Fachhochschule Graubünden
University of Applied Sciences

Hochschule der Künste Bern
Haute école des arts de Berne
Bern Academy of the Arts

The Antikythera Mechanism

Data Visualization
Using Virtual Reality

Prof. Thomas Weibel, www.thomasweibel.ch


INDIANA JONES

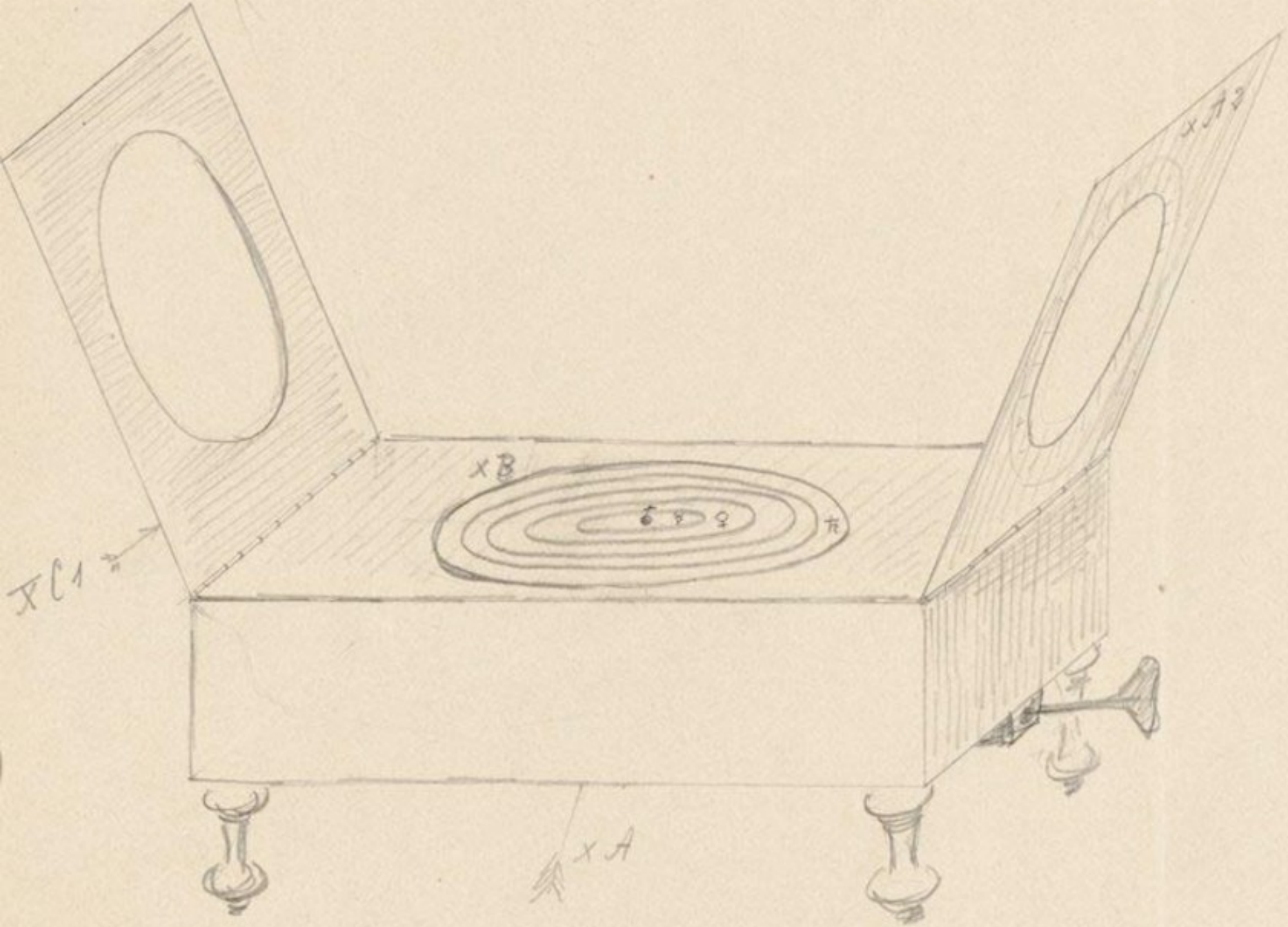




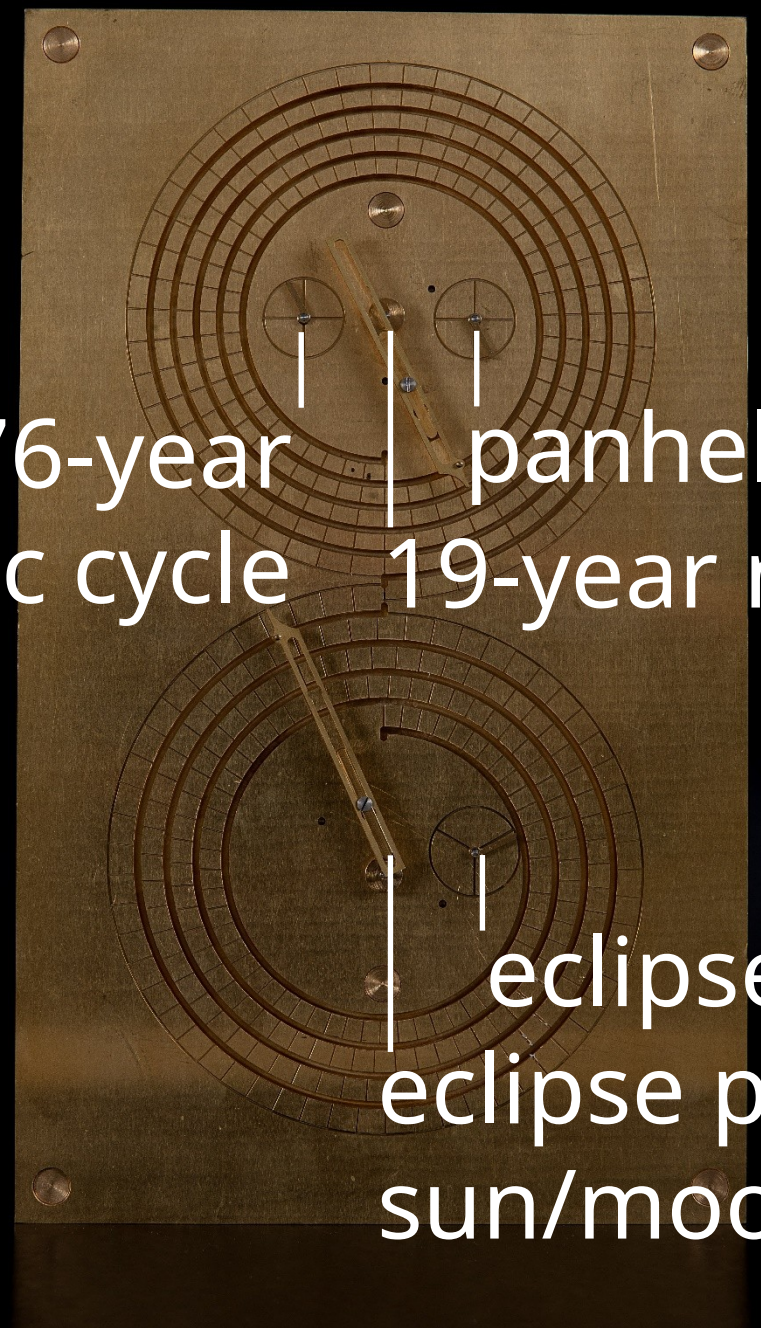


«Quodsi in Scythiam aut in Britanniam sphaeram aliquis tulerit hanc quam nuper familiaris noster effecit Posidonius, cuius singulae conversiones idem efficiunt in sole et in luna et in quinque stellis errantibus quod efficitur in caelo singulis diebus et noctibus.»

«Let us assume that a traveler brings an orrery to Scythia or Britain, as constructed by our friend Poseidonius, the individual revolutions of which produce the same thing with the sun, moon and the five planets that takes place in the real sky during the days and nights.»


xB
xC1
xA


sidereal moon cycle
solar year
synodic moon cycle (lunar phase)


76-year
callippic cycle
panhellenic games
19-year metonic cycle
eclipse time of day
eclipse prediction
sun/moon

Our current knowledge of the **Antikythera Mechanism** [PDF] fsb.hr
JH Seiradakis, MG Edmunds - Nature Astronomy, 2018 - nature.com
... **Antikythera Mechanism** and an elementary geared Byzantine sundial 3 from around the late fifth or early sixth century bce. The **Antikythera Mechanism** ... 1), geared **mechanism**, made of ...
☆ Speichern 99 Zitieren Zitiert von: 45 Ähnliche Artikel Alle 5 Versionen Web of Science: 10 »

The **Antikythera mechanism** reconsidered [PDF] sagepub.com
MT Wright - Interdisciplinary science reviews, 2007 - journals.sagepub.com
... The considerable bulk of this '**Antikythera** treasure' included ... geared **mechanism**, was recognised only later. The first official description of what we now call the **Antikythera Mechanism** ...
☆ Speichern 99 Zitieren Zitiert von: 69 Ähnliche Artikel Alle 9 Versionen Web of Science: 21 »

Decoding the ancient Greek astronomical calculator known as the **Antikythera Mechanism** [PDF] shiftleft.com
T Freeth, Y Bitsakis, X Moussas, JH Seiradakis... - Nature, 2006 - nature.com
... The **Antikythera Mechanism** is a unique Greek geared device, ... shipwreck, the **Antikythera Mechanism** is technically more ... The **mechanism** predicted lunar and solar eclipses on the ...
☆ Speichern 99 Zitieren Zitiert von: 496 Ähnliche Artikel Alle 28 Versionen Web of Science: 175 »

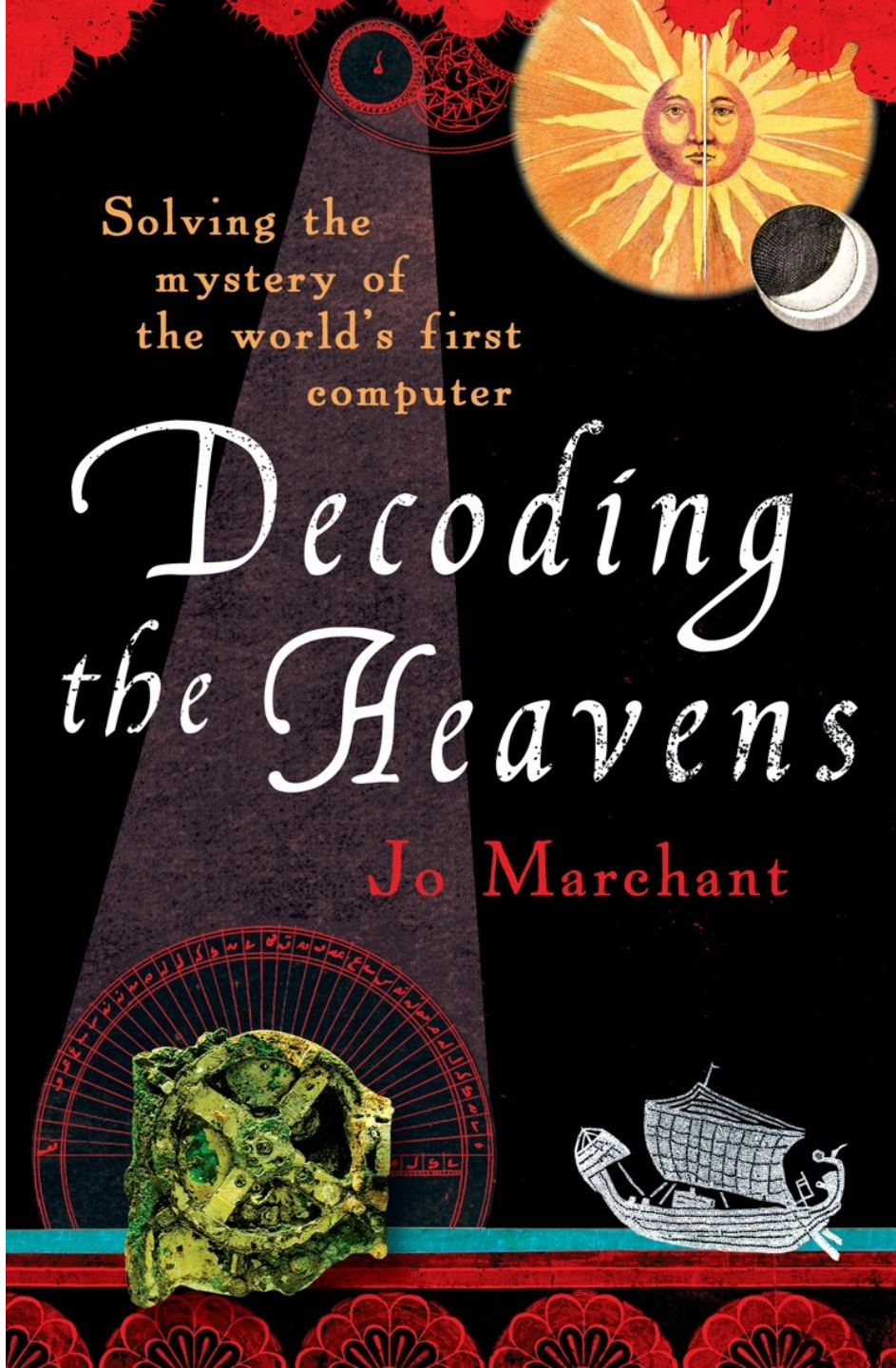
Gears from the Greeks. The **Antikythera mechanism**: a calendar computer from ca. 80 BC [PDF] jstor.org
D de Solla Price - Transactions of the American Philosophical Society, 1974 - JSTOR
... to appreciate the deep significance of the **Antikythera mechanism** which was known to me ... , I published a new evaluation of the **Antikythera mechanism** in an article, "Clockwork before ...
☆ Speichern 99 Zitieren Zitiert von: 363 Ähnliche Artikel Alle 7 Versionen Web of Science: 52 »

A Model of the Cosmos in the ancient Greek **Antikythera Mechanism** [PDF] nature.com
T Freeth, D Higgon, A Dacanalis, L MacDonald... - Scientific reports, 2021 - nature.com
... Here we propose that the **Antikythera Mechanism** itself calculated these synodic intervals by counting days on the Calendar Dial between synodic events indicated by the synodic scale ...
☆ Speichern 99 Zitieren Zitiert von: 58 Ähnliche Artikel Alle 21 Versionen Web of Science: 1 »

The **Antikythera mechanism** and the mechanical universe [PDF] tandfonline.com
MG Edmunds - Contemporary physics, 2014 - Taylor & Francis Full View
... based around the **Antikythera Mechanism**, an artefact from ... BC as witnessed by the **Antikythera Mechanism** comes as a great ... and functions of the **Antikythera Mechanism** are described. ...
☆ Speichern 99 Zitieren Zitiert von: 22 Ähnliche Artikel Alle 6 Versionen Web of Science: 9 »

[PDF] The **Antikythera mechanism**: a new gearing scheme [PDF] online.fr
MT Wright - Bulletin of the Scientific Instrument Society, 2005 - fsoso.online.fr
The **Antikythera Mechanism**, the oldest geared instrument in the world, became widely known through the work of Professor Derek de Solla Price; and for anyone seriously interested in ...
☆ Speichern 99 Zitieren Zitiert von: 61 Ähnliche Artikel Alle 4 Versionen »

[PDF] Understanding the **Antikythera mechanism** [PDF] free.fr
MT Wright - ... Second International Conference on Ancient Greek ..., 2006 - hist.science.free.fr
... The fragmentary **Antikythera Mechanism**, recovered from a shipwreck that is dateable ... **Mechanism** remained but poorly understood. A new reconstruction of the **Antikythera Mechanism** ...
☆ Speichern 99 Zitieren Zitiert von: 24 Ähnliche Artikel Alle 2 Versionen »



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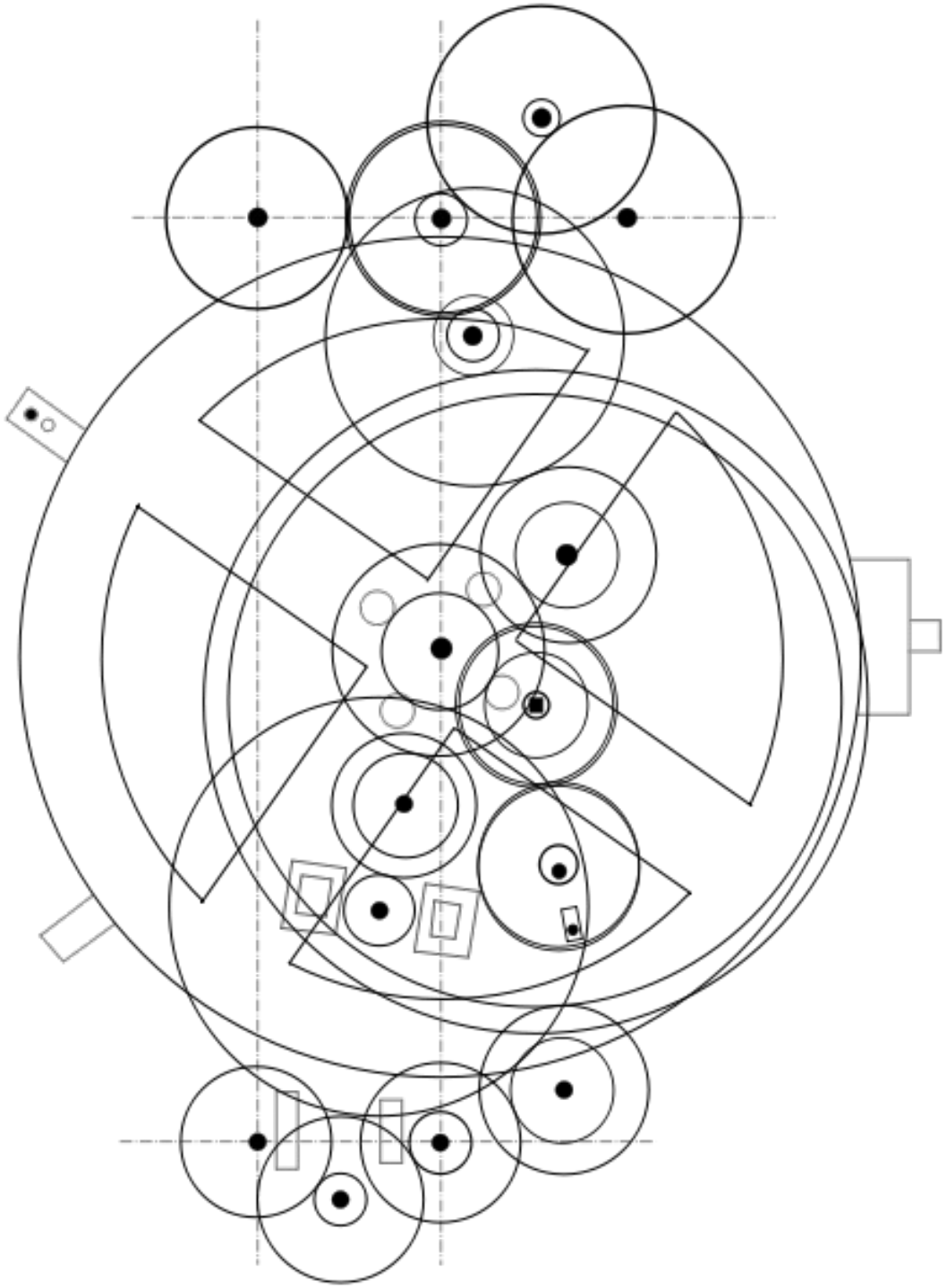

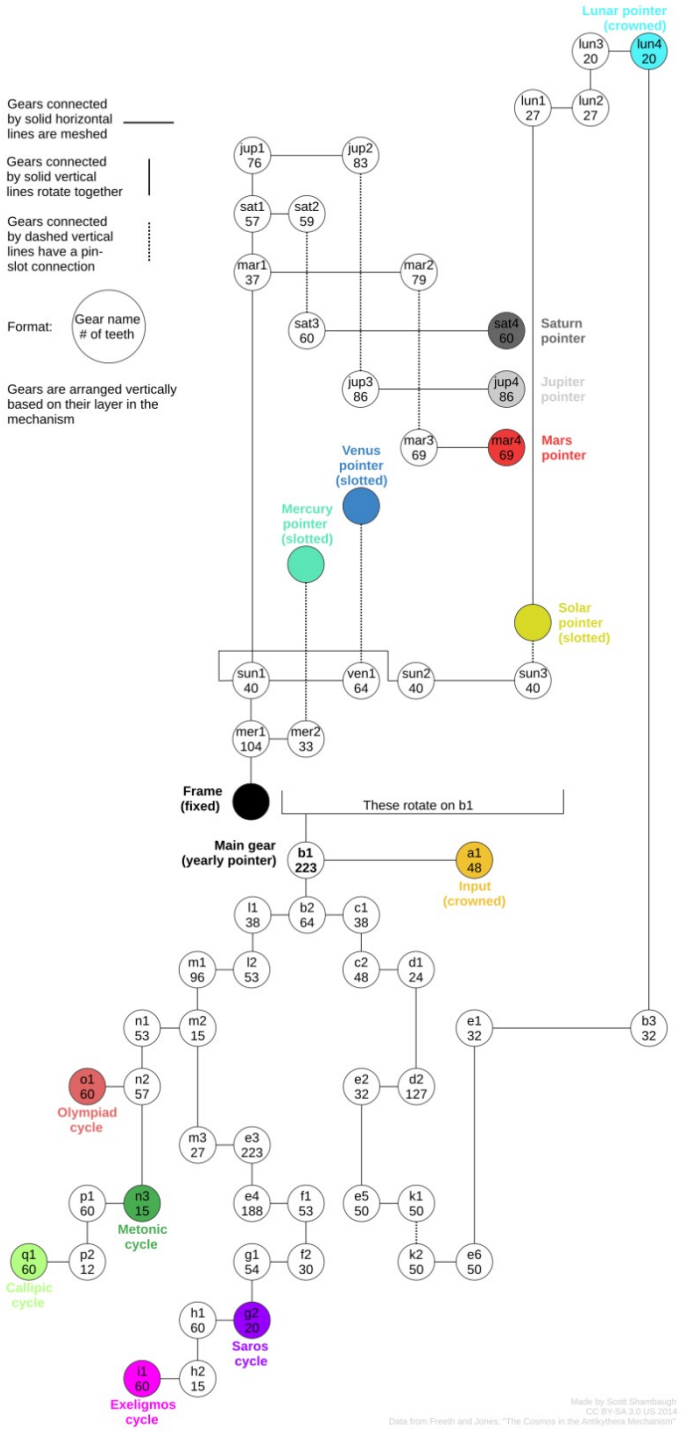

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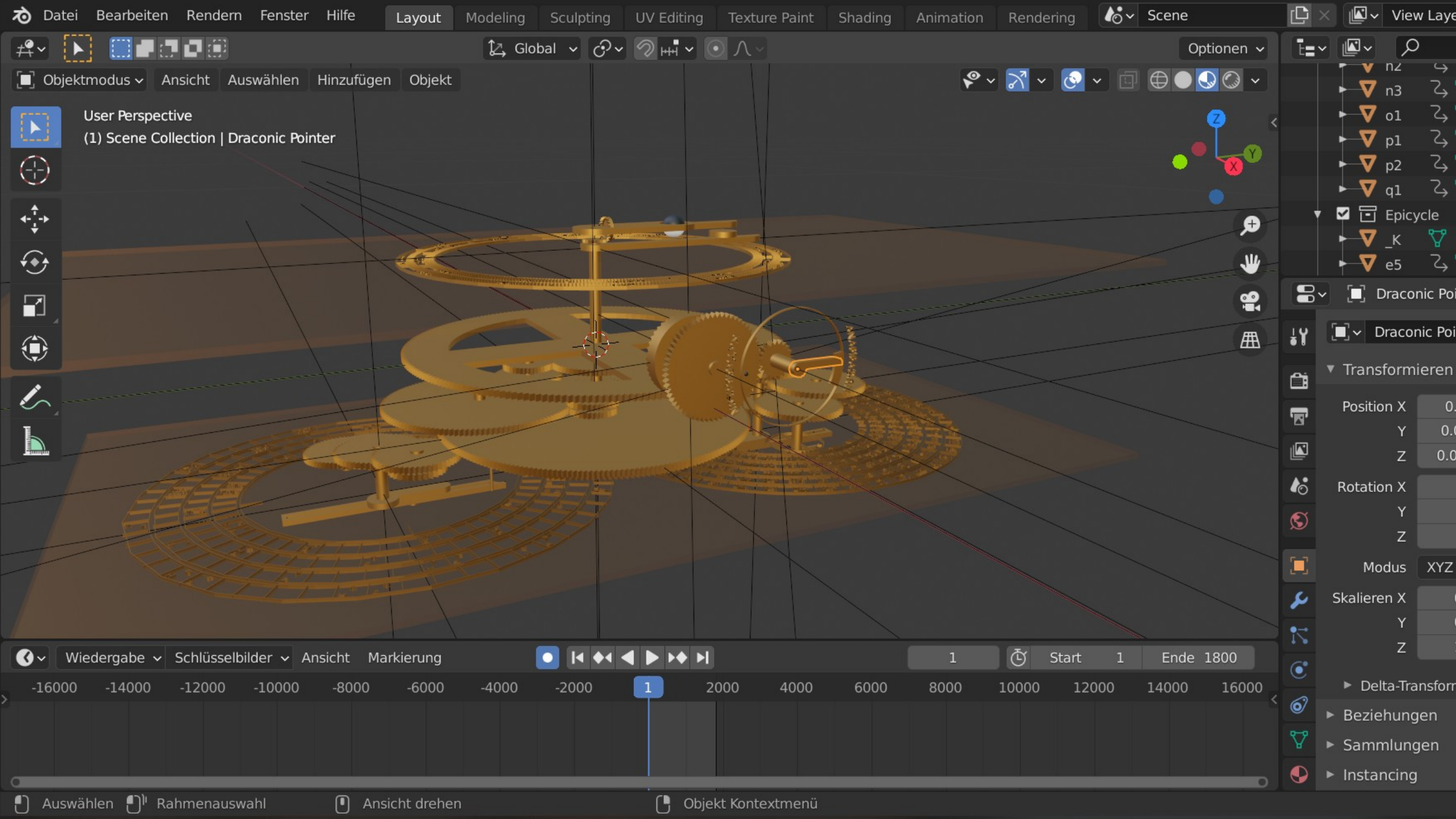
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Rotation X
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Instancing
Wiedergabe
Schlüsselbilder
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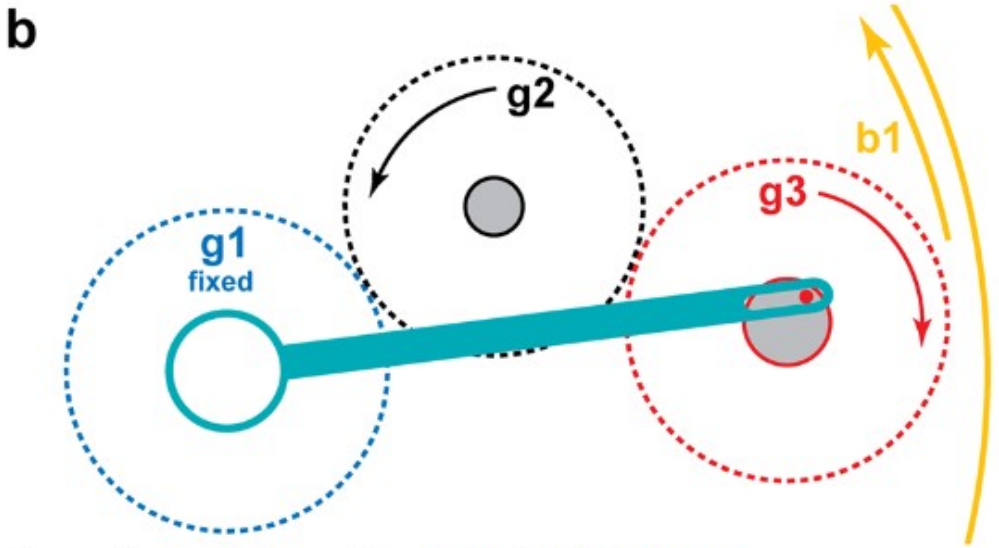
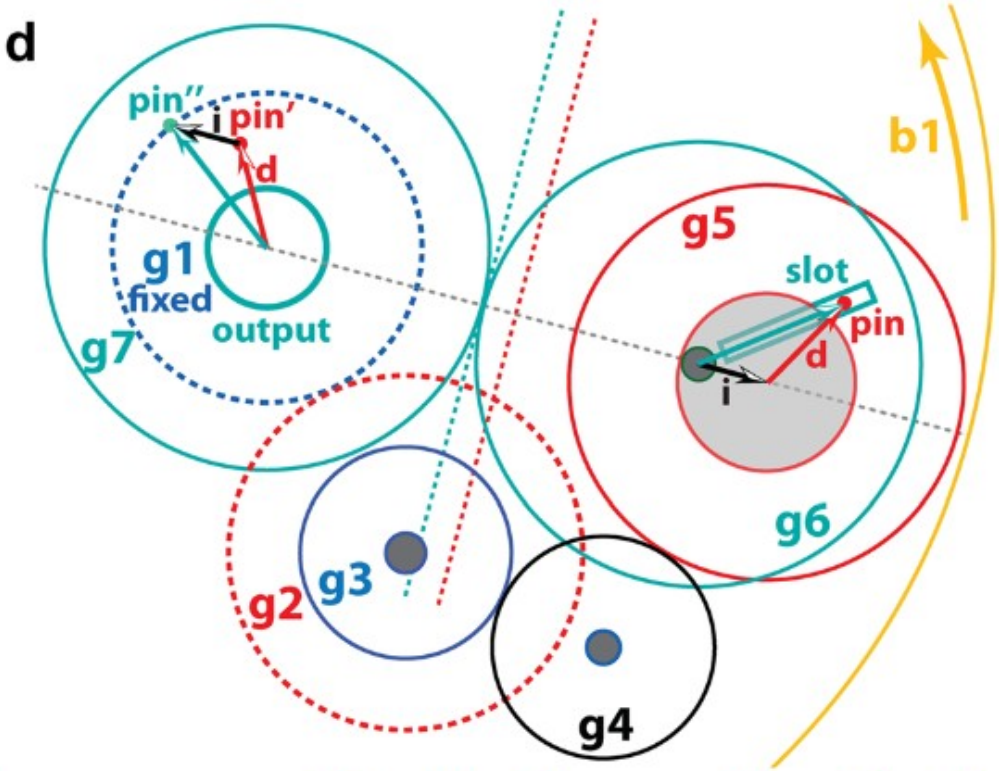
Rahmenauswahl
Ansicht drehen
Objekt Kontextmenü

web vr

realistic
digital
distributable
accessible
interactive
responsive
cost-efficient
maintainable
open data



True Sun: g1 ~ g2 ~ g3 ⊕ follower



the
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mechanism

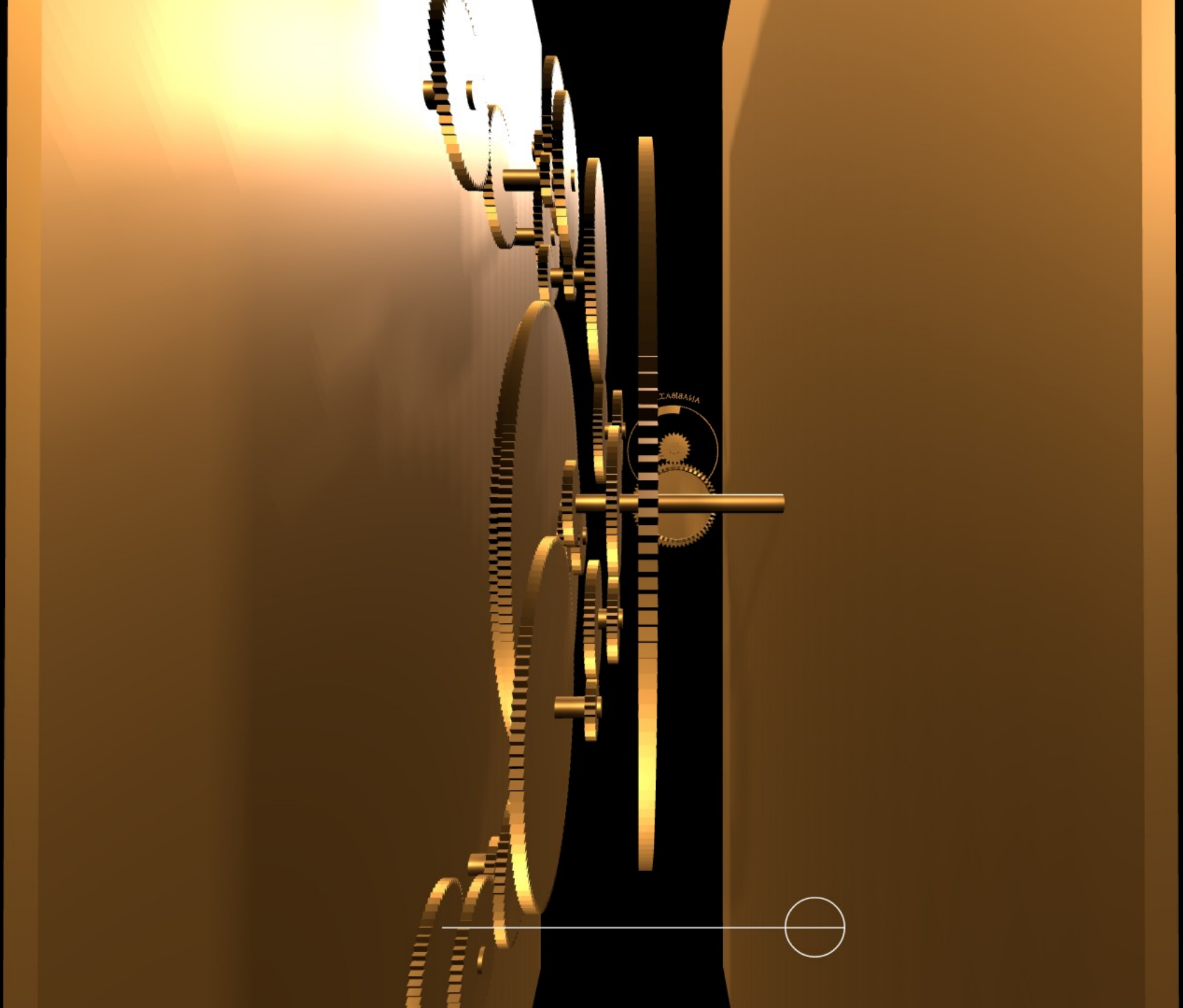
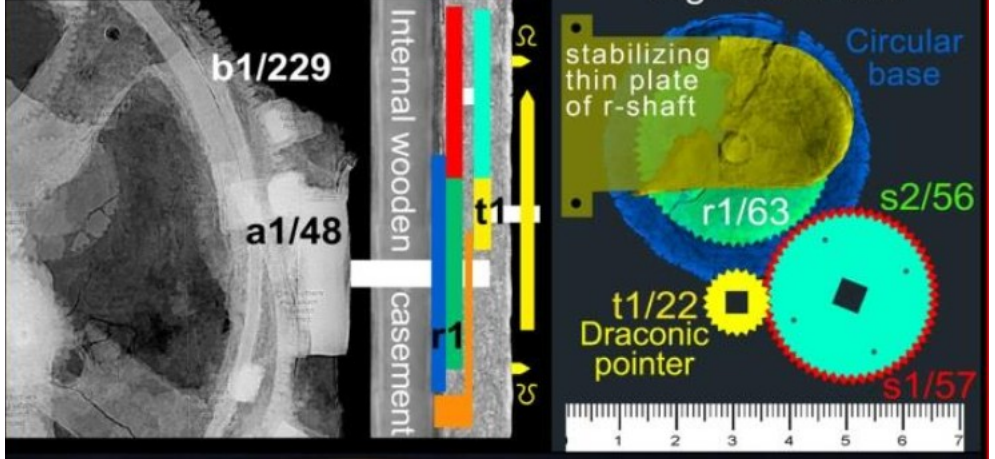
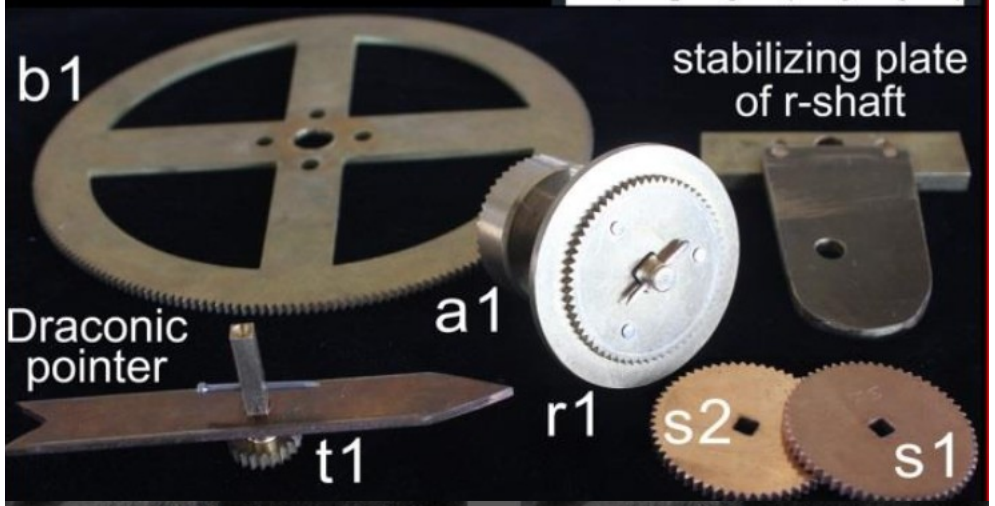


Table 6: The theoretical (without gearing errors) solar and lunar eclipse events' classification calculated according to the 5+2 Sectors of the ecliptic zone(s) based on *DracoNod-V2*. Colored events according to the (well) preserved index letters on Back plate inscription (Freeth 2014 and 2019; Anastasiou 2016; Iversen and Jones 2019; Jones 2020). A special reference for Μεγίστη solar eclipse and a special reference for Τελεία lunar eclipse are added. The deviations between theoretical and the engraved events' classification can be justified by the gearing errors, the gear teeth non-uniformity and the "*deformed*" ecliptic limits due to the gearing errors. Note that the ecliptic zone Sectors are not in equal angular dimensions.

Solar eclipse classification							
BPI	ΒΟΡΕΙΑΙ ΜΙΚΡΑΙ	Α2, Ν1, Λ2, Β1, Φ2 ΒΟΡΕΙΑΙ ΜΕΣΑΙ	Ζ1, Θ2, Σ2, Ρ1, Χ1, Δ2 ΜΕΓΑΛΑΙ	MISSING/LOST HEADING Right BPI (solar) Left BPI (lunar)	Non engraved in BPI	Ω, Ζ, Π2, Κ1, Ζ2, Φ1 ΝΟΤΙΑΙ ΜΕΣΑΙ	Τ1, Η2, Θ1, Ρ2 ΝΟΤΙΑΙ ΜΙΚΡΑΙ
New Moon on Ecliptic zone Sector	Sector NL Close to/(On) Northern Ecliptic Limit ΒΟΡΕΙΑΙ ΜΙΚΡΑΙ Northern Minor	Sector NF North and Far from Node ΒΟΡΕΙΑΙ ΜΕΣΑΙ Northern Medium	Sector NCA Out of Node ΒΟΡΕΙΑΙ ΜΕΓΑΛΑΙ Northern Large	Area of Node [0] Η ΤΟΥ ΗΛΙΟΥ ΜΕΓΙΣΤΗ ΕΓΛΕΙΨΙΣ The Greatest New Moon just right at Node ΜΕΙΖΟΝΕΣ [+ 0 -] ΕΓΛΕΙΨΕΙΣ/Major New Moon before/after Node	Sector SCA Out of Node ΝΟΤΙΑΙ ΜΕΓΑΛΑΙ Southern Large	Sector SF South and Far from Node ΝΟΤΙΑΙ ΜΕΣΑΙ Southern Medium	Sector SL Close to/On Southern Ecliptic limit ΝΟΤΙΑΙ ΜΙΚΡΑΙ Southern Minor
	12-Γ1, 54-Ν1, 59-Ξ1	7-Β1, 106-Α2, 153-Λ2, 200-Φ2	24-Ζ1, 36-Κ1, 71-Ρ1, 83-Φ1, 89-Χ1, 118-Δ2, 130-Η2, 136-Θ2, 165-Ο2, 183-Σ2, 212-Ζ(Α3)	THE GREATEST 1-Α1 MAJOR 48-Μ1, 177-Ρ2	! No Solar eclipse events occurred on Sector SCA according to *DracoNod* program	42-Λ1, 95-Ψ1, 124-Ζ2, 142-Ι2, 171-Π2, 218-Ω(Β3)	30-Θ1, 77-Τ1, 159-Ν2, 206-Ψ2
Lunar eclipse classification (lost)							
Full Moon on Ecliptic zone Sector	Sector NL Close/(On) Northern Ecliptic Limit ΒΟΡΕΙΑΙ ΜΙΚΡΑΙ Northern Minor	Sector NF North Far from Node ΒΟΡΕΙΑΙ ΜΕΣΑΙ Northern Medium	Sector CA Out of Node ΜΕΓΑΛΑΙ Large	Area of Node [0] Η ΤΗΣ ΣΕΛΗΝΗΣ ΜΕΓΙΣΤΗ (or ΤΕΛΕΙΑ) ΕΓΛΕΙΨΙΣ The Greatest Full Moon just right at Node ΜΕΙΖΟΝΕΣ [+ 0 -] ΕΓΛΕΙΨΕΙΣ/Major Full Moon before/after Node	Sector SCA Out of Node ΝΟΤΙΑΙ ΜΕΓΑΛΑΙ Southern Large	Sector SF South Far from Node ΝΟΤΙΑΙ ΜΕΣΑΙ Southern Medium	Sector SL Close to/ On Southern Ecliptic limit ΝΟΤΙΑΙ ΜΙΚΡΑΙ Southern Minor
	119-Ε2, 124-Ζ2, 171-Π2, 218-Ω(Β3)	7-Β1, 42-Λ1, 89-Χ1, 136-Θ2,	19-Ε1, 54-Ν1, 72-Σ1, 101-Ω1, 148-Κ2, 154-Μ2, 183-Σ2, 195-Υ2	THE GREATEST 113-Γ2 25-Η1, 66-Π1, 160-Ξ2, 201-Χ2		13-Δ1, 60-Ο1, 107-Β2, 189-Τ2, 207-Ω2	31-Ι1, 48-Μ1, 78-Υ1, 95-Ψ1, 142-Ι2, 177-Ρ2





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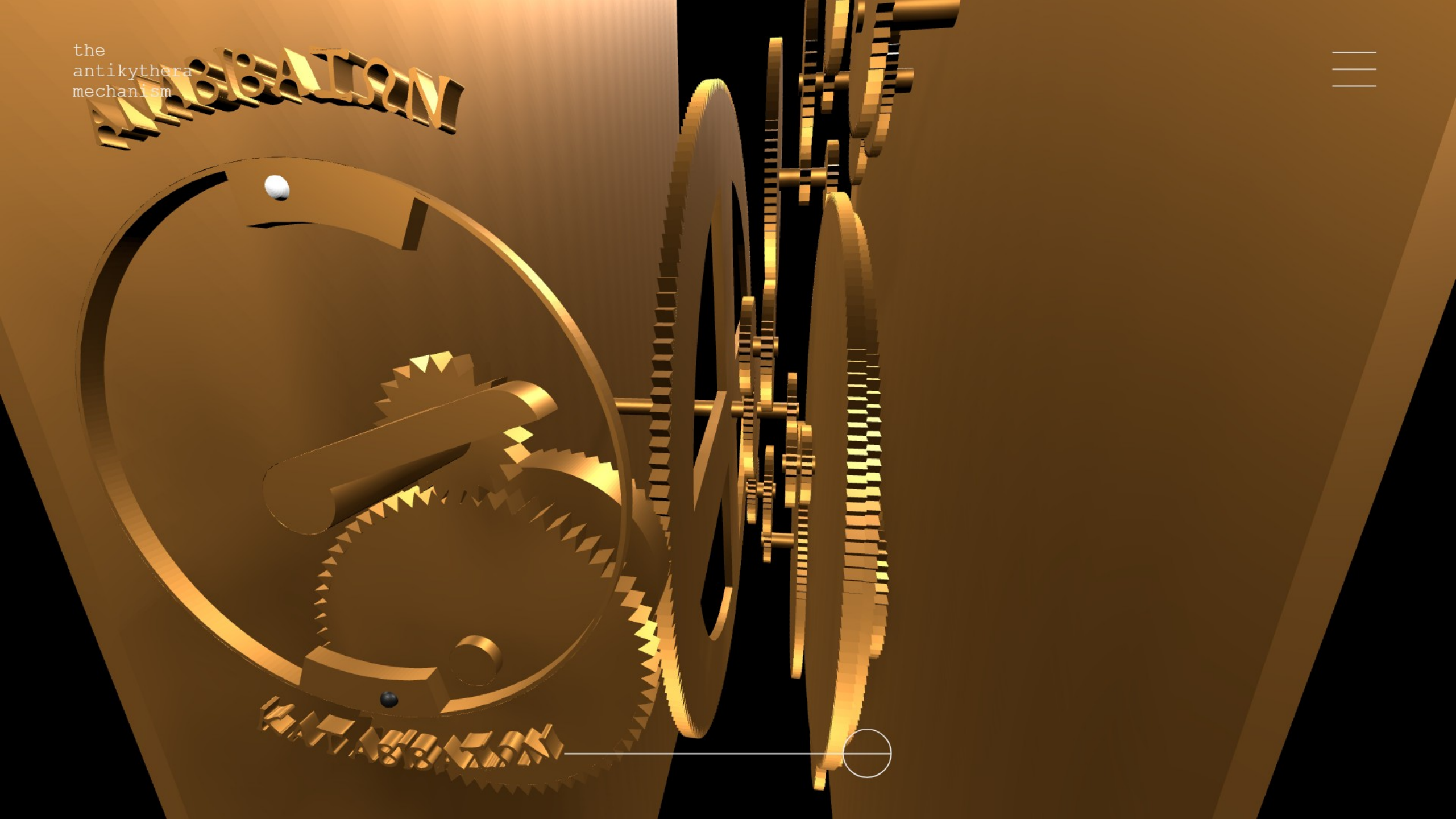

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