

NOW:

TIME

02025 ITP TIME COURSE – WELCOME!

Goals:

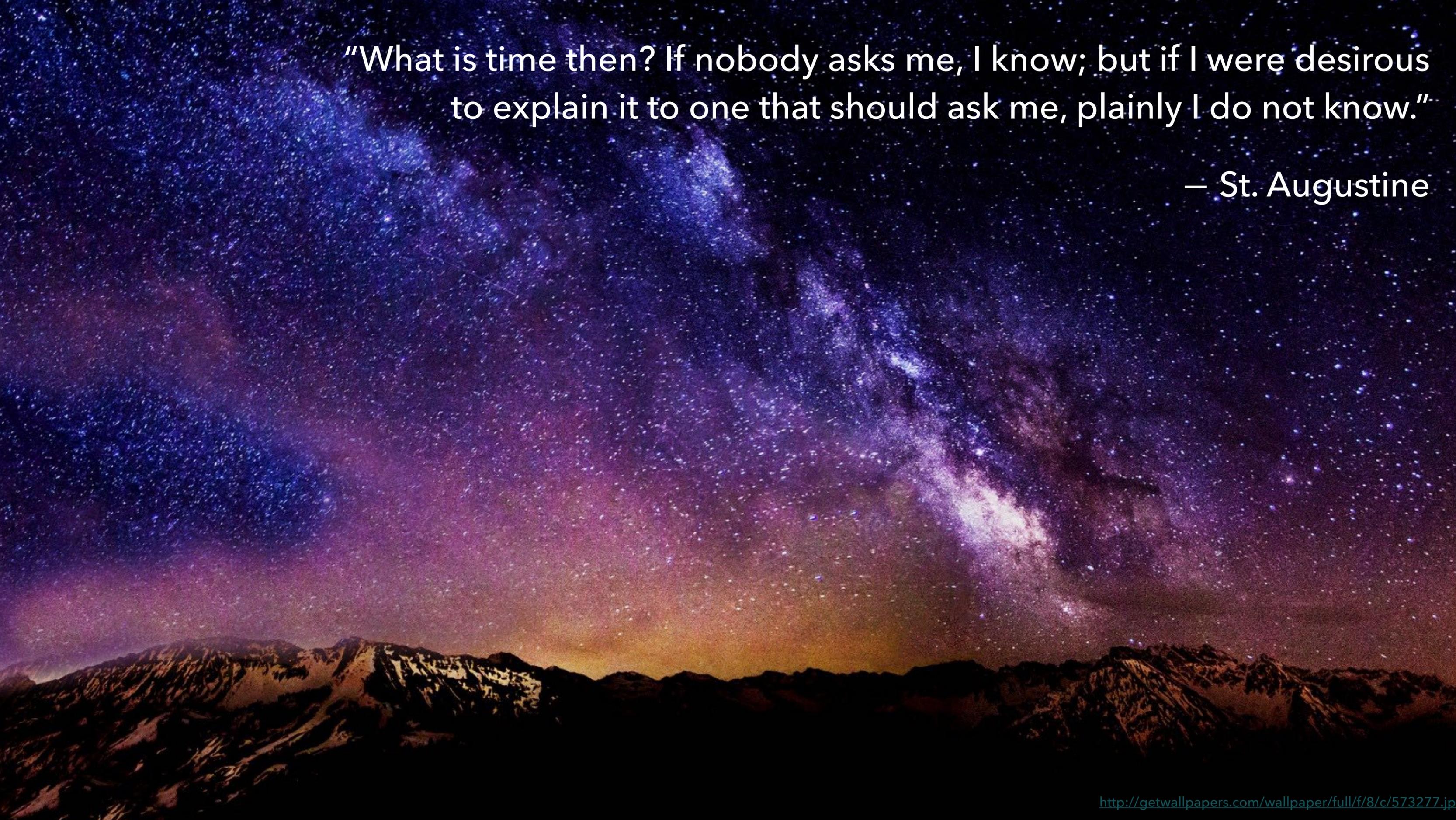
- ▶ Get excited about the class! Meet each other and have a good interaction about Time.
- ▶ Understand the syllabus and assignments.
- ▶ Build momentum for the production work.

Agenda:

- ▶ Intro to class - why Time at ITP?
- ▶ Intro from you
 - ▶ What time zones have you lived in?
 - ▶ Why ITP and why Time?
 - ▶ Something very old or very new you're excited about?
- ▶ Discussion: Attributes of Time
- ▶ <break>
- ▶ Stellarium Activity
- ▶ Gnomon
- ▶ Outro - review assignments and readings





A night sky with the Milky Way galaxy visible, arching across the frame. The stars are in shades of blue, purple, and white. Below the sky, a range of mountains is visible, with snow on their peaks and ridges. The overall scene is dark and atmospheric.

“What is time then? If nobody asks me, I know; but if I were desirous to explain it to one that should ask me, plainly I do not know.”

– St. Augustine

WHY TIME AT ITP?

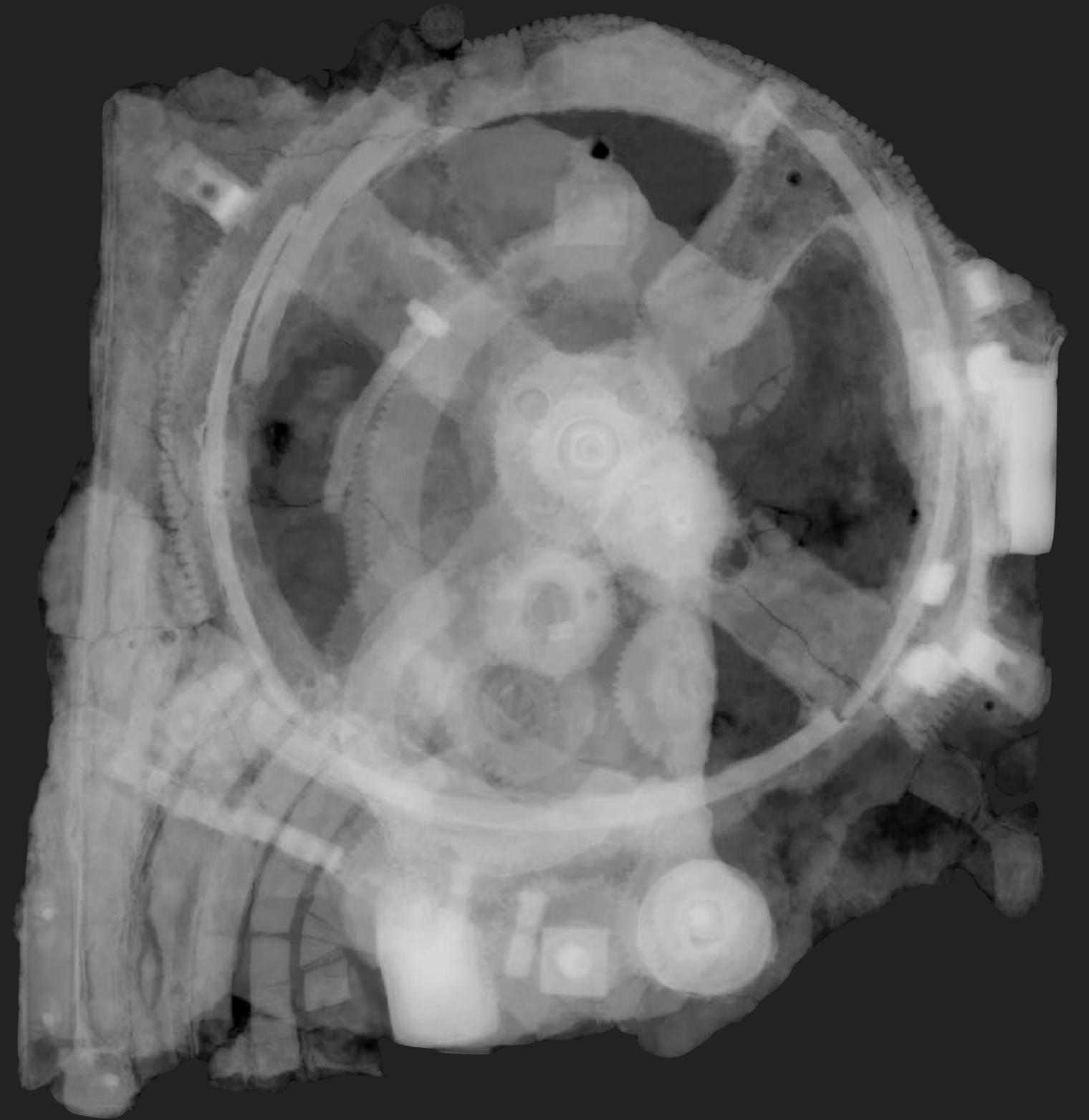
PHILOSOPHY

Language, history, politics, life...

+

SCIENCE

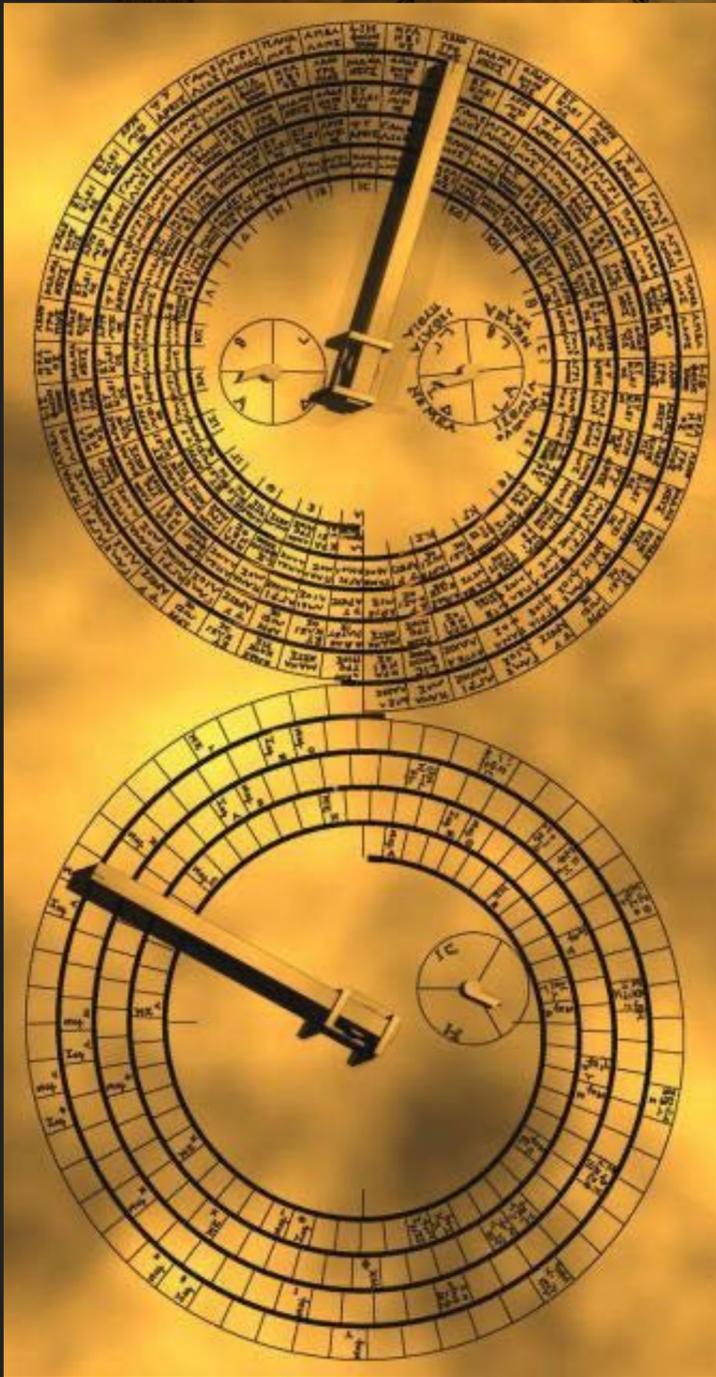
Modeling nature, engineering, code, design...



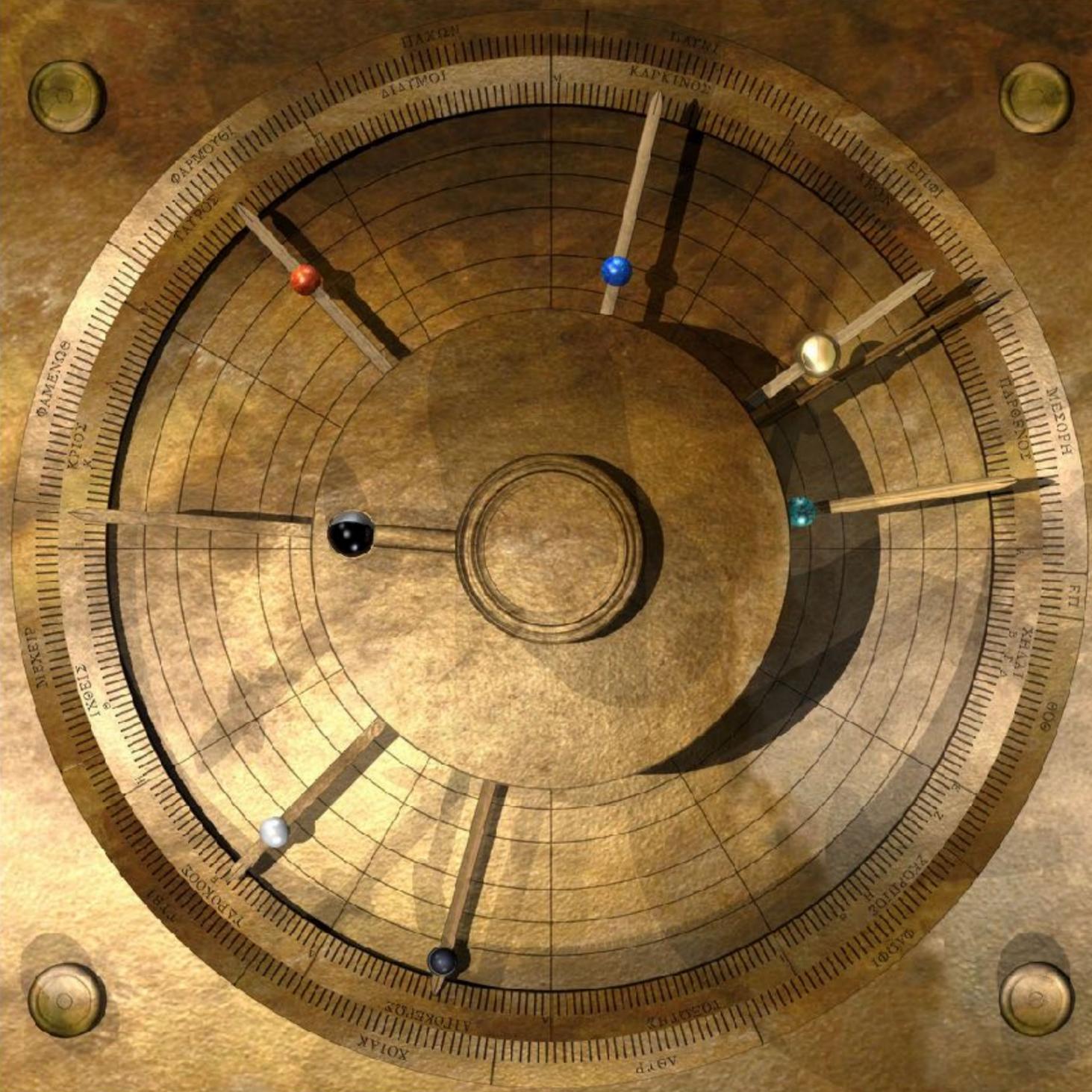
<https://en.wikipedia.org/>

ANTIKYTHERA MECHANISM

~ 100 BCE

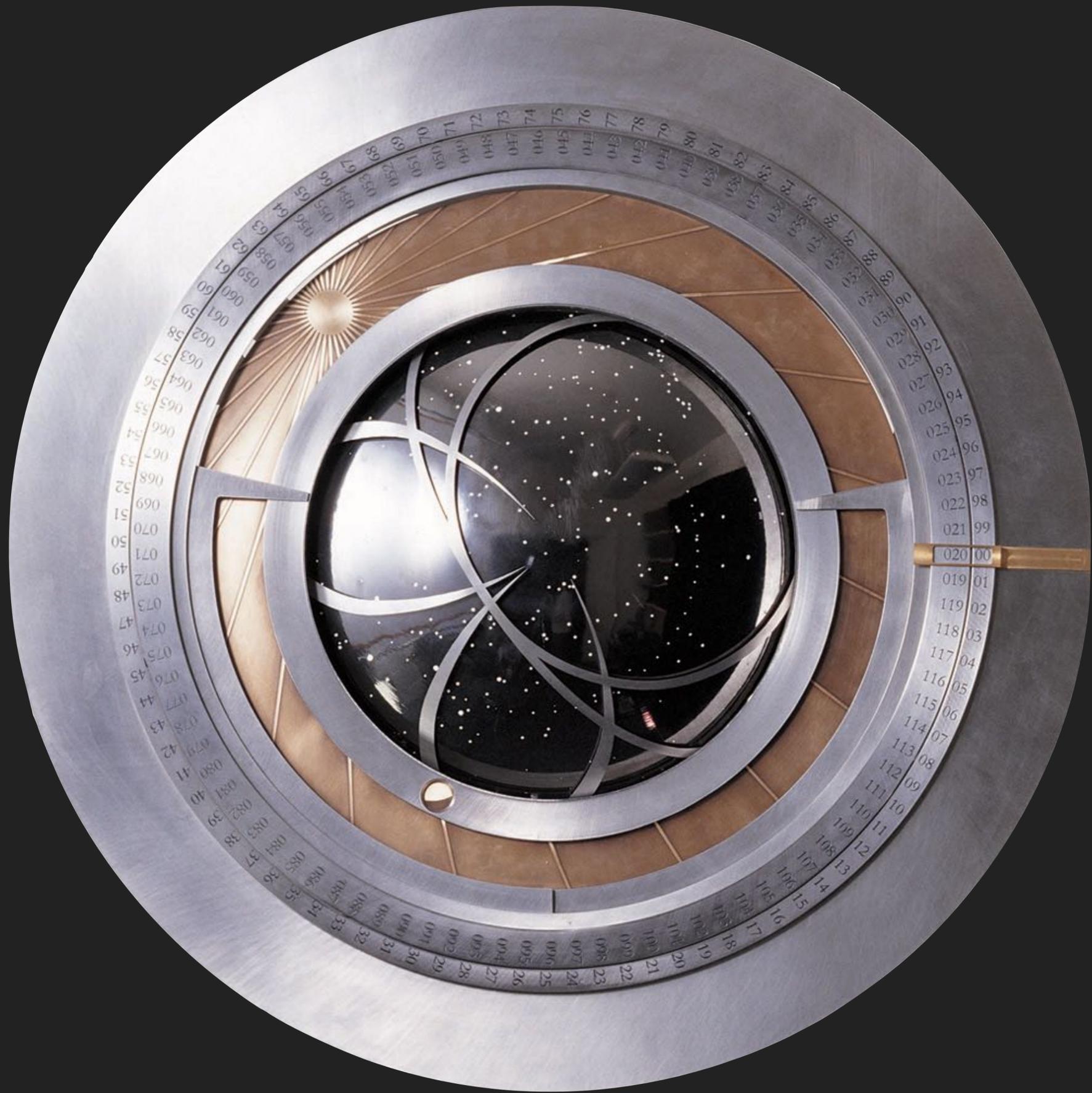


ΣΑΡΚΤΟ ΥΡΟΣ ΔΥΝΕΙ ΕΘΟΣ



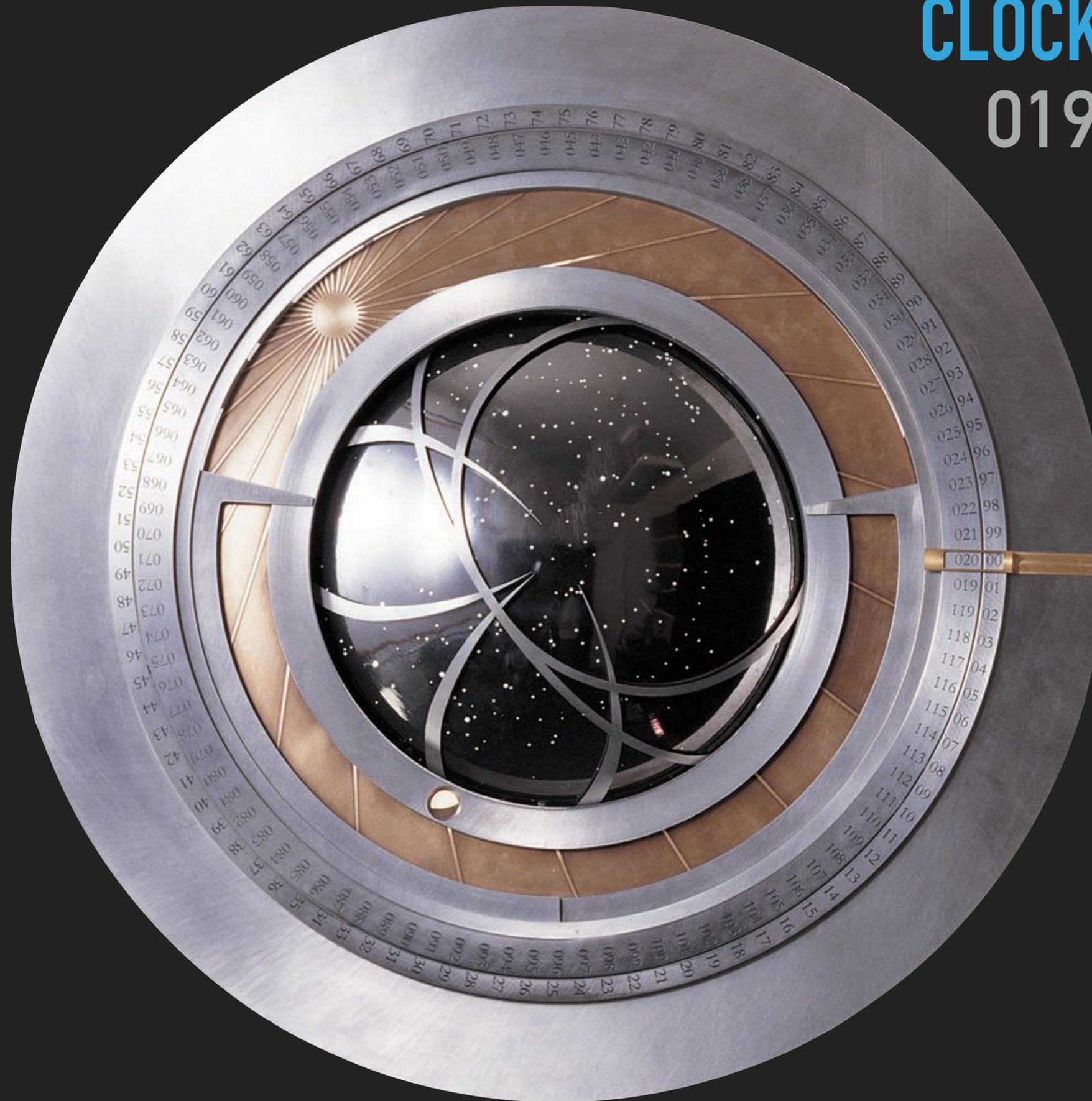
Α ΜΗΔΙ ΑΡΧΟΝΤΑΙ ΕΠΙΤΕΛΛΕΙΝ Α Μ ΚΑΡΚΙΝΟΣ ΑΡΧΕΤΑΙ
 Β ΣΥΜΕΡΙΑ ΦΟΙΝΟΣ ΠΙΝΗ Α ΤΡΟΤΑΙ ΘΕΡΙΝΑΙ
 Γ ΑΝΑΤΕΜΟΥΣΙΝ ΕΣΤΕΡΙΑΝ ΣΤΡΩΝ ΑΝΤΕΜΕΙΕΣΙΟΣ
 Δ ΑΝΑΤΕΛΛΕΙ ΕΣΤΕΡΙΑΙΟ Ε Ξ ΥΟΝ ΑΝΤΕΜΕΙΕΣΙΟΣ
 Ε ΤΕΜΕΙΟ Ο ΑΕ ΤΟΣ ΔΥΝΕΙΕΣΙΟΣ
 ΣΚΟΡΠΙΟΣ ΑΡΧΕΤΑΙ ΑΝΑΤΕΛΛΕΙΝ Α Τ ΛΕΟΝ ΑΡΧΕΤΑΙ ΕΠΙΤΕΛΛΕΙΝ
 Ρ Σ Τ Υ Φ Χ
 Α ΤΟΣ ΤΗΣ ΑΡΧΕΤΑΙ ΕΠΙΤΕΛΛΕΙΝ Α Υ Φ Χ

BACK



CLOCK of the LONG NOW

01997, ONGOING



A Story That Lasts 10,000 Years (featuring Neil Gaiman)

X
LONG NOW



DANNY HILLIS

Computer Science Pioneer



STEWART BRAND

Whole Earth Founder



BRIAN ENO

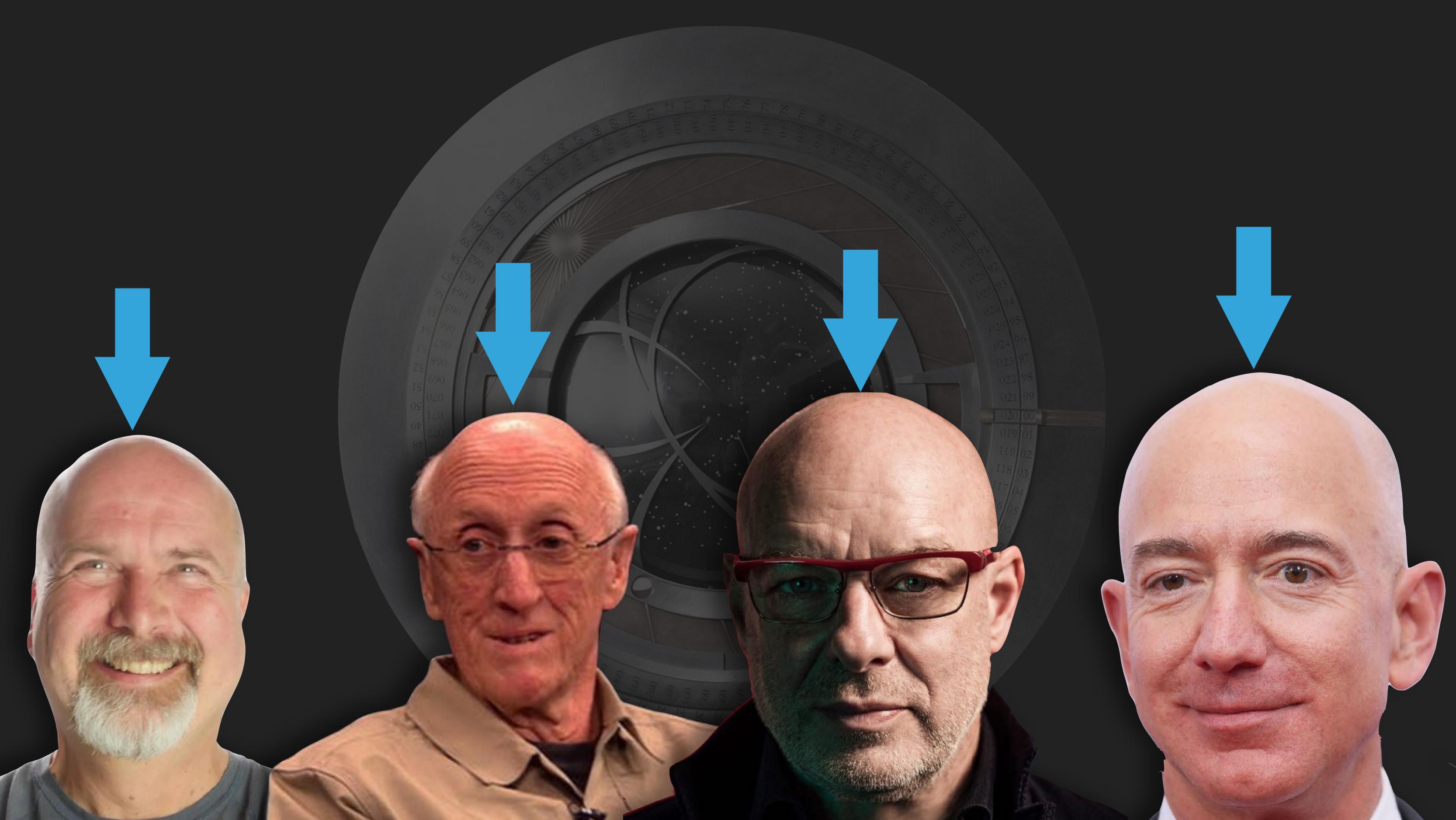
Musician



JEFF BEZOS

Money







WHY TIME AT ITP?

PHILOSOPHY

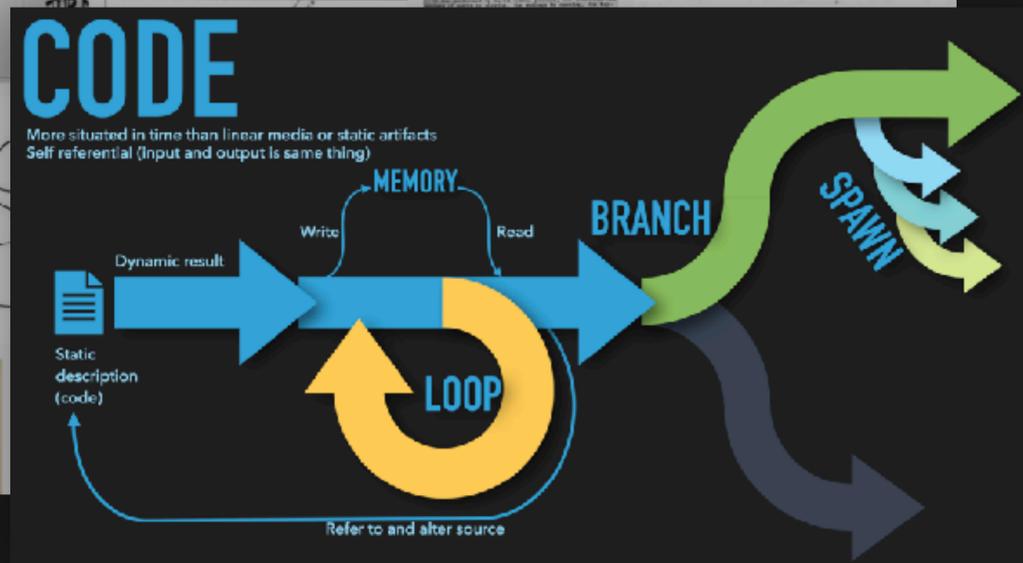
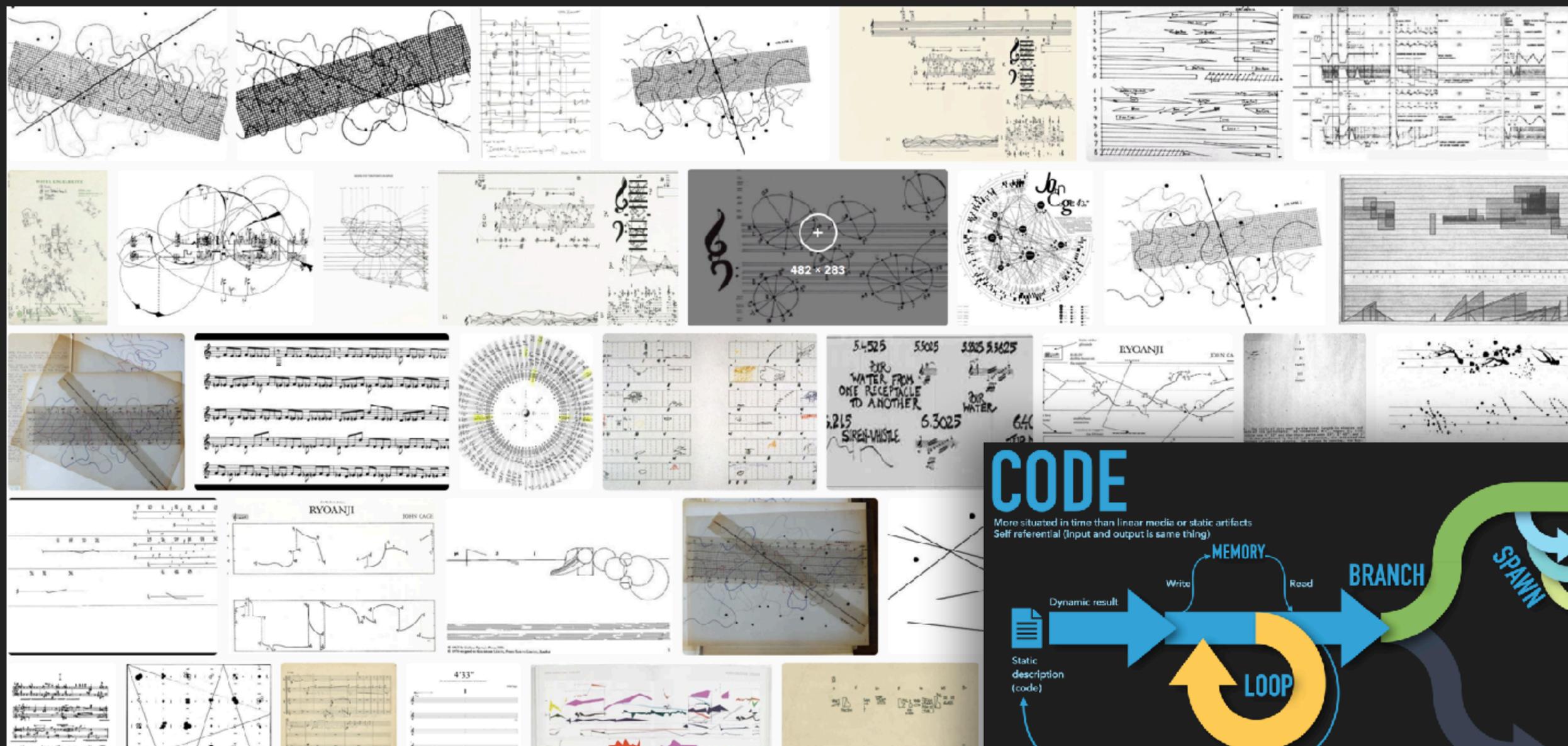
Language, history, politics, life...

+

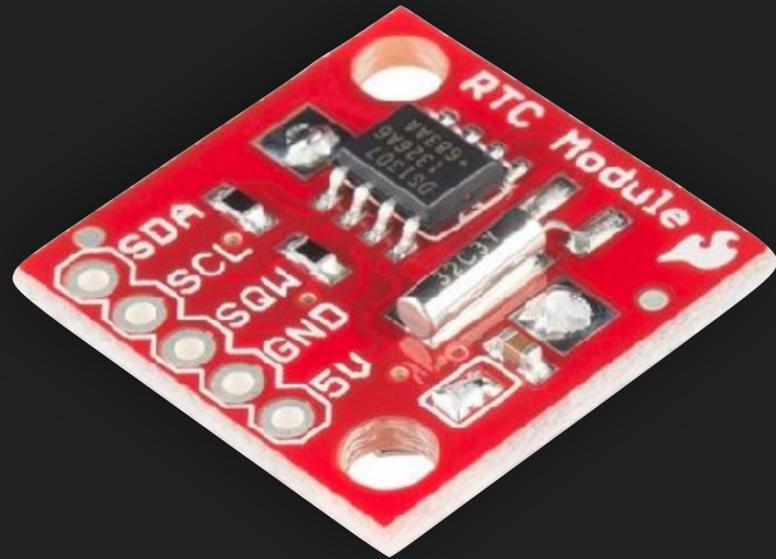
SCIENCE

Modeling nature, engineering, code, design...

Graphical music scores guide musical activity in time



Code executes in time in unique ways (slide from upcoming "Time Code")



Sparkfun RTC Breakout boards



Mechanical watch movement

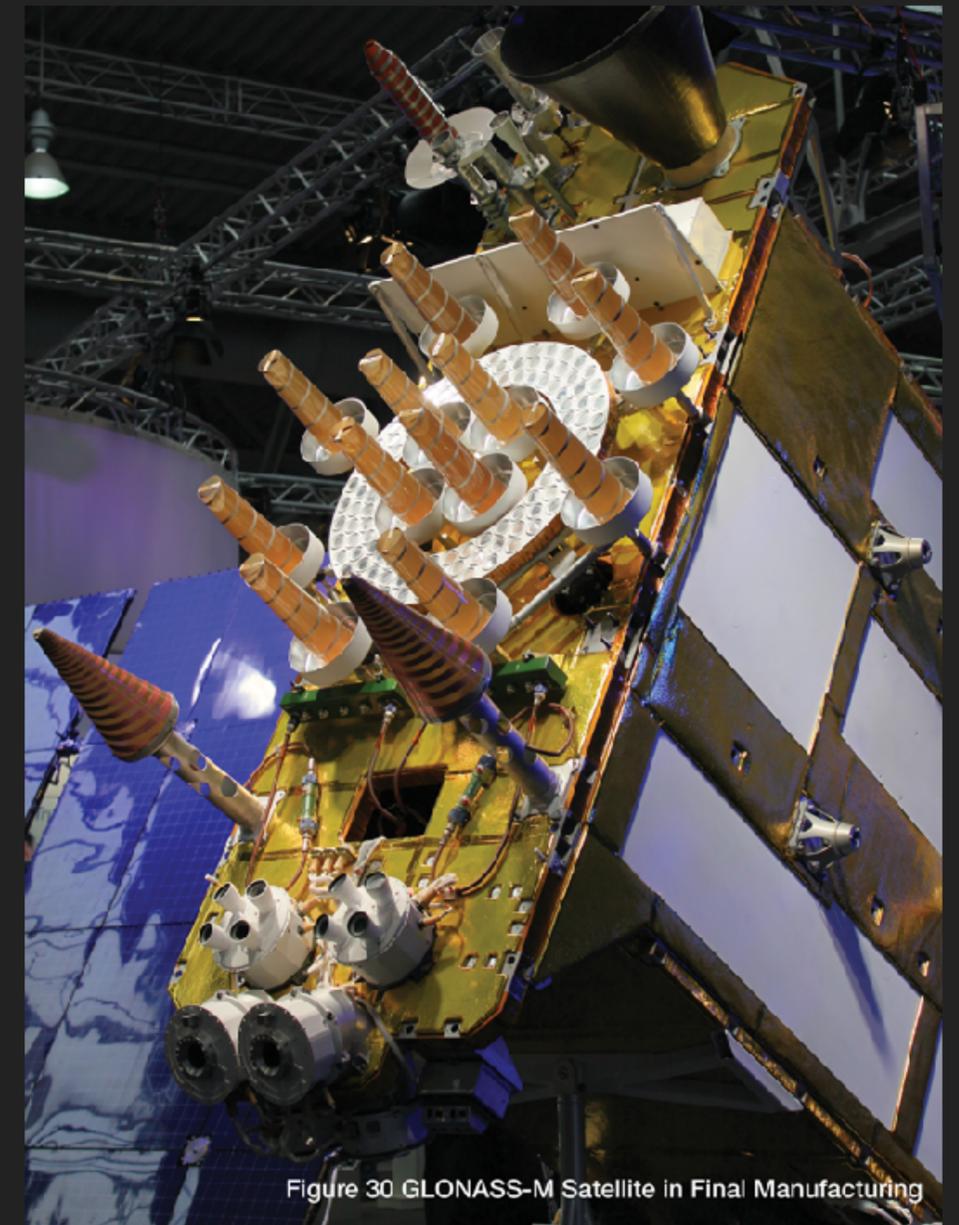


Figure 30 GLONASS-M Satellite in Final Manufacturing

Russian GLONASS satellite with atomic clock



VID-28 Bi-axial stepper motor



Strausborg Astronomical Clock [Atlas Obscura](#)



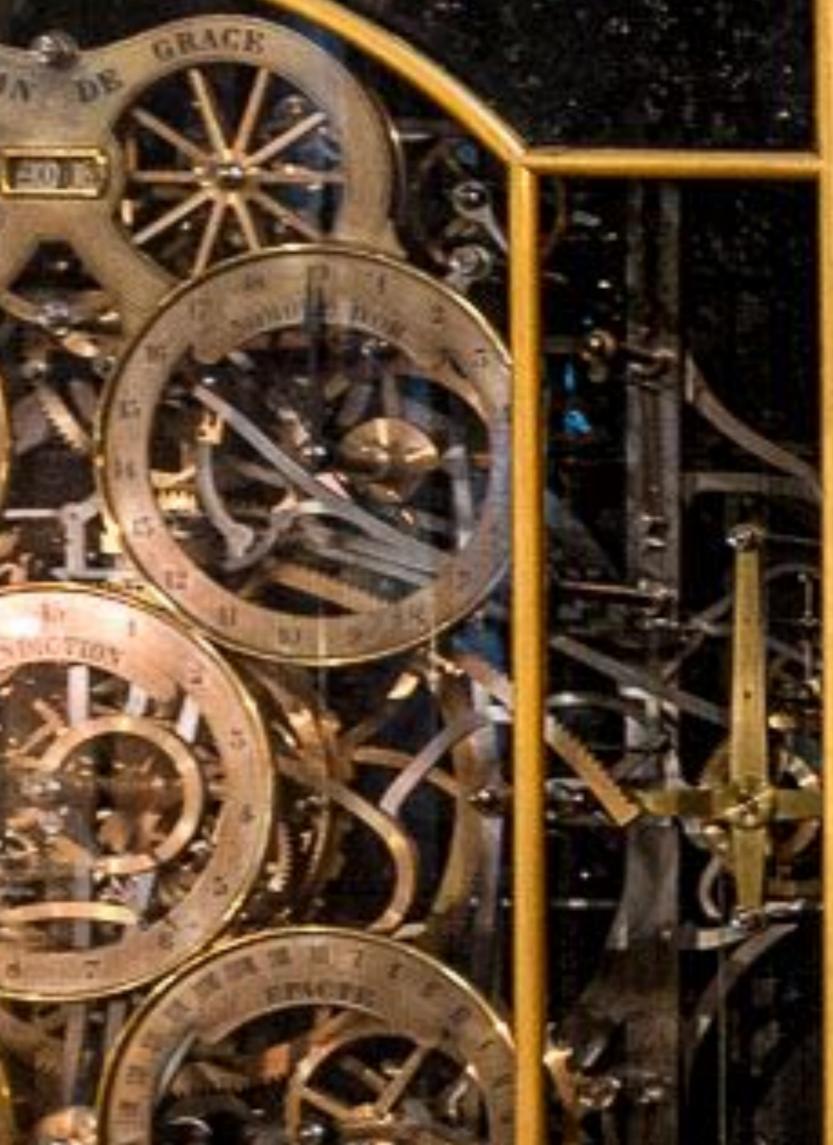
COMPUT ECCLESIASTIQUE

TEMPS APPARENT

EQUATIONS SOLAIRES & LUNAIRES

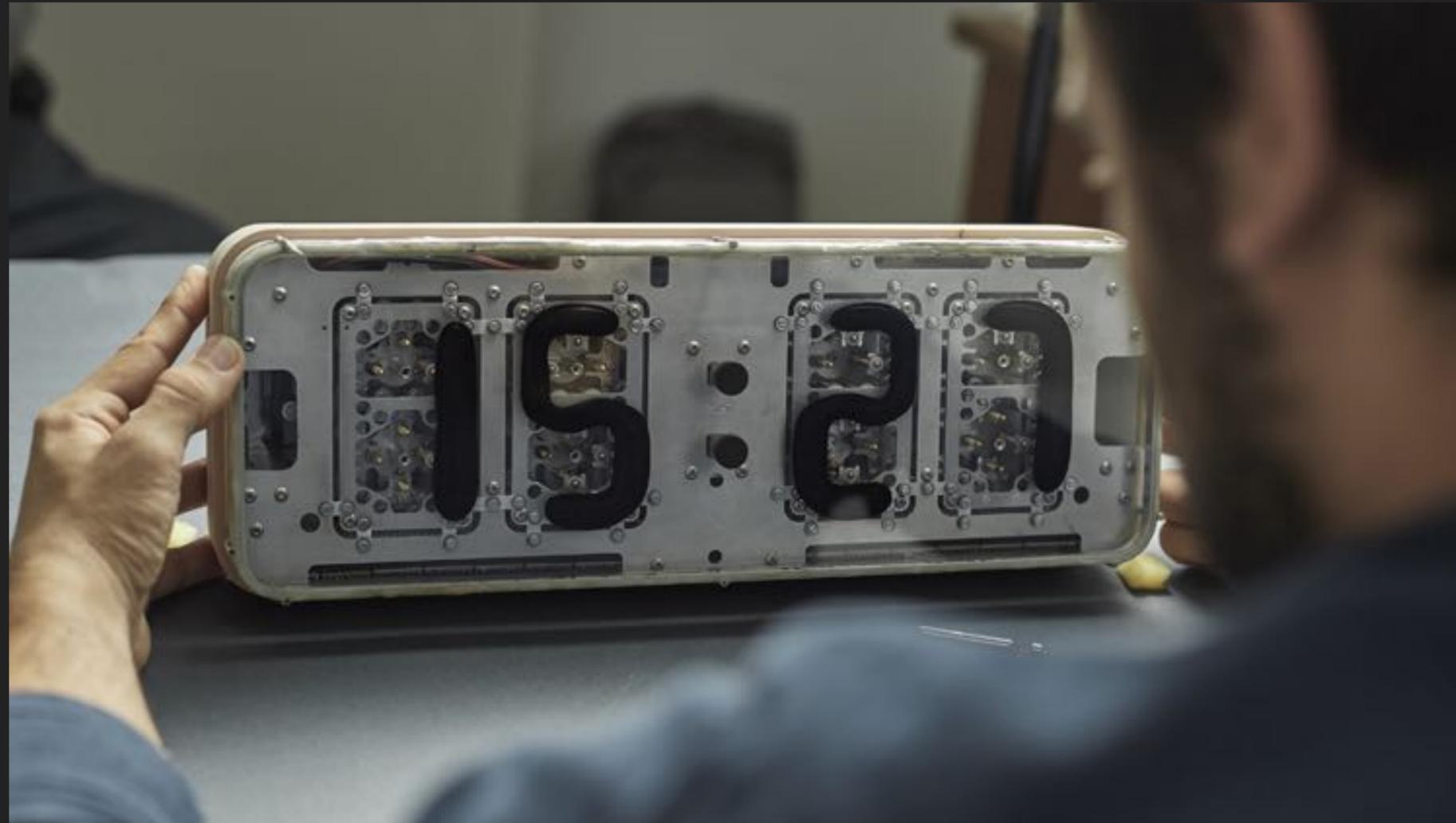


COSMOLOGIE LESIASTIQUE



COMPUT ECCLESIASTIQUE

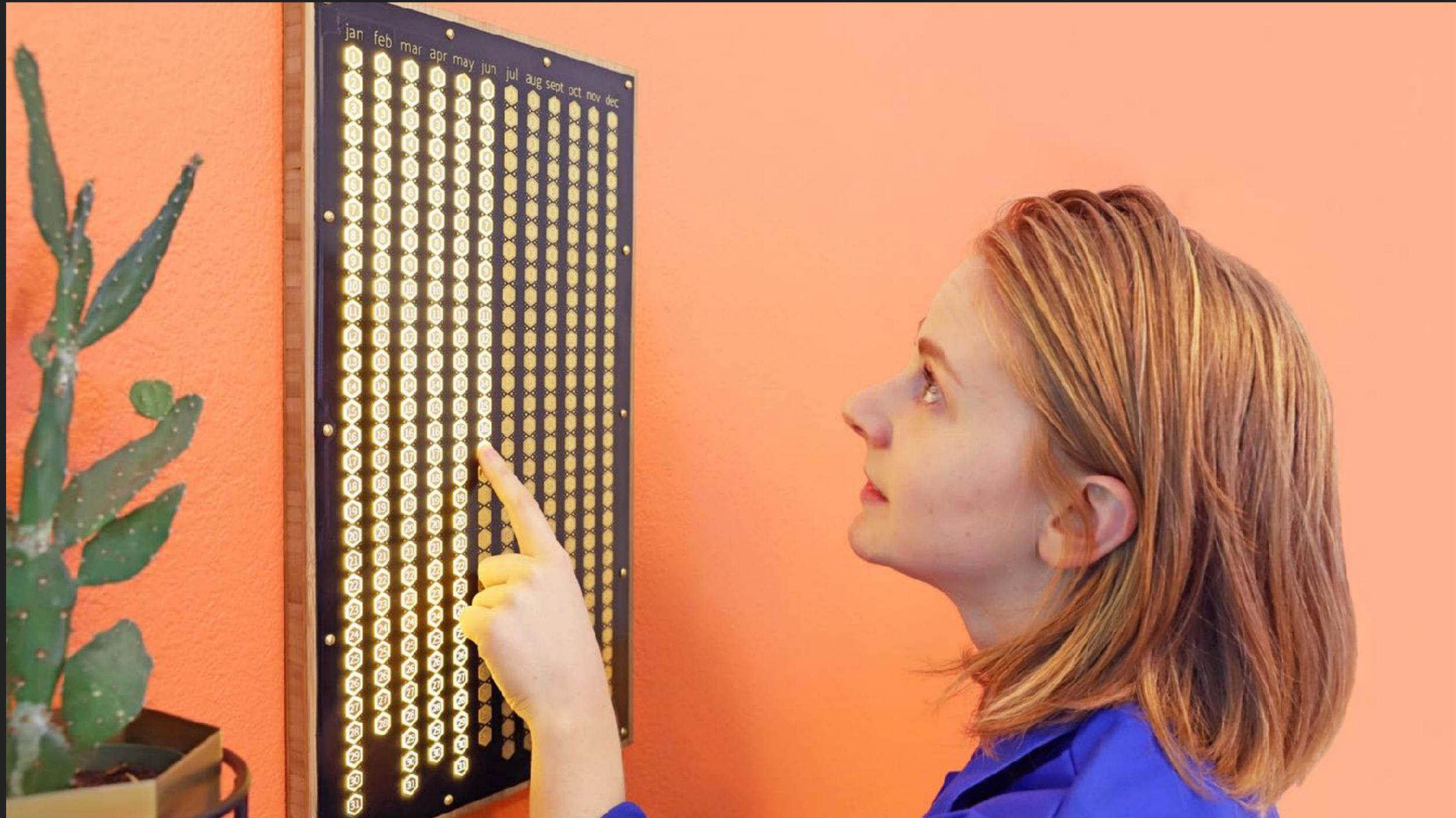
A large, curved scroll containing text, likely a calendar or list of events. The scroll is partially unrolled, showing a list of names and dates. The text is written in a small, dense font. The scroll is positioned to the right of the statue.



[Ferrofluid Clock](#)



[Scott Thrift 1-year and 1-day clock](#)



[Simone Giertz Every Day Calendar](#)



So so much more, some here, some for you to find and share...

<https://www.fddrsn.net/teaching/time/gallery/>



Green -
Plain Beak
Push
or Cold Plate

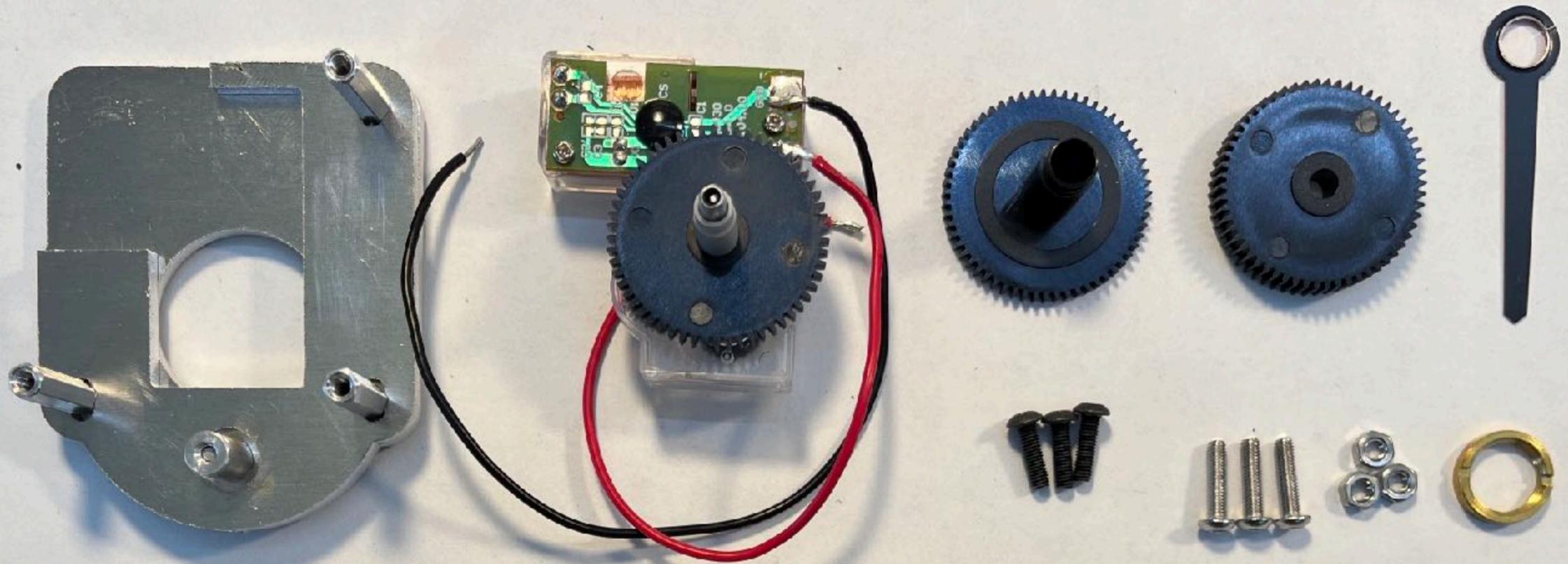


Grey -
Dark PLA
Tough
Black -
ASA (?)



White -
PLA (?)
Tough











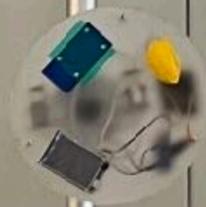


TIME

2022

Prof. Jeff Feldman

Xiao Jiang Time (Vital Clock)
 Rocky Xiaoyu Ke Clock 1
 Gracy Whellhan Time Lapse
 Clock Shirley Wu though a
 patriarchy would privilege the
 changelessness of the sun
 over the inconstancy of the
 moon and you Suraj Barthy US
 Yaj Shao Fullmoon MJ Gandhi
 Xela Surf Xiao Tan Chaotic
 Clock





02024 TIME Projects | NYU ITP

Sangyu
Chen Proud
Aiemrukka &
Christina Tang Parth
Pawar Lusine Kirakosyan
Zongze Chen & the NIGHT
Sharell Bryant & Melika Panbehchi
Liyana Ibrahim & Melika Panbehchi
Caroline Sekar Andre Lira Arya Bansal

Projects from the 02024 TIME Class
Prof. Jeff Feddersen

Clouck Turnstime The BlackHole
Autotune for Drummers
NOW Ripple Clock
Meditation Watch
Decaying Texts
Pause Time Lux
out of time
Temporalis
Lume

TOL



Heidi Neilson's [Moon Arrow](#) always points at the moon (sometimes it's behind the Earth).

ACTIVITY: HUMAN PLANETARIUM

Find your local sun and moon.

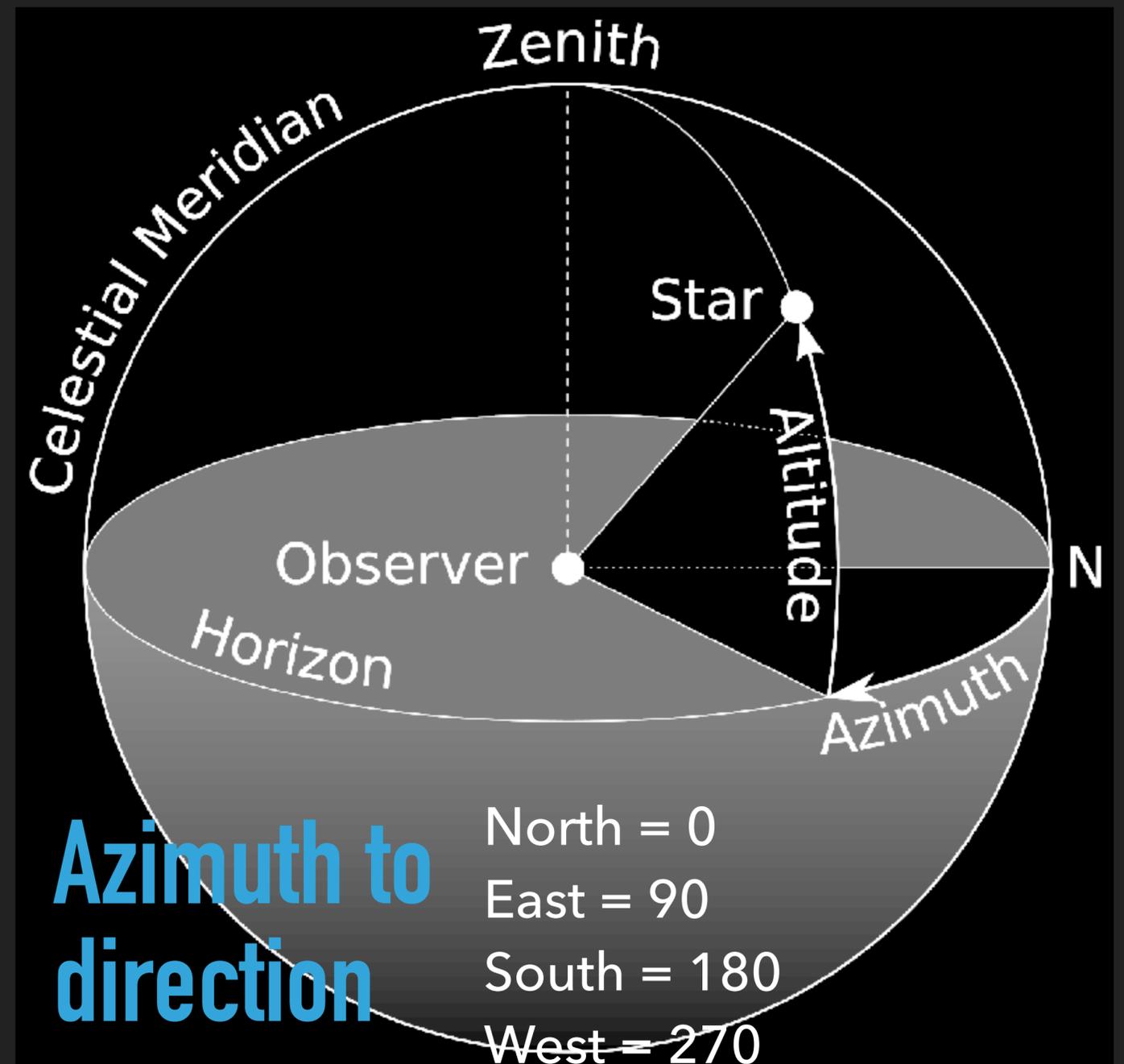
Online class version

1. Find your object's coordinates.

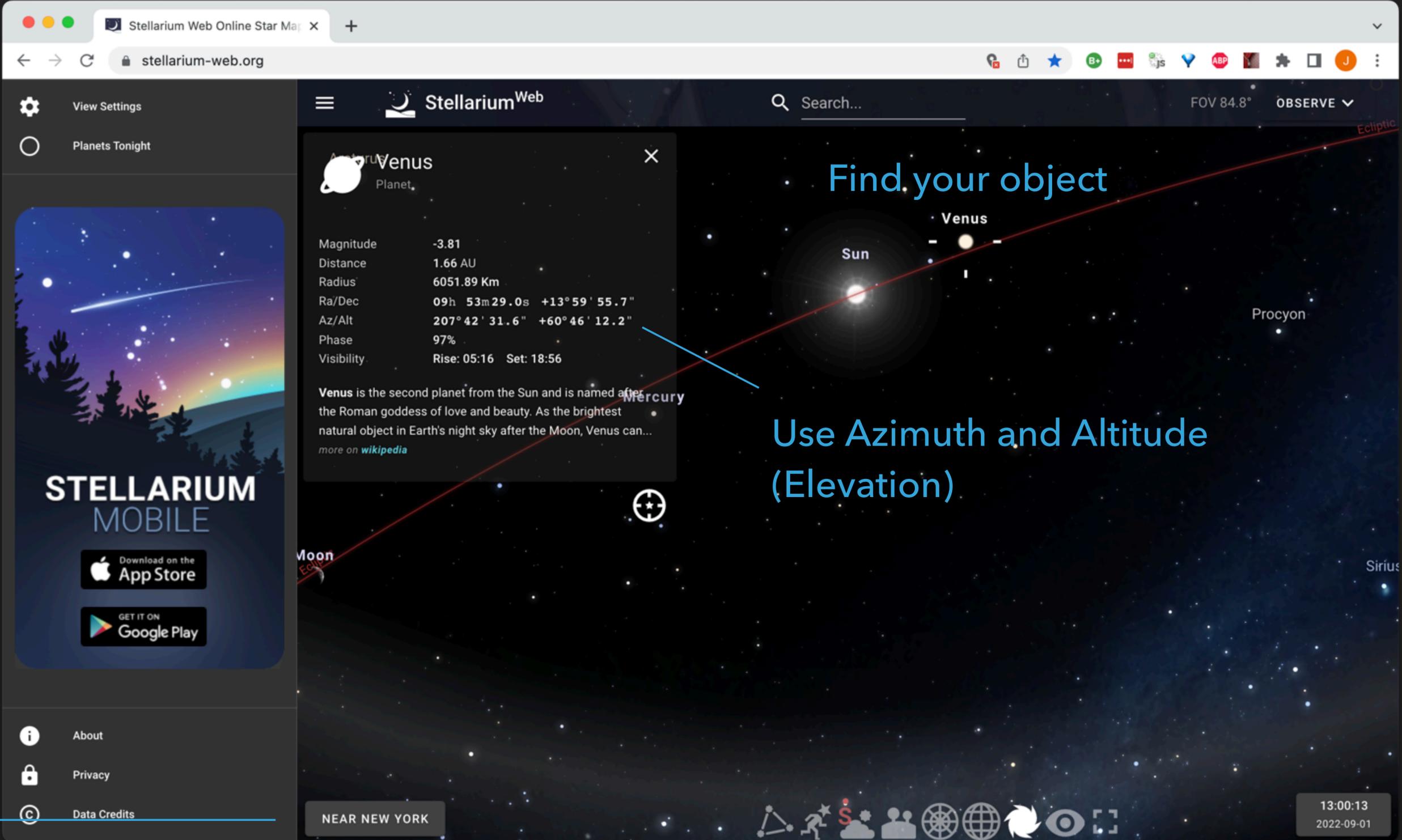
Use Stellarium, Suncalc and Mooncalc, etc. Make sure to set location and current time to now. Find coordinates as Azimuth and Altitude (aka Elevation, and as opposed to Right Ascension and Declination). Note distance as well.

2. Figure out where the object is relative to you.

Use compass and level apps to find direction towards sky object. Set compass to use true (not magnetic) north. Use anything (paper + tape, your arm, anything) as pointers. Azimuth starts with north at 0 degrees and increases towards the east (90), south (180) and west (270).



Turn on Ecliptic in View Settings



Find your object

Use Azimuth and Altitude (Elevation)

Set location

Turn off atmosphere and ground

Set to current time

Note - mobile free version is cool but doesn't offer the useful ecliptic setting

GNOMON

gnomon (n.)

"vertical shaft that tells time by the shadow it casts" ... from Latin *gnomon*, from Greek *gnōmōn* "indicator (of a sundial), carpenter's rule" ... "one that discerns or examines, interpreter, expert," from *gignōskein* "to come to know," **from Proto-Indo-European root *gno- "to know."**

TAOSI GNOMON

Xiangfen 襄汾, Shanxi Province

2300 - 1900 BCE

Oldest gnomon, oldest observatory

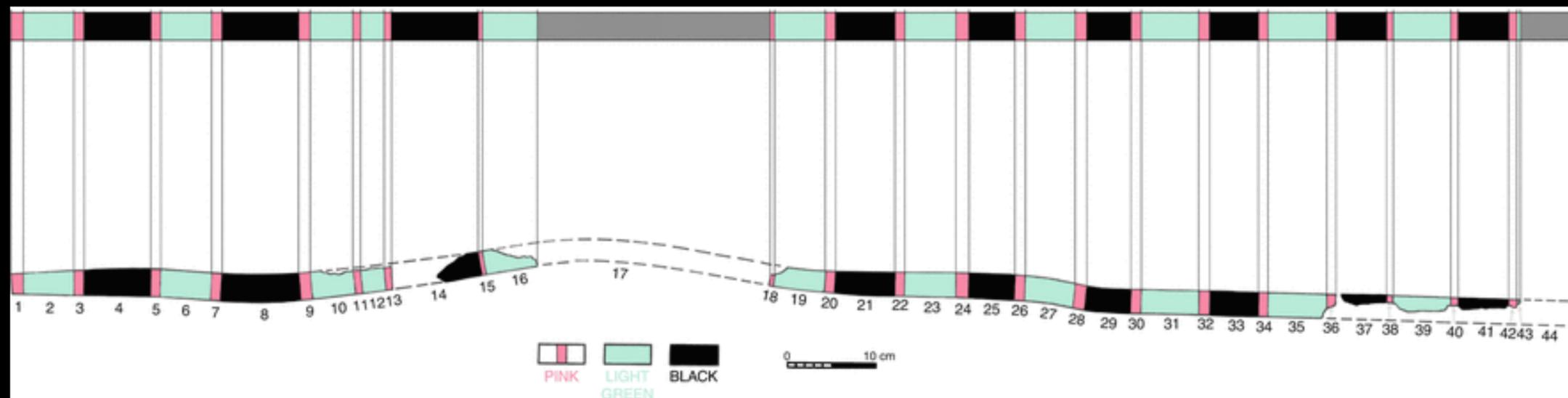


TAOSI GNOMON

Xiangfen 襄汾, Shanxi Province

23rd - 19th century BCE

Oldest gnomon, oldest observatory



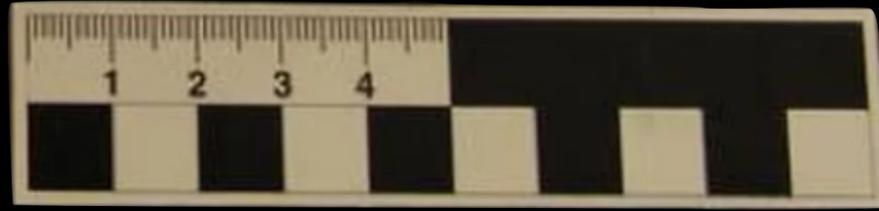
TAOSI GNOMON

Xiangfen 襄汾, Shanxi Province

2300 - 1900 BCE

Oldest gnomon, oldest observatory





EGYPTIAN SUNDIAL

15-13th century BCE
"temporary hours"



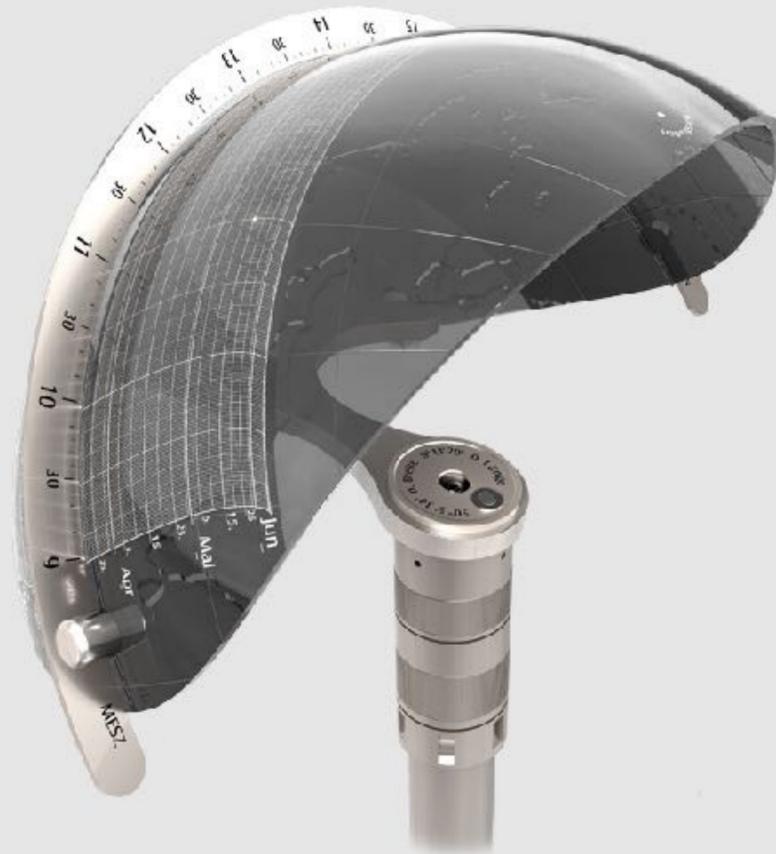


JANTAR MANTAR, JAIPUR



JANTAR MANTAR, JAIPUR

HELIOS Subsolaris
Lichtpunktgenau



SOLAR RING
400 year success story

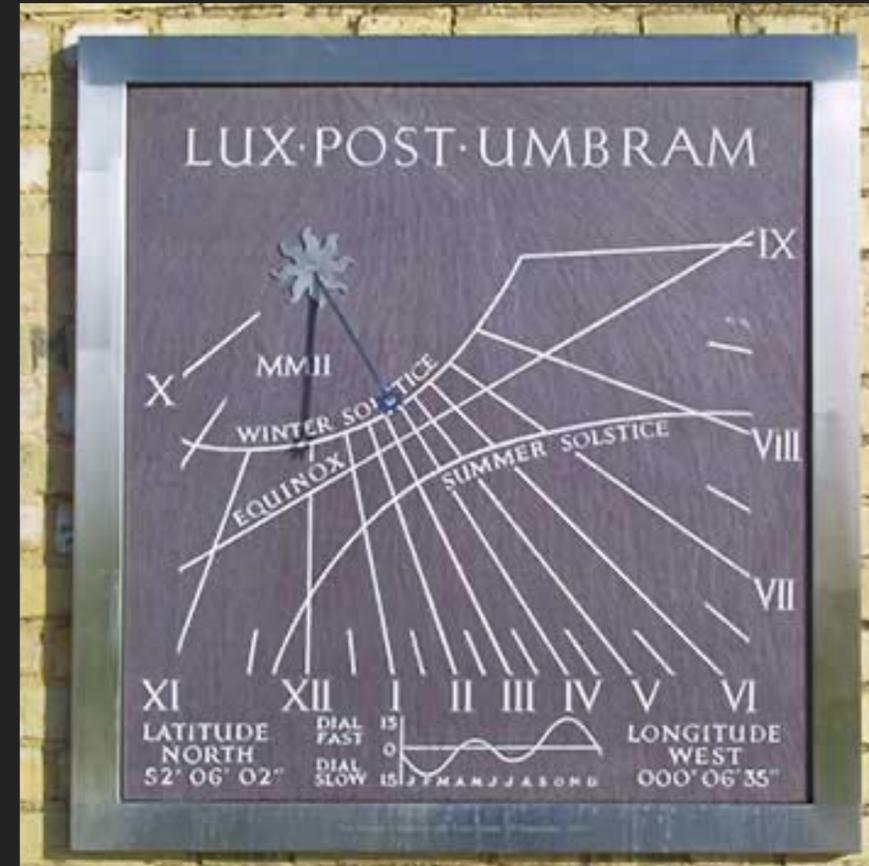


HORIZONTAL



sundialsoc.org.uk

VERTICAL



<https://www.davidharber.co.uk/>

EQUITORIAL



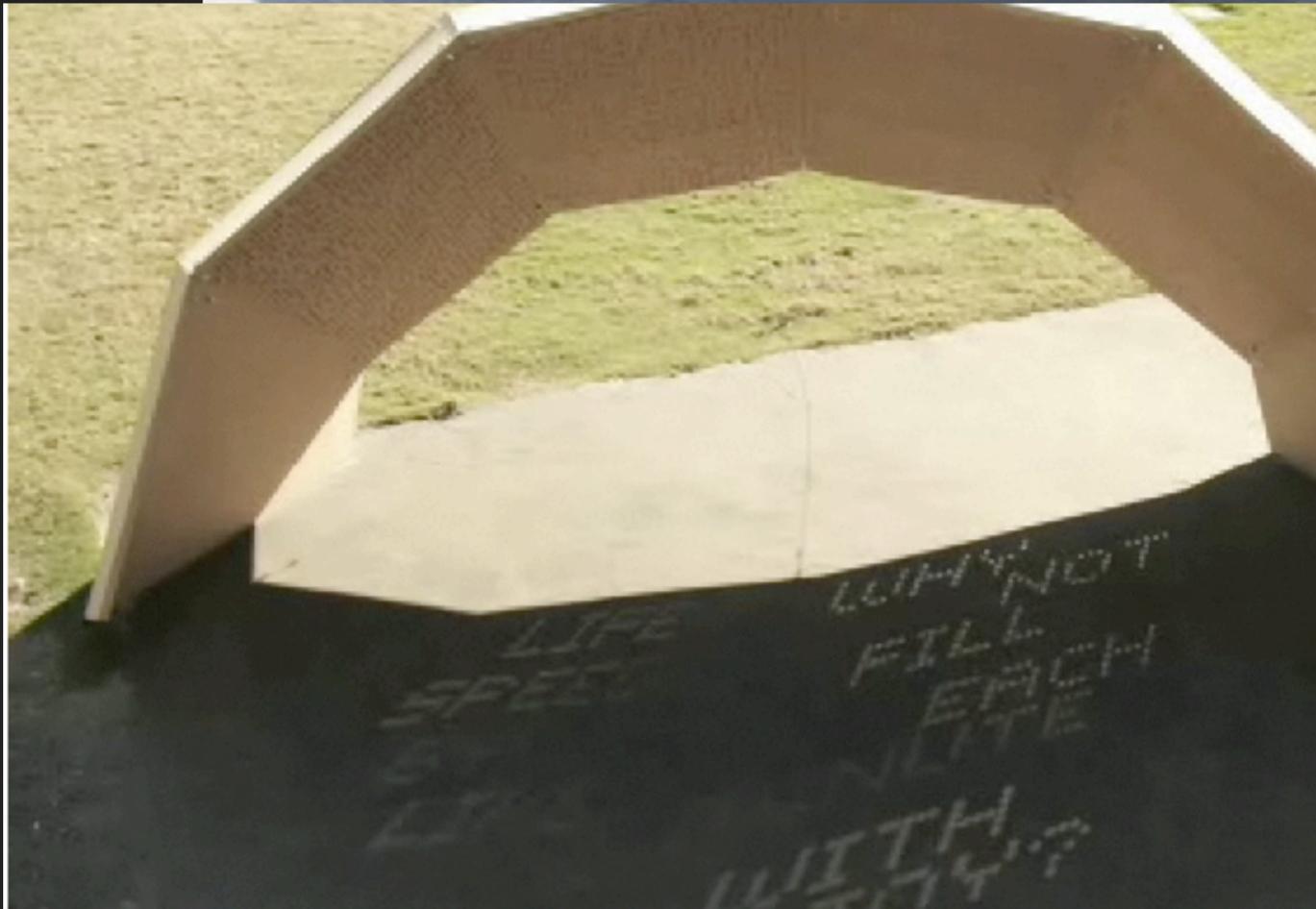
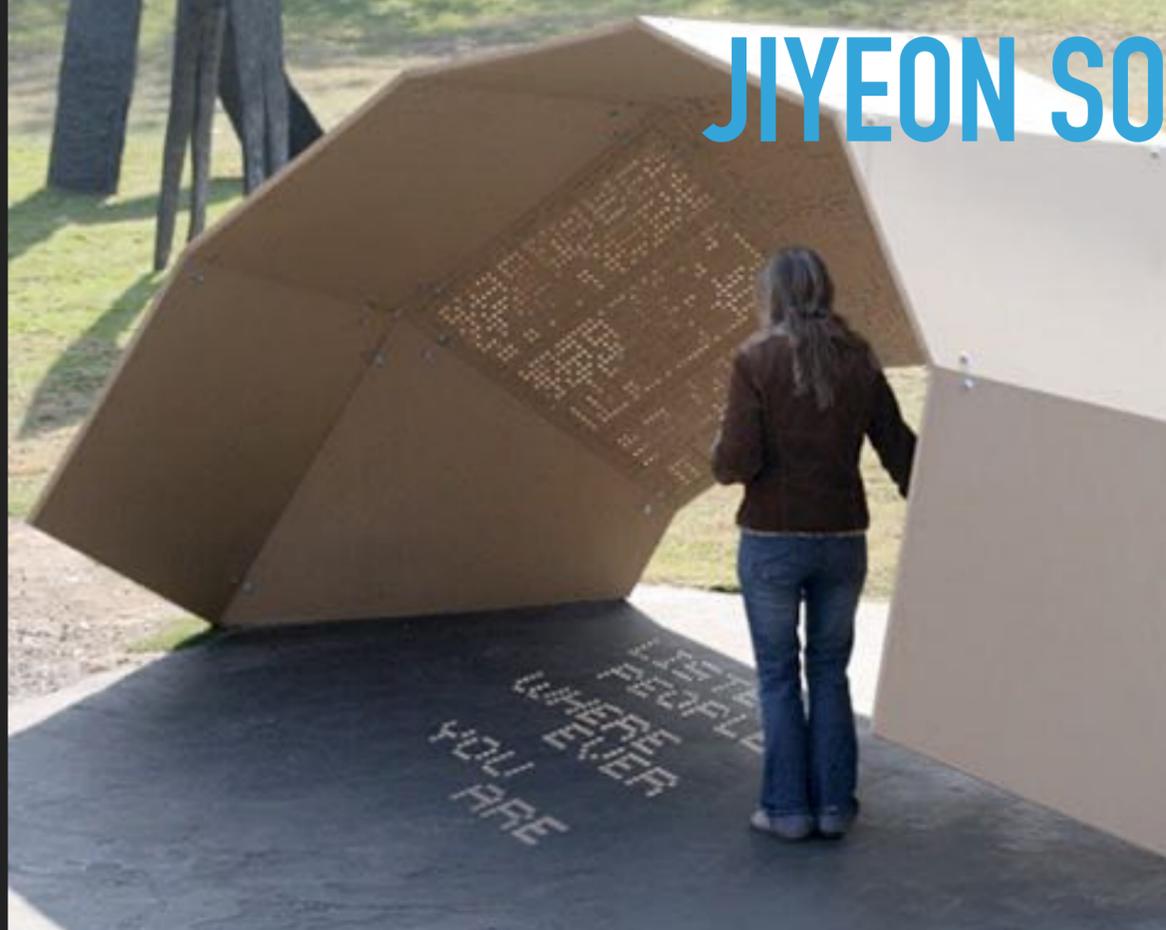
ebay.com

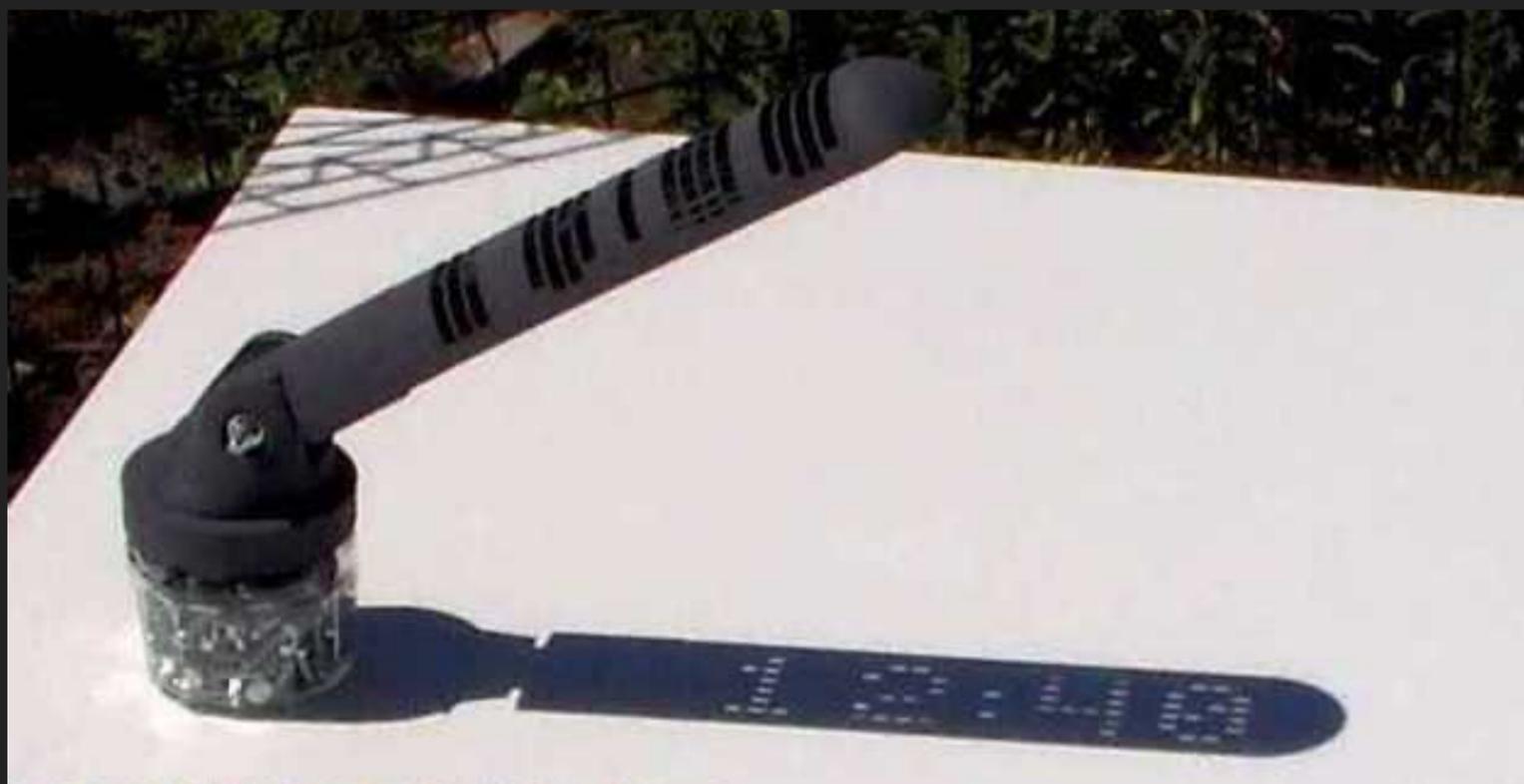
CONCAVE



Jang Yeong-sil Science Garden

JIYEON SONG, ONE DAY POEM PAVILION





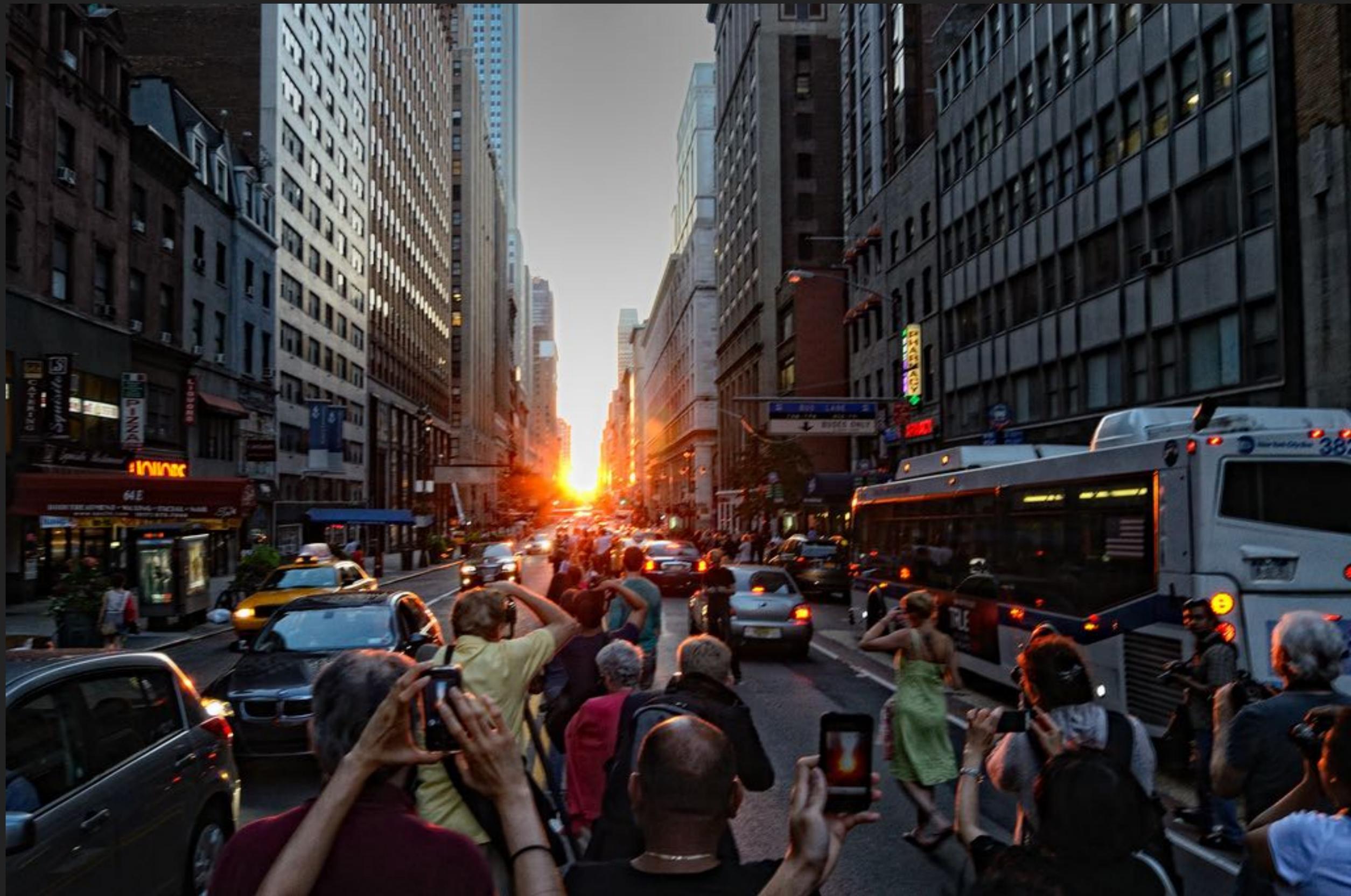
DIGITAL

<https://www.thingiverse.com/thing:1068443>

EVERY CITY IS A SUNDIAL



https://www.youtube.com/watch?v=_E3lqHq2tNU



MANHATTAN HENGE

EVERY WINDOW...



EVERY WINDOW ...



Computation path of the sun for:

11201-1832 New York, USA

04.Sep.2019 12:00 UTC-4 >|<

Solar data for the selected location

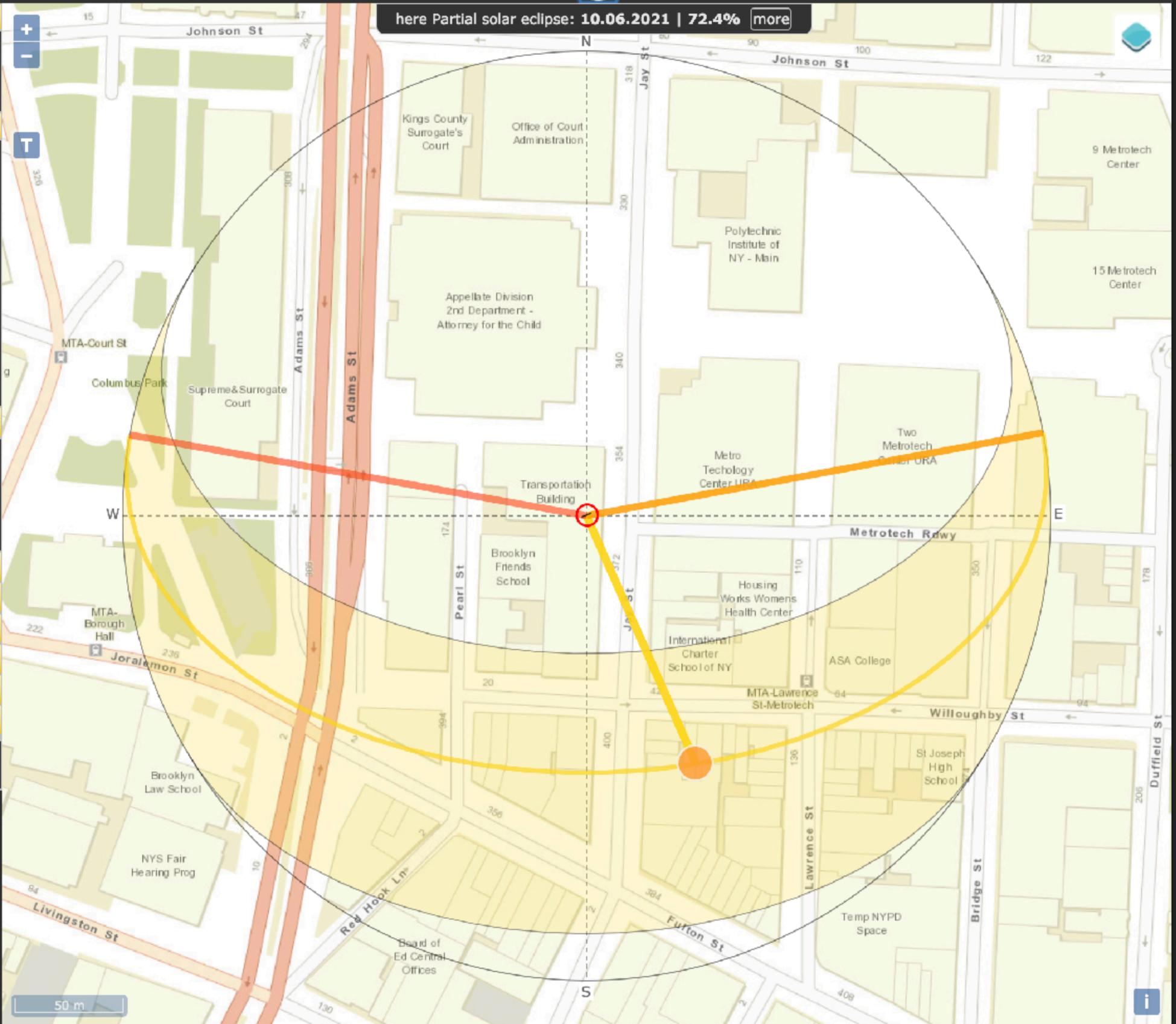
Dawn: 05:57:42
 Sunrise: 06:25:20
 Culmination: 12:55:00
 Sunset: 19:23:57
 Dusk: 19:51:30
 Daylight duration: 12h58m37s
 Distance [km]: 150.869.998
 Altitude: 54.26°
 Azimuth: 156.18°
 Shadow length [m]: 0.72
 at an object level [m]: 1

Geodata for the selected location

Height: 37m Set Lat/Lon
 Lat: N 40°41'34.86" 40.69302°
 Lng: W 73°59'14.96" -73.98749°
 UTM: 18T 585548 4505173
 TZ: America/New_York DST EDT

- More solar data
- Print
- Contact
- Help & API
- The same for the Moon
- Legal Disclosure / Privacy Policy

This website In German language
 sonnenverlauf.de 



Computation path of the sun for:

11201-1832 New York, USA

04.Sep.2019 14:54 UTC-4 >|<

Solar data for the selected location

Dawn: 05:57:42
 Sunrise: 06:25:20
 Culmination: 12:55:00
 Sunset: 19:23:57
 Dusk: 19:51:30

Daylight duration: 12h58m37s
 Distance [km]: 150.865.563

Altitude: 47.20°
 Azimuth: 226.44°

Shadow length [m]: 0.93
 at an object level [m]: 1

Geodata for the selected location

Height: 37m

Lat: N 40°41'34.86" 40.69302°
 Lng: W 73°59'14.96" -73.98749°
 UTM: 18T 585548 4505173
 TZ: America/New_York DST EDT

More solar data

Print

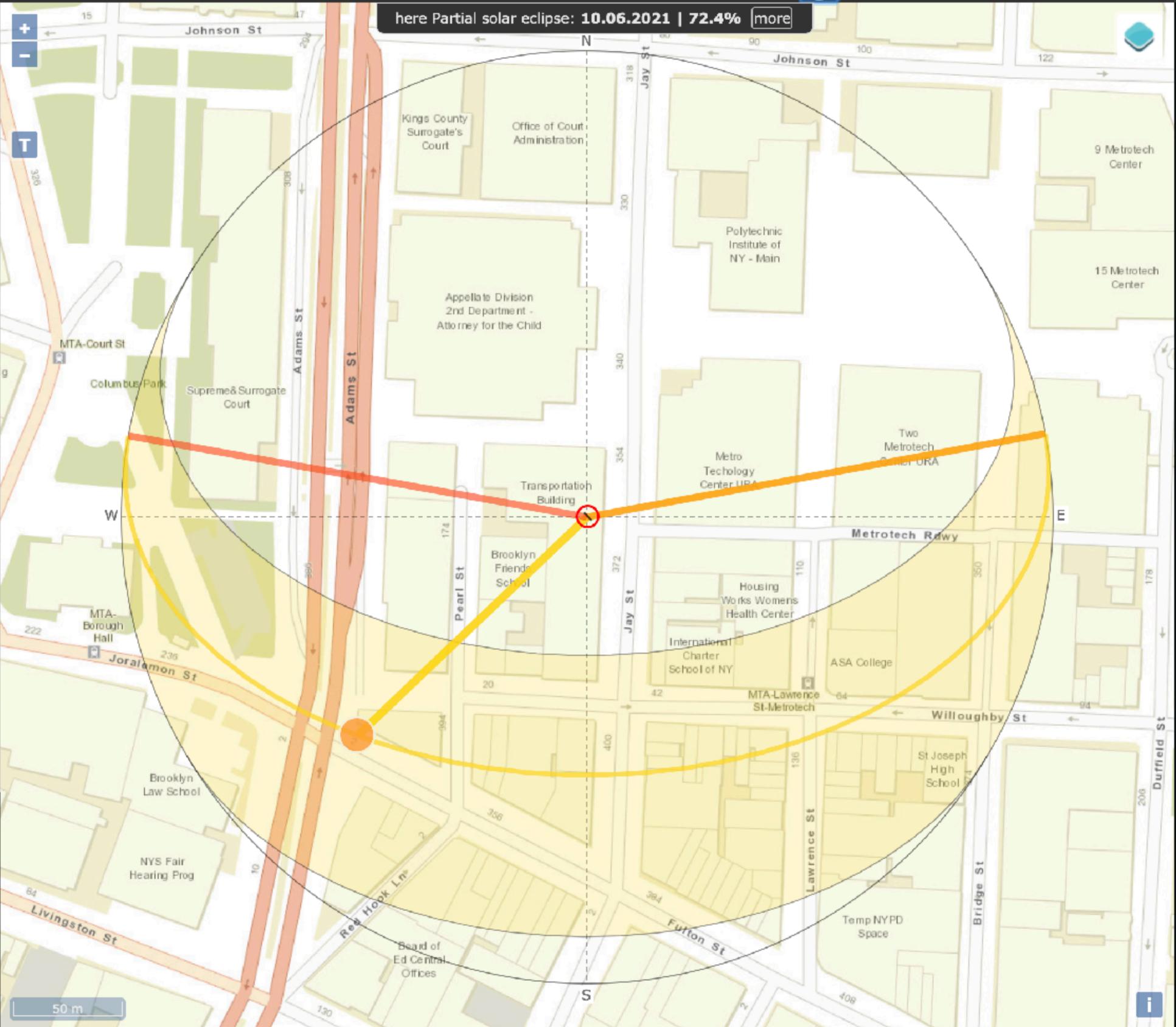
Contact

Help & API

The same for the Moon

Legal Disclosure / Privacy Policy

This website in German language  sonnenverlauf.de



Wrap up:

Review syllabus and logistics

Q&A