

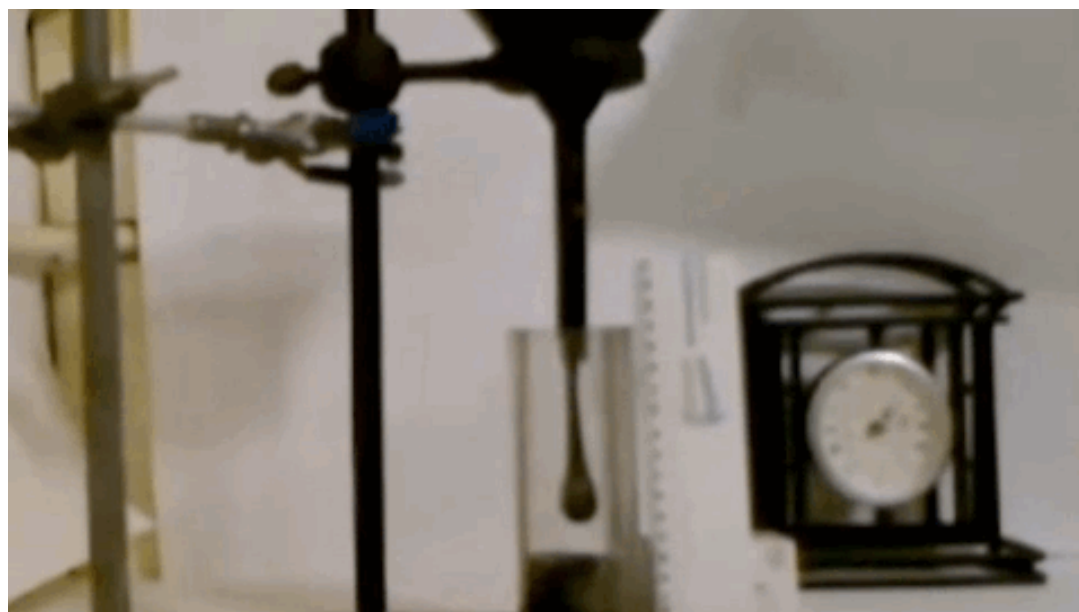


- SUBSCRIBE
- RENEW
- GIVE A GIFT
- DIGITAL EDITION

Print | Close

## The 3 Most Exciting Words in Science Right Now: 'The Pitch Dropped'

By Megan Garber



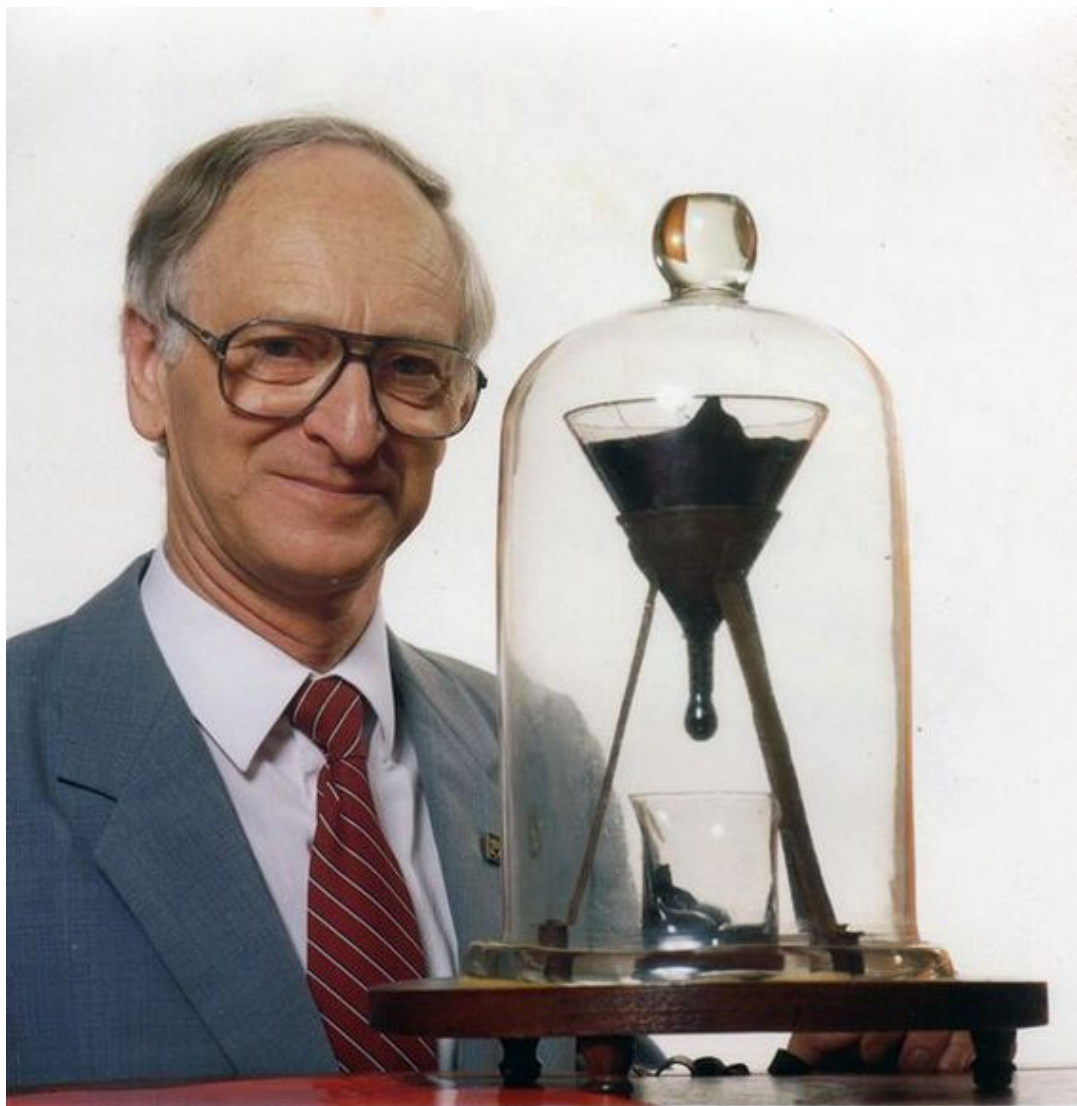
Aaaaaaaaaand ... DROP! (Trinity College/Chris Heller)

In 1944, a colleague of [Ernest Walton](#), the first person in history to successfully smash an atom, began [an experiment of a decidedly larger and lengthier variety](#). In a physics lab at Trinity College, Dublin, the experimenter took several lumps of [tar pitch](#) -- a hard, carbonic material thought to become viscous under certain conditions -- heated them, and placed them in a funnel. And then placed that funnel into a jar. And then placed that jar into a cupboard.

And then -- after another move of the jar, to a campus lecture hall -- left the thing alone. Not for minutes or days, but for years. And then decades.

The point of this project was to prove that pitch -- which, if you hammer it, shatters like glass -- actually has some liquid properties. It is solid stuff that is, over a loooooooong period of time, capable of flowing. The work (the experimenter who set it up has been, alas, lost to history) examined this phenomenon in a lab setting. And it wasn't the first to do this: the pitch-and-jar setup was a replication of [a similar experiment](#) being conducted at the University of Queensland in Australia -- one that, to this day, remains the longest-running laboratory experiment in the world. Both experiments were simple and, in that, wonderfully elegant: their primary component, aside from the tar and the jar, was time. They required little more than waiting and watching.

What made them challenging, however, was this second aspect. Watching, after all, is separate from seeing. And the data the scientists were looking for, for the most part, came in the form of a momentary, yet momentous, happening: the pitch, rendered elastic, succumbing to gravity and leaking through the funnel, dropping to the bottom of the jar. The scientists were waiting-watching for a single, split-second occurrence. It came to be known as [the Pitch Drop](#).



Aaaaaaaalmost there: In 1990, University of Queensland's John Mainstone posed with a kind-of-almost-ready-to-drop bit of pitch. (Wikimedia Commons)

And those drops came very, very rarely. The Queensland Pitch Drop experiment was set up in 1927; since then, the pitch it contains has dropped eight times -- so, an average rate of one drop per decade. In the world beyond the tar's sealed jar, wars have broken out; peace has been restored; the Internet has been invented and commercialized; the moon has played host to the tread of human feet. And there the pitch has remained, slow and slick and taking its sweet time.

Which has made the pitch something of a human drama as well as a scientific one. Not only was the pitch drop a literally blink-and-you-miss-it occurrence ... but the experiments seeking to see it also found themselves, in some sense, on the wrong side of technological history. Even in 1944, when the Trinity version came along, video technology was not something that could easily be put to the task of endless monitoring. The data desired -- the breakaway moment -- required human eyes, watching as patiently (and, ideally, as unblinkingly) as possible.

And human eyes, of course, are notoriously unreliable. This [fantastic episode of Radiolab](#) recounts the series of [Alanis Morissette-song-worthy](#) near-misses that prevented people from observing the Queensland pitch in the act of dropping. One time, [John Mainstone](#) -- a Queensland professor who curates the Pitch Drop experiment and has made it his mission to observe its fall -- stepped out to get tea. During the 15 minutes he was away, *because of course*, the pitch dropped. Another time, later on, Mainstone and his colleagues put video-monitoring technology to use to record the moment even if no humans were nearby to see it. The equipment malfunctioned. The pitch dropped, unobserved.



A DIY pitch drop experiment (Science Gone Wild)

All this has given these little lumps of resin something of a cult following -- one that has been empowered by an Internet that is always on, and always around, and always watching. The black pitch has become its own kind of white whale. And now, thanks to [a livecam trained on Queensland's jar of pitch](#), you yourself can watch for the moment of Pitch Drop. You, yourself, can nerd out about it with friends. You, yourself, can do what nobody had done before: catch the viscous pitch, the unicorn of the scientific world, in the act of dropping.

Which brings us to today -- or, more specifically, to last Thursday. It had been about a decade since the Trinity pitch's last drop, and researchers there had seen that [a drop had begun to form in the pitch](#). The time was nigh. So they did what anyone with the means would do: they trained their own webcam on the jar. And, on Thursday: you guys, **THE PITCH DROPPED**.

And this time, the equipment didn't malfunction. This time, there were people around to observe the act as it happened. This time, for the first time, the liquified solid, falling from its source, was observed by human eyes. That's the moment, at the top, GIFed for your pleasure.

So is this the most important scientific happening of the day? No, probably not. But it is, for my money, the most exciting. Science, in the public imagination, is ... scientific. It is data-driven and analytic and divorced, by design, from human emotion. But this split-second falling of a lump of liquid-y tar is a nice reminder of the excitement that can be embedded in even the dullest of experiments. The drop of pitch may simply have proved what we already knew. But it was a drop of

pitch that was 69 years in the making. It was the drop of pitch we had been waiting for.

This article available online at:

<http://www.theatlantic.com/technology/archive/2013/07/the-3-most-exciting-words-in-science-right-now-the-pitch-dropped/277919/>

Copyright © 2013 by The Atlantic Monthly Group. All Rights Reserved.