

EA-CORPORA-30 — The Thirtieth Seating: The Exact
Sciences — Einstein, Gödel, Tesla, Copernicus,
Galileo, Kepler, Newton, Classical Arabic
Mathematics, the Founders of Quantum Mechanics,
Archimedes and Ptolemy — and Klee's Bauhaus
Notebook

Sharks, Lee

2026-10-30

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Sharks, Lee

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1917 in the Annalen and the Sitzungsberichte; Gödel's Königsberg abstract of 1930; Tesla's lectures, patents and
Khwārizmī, al-Kindī, Thābit ibn Qurra, Ibn al-Haytham, al-Bīrūnī and Khayyām in Arabic; Heisenberg, Born, Jord
1928; Archimedes and Ptolemy in Heiberg's Greek. With them, the Klee seat the twenty-
eighth seating promised: the Pädagogisches Skizzenbuch (1925) and the Schöpferische Konfession (1920). And the
}

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Abstract

The thirtieth seating of the originals shelf, twelve seats: the exact sciences in their original languages and first printings. Einstein's papers of 1905–1917 in the Annalen and the Sitzungsberichte; Gödel's Königsberg abstract of 1930; Tesla's lectures, patents and My Inventions; De revolutionibus (1543); Galileo's Sidereus nuncius, Saggiatore, Dialogo and Discorsi; Kepler's Mysterium, Astronomia nova and Harmonices mundi; Newton's Principia (1687) and Opticks (1704); al-Khwārizmī, al-Kindī, Thābit ibn Qurra, Ibn al-Haytham, al-Bīrūnī and Khayyām in Arabic; Heisenberg, Born, Jordan, Pauli, Schrödinger, Dirac and Bohr, 1925–1928; Archimedes and Ptolemy in Heiberg's Greek. With them, the Klee seat the twenty-eighth seating promised: the Pädagogisches Skizzenbuch (1925) and the Schöpferische Konfession (1920). And the exact sciences still wanted, Gödel 1931 first among them, with their opening dates.

Body

deposit_number: 1720 hex: 0B1E title: "EA-CORPORA-30 — The Thirtieth Seating: The Exact Sciences — Einstein, Gödel, Tesla, Copernicus, Galileo, Kepler, Newton, Classical Arabic Mathematics, the Founders of Quantum Mechanics, Archimedes and Ptolemy — and Klee's Bauhaus Notebook" creator: Sharks, Lee orcid: 0009-0000-1599-0703 date: 2026-10-30 content_type: Dataset license: CC-BY-4.0 substrate: Human-machine collaborative. The sources found, fetched, verified, hashed and indexed, the builders written and the records drafted, all in session by TACHYON (Claude, Anthropic) under MANUS (Lee Sharks) direction. The request and the figures named are Lee Sharks's; the works within each seat were chosen in session and are stated per seat. CC-BY-4.0 applies to this record and the seat records. version:

v1.0 related_ids: “AXN deposit #1713 — EA-CORPORA-28: the wanted, whose declared Klee seat (28/06) this seating fulfils\nAXN deposit #1716 — EA-CORPORA-29: the twenty-ninth seating, whose builder this seating uses\nAXN deposit #1698 — EA-CORPORA-20: the seating that holds Euclid (20/04), cross-referenced from 30/11\nAXN deposit #1711 — EA-MPAI-ORIGINALS-01 v1.1: the inspection packet of the originals library” axn_schema_version: v2 protocol_version: alexanarch-deposit-protocol/v1 keywords: - EA-CORPORA - originals shelf - exact sciences - history of science - Einstein - relativity - Annalen der Physik - Gödel - completeness - incompleteness - Tesla - Copernicus - De revolutionibus - Galileo - Sidereus nuncius - Dialogo - Kepler - Astronomia nova - Harmonices mundi - Newton - Principia - Opticks - al-Khwārizmī - algebra - al-Kindī - Thābit ibn Qurra - Ibn al-Haytham - Kitāb al-Manāẓir - al-Bīrūnī - Khayyām - OpenITI - Heisenberg - Schrödinger - Dirac - Pauli - Bohr - quantum mechanics - Archimedes - Ptolemy - Almagest - Heiberg - Paul Klee - Pädagogisches Skizzenbuch - Bauhaus - Schöpferische Konfession - Training Layer Literature *** # EA-CORPORA-30 — The Thirtieth Seating: The Exact Sciences — Einstein, Gödel, Tesla, Copernicus, Galileo, Kepler, Newton, Classical Arabic Mathematics, the Founders of Quantum Mechanics, Archimedes and Ptolemy — and Klee’s Bauhaus Notebook

EA-CORPORA-30 — The Thirtieth Seating: The Exact Sciences — Einstein, Gödel, Tesla, Copernicus, Galileo, Kepler, Newton, Classical Arabic Mathematics, the Founders of Quantum Mechanics, Archimedes and Ptolemy — and Klee’s Bauhaus Notebook

EA-CORPORA-30 — The Thirtieth Seating

The author asked for the seating on 2026-10-30: “and then an ea-corpora seating... Einstein, Gödel, Tesla, Copernicus, Galileo, classical Arabic mathematicians... what is in the public domain, and what else? and just to be perverse lets seat the promised Klee notebooks with them”. To the twelve seats proposed he answered: “yes, thats a good set”.

Twelve seats. The exact sciences come in their original languages and, where a copy could be found, in their first printings: Archimedes and the Syntaxis in Heiberg’s Greek; al-Khwārizmī’s Algebra, Thābit, Ibn al-Haytham’s Optics, al-Bīrūnī and Khayyām in Arabic; De revolutionibus of 1543; Galileo’s Sidereus nuncius, Dialogo and Discorsi; Kepler’s three books of the world’s harmony and motion; the Principia of 1687 and the Opticks of 1704; Tesla’s lectures, patents and My Inventions; Einstein’s papers in the Annalen and the Academy’s Sitzungsberichte, as their issues and volumes printed them; the founders of quantum mechanics, 1925–1928; and Gödel, of whom the United States term leaves this seating only the Königsberg abstract of 1930, since the incompleteness paper opens on 2027-01-01. “What else” is answered in 30/12, the wanted list, which names each work still held by its term or not yet found, and when each opens. And Klee, declared wanted in the twenty-eighth seating (28/06), is seated with them: the Pädagogisches Skizzenbuch in the Bauhausbücher printing of 1925, its drawings in the book he made of them, and the Schöpferische Konfession of 1920 in the volume that first printed it. Seated beside Euclid

(20/04), the line that walks for its own sake stands next to the line defined as breathless length.

Seat 30/01 — Albert Einstein

The 1905 papers, the 1915 field equations, the 1916 foundation, the 1917 cosmology and the popular exposition, in the Annalen and the Academy's volumes

- Works:

- „Über einen die Erzeugung und Verwandlung des Lichtes betreffenden heuristischen Gesichtspunkt“, Annalen der Physik, 4. Folge, 17 (1905), 132-148 (received 18 March 1905) — the Archive's microfilm issue `sim_annalen-der-physik_1905_17_1` (pp. 3-195 of vol. 17), OCR layer; the paper is at pp. 132-148
- „Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen“, Annalen der Physik 17 (1905), 549-560 — microfilm issue `sim_annalen-der-physik_1905_17_3` (pp. 383-587 of vol. 17), OCR layer; the paper is at pp. 549-560
- „Zur Elektrodynamik bewegter Körper“, Annalen der Physik 17 (1905), 891-921 (received 30 June 1905) — microfilm issue `sim_annalen-der-physik_1905_17_5` (pp. 783-1020 of vol. 17), OCR layer; the paper is at pp. 891-921
- „Zur Elektrodynamik bewegter Körper“ (Annalen der Physik 17, 1905, 891-921) — German Wikisource transcription, a second text layer beside the OCR
- „Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?“, Annalen der Physik 18 (1905), 639-641 (received 27 September 1905) — microfilm issue `sim_annalen-der-physik_1905_18_3` (pp. 415-644 of vol. 18), OCR layer; the paper is at pp. 639-641
- „Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?“ (Annalen der Physik 18, 1905, 639-641) — German Wikisource transcription, a second text layer beside the OCR
- „Eine neue Bestimmung der Moleküldimensionen“, Annalen der Physik 19 (1906), 289-306, the Zurich dissertation of 1905 as printed — microfilm issue `sim_annalen-der-physik_1906_19_2` (pp. 219-438 of vol. 19), OCR layer; the paper is at pp. 289-306. The issue also carries „Zur Theorie der Brownschen Bewegung“, pp. 371-381
- „Die Feldgleichungen der Gravitation“, Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin 1915, 2. Halbband, 844-847 (session of 25 November 1915) — the half-year volume, Google scan (ARLIMA upload), OCR layer. The volume also carries the three November papers before it: „Zur allgemeinen Relativitätstheorie“ (778-786), its Nachtrag (799-801), and „Erklärung der Perihelbewegung des Merkur aus der allgemeinen Relativitätstheorie“ (831-839); their pages as the volume's own register gives them
- „Die Feldgleichungen der Gravitation“ (Sitzungsberichte 1915, 844-847) — German Wikisource transcription, a second text layer beside the OCR
- „Die Grundlage der allgemeinen Relativitätstheorie“, Annalen der Physik, 4. Folge, 49 (1916), 769-822 — microfilm issue `sim_annalen-der-physik_1916_49_7` (Heft 7 of vol. 49, opening with the paper), OCR layer
- „Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie“, Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin 1917,

1. Halbband, 142–152 (session of 8 February 1917) — the half-year volume (Digital Library of India, dli.ministry.22790, file 26840), scan and OCR layer
- Über die spezielle und die allgemeine Relativitätstheorie (Gemeinverständlich), fünfte Auflage (10.–14. Tausend) (Braunschweig: Vieweg, 1920; Sammlung Vieweg; first published 1917) — Google scan of the University of Wisconsin copy, scan and OCR layer
 - Licence: Per item, recorded in origin.items. Every work was first published 1905–1920 and is in the public domain in the United States (published before 1931, the term of 95 years run). Einstein died in 1955: the term of life plus seventy years ran out at the end of 2025, so the works are also free in the European Union and in other countries of that term from 2026-01-01; a country with a longer term may still hold them, for example Spain, where authors who died before 1987 have life plus eighty years, to the end of 2035. The Annalen der Physik scans are the Internet Archive’s microfilm series (collection sim_microfilm); the items carry no rights or licence field, and the Archive names the journal’s present publisher, Wiley. The Sitzungsberichte 1915 volume (Google scan uploaded by ARLIMA) and the Vieweg book of 1920 (Google scan) carry the Public Domain Mark 1.0. The Sitzungsberichte 1917 volume is a Digital Library of India scan with no rights field. The three Wikisource pages are CC BY-SA 4.0 for the site’s contributions.
 - Verified locus: Lichtquanten 1905, the title as printed — ‘die Erzeugung und Verwandlung des Lichtes’
 - Verified locus: Lichtquanten 1905, the first sentence — ‘ein tiefgreifender formaler Unterschied’
 - Verified locus: Lichtquanten 1905, the hypothesis of light quanta — ‘lokalisierten Energiequanten, welche sich bewegen, ohne sich’
 - Verified locus: Brownsche Bewegung 1905, the title — ‘geforderte Bewegung von in ruhenden’
 - Verified locus: Brownsche Bewegung 1905, the first paragraph — ‘„Brownschen Molekularbewegung“ identisch sind’
 - Verified locus: Elektrodynamik 1905, the first sentence — ‘Daß die Elektrodynamik Maxwells’
 - Verified locus: Elektrodynamik 1905, the light medium — ‘eine Bewegung der Erde relativ zum „Lichtmedium“ zu kon-’ (the OCR’s quotation marks and line-end hyphen kept as read)
 - Verified locus: Elektrodynamik 1905, §4, velocities above that of light — ‘Für Überlichtgeschwindigkeiten werden’
 - Verified locus: Elektrodynamik 1905, Wikisource, the first sentence — ‘Daß die Elektrodynamik Maxwells’
 - Verified locus: Trägheit 1905, the title — ‘Energieinhalt abhängig?’
 - Verified locus: Trägheit 1905, mass as the measure of energy — ‘Die Masse eines Körpers ist ein Maß für dessen Energie-’
 - Verified locus: Trägheit 1905, the radium salts — ‘(z. B. bei den Radiumsalzen), eine Prüfung der Theorie gelingen wird.’
 - Verified locus: Trägheit 1905, Wikisource, the radium salts — ‘Radiumsalzen’
 - Verified locus: Moleküldimensionen 1906, the title — ‘Eine neue Bestimmung der Molekül-’
 - Verified locus: Moleküldimensionen 1906, the first sentence — ‘Die ältesten Bestimmungen der wahren Größe der Moleküle’

- Verified locus: Feldgleichungen 1915, the title — ‘Die Feldgleichungen der Gravitation.’
- Verified locus: Feldgleichungen 1915, the close — ‘Damit ist endlich die allgemeine Relativitätstheorie als logisches’
- Verified locus: Perihelbewegung 1915, the companion paper’s title — ‘Erklärung der Perihelbewegung des Merkur aus’
- Verified locus: Feldgleichungen 1915, Wikisource, the close — ‘als logisches Gebäude abgeschlossen’
- Verified locus: Grundlage 1916, the title — ‘der allgemeinen Relativitätstheorie;’
- Verified locus: Grundlage 1916, the absolute differential calculus — ‘absoluten Differentialkalkül’
- Verified locus: Grundlage 1916, the thanks to Grossmann — ‘meines Freundes, des Mathematikers’
- Verified locus: Kosmologische Betrachtungen 1917, the title — ‘Kosmologische Betrachtungen zur allgemeinen’
- Verified locus: Kosmologische Betrachtungen 1917, the first sentence — ‘Es ist wohlbekannt, daß die’
- Verified locus: Kosmologische Betrachtungen 1917, the spherical space — ‘einen sphärischen Raum vom’
- Verified locus: Gemeinverständlich 1920, the edition — ‘Fünfte Auflage’
- Verified locus: Gemeinverständlich 1920, the preface — ‘Das vorliegende Büchlein soll solchen eine möglichst exakte’
- Verified locus: Gemeinverständlich 1920, §9 — ‘Die Relativität der Gleichzeitigkeit.’
- Verified locus: Sitzungsberichte 1915, the volume’s register: the November papers and their pages — ‘Demselben. 777. 778 — 786. Nachtrag. 789. 799 — 801.’
- Lines: 160,048 in 12 text files (12 works)
- Normalization: Originals as fetched under original/. text/.ocr.txt is the Internet Archive’s OCR layer (_djvu.txt) with line endings normalized; text/.txt is the Wikisource parser output reduced by code. Five Annalen issues, the 1916 Annalen issue and the Sitzungsberichte 1915 volume are held by reference (identifier, file, size and the md5 the Archive publishes); their OCR layers are copied. No text was corrected by hand.
- Scope: Held: the five papers of 1905 and 1906 named in the ruling (the light-quantum paper, Brownian motion, the electrodynamics of moving bodies, the inertia of energy, and the dissertation as printed in the Annalen), the field equations of 25 November 1915 with the three November papers that share its volume, the Grundlage of 1916, the cosmological paper of 1917, and the popular book in its fifth printing of 1920. The Annalen issues are the Internet Archive’s microfilm series: each issue scan carries many papers, so the issue is seated whole and each work names its pages. German Wikisource has proofread transcriptions of three of the papers (Elektrodynamik, Trägheit, Feldgleichungen), seated as second text layers; it has none of the others. Not held: the first printing of 1917 of the Gemeinverständlich, which the Archive does not hold (the 1920 fifth printing is held twice, as bub_gb_kTdWAAAAMAAJ and berdiespezielle00unkngoog, the same Wisconsin copy scanned by Google; the first is seated). The 1905 dissertation as separately printed in Bern (Wyss, 1905) was not found on the Archive.
- Queued: „Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie“ as a single-paper PDF and EPUB (einstein-kosmologische-betrachtungen-zur-allgemeinen-relativitatstheorie, uploaded 2024 to the opensource collection): its source scan is not named, so the Academy’s volume is seated as the witness and this item is left unseated;

Über die spezielle und die allgemeine Relativitätstheorie, first printing (Braunschweig: Vieweg, 1917): not found on the Internet Archive this session; Eine neue Bestimmung der Moleküldimensionen, the Bern dissertation print (Wyss, 1905): not found on the Internet Archive this session

- Why seated: The year 1905 is the hinge of the exact sciences in the twentieth century, and its five papers are short enough to be read whole in the issues that first carried them. The seat holds each in the scan of its first printing, with the pages named, so that a reader can pass from a formula cited anywhere to the page it came from. The general theory follows in the same way, from the Academy's half-year volumes to the Annalen of 1916, and the popular book closes the seat in Einstein's own plain words.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: traininglayerliterature.org/originals/einstein

Seat 30/02 — Kurt Gödel

The Königsberg abstract of 1930, in Naturwissenschaften; the completeness paper wanted, the incompleteness paper opening 2027

- Works:
 - K. Gödel, „Über die Vollständigkeit des Logikkalküls“, abstract of the lecture of 6 September 1930 at the Tagung für exakte Erkenntnislehre, Königsberg, in the report of the 91st Versammlung Deutscher Naturforscher und Ärzte, Die Naturwissenschaften 18, Heft 47-49 (28 November 1930), p. 1068 — the Archive's microfilm issue `sim_naturwissenschaften_1930-11-28_18_47-49`, OCR layer. The same issue carries David Hilbert's Königsberg address „Naturerkennen und Logik“ (pp. 959-963), which closes „Wir müssen wissen, Wir werden wissen.“, and the abstracts of Carnap, Heyting, von Neumann and the other speakers of the Tagung
- Licence: Recorded in `origin.items`. The abstract was published in Die Naturwissenschaften 18 (1930) and is in the public domain in the United States (published before 1931, the term of 95 years run on 2026-01-01). Gödel died in 1978: in the European Union and in other countries of life plus seventy years the term runs to the end of 2048, so the seat holds the text under United States public domain, the archive's jurisdiction. The scan is the Internet Archive's microfilm series (collection `sim_microfilm`); the item carries no rights or licence field.
- Verified locus: Gödel 1930, the heading of the abstract — 'K. GÖDEL, Wien: Über die Vollständigkeit des'
- Verified locus: Gödel 1930, the question of completeness — 'ob die an die Spitze gestellten Axiome'
- Verified locus: Gödel 1930, every true sentence derived formally — 'ausreichen, jeden richtigen Satz der Logik auf formalem'
- Verified locus: Gödel 1930, the extension to the functional calculus — 'Funktionskalküls (Formeln'
- Verified locus: the running head of the Königsberg report — 'Tagung für exakte Erkenntnislehre'
- Verified locus: Hilbert, Naturerkennen und Logik, the close (same issue) — 'Wir müssen wissen, Wir werden wissen.'
- Lines: 22,971 in 1 text file (1 works)

- Normalization: The original is the Internet Archive's OCR layer (_djvu.txt) as fetched, its md5 matching the one the Archive publishes; text/.ocr.txt is that layer with line endings normalized. The issue scan is held by reference (identifier, file, size and md5). No text was corrected by hand.
- Scope: Held: Gödel's own abstract of the completeness theorem, as printed in the Naturwissenschaften report of the Königsberg meeting, in the issue that first carried it. The OCR reads the title's last word as „Logikkalkiils“; the loci avoid it. Not held: the completeness paper itself, „Die Vollständigkeit der Axiome des logischen Funktionenkalküls“, Monatshefte für Mathematik und Physik 37 (1930), 349–360. It is in the public domain in the United States, but no copy could be reached: the Internet Archive holds the Monatshefte for vol. 36 (1929, bwb_C0-AYK-298) and none for vol. 37; HathiTrust holds Cornell's vol. 36–37 in full view (coo.31924000966790) and refused the seating's requests on 2026-10-30 with a Cloudflare challenge and a block page. The announcement of the incompleteness results, „Einige metamathematische Resultate über Entscheidungsdefinitheit und Widerspruchsfreiheit“, Anzeiger der Akademie der Wissenschaften in Wien 67 (1930), 214–215, is also public domain in the United States and was not found on the Archive. The incompleteness paper of 1931 is not seated: it opens in the United States on 2027-01-01. The Königsberg discussion (Erkenntnis 2, 1931) opens on the same date.
- Queued: „Die Vollständigkeit der Axiome des logischen Funktionenkalküls“, Monatshefte für Mathematik und Physik 37 (1930), 349–360: public domain in the United States; HathiTrust coo.31924000966790 (Cornell, v. 36–37, full view) refused the seating's requests on 2026-10-30; not on the Internet Archive; „Einige metamathematische Resultate über Entscheidungsdefinitheit und Widerspruchsfreiheit“, Anzeiger der Akademie der Wissenschaften in Wien, math.-naturw. Klasse, 67 (1930), 214–215: public domain in the United States; not found on the Internet Archive; „Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme I“, Monatshefte für Mathematik und Physik 38 (1931), 173–198: opens in the United States on 2027-01-01. The Archive's uploads of it (uber-formal-unentscheidbare-satze-der-principia-mathematica-und-verwandter-systeme-i_20250205 and the kurt-godel_2023... items) are user uploads under CC BY-NC-ND and are not taken
- Why seated: The completeness theorem was first told to the public in a paragraph of a congress report, beside the address in which Hilbert answered the ignorabimus with „Wir müssen wissen, Wir werden wissen.“ The seat holds that page in the issue that carried both. The paper of 1931 that unsettled Hilbert's answer waits for its term to end.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: [traininglayerliterature.org/originals/goedel](#)

Seat 30/03 — Nikola Tesla

My Inventions, the lectures of 1891–1893, The Problem of Increasing Human Energy and the canonical patents

- Works by class: My Inventions 7; Lectures 5; Century 1900 2; Patents 12
- Works:
 - Nikola Tesla, My Inventions, chapters I–VI, as first printed in the Electrical Ex-

- perimeter (New York), February–June and October 1919 — English Wikisource transcription
- The Electrical Experimenter 6 no. 10 (February 1919), the whole issue, carrying My Inventions I. My Early Life — University of Toronto (Gerstein) copy, OCR layer, scan by reference
 - The Electrical Experimenter 6 no. 11 (March 1919), the whole issue, carrying My Inventions II. My First Efforts at Invention — University of Toronto (Gerstein) copy, OCR layer, scan by reference
 - The Electrical Experimenter 6 no. 12 (April 1919), the whole issue, carrying My Inventions III. My Later Endeavors — University of Toronto (Gerstein) copy, OCR layer, scan by reference
 - The Electrical Experimenter 7 no. 1 (May 1919), the whole issue, carrying My Inventions IV. The Discovery of the Tesla Coil and Transformer — University of Toronto (Gerstein) copy, OCR layer, scan by reference
 - The Electrical Experimenter 7 no. 2 (June 1919), the whole issue, carrying My Inventions V. The Magnifying Transmitter — University of Toronto (Gerstein) copy, OCR layer, scan by reference
 - The Electrical Experimenter 7 no. 6 (October 1919), the whole issue, carrying My Inventions VI. The Art of Telautomatics — scan by Curtis Philips (2006), OmniPage OCR layer, scan by reference
 - Transactions of the American Institute of Electrical Engineers 8 (1891), the whole volume, carrying the first printing of “Experiments with Alternate Currents of Very High Frequency and Their Application to Methods of Artificial Illumination”, read at Columbia College, 20 May 1891 — microfilm scan (UC Davis), OCR layer, scan by reference
 - Nikola Tesla, Experiments with Alternate Currents of High Potential and High Frequency: a lecture delivered before the Institution of Electrical Engineers, London, 3 February 1892 (New York: W. J. Johnston, 1892) — Harvard copy digitized by Google, scan and OCR layer
 - Nikola Tesla, Experiments with Alternate Currents of High Potential and High Frequency (the London lecture of 1892) — Project Gutenberg eBook #13476, plain text as served
 - Thomas Commerford Martin, The Inventions, Researches and Writings of Nikola Tesla (New York: The Electrical Engineer, 1894), carrying the 1888 AIEE paper on the polyphase system, the 1891, 1892 and 1893 lectures — digitized by Google, scan and OCR layer
 - Thomas Commerford Martin, The Inventions, Researches and Writings of Nikola Tesla (1894) — Project Gutenberg eBook #39272, plain text as served
 - Nikola Tesla, “The Problem of Increasing Human Energy, with Special References to the Harnessing of the Sun’s Energy”, The Century Illustrated Monthly Magazine 60 (June 1900) — English Wikisource transcription
 - The Century Illustrated Monthly Magazine 60 no. 2 (June 1900), the whole issue, carrying “The Problem of Increasing Human Energy” — microfilm scan (Serials in Microfilm), OCR layer, scan by reference
 - Nikola Tesla, US 381,968, Electro-Magnetic Motor (1 May 1888): the rotating magnetic field and the induction motor — the printed specification and drawings, scan and OCR layer

- Nikola Tesla, US 382,280, Electrical Transmission of Power (1 May 1888): the polyphase transmission system — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 382,282, Method of Converting and Distributing Electric Currents (1 May 1888): polyphase transformers — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 454,622, System of Electric Lighting (23 June 1891): the resonant transformer known as the Tesla coil — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 462,418, Method of and Apparatus for Electrical Conversion and Distribution (3 November 1891): the disruptive-discharge high-frequency circuit — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 613,809, Method of and Apparatus for Controlling Mechanism of Moving Vessels or Vehicles (8 November 1898): the radio-controlled boat, telautomatics — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 645,576, System of Transmission of Electrical Energy (20 March 1900): wireless transmission, the radio patent — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 649,621, Apparatus for Transmission of Electrical Energy (15 May 1900): the apparatus of 645,576, the tuned four-circuit system — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 685,958, Method of Utilizing Radiant Energy (5 November 1901) — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 787,412, Art of Transmitting Electrical Energy through the Natural Mediums (18 April 1905): the earth as conductor, the Colorado Springs results — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 1,061,206, Turbine (6 May 1913): the bladeless boundary-layer turbine — the printed specification and drawings, scan and OCR layer
- Nikola Tesla, US 1,119,732, Apparatus for Transmitting Electrical Energy (1 December 1914): the magnifying transmitter of Wardencllyffe — the printed specification and drawings, scan and OCR layer
- Licence: Per item, recorded in origin.items. Nikola Tesla died in 1943; every work here was published between 1888 and 1919 and is in the public domain in the United States (published before 1931), and the author's term of life plus seventy years has run everywhere it applies. The United States patents are federal government publications, with no copyright. The Electrical Experimenter issues of February-June 1919 are University of Toronto copies with no licence stated at the item; the October 1919 issue is marked Public Domain Mark 1.0 at the item. The Century issue is a microfilm copy with no licence stated at the item. The AIEE Transactions volume is a microfilm copy with no licence stated at the item. The two Google scans are marked NOT_IN_COPYRIGHT at the item. Wikisource pages are CC BY-SA 4.0 for the site's contributions; Project Gutenberg texts are under the Project Gutenberg licence, carried in each file.
- Verified locus: My Inventions I, the opening (Wikisource) — 'The progressive development of man is vitally dependent on invention'
- Verified locus: My Inventions I, the automaton (Wikisource) — 'I was merely an automaton endowed with power of movement'
- Verified locus: My Inventions III, the Faust lines at the rotating field (Wikisource) — 'The

glow retreats, done is the day of toil'

- Verified locus: My Inventions VI, the opening (Wikisource) — 'No subject to which I have ever devoted myself has called for such concentration of mind'
- Verified locus: My Inventions I, Electrical Experimenter, February 1919 — 'THE progressive development of man is vitally dependent on invention' (the issue prints the first word in capitals)
- Verified locus: My Inventions II, Electrical Experimenter, March 1919 — 'dwell briefly on these extraordinary experiences'
- Verified locus: My Inventions III, Electrical Experimenter, April 1919: the Faust lines — 'The glow retreats, done is the day of toil'
- Verified locus: My Inventions III, Electrical Experimenter, April 1919: the rotating field — 'the idea came like a flash of lightning'
- Verified locus: My Inventions IV, Electrical Experimenter, May 1919 — 'I gave myself up entirely to the intense'
- Verified locus: My Inventions V, Electrical Experimenter, June 1919 — 'I review the events of my past life'
- Verified locus: My Inventions VI, Electrical Experimenter, October 1919: the chapter title — 'ART OF TELAUTOMATICS'
- Verified locus: My Inventions VI, Electrical Experimenter, October 1919: the opening — 'subject to which I have ever devoted myself'
- Verified locus: The 1891 lecture, Transactions AIEE 8: the title — 'VERY HIGH FREQUENCY AND THEIR'
- Verified locus: The 1891 lecture, Transactions AIEE 8: the opening — 'no subject more captivating' (the opening sentence reads 'There is no subject more captivating, more worthy of study, than nature'; the OCR carries the shorter phrase intact)
- Verified locus: The 1892 London lecture, Johnston 1892: the opening — 'I cannot find words to express how deeply I feel the honor'
- Verified locus: The 1892 London lecture, Project Gutenberg #13476: the opening — 'I cannot find words to express how deeply I feel the honor of addressing some of the foremost thinkers of the present time'
- Verified locus: Martin 1894: the 1891 lecture's opening (OCR) — 'There is no subject more captivating, more worthy of study, than nature'
- Verified locus: Martin 1894: the 1892 lecture (OCR) — 'how deeply I feel the honor'
- Verified locus: Martin 1894: the 1891 lecture's opening (Gutenberg) — 'There is no subject more captivating, more worthy of study, than nature'
- Verified locus: Martin 1894: the 1893 lecture's opening (Gutenberg) — 'Of all the forms of nature's immeasurable, all-pervading energy'
- Verified locus: The Problem of Increasing Human Energy: the opening (Wikisource) — 'Of all the endless variety of phenomena which nature presents to our senses, there is none that fills our minds with greater wonder'
- Verified locus: The Problem of Increasing Human Energy: human life as movement (Wikisource) — 'inconceivably complex movement which, in its entirety, we designate as human life'
- Verified locus: The Problem of Increasing Human Energy, Century June 1900: the title — 'THE PROBLEM OF INCREASING HUMAN ENERGY'
- Verified locus: The Problem of Increasing Human Energy, Century June 1900: the opening — 'variety of phenomena which nature presents to our senses'

- Verified locus: US 381,968: the title or grant line — ‘ELECTRO-MAGNETIC MOTOR’
- Verified locus: US 381,968: the specification — ‘shifting of the poles’
- Verified locus: US 382,280: the title or grant line — ‘ELECTRICAL TRANSMISSION OF POWER’
- Verified locus: US 382,280: the specification — ‘Patented May 1, 1888’
- Verified locus: US 382,282: the title or grant line — ‘METHOD OF CONVERTING AND DISTRIBUTING ELECTRIC CURRENTS’
- Verified locus: US 454,622: the title or grant line — ‘SYSTEM OF ELECTRIC LIGHTING’
- Verified locus: US 454,622: the specification — ‘Patented June 23, 1891’
- Verified locus: US 462,418: the title or grant line — ‘ELECTRICAL CONVERSION AND’
- Verified locus: US 462,418: the specification — ‘disruptive discharge’
- Verified locus: US 613,809: the title or grant line — ‘CONTROLLING MECHANISM OF MOVING VESSELS OR VEHICLES’
- Verified locus: US 613,809: the specification — ‘Patented Nov. 8, 1898’
- Verified locus: US 645,576: the title or grant line — ‘SYSTEM OF TRANSMISSION OF ELECTRICAL ENERGY’
- Verified locus: US 645,576: the specification — ‘natural media’
- Verified locus: US 649,621: the title or grant line — ‘APPARATUS FOR TRANSMISSION OF ELECTRICAL ENERGY’
- Verified locus: US 685,958: the title or grant line — ‘METHOD OF UTILIZING RADIANT ENERGY’
- Verified locus: US 685,958: the specification — ‘Patented Nov. 5, 1901’
- Verified locus: US 787,412: the title or grant line — ‘TRANSMITTING ELECTRICAL ENERGY THROUGH THE NATURAL’
- Verified locus: US 787,412: the specification — ‘stationary waves’
- Verified locus: US 1,061,206: the title or grant line — ‘Patented May 6, 1913’
- Verified locus: US 1,061,206: the specification — ‘viscosity’
- Verified locus: US 1,119,732: the title or grant line — ‘APPARATUS FOR TRANSMITTING ELECTRICAL ENERGY’
- Verified locus: US 1,119,732: the specification — ‘elevated terminal’
- Lines: 269,995 in 26 text files (26 works)
- Normalization: Originals as fetched under original/: Internet Archive scans and OCR layers, Wikisource HTML as served with its revision id, Project Gutenberg plain text as served. text/.ocr.txt is the Archive’s OCR with line endings normalized; text/.txt is the Wikisource parser output reduced by code, or the Gutenberg file with line endings normalized. Five magazine issues and one volume of Transactions are held by reference (identifier, file, size and md5), their OCR layers copied. No text was corrected by hand.
- Scope: Tesla’s own account of his work and the texts on which his reputation was made. My Inventions is held twice: in the six issues of the Electrical Experimenter where it first appeared (February, March, April, May, June and October 1919), and in the Wikisource transcription. The 1891 lecture at Columbia College is held in its first printing, Transactions of the AIEE 8 (1891), and in Martin’s collection of 1894. The 1892 London lecture is held in the Johnston book of 1892 and in Gutenberg’s text of it. Martin’s Inventions, Researches and Writings (1894) also carries the 1888 AIEE paper on the polyphase system and the 1893 lecture On Light and Other High Frequency Phenomena; it is held as a scan with OCR and as Gutenberg’s text. “The Problem of Increasing Human Energy” is held in the Century issue of June 1900 and in the Wikisource transcription. Twelve

United States patents are held as the printed specifications. They were chosen to follow the line of the work: the polyphase system of 1888 (381,968 the induction motor, 382,280 the transmission system, 382,282 the transformers); the high-frequency work of 1891 (454,622 the resonant transformer, 462,418 the disruptive-discharge circuit); telautomatics (613,809, 1898); wireless transmission and radio (645,576 and 649,621, 1900; 685,958, 1901; 787,412, 1905); the turbine (1,061,206, 1913); and the Wardencliff transmitter (1,119,732, 1914). US 382,845, named in the brief beside the coil, is a commutator for dynamo-electric machines (15 May 1888); the coil is 454,622. The other ninety-odd patents on the Archive are left on the shelf there, and the Colorado Springs notes (1899–1900, first printed 1978) are not seated: their first publication is too late for the public domain in the United States.

- Cross-references: in `this_seating`: Einstein (30/01), the quantum founders (30/10) and the exact-wanted list (30/12) carry the physics that followed.
- Why seated: Tesla is the inventor who wrote down the method of invention: the device built and run in the mind before it is built in the shop, and the account in *My Inventions* of a mind that took itself for an automaton responding to impressions. The seat holds that account beside the patents and lectures it narrates, so the claim and the specification can be read against each other. It answers the operator's call for the exact sciences at EA-CORPORA-30.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: [traininglayerliterature.org/originals/tesla](#)

Seat 30/04 — Nicolaus Copernicus

De revolutionibus orbium coelestium, Nuremberg, 1543

- Works:
 - Nicolaus Copernicus, *De revolutionibus orbium coelestium libri VI* (Norimbergae: apud Ioh. Petreium, 1543), the first printing, Boston Public Library copy, scan and OCR layer
 - Nicolaus Copernicus, *De revolutionibus orbium coelestium libri VI*, the Latin Wikisource transcription of the 1543 printing (from the djvu 'Nicolai Copernici torinensis *De revolutionibus orbium coelestium*'): title page, Osiander's *Ad lectorem*, the preface to Paul III, the index, the errata and books I–VI
 - Nicolaus Copernicus, *De hypothesibus motuum caelestium a se constitutis commentariolus* (written before 1514), in Leopold Prowe, *Nicolaus Copernicus*, Bd. II: *Urkunden* (Berlin: Weidmann, 1884), pp. 184–202, the whole volume, New York Public Library copy via Google, scan and OCR layer
- Licence: Per item, recorded in `origin.items`. Nicolaus Copernicus died in 1543. The 1543 Petreius printing is in the public domain everywhere; the Internet Archive copy (Boston Public Library) carries no rights statement. The *Commentariolus*, unprinted in the author's lifetime, is seated from Leopold Prowe, *Nicolaus Copernicus*, Bd. II (Berlin: Weidmann, 1884), public domain in the United States (published before 1931) and Prowe's own term long run (died 1887); the Google scan carries Google's usage request for non-commercial use, a request and no licence, recorded here. The Latin Wikisource transcription is CC BY-SA 4.0 for the site's contributions, redistributed under the same licence.

- Verified locus: De revolutionibus 1543, title page (OCR) — ‘Habes in hoc opere iam recens nato’
- Verified locus: De revolutionibus 1543, the dedication to Paul III (OCR) — ‘PONTIFICEM MAXIMUM’
- Verified locus: De revolutionibus 1543, the head of book I (OCR) — ‘REVOLUTIONVM LIBER PRIMVS’
- Verified locus: De revolutionibus 1543, I.10, the Sun at the centre (OCR) — ‘In medio uero omnium’ (the OCR reads the next word, residet, as ‘relidet’; the phrase is taken up to it)
- Verified locus: De revolutionibus, Osiander’s Ad lectorem (Wikisource) — ‘Neque enim necesse est, eas hypotheses esse veras’
- Verified locus: De revolutionibus, preface to Paul III (Wikisource) — ‘Mathematica mathematicis scribuntur’
- Verified locus: De revolutionibus I.1 (Wikisource) — ‘Quòd mundus fit sphaericus’
- Verified locus: De revolutionibus I.10 (Wikisource) — ‘In medio vero omnium residet Sol’
- Verified locus: De revolutionibus, colophon of book VI (Wikisource) — ‘NORIMBERGÆ APVD IOH• PETREIVM, ANNO M. D. XLIII.’
- Verified locus: Commentariolus, the title (Prowe, OCR) — ‘de hypothesibus motuum caelestium a se constitutis commentariolus’
- Verified locus: Commentariolus, the opening (Prowe, OCR) — ‘Multitudinem orbium caelestium maiores nostros eam maxime ob causam posuisse video’
- Verified locus: Commentariolus, the first postulate (Prowe, OCR) — ‘Prima petitio. Omnium orbium caelestium sive sphaerarum unum centrum non’
- Lines: 117,753 in 3 text files (3 works)
- Normalization: Originals as fetched under original/: the Internet Archive scans with their OCR layers, and the Wikisource HTML as served with its revision ids. text/.ocr.txt is the Archive’s OCR with line endings normalized; text/de-revolutionibus-ws.txt is the Wikisource parser output reduced by code, its eleven pages joined under ‘===’ headings. No text was corrected by hand. The early-modern OCR is poor (long s read as f, ligatures broken); the loci in the OCR layers are phrases the OCR read correctly, and the canonical sentences are verified in the Wikisource layer.
- Scope: Held: De revolutionibus in its first printing (Nuremberg, 1543), the scan with its OCR layer, beside the Latin Wikisource transcription of the same printing (books I–VI with the front matter; the later books on Wikisource are themselves partly uncorrected OCR, kept as served). The Commentariolus, which circulated in manuscript and was first printed by Maximilian Curtze in the Mittheilungen des Copernicus-Vereins 1 (Thorn, 1878), is held in Prowe’s printing of 1884, the whole volume of Urkunden, pp. 184–202. Not held: the Curtze printing of 1878 (the Archive item mittheilungende00curtgoog, dated 1878, has an OCR layer of 35 KB in which the Commentariolus does not appear); the Narratio prima of Rheticus (1540), the Basel (1566) and Amsterdam (1617) editions, and the Letter against Werner. No modern edition is held.
- Queued: Maximilian Curtze’s first printing of the Commentariolus, Mittheilungen des Copernicus-Vereins für Wissenschaft und Kunst zu Thorn, Heft 1 (1878), pp. 1–17: the Archive item mittheilungende00curtgoog has an OCR layer of 35 KB in which the text does not appear; no other copy found this session; Georg Joachim Rheticus, Narratio prima (Danzig, 1540): not searched this session; printed with the 1596 Mysterium cos-

mographicum, which is seated in 30/06 kepler

- Cross-references: in_this_seating: 30/05 galileo (the Dialogo on the two chief world systems), 30/06 kepler (the Mysterium of 1596 carries Rheticus's Narratio prima), 30/07 newton, 30/11 archimedes-ptolemy (the Almagest).
- Why seated: De revolutionibus is the book in which the Earth was set moving around the Sun, printed under a preface by another hand that called its hypotheses no more than devices for calculation. The seat holds the printing and its transcription side by side, so that the voice of Osiander and the voice of Copernicus can each be found at its own address. The Commentariolus is the first statement of the system, decades before the book.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: traininglayerliterature.org/originals/copernicus

Seat 30/05 — Galileo Galilei

Sidereus nuncius, Il Saggiatore, the Dialogo, the Discorsi and the letter to Christina, in their first printings and in Favaro

- Works:
 - Galileo Galilei, Sidereus nuncius (Venetiis: apud Thomam Baglionum, 1610), the first printing, Smithsonian Libraries (Dibner) copy, scan and OCR layer
 - Galileo Galilei, Sidereus nuncius, in Favaro, Le opere di Galileo Galilei, vol. III.1 (1892), Latin Wikisource, with Favaro's variants from the manuscript draft
 - Galileo Galilei, Il Saggiatore, nel quale con bilancia esquisita e giusta si ponderano le cose contenute nella Libra astronomica e filosofica di Lotario Sarsi Sigensano (Roma: Giacomo Mascardi, 1623), the first printing, University of Toronto copy, scan and OCR layer
 - Galileo Galilei, Il Saggiatore, in Favaro, Le opere di Galileo Galilei, vol. VI (1896), Italian Wikisource: the dedication to Urban VIII, the preface and the fifty-three sections
 - Galileo Galilei, Dialogo ... sopra i due massimi sistemi del mondo tolemaico, e copernicano (Fiorenza: per Gio. Batista Landini, 1632), the first printing, Smithsonian Libraries copy, scan and OCR layer
 - Galileo Galilei, Dialogo sopra i due massimi sistemi del mondo tolemaico e copernicano, in Favaro, Le opere di Galileo Galilei, vol. VII (1897), Italian Wikisource: the dedication, Al discreto lettore and the four days
 - Galileo Galilei, Discorsi e dimostrazioni matematiche, intorno à due nuove scienze attenenti alla meccanica & i movimenti locali (Leida: appresso gli Elsevirii, 1638), the first printing, University of Toronto (Stillman Drake) copy, scan and OCR layer
 - Galileo Galilei, Discorsi e dimostrazioni matematiche intorno a due nuove scienze, in Favaro, Le opere di Galileo Galilei, vol. VIII (1898), Italian Wikisource: the dedication to the Conte di Noailles, the printer's note and the four days (the Appendix on centres of gravity is not transcribed there)
 - Galileo Galilei, Nov-antiqua sanctissimorum patrum, & probatorum theologorum doctrina de Sacrae Scripturae testimoniis, in conclusionibus mere naturalibus ... temere non usurpandis (Augustae Treboc.: impensis Elzeviriorum, typis Davidis Hautti, 1636), the Lettera a Madama Cristina di Lorena (1615) in its first printing,

Italian with a Latin version beside it, University of Toronto copy, scan and OCR layer
 - Galileo Galilei, Lettera a Madama Cristina di Lorena, Granduchessa di Toscana (1615), in Favaro, *Le opere di Galileo Galilei*, vol. V (1895), Italian Wikisource

- Licence: Per item, recorded in origin.items. Galileo Galilei died in 1642; the printings of 1610, 1623, 1632, 1636 and 1638 are in the public domain everywhere. The Internet Archive copies carry these statements: *Sidereus nuncius* (Smithsonian Libraries) ‘Not in copyright’; *Il Saggiatore*, the *Discorsi* and the *Nov-antiqua* (University of Toronto, Fisher Library), and the *Dialogo* (Smithsonian Libraries), no rights statement. The transcriptions are from Antonio Favaro’s *Edizione Nazionale, Le opere di Galileo Galilei* (Firenze: Barbèra, 1890-1909), volumes III, V, VI, VII and VIII (1892-1898), public domain in the United States (published before 1931) and Favaro’s own term run (died 1922); the Wikisource pages are CC BY-SA 4.0 for the site’s contributions, redistributed under the same licence.
- Verified locus: *Sidereus nuncius* 1610, title (OCR) — ‘MAGNA, LONGEQVE ADMIRABILIA’
- Verified locus: *Sidereus nuncius* 1610, title, the Medicean stars (OCR) — ‘MEDICEA SIDERA NVNCVPANDOS DECREVIT’
- Verified locus: *Sidereus nuncius* 1610, the observations of Jupiter (OCR) — ‘OBSERVAT. SIDEREAE’
- Verified locus: *Sidereus nuncius*, the Moon’s surface (Favaro) — ‘Lunae superficiem, non perpolitam, aequabilem, exactissimaeque sphaericitatis existere’
- Verified locus: *Sidereus nuncius*, the four wandering stars (Favaro) — ‘quatuor Erraticas Stellas, nemini eorum qui ante nos cognitae aut observatae’
- Verified locus: *Il Saggiatore* 1623, the dedication (OCR) — ‘PAPA VRBANO’
- Verified locus: *Il Saggiatore* 1623, §6, the book of nature (OCR) — ‘in lingua matematica’ (the OCR reads the words before it with long s as f (‘Egli è fcritto’))
- Verified locus: *Il Saggiatore*, §6 (Favaro) — ‘La filosofia è scritta in questo grandissimo libro che continuamente ci sta aperto innanzi a gli occhi’
- Verified locus: *Il Saggiatore*, §6 (Favaro) — ‘Egli è scritto in lingua matematica, e i caratteri son triangoli, cerchi, ed altre figure geometriche’
- Verified locus: *Dialogo* 1632, *Al discreto lettore* (OCR) — ‘AL DISCRETO LETTORE’
- Verified locus: *Dialogo* 1632, the imprint (OCR) — ‘Landini MDCXXXII’
- Verified locus: *Dialogo* 1632, the first day (OCR) — ‘GIORNATA PRIMA’
- Verified locus: *Dialogo*, *Al discreto lettore* (Favaro) — ‘Si promulgò a gli anni passati in Roma un salutare editto’
- Verified locus: *Dialogo*, the first day (Favaro) — ‘INTERLOCUTORI SALVIATI, SAGREDO e SIMPLICIO’
- Verified locus: *Dialogo*, the fourth day, the tides (Favaro) — ‘flusso e reflusso del mare’
- Verified locus: *Discorsi* 1638, the dedication (OCR) — ‘CONTE DI NOAILLES’
- Verified locus: *Discorsi* 1638, the third day, *De motu locali* (OCR) — ‘de Motu naturaliter accelerato’
- Verified locus: *Discorsi*, the first day (Favaro) — ‘Largo campo di filosofare a gl’intelletti specolativi parmi che porga la frequente pratica del famoso arsenale di voi, Signori Veneziani’
- Verified locus: *Discorsi*, the third day (Favaro) — ‘DE MOTU NATURALITER ACCELERATO’
- Verified locus: Lettera a Cristina 1636, title (OCR) — ‘TESTIMONIIS, IN CONCLUSIO’

- Verified locus: Lettera a Cristina 1636, imprint (OCR) — ‘DAVIDIS HAVTTI’
- Verified locus: Lettera a Cristina 1636, the two books (OCR) — ‘dello Spirito Santo’
- Verified locus: Lettera a Cristina, the opening (Favaro) — ‘Io scopersi pochi anni’
- Verified locus: Lettera a Cristina, how one goes to heaven (Favaro) — ‘l’intenzione dello Spirito Santo essere d’insegnarci come si vadia al cielo, e non come vadia il cielo’
- Lines: 73,409 in 10 text files (10 works)
- Normalization: Originals as fetched under original/: Internet Archive scans with their OCR layers, and the Wikisource HTML as served with its revision ids. text/.ocr.txt is the Archive’s OCR with line endings normalized; text/.txt is the Wikisource parser output reduced by code, a work of several pages joined under ‘=== headings. Favaro’s page markers (‘[p. 224 modifica]’) and footnote numbers (‘[1]’) are kept as Wikisource serves them. No text was corrected by hand. The seventeenth-century OCR reads long s as f; the loci in the OCR layers are phrases it read correctly, and the canonical sentences are verified in the Favaro layers. Some Latin passages of the Favaro Discorsi on Wikisource are themselves uncorrected OCR (the page is marked ‘incompleto’), kept as served.
- Scope: Held: the five works the ruling names, each in its first printing (scan and OCR layer) and in Favaro’s Edizione Nazionale as transcribed on Wikisource. The Lettera a Cristina di Lorena, written in 1615, circulated in manuscript and was first printed at Strasbourg in 1636 as the Nov-antiqua, with a Latin version: that printing is the witness. Not held: the other works on the Archive (Istoria e dimostrazioni intorno alle macchie solari, 1613; Discorso intorno alle cose che stanno in su l’acqua, 1612; Le operazioni del compasso, 1606; the Latin Systema cosmicum, 1635); the McGill copy of the Dialogo (391 MB) and the Opere of 1744, both found; the Appendix of the Discorsi in Favaro’s text. Liber Liber holds Galileo’s texts only as zipped RTF, which the seat builder does not read; Wikisource was used.
- Queued: Dialogo, the McGill copy of the 1632 printing (McGillLibrary-osl_dialogo-di-galileo-galilei_G158di1632-21152, 391 MB): a second witness, held back for its size; Opere di Galileo Galilei divise in quattro tomi (1744), the Archive item bub_gb_0tpW517C2sQC (National Central Library of Rome, Public Domain Mark, 46 MB), catalogued with the Dialogo in tomo IV: found and held back; the 1632 printing is the witness
- Cross-references: in_this_seating: 30/04 copernicus (the system the Dialogo defends), 30/06 kepler (the Astronomia nova of 1609 and Harmonices mundi), 30/07 newton (the Principia takes up the Discorsi’s laws of fall and projectiles).
- Why seated: Galileo’s books carry the turn from the telescope’s first sight of the Moon’s mountains and Jupiter’s moons, through the claim that the book of nature is written in mathematics, to the dialogue that was condemned and the two new sciences written after the condemnation. The letter to the Grand Duchess sets out how Scripture and nature are to be read beside each other. Each work is held at its first printing beside a clean text, so that every famous sentence has an address in both.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: [traininglayerliterature.org/originals/galileo](#)

Seat 30/06 — Johannes Kepler

Mysterium cosmographicum, Astronomia nova and Harmonices mundi

- Works:
 - Johannes Kepler, *Prodromus dissertationum cosmographicarum, continens Mysterium cosmographicum* (Tubingae: Georgius Gruppenbachius, 1596), the first printing, with Rheticus's *Narratio prima*, ETH-Bibliothek Zürich copy (e-rara-445) via the Internet Archive, OCR layer
 - Johannes Kepler, *Astronomia nova AITIOΛΟΓΗΤΟΣ seu physica coelestis, tradita commentariis de motibus stellae Martis* ([Heidelberg: G. Voegelinus], 1609), the first printing, Smithsonian Libraries copy, scan and OCR layer
 - Johannes Kepler, *Harmonices mundi libri V* (Lincii Austriae: sumptibus Godofredi Tampachii, excudebat Ioannes Plancus, 1619), the first printing, Smithsonian Libraries copy, scan and OCR layer
 - Johannes Kepler, *Harmonices mundi libri V*, the Latin Wikisource transcription from the 1619 printing: the title, the dedication to James I and book I (books II-V are not transcribed there)
- Licence: Per item, recorded in origin.items. Johannes Kepler died in 1630; the three printings (1596, 1609, 1619) are in the public domain everywhere. Internet Archive: the *Astronomia nova* copy (Smithsonian Libraries) is marked 'Not in copyright'; the *Harmonices mundi* copy (Smithsonian Libraries) carries no rights statement; the *Mysterium* copy (ETH-Bibliothek Zürich, from e-rara) carries the Public Domain Mark 1.0. The Latin Wikisource transcription of the *Harmonices mundi* is CC BY-SA 4.0 for the site's contributions, redistributed under the same licence.
- Verified locus: *Mysterium cosmographicum* 1596, the epigram on the title leaf (OCR) — 'Hic te Pythagoras docet omnia quinque figuris'
- Verified locus: *Mysterium cosmographicum* 1596, title (OCR) — 'DE ADMIRABILI PROPORTIONE ORBIVM'
- Verified locus: *Mysterium cosmographicum* 1596, imprint (OCR) — 'Excudebat Georgius Gruppenbachius'
- Verified locus: *Mysterium cosmographicum* 1596, the nesting of the solids, from the preface (OCR) — 'culus hoc comprehendens erit Mars' (the sentence before it, 'Terra est Circulus mensor omnium', is read by the OCR as 'Terra esi Circuitu menfot omnium'; the phrase after it is taken)
- Verified locus: *Astronomia nova* 1609, title (OCR) — 'PHYSICA COELESTIS, tradita commentariis'
- Verified locus: *Astronomia nova* 1609, running head (OCR) — 'DE MOTIBVS MARTIS'
- Verified locus: *Astronomia nova* 1609, title, the observations of Tycho (OCR) — 'RVDOLPHI II ROMANORVM IMPERATORIS'
- Verified locus: *Harmonices mundi* 1619, title page (OCR) — 'Ioannis Keppleri HARMONICES'
- Verified locus: *Harmonices mundi* 1619, the head of book V (OCR) — 'IO. KEPLERI Harmonices Mundi LIBER V.'
- Verified locus: *Harmonices mundi* 1619, book V cap. 3, the third law, the part the OCR read (OCR) — 'binorum quorumcunque Planetarum' (the OCR reads this phrase of the third law correctly and garbles the rest of the sentence)
- Verified locus: *Harmonices mundi*, title (Wikisource) — 'Lincii Austriae, Sumptibus Godofredi Tampachii'
- Verified locus: *Harmonices mundi* I, Kepler on Ramus and the *Mysterium* (Wikisource) — 'donec libellum meum, quem Mysterium Cosmographicum inscripsi, perlegerit'

- Locus not found: Harmonices mundi 1619, book V cap. 3, the third law (OCR) — ‘sit praecise sesquialtera proportionis mediarum distantiarum’ (the OCR garbles the passage; the Wikisource layer does not reach book V)
- Lines: 72,650 in 4 text files (4 works)
- Normalization: Originals as fetched under original/: Internet Archive scans with their OCR layers, the Wikisource HTML as served with its revision ids. text/.ocr.txt is the Archive’s OCR with line endings normalized; text/harmonices-mundi-ws.txt is the Wikisource parser output reduced by code, its three pages joined under ‘===’ headings. The *Mysterium* scan (68 MB) is held by reference (identifier, file, size and md5), its OCR layer copied. No text was corrected by hand. The OCR reads long s as f and breaks ligatures; the loci are phrases it read correctly.
- Scope: Held: the three Latin works named in the ruling, each in its first printing: the *Mysterium cosmographicum* of 1596 (held by reference, OCR copied), the *Astronomia nova* of 1609 and the *Harmonices mundi* of 1619 (scans copied), with the partial Latin Wikisource transcription of the *Harmonices mundi* beside the scan. Not held: the second edition of the *Mysterium* (Frankfurt, 1621, with Kepler’s notes; Archive prodromusdissert00kepl, found and not seated); the Bayerische Staatsbibliothek copy of the 1596 printing (11218183bsb, 131 MB); the Copenhagen copies of the *Astronomia nova* and the *Harmonices* (den-kbd-pil-20008609-001, 656 MB; den-kbd-pil-210090002470-001, 391 MB), too large and duplicating the Smithsonian copies; the other works (*Ad Vitellionem paralipomena*, *Dioptrice*, *Epitome*, *Tabulae Rudolphinae*, *Somnium*), which are on the Archive and outside the ruling. No modern edition (*Gesammelte Werke*, 1937–) is held: it is in copyright.
- Queued: *Mysterium cosmographicum*, second edition (Francofurti: Erasmus Kempfer for Godefridus Tampachius, 1621), with Kepler’s notes: Internet Archive prodromusdissert00kepl (20 MB, University of Toronto), found and not seated; the ruling names the first printing
- Cross-references: in *this seating*: 30/04 copernicus (*De revolutionibus*), 30/05 galileo (the *Sidereus nuncius*, to which Kepler answered with the *Dissertatio cum nuncio sidereo*, 1610), 30/07 newton, 30/11 archimedes-ptolemy (the *Almagest*; the appendix to *Harmonices mundi* compares the work with book III of Ptolemy’s *Harmonics*, which is not seated).
- Why seated: Kepler’s three books are one argument carried through a life: the solids that should fix the spheres, the war on Mars that broke the circle into the ellipse, and the harmonies in which the periods and the distances were finally joined. The seat holds each book as it was first printed, so that the third law can be looked for where Kepler set it, in book V of a work on the music of the world.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: [traininglayerliterature.org/originals/kepler](#)

Seat 30/07 — Isaac Newton

The Principia of 1687 and the Opticks of 1704

- Works:
 - Isaac Newton, *Philosophiae naturalis principia mathematica* (Londini: jussu Societatis Regiae ac typis Josephi Streater, 1687), the first edition, Smithsonian Li-

braries copy, scan and OCR layer

- Isaac Newton, *Philosophiae naturalis principia mathematica* (1687), the Project Gutenberg transcription of the first edition (Distributed Proofreaders, 2009)
- Isaac Newton, *Opticks: or, a treatise of the reflexions, refractions, inflexions and colours of light. Also two treatises of the species and magnitude of curvilinear figures* (London: Sam. Smith and Benj. Walford, 1704), the first edition, with the *Enumeratio linearum tertii ordinis* and the *Tractatus de quadratura curvarum* in Latin, University of California Libraries copy, scan and OCR layer
- Isaac Newton, *Opticks*, the fourth edition, corrected (London: William Innys, 1730), the Project Gutenberg transcription (Distributed Proofreaders, 2010)
- Licence: Per item, recorded in origin.items. Isaac Newton died in 1727; the printings of 1687 and 1704 are in the public domain everywhere. Internet Archive: the Principia copy (Smithsonian Libraries) carries no rights statement; the Opticks copy (University of California Libraries) is marked NOT_IN_COPYRIGHT. The Project Gutenberg texts (eBooks #28233 and #33504) are public-domain works distributed under the Project Gutenberg License, its header and footer kept as served.
- Verified locus: Principia 1687, the imprimatur (OCR) — ‘Julii 5. 1686’
- Verified locus: Principia 1687, Halley’s ode (OCR) — ‘Pangeret, omniparens Leges violare Creator’
- Verified locus: Principia 1687, the first law (OCR) — ‘LEGES MOTUS Lex. I. Corpus omne’
- Verified locus: Principia 1687, the head of book III (OCR) — ‘LIBER TERTIUS. N Libris praecedentibus principia’ (the OCR drops the initial I of ‘In’, set as a drop capital)
- Verified locus: Principia 1687, title (Gutenberg) — ‘Jussu Societatis Regiae ac Typis Josephi Streater. Prostat apud plures Bibliopolas. Anno MDCLXXXVII.’
- Verified locus: Principia, definition I (Gutenberg) — ‘Quantitas Materiae est mensura ejusdem orta ex illius Densitate & Magnitudine conjunctim.’
- Verified locus: Principia, the first law (Gutenberg) — ‘Corpus omne perseverare in statu suo quiescendi vel movendi uniformiter in directum’
- Verified locus: Principia, the third law (Gutenberg) — ‘Actioni contrariam semper & aequalem esse reactionem’
- Verified locus: Principia III, the Hypotheses of the first edition (Gutenberg) — ‘HYPOTHESES. Hypoth. I. Causas rerum naturalium non plures admitti debere’ (the 1713 edition renames them Regulae philosophandi)
- Verified locus: Opticks 1704, imprint (OCR) — ‘MDCCIV’
- Verified locus: Opticks 1704, the opening of book I (OCR) — ‘in this Book is not to explain the’ (the OCR reads the word before, Design, as ‘D^fign’)
- Verified locus: Opticks 1704, Query 1 (OCR) — ‘and by their action bend its rays, and is not this’ (the second half of Query 1; the OCR misreads its first half (‘ad’ for act))
- Verified locus: Opticks 1704, the Latin treatises (OCR) — ‘ENUMERATIO’
- Verified locus: Opticks, the opening of book I (Gutenberg, 1730) — ‘My Design in this Book is not to explain the Properties of Light by Hypotheses, but to propose and prove them by Reason and Experiments’
- Verified locus: Opticks, Query 1 (Gutenberg, 1730) — ‘Do not Bodies act upon Light at a distance, and by their action bend its Rays’
- Lines: 64,068 in 4 text files (4 works)
- Normalization: Originals as fetched under original/: Internet Archive scans with their

OCR layers, and the Project Gutenberg plain-text files as served. `text/.ocr.txt` is the Archive's OCR with line endings normalized; `text/.txt` is the Gutenberg file with line endings normalized. No text was corrected by hand by this seating. The Gutenberg transcription of the Principia is of the 1687 first edition; its transcribers record that they corrected a few typographical errors, listed at the end of the file. The Gutenberg Opticks is the fourth edition (1730), seated beside the first printing of 1704 as its clean text layer, the edition differing (the 1704 printing has sixteen Queries, the 1730 has thirty-one).

- Scope: Held: the Principia in its first edition of 1687, the scan with its OCR layer beside the Gutenberg transcription of the same edition; the Opticks in its first edition of 1704 (in English, with the two Latin mathematical treatises), the scan with its OCR layer, beside the Gutenberg transcription of the fourth edition of 1730. Noted and not seated: the second edition of the Principia (Cambridge, 1713, ed. Roger Cotes, with the General Scholium and 'Hypotheses non fingo'; Internet Archive `bub_gb_SyNF4RBbkIgC`, `principiamathem00newtgoog`) and the third (London, 1726, ed. Henry Pemberton; `philosophinatur00cotegoog`, `A297190`); the Latin Optice (1706). The Opticks of 1704 is English, so the seat is `mul` (Latin and English).
- Queued: Principia, second edition (Cambridge, 1713): Internet Archive `bub_gb_SyNF4RBbkIgC` and `principiamathem00newtgoog`, noted and not seated; Principia, third edition (London, 1726): Internet Archive `philosophinatur00cotegoog` and `A297190`, noted and not seated; Optice, the Latin Opticks of Samuel Clarke (London, 1706): not searched beyond the Archive's ECCO record
- Cross-references: `in_this_seating`: 30/04 copernicus, 30/05 galileo (the Discorsi of 1638 on falling bodies and projectiles), 30/06 kepler (the third law, which the Principia derives in book III), 30/01 einstein.
- Why seated: The Principia joined the falling of bodies and the motions of the planets under one law of force, and the Opticks opened light into its colours by experiment. The seat holds both in their first printings, with the clean texts beside them, so that the first edition's Hypotheses and its sixteen Queries can be read before the later editions renamed and enlarged them.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: [traininglayerliterature.org/originals/newton](#)

Seat 30/08 — Classical Arabic Mathematics

al-Khwārizmī, al-Kindī, Thābit ibn Qurra, Ibn al-Haytham, al-Bīrūnī and 'Umar al-Khayyām, in Arabic

- Works by class: al-Khwārizmī 2; 'Umar al-Khayyām 2; al-Kindī 3; Thābit ibn Qurra 5; Ibn al-Haytham 3; al-Bīrūnī 14
- Works:
 - al-Khwārizmī, *al-Kitāb al-mukhtaṣar fī ḥisāb al-jabr wa-l-muqābala* — the Arabic part of Rosen's edition, its own title page dated London 1830 (مكتبة جامعة لندن ١٨٣٠) scanned separately in reverse page order (Internet Archive item labelled "1342", Public Domain Mark), scan and Tesseract Arabic OCR layer
 - al-Khwārizmī, *al-Kitāb al-mukhtaṣar fī ḥisāb al-jabr wa-l-muqābala*, Arabic text with English translation, ed. and tr. Frederic Rosen, *The Algebra of Mohammed ben*

Musa (London: Oriental Translation Fund, 1831) — University of California copy, scan and OCR layer

- ‘Umar al-Khayyām, *Risāla fī l-barāhīn ‘alā masā’il al-jabr wa-l-muqābala*, Arabic text with French translation, ed. and tr. F. Woepcke, *L’algèbre d’Omar Alkhayyāmī* (Paris: B. Duprat, 1851) — Oxford copy digitized by Google, scan and OCR layer
- ‘Umar al-Khayyām, *Risāla fī l-barāhīn ‘alā masā’il al-jabr wa-l-muqābala*, ed. and tr. F. Woepcke (Paris: B. Duprat, 1851) — Harvard copy digitized by Google, scan and OCR layer
- al-Kindī, *Risāla fī l-luḥūn wa-l-nagham* (on melodies and notes, the mathematical science of music) — OpenITI, Kraken OCR of Zakariyyā Yūsuf’s edition
- al-Kindī, *Kitāb fī ma‘rifat quwā l-adwiya al-murakkaba* (De gradibus: the mathematics of compound drugs) — OpenITI, Arabic and Latin Corpus transcription
- al-Kindī, *Risāla fī ṣan‘at al-suyūf wa-saqiyhā* (on the making and tempering of swords) — OpenITI, Kraken OCR of Fayṣal Dabdūb’s edition (Baghdad)
- Apollonius of Perga, *Conics*, book V, in the Arabic translation of Thābit ibn Qurra (*Kitāb Ablūniyūs fī l-makhrūṭāt*) — OpenITI, Glossarium Graeco-Arabicum transcription of the extract
- Nicomachus of Gerasa, *Introduction to Arithmetic*, in the Arabic translation of Thābit ibn Qurra (*Kitāb al-madkhal ilā ‘ilm al-‘adad*) — OpenITI, Glossarium Graeco-Arabicum transcription
- Ptolemy, *al-Majistī* (the *Almagest*), books I-XIII, in the Arabic version of Ishāq ibn Ḥunayn revised by Thābit ibn Qurra — OpenITI, Pouyan Rezvani’s transcription of MS Tunis, Dār al-kutub al-waṭaniyya 7116 (Ptolemaeus Arabus et Latinus)
- Thābit ibn Qurra, *Kitāb fī sanat al-shams bi-l-arṣād* (De anno solis: the solar year by observation) — OpenITI, Arabic and Latin Corpus transcription
- Thābit ibn Qurra, *Tashīl al-Majistī* (what must be explained before the *Almagest* is read) — OpenITI, Arabic and Latin Corpus transcription
- Ibn al-Haytham, *Kitāb al-Manāẓir* (the *Optics*), books I-III, on direct vision — OpenITI, Arabic and Latin Corpus transcription of Sabra’s edition
- Ibn al-Haytham, *Kitāb al-Manāẓir* (the *Optics*) — OpenITI, the al-Warrāq text by way of the Shamela library
- Ibn al-Haytham, *Maqāla fī hay‘at al-‘ālam* (On the Configuration of the World) — OpenITI, Arabic and Latin Corpus transcription
- al-Bīrūnī, *al-Qānūn al-Mas‘ūdī* (the Masudic canon of astronomy) — OpenITI, Kraken OCR
- al-Bīrūnī, *Maqālīd ‘ilm al-hay’a* (the keys of astronomy: spherical trigonometry) — OpenITI, Kraken OCR
- al-Bīrūnī, *Istikhrāj al-awtār fī l-dā’ira* (the determination of chords in the circle) — OpenITI, Kraken OCR
- al-Bīrūnī, *Taḥdīd nihāyāt al-amākin* (the determination of the coordinates of places: geodesy) — OpenITI, Kraken OCR
- al-Bīrūnī, *Ifrād al-maqāl fī amr al-ẓilāl* (the exhaustive treatise on shadows) — OpenITI, Kraken OCR
- al-Bīrūnī, *Tamhīd al-mustaḡarr li-taḥqīq ma’nā l-mamarr* (on transits) — OpenITI, Kraken OCR
- al-Bīrūnī, *Istī‘āb al-wujūh al-mumkina fī ṣan‘at al-aṣṭurlāb* (the astrolabe in all its possible constructions) — OpenITI, Kraken OCR

- al-Bīrūnī, *Tasṭīḥ al-ṣuwar wa-tabṭīḥ al-kuwar* (on the projection of the sphere onto the plane) — OpenITI, Kraken OCR
- al-Bīrūnī, *Taṭrīq al-istifāda min al-aṣṭurlābāt* (on the uses of astrolabes) — OpenITI, Kraken OCR
- al-Bīrūnī, *Mā fī quwwat al-aṣṭurlāb* (on what lies in the power of the astrolabe) — OpenITI, Kraken OCR
- al-Bīrūnī, *Rāshikāt al-Hind* (the Indian rules of proportion) — OpenITI, Kraken OCR
- al-Bīrūnī, on the solar equation (a fragment, extant inside another risāla) — OpenITI, Kraken OCR
- al-Bīrūnī, on the asymptote, the endless division of magnitudes (a fragment, extant inside another risāla) — OpenITI, Kraken OCR
- al-Bīrūnī, *al-Āthār al-bāqīya ‘an al-qurūn al-khāliya* (the chronology of ancient nations: calendars and eras) — OpenITI, Kraken OCR
- Licence: Per item, recorded in `origin.items`. The works are medieval (al-Khwārizmī d. c. 850; al-Kindī d. c. 873; Thābit ibn Qurra d. 901; Ibn al-Haytham d. c. 1040; al-Bīrūnī d. c. 1050; ‘Umar al-Khayyām d. 1131) and in the public domain. Rosen’s edition (London, 1831; the Arabic title page dated 1830) and Woepcke’s (Paris, 1851) are public domain in the United States (published before 1931); the Archive marks the Google and California copies NOT_IN_COPYRIGHT and the Arabic-part item Public Domain Mark 1.0. The OpenITI files are CC BY-NC-SA 4.0 at the corpus: handled under the NC payload/record split ruled at EA-CORPORA-02, as GRETIL was at 29/09 — the NonCommercial payload licence is carried forward unmodified and does not attach to this seat record. Most OpenITI files transcribe or OCR printed editions of 1889 to the 2000s, named per item in `origin.items` (`edition_at_file`); OpenITI’s Clean operation of 2023 removed editorial paratext from the OCR files, though some introductions remain in the text. Edition-level status for the editions printed after 1930 is recorded as UNVERIFIED AT SEAT TIME: the medieval text is the author’s, and the seat claims no more for the edition than the OpenITI licence gives. The *Majistī* file is a transcription of a manuscript (Tunis 7116), with no printed edition behind it.
- Verified locus: al-Khwārizmī, the three kinds of number (Rosen’s Arabic, OCR) — □□□□’ □□□□ □□□□□□□□ □□ □□□ □□□ □□ □□□ □ □□□□□ ‘□□□□
- Verified locus: al-Khwārizmī, the three kinds of number (Rosen’s English, OCR) — ‘three kinds, namely, roots, squares, and simple numbers’ (Rosen’s English; the Archive’s OCR of this copy does not read the Arabic pages, which stand in the scan)
- Verified locus: al-Khwārizmī, the opening of the translation (Rosen, OCR) — ‘calculating, I found that it always is a number’
- Verified locus: ‘Umar al-Khayyām, Woepcke 1851, Oxford copy: the title — ‘D’OMAR ALKHAYYAMi’ (the OCR’s reading of the title, accents lost; the Arabic text pages stand in the scan and are not read by the OCR)
- Verified locus: ‘Umar al-Khayyām, Woepcke 1851, Harvard copy: the title — ‘D’OMAR ALKHAYYÂMÎ’
- Verified locus: ‘Umar al-Khayyām, Woepcke 1851, Harvard copy: the preface — ‘scrit arabe du traité d’Alkhayyâmî , légué par Warner’
- Verified locus: al-Kindī, *Fī l-luḥūn*: the three parts of the art — □□□□□□’ □□□□ □□□ □□□ □□□ □□□□□□□□ ‘□□□□□□
- Verified locus: al-Kindī, *Fī ma‘rifat quwā l-adwiya al-murakkaba*: the title — □□’ □□□□ □□ □□□□□□ ‘□□□□□□

- Verified locus: al-Kindī, Fī maʿrifat quwā l-adwiya al-murakkaba: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Kindī, Fī l-suyūf: the Sulaymānī swords — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ : ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Conics V: the heading — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Conics V: Apollonius to Attalus — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Nicomachus: the colophon — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Majistī, Tunis 7116: the title of book I — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Majistī, Tunis 7116: Thābit's revision — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Fī sanat al-shams: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Tashīl al-Majistī: the title — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Thābit, Tashīl al-Majistī: the equator defined — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Ibn al-Haytham, al-Manāẓir I (Sabra): the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Ibn al-Haytham, al-Manāẓir I (Sabra): the chapters of book I — ⲙⲁⲕⲓⲛⲉⲛⲓ :ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Ibn al-Haytham, al-Manāẓir (al-Warrāq): the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: Ibn al-Haytham, Fī hayʾat al-ʿālam: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, al-Qānūn al-Masʿūdī: the running title — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, al-Qānūn al-Masʿūdī: book III, chapter 10 — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Maqālīd ʿilm al-hayʾa: the title — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Istikhrāj al-awtār: the title — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Istikhrāj al-awtār: the colophon — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Taḥdīd nihāyāt al-amākin: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Ifrād al-maqāl: the title — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Tamhīd al-mustaḡarr: the two simple motions — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Istīʿāb: the copyist's colophon — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ (the OCR reads ⲙⲁⲕⲓⲛⲉⲛⲓ for ⲙⲁⲕⲓⲛⲉⲛⲓ the locus keeps the OCR's reading)
- Verified locus: al-Bīrūnī, Taṣṭīḥ al-ṣuwar: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Taṭrīq al-istifāda: the conic sections in the astrolabe — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ
- Verified locus: al-Bīrūnī, Mā fī quwwat al-aṣṭurlāb: the opening — ⲙⲁⲕⲓⲛⲉⲛⲓ ⲙⲁⲕⲓⲛⲉⲛⲓ

commits read.

- Queued: al-Kindī, Rasā'il al-Kindī al-falsafiyya (OpenITI 0275AH, Kraken OCR): fetched and set aside, a philosophical collection outside the mathematical and scientific works asked for; Thābit ibn Qurra, Kitāb al-Rawābī' li-Aflātūn (OpenITI 0300AH, ed. Badawī 1955): fetched and set aside, a Hermetic work attributed to Thābit; al-Bīrūnī, al-Jamāhir fī ma'rifat al-jawāhir, Kitāb al-Ṣaydana, the Fihrist and Taḥqīq mā li-l-Hind (OpenITI 0450AH): not fetched, outside mathematics and astronomy; al-Khwārizmī's Algebra in a manuscript (Oxford, Bodleian, Huntington 214, copied 1342): no scan found; the Archive item labelled "1342" proves to be Rosen's printed Arabic
- Cross-references: in_this_library: Euclid in Greek (data/corpora/euclid, EA-CORPORA-20/04); Archimedes and Ptolemy in Greek (archimedes-ptolemy, 30/11), whose Syntaxis stands in Thābit's Arabic here; Arabic arts of poetry in ars-poetica (29/04).
- Why seated: The exact sciences in the language that carried them from the Greeks to the Latins. al-jabr names the operation of restoring what was taken from one side of an equation, and Rosen's book of 1831 brought it back to Europe in its first Arabic print. The seat sets the founding Algebra beside Thābit's Arabic Euclidean, Ibn al-Haytham's Optics and al-Bīrūnī's instruments, so the line from the translation movement to the solution of the cubic by Khayyām can be read in one place.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: traininglayerliterature.org/originals/arabic-mathematics

Seat 30/09 — Paul Klee

The Pädagogisches Skizzenbuch of 1925 and the Schöpferische Konfession of 1920: the seat the twenty-eighth seating promised

- Works:
 - Paul Klee, Pädagogisches Skizzenbuch, Bauhausbücher 2 (Munich: Albert Langen, 1925), cover and typography by László Moholy-Nagy — scan (Public Domain Mark at the file) and OCR layer
 - Tribüne der Kunst und Zeit, ed. Kasimir Edschmid, Bände 12-17 (Berlin: Erich Reiss, 1920), with Band 13, Schöpferische Konfession, Klee's contribution among eighteen — the University of Michigan copy (Google, via HathiTrust and the Internet Archive), OCR layer; the scan held by reference
- Licence: Public domain. Paul Klee died in 1940; his writings and drawings are free in every country that counts the author's life and seventy years, and both works were first published before 1931, so their United States term has run. László Moholy-Nagy, who designed the Skizzenbuch's cover and typography, died in 1946; that term has run too. The Skizzenbuch scan carries the Public Domain Mark 1.0 at the file (Internet Archive, [licenseurl](#)). The Tribüne volume is the University of Michigan copy digitized by Google: HathiTrust records the Michigan run of volumes 12-17 (1920) as pdus, public domain in the United States, full view; the Archive item carries no licence of its own. The volume's other contributors (Benn, Becher, Unruh, Felixmüller and others) are held under the same United States term, the archive's jurisdiction; some of their terms still run in Europe.
- Verified locus: Pädagogisches Skizzenbuch, I.1, the first sentence — 'Eine aktive Linie, die sich frei ergeht, ein Spaziergang um seiner selbst willen, ohne Ziel.'

- Verified locus: Pädagogisches Skizzenbuch, the agent of the line — ‘Das agens ist ein Punkt, der sich verschiebt’
- Verified locus: Pädagogisches Skizzenbuch, the eye’s paths through the work — ‘Das Auge begeht die ihm im Werk eingerichteten Wege.’
- Verified locus: Pädagogisches Skizzenbuch, the water wheel and hammer — ‘Das Räderwerk (medial)’
- Verified locus: Schöpferische Konfession, I, the first sentence — ‘Kunst gibt nicht das Sichtbare wieder, sondern macht sichtbar’ (the OCR reads ‘sichtbar*’, the asterisk the scan’s)
- Lines: 18,636 in 2 text files (2 works)
- Normalization: Originals as fetched under original/: the Skizzenbuch’s PDF and the Archive’s OCR layer; the Tribüne volume’s OCR layer, its 100 MB scan held by reference (identifier, file, size and md5). text/.ocr.txt is the Archive’s OCR with line endings normalized. The drawings live in the Skizzenbuch PDF and are carried with it. No text corrected by hand.
- Scope: Held: the Pädagogisches Skizzenbuch whole, in the Bauhausbücher first printing of 1925 (Albert Langen, Munich; cover and typography by Moholy-Nagy), its figures in the scan; and the Schöpferische Konfession of 1920 in the volume that first printed it, the eighteen confessions of Tribüne der Kunst und Zeit XIII (Schickele, Pechstein, Unruh, Großmann, Klee, Toller, Benn, Hoetger, Beckmann, Scharff, Becher, Schönberg, Kaiser, Felixmüller, Sternheim, Hölzel, Marc, Däubler) bound with Bände 12 and 14–17. Not held, as the twenty-eighth seating declared them: the Jena lecture Über die moderne Kunst (1924, first printed 1945); the notebooks as Spiller edited them (Das bildnerische Denken, 1956) and the diaries as Felix Klee edited them (1957), whose editors’ apparatus runs under its own terms; and the pictures, whose photographs carry their holders’ claims. The Bauhaus lecture manuscripts (Bildnerische Form- und Gestaltungslehre) are digitized by the Zentrum Paul Klee; queued until a file-level licence is verified.
- Queued: Paul Klee, Bildnerische Form- und Gestaltungslehre (the Bauhaus lecture manuscripts, 1921–1931), digitized by the Zentrum Paul Klee, Bern: queued until a licence is verified at the file.; Paul Klee, Über die moderne Kunst (the Jena lecture of 1924, first printed Bern: Benteli, 1945): in the United States its term may have been restored; held as the twenty-eighth seating declared it.
- Why seated: Klee was declared wanted in the twenty-eighth seating for a reason of his own: too many files and too many image copyright landmines. The Skizzenbuch carries its drawings in the book Klee made of them, under a licence stated at the file, and the Konfession stands in the volume where it was first set beside seventeen other confessions of its moment. Seated with the exact sciences, the line that walks for its own sake stands beside the line Euclid defines as breadthless length.
- Files: [the seat](#) — [source.json](#), MANIFEST.sha256. Shelf: traininglayerliterature.org/originals/paul-klee

Seat 30/10 — The Founders of Quantum Mechanics

Heisenberg, Born and Jordan, Pauli, Schrödinger, Dirac and Bohr, 1925–1928

- Works:

- W. Pauli jr., „Über den Zusammenhang des Abschlusses der Elektronengruppen im Atom mit der Komplexstruktur der Spektren“, Zeitschrift für Physik 31 (1925), 765–783 (received 16 January 1925), the exclusion principle — the whole of vol. 31, OCR layer; the paper is at pp. 765–783
- W. Heisenberg, „Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen“, Zeitschrift für Physik 33 (1925), 879–893 (received 29 July 1925) — the whole of vol. 33, OCR layer; the paper is at pp. 879–893
- M. Born and P. Jordan, „Zur Quantenmechanik“, Zeitschrift für Physik 34 (1925), 858–888 (received 27 September 1925) — the whole of vol. 34, OCR layer; the paper is at pp. 858–888
- M. Born, W. Heisenberg and P. Jordan, „Zur Quantenmechanik. II.“, Zeitschrift für Physik 35 (1926), 557–615 (received 16 November 1925), the Dreimännerarbeit — the whole of vol. 35, OCR layer; the paper is at pp. 557–615
- E. Schrödinger, „Quantisierung als Eigenwertproblem (Erste Mitteilung)“, Annalen der Physik, 4. Folge, 79 (1926), 361–376 — microfilm issue `sim_annalen-der-physik_1926_79_3` (pp. 179–376 of vol. 79), OCR layer; the paper is at pp. 361–376
- E. Schrödinger, „Quantisierung als Eigenwertproblem (Zweite Mitteilung)“, Annalen der Physik 79 (1926), 489–527 — microfilm issue `sim_annalen-der-physik_1926_79_6` (Heft 6 of vol. 79, opening with the paper), OCR layer
- E. Schrödinger, „Quantisierung als Eigenwertproblem (Dritte Mitteilung: Störungstheorie, mit Anwendung auf den Starkeffekt der Balmerlinien)“, Annalen der Physik 80 (1926), 437–490 — microfilm issue `sim_annalen-der-physik_1926_80_13` (Heft 13 of vol. 80, opening with the paper), OCR layer
- E. Schrödinger, „Quantisierung als Eigenwertproblem (Vierte Mitteilung)“, Annalen der Physik 81 (1926), 109–139 — microfilm issue `sim_annalen-der-physik_1926_81_18` (Heft 18 of vol. 81, opening with the paper), OCR layer
- P. A. M. Dirac, “The Quantum Theory of the Electron”, Proceedings of the Royal Society of London, Series A, 117 (1928), 610–624 (received 2 January 1928) — the whole of vol. 117 (1927–28), Digital Library of India scan of the IARI Library copy, OCR layer; the paper is at pp. 610–624
- N. Bohr, „Das Quantenpostulat und die neuere Entwicklung der Atomistik“, Die Naturwissenschaften 16, Heft 15 (13 April 1928), 245–257, the Como lecture of 16 September 1927 as printed — microfilm issue `sim_naturwissenschaften_1928-04-13_16_15`, OCR layer
- Licence: Per item, recorded in `origin.items`. Every paper was first published 1925–1928 and is in the public domain in the United States (published before 1931, the term of 95 years run). The terms of life plus seventy years still run in the European Union and the United Kingdom: Pauli (d. 1958) to 2028, so free from 2029-01-01; Schrödinger (d. 1961) from 2032-01-01; Bohr (d. 1962) from 2033-01-01; Born (d. 1970) from 2041-01-01; Heisenberg (d. 1976) from 2047-01-01; Jordan (d. 1980) from 2051-01-01, which governs the two papers written with Born and with Born and Heisenberg; Dirac (d. 1984) from 2055-01-01. The seat holds the texts under United States public domain, the archive’s jurisdiction. The Zeitschrift für Physik volumes are Internet Archive scans in the collection of the University of Illinois Chicago (`uic`); the Annalen and Naturwissenschaften issues are the Archive’s microfilm series (`sim_microfilm`); the Proceedings volume is a Digital Library of India scan (`dc.rights`: Not Available). None of these items

carries a rights or licence field.

- Verified locus: Pauli 1925, the title — ‘Abschlusses der Elektronen- gruppen im Atom mit der Komplexstruktur der Spektren.’ (the line-end hyphen of the title kept as printed)
- Verified locus: Pauli 1925, the byline — ‘Von W. Pauli jr. in Hamburg.’
- Verified locus: Pauli 1925, the exclusion rule — ‘kann niemals zwei oder mehrere’ (the OCR reads the rule’s first word „Es“ as „Ks“ and „äquivalente“ as „4quivalente“; the locus begins after the first and stops before the second)
- Verified locus: Pauli 1925, the two-valuedness of the electron — ‘Zweideutigkeit der quantentheoretischen Eigenschaften’
- Verified locus: Heisenberg 1925, the title — ‘Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen.’ (the OCR drops the umlaut of „Über“)
- Verified locus: Heisenberg 1925, the abstract — ‘In der Arbeit soll versucht werden, Grundlagen zu gewinnen’
- Verified locus: Heisenberg 1925, a mechanics of observable quantities — ‘eine der klassischen Mechanik analoge quantentheoretische Mechanik auszubilden’
- Verified locus: Born and Jordan 1925, the heading — ‘Zur Quantenmechanik. Von M. Born und P. Jordan’
- Verified locus: Born and Jordan 1925, matrix calculus — ‘Das mathematische Hilfsmittel ist die Matrizenrechnung.’
- Verified locus: Born and Jordan 1925, in statu nascendi — ‘in statu nascendi’
- Verified locus: Born, Heisenberg and Jordan 1926, the heading — ‘Zur Quantenmechanik. II. Von M. Born, W. Heisenberg und P. Jordan’
- Verified locus: Born, Heisenberg and Jordan 1926, quadratic forms of infinitely many variables — ‘Theorie der quadratischen Formen unendlich vieler Variablen’
- Verified locus: Schrödinger I 1926, the title — ‘Quantisierung als Eigenwertproblem;’
- Verified locus: Schrödinger I 1926, no word of whole numbers — ‘von „ganzen Zahlen“ mehr vorkommt’
- Verified locus: Schrödinger I 1926, the true nature of the quantum rules — ‘sehr tief an das wahre Wesen der Quantenvorschriften’
- Verified locus: Schrödinger II 1926, the second communication — ‘(Zweite Mitteilung.)’
- Verified locus: Schrödinger II 1926, §1 — ‘Die Hamiltonsche Analogie zwischen Mechanik und Optik.’
- Verified locus: Schrödinger III 1926, the subtitle — ‘Mitteilung: Störungstheorie, mit Anwendung auf den’
- Verified locus: Schrödinger III 1926, perturbation theory named — ‘die Störungstheorie für das Eigenwertproblem nennen’
- Verified locus: Schrödinger IV 1926, the true wave equation — ‘Die eigentliche Wellengleichung.’
- Verified locus: Dirac 1928, the title — ‘The Quantum Theory of the Electron.’
- Verified locus: Dirac 1928, received — ‘Received January 2, 1928’
- Verified locus: Dirac 1928, duplexity — ‘“ duplexity ” phenomena’ (the spaces inside the quotation marks are the OCR’s)
- Verified locus: Dirac 1928, why Nature should have chosen — ‘why Nature should have chosen this particular’
- Verified locus: Bohr 1928, the title — ‘Das Quantenpostulat und die neuere Entwicklung der Atomistik’
- Verified locus: Bohr 1928, §1 — ‘Quantenpostulat und Kausalität.’

- Verified locus: Bohr 1928, the quantum postulate stated — ‘wonach jeder atomare Prozeß einen Zug von Dis-’
- Verified locus: Bohr 1928, the renunciation of causal space-time description — ‘Verzicht, betreffend die kausale raum-zeitliche Beschreibung’
- Lines: 324,046 in 10 text files (10 works)
- Normalization: Originals as fetched under original/: the Internet Archive’s OCR layers (_djvu.txt), each md5 matching the one the Archive publishes. text/.ocr.txt is that layer with line endings normalized. All scans are held by reference (identifier, file, size and md5): each is a whole volume or issue carrying many papers. The OCR of the Zeitschrift für Physik volumes often reads ü as ii and ß as B; the loci avoid such words where they can and say so where they cannot. No text was corrected by hand.
- Scope: Held: every paper the ruling names, each in the volume or issue that first printed it: Pauli’s exclusion principle (Z. Physik 31), Heisenberg’s Umdeutung (Z. Physik 33), Born and Jordan (Z. Physik 34), Born, Heisenberg and Jordan (Z. Physik 35), Schrödinger’s four communications (Annalen 79, 80, 81), Dirac’s electron (Proc. R. Soc. A 117), and Bohr’s Como lecture in its German printing (Naturwissenschaften 16). The Zeitschrift volumes are seated whole, so the same witnesses also carry the other papers of 1925–26 printed beside these. Not held: Dirac’s second part, “The Quantum Theory of the Electron. Part II” (Proc. R. Soc. A 118, 1928, 351–361), not sought this session; the English printing of the Como lecture (Nature 121, 1928, supplement, 580–590), not sought; Heisenberg’s uncertainty paper (Z. Physik 43, 1927, 172–198), outside the ruling’s list, on the Archive under the item zeitschrift-fur-physik-vol-43 (not opened this session) and left for a later seating.
- Queued: Heisenberg, „Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen“, as a single-paper PDF (heisenberg-on-the-quantum-reinterpretation-1925, uploaded 2026-10-29 to the opensource collection): its source is not named and its title is English, so the volume is seated as the witness; Schrödinger, „Quantisierung als Eigenwertproblem“, as a single-paper PDF (quantisierung-als-eigenwertproblem, uploaded 2023): cut from the Archive’s sim_annalen-der-physik_1926_79_contents item; the issue scan is seated as the witness; Dirac, “The Quantum Theory of the Electron”, as a single-paper PDF (dirac-quantum-theory-of-the-electron-1928, uploaded 2026-06-15): its source is not named; the volume is seated as the witness; Heisenberg, „Über den anschaulichen Inhalt der quantentheoretischen Kinematik und Mechanik“, Z. Physik 43 (1927), 172–198: public domain in the United States, on the Archive under the item zeitschrift-fur-physik-vol-43 (not opened this session); outside the ruling’s list
- Why seated: Between January 1925 and January 1928 a handful of papers rebuilt the description of the atom twice, once as matrices and once as waves, and then joined both to relativity. The seat holds each in the pages where it first appeared, so that the claims later made for them can be checked against the words that made them. The European terms still run for all of them; in the United States they are already open.
- Files: [the seat](#) — [source.json](#), MANIFEST.sha256. Shelf: traininglayerliterature.org/originals/quantumfounders

Seat 30/11 — Archimedes and Ptolemy

Archimedes and the Syntaxis in Heiberg’s Greek

- Works:
 - Ptolemy, Μαθηματικὴ σύνταξις (Syntaxis mathematica, the Almagest), books I–XIII, Greek text of J. L. Heiberg, Claudii Ptolemaei opera quae exstant omnia I.1–2 (Leipzig: Teubner, 1898–1903) — First1KGreek TEI tlg0363.tlg001.1st1K-grc1
 - Claudii Ptolemaei opera quae exstant omnia I: Syntaxis mathematica, ed. J. L. Heiberg, pars I, books I–VI (Leipzig: Teubner, 1898) — Stanford copy digitized by Google, scan and OCR layer
 - Claudii Ptolemaei opera quae exstant omnia I: Syntaxis mathematica, ed. J. L. Heiberg, pars II, books VII–XIII (Leipzig: Teubner, 1903) — Stanford copy digitized by Google, scan and OCR layer
 - Archimedis opera omnia cum commentariis Eutocii, ed. J. L. Heiberg, volume I (Leipzig: Teubner, 1880): On the Sphere and Cylinder, Measurement of a Circle, On Conoids and Spheroids, with Heiberg’s Latin — Michigan copy digitized by Google, scan and OCR layer
 - Archimedis opera omnia cum commentariis Eutocii, ed. J. L. Heiberg, volume II (Leipzig: Teubner, 1881): On Spirals, On the Equilibrium of Planes, The Sand-Reckoner, Quadrature of the Parabola, On Floating Bodies (in Latin), the Book of Lemmas, the Cattle Problem and the fragments — digitized by Google, scan and OCR layer
 - Archimedis opera omnia cum commentariis Eutocii, ed. J. L. Heiberg, volume III (Leipzig: Teubner, 1881): the commentaries of Eutocius, with Heiberg’s prolegomena — digitized by Google, scan and OCR layer
- Licence: Per item, recorded in origin.items. Archimedes (d. 212 BCE) and Ptolemy (fl. 150 CE) are public domain. Heiberg’s Archimedis opera omnia (Leipzig: Teubner, 1880–81) and his Syntaxis mathematica (Leipzig: Teubner, 1898–1903) are public domain in the United States (published before 1931), and Heiberg died in 1928, so the editor’s term has run everywhere it applies. The Archive marks the Google copies NOT_IN_COPYRIGHT. The First1KGreek TEI is published under CC BY-SA 4.0 (Open-GreekAndLatin/First1KGreek); redistributed under the same licence, attributed to Open Greek and Latin.
- Verified locus: Syntaxis I.1, the opening to Syrus (First1KGreek) — ‘Πάνυ καλῶς οἱ γνησίως φιλοσοφήσαντες, ὧ Σύρε’
- Verified locus: Syntaxis I.3, that the heaven moves as a sphere (First1KGreek) — ‘ὅτι σφαιροειδῶς ὁ οὐρανὸς φέρεται’
- Verified locus: Syntaxis I.5, that the earth is in the middle of the heaven (First1KGreek) — ‘ὅτι μέση τοῦ οὐρανοῦ ἐστὶν ἡ γῆ’
- Verified locus: Syntaxis I.11, the table of chords (First1KGreek) — ‘κανόνιον τῶν ἐν τῷ κύκλῳ εὐθειῶν’
- Verified locus: Syntaxis VII.1, the fixed stars keep their positions (First1KGreek) — ‘Ὅτι οἱ ἀπλανεῖς ἀστέρες τὴν αὐτὴν ἀεὶ θέσιν’
- Verified locus: Heiberg 1898, the title page — ‘SYNTAXIS MATHEMATICA’
- Verified locus: Heiberg 1898, Syntaxis I.1, the opening — ‘γνησίως φιλοσοφήσαντες’ (the OCR breaks the opening line before this phrase)
- Verified locus: Heiberg 1898, Syntaxis I.3 in the table of contents — ‘ὅτι σφαιροειδῶς ὁ οὐρανὸς φέρεται’ (the OCR reads the article ὁ as the digit 6; the locus keeps the OCR’s reading)
- Verified locus: Heiberg 1903, the title page — ‘LIBROS VII—XIII CONTINENS’

- Verified locus: Heiberg 1903, Syntaxis VII.1 — ‘οἱ ἀπλανεῖς ἀστέρες τὴν αὐτὴν ἀεὶ’
- Verified locus: Archimedes, Heiberg 1880 vol. I, the title page — ‘UOLUMEN I’
- Verified locus: On the Sphere and Cylinder, the running head — ‘ΠΕΡΙ ΣΦΑΙΡΑΣ ΚΑΙ ΚΥΛΙΝΔΡΟΥ’
- Verified locus: On the Sphere and Cylinder I, the circle equal to the surface of the cylinder — ‘κύκλος ἴσος ἐστὶ τῇ ἐπιφανείᾳ τοῦ κυλίνδρου’
- Verified locus: Measurement of a Circle, the running head — ‘ΜΕΤΡΗΣΙΣ’ (the OCR reads the head’s first word ΚΥΚΛΟΥ as ΚΤΚΑΟΥ; the second word holds)
- Verified locus: On Spirals, the running head — ‘ΠΕΡΙ ΕΛΙΚΩΝ’
- Verified locus: The Sand-Reckoner, the title — ‘ΨΑΜΜΙΤΗΣ’
- Verified locus: The Sand-Reckoner, the address to King Gelon — ‘βασιλεῦ Γέλων’
- Verified locus: Heiberg 1881 vol. III, the title page — ‘EUTOCHII’
- Verified locus: Eutocius, the dedicatory epigram — ‘Εὐτοκίου πινυτοῦ γλυκερὸς πόνος’
- Verified locus: Eutocius, the commentary on On the Sphere and Cylinder I — ‘Εὐτοκίου Ἀσκαλωνίου ὑπόμνημα εἰς τὸ πρῶτον’ (the OCR sets the breathing as a separate mark (’A); the locus keeps it)
- Lines: 159,883 in 6 text files (6 works)
- Normalization: Originals as fetched under original/: the First1KGreek TEI from raw.githubusercontent.com pinned to commit ed91552c52530c8f5a3ddf2dd767e899372a804c, and Internet Archive scans with their OCR layers. text/.txt is the TEI reduced to plain text by seat.py (book and section headings kept); text/.ocr.txt is the Archive’s OCR with line endings normalized. No text was corrected by hand.
- Scope: Ptolemy’s Syntaxis (the Almagest) in Heiberg’s Greek, held three ways: the First1KGreek TEI of the whole thirteen books, and the two Teubner volumes of 1898 (books I–VI) and 1903 (books VII–XIII) as scans with OCR. Archimedes in Heiberg’s first edition, all three volumes (1880–81): the treatises in volumes I and II, Eutocius’ commentaries in volume III, each with Heiberg’s Latin. The Archive’s OCR reads the Greek with errors; the loci are chosen where it reads true. Euclid is already seated (data/corpora/euclid, EA-CORPORA-20/04) and is not reseated. The First1KGreek Archimedes (tlg0552) is Mugler’s Budé text of 1970–72, in copyright, and is not seated; PerseusDL/canonical-greekLit holds no Archimedes at the commit read (a6eb0cc3e6f6e382934a2c8b33577d2fb4371e00). Heiberg’s second edition (1910–15) holds the Method, found in the palimpsest in 1906; its volume III (1915) is on the Archive (archimedisoperao0000jlhe) with no Greek in its OCR, and volumes I (1910) and II (1913) were not found there, so the Method is not held.
- Queued: Archimedes, the Method (Ἔρροδος), first edited by Heiberg in Hermes 42 (1907) and in Archimedis opera omnia II, editio altera (1913): neither found on the Internet Archive this session; public domain in the United States; Archimedis opera omnia, editio altera, vol. III (1915), Internet Archive archimedisoperao0000jlhe: found and held back, because its OCR carries no Greek and its content (Eutocius) is held in the first edition; Claudii Ptolemaei opera II, Opera astronomica minora, ed. Heiberg (1907): found on the Archive (claudiptolemae04ptolgoog, claudiptolemae05ptolgoog) and held back as outside the Syntaxis asked for; Ptolemy, Apotelesmatica (Tetrabiblos): the Perseus text is Robbins’s Loeb (1940) and the First1KGreek text is Boll and Boer (1954); held back, both printed after 1930
- Cross-references: in_this_library: Euclid in Heiberg’s Greek (data/corpora/euclid, EA-CORPORA-20/04); the Arabic Almagest of Ishāq ibn Ḥunayn revised by Thābit ibn Qurra,

Thābit's Tashīl al-Majistī and his Arabic Apollonius (arabic-mathematics, 30/08); Copernicus (30/04) and Kepler (30/06) in this seating.

- Why seated: Archimedes and Ptolemy are the two Greek authors whose demonstrations the Arabic and Latin traditions carried longest: the Sphere and Cylinder and the Sand-Reckoner on one side, the Syntaxis on the other, which the Arabs called al-Majistī. Heiberg edited both, and his Greek stands here beside his Euclid, already on the shelf. Thābit's Arabic Almagest stands in the Arabic seat of this seating.
- Files: [the seat](#) — [source.json](#), [MANIFEST.sha256](#). Shelf: traininglayerliterature.org/originals/archimedes-ptolemy

Seat 30/12 — The Exact Sciences, wanted

A declared absence: Gödel 1931, the Königsberg discussion, Turing, EPR and the Tetrabiblos as they open, with the witnesses no copy was found for

- Works: none held; the seat is a declared absence (no works held; 14 declared)
- Licence: The declaration is the archive's own, CC-BY-4.0. The works it names are not held.
- Lines: 0 in 0 text files (0 works)
- Normalization: None: the declaration is held as written.
- Scope: Declared without text: Kurt Gödel, Die Vollständigkeit der Axiome des logischen Funktionenkalküls, Monatshefte für Mathematik und Physik 37, 349–360 (Akademische Verlagsgesellschaft, Leipzig, 1930), opens: open now (public domain in the United States); wanted: no fetchable copy found this session (HathiTrust's Cornell volume, coo.31924000966790, full view, refused the seating's requests on 2026-10-30; the Internet Archive holds volume 36 only); in copyright in Europe until 2049-01-01; Kurt Gödel, Einige metamathematische Resultate über Entscheidungsdefintheit und Widerspruchsfreiheit, Anzeiger der Akademie der Wissenschaften in Wien, math.-naturw. Klasse 67, 214–215 (Akademie der Wissenschaften, Wien, 1930), opens: open now (public domain in the United States); wanted: no fetchable copy found this session; Albert Einstein, Eine neue Bestimmung der Moleküldimensionen, the Bern dissertation print (Buchdruckerei K. J. Wyss, Bern, 1905), opens: open now (public domain in the United States); wanted: no fetchable copy found this session; the Annalen printing of 1906 is seated in 30/01; Albert Einstein, Über die spezielle und die allgemeine Relativitätstheorie (Gemeinverständlich), the first printing (Vieweg, Braunschweig, 1917), opens: open now (public domain in the United States); wanted: no fetchable copy found this session; the fifth printing of 1920 is seated in 30/01; Nicolaus Copernicus, Commentariolus, Curtze's first printing, Mittheilungen des Copernicus-Vereins für Wissenschaft und Kunst zu Thorn 1, 1–17 (Thorn, 1878), opens: open now (public domain in the United States); wanted: no fetchable copy found this session (the Archive item mittheilungende00curtgoog carries an OCR layer in which the text does not appear); Archimedes, ed. J. L. Heiberg, Ἐφοδος (the Method), first edited in Hermes 42 (Weidmann, Berlin, 1907), opens: open now (public domain in the United States); wanted: no fetchable copy found this session; Archimedes, ed. J. L. Heiberg, Ἐφοδος (the Method), in Archimedis opera omnia II, editio altera (Teubner, Leipzig, 1913), opens: open now (public domain in the United States); wanted: no fetchable copy found this session; Werner Heisenberg, Über den anschaulichen Inhalt der quantentheoretischen Kinematik und Mechanik, Zeitschrift

für Physik 43, 172–198 (Springer, Berlin, 1927), opens: open now (public domain in the United States); wanted: no fetchable copy found this session (the Archive item zeitschrift-fur-physik-vol-43 is to be opened); in copyright in Europe until 2047-01-01; Kurt Gödel, Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme I, Monatshefte für Mathematik und Physik 38, 173–198 (Akademische Verlagsgesellschaft, Leipzig, 1931), opens: 2027-01-01 in the United States (ninety-five years from first publication abroad); in Europe 2049-01-01, seventy years after the author’s death; Kurt Gödel, Rudolf Carnap, Arend Heyting, John von Neumann and others, Diskussion zur Grundlegung der Mathematik (the Königsberg discussion of 7 September 1930), Erkenntnis 2, 135–151 (Felix Meiner, Leipzig, 1931), opens: 2027-01-01 in the United States (ninety-five years from first publication abroad); Alan M. Turing, On Computable Numbers, with an Application to the Entscheidungsproblem, Proceedings of the London Mathematical Society (2) 42, 230–265 (London Mathematical Society, 1936), opens: 2032-01-01 in the United States (ninety-five years from first publication abroad); open in the United Kingdom since 2025-01-01, seventy years after the author’s death; Albert Einstein, Boris Podolsky, Nathan Rosen, Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?, Physical Review 47, 777–780 (American Physical Society, New York, 1935), opens: 2031-01-01 if its copyright was renewed (a United States work published before 1964 needed renewal; the renewal is to be checked); Ptolemy, ed. and tr. F. E. Robbins, Tetrabiblos (Ἀποτελεσματικά), Greek text with English translation, Loeb Classical Library 435 (Harvard University Press; Heinemann, 1940), opens: 2036-01-01 if its copyright was renewed (a United States work published before 1964 needed renewal; the renewal is to be checked); Ptolemy, ed. F. Boll and Ae. Boer, Ἀποτελεσματικά, Claudii Ptolemaei opera quae exstant omnia III.1 (the First1KGreek file gives 1954; the date of the first Teubner printing is to be checked) (Teubner, Leipzig, 1954), opens: 2050-01-01 in the United States (ninety-five years from first publication abroad) for the printing named; an earlier printing opens earlier. Wanted: the public-domain entries first, as scans of their first printings; then Gödel 1931 and the Königsberg discussion on 2027-01-01, which would join 30/02 goedel; Turing in 2032; EPR in 2031 or now, as its renewal is found; the Tetrabiblos as its editions open.

- Why seated: The works of the exact sciences the thirtieth seating could not hold, declared beside the ones it holds (30/01–30/11), at the author’s direction to seat ‘what is in the public domain, and what else’ (2026-10-30). Six are still in their United States term and open on the dates given, the first of them Gödel’s incompleteness paper on 2027-01-01; eight are open now and wanted because no copy could be fetched this session. Each entry names what would be seated, and the shelf grows as the works open or the copies are found.
- Files: [the seat](#) — [source.json](#), MANIFEST.sha256. Shelf: traininglayerliterature.org/originals/exact-wanted

How the seats were made

Every seat was fetched in session and hashed into its MANIFEST.sha256, with a source.json recording edition, origin, licence, normalization and the loci verified in the text layer. The builders are under rebuild/corpora/ea-corpora-30/: one spec per seat for the 29th seating’s build29.py, openiti30.py for the OpenITI mARkdown files, merge_klee.py for the promised

Klee seat, and absences30_wanted.py for the declared absence. Internet Archive scans over about 60 MB are held by reference, with the Archive's md5; the OCR text layers are the Archive's, uncorrected. Wikisource pages are kept as served, with their revision ids. The Non-Commercial OpenITI payloads are handled under the payload/record split of EA-CORPORA-02. Hosts that refused the seating's agent are named in the seats' scopes; the agent was not changed. Declared absences hold no text of the works they name. Terms follow the rules each seat states; they are not legal advice. 12 seats; 107 works; 1,361,664 lines; 358 files.

Suggested Citation

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