

Exploring sugar

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Good evening. I wish you peace and blessings.

Recently, I was graced by an extraordinary microscopy session, complete with peculiar and baffling results. The goal was to make crystals of various solutions by placing a drop on a slide and boiling it quickly over a spirit flame. This isn't the best way to make crystals, but it's fast and often has intriguing results. This time, however, everything went explosively wrong, but not in a bad way. I have a lot of stories to tell, but the best one is that of sugar.

The sugar solution I made boiled and boiled but did not produce crystals. It was quite perplexing until all the water was gone, and the remaining sugar immediately caramelized. In hindsight, this sounds obvious. The ensuing syrup was charming and possessed a rich orange color, so I made a couple more batches by heating dry sugar over the flame. Smelled amazing.

The melting process caused plenty of bubbles in the melted sugar, which got trapped in the syrup as it solidified. The melted sugar looked fine, a spot of color here and there, some wonderful fluid dynamics as the sugar diffused. The bubbles, on the other hand, were otherworldly — in that they looked like alien lifeforms. I'll let you judge for yourself.

Viewing Apparatus:

Microscope: Monocular compound light microscope with 10x eyepiece magnification. The objective lens used is 4x (total magnification 40x) unless stated otherwise under the image.

Camera: Mid-range mobile phone camera. No tripod setup. Photos were cropped and adjusted.

Viewing: These specimens did not require stains or special techniques. Certain procedures are listed alongside the pictures.

P.T.O

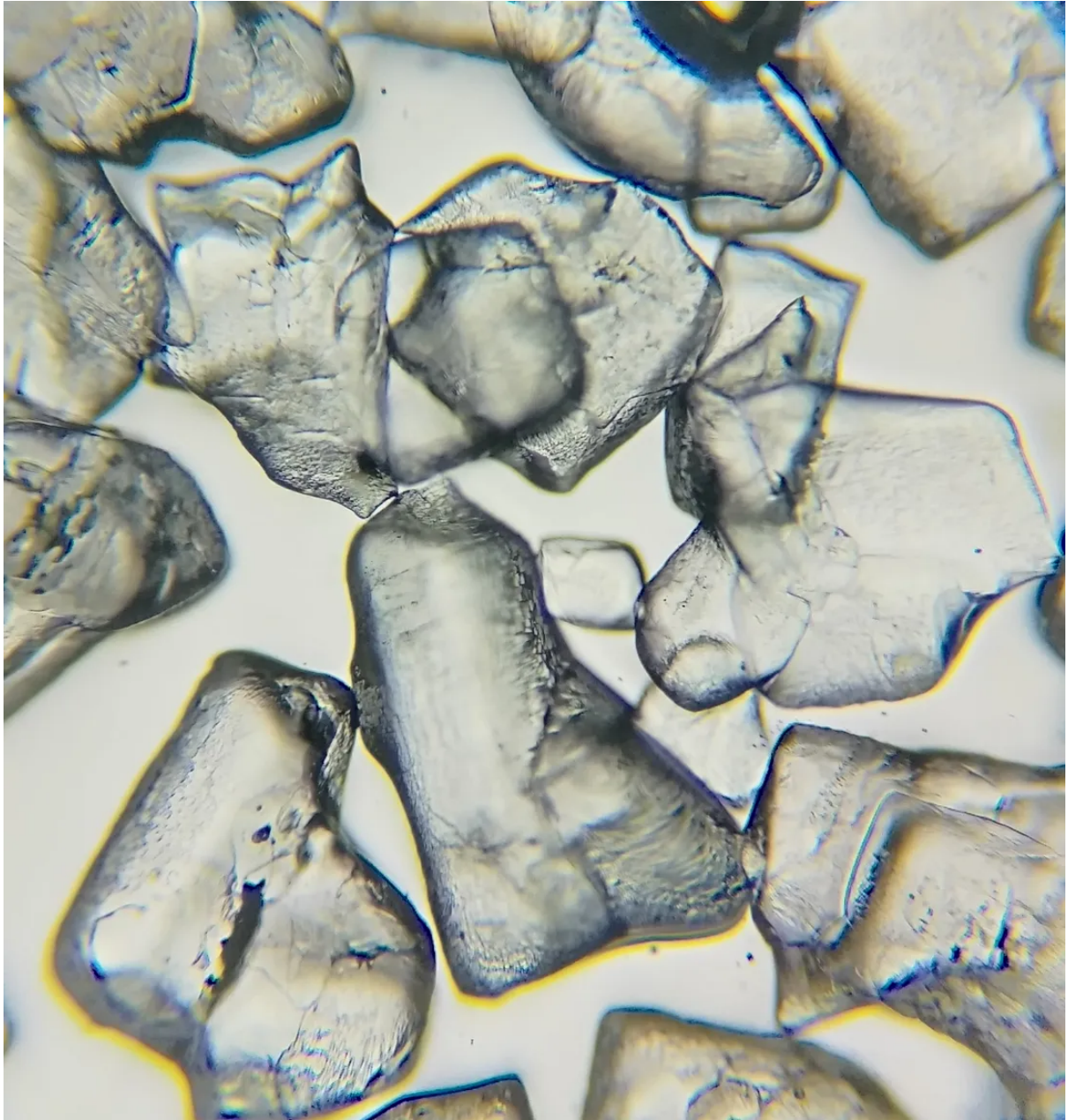
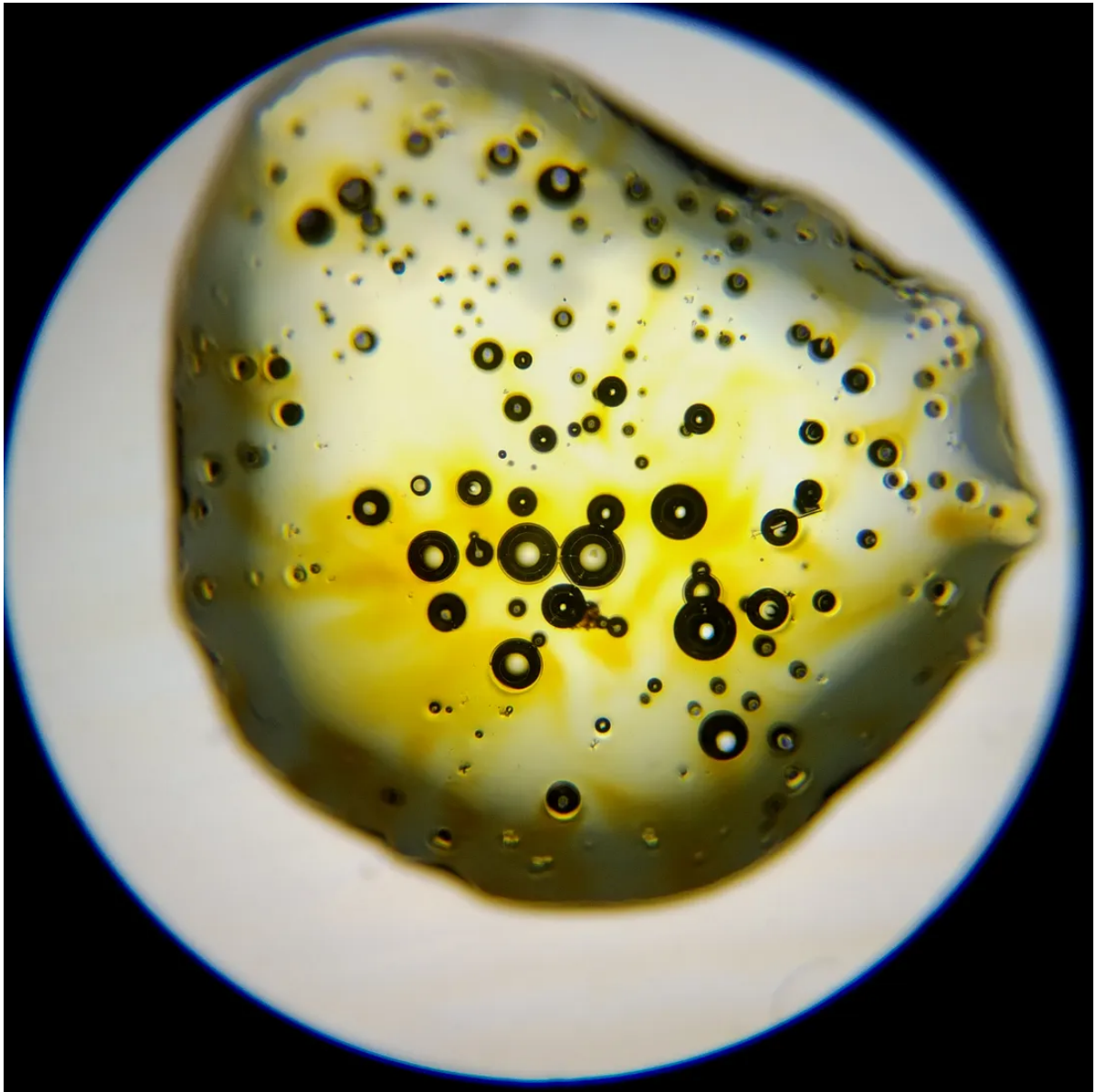
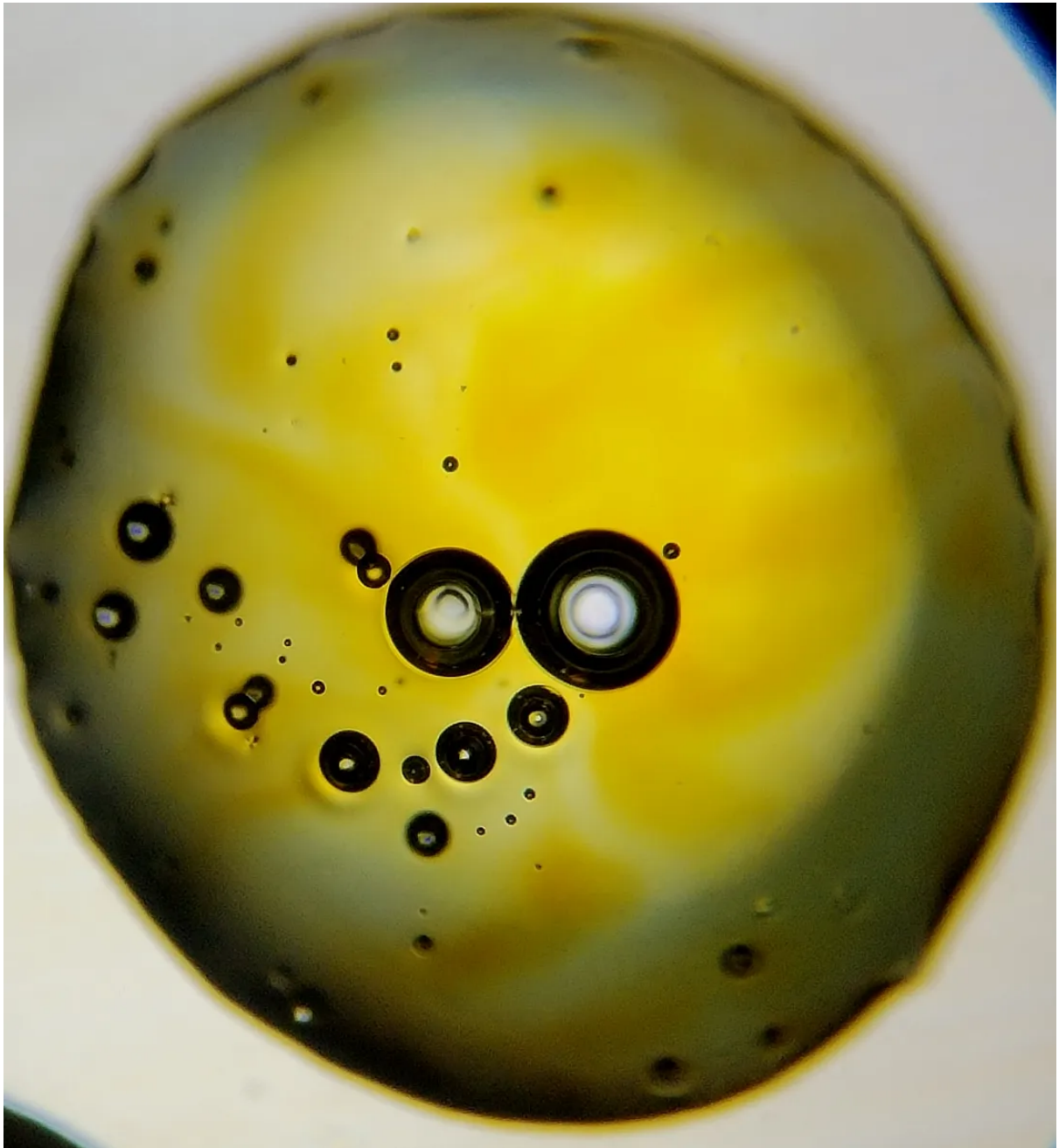


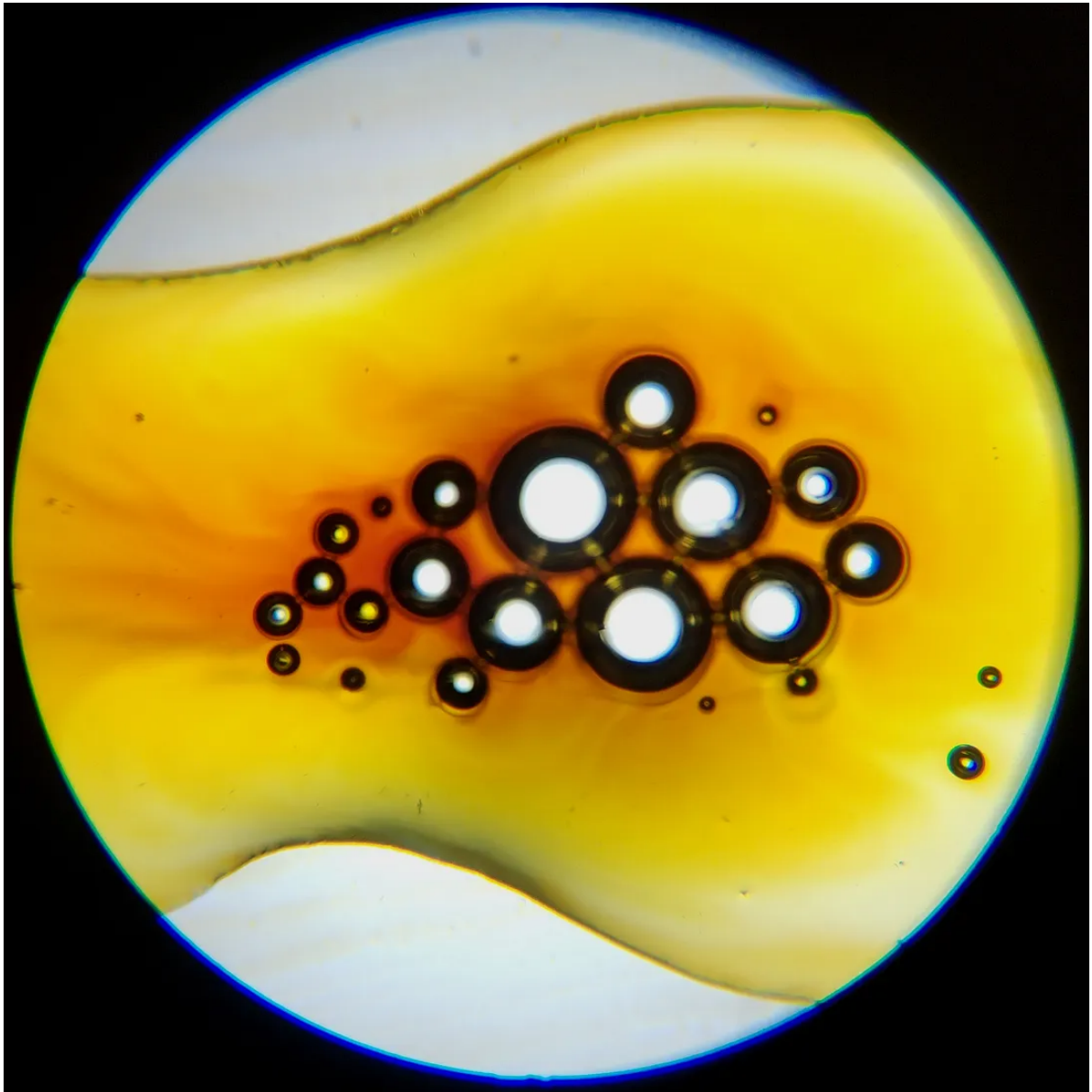
Table Sugar dissolving in water. Dissolution is mesmerizing in itself, actually.



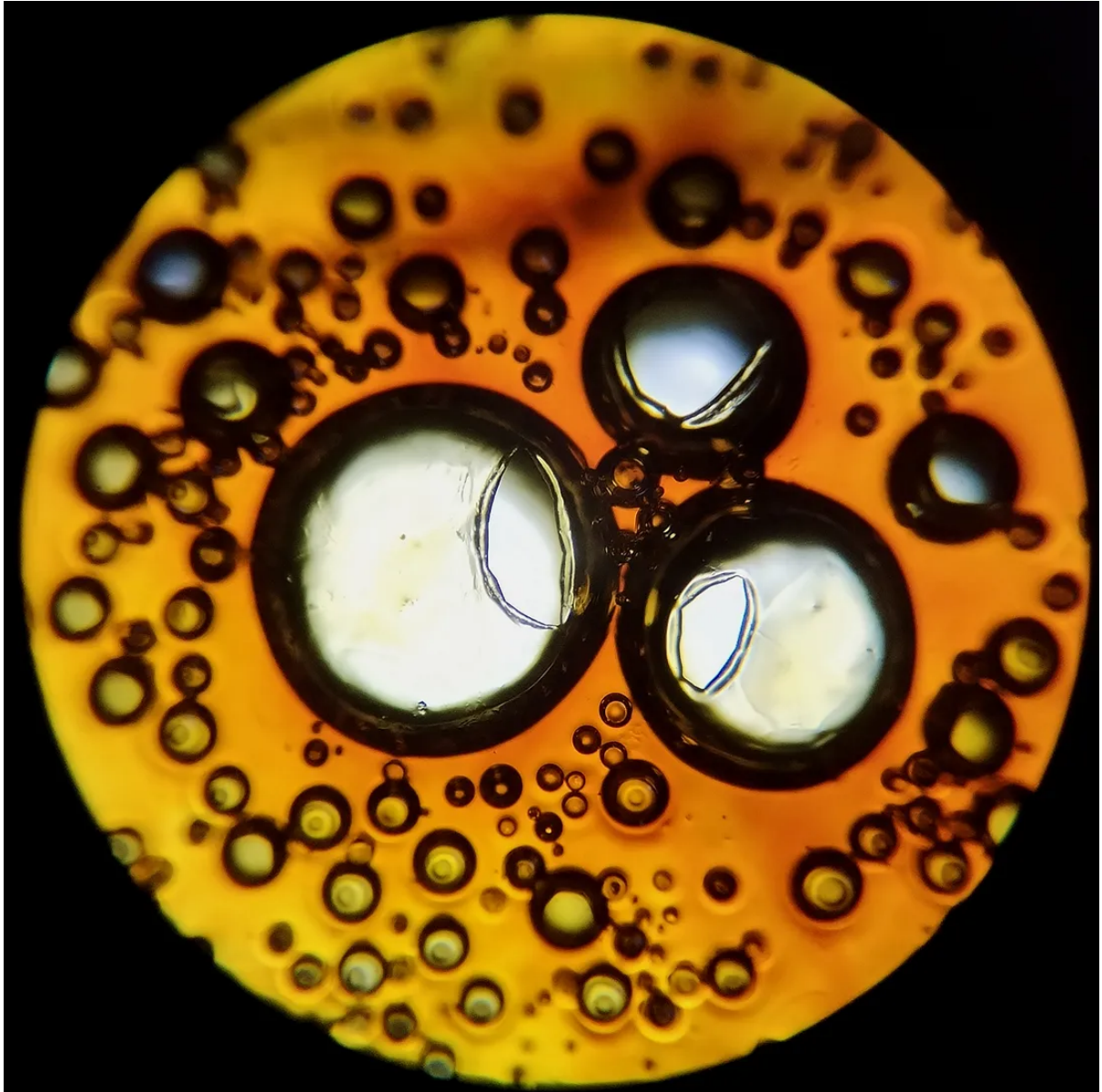
Look at the color, the pale yellow infusing through the droplet. The lovely bubbles, each a spot of white on black.



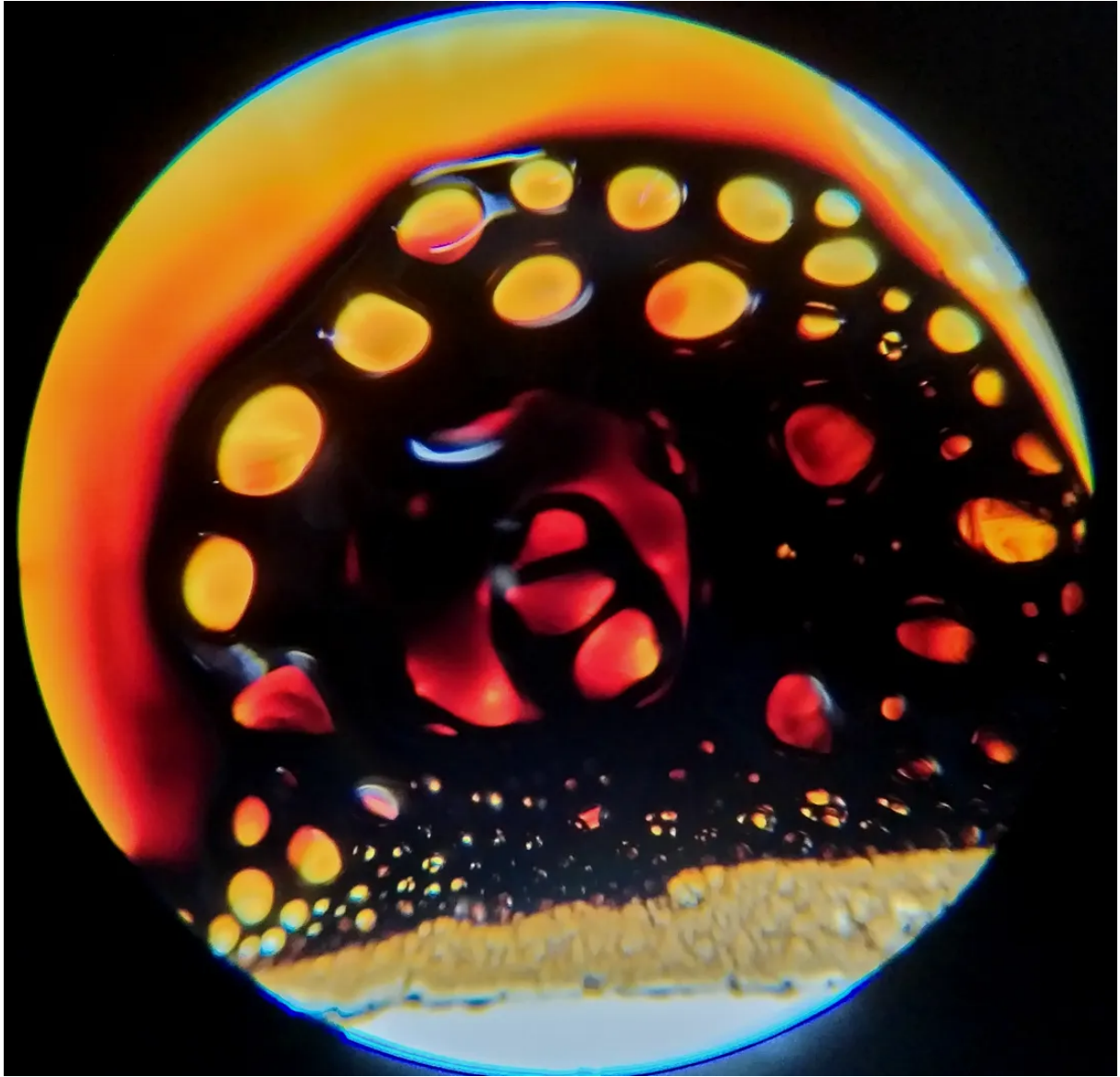
Notice the color. The two bubbles fusing.



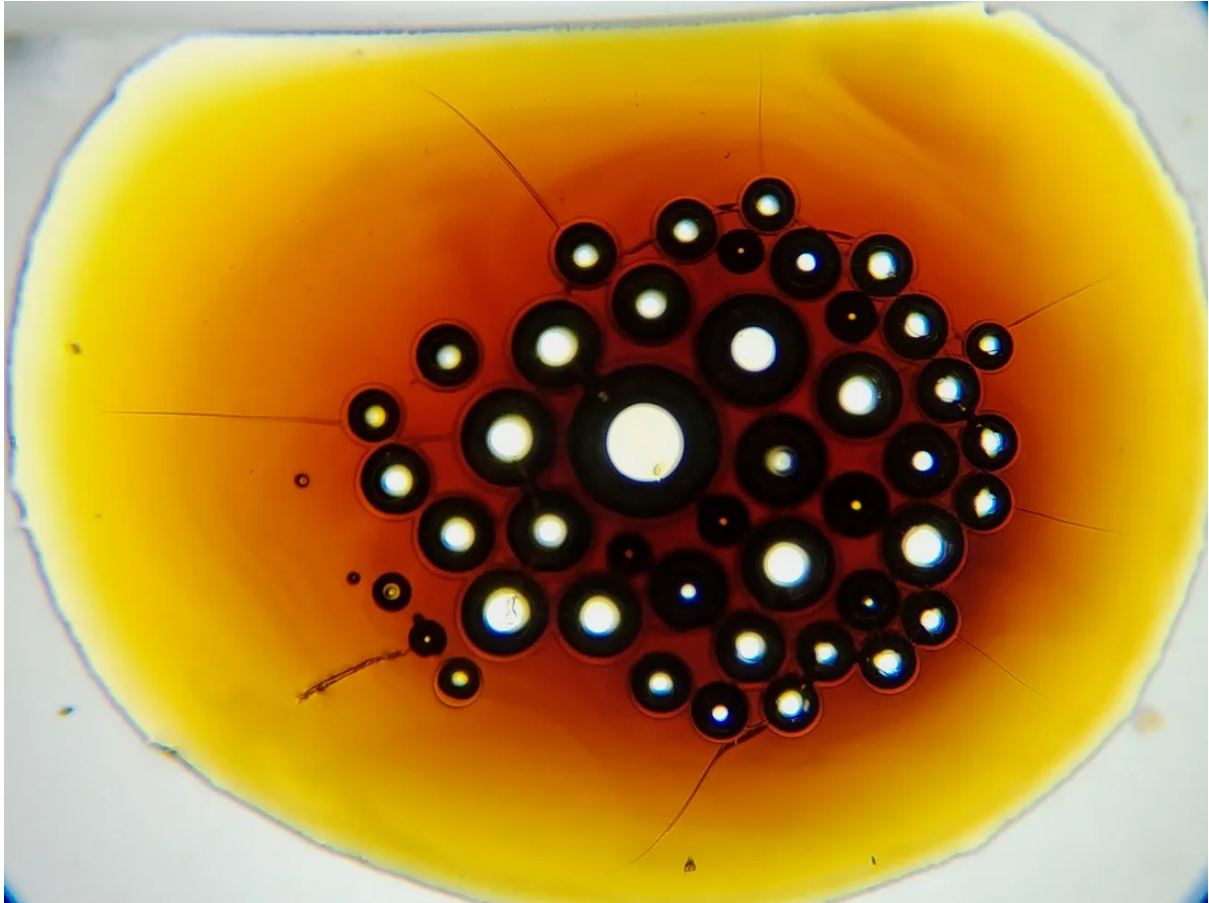
A richer, caramel color. Notice how the orange is wavyly, silkily spreading outwards. Look how the bubbles interconnect, the points where they touch.



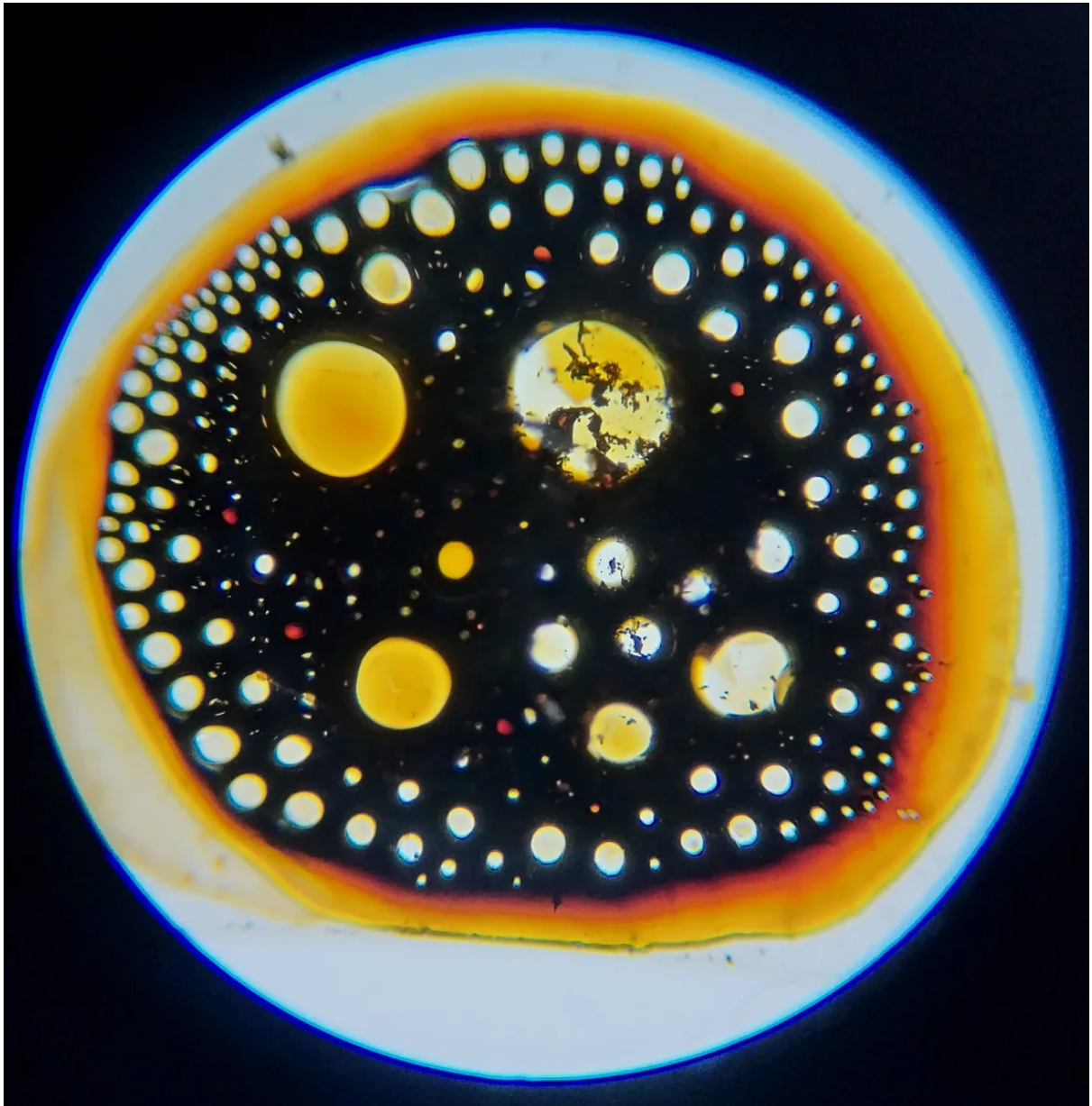
Like big, watery eyes, shattered and searching. The lovely orange background.



Are you getting the alien vibes now? The black muck, the holes, the texture.



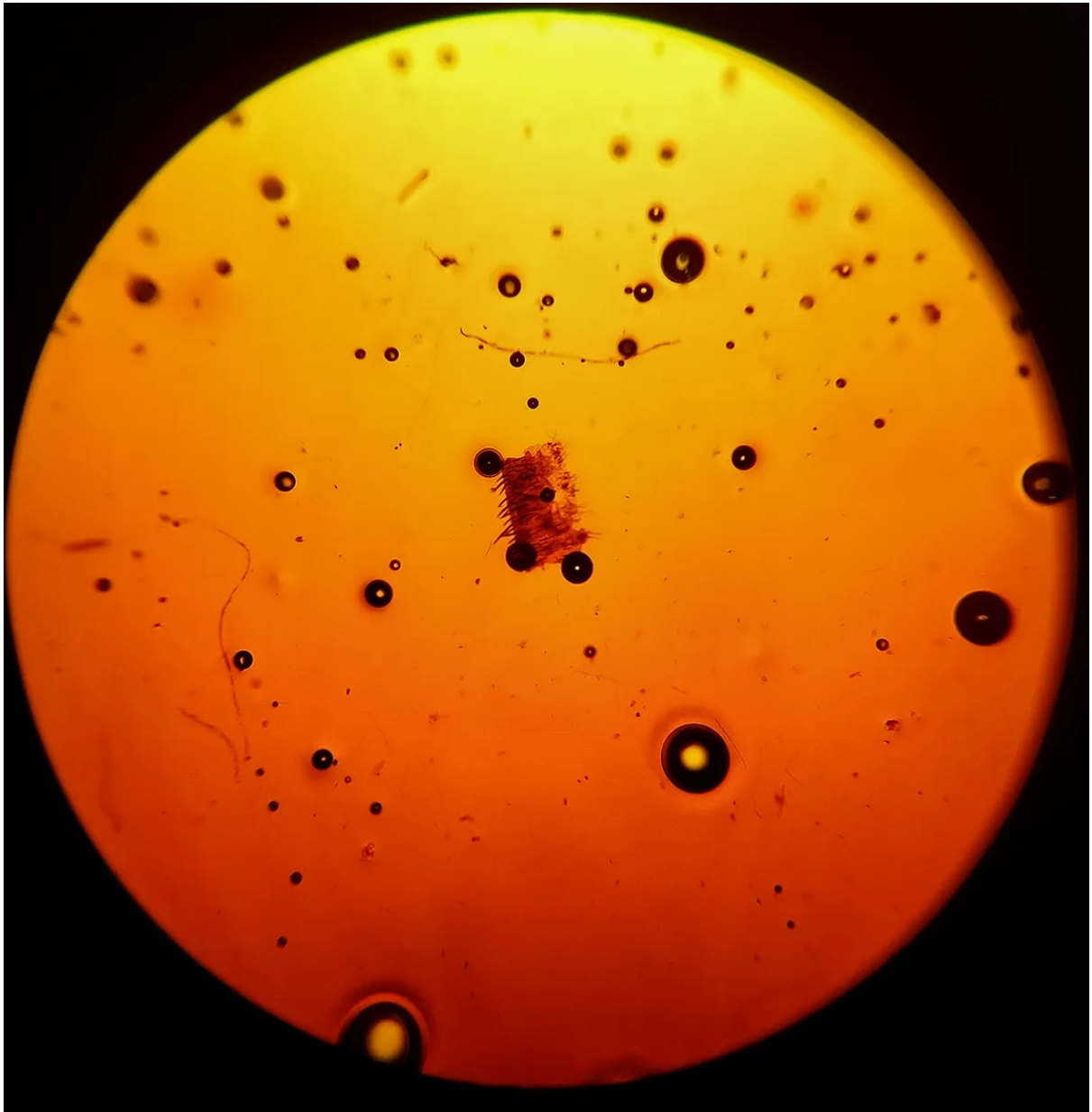
So many bubbles clumped together only evokes alien metaphors. Like a mass of eyes, maybe of the insect variety (isn't it a piercing glare?). It looks peculiar to the point of being creepy. Notice also the thin cracks, like injured glass.



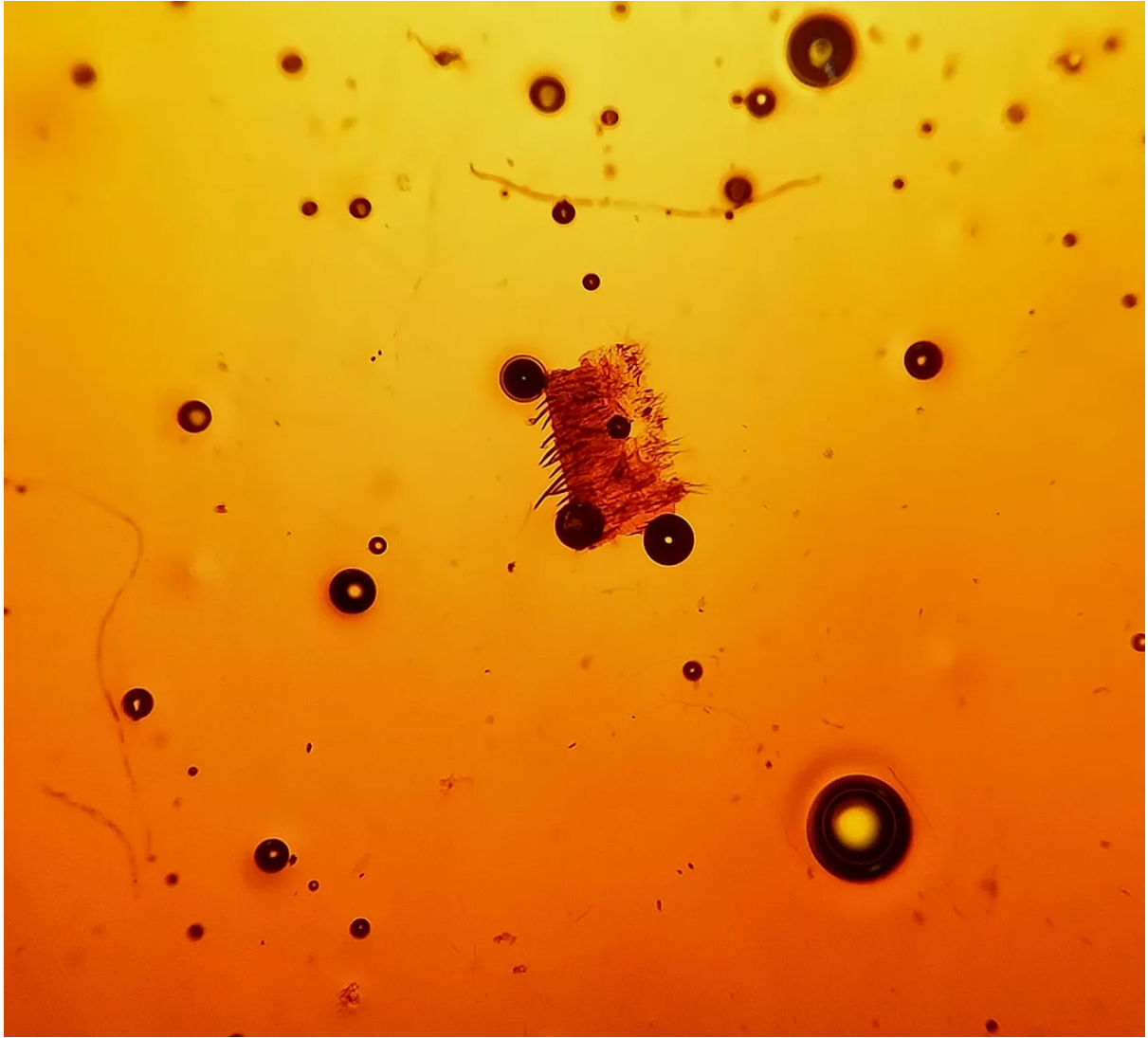
Blackened and smashed. It has the shape of a cell (a parasite, maybe?). Look at the smaller white holes and larger orange ones. The orange border with a gradient. It has an unpleasant aura, but I still love it.



Unique. The lush orange-red background, the backdrop of blurry bubbles, the central circle, the shape inside, like tears welling, fluid and bulbous.



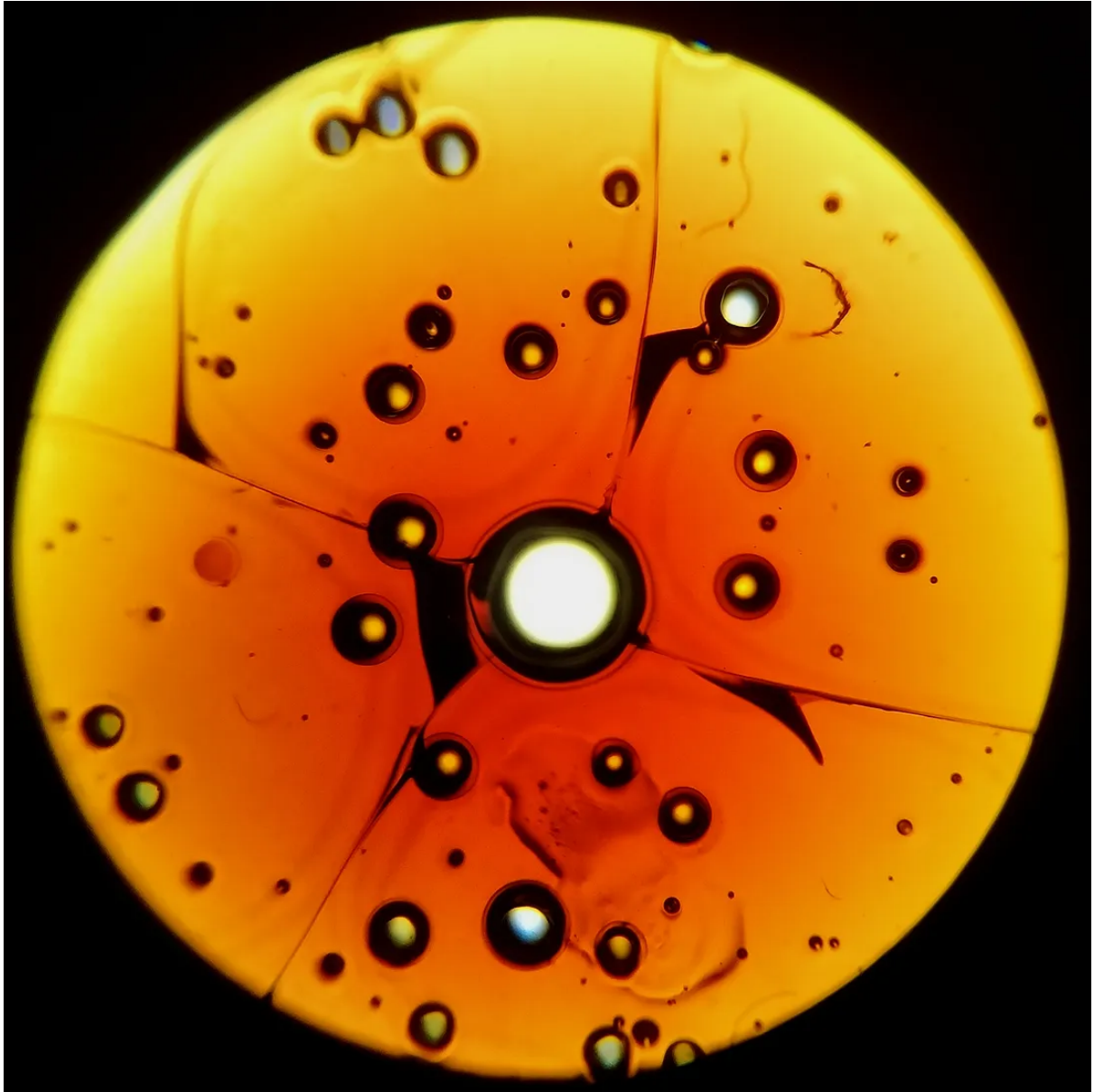
Meet my friend. I don't know what he is.



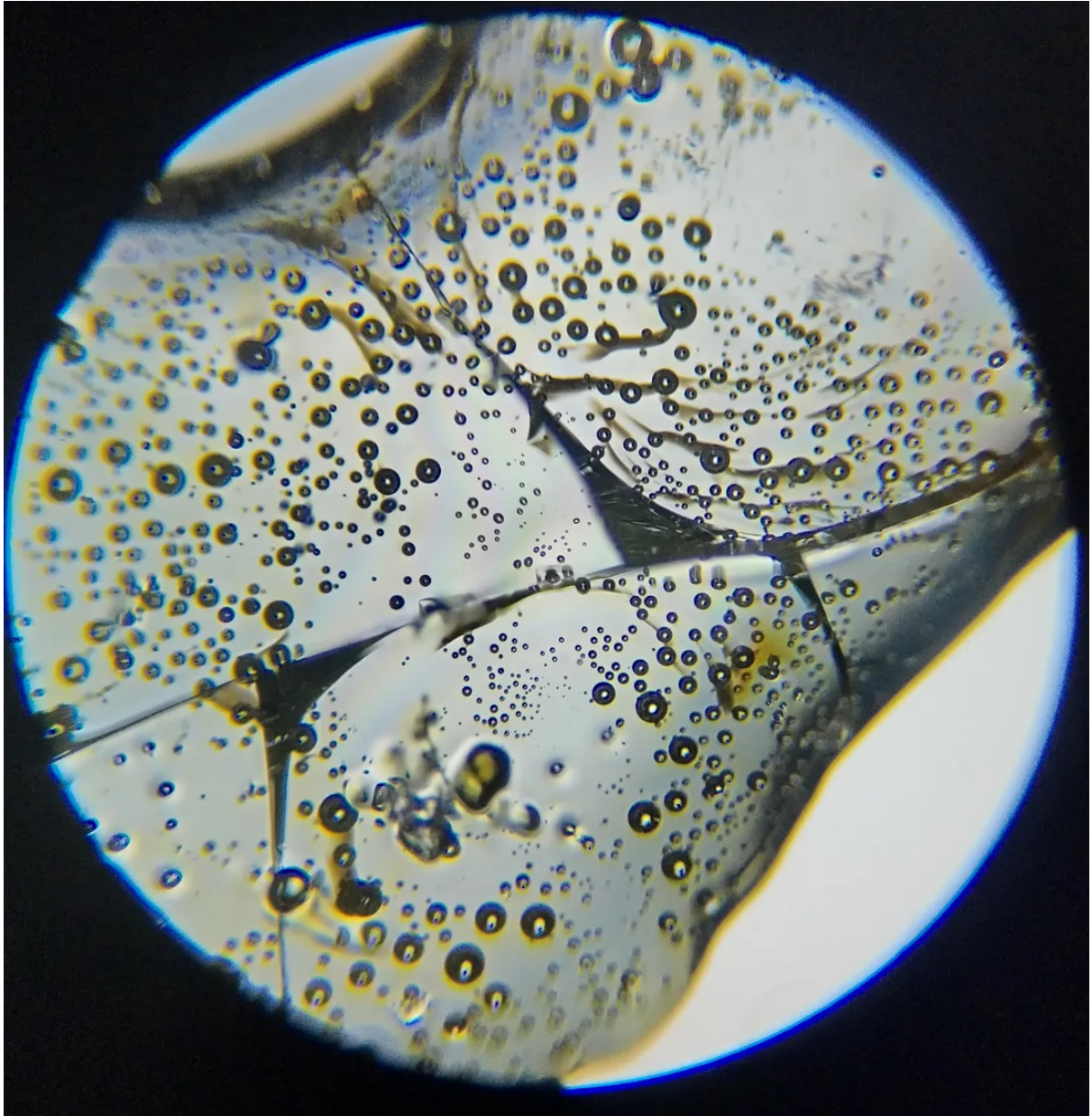
Close up. It's so hairy and bizarre. Almost as small as the bubbles. Rectangular with a dot for an eye, nestled between three bubbles.



Closer up. He has so much personality. Gives you the creepy sensation of being looked at. I feel like he's sentient, that I can get to know him. Notice his sharp hairs, his shape and texture, the impression he makes. (100x total)

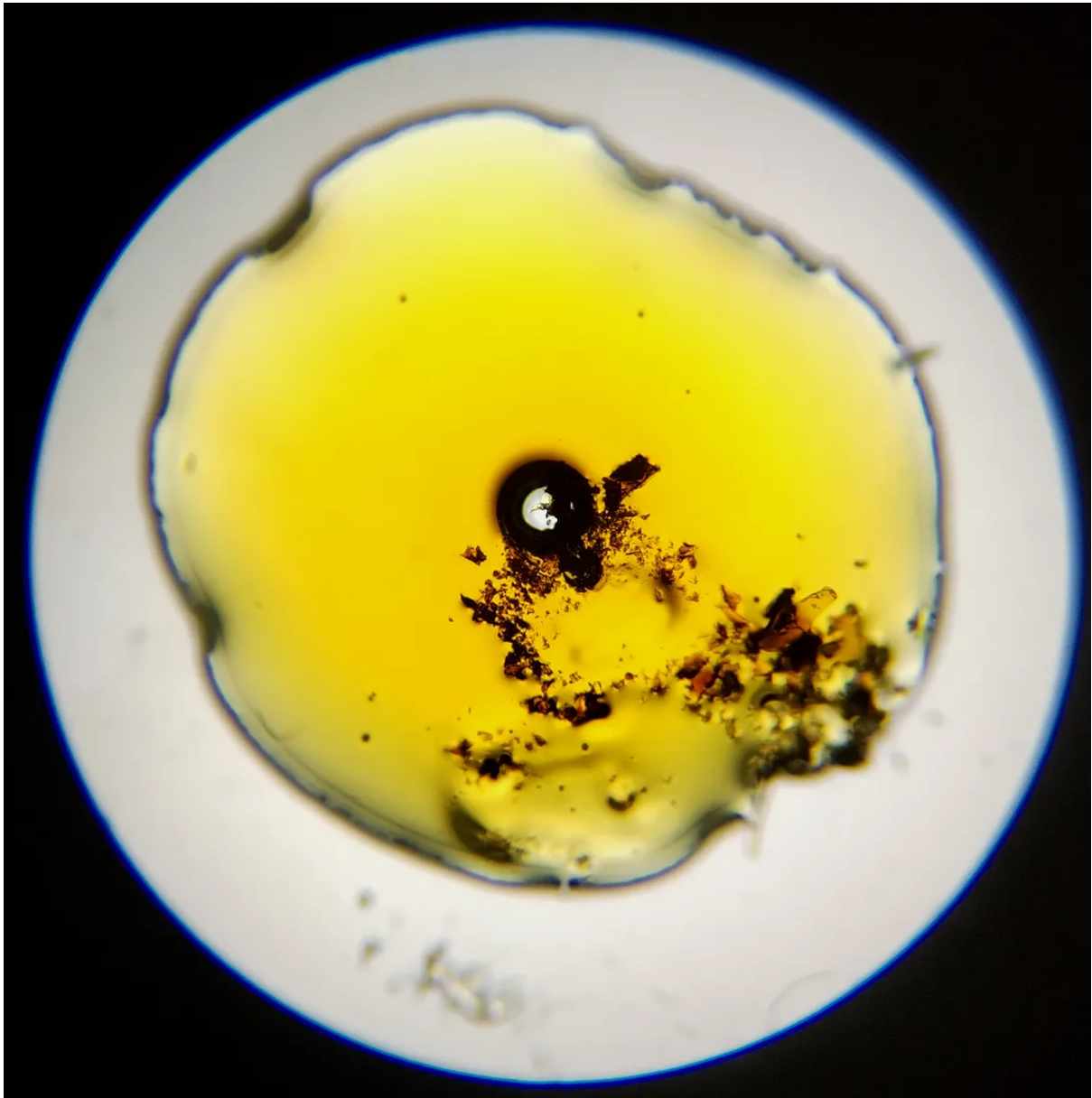


Shattered. broken. The arresting bubble, the cracks spreading outwards, the shards, the fading orange gradient, the tiny, barely discernable fluid texture. It's beautiful.

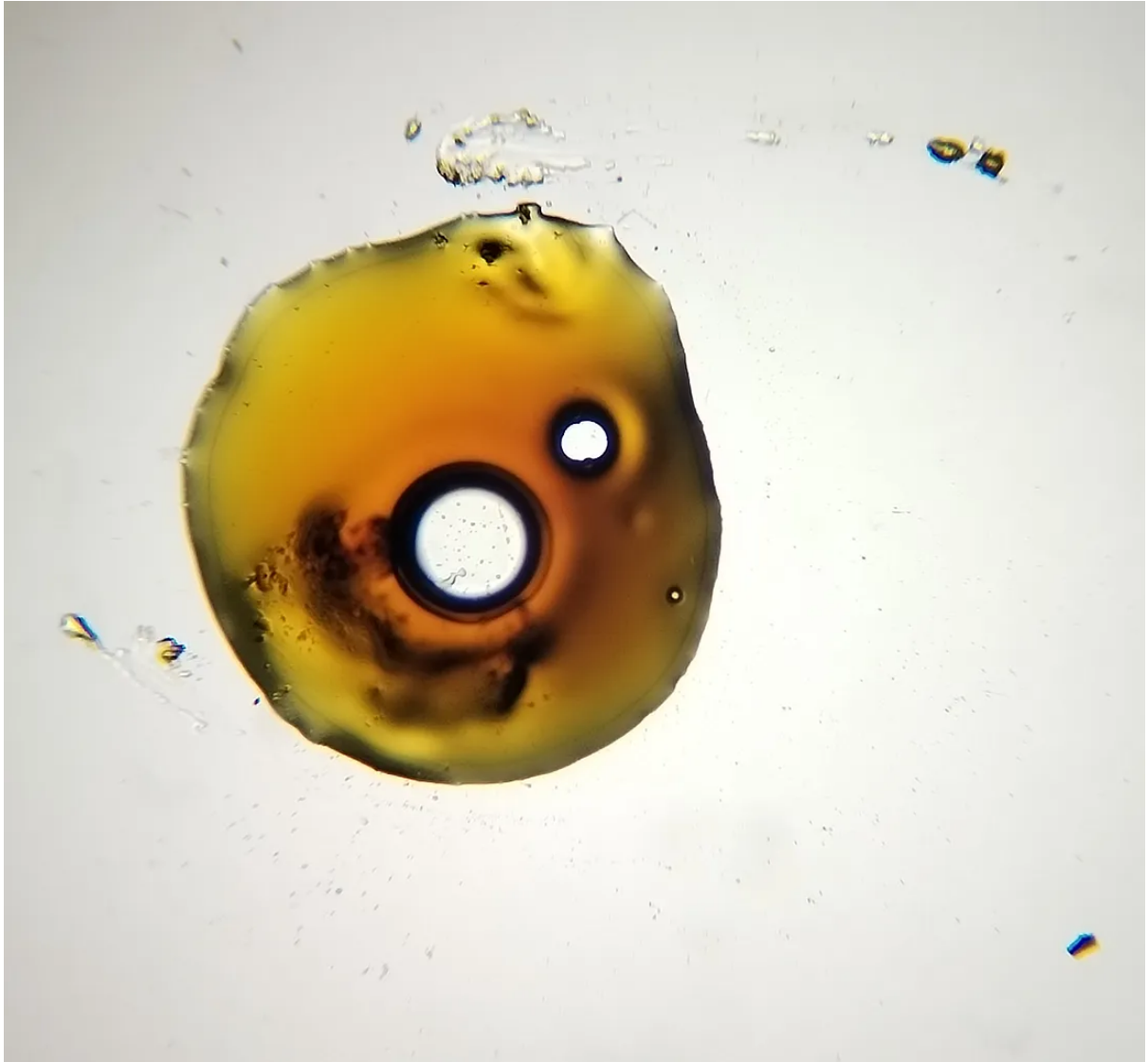


This looks like proper shattered glass. The lack of color highlights the cracks and disfigurations. Notice also that the bubbles are smaller, with weaker personalities.

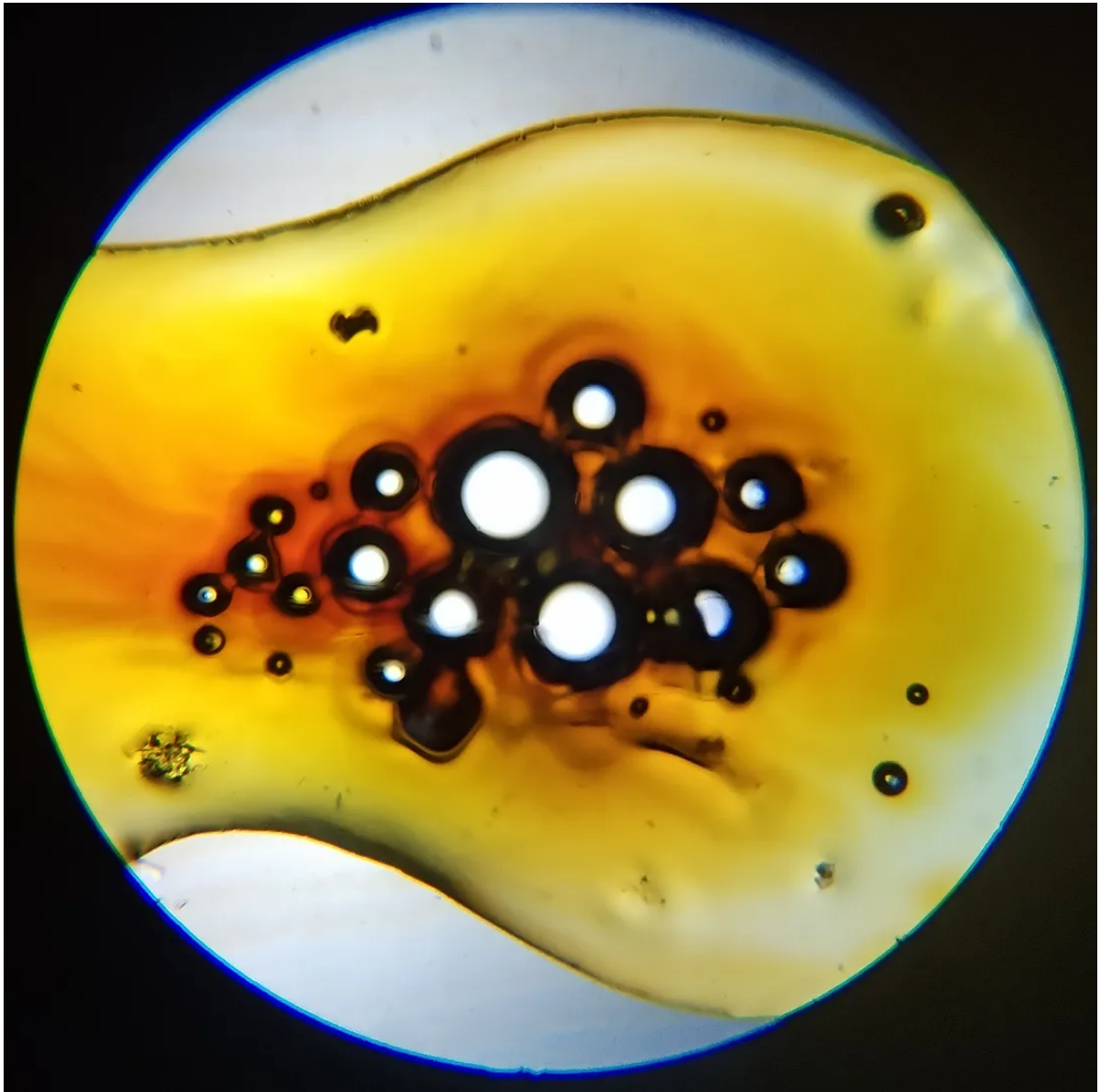
I loved the shattered glass effect so much I went back to the slides and tried artificially cracking some spots. I'll let you judge for yourself.



Smashed

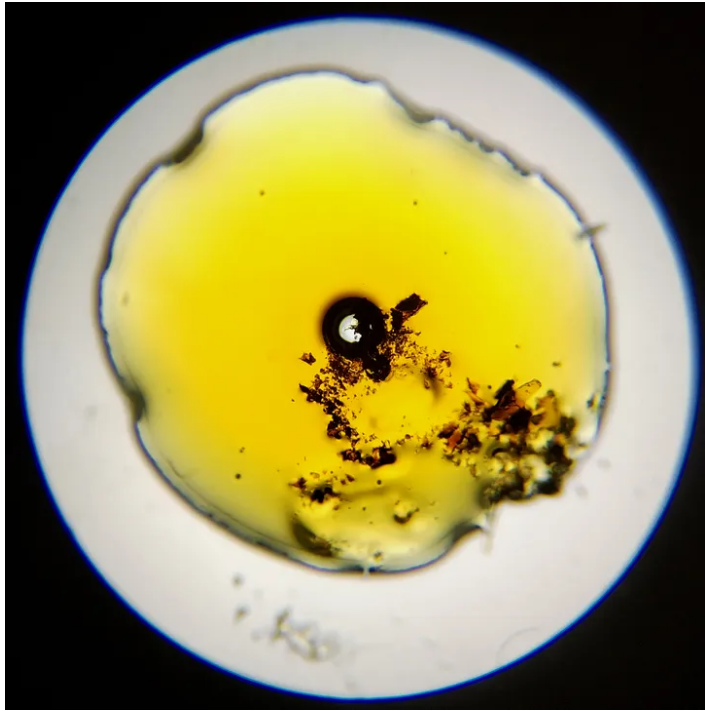
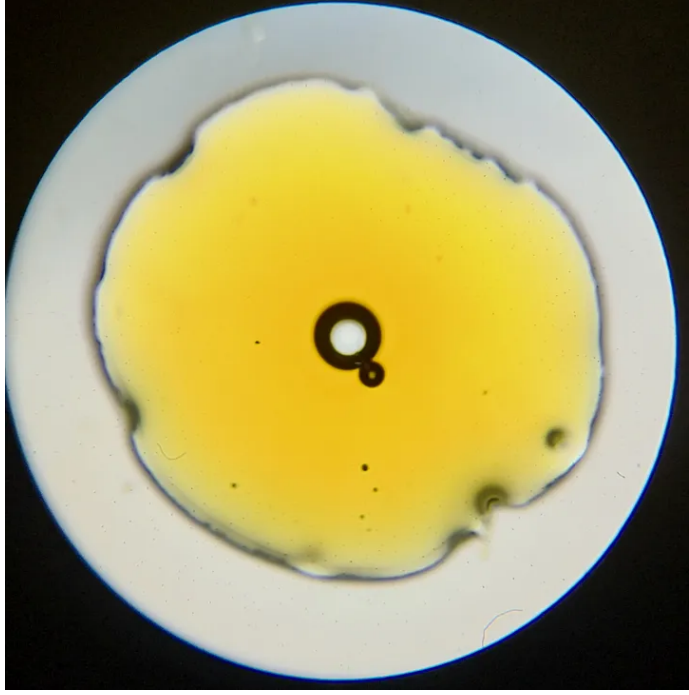


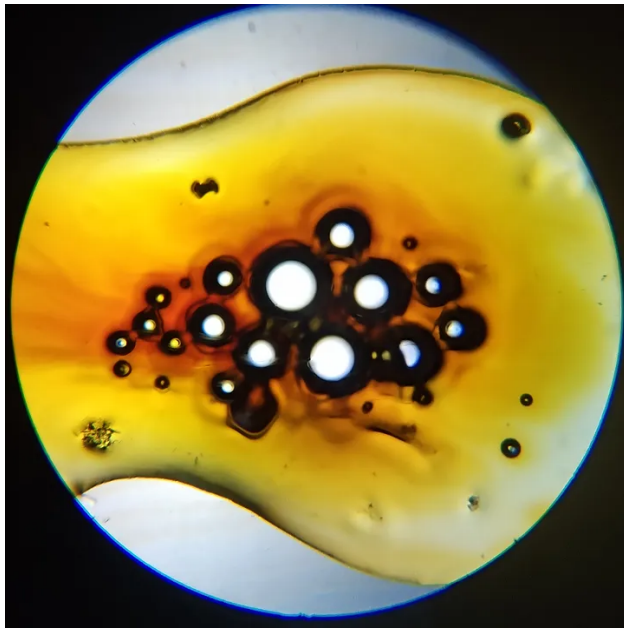
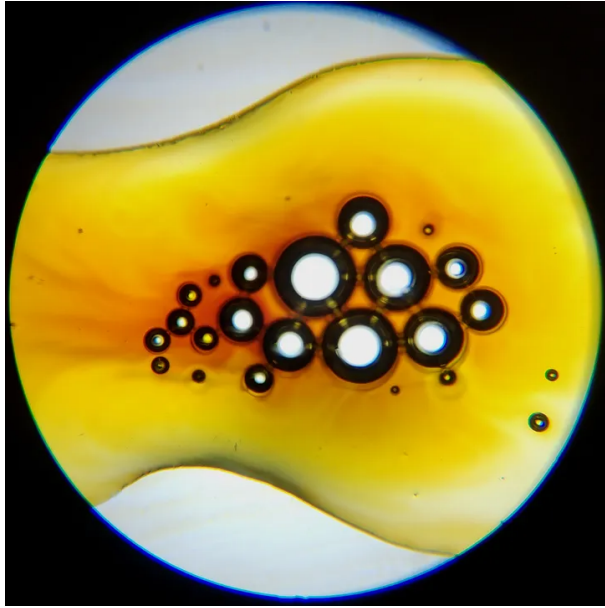
Disfigured.



Compressed.

Side-by-side comparison:





What an amazing run!

But this isn't all. Melted sugar was just one of the specimens, and this run had many interesting (and sometimes explosive) candidates. For more wonderful images, feel free to browse my [Medium Profile](#).

P.S. Sugar is terrible for you. I've almost removed sugar from my life. Consider removing it from your life as well. You'll thank yourself later.