases found in DNA. The 9 atoms that make up the fused rings (5 carbon, 4 nitrogen) are numbered 1-9. All ring atoms lie in the same plane. Cytosine and thymine are pyrimidines. The 6 atoms (4 carbon, 2 nitrogen) are numbered 1-6. Like purines, all pyrimidine ring atoms lie in the same plane.

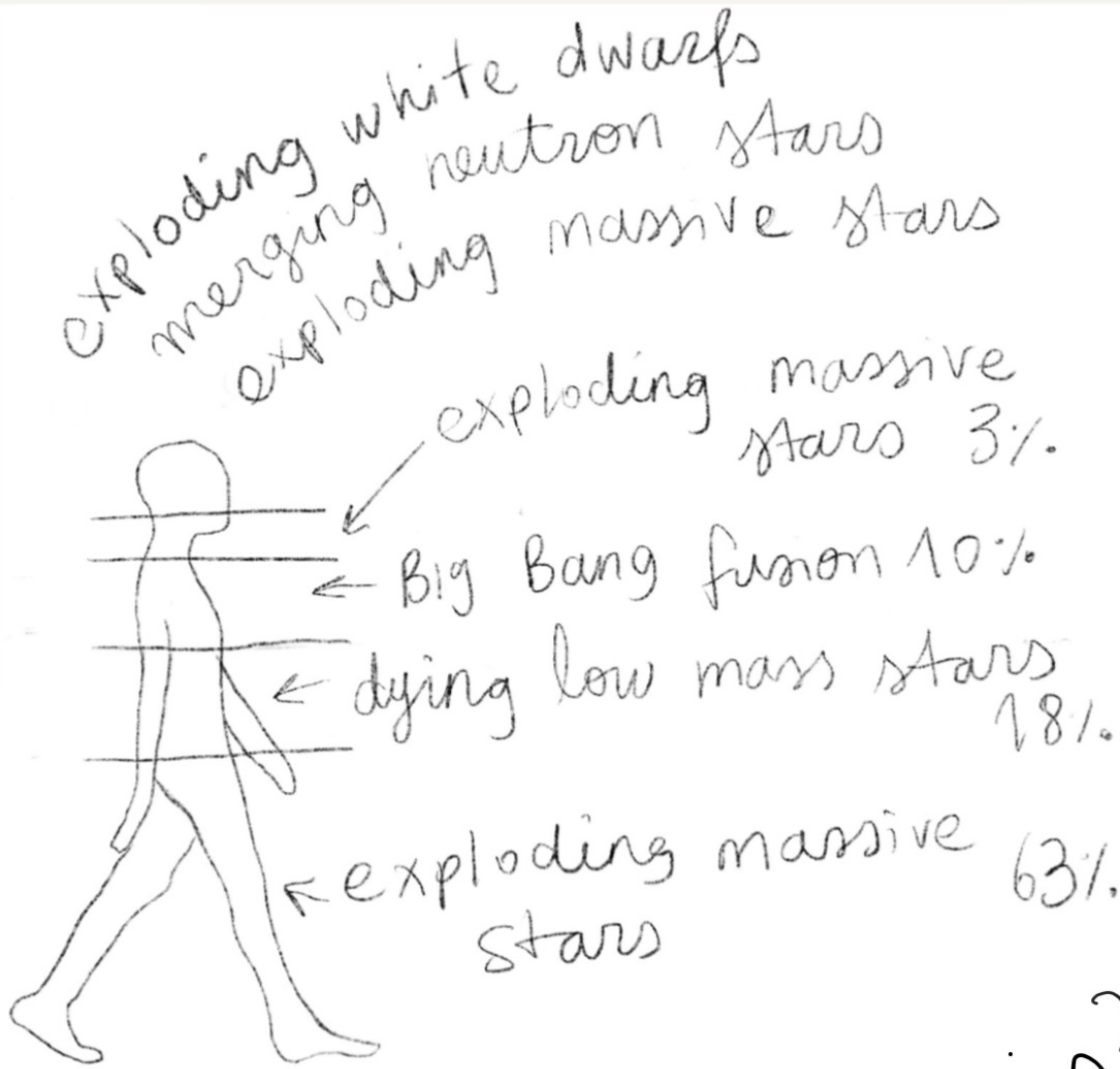
Deoxyribose Sugar

The deoxyribose sugar of the DNA backbone has 5 carbons and 3 oxygens.

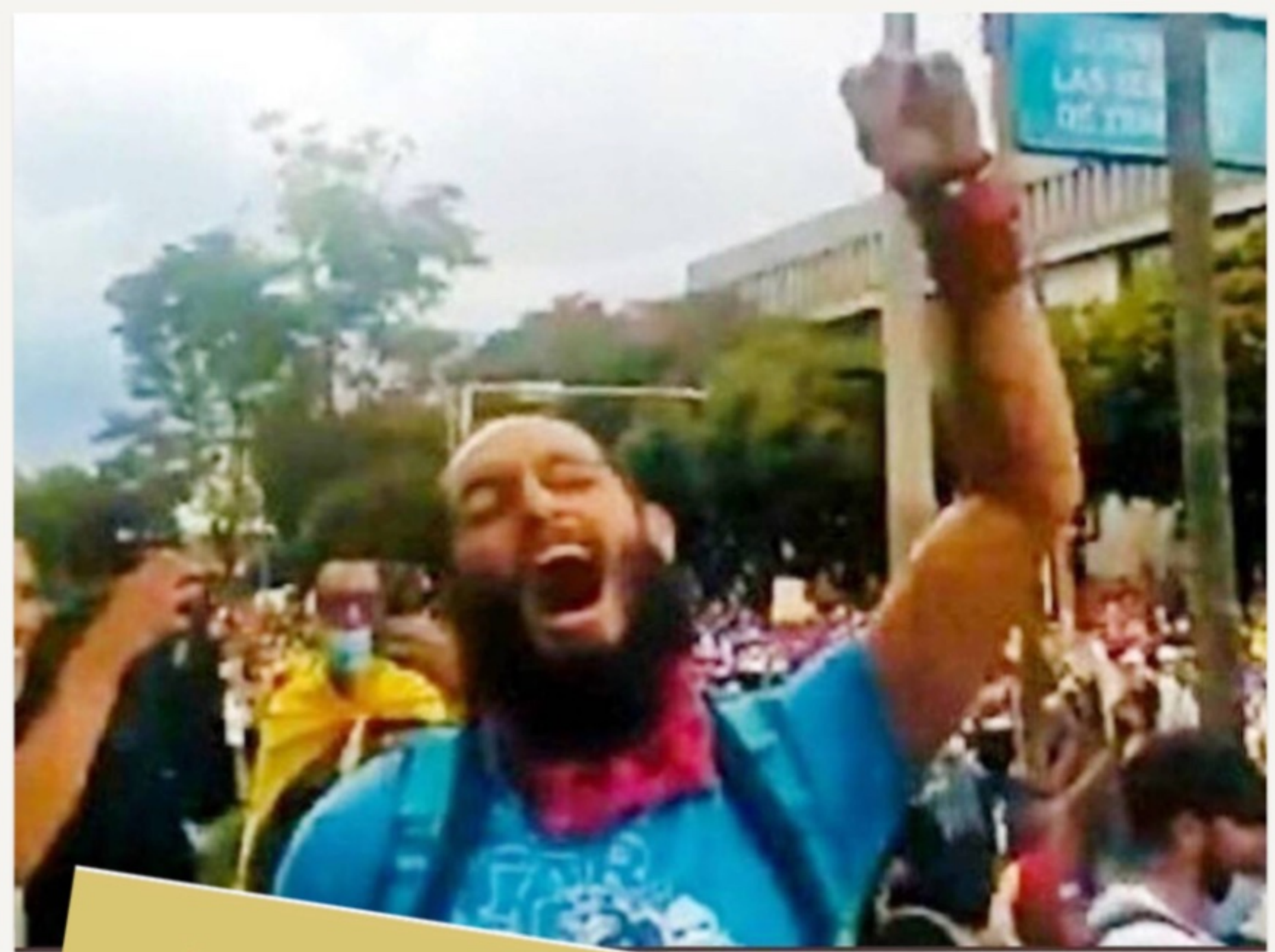




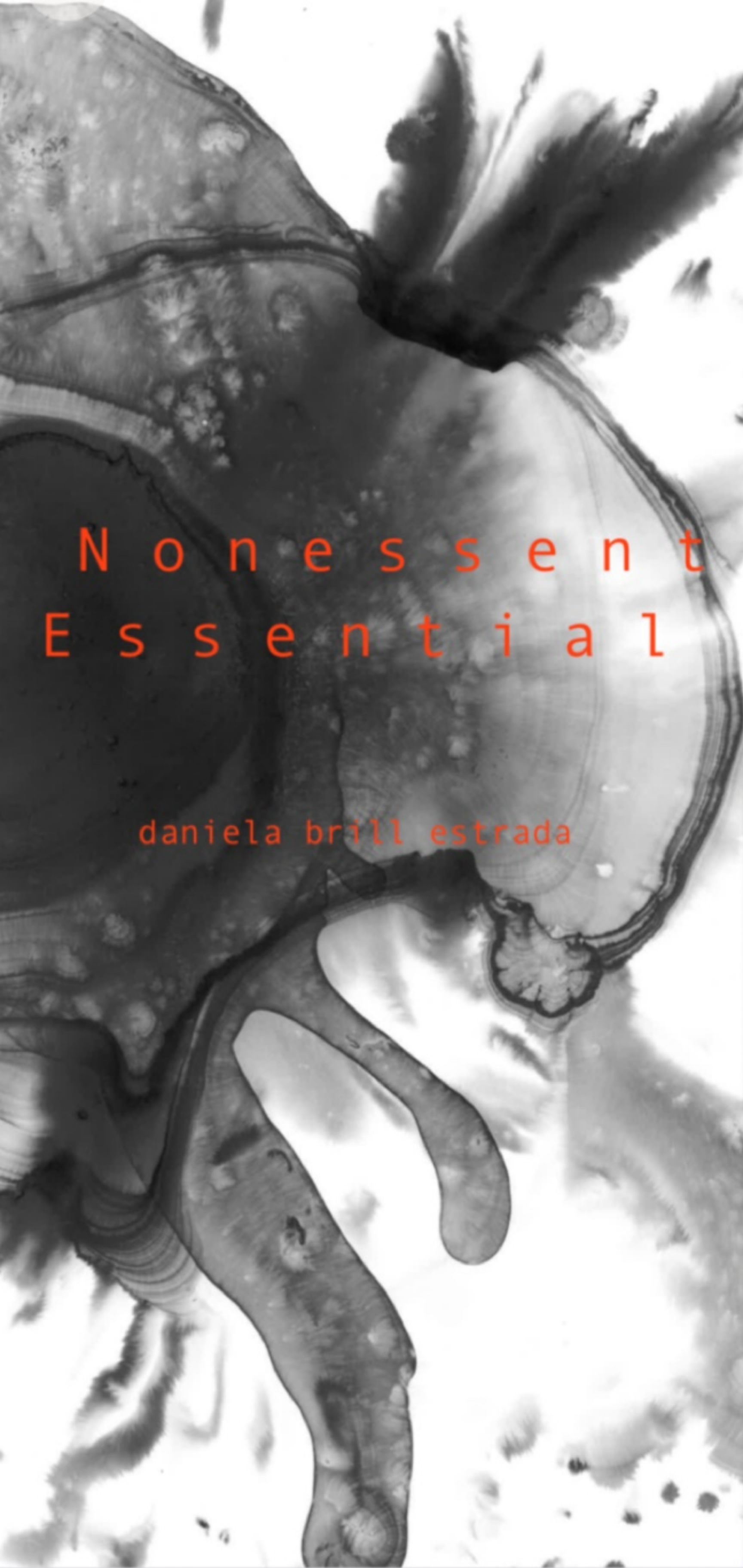




difference to other species?  
 FISH/WOMAN?







# Nonessential Essential

daniela brill estrada



20:05 Montag 23. Nov.

48%

The Nonessential Essential -testprint - daniela brill copia 3.pdf

Most of the carbon in the universe is created when low mass stars die, although there is also carbon being created when massive stars explode. Every element in the periodic table is created either when a star explodes or when it merges with other stars, the only exception to this are the ones created by cosmic ray fission or direct out of the big bang, which is the case of hydrogen.

Every carbon atom in the universe is exactly equal as every other carbon atom. And carbon is an essential part of the earth, of its cycles, of the atmosphere and the living and non-living matter that inhabit it. My hypothesis states that carbon atoms, being the element that binds life through compound molecules, have an intrinsic force that drives them differently when building up the calcium carbonate of the shells or when building up the DNA of the snail inside the shell. Carbon is the only element that has the ability to bind compound organic molecules, thereby creating "living matter". Although science is trying to find the way to bind life out of silicon atoms (silicon-based life), on earth, there is only carbon-based life.

Carbon decays in different isotopes, including Radiocarbon, or C14, which is radioactive carbon found on archeological pieces and useful to find out how old organic matter is. This carbon is the same that used to keep the organism alive, the one that bounded the compound molecules into living matter. And after millions of years, it starts decaying, and becoming radioactive, changing into a different state. As I said before, this decay takes places thanks to the weak force.

Going back to the idea of wild speculations, I would like to state that these carbon atoms are not only driven by outside forces in order to create compound molecules and afterwards decay and become radiocarbon, and afterwards become mineral carbon and start the cycle all over again. I think they bear the Force of Embodiment, keeping the quarks and leptons functioning as basic building blocks of matter. It is not only the environment which shapes living matter but the F.E that steers it into the direction of the form it will take.

The cycle of carbon during the creation of solar energy is a good example to explain the states of matter it embodies possibly through the Force of Embodiment working together with the electromagnetic/weak force and the environment the reaction is taking place:

"Starting for instance with ordinary carbon (C12) we see that the result of a

# AISTHESIS

Bezogen auf den Begriff des Gefühls:  
(Greek: Emotions:  
Feelings, perceptions, sensations)

Wissen beginnt mit Aesthesis  
95% der Geschichte der Menschen spielt sich  
im Paläolithikum



not an insistence that quantum physics can provide an explanation for everything under the sun – as if this were some new theory of everything. Quantum physics profoundly disrupts many classical ontological and epistemological notions what we take for granted, and delving into the details of this disruption can open up exciting realms of thought. I am sympathetic to my physics colleagues' strong reactions against the all-too-familiar approach of drawing simplistic analogies between the way things happen

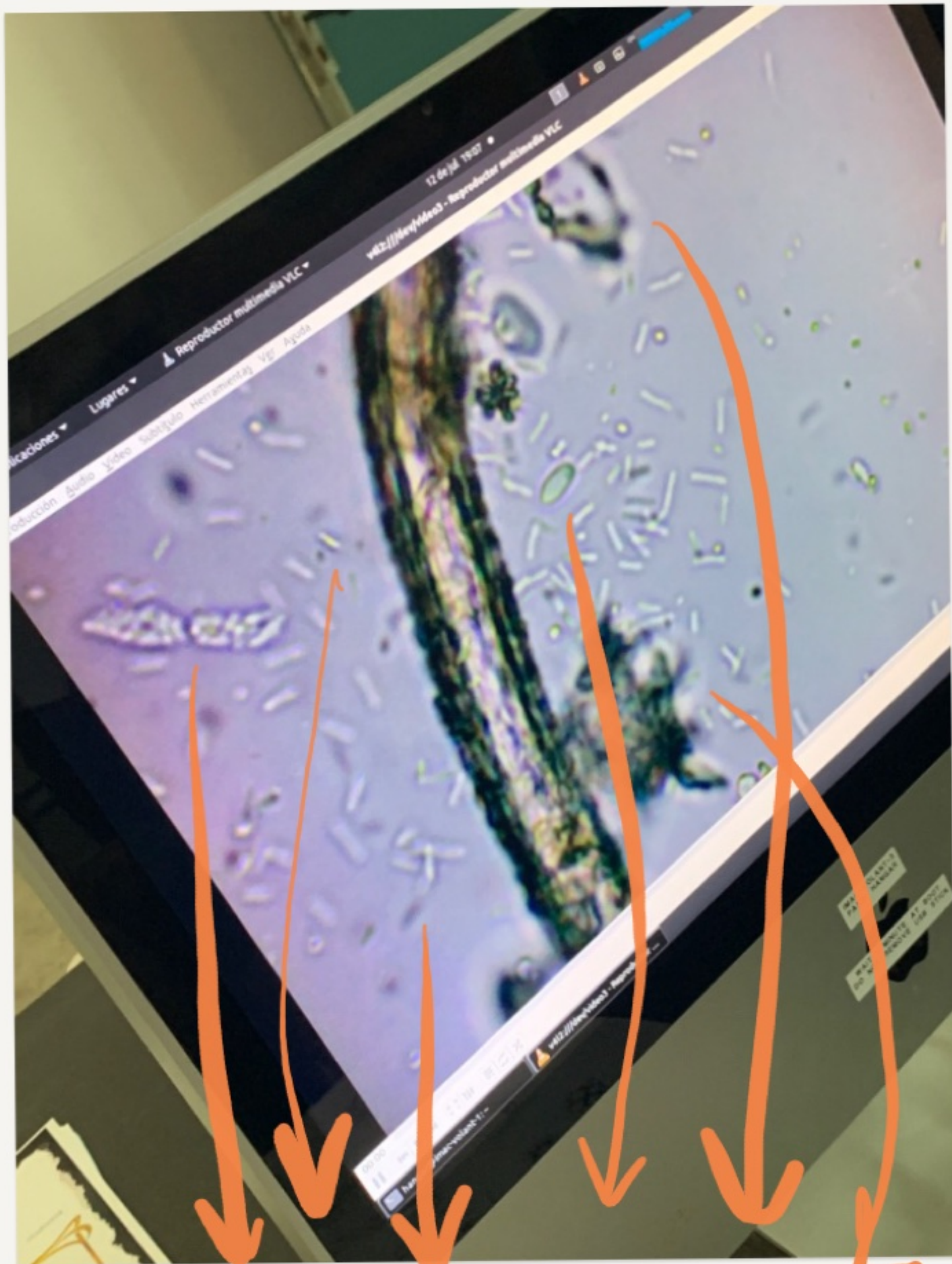
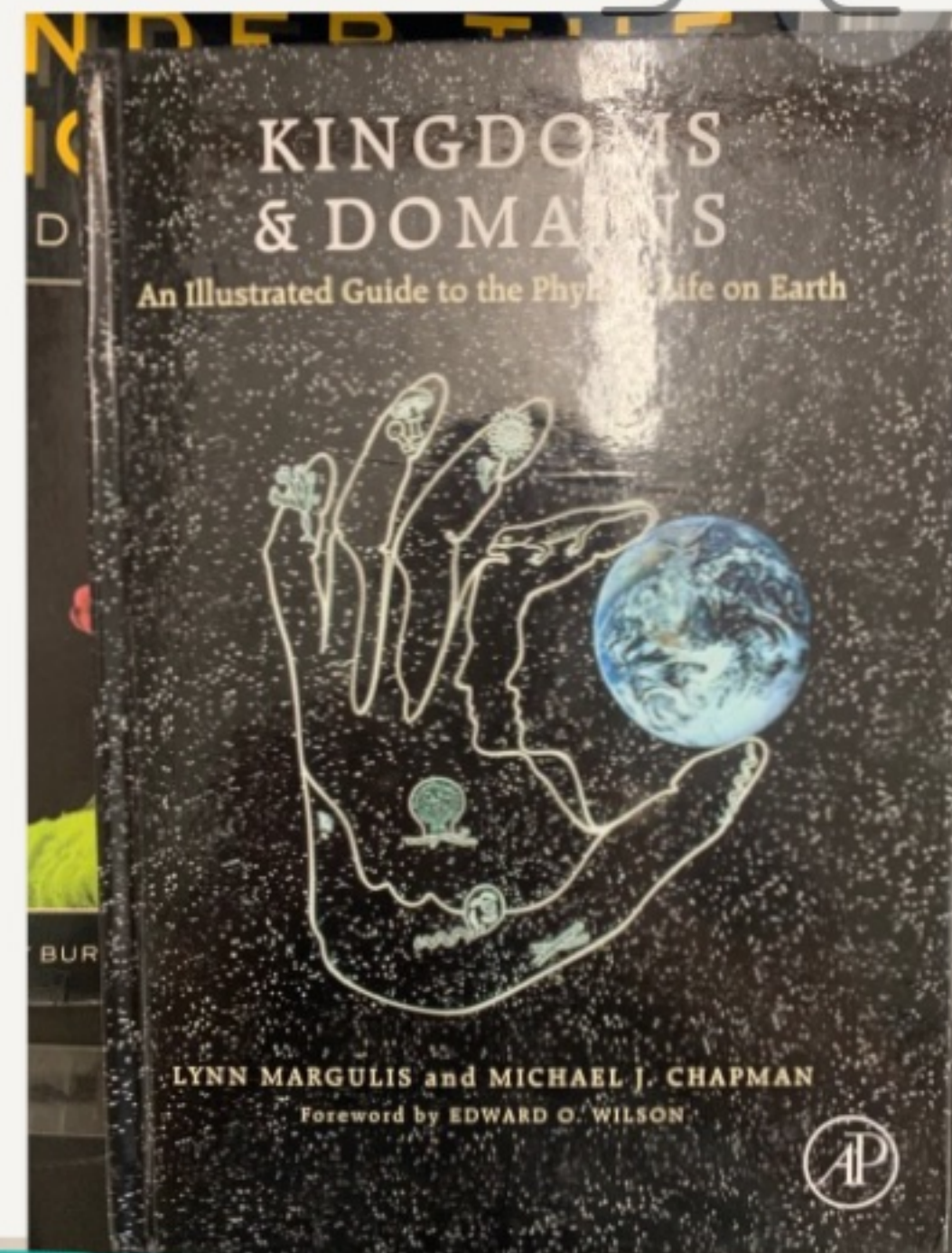
nothing is  
by - default!

not simply strange. There's quite a bit to be said here, and I've discussed this in written work, but for now we might keep this in mind: *Queer* is a radical questioning of identity and binaries, and quantum physics, like queerness, displaces a host of deeply-held foundational dualisms. One could say that this denial of quotidian queerness of the world is a kind of queer-phobia. (Which is not to say that the new-age embrace of everything quantum is a celebration of the queer either, because what is be-

Individualistic  
small  
(science)  
encrypted  
binary  
dualistic

Inclusive  
big  
(~~science~~)  
Collaborative  
KNOWLEDGE  
queer  
global  
open

# TAXONOMY AND THE QUEER ATLAS



WHO ARE YOU?

queer atlas

linnaeus - roose classification

process of clarification of knowledge

"common sense is very conservative"

bacteria sex

domination and colonial relationships

how we use science

take the tools and change the use.

taxonomía es colaborativa pero no abierta.

What is sex - Lynn Margulis

Comparison v. quant

de-identification

Standards

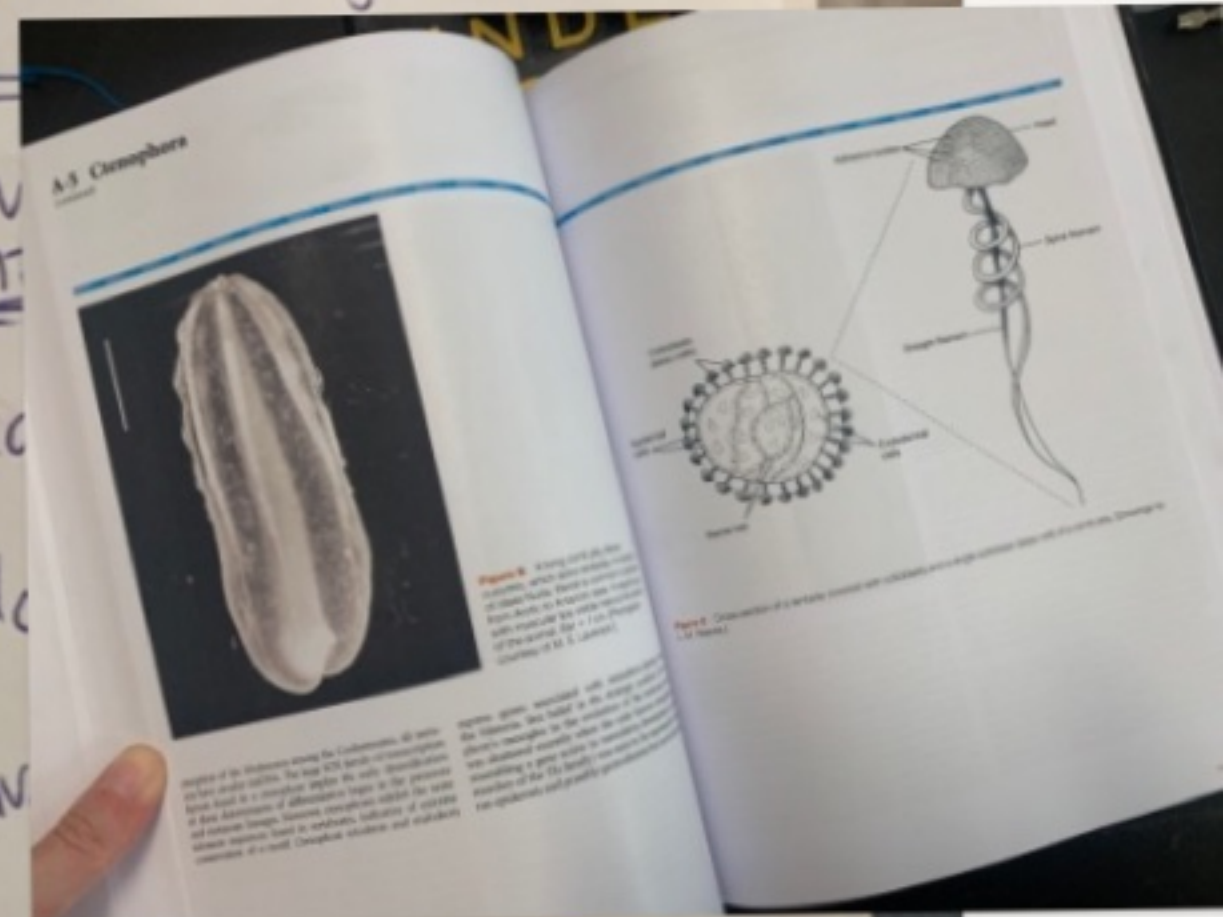
the inv

WITCH-SCIENTIST

Scientific institution is looking for the truth

Scientist observes the universe

- structure
- hierarchy
- capital



# LANGUAGE:

**SELF** - **MISMO** WHAT IS THE EXTENSION OF THE SELF? **suelo**  
**TERRITORY** - **TERRITORIO** ANIMAL SELF  
 Tierra-earth piece of earth (soil)  
**PROPERTY** - **PROPIEDAD** (ANIMAL TERRITORY) IS IT POSSIBLE TO OWN TERRITORIES?  
 propio-own MY OWN  
**CONSENT** - **CONSENTIMIENTO** WHAT CONSENT IS IT POSSIBLE TO GIVE?  
 (ANIMAL CONSENT) HOW TO TEACH CONSENT  
**UNITY** - **UNIDAD** ONE-TOGETHER  
 UNO-ONE WHAT  
**UNIT** - **UNIDAD** AM I EVER A UNITY mentally-emotionally?  
 UNO  
**INDIVIDUAL** - **individuo** (ANIMAL INDIVIDUAL)  
 in-dividible not possible to divide  
 does this exist? →



FIGHT FOR WHAT LAND?

WHAT IS PORTUGAL?

IS THIS AN INDIVIDUAL?



TWO FRIENDS HANGING OUT

I'm multitudes but so is every creature  
 ATOM → single unity  
 NOT REALLY

# \* TAXONOMY AND THE FISH / WOMAN

\* LANGUAGE! words  
with multiple meanings!

- KINGDOM
- PHYLUM
- CLASS
- ORDER
- FAMILY
- GENUS
- SPECIES

DARK TAXA!

(comparison to dark matter or dark genes)

ACADEMIC CENSORSHIP IN TAXONOMY!

"THE INTEGRATIVE  
FUTURE OF  
TAXONOMY"

\* THE FISH / WOMAN NEEDS  
NO KING!

\* SHE CHOOSES HER OWN  
FAMILY!

\* DOESN'T BELONG TO ANY  
CLASS OR ORDER!

THE QUEER SIDE:

SOCRATEA ELYSIA

EUGLENA

plants that don't do photosynthesis  
moving organisms that do.

around us

world

# TAXONOMY

- Identify
- classify
- categorize
- name

Carl Linnaeus (1707 - 1778)

- Kingdom
- Phylum
- Class
- Order
- Family

→ genus → species

look at th

# Kingdom (biology) Summary

Taxonomy Browser

Taxonomic impediment

PARA TAXA

99% of microorganisms

(LANGUAGE)

academic sensorship in different

## TAXONOMY

"The integrative future of taxonomy"

forced taxonomy

Protista

EUGLENA

queerness

SOCRATEA  
ELYSIA

Plant with no photosynthesis and organism that moves but do photosynthesis

TAXONOMIC BROWSER

et Cria





Animalia  
Chordata  
Mammalia  
Carnivora  
Canidae  
Caninae  
Canini  
Canina  
Canis

DOG

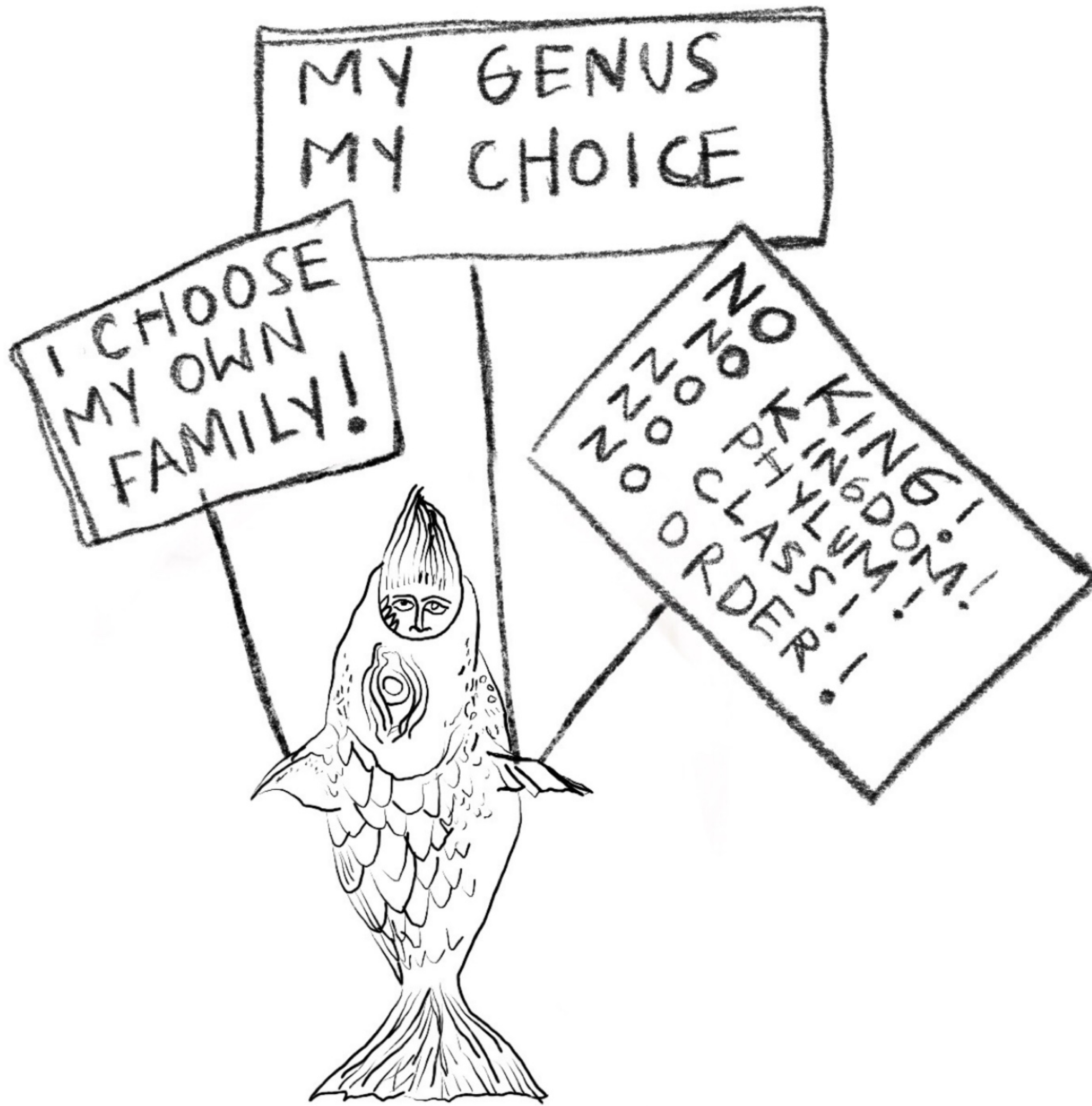
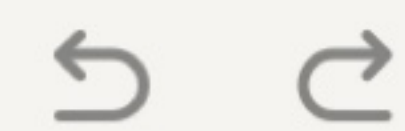


Marta with gills.

↓. a woman  
is also a  
fish



the man from Atlantis



Based on the drawing by Leonora Carrington  
The fish/ woman does not need western  
Taxonomy to tell her who she is

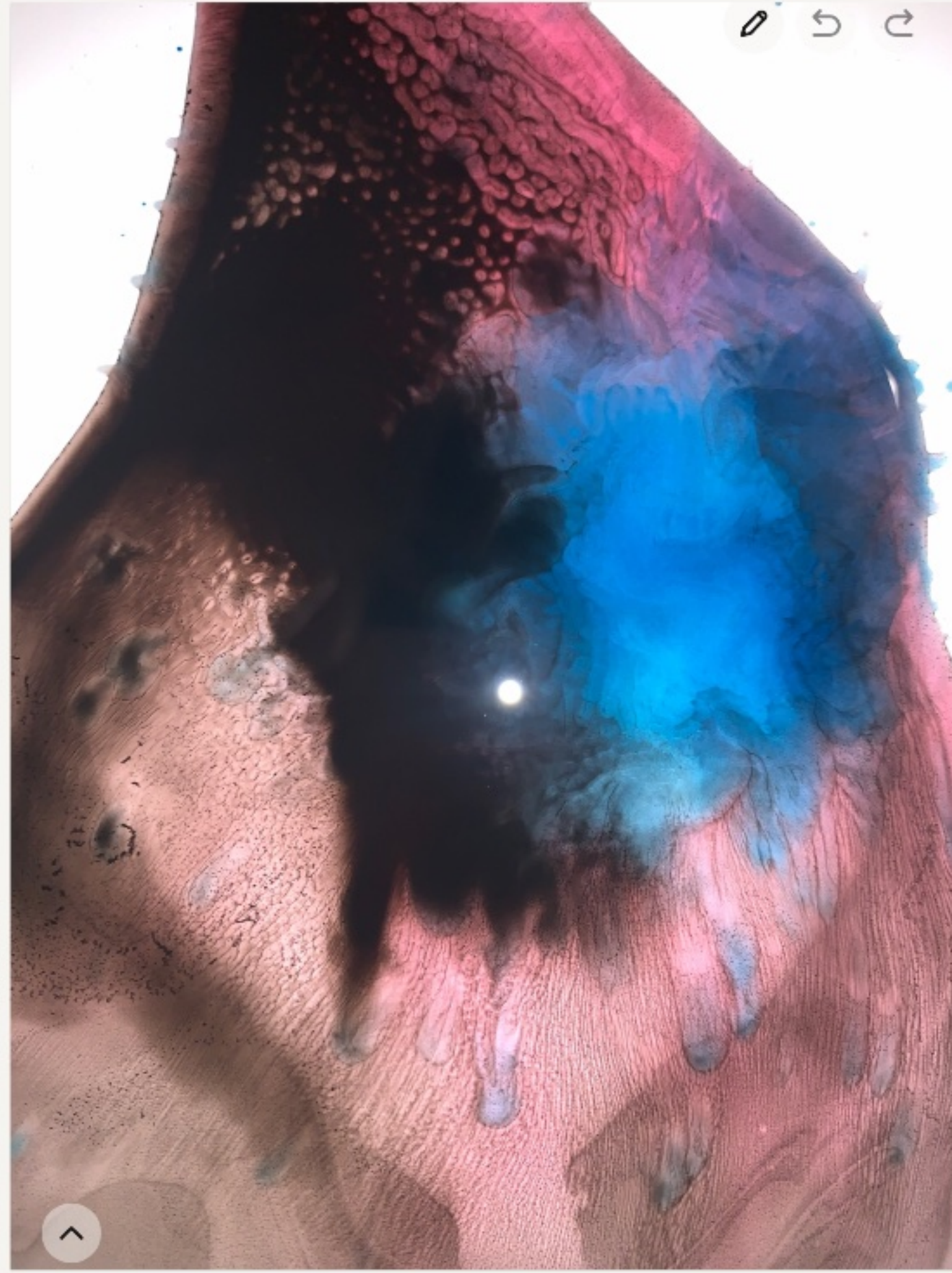


x

River water

MIRA - salty water

- food coloring (blue)
- carbon ink (black)
- drawing ink (pink)
  
- BARN - really humid and dark no wind



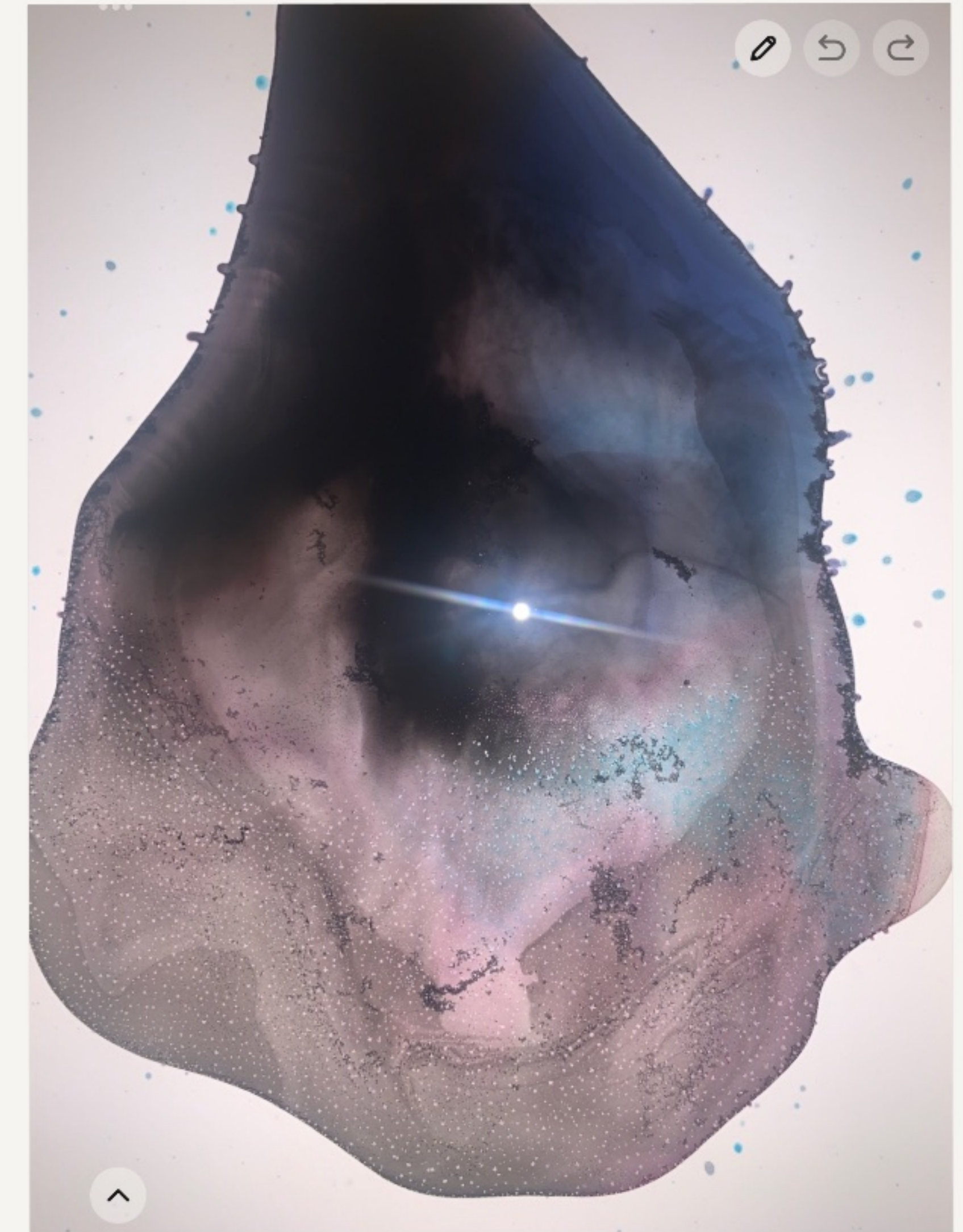
crystals appear after 24 hours

pattern:

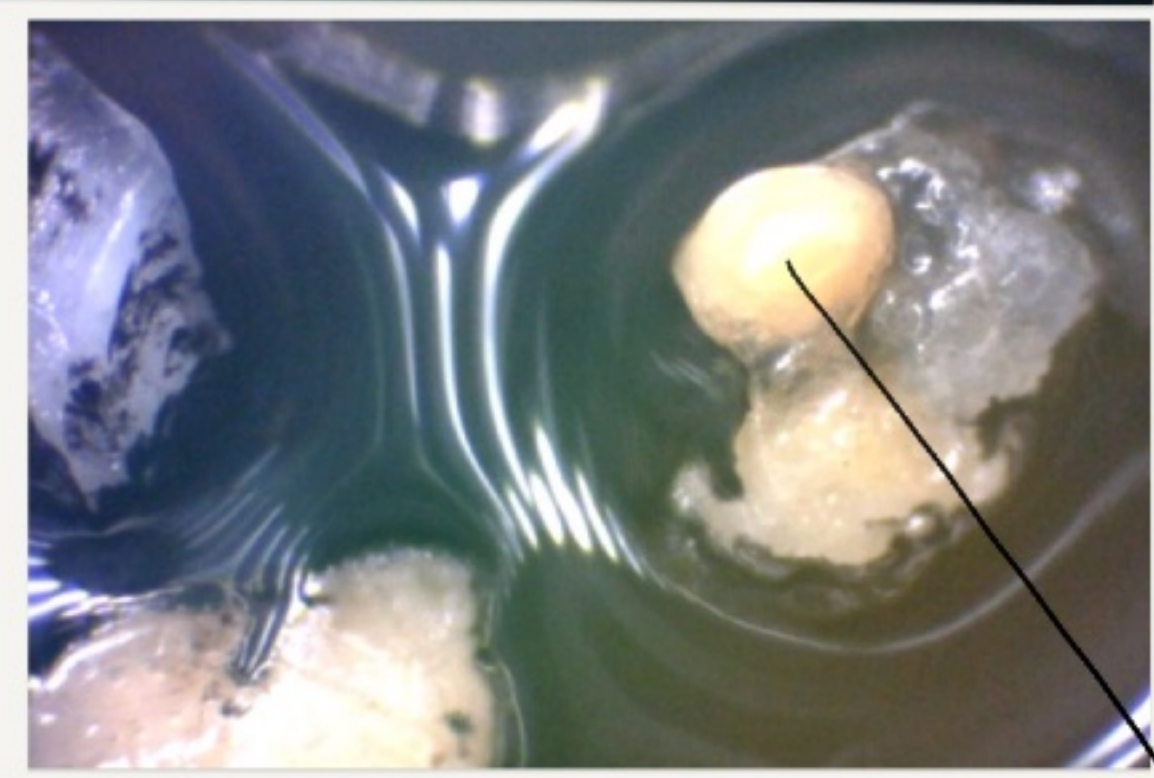
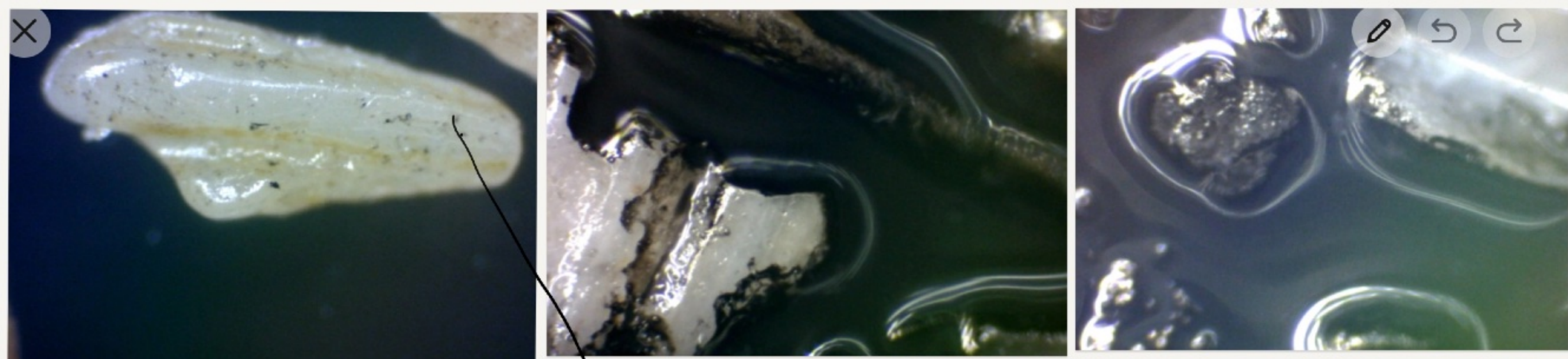
- first the smaller ones form
- less colour

· Stagnation of water makes the crystals bigger and more complex

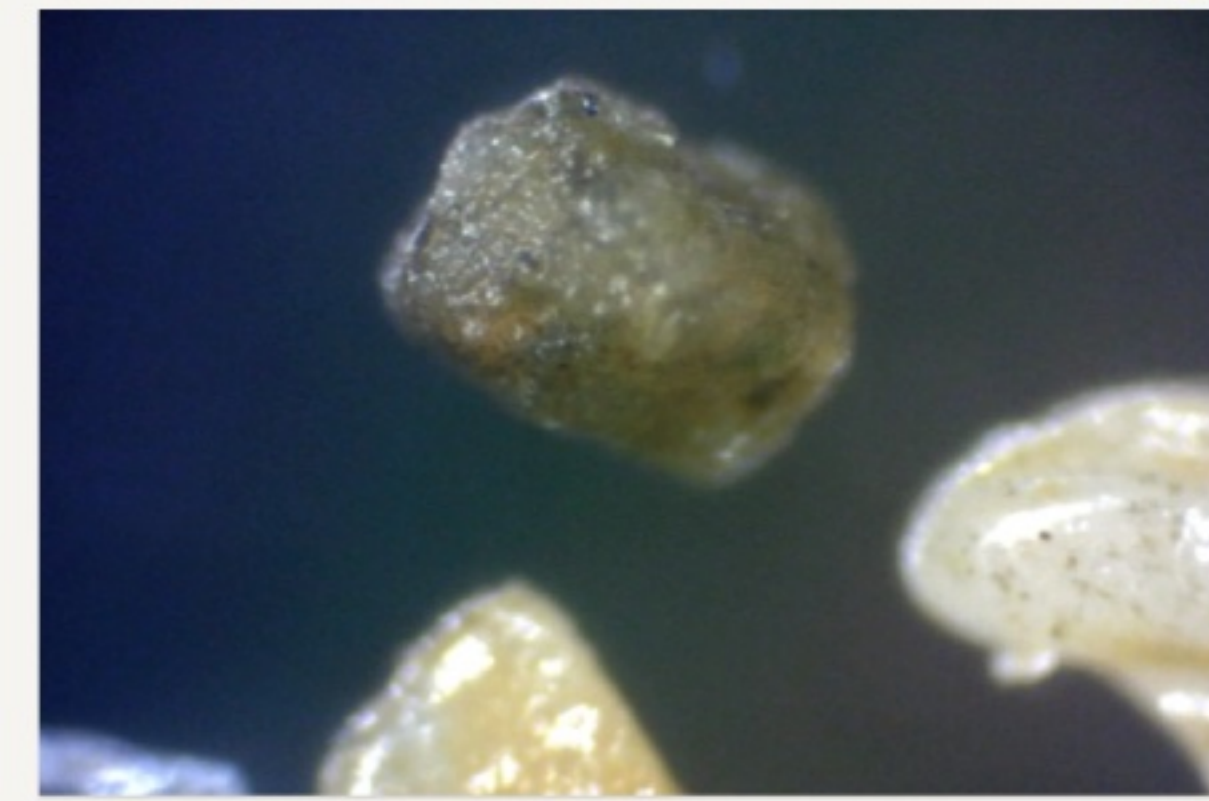
Salt





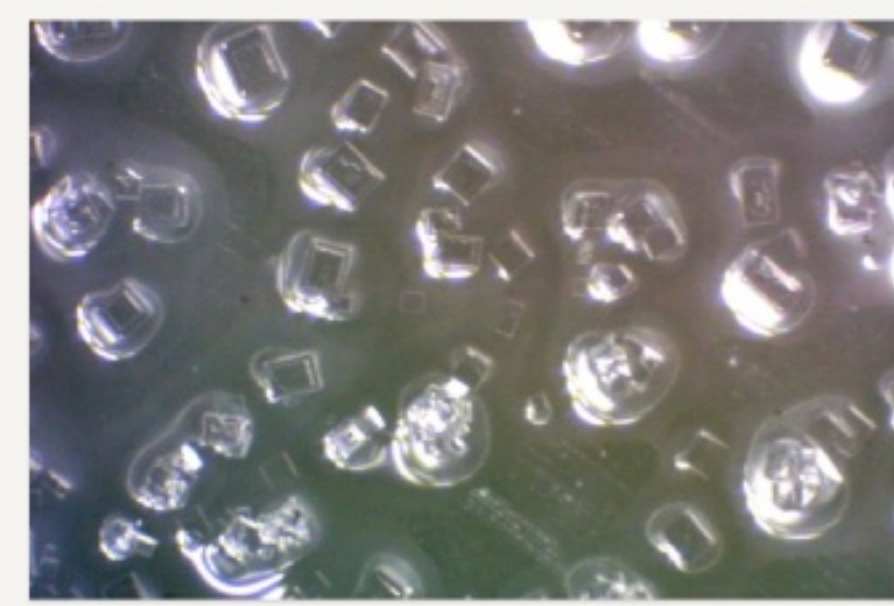


Sand interacting with ink  
 ↙ silicon based  
 ↘ carbon based

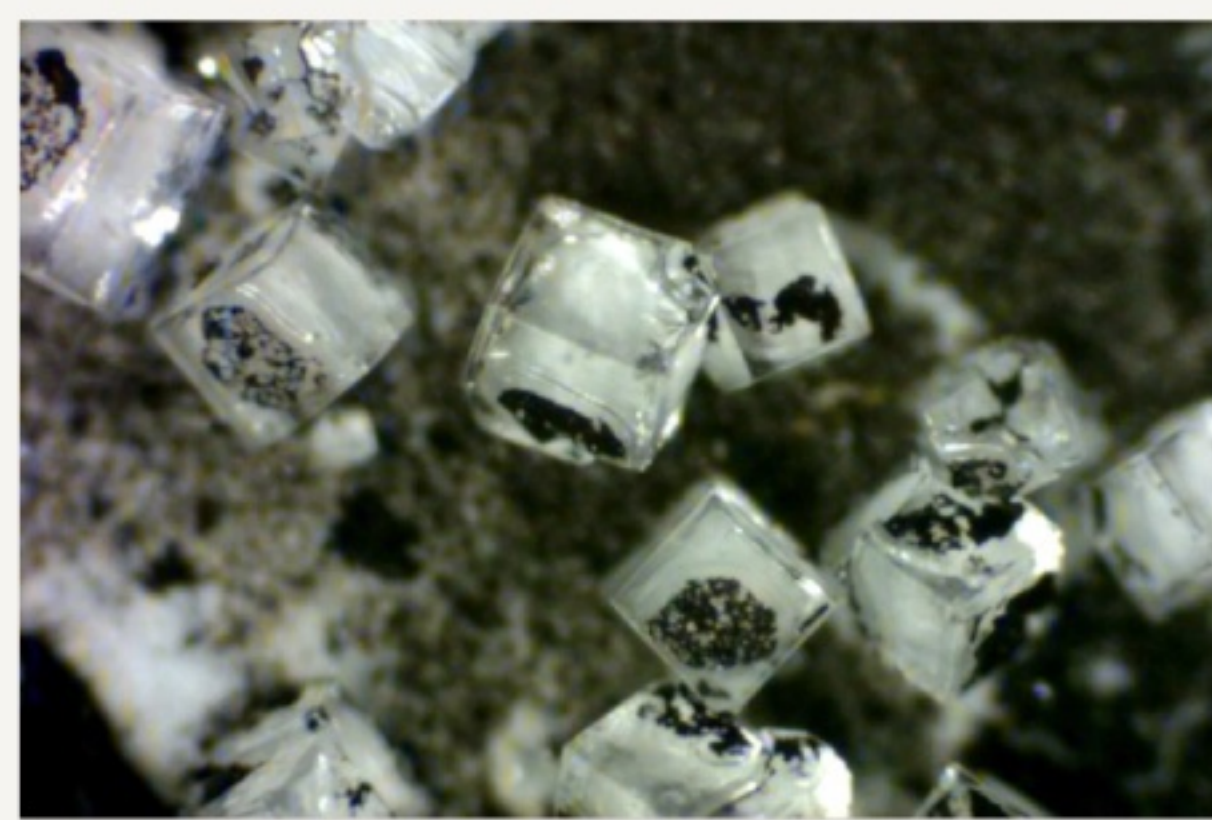


organism?  
 ↘ calcium-carbonate shell

x

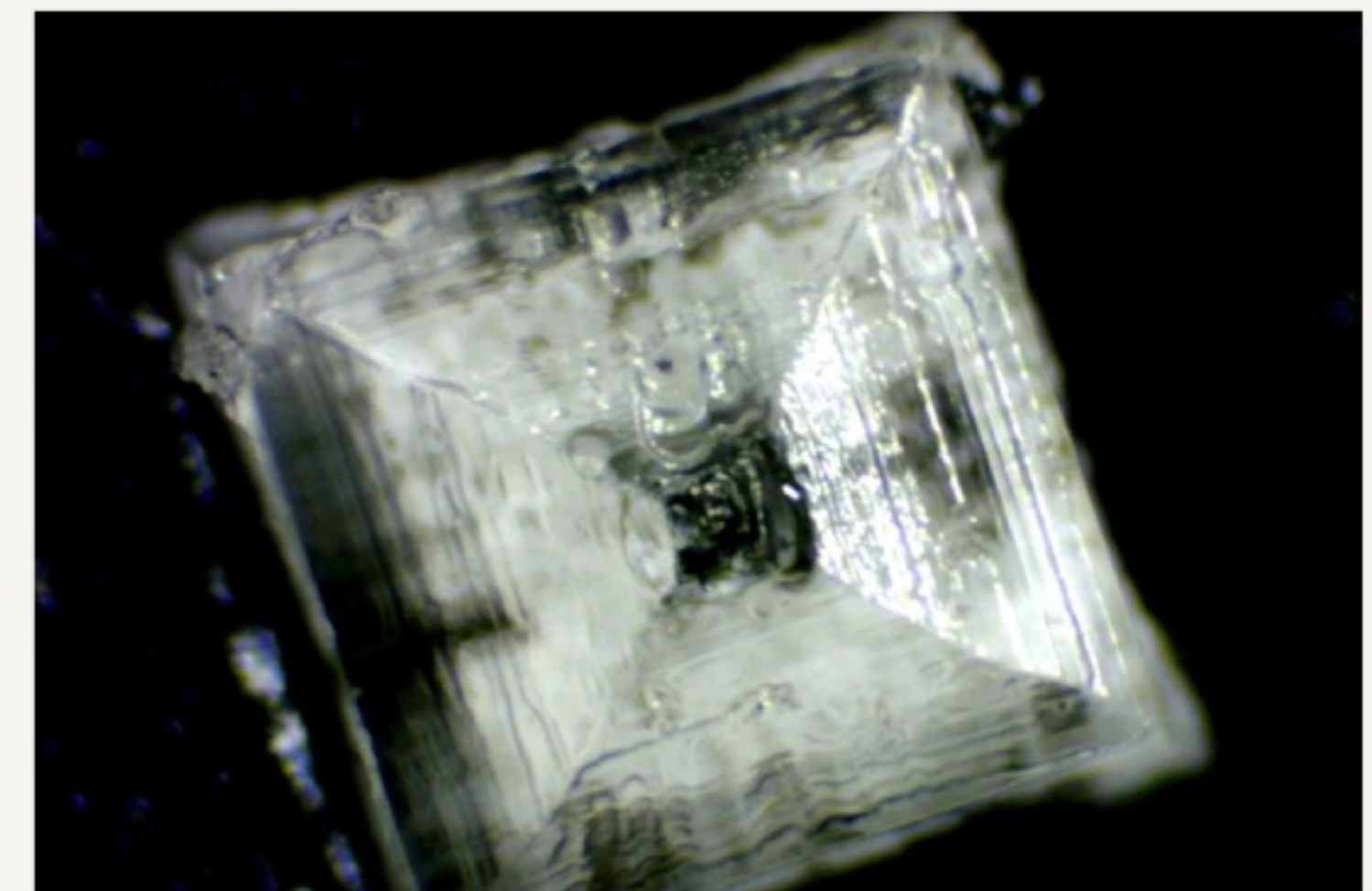


"baby" crystals  
 ↳ grow  
 ↳ children of the sea and the drawings  
 ↳ react to the environment



"cube" stage of salt crystals

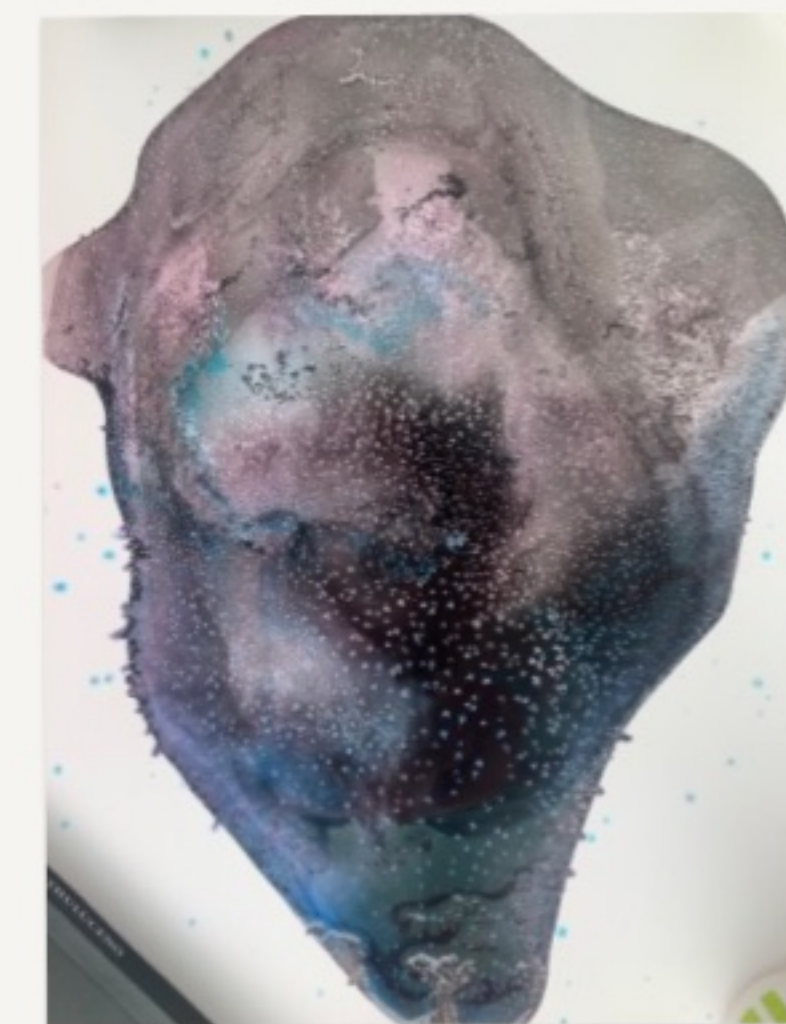
"grown up" crystals = pyramids



o s e

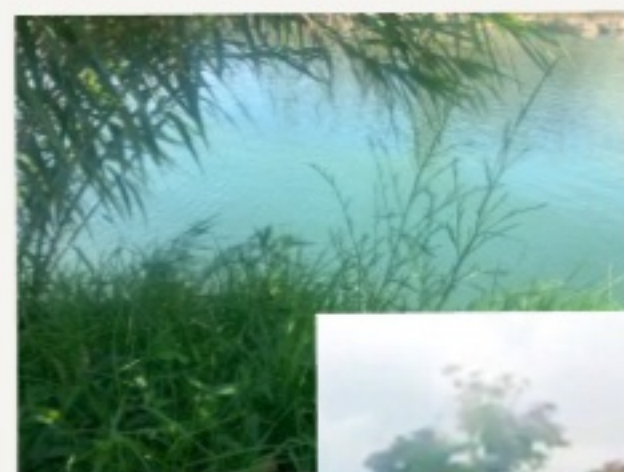
# Types of bodies

what constitutes a body?

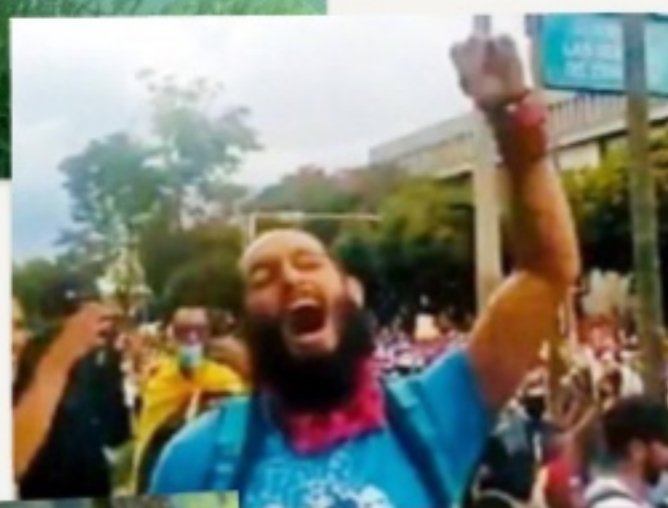


breathes  
moves  
digests  
transforms

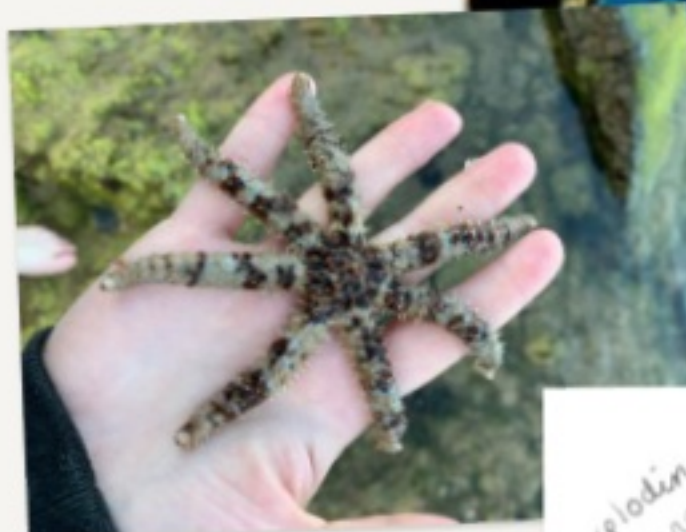
WATER BODY



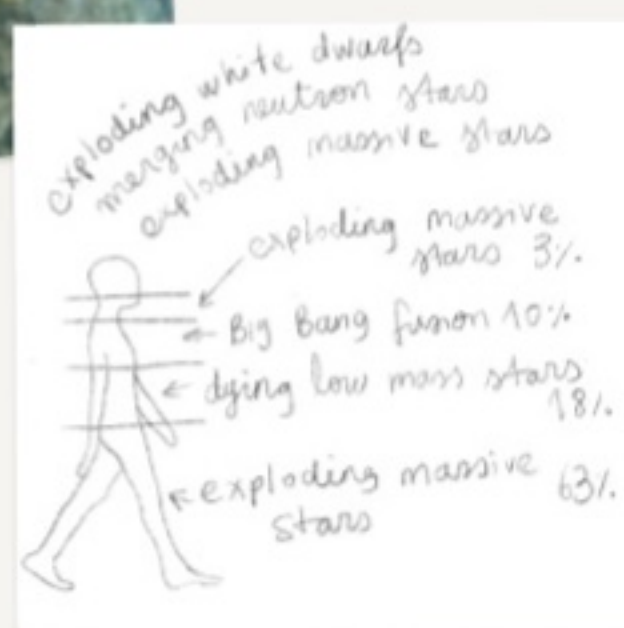
POLITICAL BODY



ANIMAL BODY



POETICAL BODY



ORGANIC / INORGANIC BODY



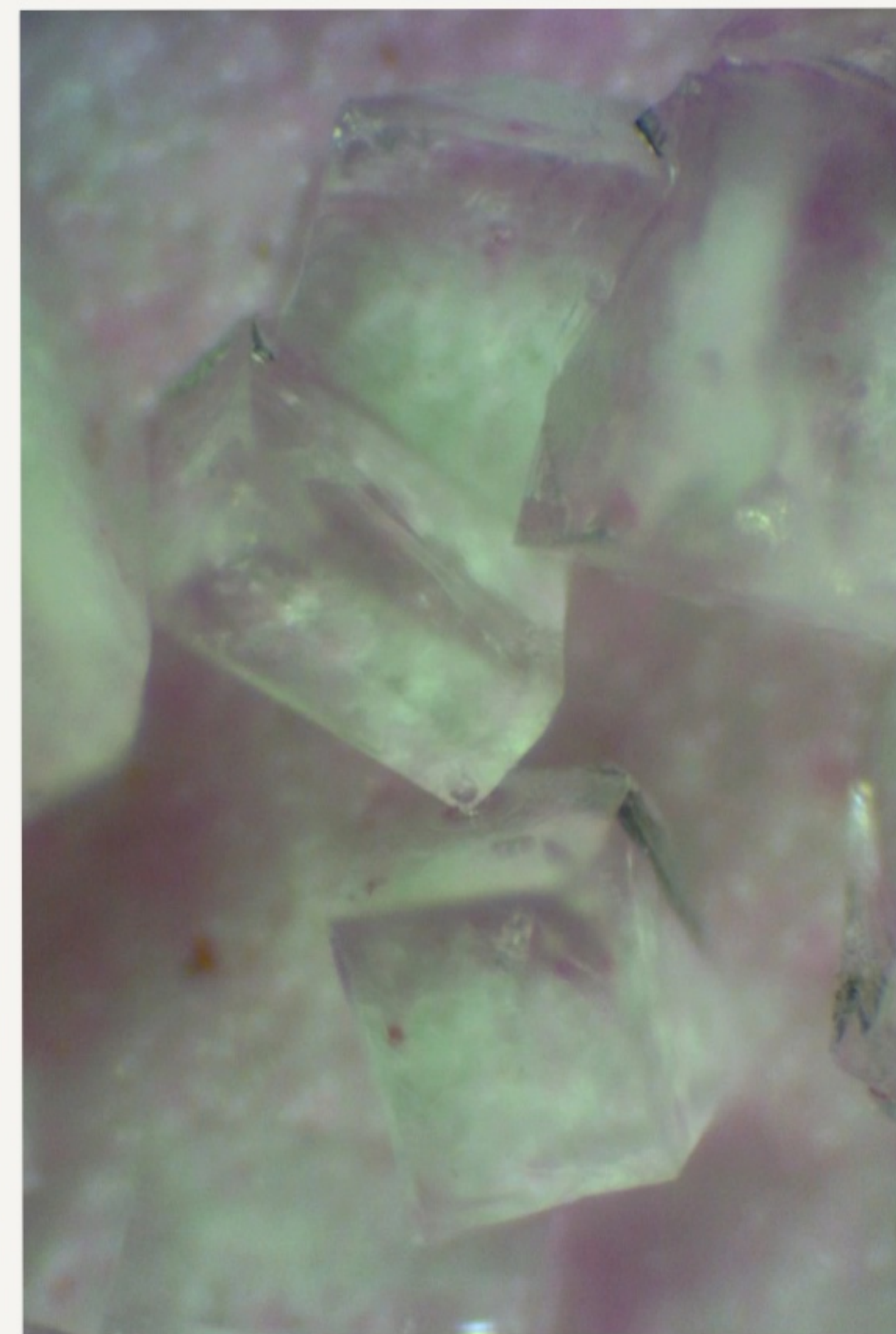
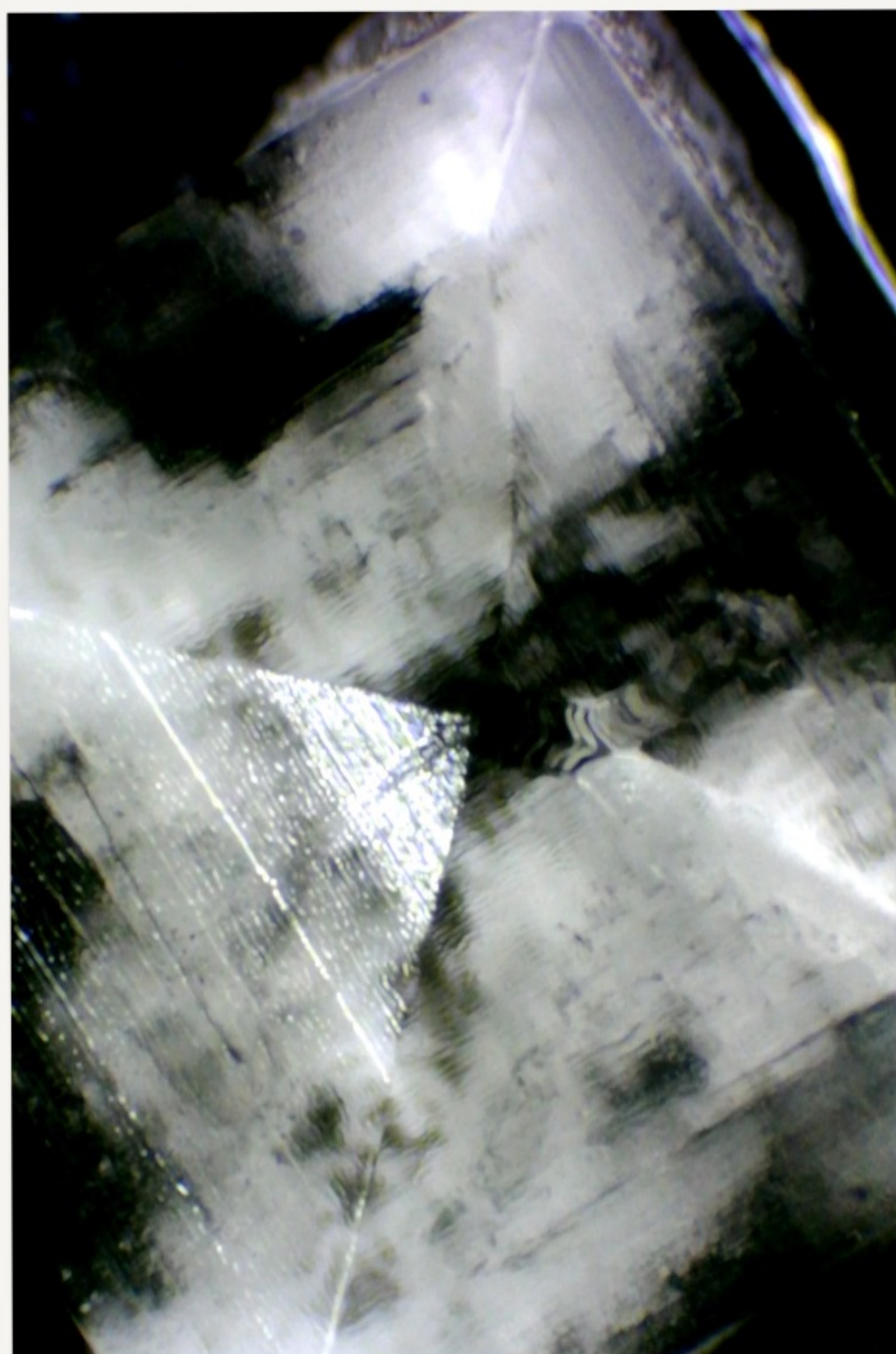
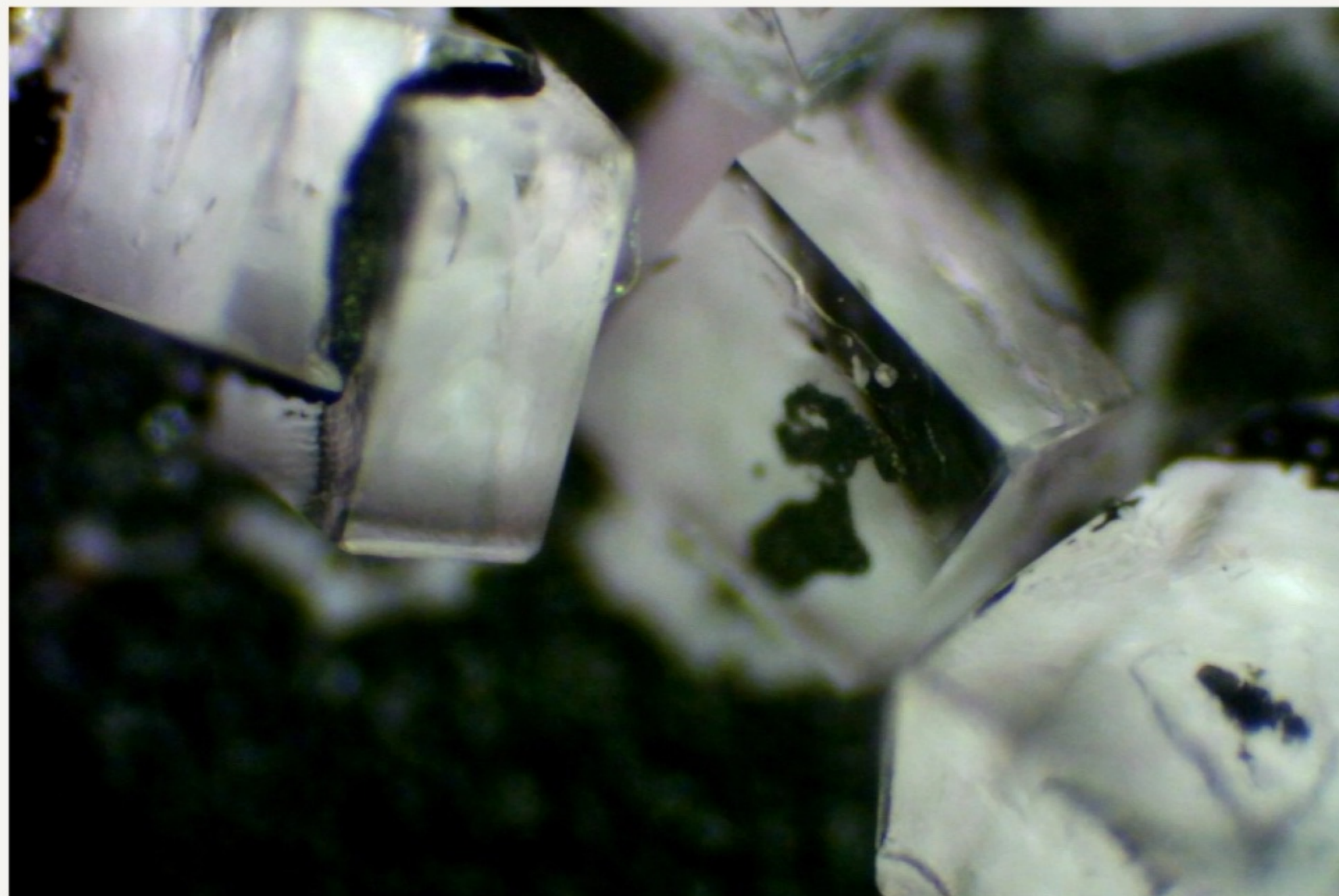
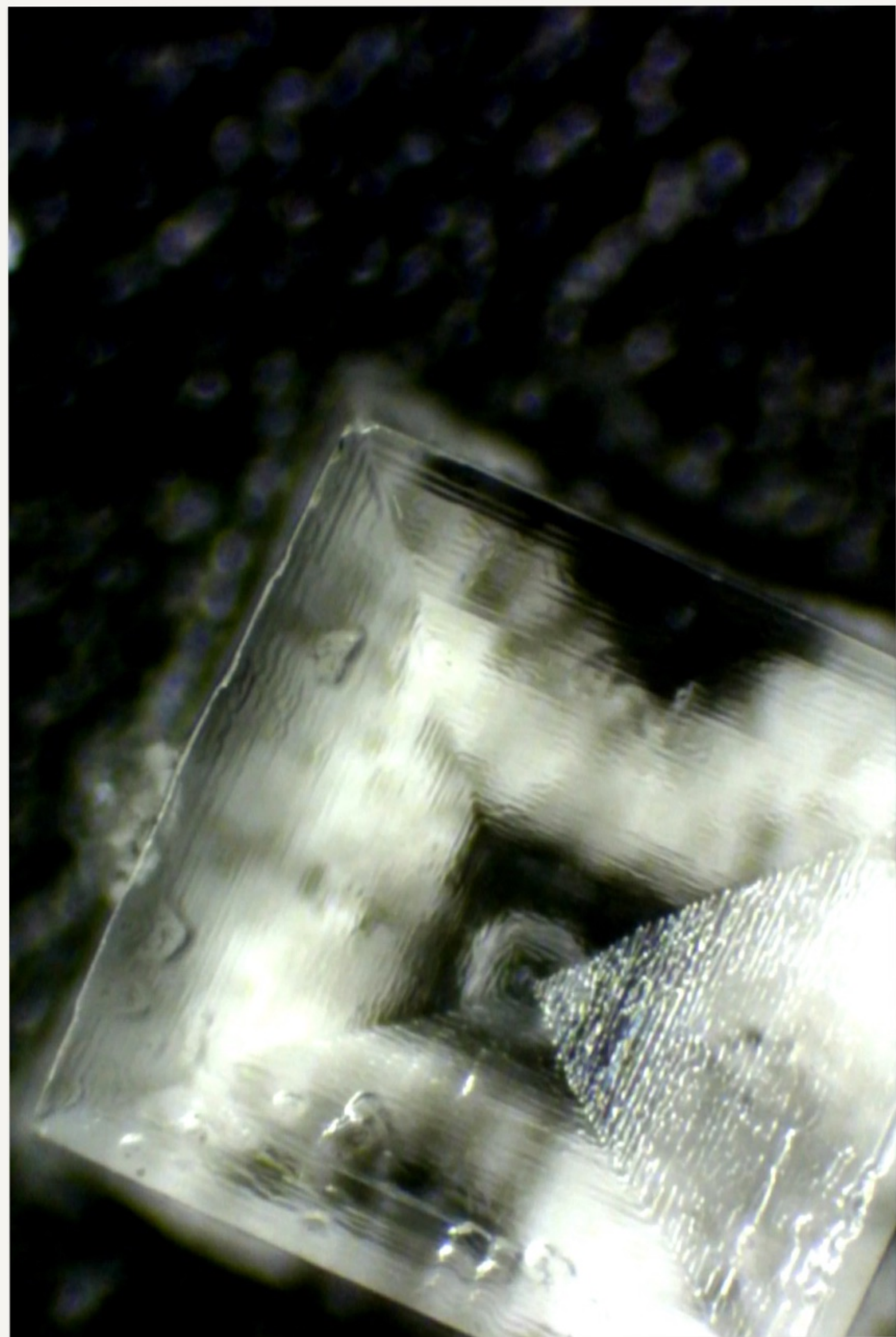
MINERAL BODY



MOLECULAR BODY







# MARTA'S PRESENTATION

Shift in perspective

Empathy

IDENTITY related to the shift in perspective

Trying to understand the perspective of another

You always understand yourself through understanding another

Anything that triggers the shift in perspective is stimulating - mind is challenged to understand it from a different perspective

whose identity?

How far?

can I really understand any other identity besides my own?

What am I willing to trigger to feel the stimulation?

How far away from humans?  
women?  
animals?  
vertebrates?

whose perspective am I changing?

