

Data Visualization & Information Aesthetics

Visualizing Time

Image: Salvador Dali, *The Persistence of Memory*, 1931 <https://www.moma.org/collection/works/79018>

there isn't a direct visual concept for time

how do we point to time?

Containers



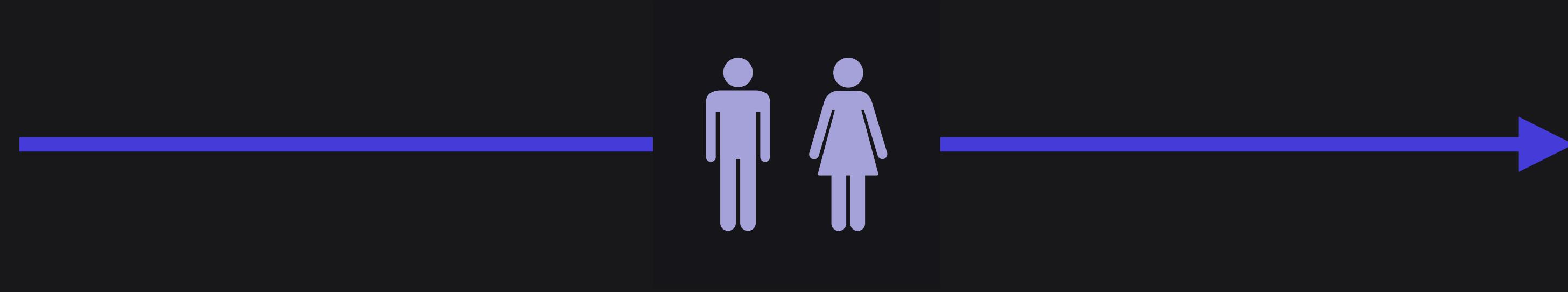
Image: <https://www.cityofgolden.net/event/time-capsule-unveiling/>

Moving Objects



Image: <https://www.magnumphotos.com/newsroom/society/henri-cartier-bresson-the-world-of-henri-cartier-bresson/>

Time is stationary and we move through it



Time moves towards us



Isabel Meirelles "Design for Information"

Ogilby - The Road From LONDON to the LANDS END (1675)

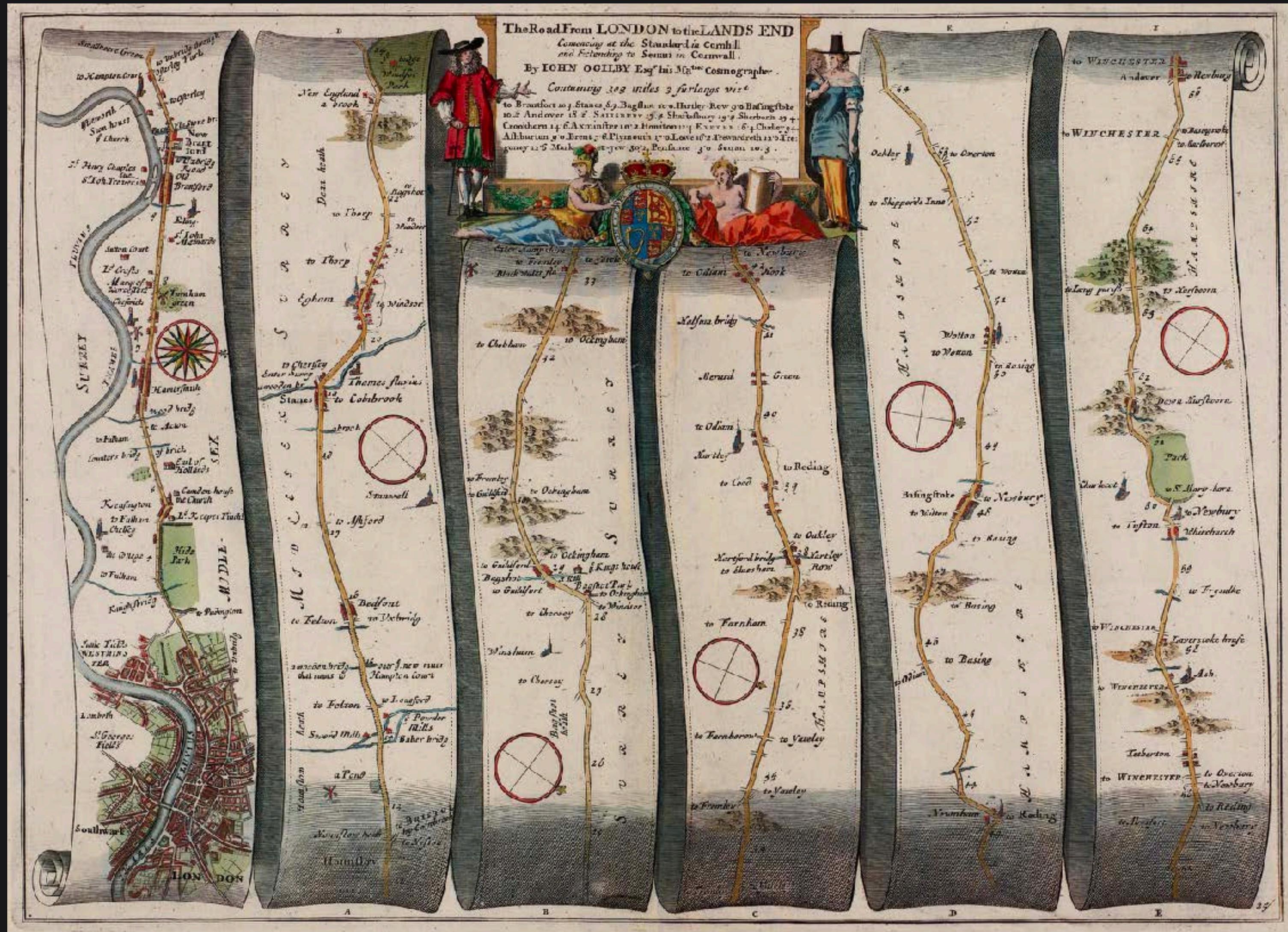


Image: [https://commons.wikimedia.org/wiki/File:Ogilby_-_The_Road_From_LONDON_to_the_LANDS_END_\(1675\).jpg](https://commons.wikimedia.org/wiki/File:Ogilby_-_The_Road_From_LONDON_to_the_LANDS_END_(1675).jpg)

Lascaux Cave Paintings



Image: <https://www.bradshawfoundation.com/lascaux/>

Lascaux Cave Paintings



Image: <https://en.wikipedia.org/wiki/Lascaux>

Eadweard Muybridge, 1885

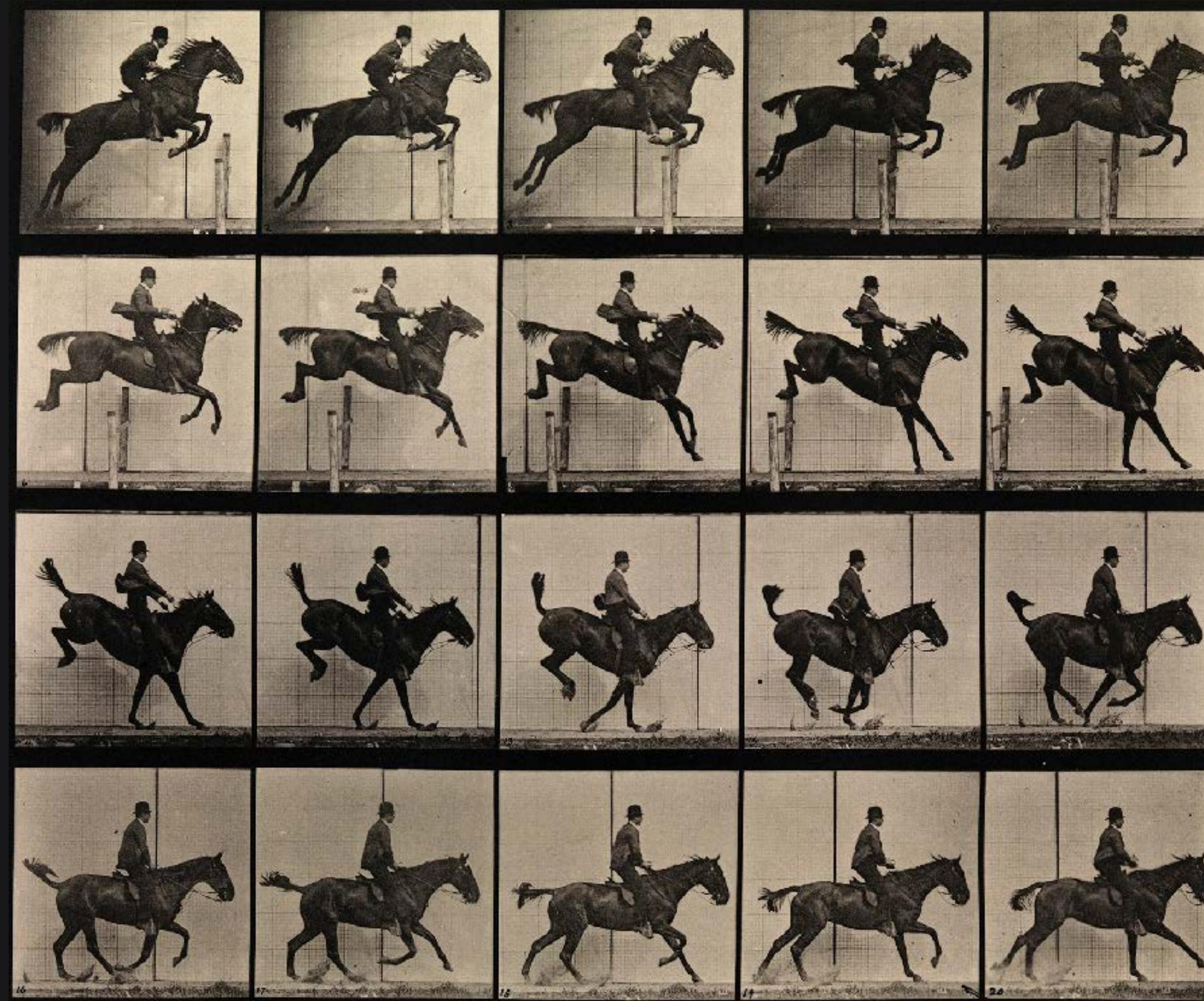


Image: <https://www.britannica.com/biography/Eadweard-Muybridge/images-videos#Images>

Jules-Étienne Marey, Etude chronophotographique de la locomotion humaine, vers 1885.

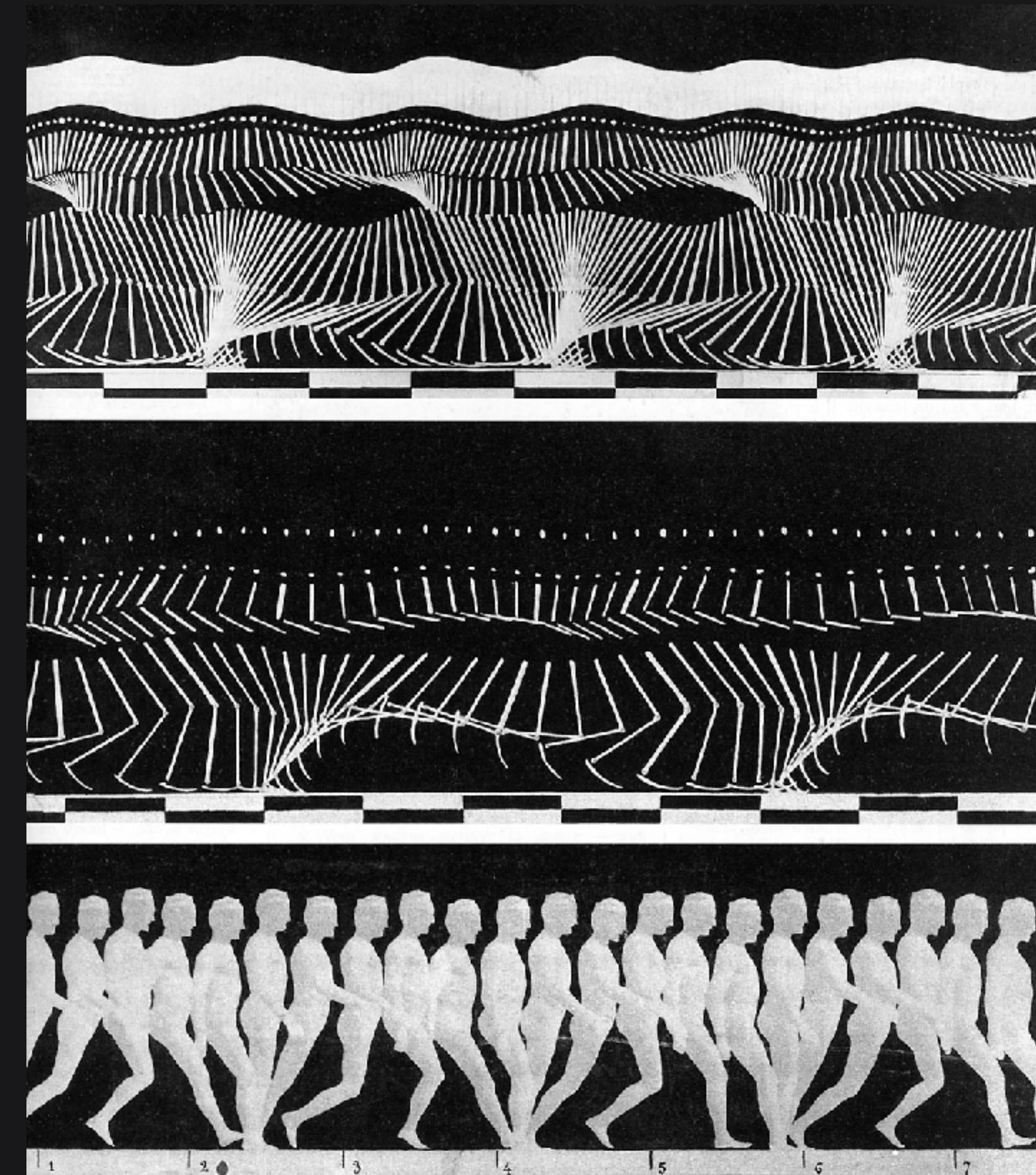


Image: <http://le-corpus.com/atlas/atlas-walk-wave.html>

Eliot Eliofson, Duchamp descendant un escalier, 1952.



Image: <http://le-corpus.com/atlas/atlas-walk-wave.html>

Simulation informatique d'une marche bipède, 1979. (Humanoid Robotics Institute, Waseda University, Japan)

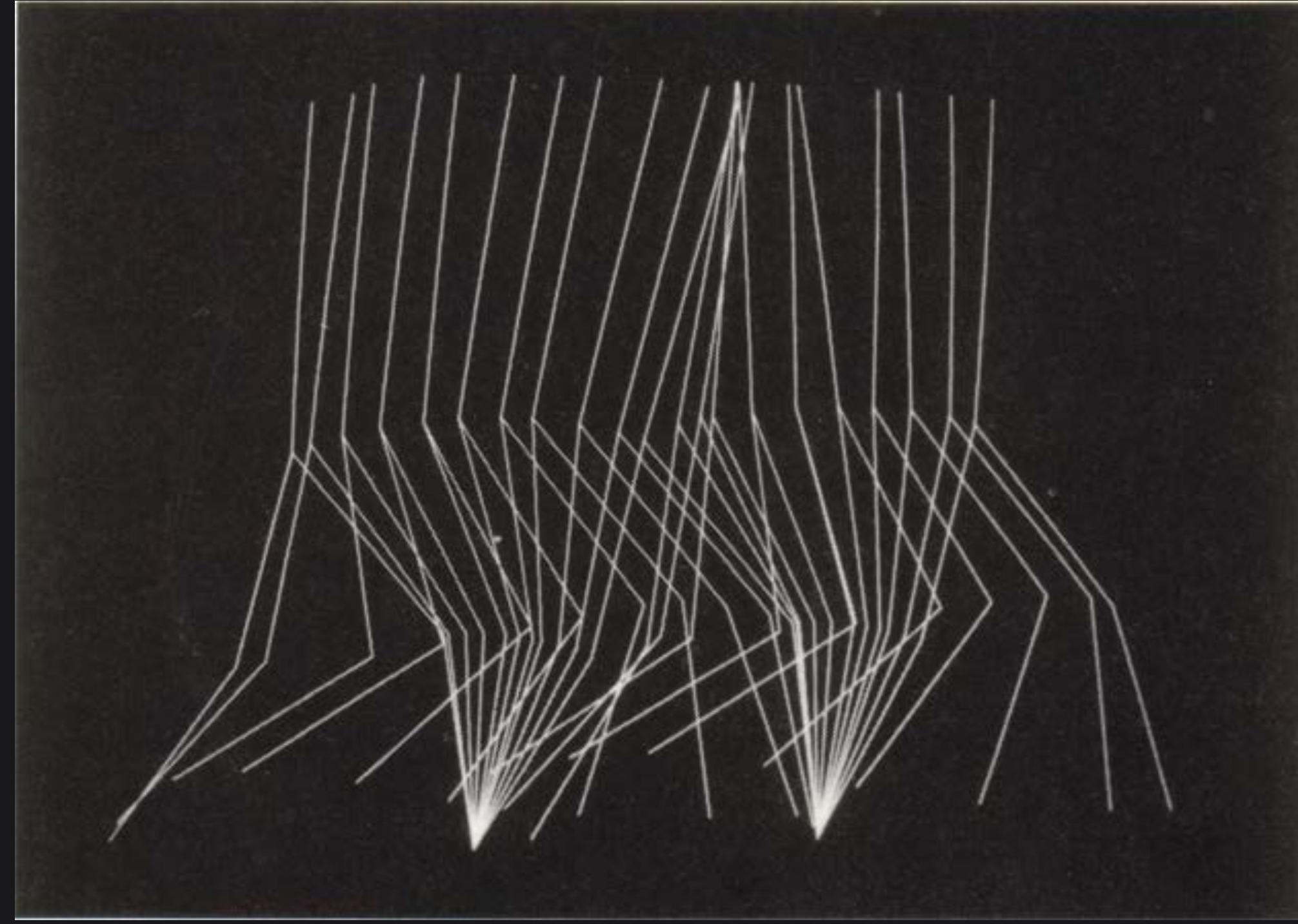


Image: <http://le-corpus.com/atlas/atlas-walk-wave.html>

how do we measure time?

Sumerian Calendar



Image: <http://www.projectglobalawakening.com/sumerian-calendar/>

Metonic Cycle

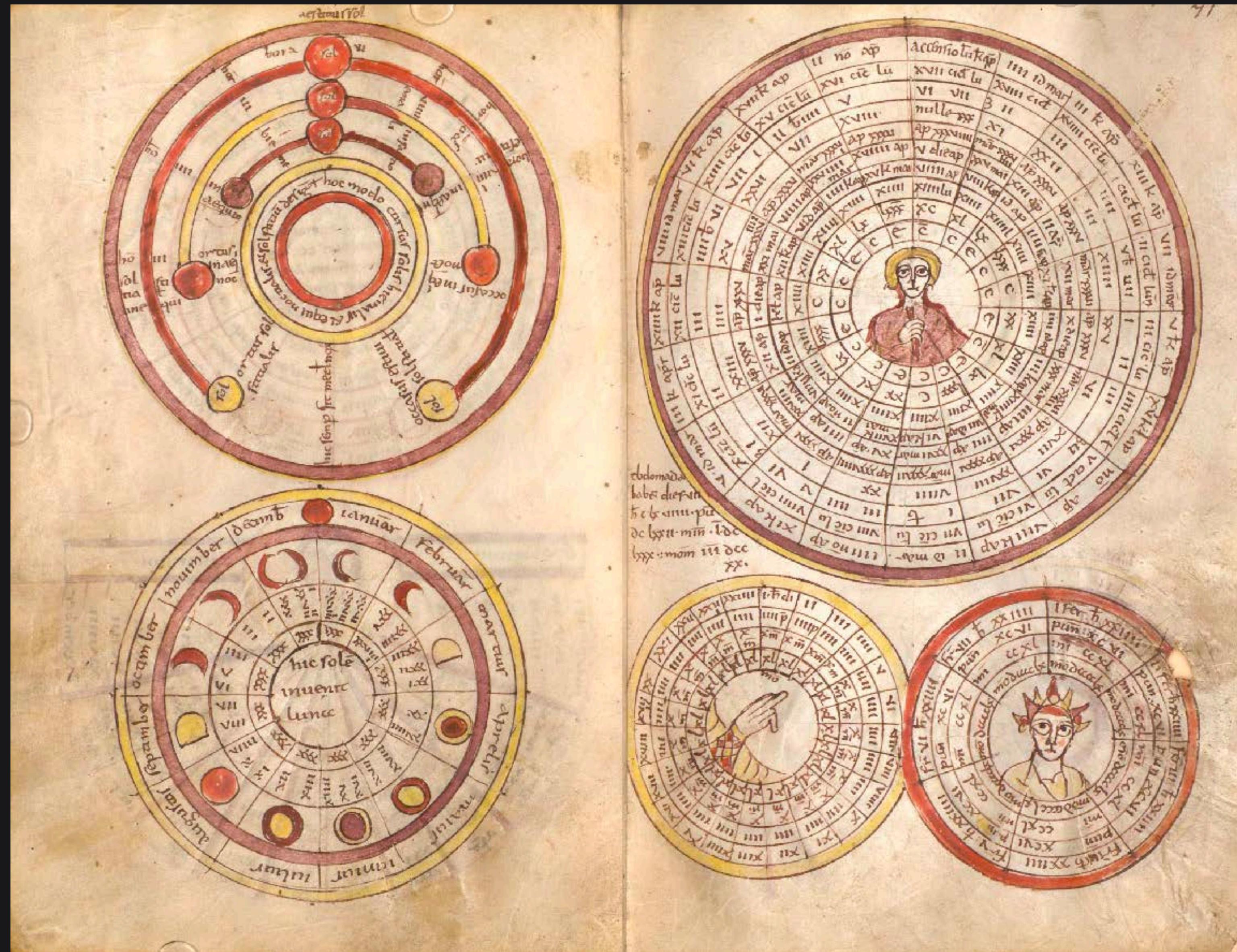


Image: https://en.wikipedia.org/wiki/Metonic_cycle

Quartz



Image: https://en.wikipedia.org/wiki/Crystal_oscillator#/media/File:Quartz_Br%C3%A9sil.jpg

Ingrid Burrington



Image: <http://lifewinning.com/projects/alchemy-studies/>

Ingrid Burrington



Image: <http://lifewinning.com/projects/alchemy-studies/>

Ingrid Burrington



Image: <http://lifewinning.com/projects/alchemy-studies/>

Ingrid Burrington



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Ingrid Burrington



Image: <http://lifewinning.com/projects/alchemy-studies/>

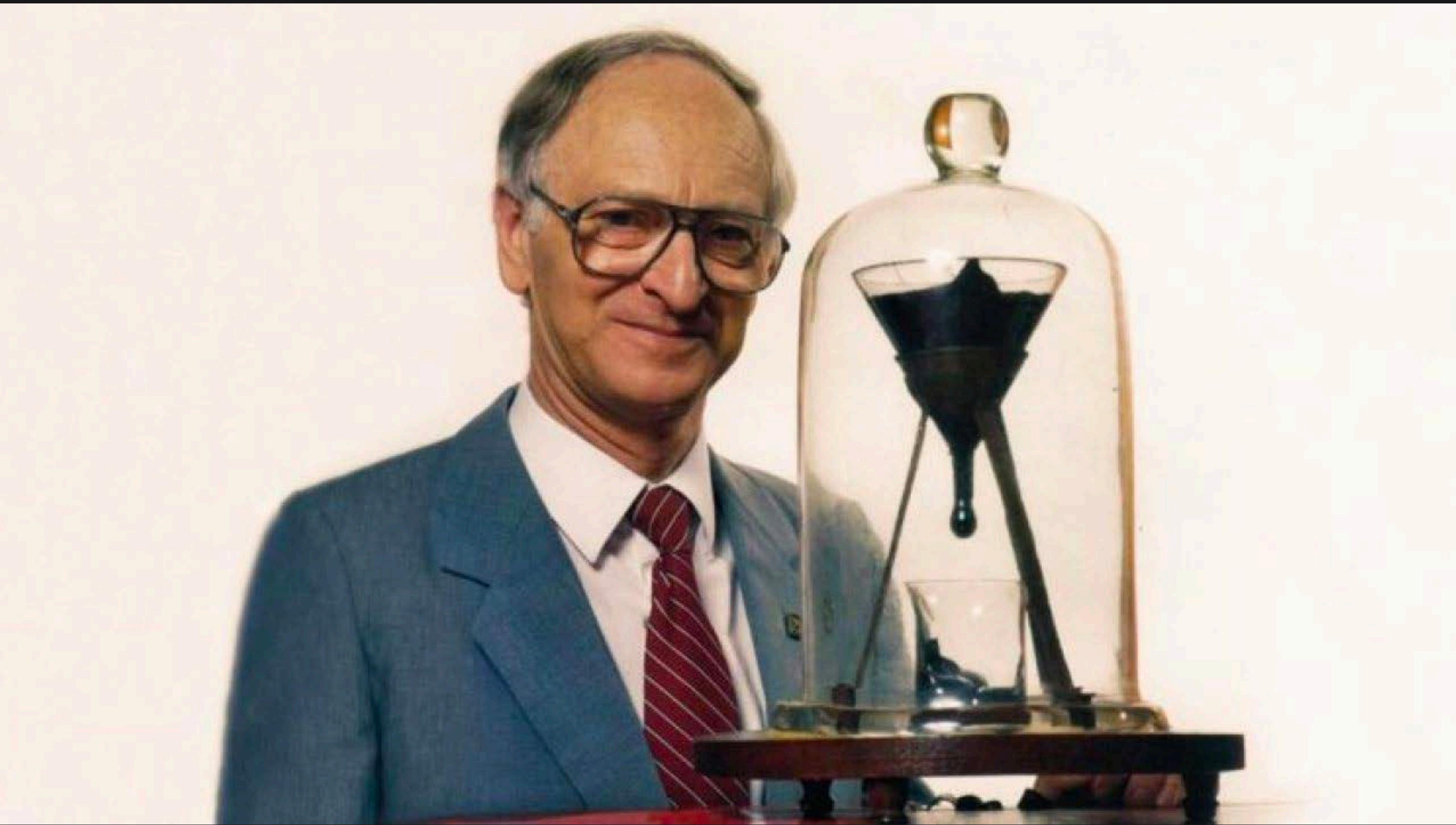


Image: <https://www.thevintagenews.com/2019/01/15/the-pitch-drop-experiment/>

www.dazedsdigital.com/science-tech/article/54037/1/a-major-solar-storm-cou

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**A major solar storm could cause an
'internet apocalypse'**

SCIENCE & TECH - NEWS

Countries could be without internet connection for months

7th September 2021

Text Patrick Benjamin

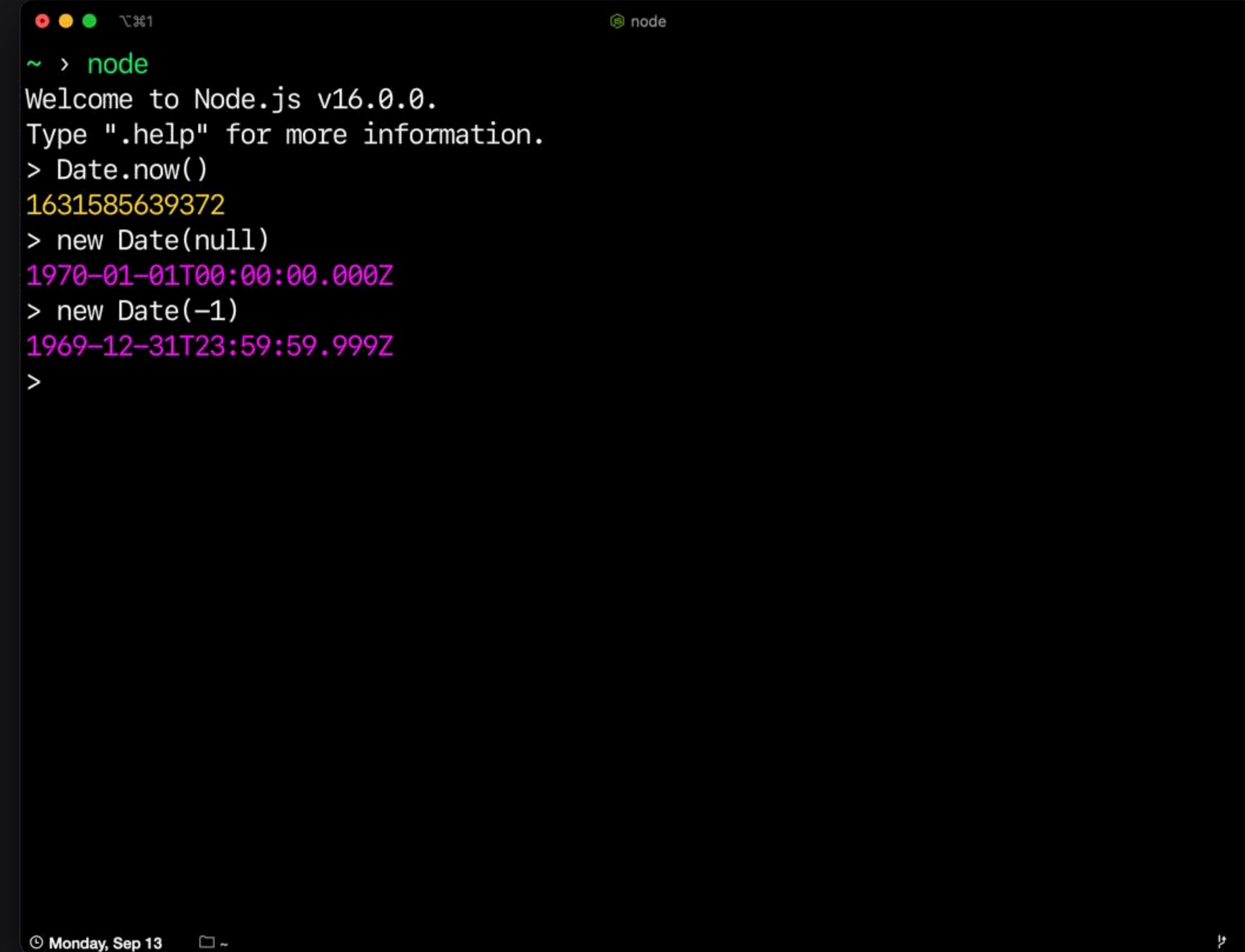
how do we encode time?

REMEMBER

**Turn your computer off
before midnight on**

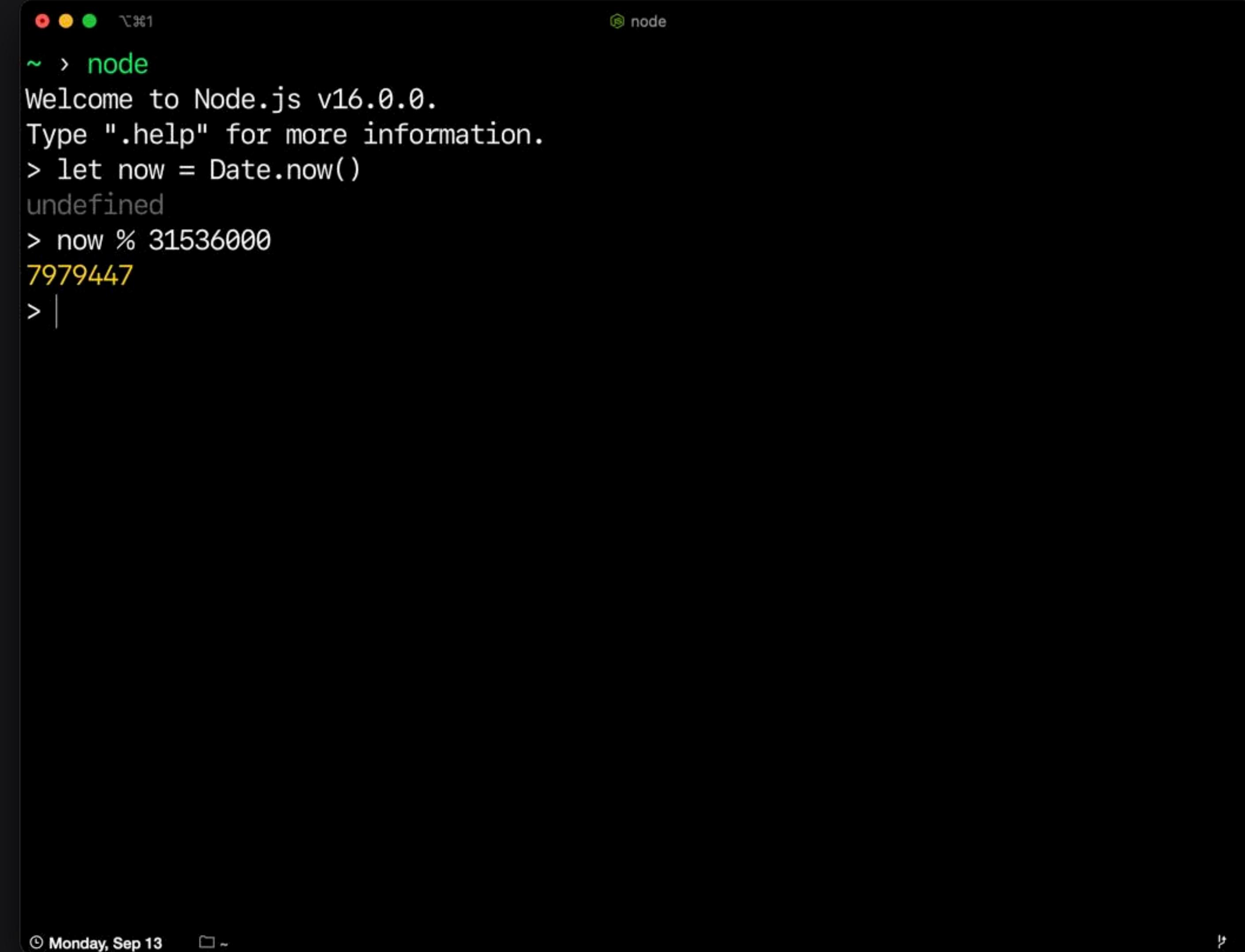
12/31/99.





```
node
~ > node
Welcome to Node.js v16.0.0.
Type ".help" for more information.
> Date.now()
1631585639372
> new Date(null)
1970-01-01T00:00:00.000Z
> new Date(-1)
1969-12-31T23:59:59.999Z
>
```

© Monday, Sep 13



```
● ○ ●   11:36 AM  
~ > node  
Welcome to Node.js v16.0.0.  
Type ".help" for more information.  
> let now = Date.now()  
undefined  
> now % 31536000  
7979447  
> |
```

© Monday, Sep 13

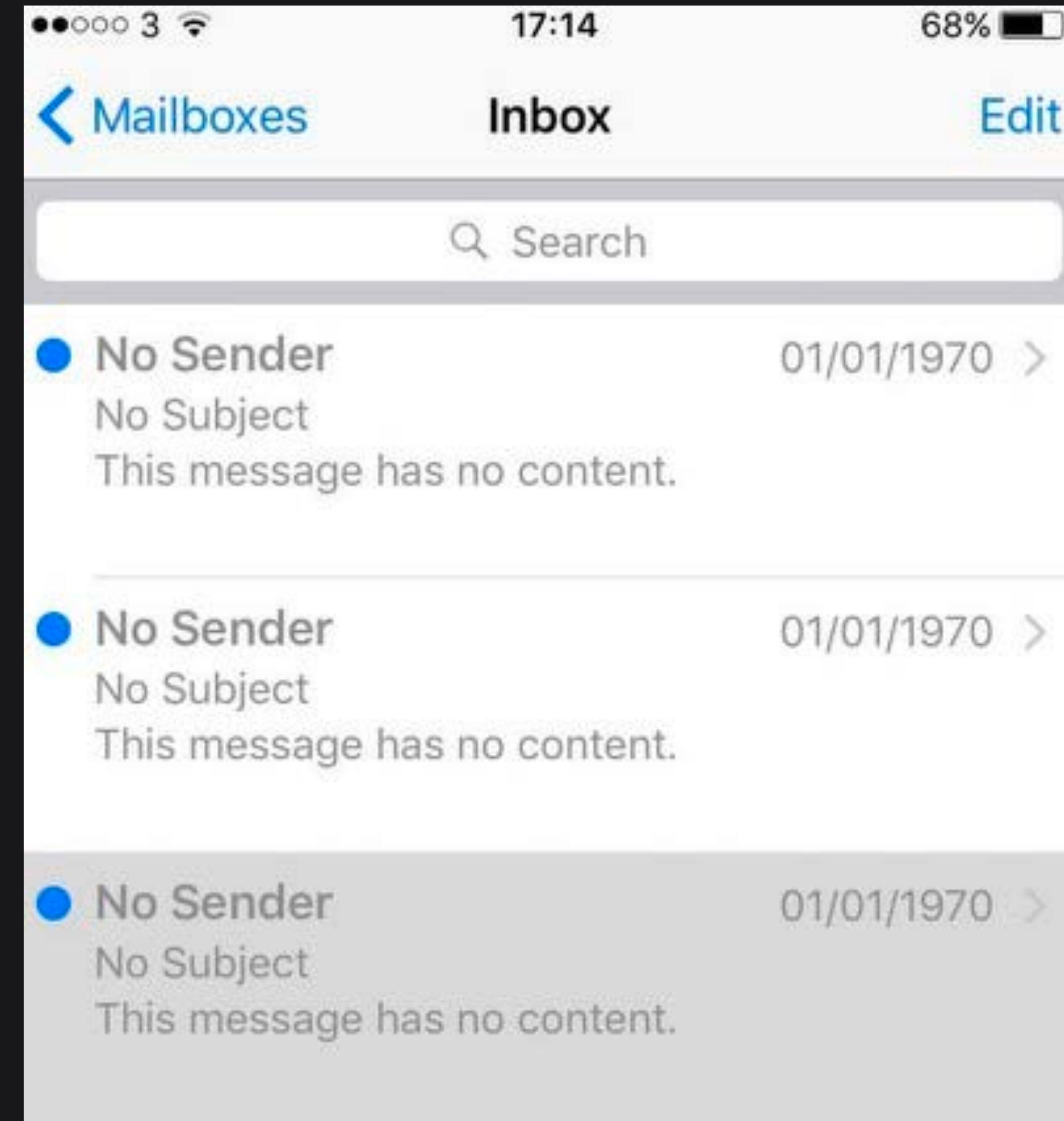


Image: <https://www.macrumors.com/2016/03/07/ghost-emails-1970-unix/>

Unix Epoch	Date and Time (GMT)
111111111	Tue, 10 Jul 1973 00:11:51 +0000
1111111111	Fri, 18 Mar 2005 01:58:31 +0000
1222222222	Wed, 24 Sep 2008 02:10:22 +0000
1333333333	Mon, 02 Apr 2012 02:22:13 +0000
1444444444	Sat, 10 Oct 2015 02:34:04 +0000
1555555555	Thu, 18 Apr 2019 02:45:55 +0000
1666666666	Tue, 25 Oct 2022 02:57:46 +0000
1777777777	Sun, 03 May 2026 03:09:37 +0000
1888888888	Fri, 09 Nov 2029 03:21:28 +0000
1999999999	Wed, 18 May 2033 03:33:19 +0000
2000000000	Wed, 18 May 2033 03:33:20 +0000
2111111111	Mon, 24 Nov 2036 03:45:11 +0000
2147483647	The End - Tue, 19 Jan 2038 3:14:07 +0000
-2147483648	Fri, 13 Dec 1901 20:45:52 +0000

Labanotation

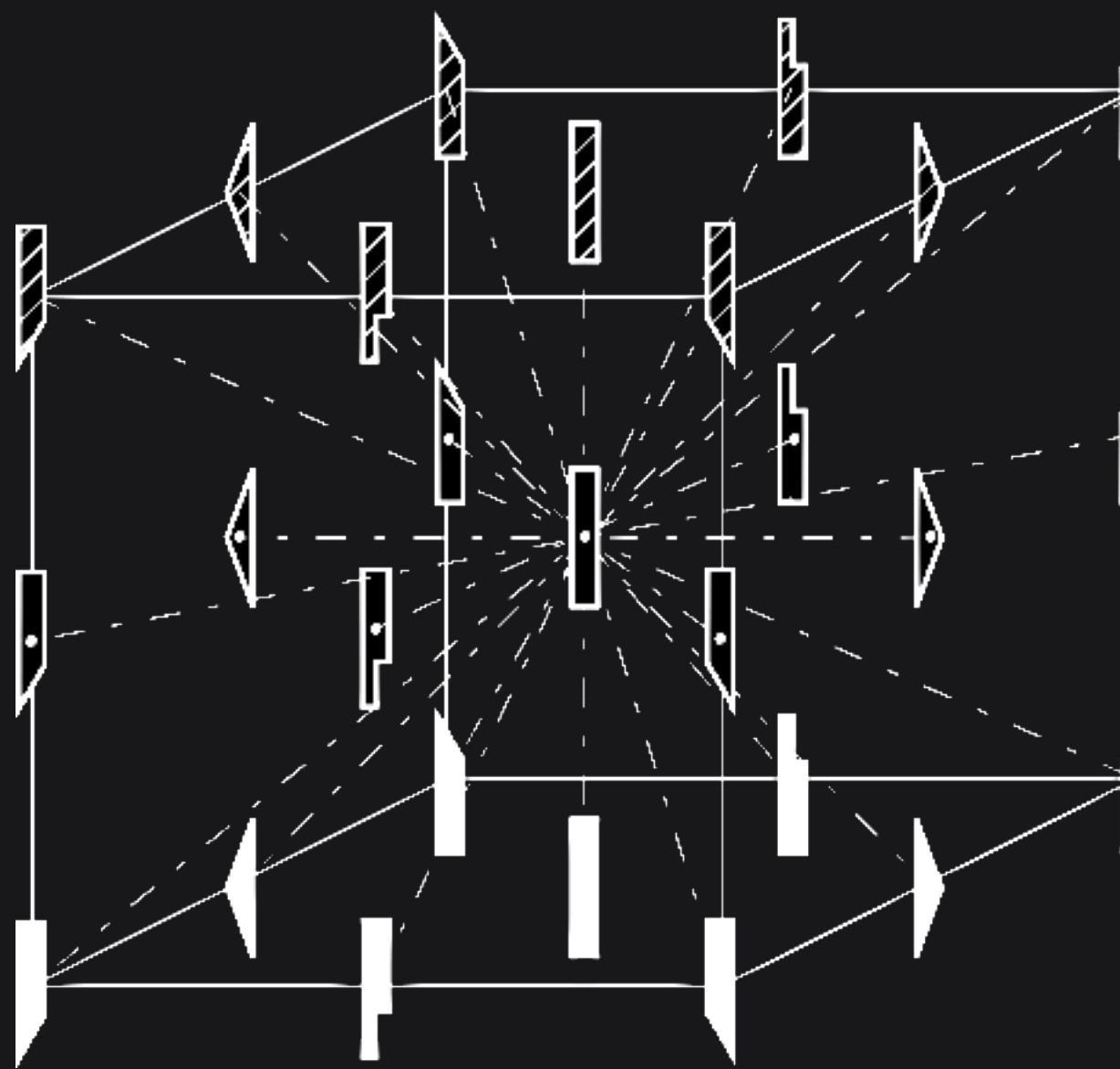


Image: <https://www.dcode.fr/labanotation>

Labanotation



Image: <https://www.semanticscholar.org/paper/Labanotation%3A-a-universal-movement-notation-Barbacci/08ca9ec5fd157d3a9d4881a4c6c07aac4d777a4>

Labanotation Diagram, Zengqiang Yan
(The Hong Kong University of Science
and Technology), 2018

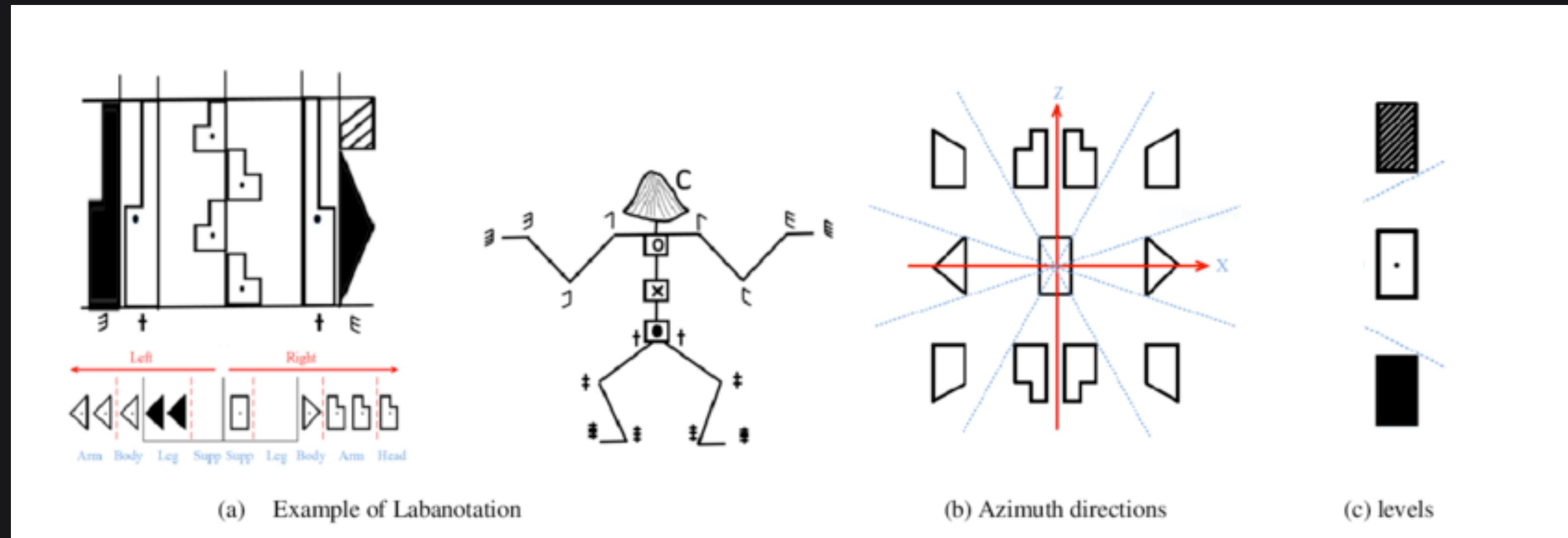


Image: https://www.researchgate.net/figure/Labanotation-In-a-Labanotation-score-the-time-passes-from-bottom-to-top-Each-column-in_fig1_308332120

time as a subject

Marcel Duchamp, Nude Descending a Staircase (No. 2), 1912



Image: <https://www.artsy.net/artwork/marcel-duchamp-nude-descending-a-staircase-no-2>

Umberto Boccioni, Unique Forms of Continuity in Space, 1913

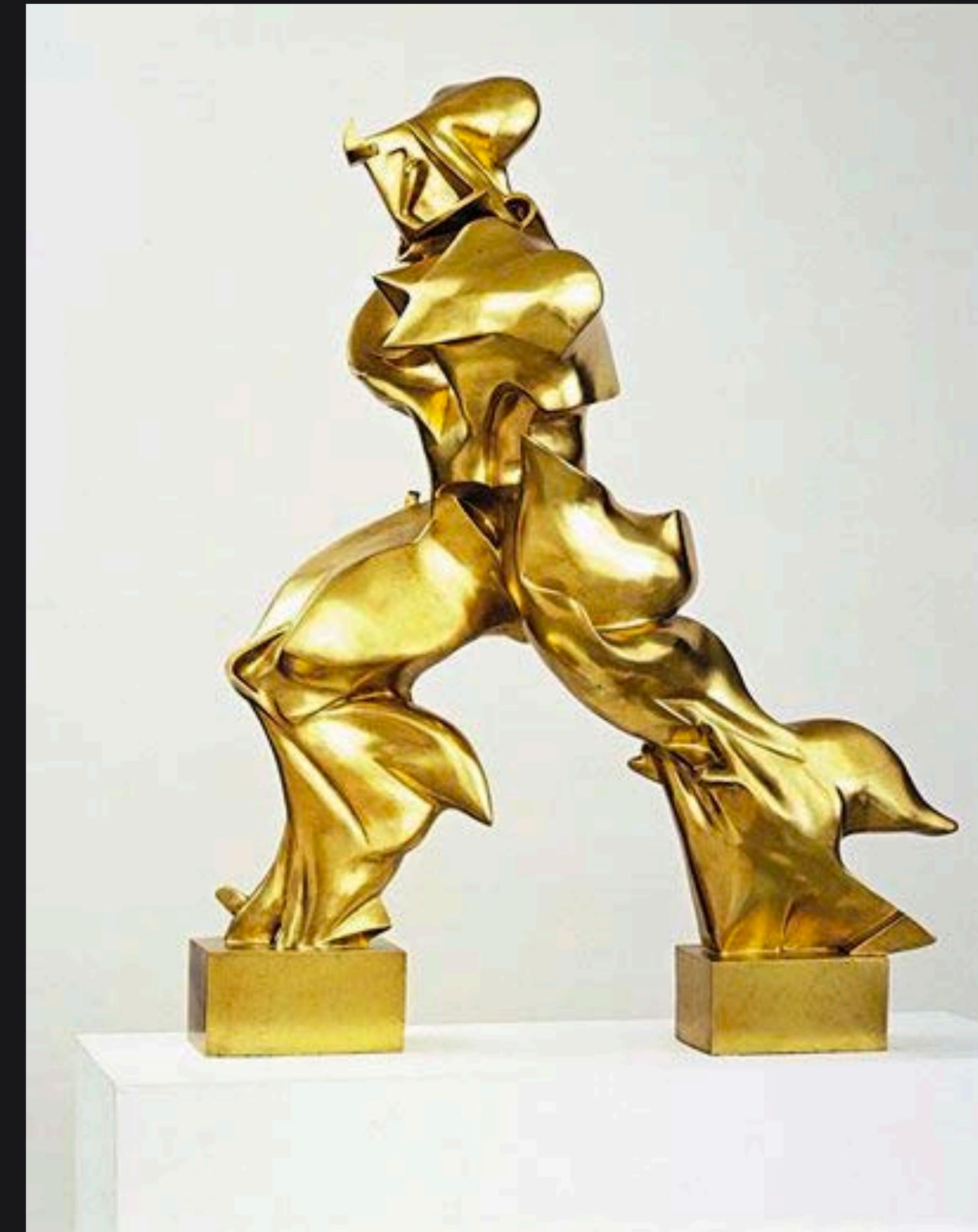


Image: <https://www.artsy.net/artwork/marcel-duchamp-nude-descending-a-staircase-no-2>

Kazimir Malevich, *The Knife Grinder, or Principle of Glittering*, 1912

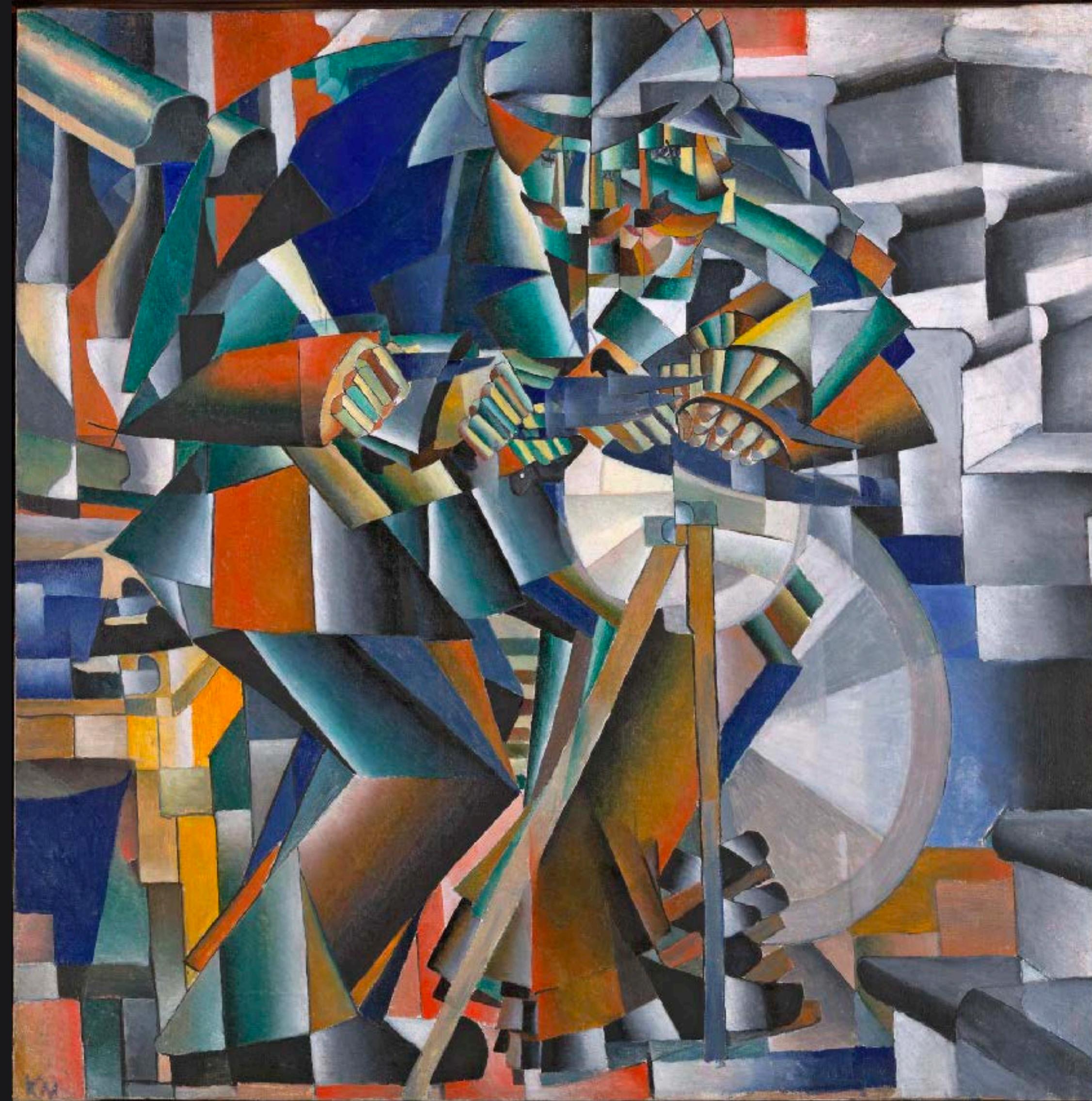


Image: <https://www.artsy.net/artwork/marcel-duchamp-nude-descending-a-staircase-no-2>

John Cage, 4'33", 1952

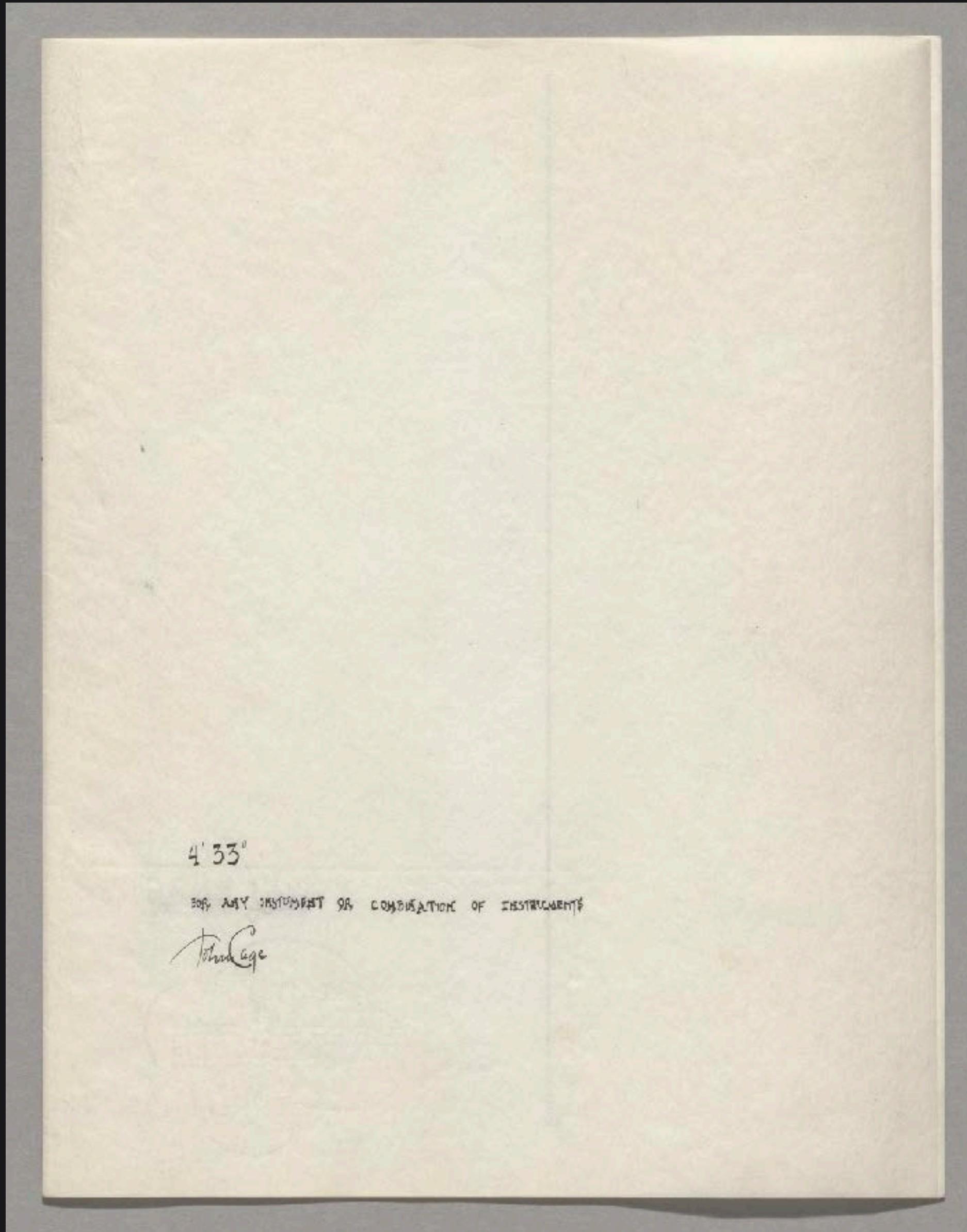


Image: <https://www.moma.org/collection/works/163616>

Hiroshi Sugimoto, U. A. Play House, 1978



Image: <https://www.sugimotohiroshi.com/new-page-7>

Hiroshi Sugimoto, Cinerama Dome, 1993



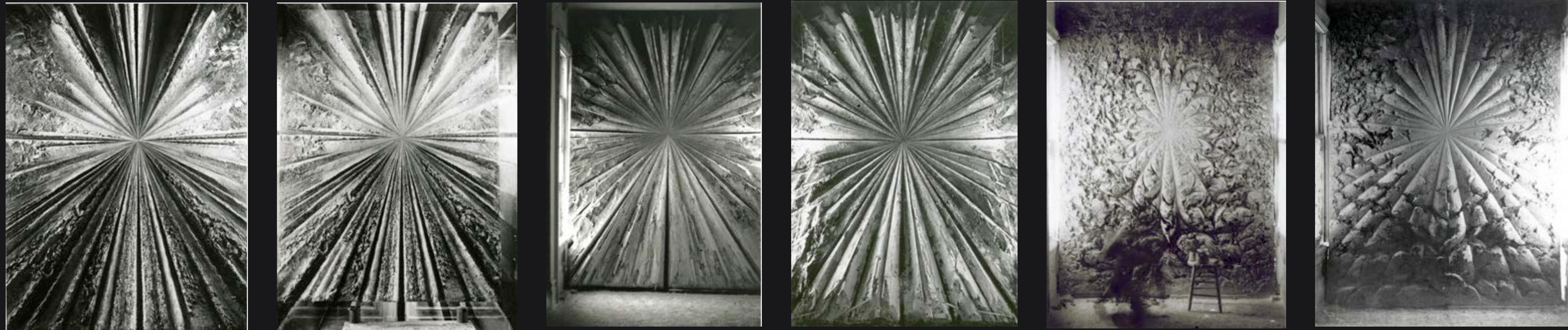
Image: <https://www.sugimotohiroshi.com/new-page-7>

Jay DeFeo, *The Rose*, 1958-66



Image: <https://www.nytimes.com/2013/03/01/arts/design/jay-defeo-a-retrospective-at-the-whitney.html>

Jay DeFeo, *The Rose*, 1958-66



Images: <https://www.jaydefeofoundation.org/artwork/the-rose/>

Roman Opalka, $1 - \infty$ (*Detail*
2806353-2828874), 1965

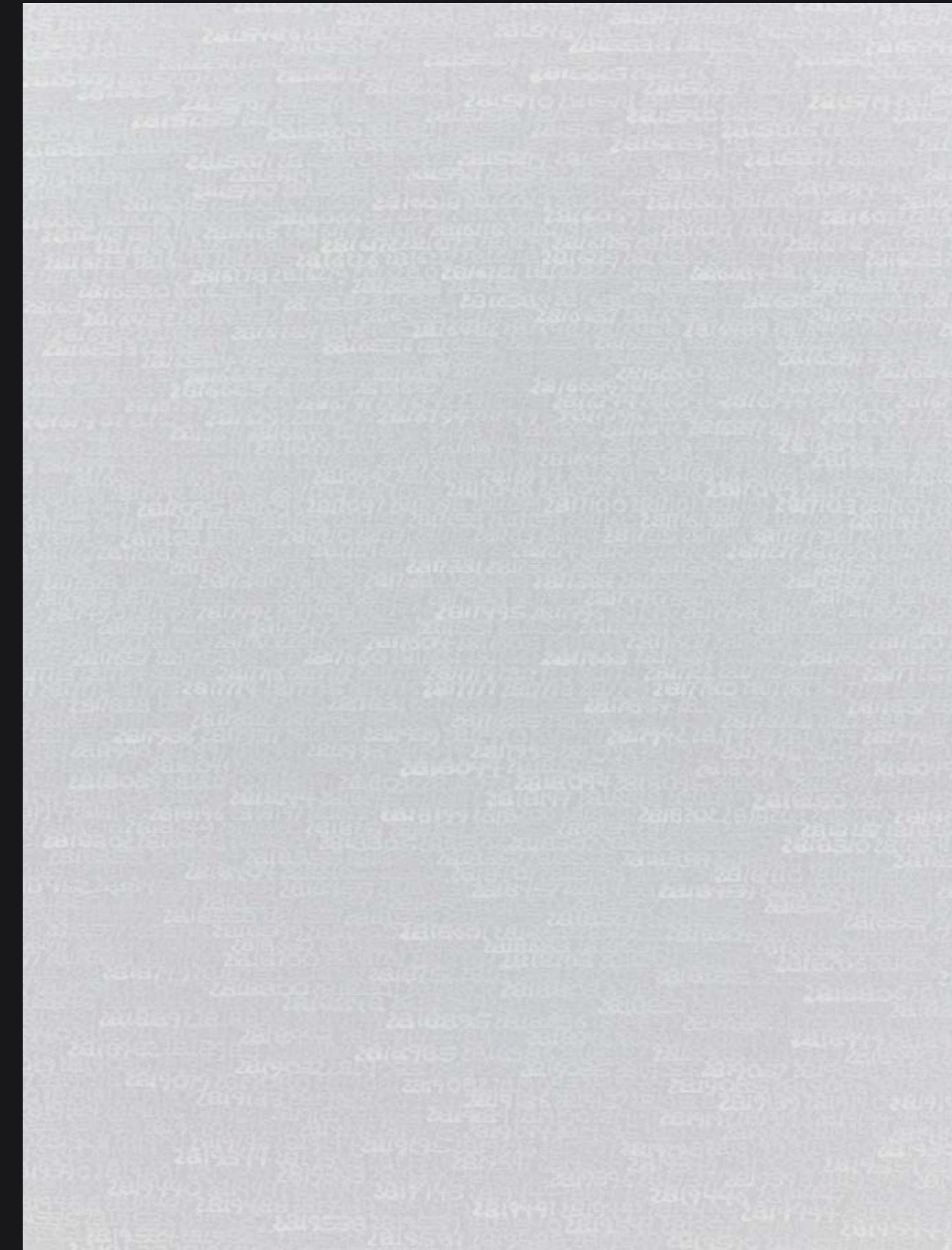


Image: <https://www.levygorvy.com/works/roman-opalka/>

Felix Gonzalez Torres, *Untitled (Perfect Lovers)*, 1987-1990

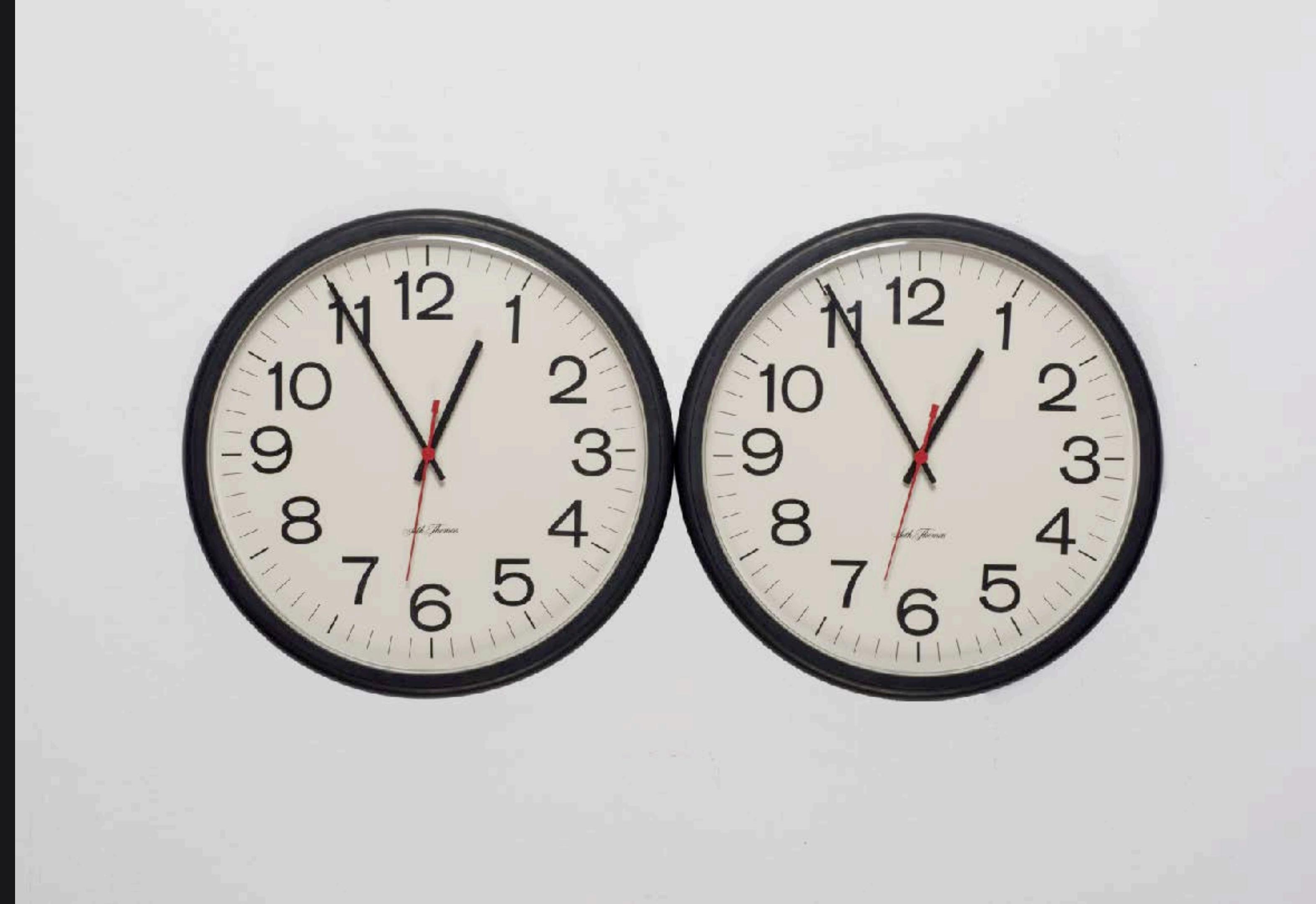


Image: <https://www.theartnewspaper.com/news/felix-gonzalez-torres-works-to-be-displayed-around-barcelona>

Christian MacLay, The Clock, 2010



Image: <https://www.tate.org.uk/art/lists/five-ways-christian-marclays-clock-does-more-just-tell-time>

Christian MacLay, The Clock, 2010



Image: <https://www.tate.org.uk/art/lists/five-ways-christian-marclays-clock-does-more-just-tell-time>

analyzing time

Tommaso Buonocore, 2019

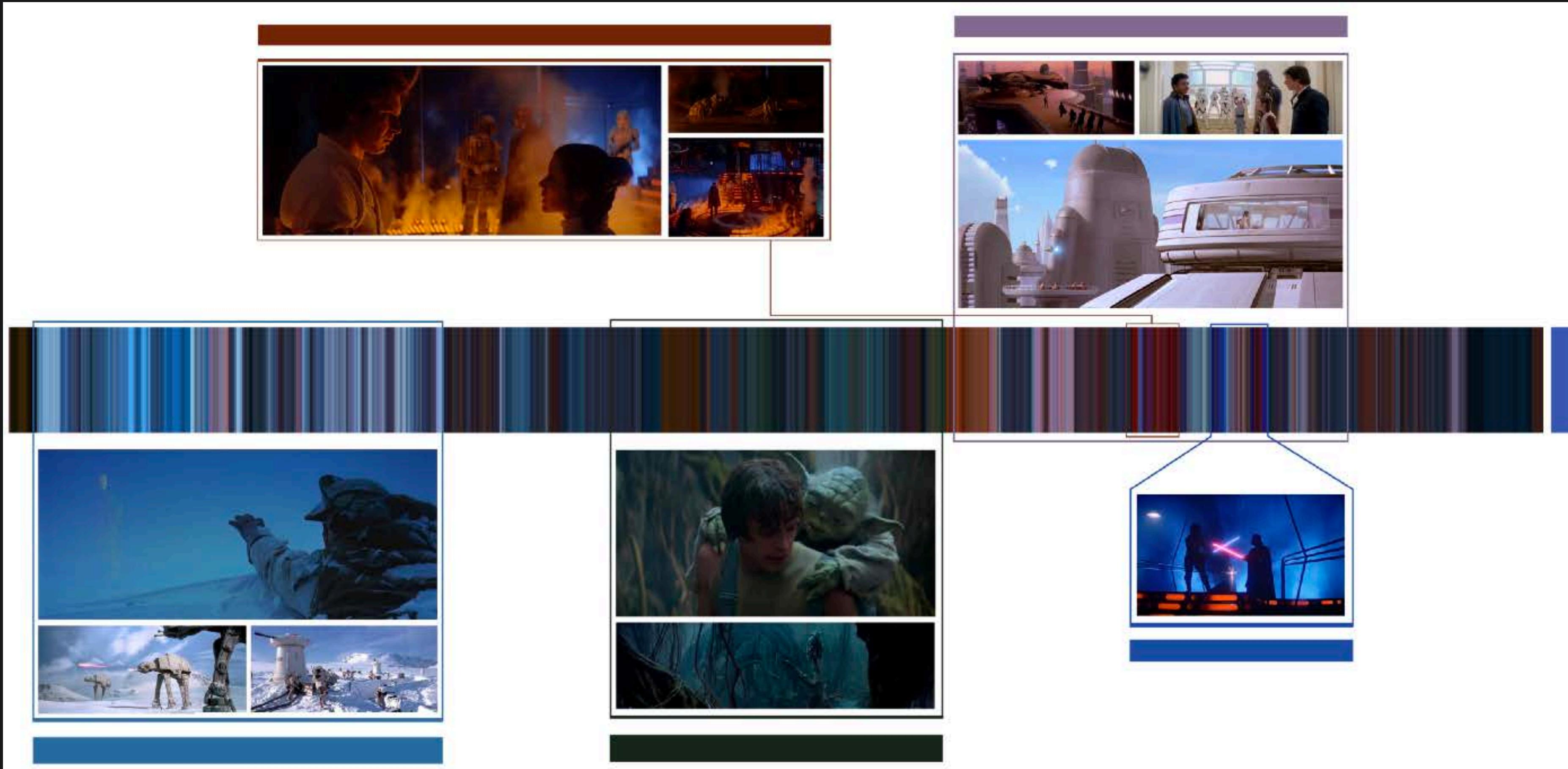


Image: <https://towardsdatascience.com/exploring-chromatic-storytelling-with-r-part-1-8e9ddf8d4187>



=

Frameld	R	G	B
1	76	52	48
2	76	52	48
3	77	53	49
4	77	53	49

Image: <https://towardsdatascience.com/exploring-chromatic-storytelling-with-r-part-1-8e9ddf8d4187>

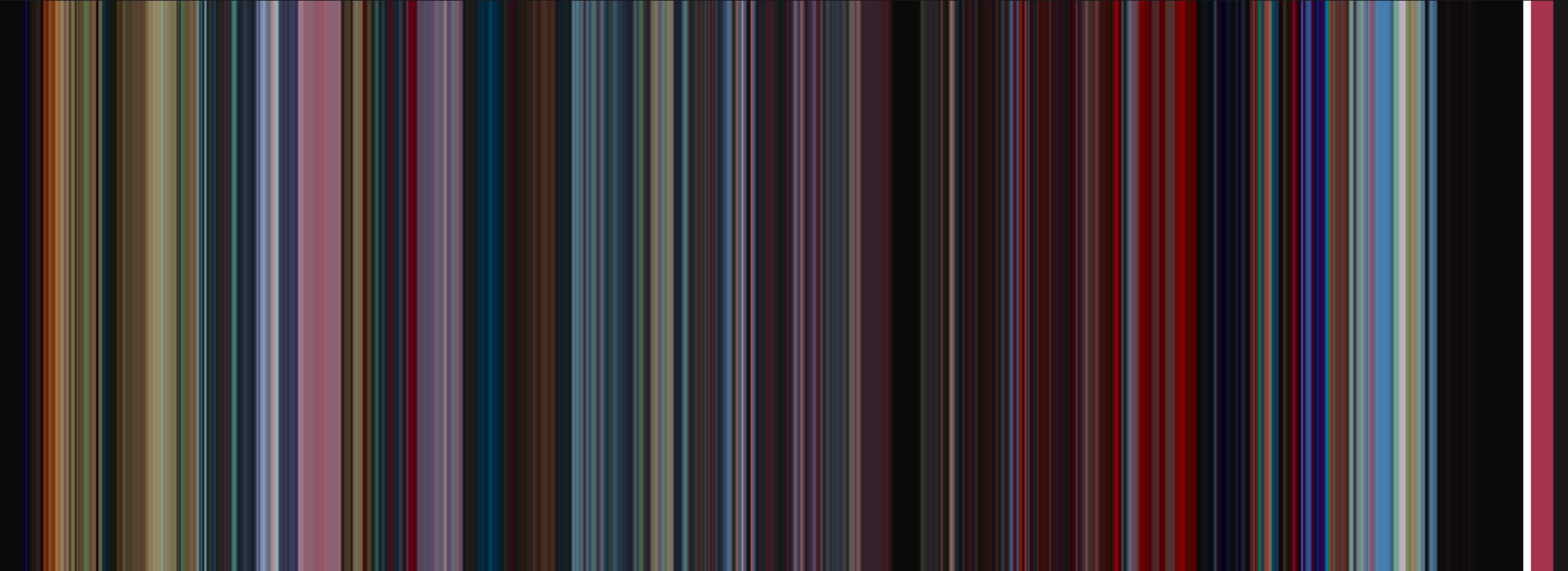


Image: <https://towardsdatascience.com/exploring-chromatic-storytelling-with-r-part-1-8e9ddf8d4187>

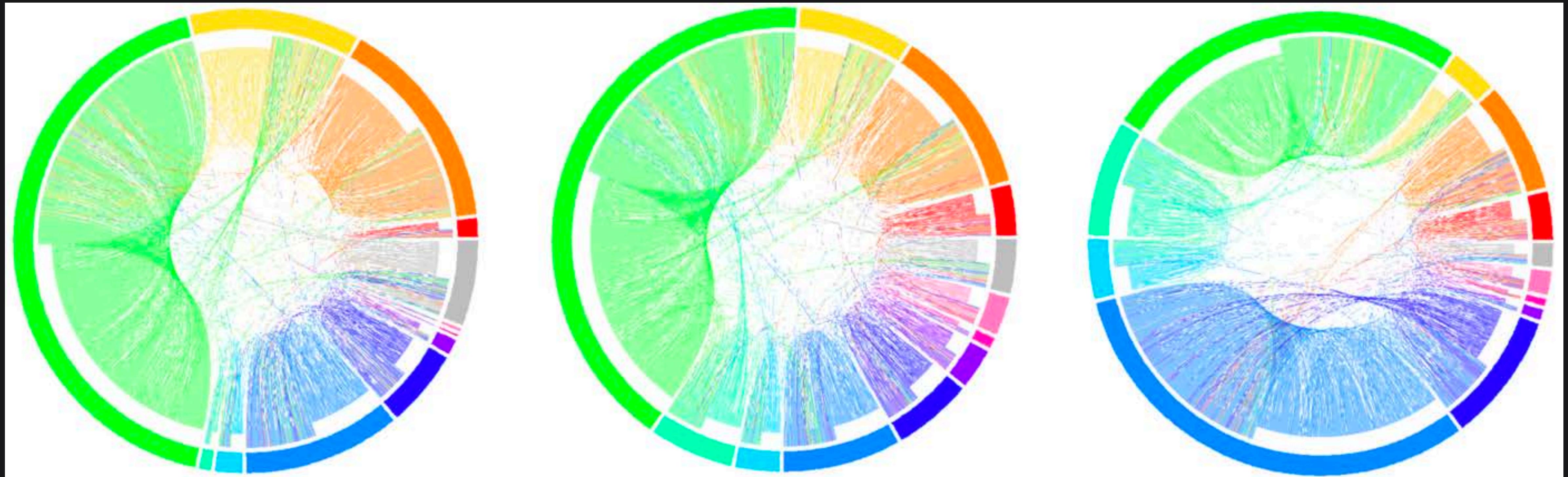


Image: <https://towardsdatascience.com/exploring-chromatic-storytelling-with-r-part-1-8e9ddf8d4187>

Vox Media, "How the triplet flow took over rap." Ear Worm, 2017



Image: <https://www.youtube.com/watch?v=3la8bsi4P-c>

Vox Media, "How the triplet flow took over rap." Ear Worm, 2017

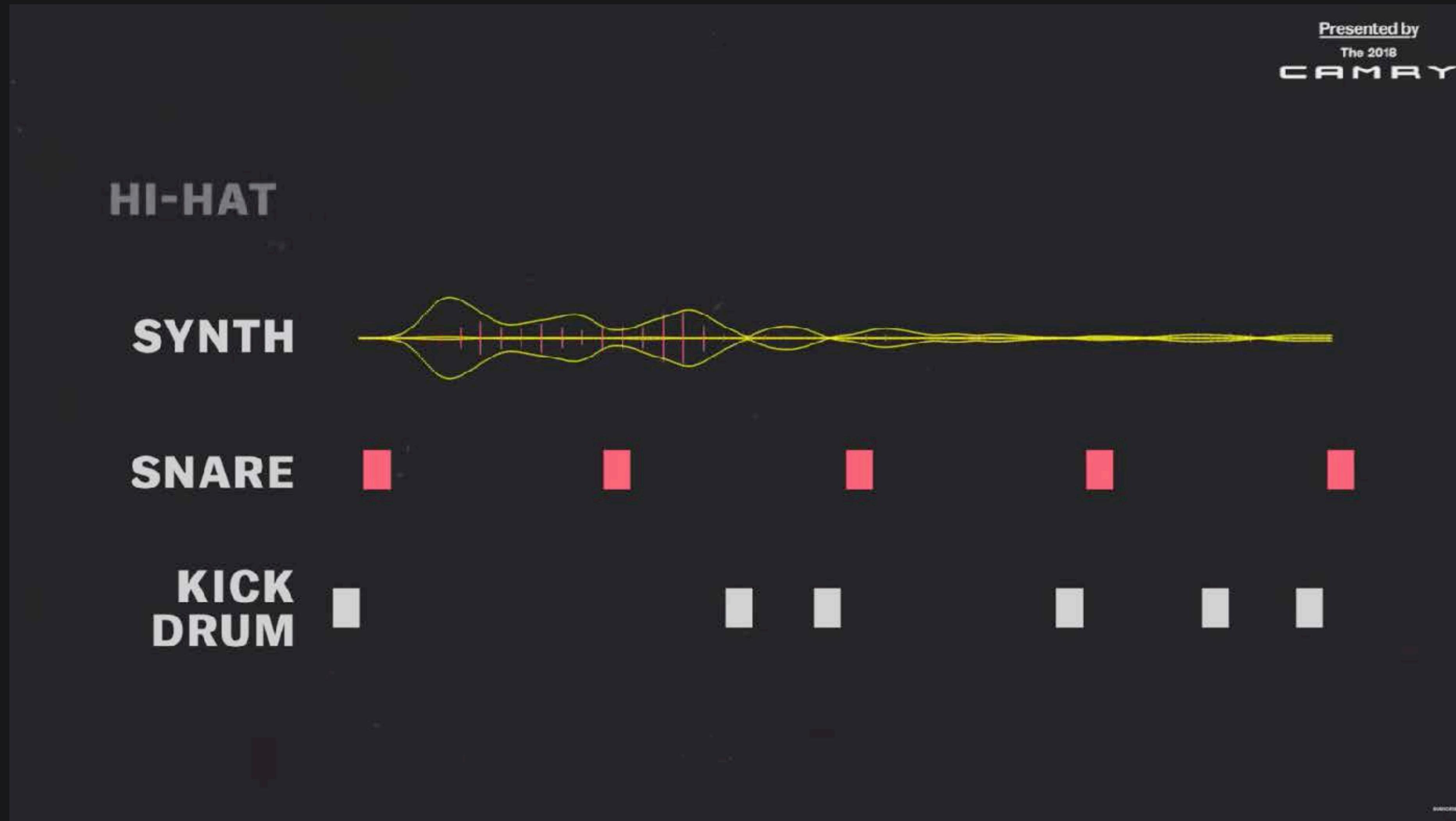
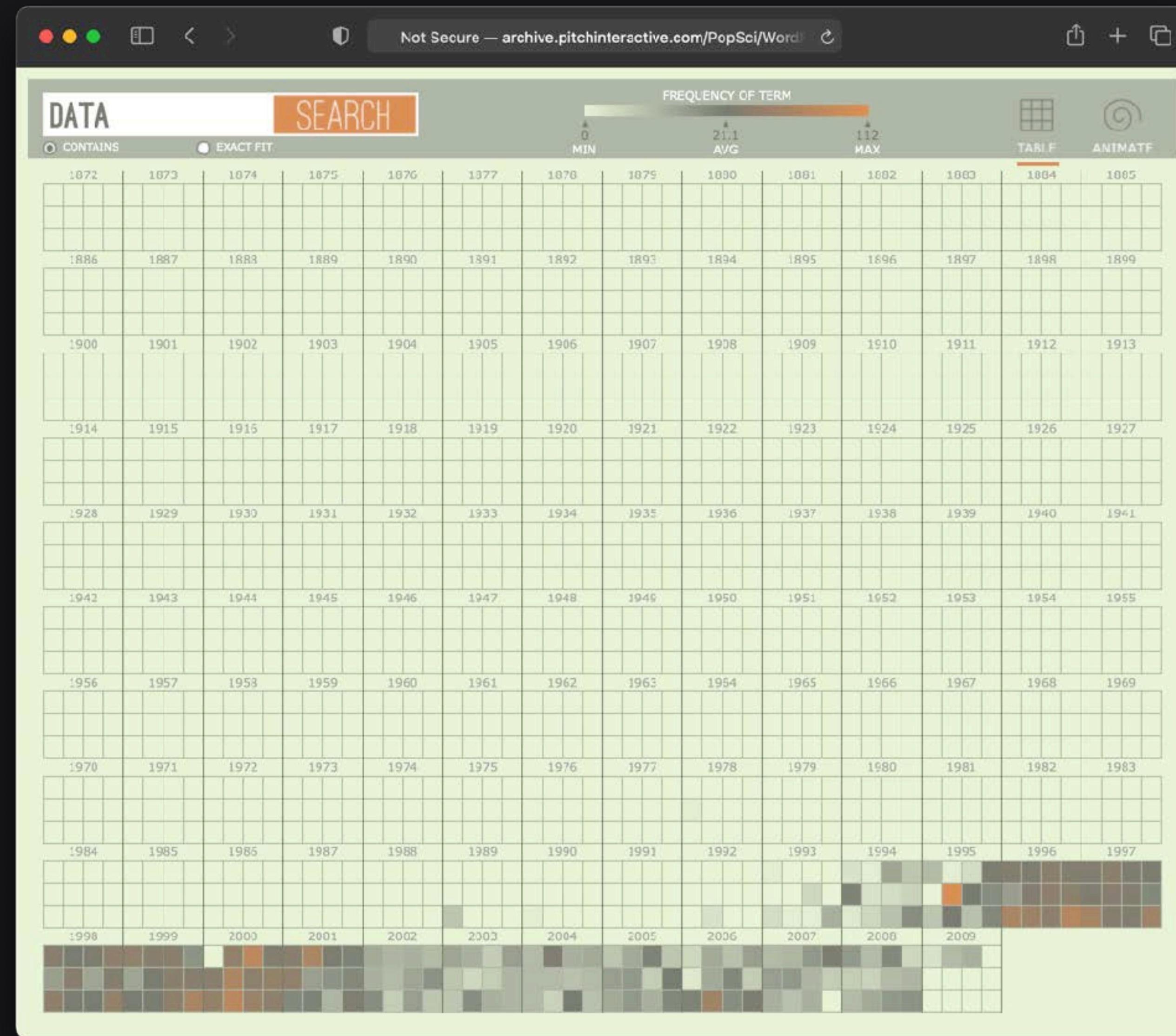
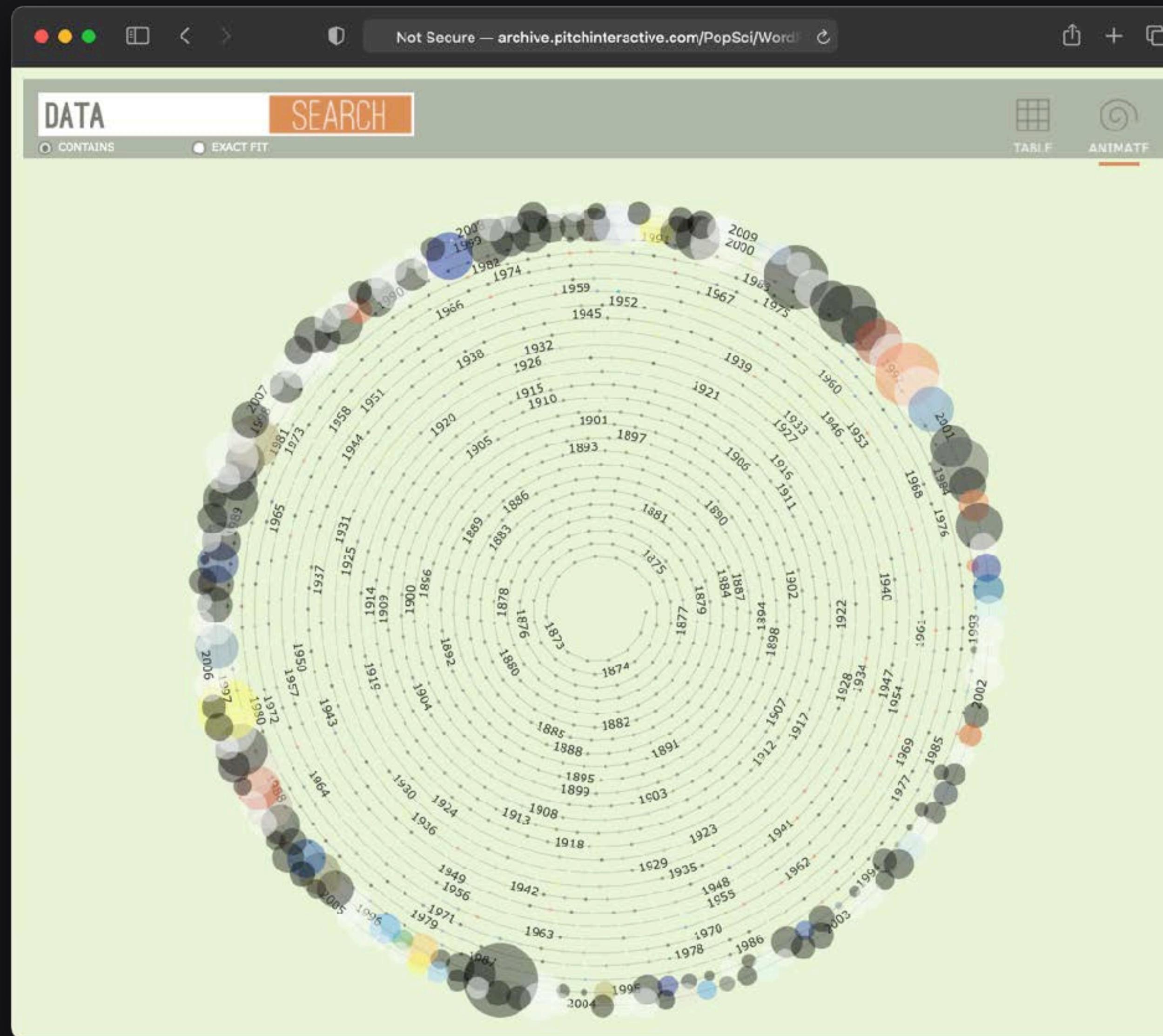


Image: <https://www.youtube.com/watch?v=3la8bsi4P-c>

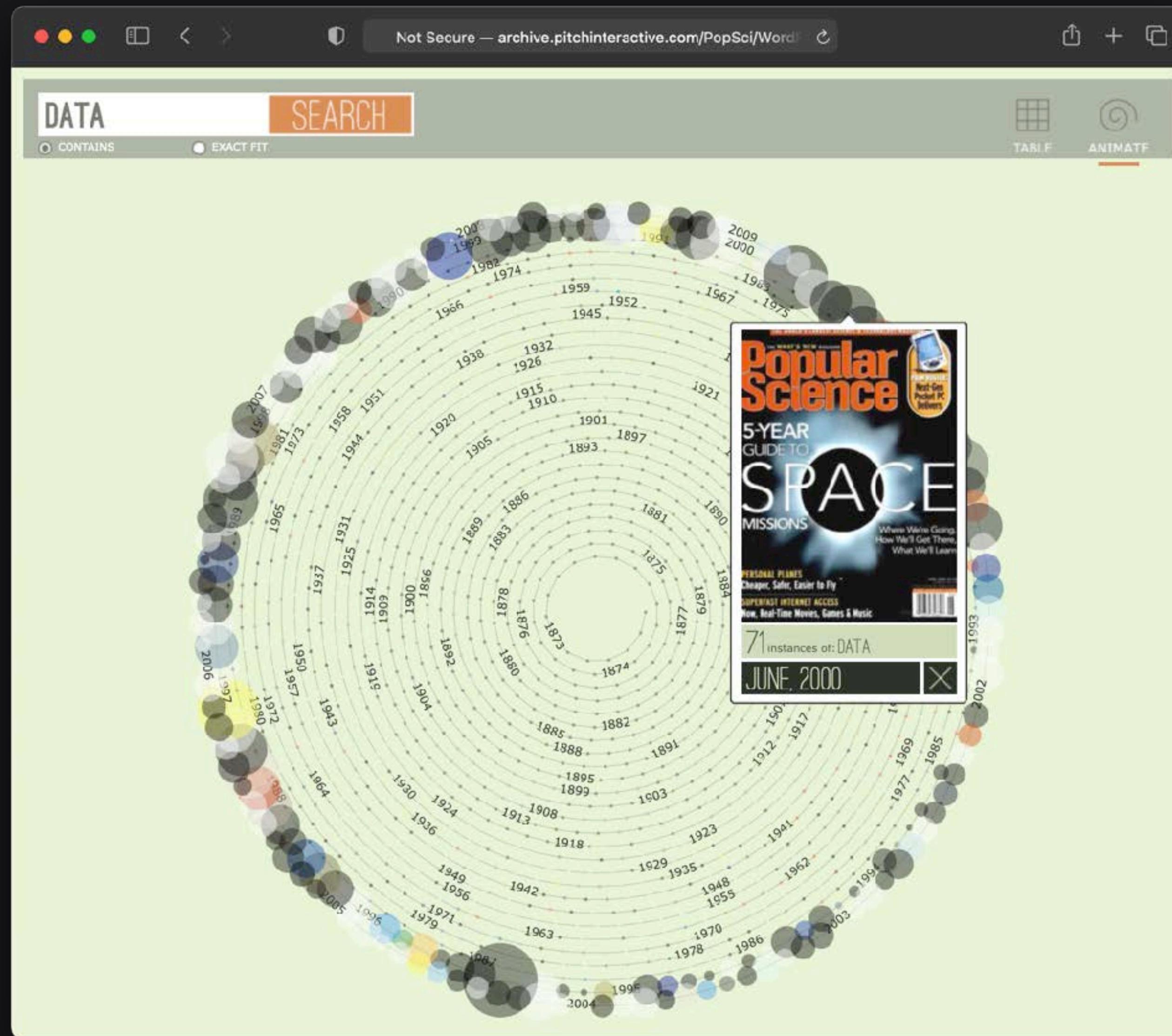
Word Frequency, Pitch Interactive, 2009



Word Frequency, Pitch Interactive, 2009



Word Frequency, Pitch Interactive, 2009



www.indy100.com/viral/amazon-employee-warning-shift-b1877182

Amazon supervisor warns employees not to pack up 'early' – 1 minute before shift ends

Danielle Sinay • Friday 02 July 2021 19:22

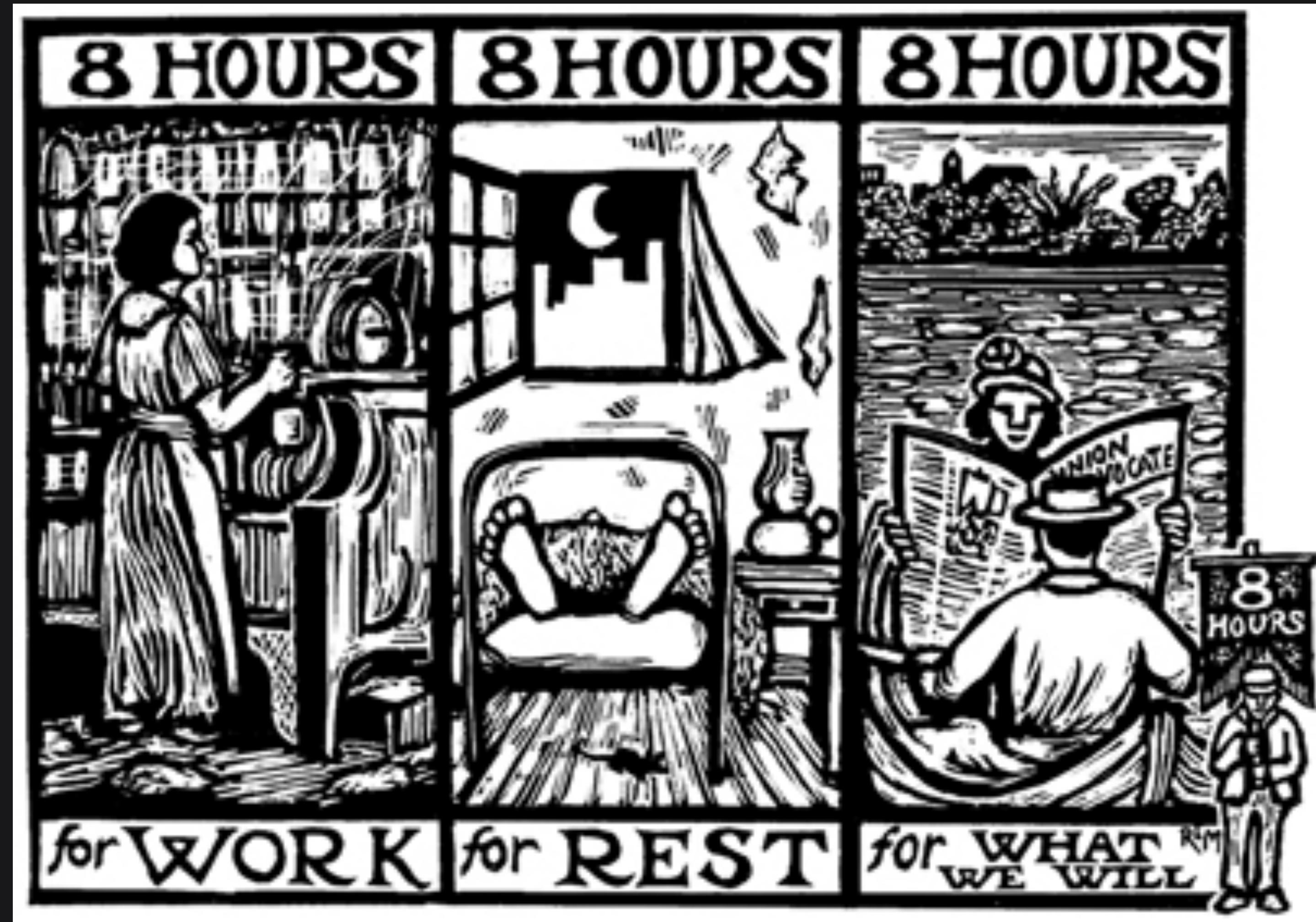


"It is 9:59"

An Amazon manager warned employees not to leave their stations "early."
(Photo Credit: amazonassociate1/TikTok.)

Facing admonishment for packing up "early" may sound familiar to antsy school children anxiously awaiting the school bell's ring, but such is the case for full-grown adult employees, as well — at least those who work at Amazon.





The screenshot shows a computer browser displaying the Verso Books website at www.versobooks.com/books/1570-24-7. The page features the Verso logo (a red 'V') and navigation links for Login, Cart, Facebook, Twitter, Instagram, and Email. A banner at the top indicates a 40% off discount for student reading, valid for 16 days. The main content is for the book '24/7: Late Capitalism and the Ends of Sleep' by Jonathan Crary. The book cover is prominently displayed, showing large orange numbers '24' and '7' against a dark background with a grid of lights. Below the cover, there are two smaller thumbnail images of the book's front cover. The book details include the title, author, format options (Paperback, Ebook, Hardback), price (\$12.95, \$7.77, 40% off), and publication information (144 pages, June 2014, ISBN 9781781683101). A red 'Add to cart' button is visible. A quote from the Los Angeles Review of Books describes the book as "a polemic as finely concentrated as a line of pure cocaine". The page also contains a detailed description of the book's content and author's focus on contemporary capitalism.

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24/7
Late Capitalism and the Ends of Sleep
by Jonathan Crary

Paperback Ebook Hardback

Paperback with free ebook
\$12.95 \$7.77 40% off

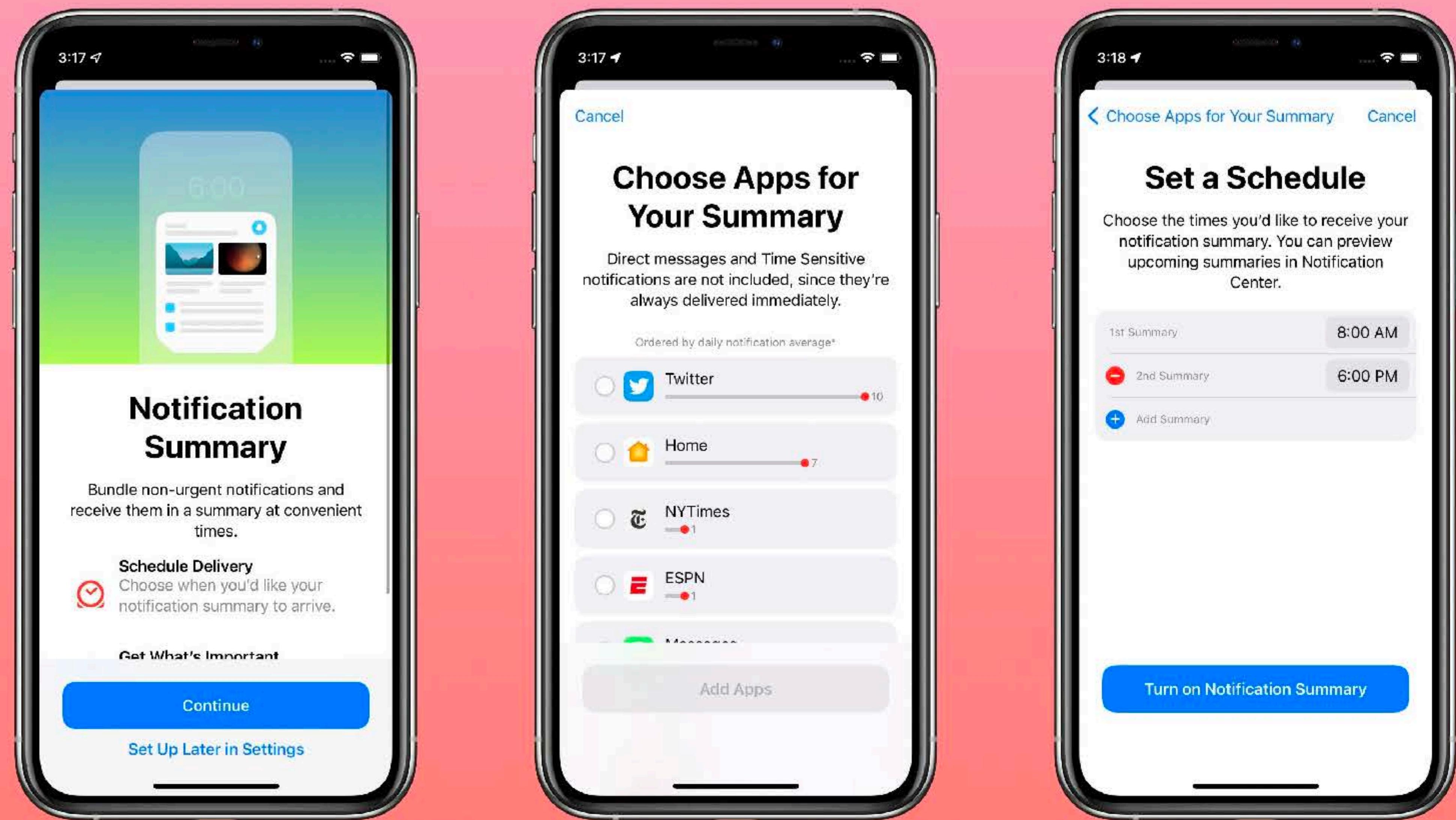
144 pages / June 2014 / 9781781683101

Add to cart

"A polemic as finely concentrated as a line of pure cocaine" – *Los Angeles Review of Books*

24/7: Late Capitalism and the Ends of Sleep explores some of the ruinous consequences of the expanding non-stop processes of twenty-first-century capitalism. The marketplace now operates through every hour of the clock, pushing us into constant activity and eroding forms of community and political expression, damaging the fabric of everyday life.

Jonathan Crary examines how this interminable non-time blurs any separation between an intensified, ubiquitous consumerism and emerging strategies of control and surveillance. He describes the ongoing management of individual attentiveness and the impairment of perception within the compulsory routines of contemporary technological culture. At the same time, he shows that human sleep, as a restorative withdrawal that is intrinsically incompatible with 24/7 capitalism, points to other more formidable and collective refusals of world-destroying patterns of growth and accumulation.



Exercise 1:

Visualize Time

Assignment

Exercise 1: Visualize Time

Objective

Design and implement a “visual clock” that displays a novel or unconventional representation of the time. Your clock should appear different at all times of the day, and it should repeat its appearance every 24 hours (or other relevant cycle, if desired).

Use only graphic primitives, symbols, and formal design elements. Text and alphanumeric characters are not permitted. This is a creative interpretation of the clock, focused on visual quality and inventiveness.

Try to consider compositions that aren't directly "circular."

Union Square



Image: <https://www.fastcompany.com/90552230/manhattans-classic-digital-clock-is-now-counting-down-to-climate-disaster?partner=rss>



<https://procyonic.org/clocks/clock47.html>

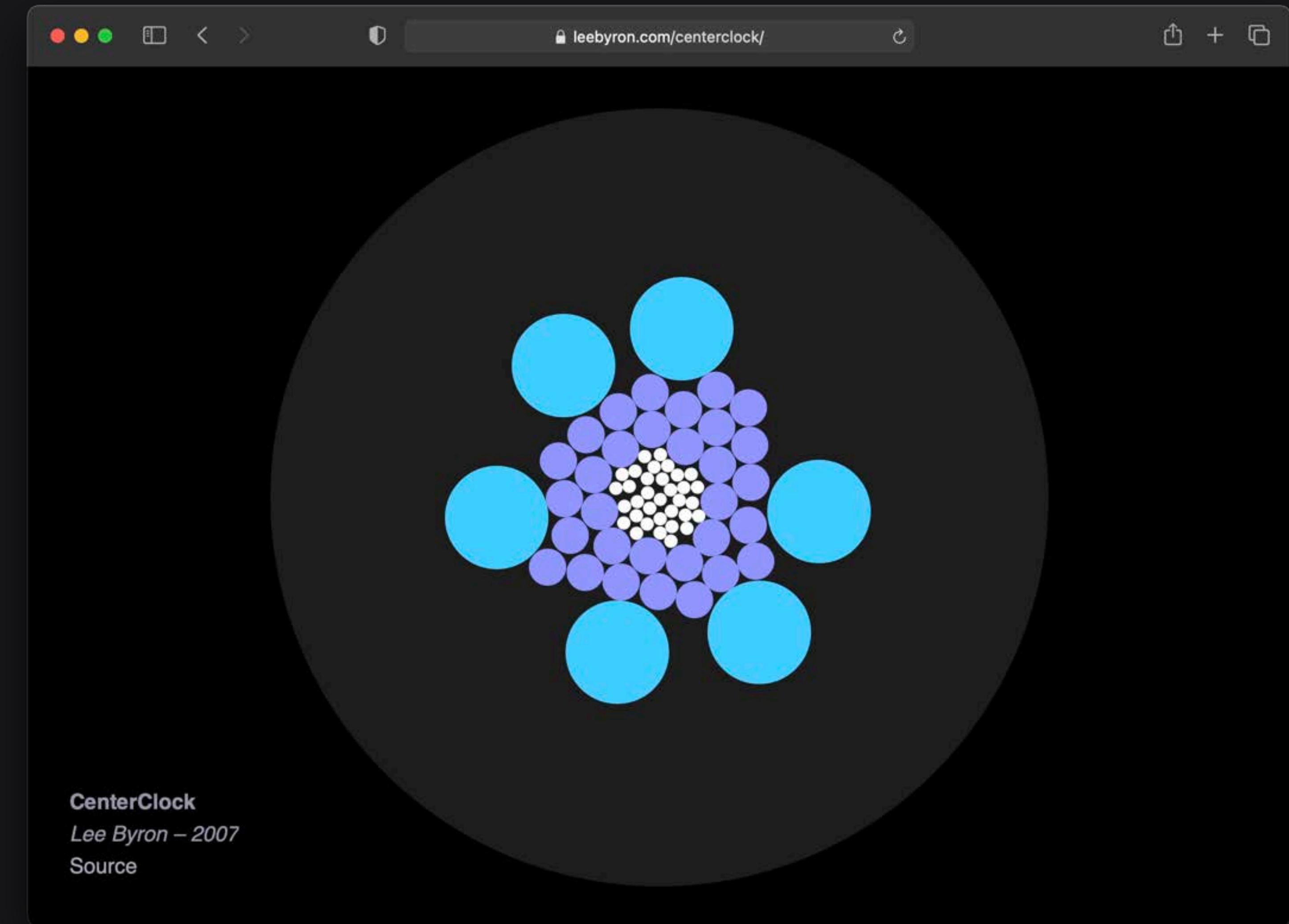
Sophie Taeuber-Arp, Construction géométrique, 1942



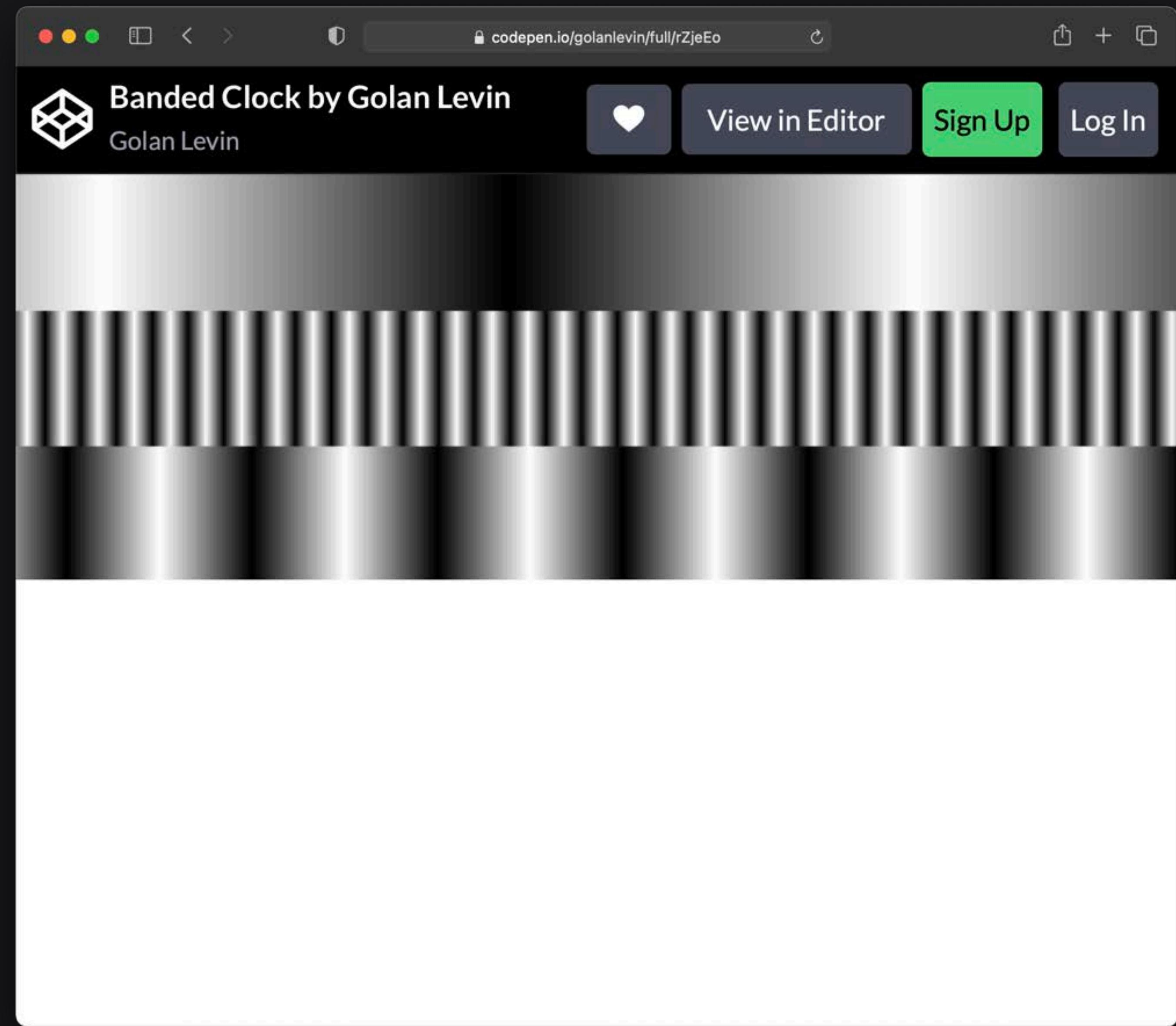
Image: <https://sophietaeuberarp.org/english/geometrische-konstruktion/>



Image: <https://www.smithsonianmag.com/arts-culture/it-still-avant-garde-180977156/>



<https://leebryon.com/centerclock/>



<https://codepen.io/golanlevin/full/rZjeEo>

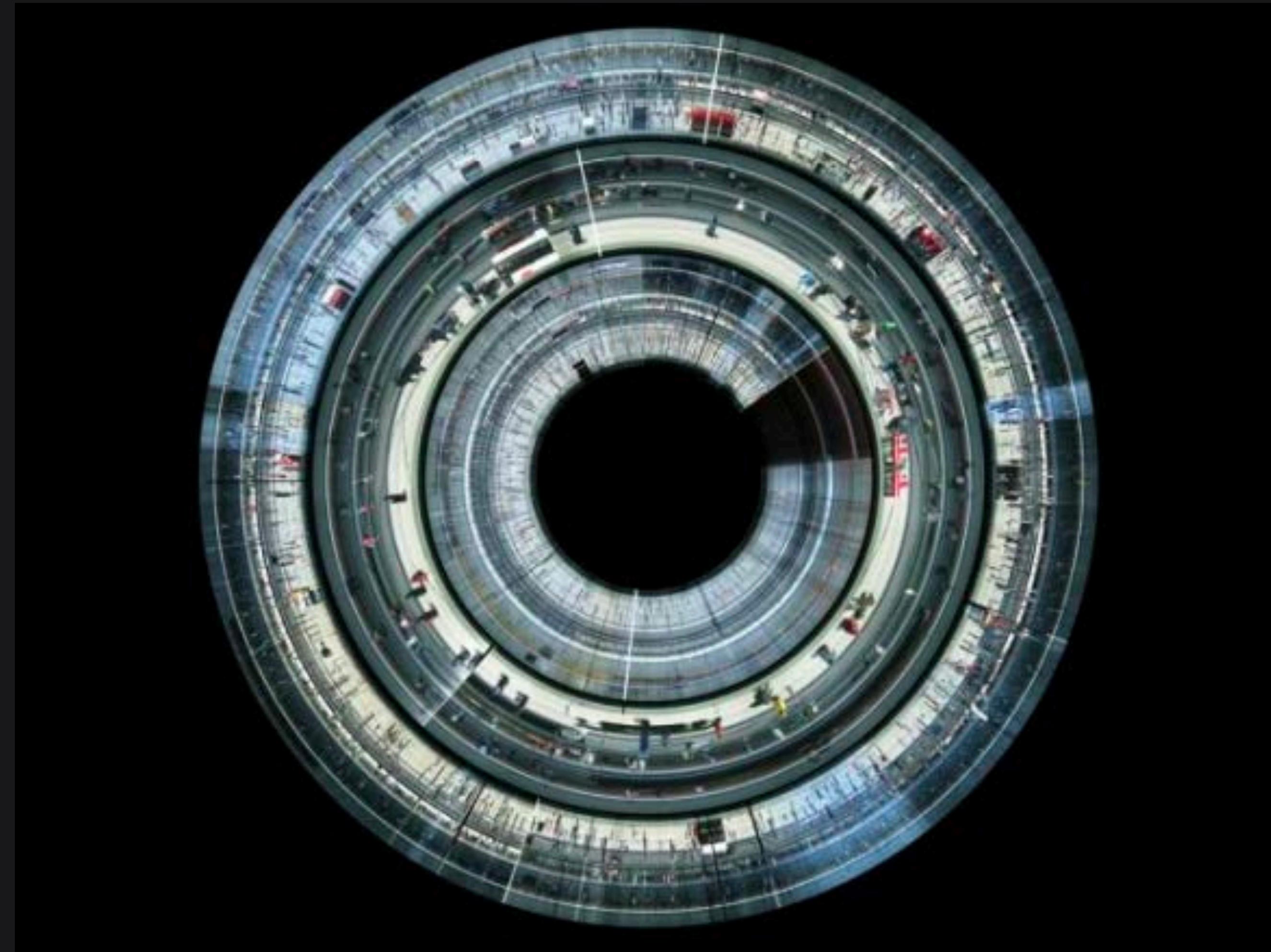


Image: <http://gnomalab.es/last-clock-ipad/>

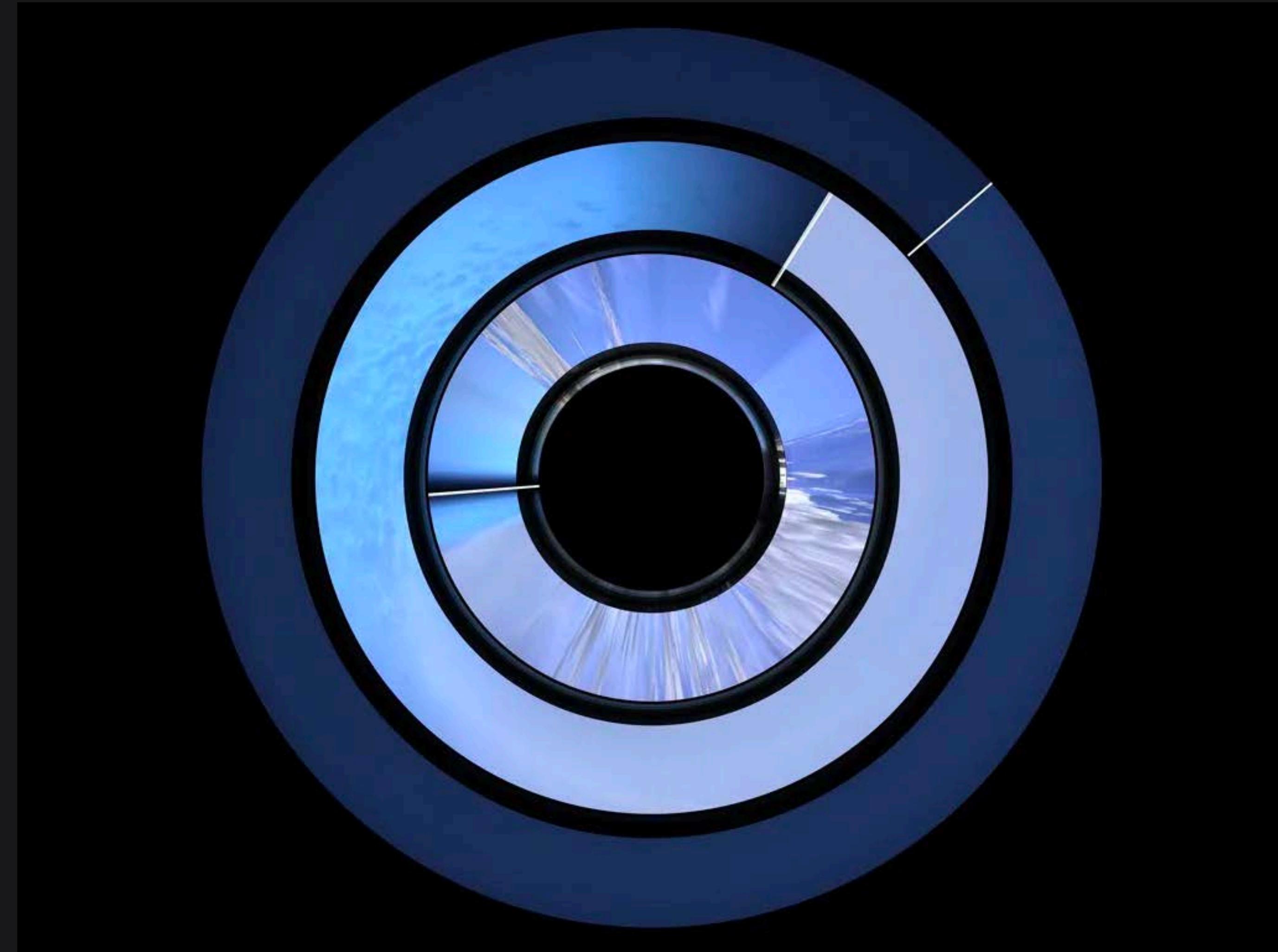


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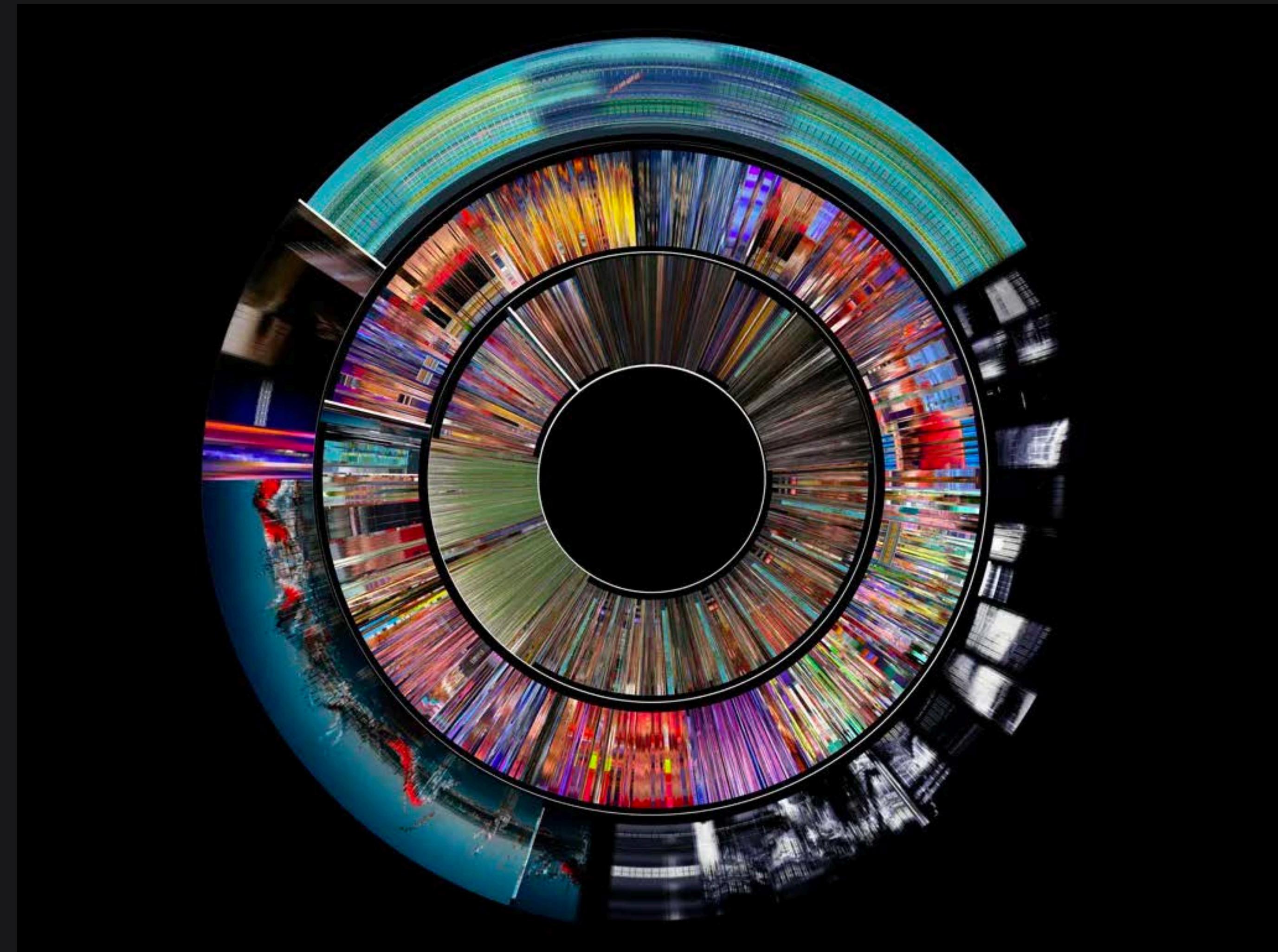
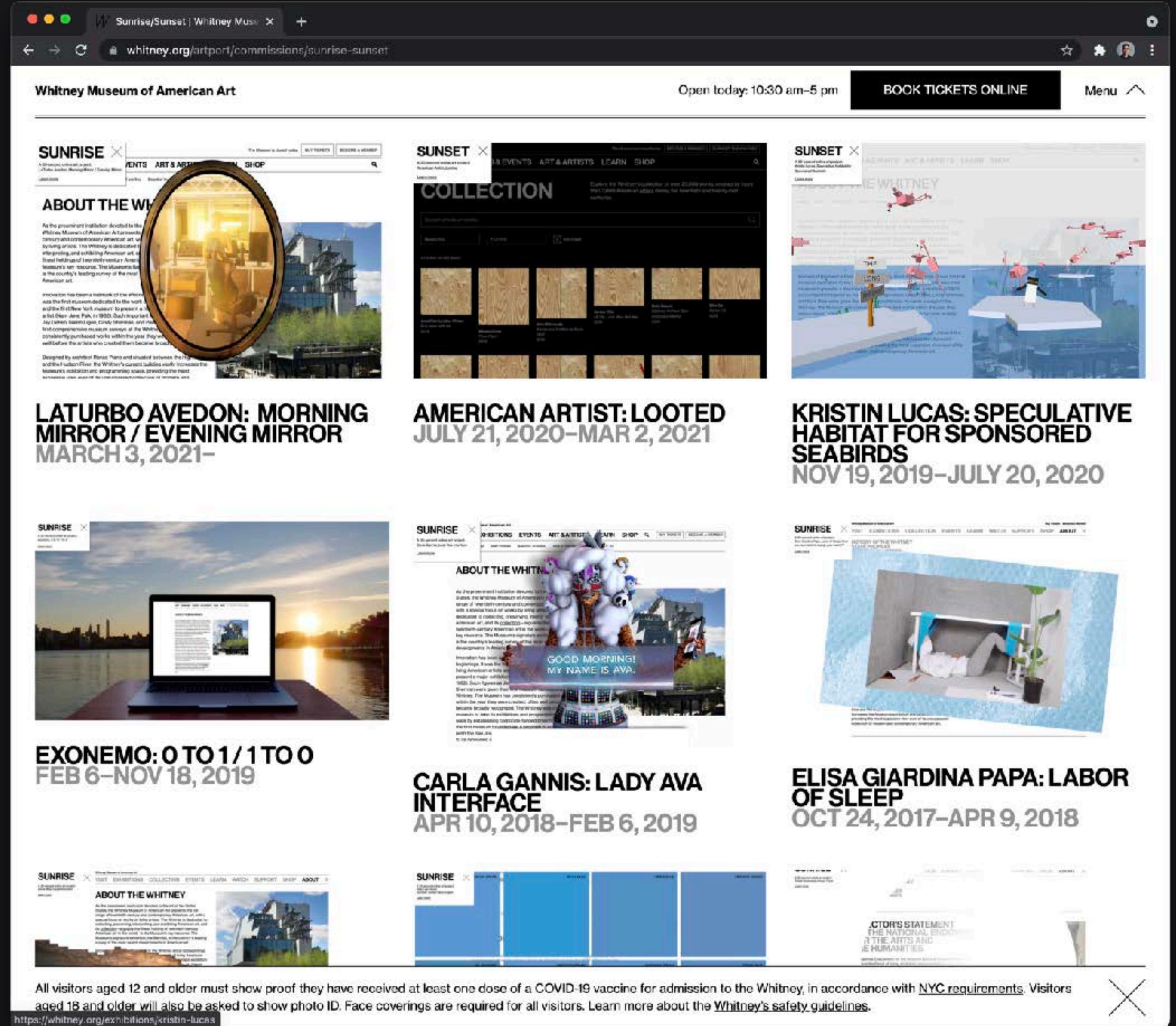


Image: <http://gnomalab.es/last-clock-ipad/>



SUNRISE X

A 30-second online art project:
LaTurbo Avedon, *Morning Mirror / Evening Mirror*

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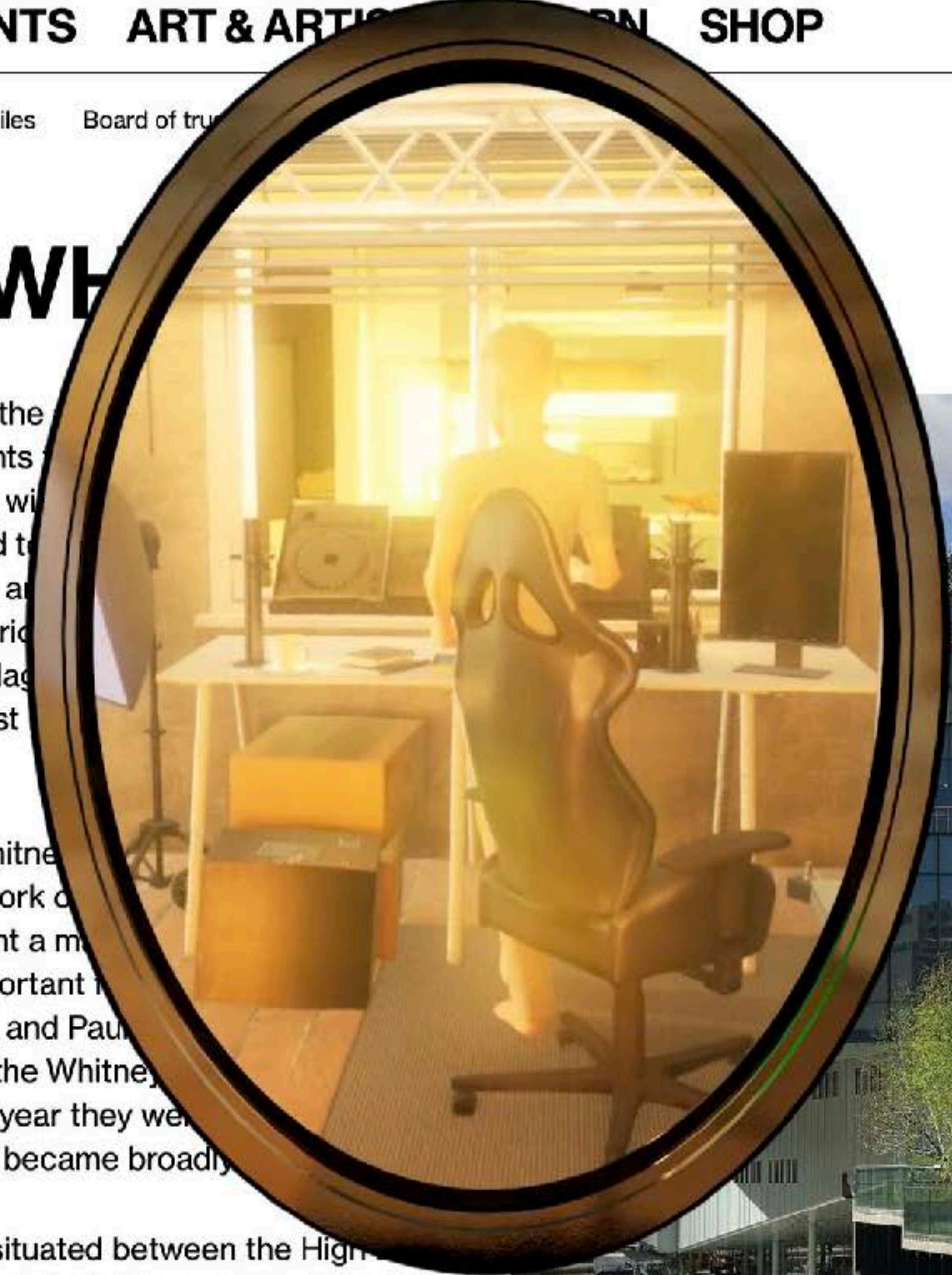
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ABOUT THE WHITNEY



As the preeminent institution devoted to the collection, study, and presentation of twentieth-century and contemporary American art, with a focus on works by living artists. The Whitney is dedicated to collecting, preserving, interpreting, and exhibiting American art, and maintaining one of the finest holdings of twentieth-century American art in the world. The Museum's flagships program is the country's leading survey of the most important works of American art.

Innovation has been a hallmark of the Whitney since its founding in 1930. It was the first museum dedicated to the work of living artists, the first to present a major exhibition of a woman artist (Nam June Paik, in 1982). Such important figures as Jasper Johns, Robert Rauschenberg, Jay DeFeo, Glenn Ligon, Cindy Sherman, and Paul McCarthy have had their first comprehensive museum surveys at the Whitney. The Museum consistently purchased works within the year they were created, often well before the artists who created them became broadly known.

Designed by architect Renzo Piano and situated between the High Line and the Hudson River, the Whitney's current building vastly increases the Museum's exhibition and programming space, providing the most expansive view ever of its unsurpassed collection of modern and contemporary American art.