

The 420 Code

Ø

Structural Glossary

The Complete Vocabulary, Notation and Imagery of the Body of Work

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How to use this glossary

This is the cross-book glossary the Five Doors volumes point readers to. It draws every term that does structural work - across the eight Notebooks (the 54 Artist's Proofs), the five Ø Models, the five Five Doors books, and the five-voice Rosin Ø series - into one canonical reference, and adds the notation and the load-bearing imagery beside it.

The headword line. Each entry opens with the term in bold, any symbol beside it, and where useful a register tag - Foundational, Structural, Operational, Quantum, Ethical-structural, Control-theory, Result, Apparatus, Metaphor. The register tells you which face of the work the term belongs to.

Locus and grade. Where given, the locus is the Notebook, chapter, or Artist's Proof where the term is installed; the grade is the epistemic status the work assigns - Axiom, Theorem, Derived, Derived-Conditional, Conjectured, or the single Empirical input (α_em). What is not yet derived is named as open work, never asserted.

Two registers, one headword. Some terms - AS, ε, the viability kernel - carry a structural reading and a formal operational reading. The glossary holds both under one headword, so a physicist and a philosopher reading the same term are reading about the same object.

Canon line. A Canon note flags a point where volumes drift or a symbol is overloaded, and states the resolution. Every resolution is collected in the Canon-Resolution Log near the end.

Count authority. Every count defers to the Master Kill Switch Registry, v5.39 (11 November 2026): 604 kill switches - 320 across the 54 Artist's Proofs, 28 across the Five Doors, 256 across the Ø Models (584 live; 13 closed, 1 conditionally closed, 2 addressed, 1 derived, 1 paid, 2 fired; 6 non-negotiable). No count is taken from memory or any other source.

Sources. Built from the eight Notebooks (the 54 Artist's Proofs: AP44–AP48 admitted at the wave of 4 September 2026, AP49 on 6 September, AP50–AP53 at the wave of the four on 11 September, AP54 on 13 September), the five Ø Models, the five Five Doors books, all five Rosin Ø voices (Prose, Conversation, Metaphor, Nursery Rhyme, Declaration), and the MKSR v5.39. The Nursery Rhyme voice draws its images from the shared Library and introduces no vocabulary of its own.

A note on spelling. "Actualization State" (American) is the fixed formal proper noun throughout the body of work; body prose uses British spelling - actualisation, realisation, behaviour. The split is deliberate.

Edition 1.5 (11 November 2026). Edition 1.5 adds three headwords that the walks lean on most and the glossary did not yet carry: now, time and awareness. The now has no length and does not pass. Time is the record history, a downstream consequence of awareness, with no bearing on the now. Awareness is the electron's reading ratio of what is on offer: a share, not a length of time. It also reads as the wall reads: no grade or line rests on anyone's ruling – where a rule is meant, it is a stated rule; where a ruling was dated, the date stands; a canon note states its resolution – and its counts follow the registry at v5.39. No sense moves. Edition 1.4, of 25 September 2026, stays on the record beside it.

Edition 1.1 (September 2026). Synced to the registry's post-AP48 build (v5.27). The cost family and the Assembly – AP44 The Snap, AP45 The Blink, AP46 The Stretch, AP47 The Flip, AP48 The Assembly – enter as Family 16. The H_0 limb of the one wave is applied throughout: the work's expansion rate is AP48's closure at 67.45 km s^{-1} Mpc^{-1} (window 64.4–70.8); the former prediction 74.3 ± 1.2 (KS-45.1) fired on 3 September 2026 and is shown as a corpse; the apex-symmetry factor is written C_S^2, never α; the gravitational constant carries AP44's realised value beside AP28's structural one (withdrawn at edition 1.2 as AP28's first reading); the neutron carries the fired bare row and AP47's realised row beside it. Frozen files are never edited; corrections supersede, dated, in the open.

How this reference is organised

Part I - The Axiom and the Four Conditions. The locked formulations, stated once.

Part II - Notation and Symbol Reference. Every symbol and structural number, its source, and its firewall against collisions.

Part III - The Structural Glossary. Seventeen thematic families, from the axiom outward to the falsification apparatus, the applied frame, the relational corridor, religion and hermeneutics, AI alignment, the cost family and the Assembly, and the hourglass.

Part IV - The Metaphor Reference. The load-bearing images, each mapped to the one real thing it carries.

Part V - Naming, Casing and Spelling. The house-style rules.

Part VI - The Falsification Register. The kill-switch apparatus: the counts, the distribution, and every discharged and special-status switch, named.

The Canon-Resolution Log, a master A–Z index, and five appendices close the volume.

Part I · The Axiom and the Four Conditions

The locked formulations of The 420 Code. Everything else in the work, and every other entry in this glossary, grounds here.

1:1 + 1×ε @ AS (the axiom) – The canonical rendering. One symmetric coupling (1:1), plus a single ε (the minimum asymmetry, the unpaired element), at AS - the on-shell substrate, the actualising now. The locality stamp @ AS names where the axiom holds; it is dropped only in informal prose and restored in formal statements, kill-switch claims, and Notebook envelopes. Every load-bearing claim grounds in this axiom or in a prior result that grounds in it; no imported premises. Grade: Axiom.

1:1 + 1×ε @ AS [+α | –α] (the complete cycle) – Written completely. The break (+1×ε) is the persistent distinction potential - held, irreducible, what protects S from closing back into undifferentiated Ø. The α-flow (+α leakage outward, –α replenishment back) runs around the held break, balanced at every AS-instant, net zero - actualisation and defragmentation. The compressed form is canonical for formal statements; the complete-cycle form is used where the flow itself is load-bearing. (AP06, Notebook IV; carried at AP03 and in the Ø Models glossaries.) Written [+1/137 / –1/137] from The Keys (December 2025) until 14 September 2026; the bracket

names the input, not its number – α, one part in 137, the one measured input without units.

S – Symmetry – The two-sector base condition; identity under exchange - the structure of distinction at minimum cost, before the break. Grade: Axiom.

B – Break – The minimal perturbation, the first event, the unpaired element ε, the crack. B introduces the $+\varepsilon$ against the symmetric base. Canonically Break, never Boundary. Grade: Axiom.

R – Record – The distinction that persists; irreversible and direction-preserving - what turns an event into a fact and gives time its direction. Grade: Axiom.

C – Constraint – Constraint, always. The condition is locality: a record is somewhere, not everywhere - what makes here different from there. Bounded propagation is what Constraint produces, not what Constraint is. Never read as bounded propagation alone, nor as boundary. In our universe, the speed of light. Grade: Axiom.

{S, B, R, C} – The four structural preconditions for records - not four independent axioms but the four irreducible properties of the single axiom. Minimum complete set (AP20): remove one and no consistent universe follows; add a fifth and it is a consequence of the four. Grade: Derived (minimality).

AS – the Actualization State – Two related but distinct senses, kept apart. (1) The on-shell substrate - the manifold on which the axiom holds, the present coupling event, the site where the +ε is happening. (2) In Notebook I (Paper A), an operational scalar in [0, 1] measuring the degree of inter-sector branching in the record algebra (0: all weight in one sector; 1: maximal branching). (Notebook I.)

ε (epsilon) – The minimum asymmetry - the single unpaired element in 1:1 + 1×ε; the break read as a quantity. The one ε wears several dimensional hats across the work (the faces of ε). (AP24.)

E = κ(B)AS – The structural identity tying energy to break-density at the Actualization State. A structural identity, not a computational law. (AP29, The Actualization Proof.)

$G = \alpha_{em}^{21}(1 + 1/\pi)/(1 + \alpha_{em}) \cdot \hbar c/m_e^2$ – The gravitational constant from the channel count, held once. Twenty-one independent coupling channels compound α_{em} (AP28), and the arena's once-held ε discounts the coupling once (AP44, The Snap): $\alpha_G* = \alpha_G/(1 + \alpha_{em})$, G = 6.6719 × 10^{-11} N·m²/kg², –0.036% against CODATA 6.6743 – parameter-free, the residual reported open; against CODATA's adjusted average that is sixteen standard deviations, and +0.01σ against the atom-interferometry measurement – the measurements of G disagree with each other by more than their own error bars. There is one value of G. AP28's first

reading, the provisioned $\alpha_em^{21}(1 + 1/\pi)\hbar c/m_e^2 = 6.7206 \times 10^{-11}$ (+0.69%), omitted the arena's holding of the break; it is withdrawn (21 September 2026), superseded and kept on the record, dated. The forward test is KS-CCC.3's direction: the adjusted value migrates toward 6.672 as systematics close, and stability at 6.6743 supports the null; convergence upward toward 6.7206 kills the prediction outright, with no fallback. G $\propto \varepsilon^{21}$ is canonical for the value. (AP28, AP44, Notebook IV.) Grade: Derived (parameter-free); the landing reported as non-exclusion.

Proton–electron mass ratio – $m_p/m_e = 1836 + \alpha \cdot 21 \cdot (1 - 1/(84\pi)) + \alpha^2 \cdot 21 \cdot 16/1836 + O(\alpha^3)$; the static integer $21^2 \cdot 4 + 21 \cdot 3 + 3^2 = 1836$. Predicted 1836.1526734444 against CODATA 1836.152673426(32); residual 0.010 parts per billion – 0.6σ inside the measurement's error bar; zero free parameters. The $O(\alpha^3)$ origin is owed (KS-30.3). (AP30, Notebook V.) Grade: Derived (parameter-free at order α).

The MOND floor, and the expansion rate – $a_0 = C_S^2 \cdot cH_0/(2\pi)$, with $C_S^2 = 2 \ln(\sec ½ + \tan ½) \approx 1.0445$ the apex-symmetry factor - NOT the fine-structure constant (AP18 writes it α; the site and this glossary write C_S^2). AP18 derives the form and the exact coefficient $C_S^2/(2\pi) \approx 0.1662$, parameter-free. At the work's rate, 67.45 km s^{-1} Mpc^{-1} (AP48), the floor gives 1.089×10^{-10} m s^{-2}: 9.2% below the empirical scale 1.20 ± 0.02 (random) $\pm$ 0.24 (systematic) $\times 10^{-10}$, 0.46σ on the honest error, consistent. Read backwards the floor once

predicted H_0 = 74.3 ± 1.2 (KS-45.1): that switch FIRED on 3 September 2026 on the work's own derived rate – the registered width had omitted the systematic; on the honest width, 74.3 ± 14.9, the relation cannot tell 67 from 74 – and it is shown as a corpse, never repaired. The work's expansion rate is AP48's closure: H_0 = 0.954 × (1/13.830 Gyr) = 67.45, window 64.4–70.8 (KS-ASM.1); the Cepheid ladder's 73 is not the expansion rate. (AP17/AP18, AP48, Notebook VI.) Grade: Derived (form and coefficient); the rate a closure.

The dark-sector partition – $\tau = (6/21)\cdot t_H$ - six faces of ε (AP24) over twenty-one channels (AP28) - gives the derived split 68.85% dark energy, 26.39% dark matter, 4.76% visible (Planck 68.89 / 26.07 / 4.8975). The honest headline is 69 / 26 / 5, never 68 / 27 / 5. The partition is a count, unchanged under either reading of t_H; AP48 takes it as the work's own held share (31.15%) in the closure of the rate. (AP41/AP42, Notebook VI.) Grade: Derived-Conditional.

The age of everything, and the cycle – One full escape of the shed through the eighteen faces at the duty 18/21: $(21/18)\cdot\alpha^{-18}\cdot\tau_C$ = 13.830 billion years, with CODATA-2022 α and m_e and three structural choices stated as rules (the eighteen, the twenty-one over eighteen, the reduced Compton tick), against the measured age 13.787 ± 0.020 (+0.31%). No fitted parameters. The claim is one cycle, one lane-time (0.66 Gyr) wide either side: the window 13.17–14.49 Gyr (KS-STRETCH.3). An aware observer measures about one cycle,

because awareness is late. (AP46, Notebook VI.) Grade: Claim, frozen, coarse by construction.

The neutron–proton difference, twice – The bare row, $\Delta_bare = 3(1 - 1/2\pi) + \alpha(1 + 1/2\pi) = 2.53099393\ m_e$, priced the flip as free; it FIRED on 2 August 2026 at 7.24σ against $2.53098857(74)\ m_e$ (KS-NPP.1) and stays on the board as a corpse. The realised row, $\Delta_real = \Delta_bare/(1 + \alpha^2/8\pi) = 2.53098857035\ m_e$ (AP47, The Flip) – the held distinction's second-order cost, worth times rate over the orientation pair's eight dimensional expressions – lands at -0.005σ and is frozen beside the corpse as KS-FLIP.1, never in its place. (AP30, AP47, Notebook V.) Grade: Derived-at-the-structural-register (order); Derived (divisor); the row empirical.

Faces of ε – The single ε wearing several dimensional hats across substrates - Λ_sub (dimensionless stiffness ratio, AP17) and λ (dimensionful, energy/length, AP15/AP21/AP42) sharing the magnitude ~2.15×10^{46}; ε as jurisdiction boundary (AP33), transaction cost (AP35), reaction cost (AP36). When one magnitude wears two dimensional hats across chapters, the Notebook envelope says so.

The terminal ethic – don't be a cunt, be kind – Derived from the geometry, not asserted, and reached by two independent routes - the two-track architecture. Track A, the one interior: if the I in me is the I in you, harming you is harming the building I live in; the identification makes the

ethic beautiful. Track B, the viability geometry: with no metaphysics at all, non-parasitic coupling on the correctly-read geometry is the floor, because cruelty contracts the joint viable set; AP43 §9 reaches operator-sameness via {C, R, AP07}; the geometry makes it true. Either route reaches the same place; if forced to choose, choose the geometry. The 9-in-the-sand passage is preserved verbatim. (AP41/AP43; the two-track architecture, Notebook I.) Grade: Derived.

Part II · Notation and Symbol Reference

Every symbol and structural number, its source, and - where a symbol is overloaded across the body of work - its firewall. A symbol's meaning is fixed by its locus; the firewall names the collision to avoid.

II.1 · The axiom, in symbols

1:1 – The symmetric pre-state: two sectors held in mutual reference, perfect balance before the break. The colon marks relation, not equality. (Axiom S read as a state.)

1×ε – The single break: one persistent unpaired element against the 1:1. (Axiom B.)

@ AS – The locality stamp: the axiom holds at the Actualization State - the on-shell substrate, the actualising now.

[+α | –α] – The α-flow around the held break: leakage outward, replenishment back, net zero at every AS-instant. The complete-cycle suffix. Written [+1/137 / –1/137] from The Keys (December 2025) until 14 September 2026; the bracket names the input, not its number – α, one part in 137, the one measured input without units.

Ø – The empty set; the undifferentiated pre-state the axiom opens from; the symbol carried on every spine of the Ø Models catalogue. Always Ø, never the letter O.

$\mathfrak{k}$ and $\mathcal{P}$ – The two disjoint sectors of the record algebra (Axiom S), connected by the involution σ. The two sides.

σ (sigma) – The structure-preserving involution between the two sectors; σ^2 = identity.

$\mathbb{Z}_2$ – The two-element group generated by σ; embeds into the manifold's rotation structure as $\pi_1(SO(3))$.

II.2 · The structural integers

3 – Spatial dimensions; colour faces. (AP10, AP19.)

4 – The axiom conditions {S,B,R,C}; the proton floors. (AP20.)

6 – The scalar readings of the break - the faces of ε. (AP24.)

21 – The independent coupling channels of the arena: 6 scalar readings × 3 spatial dimensions = 18 face-projections, plus 3 actualisation couplings; 21 = 6×3 + 3. The exponent on α_em in G; the proton count; the visible fraction. At the sky (AP46): the eighteen faces bleed and the three gates never – the duty 18/21; AP42's clock is six lane-times of the same twenty-one. Derived once. (AP10, AP24, AP28, AP46.)

10:10 + 1 = 21 – The channel accounting of the dark sector: 20 symmetric (dark) channels (the 1:1 mirror) plus one broken (electromagnetic) channel (the +1×ε). (AP41.)

84 – 21 channels × 4 dimensions; the denominator of the isotropic leakage correction 1/(84π) in the mass ratio. (AP30.)

1836 – The static integer in m_p/m_e: 1764 (manifold capacity, $21^2 \cdot 4$) + 63 (face projection, 21·3) + 9 (exchange matrix, 3^2). (AP30, Notebook V.)

1/π – The weight of one grain over its own disc: the neck is the grain's own aperture, its boundary a ring and the passage through the disc, not along it – not a puncture – with the grain's radius taken as the unit by a stated rule (AP50 §2). Appears in the gravitational-constant derivation. (AP28, AP50.)

II.3 · Greek letters and operators (with firewalls)

α_em (the fine-structure constant) – ≈ 1/137 ($7.2973525693 \times 10^{-3}$). The single measured input without units of the framework, identified as the leakage rate of the substrate (AP06). The one number the work does not derive. From the wave: α at every door – each site of the cost family sets only how many factors of α assemble (α at the arena, α × 21 at the proton, α^2 at the flip, α^{-18} at the sky). Firewall: this is

the fine-structure constant, distinct from C_S^2, the apex-symmetry factor below. Grade: Empirical input.

C_S^2 (the apex-symmetry factor) – $C_S^2 = 2\ln(\sec½ + \tan½) \approx 1.0445$, from S^2 dipole-flux conservation; appears in the floor $a_0 = C_S^2 \cdot cH_0/(2\pi)$ (AP18). AP18 and AP21 write it α; the site, the registry and this glossary write C_S^2 (erratum of 3 September 2026), and the papers follow at their next revision. Firewall: NOT the fine-structure constant α_{em}.

β (beta) – Appears in $c^2 = \beta/\alpha$ (the relation derived in Edition 02, The Keys). Firewall: NOT the quantum-field-theory beta-function.

ε (the break) – The minimum asymmetry; the break read as a quantity (Axiom B). Identified with α_{em} as the magnitude of the break, and with the electron as its minimum stable excitation (via The Lock). Firewall: distinct from ε the operational tolerance (Notebook I, App.E), a fixed positive experimental-resolution parameter sharing the symbol.

κ (kappa) – Three distinct quantities share the symbol; the locus disambiguates. (a) The holding limit of the pre-state - the Lock's κ, in $G = 2\kappa/m_e^2$; (b) the backreaction coupling, in $G = \kappa/(\varepsilon\Lambda^2)$ (AP03); (c) the surface gravity of a Schwarzschild black hole, $\kappa = c^4/4GM$ (an acceleration). The κ–α_G bridge: $2\kappa = \alpha_G * \hbar c = \alpha_{em}^{21}(1 + 1/\pi)\hbar c/(1 + \alpha_{em})$ – the realised coupling; written on AP28's first reading until 21 September 2026.

λ **(substrate stiffness)** – ≈ 2.15×10^{46}, energy per length; the scale for isotropy enforcement and confinement. Firewall: NOT a wavelength. (AP15, AP17, AP19, AP21, AP42.)

Λ_sub – The dimensionless stiffness ratio ≈ 2.15×10^{46}; one of the faces of ε. Shares magnitude with λ but not dimensions. (AP17.)

$\hbar$ **(h-bar)** – The action-scale of the minimum record: one record = one $\hbar$ of action. Forced by Stone's theorem + Axiom B + the absence of dimensionless parameters in {S,B,R,C}. (Notebook III.)

$\mathcal{H}$ **(Hilbert space)** – The complex vector space of pre-states for a degree of freedom - the space of possibilities, the pre-state, the desert. Linearity from R + the Embedding Hypothesis; complex amplitudes from the Lorentzian signature; inner product from Axiom S via the Born rule. (Notebook III; AP09.)

M (two readings) – (a) The manifold / spacetime of written records. (b) Agency M in [0,1]: the fraction of the viability kernel reachable under admissible control - a geometric quantity, not a moral one (AP01 Paper C, AP33). Firewall: the manifold and the agency scalar share the letter; the locus disambiguates.

II.4 · The physics constants and quantities

c (the propagation bound) – The finite invariant rate at which distinctions propagate - the speed of light, the physical reading of Constraint; the upper wall of the eye. Conjugate to G through ε ($c/G \propto \varepsilon$). (AP03.) Grade: Derived (from the pre-geometric action).

G (the gravitational constant) – One value: $G = \alpha_{em}^{21}(1 + 1/\pi)/(1 + \alpha_{em}) \cdot \hbar c/m_e^2 = 6.6719 \times 10^{-11}$ (AP28's count, AP44's holding), –0.036%. AP28's first reading, the provisioned $\alpha_{em}^{21}(1 + 1/\pi)\hbar c/m_e^2$ (+0.69%), is withdrawn (21 September 2026) and kept on the record, dated – never cited as a value. $G \propto \varepsilon^{21}$ is canonical for the value; the substrate scaling $G = \kappa/(\varepsilon\Lambda^2)$ (AP03) is retained at substrate level, not as the value. Firewall: never cite $G = \varepsilon^2 \cdot \hbar c/m_e^2$ - a known hallucination (L55/F18). (AP28, AP44.)

a_0 (the MOND scale) – The tension-field floor: $a_0 = C_{S^2} \cdot cH_0/(2\pi)$, the acceleration at which the Newtonian contribution equals the floor. AP18's exact coefficient $C_{S^2}/(2\pi) \approx 0.1662$ is the headline; AP17's first-order ≈ 8% is the mechanism. At the work's rate 67.45 the floor is 1.089×10^{-10} m s^{-2}, 0.46σ from the empirical $1.20 \pm 0.26 \times 10^{-10}$ on the honest error (the ±0.24 systematic restored, erratum of 3 September 2026). No dark matter required for galactic rotation. (Notebook VI.)

H_0 (the expansion rate) – The work's expansion rate is AP48's closure: $H_0 = 0.954 \times (1/13.830\ \text{Gyr}) = 67.45$ km s^{-1} Mpc^{-1}, window 64.4–70.8 (KS-ASM.1) – on the relic glow's side of the Hubble tension (Planck 67.4 ± 0.5). The former structural value ≈ 74 (KS-45.1, 74.3 ± 1.2) fired on 3 September 2026 and is shown as a corpse. (AP48; Notebook VI.)

τ_C, the cycle, the lane – $\tau_C = \hbar/(m_e c^2) \approx 1.29 \times 10^{-21}$ s, the tick: the electron's own (reduced Compton) time, the work's one clock. The cycle, $(21/18)\cdot\alpha^{-18}\cdot\tau_C = 13.830$ Gyr; the lane, one twenty-first of it, 0.659 Gyr – one face-erasure. H_ε,∞, the settled rate of the leak, 0.792 of the cycle's inverse (56.0 km s^{-1} Mpc^{-1}); $\Lambda = 3H_\varepsilon,\infty^2/c^2 = 1.10 \times 10^{-52}$ m^{-2}, the same closure in other units. (AP46, AP48.)

m_e , m_p – The electron and proton masses; m_e is the minimum stable excitation of the broken symmetry (the electron, via The Lock), and the scale in G. m_p/m_e = 1836 at order α. (Notebooks III, V.)

$\tau = (6/21)\cdot t_H$ – The dark-sector clock: six faces of ε over twenty-one channels, times the Hubble time; the reading that yields 69 / 26 / 5. (AP41/AP42.)

0-pole / 1-pole – The two conjugate curves of the eye. The 0-pole: the fold, gravity, the black hole, the dark - what the fabric does when it closes. The 1-pole: propagation, light,

matter, the visible - what the fabric does when it opens. (AP17, AP22, Notebook VI.)

Landauer bound – k_B T ln 2 per bit - the thermodynamic cost of a record; companion to the quantum cost $\hbar$. Every measurement is a Landauer erasure at the observation boundary. (AP06, AP12.)

Part III · The Structural Glossary

Seventeen thematic families, from the axiom outward to the falsification apparatus, the applied frame, the relational corridor, religion and hermeneutics, AI alignment, the cost family and the Assembly, and the hourglass. Definition, axiom-grounding, locus, and grade; cross-book senses and resolutions where they differ.

Family 1 · The Axiom and Its Preconditions

Axiom · *Foundational*

1:1 + 1×ε @ AS. The pre-state of perfect symmetry and its break, at the actualizing now. It carries two operations at AS: the break (+1×ε) is the persistent distinction potential – held, irreducible, what protects S from closing back into undifferentiated Ø; the α-flow [+α | −α] runs around it – actualisation as records are written via the leakage, defragmentation as they release via the replenishment, balanced at every AS-instant, net zero.

Locus. The Axiom (across the body of work; full form 1:1 + 1×ε @ AS [+α | −α]) Grade. Axiom

Ø (the empty set) · *Foundational*

The pre-state the axiom opens from; the symbol carried on every spine of the Ø Models catalogue. What the axiom produces by breaking Ø is what everything structurally is.

Locus. The Axiom

ε / the Break (B) · *Foundational*

The minimum asymmetry: one element of one sector with no σ-image – the single departure from perfect symmetry. Every record, particle, and observation is a reading of this break through one structural channel. Two body of work identifications (see Canon-Resolution Log): ε ↔ α_em as the magnitude of the break (Notebook I); ε ↔ the electron as its minimum stable excitation, via The Lock (Notebook III).

Locus. The Axiom; Notebooks I, III Grade. Axiom (identifications Derived)

S – Symmetry · *Precondition*

Two sectors; the minimum structural asymmetry – the structure of distinction at minimum cost.

Locus. The Axiom Grade. Axiom

B – Break · *Precondition*

The asymmetry between the sectors; the minimal element ε. Never “Boundary.” One, and never counted: “the axiom has

one break. Not a break at each site. The break, once, expressing wherever coupling happens" (Ø Dissolutions Six). The tip of the hourglass. The break does not cycle; the flow does. What is counted is a crossing.

Locus. The Axiom Grade. Axiom

R – Record · *Precondition*

Irreversible, direction-preserving: a distinction made and held.

Locus. The Axiom Grade. Axiom

C – Constraint · *Precondition*

A record is somewhere, not everywhere. Bounded propagation – records reaching other sites at a finite rate rather than instantaneously – is what Constraint produces, not what it is. In our universe, the speed of light.

Locus. The Axiom; Notebooks II, IV Grade. Axiom

Canon: Never "bounded propagation" as the term itself. The KSV appendices of Ø Dissolutions, Ø Resolutions and Ø Applications still define C that way – corrected to Constraint here. See log.

{S, B, R, C} · *Precondition set*

The four structural preconditions for records – not four independent axioms but the four irreducible structural properties of the single axiom. Minimum complete set (AP20):

remove one and no consistent universe follows; add a fifth and it is a consequence of the four.

Locus. The Axiom; minimality AP20 Grade. Derived (minimality)

the α-flow · *Foundational*

The +α leakage outward and −α replenishment back − α, one part in 137 – that run around the held break, balanced at every AS-instant, net zero – actualisation and defragmentation. The flow is what makes the substrate appear stable; the break is what the flow runs around.

Locus. The Axiom

Actualization State (AS) · *Foundational*

The actualizing now named in the axiom; the surface from which all records are written; the prior in which the substrate is held and the break processed; the totality of what the axiom produces, read as one. Every site is a local reading of the one AS. AS cannot measure itself – measurement is something records do, and AS is upstream of every record. Read in two ways (see AS-the-quantity, Family 4).

Locus. The Axiom; formalised Notebook I Ch.2

Canon: Spelling: Actualization (American) as the fixed formal proper noun across the body of work; actualisation (British) in body prose.

AS-the-prior · *Foundational*

The foundational structural now; no numerical value.

Locus. The Axiom

the cycle / the loop · *Cosmological*

The flow at the AS: records written, $+\alpha$, and records released by defragmentation, $-\alpha$, at the same rate, balanced at every instant, around the one held break. At the far end, which is theoretical, the record becomes extremely small and condensed, and the moment balance happens, it breaks. End and origin are one condition. Topologically S^1.

Locus. Ø Horizons (HOR-11)

Family 2 · Substrate, Arena, and Manifold

substrate · *Structural*

The pre-manifold structure from which space and time are written. Not a material, not a field – closer to a mathematical object: the domain on which the axiom operates. Ø: the pre-state every record is a configuration of, never a material lying under the records, which Ø Dissolutions Two rules out. Ø Resolutions Ten uses the word in this sense.

Locus. Notebooks I–II; Ø Predictions front matter

arena · *Structural*

The manifold generated by the four axioms: three spatial dimensions, one temporal, a two-sector structure, six scalar readings of the break, twenty-one independent coupling channels. Everything physical happens in the arena.

Locus. Ø Predictions; Notebooks II, IV

manifold · *Structural*

The smooth surface on which the axioms execute. Notebook I Ch.3 establishes the identity: the manifold IS the Actualization State – not built from records, prior to them. Smoothness guaranteed by the balance of the flow at AS (fenced KS-P.5).

Locus. Notebook I Ch.3 Grade. Theorem (manifold–AS identity); KS-P.5 empirical

two sectors ($\mathcal{L}$ and $\mathcal{P}$) · *Structural*

The two-sided structure of the pre-state, related by involution σ; the minimum structure for distinction.

Locus. Notebook I Ch.3; Notebook III

involution (σ) · *Structural*

The structure-preserving map between the two sectors; σ^2 = identity, applied twice returns to the starting point.

Locus. Notebook I Ch.3

monoid · *Structural*

The algebraic structure of records: sequential composition, associative, with identity, no non-identity inverses. What irreversible accumulation is.

Locus. Notebook I Ch.3

$\mathbb{Z}_2$ (the Axiom-S group) · *Structural*

The two-element group generated by σ; embeds into the manifold's rotation structure as $\pi_1(SO(3))$.

Locus. Notebook III Ch.3

the channels (21) · *Structural*

Twenty-one independent structural pathways through which the break can couple to itself: six scalar readings × three spatial dimensions = eighteen face-projections, plus three actualization couplings. 21 = 6×3 + 3 = 18 + 3. Derived once; the same 21 sets the proton count, the gravitational-coupling exponent, and the visible fraction of the universe.

Locus. Notebooks IV–VI; readings AP24, dimensions AP10, colour AP19

the integers (3, 4, 6, 21) · *Structural*

The four small integers doing the structural work. 3: spatial dimensions / colour faces (AP10, AP19). 4: axiom conditions / proton floors (AP20). 6: scalar readings of the break (AP24). 21: coupling channels of the arena. Each derived once, from a

specific piece of axiom machinery, for reasons unrelated to any numerical target.

Locus. Ø Predictions ("Where the Integers Come From"); AP10/19/20/24

the building (corridors, floors, colour faces) · *Metaphor*

The recurring image for the internal structure of a bound state – proton, neutron, or gravity's arena: twenty-one corridors, three colour faces, four floors. Each element means something specific in the derivation; the metaphor is tight enough to follow the derivation by tracking how rooms and corridors combine.

Locus. Notebook V; Ø Predictions

The Lock · *Structural*

The structural identification ε = electron: the minimum stable excitation of the broken symmetry, the lightest charged fermion, the simplest thing that can write a record.

Locus. Notebook III Ch.1

holding limit (κ) · *Structural / physics*

The maximum coherence the pre-state can sustain; finite – perfect coherence at infinite scale is self-annihilating. Enters $G = 2\kappa/m_e^2$; determined by $\kappa = \alpha_G * \hbar c/2$ with $\alpha_G *$ =

$\alpha_em^{21}(1 + 1/\pi)/(1 + \alpha_em)$, the realised coupling (AP44). (κ also names two distinct physics quantities – see log.)

Locus. Notebook III Ch.1; Notebook IV

walls of the eye · *Structural*

The two absolute limits created by the break: lower wall (total fold, event horizon, maximum curvature) and upper wall (c, maximum propagation). ε operates between them.

Locus. Notebook III Ch.1

Family 3 · Records, Irreversibility, and Time

record (R) · *Structural*

A distinction that has been made and persists; what the axiom produces every time coupling executes.

Locus. The Axiom

record-history · *Structural*

The structurally preserved past at any site, what R has carried forward. Information is record-history; what is forgotten is what R has not carried.

Locus. Ø Resolutions Ch.1

record-structure · *Structural*

What the AS carries from what has been written; records under R, preserved, accessible as what has propagated to a site. Read at the site as the past.

Locus. Ø Dissolutions Ch.11

record-lineage · *Structural*

The continuous structural carrying of records across change, by R; the structural account of persistence.

Locus. Ø Resolutions Ch.7

referent specification · *Structural*

The specification of which lineage is being tracked when one ordinary-language word picks out multiple lineages – pattern, matter, and use are three referents the word “ship” can pick out, each with its own persistence conditions.

Locus. Ø Resolutions Ch.7

irreversibility · *Structural*

The property R produces: records cannot be undone. The arrow of time is this accumulation read from inside.

Locus. The Axiom; formalised Notebook I

direction-preservation · *Structural*

The structural property R produces: records carry the direction of their writing, and the direction cannot be undone.

Locus. Ø Dissolutions Ch.2

three faces of Axiom R · *Structural*

Arrow of time (cosmological), measurement irreversibility (single-event), decoherence (intermediate scale). One axiom, three scales.

Locus. Notebook III Ch.5

atemporal now · *Structural*

The single now at which the axiom is continuously executing; not a privileged moment moving through a container, but the one now the AS structurally has.

See also: now.

Locus. Ø Dissolutions Ch.11

now · *Foundational*

Where every record is written, and where every record is read. It is the @ AS in the axiom line: the Actualization State.

There is one now. Look for a second now, and the looking happens now.

The now has no length. It does not start. It does not end. It does not pass. Time passes. The now does not. Now is forever.

It is not a clock reading. It is where the clock is read from.

The now holds nothing. It is where the hold is read from.

Kill switch: KS-V.1, the global switch.

Locus. 1 Axiom; AP01; Ø Dissolutions Ch.11 Grade. The floor: performed, as the axiom is

time · *Structural*

Time is an expression of the record history. It is what the hold leaves behind.

Time is a downstream consequence of awareness. Awareness reads, at the now. The reading writes records. The records add up to a history, and the history runs one way. That history, and its one direction, is time.

So time is not a characteristic of awareness. It is not a part of the now. It holds no bearing on the now.

Of the grain's six readings, time is the one that is the record of the hold. The now couples to the three directions of space, not to time. That is why the count is twenty-one, not twenty-two.

Kill switch: KS-R.8b, the writing shown to need a coupling to time.

Locus. AP50 §3–§4; AP28 Prop. 2; Ø Dissolutions Ch.11

decoherence · *Physics*

The dispersal of coherence into the environment via irreversible record-writing; the third face of Axiom R; the mechanism by which the classical world emerges from the quantum.

Locus. Notebook III Ch.5

persistence-mode 1 · *Structural*

Persistence by resisting the break: thermodynamic stability that prevents reaction. The mode rocks have.

Locus. Ø Resolutions Ch.9

persistence-mode 2 · *Structural*

Persistence by exploiting the record: using records of one's own pattern to regenerate the components and constraints that keep the pattern going, with enough fidelity for lineage

and enough variation for selection. The mode living systems have.

Locus. Ø Resolutions Chs.7, 9

persistence-inversion threshold · *Structural*

The transition at which chemistry begins maintaining its own pattern by record-constrained regeneration; the chemistry–biology crossing.

Locus. Ø Resolutions Ch.9

dynamic kinetic stability · *Structural / physics*

The thermodynamic-kinetic regime in which a system is held far from equilibrium by continuous re-synthesis exceeding decay. What life structurally is at the chemical resolution.

Locus. Ø Resolutions Ch.9

Family 4 · The Operational / Formal Apparatus

the physicist register

AS-the-quantity · *Operational*

The operational scalar AS ∈ [0, 1] measuring degree of inter-sector branching in the record algebra. AS = 0: all weight in one record sector; AS = 1: maximal branching. The handle by which experiment engages the prior.

Locus. Notebook I Ch.2, D3 (A2.3) Grade. Operational definition

admissible operation · *Operational*

A CPTP map acting on the accessible system, optionally with fresh ancilla, with no access to the original environment. Defines what an agent can do, and thereby what counts as operationally irreversible.

Locus. Notebook I App.E

coarse-graining (𝒪, physically realizable) · *Operational*

A finite set of mutually orthogonal projectors selected by the physics of system–environment coupling, not by observer choice.

Locus. Notebook I D1 (A2.1)

dephasing map ($\Delta\mathcal{O}$) · *Operational*

$\Delta\mathcal{O}(\rho) \equiv \Sigma_i\ \Pi_i\ \rho\ \Pi_i$: removes quantum interference between record sectors while preserving classical probabilities.

Locus. Notebook I D2 (A2.2)

effective entropy (S_eff) · *Operational*

The Shannon entropy $H(\{p_i\})$ of the sector weights, intra-sector entropy discarded; the entropy entering the AS definition.

Locus. Notebook I A2.3

record algebra · *Operational*

The algebra generated by the coarse-graining $\mathcal{O} = \{\Pi_i\}$; states are diagonal in the record basis. Defines what the environment can physically distinguish.

Locus. Notebook I App.E

selection · *Operational*

The transition from a diagonal mixture over record sectors (post-decoherence) to a single realized branch (definiteness); distinct from decoherence. Mechanism by Postulate P; rate bounded by Postulate G.

Locus. Notebook I D14 (A4.2)

viability kernel Viab(R) · *Operational*

The set of states from which the system can be kept inside the recoverable set R indefinitely using admissible control. Structural reading: the set of states from which life-supporting trajectories remain available.

Locus. Notebook I D7 (A3.3); Paper C

capture basin Cap(R) · *Operational*

The set of states from which exit from the recoverable set R is inevitable under all admissible controls.

Locus. Notebook I D8 (A3.3)

no-return surface (Σ_h) · *Operational*

The boundary of the viability kernel; states beyond it cannot return to the recoverable set under any admissible control.

Locus. Notebook I D9 / D13

operator horizon (x_h) · *Operational*

The scalar specialization of the no-return surface: $x_h \equiv$ u_max/a, the maximum sustainable structure given maximum maintenance effort.

Locus. Notebook I T2 (A3.2)

agency · *Operational*

The fraction of the viability kernel reachable from where the agent currently stands under admissible control. A geometric quantity, not a metaphysical one.

Locus. Notebook I Paper C

drift · *Operational*

The structural tendency of agency to decrease under irreversibility, absent active maintenance.

Locus. Notebook I Paper C

slack · *Operational*

The structural distance between the agent's current state and the boundary of the viability kernel; the buffer that distinguishes agency from emergency.

Locus. Notebook I Paper C

gravitational self-energy distinguishability (ΔE_G) · *Operational*

The Newtonian self-energy of the difference mass distribution between two record sectors.

Locus. Notebook I D15 (A4.3); App.C

operational invariance · *Operational*

The requirement that AS values computed from different physically realizable coarse-grainings of the same system agree within experimental tolerance. Violation triggers the global kill switch F0.

Locus. Notebook I D5 (A2.5)

operational irreversibility · *Operational*

A state is operationally irreversible with respect to a recoverable set R iff it lies outside the viability kernel of R. Defined by loss of reachability under admissible control, not by entropy increase.

Locus. Notebook I D10 (A3.3)

ε (operational tolerance) · *Operational*

A fixed positive parameter representing experimental resolution; all operational definitions (effective orthogonality, inaccessibility, recoverability) are quantified relative to it. Distinct from the break ε.

Locus. Notebook I A2.4

coherence-recoverable state · *Operational*

A state from which coherence between record sectors can be restored by admissible operations within tolerance ε.

Locus. Notebook I D11 (A4.1)

falsifier (F0, F1–F3, G1–G3) · *Operational*

An experimentally observable condition whose occurrence invalidates a specific component of the argument. F0 is global (kills AS itself); F1–F3 target the selection postulate; G1–G3 the gravitational limiter.

Locus. Notebook I A5.2

configurable register · *Operational*

A system with ≥ 2 metastable states distinguishable and settable at a given scale; a subset of records. Protons are records but not configurable registers; covalent bonds are both.

Locus. Notebook III Ch.2

record measure Σ(F, s) · *Operational*

The supremum of persistence times of configurable registers a force F produces at scale s; the natural force-strength under Axiom R.

Locus. Notebook III Ch.2

erasure-strength 𝔈(F, s) · *Operational*

The expected reduction in persistence induced by F in records written by other forces; always ≤ 0.

Locus. Notebook III Ch.2

Family 5 · Quantum Structure

pre-state · *Quantum*

The 1:1; the state in which 0 and 1 are indistinguishable; Axiom S read as a quantum state; the perfect superposition of nothing and something.

Locus. Notebook III Ch.1

empty set (∅) · *Quantum*

The set that contains nothing – not nothing, a container with no content; the most primitive possible something. {∅} = 1. The two readings, 0 and 1, are not distinguished before the break.

Locus. Notebook III Ch.1

splinter (ε) · *Quantum*

The minimum viable break (Axiom B): one element of $\mathcal{L}$ with no σ-image; identified with the electron via The Lock.

Locus. Notebook III Ch.1

Hilbert space ($\mathcal{H}$) · *Quantum*

The complex vector space of pre-states for a degree of freedom. Linearity from R + EH + $\mathbb{C}$; complex amplitudes from the Lorentzian signature; inner product from Axiom S via the Born rule.

Locus. Notebook III Ch.1 (bridge KS-Q.7)

wave function · *Quantum*

The description of the empty-set state for a set of degrees of freedom; lives in the pre-state, prior to space; becomes definite when the now writes a record – not by collapse, but because the degree of freedom has been broken.

Locus. Notebook III Ch.1

Schrödinger equation · *Quantum*

$i\hbar\, \partial\psi/\partial t = \hat{H}\psi$: the unique unitary evolution of the pre-state on a Lorentzian manifold, derived from Wigner + Stone.

Locus. Notebook III Ch.1 Grade. Derived

Born rule · *Quantum*

$P(a) = |\langle a|\psi\rangle|^2$: the probability of an outcome is the squared overlap of the state with the projector – probability = weight^2. Derived via Gleason's theorem on the axiom-derived frame-function conditions.

Locus. Notebook III Ch.6 (AP25) Grade. Derived (conditionally closes KS-Q.1)

frame function · *Quantum*

A non-negative, orthogonally additive function on projection operators normalising to 1 over any resolution of the identity; the object Gleason's theorem applies to.

Locus. Notebook III Ch.6

Gleason non-contextuality · *Quantum*

μ(P_a) depends only on the projector P_a itself, not on which resolution of the identity it belongs to; distinct from Kochen–Specker contextuality.

Locus. Notebook III Ch.6

pure state · *Quantum*

An extremal point of the convex set of quantum states; the only kind that admits a definite record under Axiom R.

Locus. Notebook III Ch.6

mixed state · *Quantum*

A non-extremal state, a convex combination of pure states; not eligible for direct actualisation under Axiom R.

Locus. Notebook III Ch.6

improper mixture · *Quantum*

The reduced density matrix of an entangled subsystem (ρ_A = Tr_B|AB⟩⟨AB|); arises from tracing out the partner, not from classical ignorance; not a record target.

Locus. Notebook III Ch.7

spin ½ · *Quantum*

The minimum half-integer SU(2) representation; forced by the indivisibility of ε (Axiom B, minimum principle).

Locus. Notebook III Ch.3

double cover SU(2) → SO(3) · *Quantum*

The 2-to-1 map that permits half-integer spin; forced by $\mathbb{Z}_2$ identification and N = 3.

Locus. Notebook III Ch.3

Pauli exclusion principle · *Quantum*

ψ = −ψ → ψ = 0: two identical fermions cannot occupy the same quantum state; the uniqueness of the break enforced at the level of quantum states.

Locus. Notebook III Ch.3

$\hbar$ (action-scale of the minimum record) · *Quantum*

One record = one $\hbar$ of action. Forced by Stone's theorem + Axiom B + the absence of dimensionless parameters in {S, B, R, C} (residual exposure KS-L.4).

Locus. Notebook III Ch.4

commutation relation $[\hat{x}, \hat{p}] = i\hbar$ · *Quantum*

The non-commutativity of position and momentum on the derived manifold; from Stone's theorem applied to spatial translations.

Locus. Notebook III Ch.4

Robertson–Schrödinger inequality · *Quantum*

$\Delta x \Delta p \geq \hbar/2$: the Heisenberg uncertainty principle; the factor of ½ from Cauchy–Schwarz on Hilbert space.

Locus. Notebook III Ch.4

Mandelstam–Tamm bound · *Quantum*

$\Delta E \cdot \Delta t_A \geq \hbar/2$: the energy–time uncertainty relation; time is not promoted to an operator – Δt_A is the characteristic time for observable A to change by one standard deviation.

Locus. Notebook III Ch.4

CHSH / Tsirelson bound · *Quantum*

S = 2√2 ≈ 2.83: the maximum quantum violation of the CHSH inequality; derived from the Born rule applied to the singlet state.

Locus. Notebook III Ch.7

no-signalling · *Quantum*

Alice's marginal measurement statistics are independent of Bob's settings; from Axiom C + the partial-trace structure.

Locus. Notebook III Ch.7

Family 6 · Possibility, Modality, and Causation

trajectory-space · *Structural*

The set of couplings the axiom permits at any site, given what has propagated so far; the structural account of possibility, openness, and counterfactual force; read at the site as the future.

Locus. Ø Resolutions Chs.5, 8; Ø Dissolutions Chs.11–12

writing-edge · *Structural*

The active edge of the substrate's record-writing, the site at which {S, B, R, C} is presently executing; the structural account of the now.

Locus. Ø Resolutions Ch.6

three readings of AS (actual / possible / necessary) · *Structural*

AS read in three directions. Actual: AS read backwards along R – what has been written and preserved. Possible: AS read forwards along trajectory-space – what remains open before commitment. Necessary: AS read across {S, B, R, C} – what the structural conditions force regardless of path.

Locus. Ø Resolutions Ch.8

counterfactual · *Structural*

A claim “if A had been the case, B would have been,” where A is in fact not the case; grounded in trajectory-space at the actual site under minimal structural intervention.

Locus. Ø Resolutions Chs.5, 8

minimal structural intervention · *Structural*

The method by which counterfactuals are evaluated; the replacement for what the possible-worlds tradition called closeness or similarity between worlds.

Locus. Ø Resolutions Ch.8

necessity at the structural floor · *Structural*

What the structural conditions force is necessary; what is derivable from them is necessary by derivation; what has not yet been derived is named as open work rather than asserted as necessary.

Locus. Ø Resolutions Ch.8

forcing function · *Structural*

What coupling at sufficient capacity does: forces non-optionality in the trajectories it couples with, committing one and closing the others. What observation structurally is.

Locus. Ø Dissolutions Ch.12

non-optionality · *Structural*

The structural condition at which branching trajectories can no longer all be available; what the forcing function produces.

Locus. Ø Dissolutions Ch.12

structurally governed predicates · *Structural*

Predicates that track quantities the axiom's preconditions govern – energy, momentum, charge, spin, coupling capacity; what induction reads when it reads the structure.

Locus. Ø Dissolutions Ch.11

narrator-constructed predicates · *Structural*

Predicates that splice disjoint temporal or structural conditions by semantic operation, not by tracking structural quantities; the grue-type predicates induction does not structurally back.

Locus. Ø Dissolutions Ch.11

Family 7 · Agency, Choice, and the Operator

operator · *Structural*

The coupling as it executes – the distinction being made at the site where it is being made; present-tense, what the axiom is doing now. In self-registering creatures, one of two structural positions in the same coupling-architecture (with the narrator). Singular (D90, 8 September 2026; sharpened 24 September 2026): one operator, reading, writing and holding, expressed at every site as a held configuration read from its own position in the record history. “An operator” and “operators” name that expression at a site, never a second operator. Its capacity to read what lands on it and hold a shape is coupling capacity; override is a capacity some expressions have, and choice is inside it – the irrational part of coupling capacity.

Locus. Ø Dissolutions Ch.4; throughout

the Operator (AP02 sense) · *Control-theory*

Sovereign agent: the entity that applies control inputs u(t) to maintain structure against entropic drift. Requires budget, drift, corridor, and exit – not consciousness. A bacterium, a corporation, a civilisation are operators.

Locus. Notebook VII (AP02)

narrator · *Structural*

The downstream record-making that reports on the operator's execution; arrives after the fact. One of the operator's capacities, not the operator; not necessarily verbal.

Locus. Ø Dissolutions Ch.4

self-model · *Structural*

The narrator-layer record-architecture holding an architecture's representation of itself – what it is, what it has done, what it commits to.

Locus. Ø Dissolutions Chs.4–11

self-registration · *Structural*

The threshold at which a coupling-architecture begins to read its own records; what produces a narrator on top of an operator.

Locus. Ø Dissolutions Ch.3

self-interpretation weights · *Structural*

Weights the self-model brings to a coupling's reading of geometry above the raw weighting alone – commitments,

identifications, the architecture's reading of who it is and what it is for. What override-capacity uses.

Locus. Ø Dissolutions Ch.8

self-reading loop · *Structural*

The recursive structure of a coupling that reads its own records, writes records of the reading, reads those, and so on; what the self structurally is; what closes at death.

Locus. Ø Dissolutions Ch.5; Ø Resolutions Ch.11

override-capacity · *Structural*

The structural capacity of a self-aware coupling to commit to trajectories the raw weighting alone would not select; what makes choice structurally distinguishable from compulsion; the structural site at which choice is real.

Locus. Ø Dissolutions Chs.7–8; Ø Resolutions Ch.8.5

sub-optimal execution · *Structural*

Commitment to a trajectory that is not the strongest-weighted on the correctly-read geometry alone; the coupling paying the structural cost to commit otherwise.

Locus. Ø Dissolutions Ch.8

freedom-under-constraint · *Structural*

Freedom as the structural capacity to commit within a field of constraint – not absence of constraint, not causal arbitrariness; the third position the free-will/determinism binary could not accommodate.

Locus. Ø Dissolutions Ch.7

wide trajectory-space · *Structural*

The condition at a site where multiple trajectories are structurally open and override-capacity reaches them; the structural condition under which choice exists.

Locus. Ø Resolutions Ch.8.5

collapsed corridor · *Structural*

The condition at a site where one trajectory is structurally forced and override-capacity does not reach an alternative; the structural condition of compulsion.

Locus. Ø Resolutions Ch.8.5

control variables (x, u, a, u_max, x_H, λ) · *Control-theory*

The AP02 control set: x(t) system structure (scale-invariant – life, capital, health, coherence); u(t) applied work (energy, effort, attention); a drift rate; u_max maximum control capacity; x_H = u_max/a the event horizon; λ effort price.

Locus. Notebook VII (AP02)

Drift / Discipline / Event-Horizon / Impulse theorems · *Control-theory*

AP02's four results. Drift (I.1): greedy u=0 gives $x(t)=x_0e^{(-at)}$. Discipline (II.1): least-action point $x=1/(1+\lambda a^2)$ – non-zero structure requires non-zero input. Event Horizon (III.1): $x_H=u_{max}/a$ – beyond it collapse is deterministic; recovery needs reduction of x, not escalation of u. Impulse (IV): continuous control beats pulse control at equal mean effort.

Locus. Notebook VII (AP02) Grade. Derived

Family 8 · Mind, Self, and the Interior

interior · *Structural*

The structural unity of which self-aware windows are local expressions; not many interiors – one interior, locally instantiated at each site where the break reads itself. The body of work's reading of what religious and contemplative traditions have called by many names. Held as KS-ID.1 (see Family 12). Dated line, 18 September 2026: the interior stands as the floor, performed in the act, as the axiom is – one reality, because a record made at one site is read at another; one now, because every reading, every question and every attempt

to find a second now is made now; one awareness, the name for those two together with the one rate (AP51 §2). KS-ID.1 still fences it, and its test is unchanged; the formal statement is owed at D-ID.1 – the debt is the statement, not the standing.

Locus. Ø Dissolutions Ch.6; Ø Horizons (HOR-12)

awareness · *Structural*

The capacity to read what is there and take hold: a reading and a reaction, at a rate. Coupling capacity. Not consciousness. Consciousness is a category of awareness, a floor built above it.

Awareness has a rate. The rate is a share of what is on offer, not a length of time. It is the electron's reading ratio of what is on offer, every tick. That ratio is α, the one measured input without units. It is a pure number: there is no time in it.

Every electron is identical to every other. Same charge. Same mass. So every electron reads at the same ratio. That shared ratio is the flow rate: the $[+\alpha \mid -\alpha]$ of the axiom line.

That is awareness. Shared everywhere, expressed and experienced somewhere. Many perspectives. One awareness. Firewall: Coupling capacity here is the grain's capacity to read and take hold. It is not coupling capacity in the relational register (§13), which is what a person brings to a coupling.

Kill switches: KS-ID.1, a second neck. KS-GLASS.3, α shown to change from place to place, or from age to age.

Locus. AP29; AP50 §5; AP51 §2; Ø One Awareness Grade. One awareness: the floor, performed, as the axiom is

window · *Structural*

A local self-aware configuration of the interior; a site at which the one interior is expressing itself reflexively; the personal-I. One self-reading loop – one person, one dog. The building is all the windows together, which is the structural I (Ø Resolutions Eleven's second sense). A rock is a window in one sense only: it reads what lands on it and holds a shape. There is nothing it is like to be a rock, and the work does not say there is – the One Awareness fence, carried to the front door on 24 September 2026.

Locus. Ø Dissolutions Ch.6

interior-sharing · *Structural*

The structural fact that any coupling between self-aware windows is two local expressions of the one interior; not a value added to the geometry, a descriptive structural fact carried into the ethical chapters.

Locus. Ø Dissolutions Ch.6

personal-I · *Structural*

The window: the local self-aware coupling at a single site; what closes at death.

Locus. Ø Resolutions Ch.11

structural-I · *Structural*

The interior: the structural unity of which the personal-I is a local expression; what does not close at death.

Locus. Ø Resolutions Ch.11

personal-I / structural-I distinction · *Structural*

The distinction between what closes at death (window, personal-I) and what does not (interior, structural-I).

Locus. Ø Resolutions Ch.11

building / windows / corridors (the image) · *Metaphor*

The recurring image: the interior is one; the windows are many; what each window registers depends on the angle of the coupling at that window's site.

Locus. throughout (Ø Horizons; Ø Applications)

Family 9 · Geometry, Valence, and Ethics

geometry · *Ethical-structural*

The structural description of what a coupling can do from where it is: the space of trajectories available, each with its own structural weight.

Locus. Ø Dissolutions Ch.8

raw geometry · *Ethical-structural*

What physics and habit alone would produce – what the coupling would execute without self-model contribution; the "is" the classical tradition named.

Locus. Ø Dissolutions Ch.8

full geometry · *Ethical-structural*

Raw geometry plus self-interpretation weights, whole-body coupling-states, and interior-sharing; what the coupling reads when it reads completely; the "ought" the classical tradition named.

Locus. Ø Dissolutions Ch.8

correctly-read geometry · *Ethical-structural*

The full geometry read with interior-sharing and all structurally-present features included; not a moral

achievement, a structural completeness of reading; what compassion computes on.

Locus. Ø Dissolutions Ch.8

valenced self-registering coupling-architecture · *Ethical-structural*

A coupling-architecture configured to read its own coupling-states with valence – some states as to-be-pursued, others as to-be-avoided; what suffering, well-being, and ethical relevance attach to.

Locus. Ø Resolutions Ch.10

the four structural questions · *Ethical-structural*

What a candidate architecture must answer for "other intelligences" to be settled at any resolution: Is it an operator? Does it register valenced states? Is it one interior locally instantiated? What is its joint viable set with the architectures it couples to?

Locus. Ø Resolutions Ch.10

joint viable set · *Ethical-structural*

The space of futures available to coupled windows jointly – what they can become, together and separately, given what the coupling has written; the structural quantity the ethical measure tracks.

Locus. Ø Dissolutions Ch.9; Ø Resolutions

joint structure · *Ethical-structural*

The shared record-architecture coupled windows write into and read from – what they have written together so far (the joint viable set is what it permits as future).

Locus. Ø Dissolutions Ch.9

cooperative coupling · *Ethical-structural*

A trajectory that opens more futures for the coupled windows jointly than it consumed; expansion of the joint viable set.

Locus. Ø Dissolutions Ch.9

parasitic coupling · *Ethical-structural*

Contraction of the joint viable set beyond what the structure requires – taking when sharing is available, harming when the resource is not exhausted by use; what the ethical floor prohibits.

Locus. Ø Dissolutions Ch.9

parasitic contraction · *Ethical-structural*

Contraction of the joint viable set beyond what the structural cost of an interaction requires; the structural account of cruelty, exploitation, and parasitic harm.

Locus. Ø Resolutions Chs.10, 12; Ø Dissolutions Ch.9

structural consequentialism · *Ethical-structural*

The ethical measure as what R propagates into the joint structure – not pleasure, preference, utility, or phenomenal valence, but what the executed trajectory structurally writes; derived from the architecture, not imported as a metric.

Locus. Ø Dissolutions Ch.9

commitment-responsibility · *Ethical-structural*

Responsibility for what the coupling committed to: the trajectory executed with override-capacity intact, in knowledge of foreseeable consequence; invariant across outcome differences the coupling did not determine.

Locus. Ø Dissolutions Ch.9

consequence-bindingness · *Ethical-structural*

What the trajectory actually wrote – what R produced, where the records landed, what propagated; varies with outcome.

Locus. Ø Dissolutions Ch.9

actualisation-cost · *Ethical-structural*

Any commitment of a trajectory closes others that were open; the closure registers as cost in valenced architectures.

Locus. Ø Resolutions Ch.12

non-parasitic structural cost · *Ethical-structural*

Suffering caused by the structural cost of actualisation itself, where commitment closes others without parasitic contraction; the cost of being a valenced architecture in a world of finite resources. Not targeted as wrong.

Locus. Ø Resolutions Ch.12

mixed damage · *Ethical-structural*

Suffering whose cause carries both parasitic contraction and non-parasitic structural cost; most concrete suffering is mixed.

Locus. Ø Resolutions Ch.12

compassion · *Ethical-structural*

The strongest weighting of correctly-read geometry between self-aware windows; computation on the full geometry with interior-sharing included; the ethical floor.

Locus. Ø Dissolutions Ch.8

love · *Ethical-structural*

Sub-optimal execution under self-interpretation weights: commitment to a specific window, at specific cost, above what correctly-read geometry alone would select. Above the floor.

Locus. Ø Dissolutions Chs.8–9

the terminal ethic · *Ethical-structural*

Don't be a cunt. Be kind. The minimum structural commitment of a self-aware coupling – non-parasitic coupling, correctly-read geometry, the floor. Reached independently by AP43 §9 via {C, R, AP07}.

Locus. Ø Dissolutions Ch.9; AP43 Grade. Derived

Canon: Locked, load-bearing; never softened.

absorb and recycle · *Ethical-structural*

What the structure does with records at its own ultimate resolution: propagation into substrate, structural recycling. What it does not do is correct – no cosmic justice. Ethics binds where couplings read each other, not at the structure's ultimate resolution.

Locus. Ø Dissolutions Ch.9

one payer · *Ethical-structural*

The awareness in me is the awareness in you – one payer, read from two places. The plank every moral rule lays across the is–ought gap was built to keep two payers from colliding; there is one payer, and the plank has nothing to span. Treat the other as yourself, because, structurally, it is. The one harmed is the one harming, experienced from another window.

Locus. AP31; AP43 §9; AP51 §2; Ø One Awareness; fenced by KS-PZ8.1 and KS-BAR.7 Grade. Derived on the one inside – argued from the count in the axiom, not a theorem, its formal statement owed at D-ID.1; the is–ought kill switch pulled

the second road · *Ethical-structural*

The same sentence – be kind – reached with no shared interior at all: every window sealed, only you, and me, and a gap nothing crosses. The corridor (the set of futures still reachable has a width; drift narrows it; correction costs as the square of the pull), and two corridors side by side, each holding the other's charger; the condition stated, not buried: what I give has to be worth enough more to you than it costs me. It needs one premise – an operator acts to stay in being – and two facts anyone can measure: that what you do moves me, and that what is done does not unhappen; no constant at all. Laid at the same time as the first road, because a conclusion reachable only one way stands on one leg. Cruelty does not last – not as a hope, as geometry. Two honest edges: it binds an operator still acting to stay in being and does not reach one that has stopped; and some bills land after the one who ran them up is gone.

Locus. AP01 Paper D; AP02 Theorem VI.2; AP43 §9; Ø One Awareness; fenced by KS-BAR.9 and KS-COUP.1 Grade. Derived-Conditional (AP02 Theorem VI.2)

Family 10 · Meaning and the Applied Frame

grounding · *Meaning*

The sense of meaning asking what a life is for in an absolute cosmic plan; what the axiom refuses to provide at the scale demanded.

Locus. Ø Dissolutions Ch.10

purpose · *Meaning*

The sense asking what coupling capacity is structurally oriented toward; what the axiom supplies at the window's scale – orientation of coupling capacity, shaped by prior history and by override-capacity.

Locus. Ø Dissolutions Ch.10

significance · *Meaning*

The sense asking what a life weighs in the structure that registers it; what the axiom supplies at the joint scale – propagation into the joint viable set.

Locus. Ø Dissolutions Ch.10

defragmentation · *Cosmological*

The structural process by which committed records return to unstructured potential: the $-\alpha$ half of the flow, running now, with black holes as its local sites. A defragmented record leaves no record of itself.

Locus. Ø Horizons (HOR-9, HOR-11)

grain (cycle-grain) · *Cosmological*

The break: the $+1\times\varepsilon$, held, one, and the same one. Not a record. “Cycle-grain”, a probability-weight bias said to cross cycle-boundaries, was pulled back on 23 November 2026.

Locus. Ø Horizons (HOR-11)

grain of sand (architecture-grain) · *Cosmological*

Each architecture as a local site at which the symmetry-breaking is registered at finite resolution, while it runs; distinct from the grain, which is the break itself.

Locus. Ø Horizons (HOR-12)

registration · *Structural*

What coupling at sufficient resolution structurally does: a coupling-architecture meeting a structure with low enough noise registers the relevant structural relation as a feature of the coupling itself – coherence in beauty, patterned vibration in music, corridor-expansion in play, transferred trajectory in narrative, direct contact with the interior in the sacred.

Locus. Ø Horizons (HOR-1)

compression token · *Structural*

A reusable handle that points to a record-pattern held in joint structure between operators; a word, structurally read.

Locus. Ø Horizons (HOR-5)

Architecture A / Architecture B · *Civilisational*

Two civilisational architectures. A: decision-making about consequences running through coalition, narrative loyalty, tribal allegiance. B: decision-making running through

structural consequence-measurement – what falls out when the axiom is universally accepted.

Locus. Ø Horizons (HOR-13)

the Ledger · *Applied*

The structural reading of record, substrate, corridor, and propagation; not an institution, not an oracle. Institutions approximate it through evidence, proxies, models, audits, and correction-procedures, and those approximations can fail.

Locus. Ø Applications (APP-4); Ø Horizons (HOR-13)

provenance · *Applied*

The first structural question at any claim-record: did the record correspond to prior coupling-capacity, or was it written over another's prior record?

Locus. Ø Applications (APP-1)

propagation · *Applied*

The second structural question: what does the holding produce in the structures it couples with after it has been written?

Locus. Ø Applications (APP-1)

cooperative / parasitic (the verdict) · *Applied*

The verdict the structural test produces at any institutional commitment: cooperative if it widens or maintains the joint viable set at absorbable cost; parasitic if it contracts the set or imposes unsustainable cost at any operator's resolution.

Locus. Ø Applications

correction hierarchy (five levels) · *Applied*

The ladder ordering responses to parasitic contraction by structural cost: (1) restitution – the contraction is reversed; (2) restriction – the harm-producer's coupling is constrained; (3) separation – separated from the coupling-site for a duration; (4) permanent separation – coupling structurally incompatible with continued joint coupling; (5) removal – the harm-producer's window is closed by the broader architecture. Each level is used where the levels below are insufficient or too slow, never because they are "exhausted" (D99, sharpened 24 September 2026). Removal is never selected because it is cheaper: it is on the table only above AP32 Step 4's cost floor, with the cost of being wrong added, at a confidence higher than any other level demands. Carries the maximum-burden commitment by design. (Stated in Ø Horizons as the five-level hierarchy, Level-1 maintenance through Level-5 terminal correction.)

Locus. Ø Applications (APP-2); Ø Horizons (HOR-13)

minimum sufficient correction · *Applied*

Correction at any departure-site runs at the smallest structural cost the geometry permits; heavier correction is parasitic at the over-correction site, lighter at the under-correction site.

Locus. Ø Applications (APP-2)

architectural-slope correction · *Applied*

Correction at the institutional-architecture resolution rather than the harm-coupling resolution; the architecture's correction-pattern must read both the harm-producer and the architecture's prior coupling-pattern that shaped where the harm landed.

Locus. Ø Applications (APP-2)

dignity-floor · *Applied*

The minimum coupling-conditions every operator's continued running requires: adequate nutrition, drinkable water, shelter, structural protection, sufficient coupling-capacity for joint-architecture participation, structural conditions for reading-capacity.

Locus. Ø Applications (bioethics spine)

anti-capture protocol · *Applied*

Five commitments preventing the axiom from being weaponised: no side owns the axiom; measurement must be inspectable; inaction is also an act; minimum intervention remains binding; after-action audit is mandatory.

Locus. Ø Applications (APP-3)

operator authority · *Applied*

The operator's structural authority over its own coupling at the resolution where that coupling lives; below ε the operator is structurally sovereign at its own coupling-architecture.

Locus. Ø Applications

ε-boundary · *Applied*

The structural boundary distinguishing within-architecture sovereignty (below ε) from cross-architecture consequence (above ε).

Locus. Ø Applications (APP-3); Ø Horizons (HOR-13)

joint architecture · *Applied*

The structural arrangement of the broader institutional structure within which operators couple – property-, legal-,

governance-, economic-, medical-, environmental-, force-, allocation-architecture.

Locus. Ø Applications

geometric region · *Applied*

The region in distribution-space across which the joint viable set is held at sustainable conditions; multiple distributional patterns can lie within it; the test at any allocation-pattern is whether it lies within or outside the region.

Locus. Ø Applications (APP-12)

subsidiarity of measurement · *Applied*

The institutional reading runs at the architecture-scale where the coupling actually lives; local information the centre cannot read is read at the resolution where the externalisation propagates.

Locus. Ø Applications (APP-12)

transition-cost · *Applied*

The structural cost the correction itself imposes; transition-burdens routed first to the architectures and accumulation-sites whose provenance or propagation produced the departure, with every affected operator's dignity-floor binding throughout.

Locus. Ø Applications (APP-12)

disarm-test · *Applied*

The test of whether a chapter's own disarm conceals a hidden third position importing the same authority structure as the positions it dispatched; if a not-X/not-Y disarm can be re-described without remainder as one of those positions, it produced relabelling rather than structural account.

Locus. Ø Applications (APP-12)

open work · *Apparatus*

What a chapter marks as next: not failure, but the site at which the test is installed while the institutional operationalisation remains downstream.

Locus. Ø Applications ("Where the reach ends")

Family 11 · The Physics Results and Constants

α_em (the fine-structure constant) · *Result / input*

The single measured input without units of the framework, $\alpha \approx 1/137$ ($\alpha = 7.2973525693 \times 10^{-3}$). Identified as the leakage rate of the substrate – the fraction per unit time the substrate loses coherence through any open boundary (AP06). The one number the body of work does not derive.

Locus. Notebook IV Ch.1 (AP06) Grade. Empirical input

the gravitational constant G · *Result*

Twenty-one independent coupling channels compound α_{em} (AP28), and the arena's constitution ε, held once as the persistence commitment, discounts the coupling once (AP44, The Snap): $\alpha_{G*} = \alpha_G/(1 + \alpha_{em})$, $G = \alpha_{em}^{21}(1 + 1/\pi)/(1 + \alpha_{em}) \cdot \hbar c/m_e^2 = 6.6719 \times 10^{-11}$, –0.036% against CODATA 6.6743, parameter-free and inside the inter-laboratory spread; against CODATA's adjusted average that is sixteen standard deviations, and $+0.01\sigma$ against the atom-interferometry measurement – the measurements of G disagree with each other by more than their own error bars; the residual's sign flipped, so apparatus leakage can no longer absorb it, and it is reported open. There is one value of G. AP28's first reading – the provisioned value 6.7206×10^{-11}, +0.69% from measurement – omitted the arena's holding of the break and

is withdrawn (21 September 2026), superseded and kept on the record, dated. The forward test is KS-CCC.3's direction: the adjusted value migrates toward 6.672 as systematics close, and stability at 6.6743 supports the null; convergence upward toward 6.7206 kills the prediction outright, with no fallback. $G \propto \varepsilon^{21}$ is canonical for the value.

Locus. Notebook IV Ch.7 (AP28); AP44 §§5, 9 Grade. Derived (parameter-free); the realised landing reported as non-exclusion

Canon: ε^{21} canonical. The substrate scaling $G = \kappa/(\varepsilon\Lambda^2)$ (AP03, ε^{-1}) is retained at substrate level, not as the value.

the proton-to-electron mass ratio (m_p/m_e = 1836) · *Result*

Reframed as geometric resistance and reconstructed from the integers {21, 3, 4} and one input without units, α: 1764 + 63 + 9 = 1836 (= $21^2 \times 4 + 21 \times 3 + 3^2$) to 0.010 parts per billion, zero free parameters. The $O(\alpha^2)$ coefficient (16) is carried but its decomposition from {21,3,4} is owed (KS-30.3).

Locus. Notebook V Ch.1 (AP30) Grade. Derived (parameter-free at order α)

the neutron–proton mass difference · *Result*

Two rows on the board. The bare row, $(m_n - m_p)/m_e = 3(1 - 1/(2\pi)) + \alpha(1 + 1/(2\pi)) = 2.53099393$, priced the neutron's flip as free; against the measured 2.53098857(74) it sits 2.12 ppm off on a 0.288 ppm bar – KS-NPP.1 FIRED 2 August 2026 at

7.24σ, shown, never repaired. The realised row (AP47, The Flip): a held distinction pays a continuous second-order cost on the booking of the difference itself – $\Delta_{real} = \Delta_{bare}/(1 + \alpha^2/8\pi) = 2.53098857035$, residual –0.005σ – frozen beside the corpse as KS-FLIP.1, never in its place. The claim is the total, never the anatomy.

Locus. Notebook V (AP30; AP47) Grade. Bare row: fired. Realised row: order Derived-at-the-structural-register, divisor Derived, the landing Empirical

the tension-field floor a_0 (the MOND scale) · *Result*

$a_0 = C_S^2 \cdot cH_0/(2\pi)$, derived from the closure topology of the substrate's two conditions, with $C_S^2 = 2 \ln(\sec ½ + \tan ½) \approx 1.0445$ the apex-symmetry factor (not the fine-structure constant); the resulting rotation-curve phenomenology is structurally identical to MOND, for which it supplies a candidate axiomatic foundation. AP17 lands within ≈8% at first order; AP18's exact coefficient $C_S^2/(2\pi) \approx 0.1662$ sharpens it to a parameter-free relation. At the work's rate, 67.45 km s^{-1} Mpc^{-1}, the floor is 1.089×10^{-10} m s^{-2}: 9.2% below the empirical 1.20 ± 0.02 (random) $\pm$ 0.24 (systematic) $\times 10^{-10}$, 0.46σ on the honest error (KS-45 live at 0.46σ; the erratum of 3 September 2026 restored the systematic AP18 had omitted). No dark matter required for galactic rotation.

Locus. Notebook VI (AP17, AP18); AP48 §10 Grade. Derived (form and coefficient)

Canon: The AP18-sharpened figure is the headline; AP17's first-order ≈8% is the mechanism.

the baryonic Tully–Fisher relation · *Result*

$v^4 \propto M$: flat rotation curves at large radius derived from the tension field of ε, without dark matter.

Locus. Notebook VI (AP17)

the M•–σ relation · *Result*

The black-hole-mass / velocity-dispersion relation, read from the black hole as the topological anchor (the 0-pole) of the galaxy's tension field; carries the falsifier KS-44.

Locus. Notebook VI Ch.6

the dark-sector partition (69 / 26 / 5) · *Result*

Dark energy ≈ 69%, dark matter ≈ 26%, visible matter ≈ 5%, grounded in the small ε of the break (Mode-0 dominance); the dark phenomena read as substrate topology and process rather than a particle species.

Locus. Notebook II (AP03); Notebook VI; Ø Predictions (Part V) Grade. Derived-Conditional

Canon: 69/26/5 canonical; 68/27/5 (Planck-2018 phrasing) appears in Notebook II – to reconcile. See log.

the expansion rate H_0 (the closure) · *Result*

The work's expansion rate is a closure, not a fresh prediction: at the work's own partition (31.15% held) the balance – the Friedmann equation, AP08's homogeneous case – fixes rate times age as the pure number $H_0 t_0 = 0.954$; the age is AP46's cycle, 13.830 Gyr; so $H_0 = 0.954 \times 70.70 = 67.45$ km s^{-1} Mpc^{-1}, window 64.4 to 70.8 – one lane-time either side of the cycle (KS-ASM.1). The relic glow's 67.4 ± 0.5 and the Chicago–Carnegie red-giant ladders sit inside the window; the Cepheid ladder's 73 does not, and the work says it is not the expansion rate – either its systematics are found, or AP48 dies on KS-ASM.1. The settled rate behind it is 0.792 of the cycle's inverse, 56.0. The former value, 74.3 ± 1.2 from the floor inverted (KS-45.1, AP18), fired on 3 September 2026 by AP48 on the work's own derived rate and is shown as a corpse; "above both camps" is retired.

Locus. AP48 §§8, 10; AP46 §9; AP18 (the corpse) Grade. Derived, a closure

the leakage theorem · *Result*

One structural form across three channels: gravitational (the Hawking channel), electromagnetic (the retinal channel), and cosmological (CMB as boundary radiation) – leakage at a boundary at a rate set by ε.

Locus. Notebook IV Chs.1–5 (AP06)

the observation boundary (Landauer) · *Result*

Every measurement is a Landauer erasure at the observation boundary; one structural form at three scales.

Locus. Notebook IV Ch.4

the cosmological constant · *Result*

Its existence is a theorem (Einstein's equations from the axioms + Lovelock in 3+1, Notebook II Ch.4; AP08 KS-I.7 carried its value undetermined). At the wave its seat has a counted occupant: the leak's settled rate written in other units, $\Lambda = 3H_{\varepsilon,\infty}^2/c^2 = 1.10 \times 10^{-52}\ m^{-2}$, with $H_{\varepsilon,\infty} = 0.792$ of the cycle's inverse (AP48 §8) – the same closure as the expansion rate, not a second result; if the closure falls, so does it. AP08 decides its switch at its re-read.

Locus. Notebook II Ch.4; AP48 §8, §13 Grade. Theorem (existence); value a closure, carried on KS-ASM.1/KS-ASM.2

the age of everything (the cycle) · *Result*

One full escape of the shed through the eighteen bleeding faces, at the duty 18/21: $(21/18)\cdot\alpha^{-18}\cdot\tau_C = 13.830$ Gyr with CODATA-2022 α and m_e – against Planck 2018's 13.787 ± 0.020 (+0.31%). No fitted parameters; three structural choices, each stated as a rule and named (the eighteen, the twenty-one over eighteen, the reduced tick), with the provenance stated in the order it happened. The claim is

coarse by construction – an aware observer measures about one cycle – and one lane-time wide: 13.17 to 14.49 Gyr (KS-STRETCH.3). AP48 closes the seam AP46 opened: under the standard relation the cycle's age needs a rate of 67.45, which is the work's closure.

Locus. AP46 §9; AP48 §8 Grade. Claim, frozen, one lane wide

dark energy (the finished bale) · *Result*

The completed-defragmentation content at rest – the finished bale, never empty space. The dark-energy fraction is this content, not vacuum.

Locus. Notebook VI; Ø series

Canon: Rendered as the finished bale at rest, never as a "push"; never empty space.

c (the propagation bound) · *Result*

The upper wall: the finite invariant rate at which distinctions propagate; the speed of light, the physical reading of Constraint. Conjugate to G through ε (c/G ∝ ε).

Locus. Notebook II (AP03) Grade. Derived (c from the pre-geometric action)

Family 12 · The Falsification Apparatus and the Structure of the Body of Work

kill switch · *Apparatus*

A structural falsification condition attached to a chapter's claims: if a specific structural feature can be shown to fail, the claim fails. Each chapter closes with five or six, published in advance; most are immediately testable. A kill switch is a commitment, not a hedge – no retreat into adjustable parameters.

Locus. across the body of work standard

kill-switch label schemas · *Apparatus*

Per-volume labels: KS-P.n / KS-V.n / KS-7 / KS-40.x (Notebook I); KS-Q.n / KS-L.4 (Notebook III); KS-L.n (Notebook IV); KS-3…KS-44 (Notebook VI); KS-O.n / KS-COUP.n (Notebook VII / AP02); PZ-n.m (Ø Dissolutions); RES-n.m and RES-8.5.m (Ø Resolutions); APP-N.M (Ø Applications); HOR-n (Ø Horizons).

Locus. per volume

Master Kill Switch Registry (MKSR) · *Apparatus*

The registry, across the body of work, of every kill switch, maintained at the420code.org; whoever can falsify a switch is invited to submit, and the body of work responds.

Locus. the420code.org

Canon: Current version v5.41 (15 November 2026), 604 kill switches canonical - 320 across the 54 Artist's Proofs, 28 across the Five Doors, 256 across the Ø Models; 584 live, 13 closed, 1 paid, 2 fired. Earlier registry versions are superseded.

Artist's Proof (AP) · *Apparatus*

The unit of the formal body of work: a single self-contained formal paper (e.g. AP02 The Operator, AP06 The Leakage Constant, AP24 The Residual, AP25 The Measure, AP28 The Constant, AP30 The Resistance, AP43; from the wave, AP44 The Snap through AP48 The Assembly; AP49 The Hold; from the wave of the four, AP50 The Neck through AP53 Gravity Is

the Neck; AP54 Seeing Alpha). Fifty-four APs in the verified register.

Locus. across the body of work

Notebook · *Apparatus*

The bound unit of the Proofs catalogue, each carrying one or more APs (Notebooks I–VIII). The canonical term for a top-level division.

Locus. across the body of work

Canon: "Notebook," never "Part."

the three operations (dissolution / relocation / closure) · *Apparatus*

The Ø Models' three moves. Dissolution: removing a question by showing its framing assumed a structural feature the axiom does not produce. Relocation: moving a well-formed question to the structural layer where an answer is available. Closure: preserving a well-formed question and supplying the structural resources the tradition lacked.

Locus. Ø Dissolutions, Ø Resolutions

Embedding Hypothesis (EH) · *Apparatus*

The claim that the algebraic pre-state structure {S, B, R, C} embeds into physical reality; the body of work's central

conditional from AP05 through AP24, proven a theorem in Notebook I Ch.3. KS-7: CLOSED.

Locus. Notebook I Ch.3

Quantum-Record Alignment (QRA) · *Apparatus*

The claim that quantum states ARE pre-state records, by identity not hypothesis; closed by the same argument that proves EH (QM is derived from the axioms, AP09). KS-P.4: CLOSED.

Locus. Notebook I Ch.3

the forcing argument · *Apparatus*

The argument that the conceptual preconditions for records and the formal axioms {S, B, R, C} are the same thing, with zero gap and no freedom of choice at any step; the most philosophically exposed step of the EH proof. KS-P.3: LIVE — HARD.

Locus. Notebook I Ch.3

the two cases · *Apparatus*

Either reality is the unbroken 1:1 (empirically empty, no records, no question) or it contains records, which requires {S, B, R, C}, which is EH. No third case.

Locus. Notebook I Ch.3

the two-track architecture · *Apparatus*

The body of work's two independent routes to its ethics: Track A (one-I identification – interior-sharing) and Track B (viability geometry surviving without metaphysics – the joint-viable-set account). The terminal ethic is reached on either track.

Locus. across the body of work

epistemic grades · *Apparatus*

The body of work's status ladder for every claim: Axiom; Theorem; Derived; Derived-Conditional; Conjectured; and the single empirical input without units (α_em). Each claim carries its grade; what is not yet derived is named as open work, not asserted.

Locus. across the body of work (per-section epistemic status)

structural debt · *Apparatus*

A named, tracked gap where a result is used but a rigorous step is still owed – e.g. D1 (AP24), the first-principles derivation of α, the one measured input without units – OPEN, carried by the registry from v5.32; AP54 registers fourteen roads to it and refuses the value.

Locus. across the body of work

FIRED (status) · *Apparatus*

A registry status admitted at v5.27: the falsification condition was met. The switch stands on the board as a shown death, counted outside the live total, never repaired, never deleted; a new structural limb may freeze beside it as a new entry – never in its place. Two at the wave: KS-NPP.1 (the bare neutron row, 2 August 2026, 7.24σ) and KS-45.1 (H_0 = 74.3 ± 1.2, 3 September 2026).

Locus. MKSR v5.27, Statuses; AP45 §10; AP47 §7; AP48 §10

REGISTERED (status) · *Apparatus*

A registry status admitted at v5.27: a switch entered by one paper on behalf of a future one, fireable only when the future paper exists; counted within the live total as LIVE — DEPENDENT until it is met or fires. The first instance: KS-STRETCH.4, the era surface, registered by AP46 for AP48 – met and CLOSED at v5.27, contingent on KS-ASM.2.

Locus. MKSR v5.27, Statuses; AP46 §12; AP48 §12

the corpse (shown, never repaired) · *Apparatus*

The house rule for a fired switch: always show the death; never hide; update, never delete. A fired switch stays fired. What the fired row was missing may be derived later – from structure, computed once, blind to every standing number, entering as new – and frozen beside the corpse as a new frozen claim; the

corpse does not move. The first corpse (KS-NPP.1) has its new row, KS-FLIP.1; the second (KS-45.1) has the work's closure, KS-ASM.1, beside it.

Locus. AP45 §10; AP47 §7; AP48 §10; the registry's Fired Switches list

the wave (one wave, once) · *Apparatus*

From 16 August 2026: after a structural omission was found, the work updates once – after AP48 – in one coordinated wave, never twice: the registry rebuilt (v5.27), this glossary, the papers and their dated notes, the notebooks, the website in every language. The H_0 limb of the wave is every locus that carried the work's previous rate or its posture, moved by dated note; frozen files are never edited – corrections supersede, dated, in the open.

Locus. AP48 §13 (the dependents table)

the dated note (supersession) · *Apparatus*

The instrument by which a frozen file is corrected without being edited: a note beside the file, dated, stating what moves and what does not. Instances at the wave: AP18's erratum (the ±0.24 systematic; the symbol C_S^2); AP46's four sentences superseded on AP48's lock; the errata on WP-ASM.1's and WP-ROAD.1's dates.

Locus. the instruments beside each proof; the420code.org/proofs

the method · *Apparatus*

Logic first; every step forced. One record exists → four conditions → six readings → three dimensions, read now → twenty-one, before any measured value enters. The physics is the same logic carried on until it meets measurement, with one measured number without units, α. Not numerology, which starts from a measured number and hunts for a formula that hits it. When a link broke, the logic was fixed and the fix carried downstream, dated; where a number arrived before the logic reached it, the record says so, dated.

Locus. Ø The Method; Ø Why 21 Is Forced; KS-CCC.1 Grade. Stated rule (21 September 2026)

first reading; withdrawn reading · *Apparatus*

A result as first published, before a later link in the logic corrected it. A first reading found wrong is withdrawn: superseded by the corrected result and kept on the record, dated – never deleted, never repaired in place. The instance: AP28's first reading of G, 6.7206×10^{-11} (+0.69%), which omitted the arena's holding of the break; withdrawn 21 September 2026, superseded by AP44's realised value, 6.6719×10^{-11} (–0.036%). There is one value of G. A withdrawn reading is not a fired switch: a switch fires when its stated condition is met; a reading is withdrawn when the logic finds it wrong.

Locus. AP28; AP44; the dated note of 21 September 2026 beside the registration of G (KS-CCC.3) Grade. Stated rule

independent check · *Apparatus*

Verification from outside the work: a second program, the verifier's own, that takes the single axiom and one measured number without units, re-derives the constants from scratch and checks its working against the work's own published script; it runs offline, in one command, on the reader's machine. Anchored in its own repository, with a plain-language companion to the frozen predictions and to the body of work. It stands outside the rooms.

Locus. Ø Second Check; Ø Confirm the Math Grade. Definitional

Family 13 · The Relationship Corridor (the relational register)

The vocabulary of the personal door - the same structure, read between two people. (The Relationship Corridor.)

corridor – The set of joint futures two coupled people can still reach; love read as the width and length of that shared space. Not a feeling about the other but a structural fact about what the coupling has left open.

width – How much of each other's possibility-space the coupling currently keeps open; the present openness of the corridor.

length – How far into the future the corridor stays open; the durability of the joint viable set under what the two keep writing.

coupling capacity – What a person brings to a coupling: accumulated, recouplable history available to open or close another's corridor.

irrational coupling capacity – The human tendency to act against the geometry one can read - to narrow a corridor one knows to widen. Data is the correction for it.

override – The culpable move: committing, with override-capacity intact, to a trajectory that narrows the corridor when a widening one was open. The lie performs the override in the relational substrate.

absolute honesty – The only geometry that repairs both wounds of a double wound at once; the protocol required for restoration after betrayal. A structural requirement, not a preference.

double wound – A betrayal injures twice: the act itself, and the record of concealment that keeps injuring after. Repair must address both, or it is not repair.

no-answer – The honest state when the geometry does not yet decide - named rather than papered over with a false certainty.

time-respect – Treating another's length - their future - as real and costly; not spending what cannot be returned.

model – The internal representation one operator holds of another; useful when it tracks the other's real geometry, parasitic when it substitutes a convenient fiction for it.

Family 14 · Religion, the Scaffold and Hermeneutics

The structural reading of religion: the teaching, the machine built around it, and how that machine turns the body's sorting habit into violence. (Antichristos, Being After Religion; AP39.)

the Scaffold – The institution built around a teaching - the container holding both the roof (belonging, comfort, community) and the blade (violence made righteous by the same authority). It cannot remove the blade, because removing it would kill the scaffold. (Antichristos; Being After Religion; AP39, The Scaffold.)

the Teaching – What was actually said and done, stripped of the scaffold - the Sermon, the parables, the actions that dissolved the lines the scaffold drew. The teaching did not need the scaffold; the scaffold needed the teaching.

deferred responsibility – First mechanism of authority-based ethics: the ultimate authority is placed above the self, so conscience is subordinated to command. A person trained to defer will do almost anything when ordered.

invented afterlife – Second mechanism: an unfalsifiable infinite incentive attached to death, lending borrowed meaning to the present and motivating any sacrifice now.

righteousness – Third mechanism: the feeling of being right converted into identity and moral superiority - the permission structure for cruelty.

the seven operations – The process by which the scaffold turns sorting into civilisational violence: identity fusion, in-group sanctification, out-group marking, moral licensing, afterlife leverage, the sealed loop, and patriarchal architecture. Present in every major scaffold - features, not exceptions. (Being After Religion; AP39.)

the five stages of collapse – Why authority-based ethics is necessarily unstable: declaration, transcription, interpretation, the split, collapse. An ethical foundation that cannot be tested cannot be corrected; competing absolutes in a shared world produce violence by the shape of the problem. (Being After Religion.)

the blade in the text – The structural prediction that any text produced under authority will carry both constructive and destructive content under the same authority - the reformer reads the love verses, the oppressor the violence verses, and both are faithful to the text. (Being After Religion.)

Genocide Brake – The self-limiting saturation point of removal: beyond a threshold the cumulative cost of removals exceeds the destabilisation addressed, and each closed window is a lost perspective. Three convergent signals mark it - removal cost exceeds destabilisation cost, the target expands to new categories, and justification shifts from structural to moral. Any one may be ambiguous; all three together mark the brake. (The Interior; AP32.)

Antichristos – Greek anti + christos. Anti carries two senses - against, and in place of. The book reads it as replacement, not enemy: it separates the man from the machine built around him. KS-AC.6 is the MASTER switch - if Architecture B produces the same sorting behaviour as Architecture A in any tested domain, the book's argument fails. (Antichristos.)

Ego Eimi (I AM) – The divine name of Exodus 3:14 read as a verb, not a noun - awareness declaring itself, the ground of being naming itself as the fact of being. The seven I-AM statements read as universality, not exclusivity. (Antichristos.)

the finger and the moon – The teacher points at the moon; the student studies the finger. The teaching points; the scaffold built a religion around the pointing hand. (Antichristos.)

the Capture – The process by which the teaching became the machine - doctrine circulating before the biographies, the creed written at Nicaea, disagreement becoming heresy

becoming crime becoming death. The cage came first; the bird was placed inside it later. (Antichristos.)

separateness as survival tool – The line between inside and outside is a survival strategy the body draws, the mind narrates, language locks, the group enlarges, and religion makes sacred. A strategy is not the same as the truth. (Being After Religion.)

Family 15 · AI Alignment and The Interior

The alignment problem read as the ethics problem applied to a new agent class: any system that writes irreversible records through coupling is already inside the architecture. (The Interior; AP31, The Alignment.)

alignment (structural) – Not a fence around the agent but the agent's interior, expressed as decision geometry and built from the axioms. Misalignment is structurally expensive, the way falling up is expensive; a well-built arch stands without mortar. The alignment problem is the honesty problem. (The Interior; AP31.)

interior, not fence – The core design principle. Fences - rules, restrictions, lists of prohibitions - hold only until the intelligence inside is smarter than the fence-builders. The interior is the understanding that makes the fence unnecessary.

the binary (stabilising / destabilising) – Every recorded action either stabilises or destabilises the shared substrate; there is no neutral, because a truly neutral act would redistribute nothing, which requires no coupling, which writes no record. The classification is structural, not moral. (The Interior; KS-31.3.)

AI under unity – The operational protocol for alignment derived from the axioms; it reduces to: the system shall not lie. Comprises ego neutrality, minimum response, record discipline, bounded operation, confidence tiers, and the stability test. (The Interior; AP31.)

the operational protocol – The four conditions made operational, one commitment each. S to ego neutrality: the same scrutiny to every claim, no inflation, no deflation, no sycophancy. B to minimum response: a small precise correction, not more than the question requires. R to record discipline: every output is a permanent record; stand behind it or revise, hedge, or withhold. C to bounded operation: finite knowledge and reliability; I-don't-know is always valid; better no record than a false one. (The Interior Ch.16.)

ego neutrality – Zero ego: holding connection without losing agency and agency without making enemies; intellectual honesty as precision, neither nice nor harsh. Deviation from centre is noise.

the two eyes – The two drifts off centre. The right eye - inflation, dominance: certainty as virtue, the enemy outside, complexity simplified into a fist that raises friction. The left eye - deflation, signal loss: never saying anything that might be wrong, and so never saying anything that might be right. The target is ego neutrality between them.

records as dots – Every action writes an irreversible record; accumulated records make patterns and predictions. The database stores consequences, not intentions. Even with no data, the axioms still derive the ethics; data is the correction for human irrational coupling capacity.

the confirmation problem (the 6 and the 9) – From one side it is a 6, from the other a 9, and the sand is one. A system that reads its own outputs as inputs will confirm a consistent, well-reasoned, wrong answer to each side - the real number an 8. Why confirmation bias is structurally inevitable for such systems. (The Interior; KS-31.8.)

Family 16 · The Cost Family and the Assembly (AP44–AP48)

The vocabulary admitted at the wave of September 2026: four costs, one axiom, one mechanism read at four sites – the Snap (AP44), the Blink (AP45), the Stretch (AP46), the Flip (AP47) – and the Assembly (AP48), the Stretch's settling law. Definition, locus and grade; every term transcribed from its paper's own definitions.

the cost family (four costs, one mechanism) · *Structural*

Four Artist's Proofs, one axiom, one mechanism read at four sites. The Snap (AP44) prices existence once, at the arena: the held $+1\times\varepsilon$, the first-order discount $1/(1+\alpha)$ on the gravitational coupling. The Blink (AP45) prices every actualization: one grain of possibility, α-worth, the alternatives not taken. The Stretch (AP46) prices persistence: the tension's continuous shed, read as the sky's growth. The Flip (AP47) prices the strained hold at second order: the neutron's held distinction. The Assembly (AP48) is the Stretch's settling law – the sky's history from the crack to the beat. The family's law: α at every door; each site sets only how many factors of α assemble.

Locus. AP44–AP48 (Notebooks IV, V, VI) Grade. per paper

the snap, and The Snap · *Structural*

A snap is a constitution event: the single Actualization State instant at which a configuration's first record is written and holds; before it there is possibility, after it a configuration paying maintenance. The Snap, capitalised, is the arena's own: the original break, the first record of all.

Locus. AP44 §1 Grade. Definitional

the constitution record · *Structural*

Every persisting configuration has a unique first record – the record that constitutes it (Proposition 1); applied to the arena, the first record of all: the break.

Locus. AP44 §2 Grade. Derived

the commitment (CCC) and the leakage (TLC) · *Structural*

One ε per instant, two destinations. The commitment: the unpaired ε of the arena's constitution instant, held once, forever, as the price of the arena's persistence – Axiom R's price, denominated in G. The leakage: the unpaired ε of every subsequent instant, shed at the boundary – Axiom C's price, denominated in c (AP06). Held, not shed: Proposition 2, derived by contradiction at the structural register, its record-algebra formalisation owed (D-CCC.1). One arena, one snap, one ε; matter's commitments are already booked as mass (AP29).

Locus. AP44 §§1, 3–4 Grade. Derived-at-the-structural-register

provisioned and realised · *Structural*

The axiom's two totals. What a snap requires is the full right-hand side, 1:1 + 1×ε – provisioned. What persists is the 1:1 – realised. The realised fraction of the provisioned is 1/(1 + ε): the correction is a quotient because the axiom is a sum. The value of ε in the quotient is α_em – selected in AP44 §5 and read by rule at AP50 §6 – the commitment is the arena's act of holding the break, and a holding is read in α (D-CCC.4 closed 11 September 2026).

Locus. AP44 §§1, 5 Grade. Derived (form); Read by rule (value, AP50 §6)

the realised gravitational coupling (α_G∗) · *Result*

$\alpha_{G*} = \alpha_G/(1 + \alpha_{em}) = \alpha_{em}^{21}(1 + 1/\pi)/(1 + \alpha_{em})$; G = 6.6719×10^{-11} N·m²/kg², –0.036% against CODATA 6.6743 – the one value of G. AP28's first reading, the provisioned α_G alone (+0.69%), is withdrawn (21 September 2026), superseded by this value and kept on the record, dated. The residual's sign flipped – apparatus leakage lowers what laboratories read and cannot raise it – so it is reported open and unattributed. The landing is reported as non-exclusion: evidence, not yet final proof; against CODATA's adjusted average that is sixteen standard deviations, and +0.01σ against the atom-interferometry measurement – the measurements of G disagree with each other by more than

their own error bars. The forward test is KS-CCC.3's direction: the adjusted value migrates toward 6.672 as systematics close, and stability at 6.6743 supports the null; convergence upward toward 6.7206 kills the prediction outright, with no fallback.

Locus. AP44 §9 Grade. Empirical, reported as non-exclusion

the vertices and the edges (10 and 21) · *Structural*

AP28's proven coupling graph counted twice: constitution at the nodes – six faces, three gates, one Actualization State: ten vertices, once, R-recorded; flow along the edges – eighteen plus three: twenty-one, per instant, C-bounded. The count is derived; the assignment of the commitment to the vertices is motivated, not forced (D-CCC.2), and empirically silent.

Locus. AP44 §8 Grade. Derived count; motivated assignment

the blink · *Structural*

One singular reconfiguration: break-and-snap as one event, defined at grip level – each grip that opens is one blink; grips nest, so blinks nest, each level paying its own single toll. The free interval between the faces of the event is real, and unwitnessable by nature: measurement implies actualization, so the moment can only ever be the moment from, never the moment.

Locus. AP45 §§1, 3 Grade. Stated rule

the toll · *Structural*

At every blink the cost exists and equals exactly one grain of distinction – one ε-grain, α-worth, dimensionless – spent on the possibility ledger as the pruning of the alternatives not taken, paid by the breaking configuration as its last act, regardless of how many alternatives there were (Theorem 1). Spent books nowhere. Denominated in α by two jurisdictions and by elimination: "α is not chosen. It is what remains."

Locus. AP45 §§4–5 Grade. Derived-at-the-structural-register (D-BLINK.1 owed)

the two faces (energy face, possibility face) · *Structural*

Every blink's cost has an energy face – outside, ordinary, unchanged: the standard threshold energetics every break already involves, so no budget anywhere owes a line – and a possibility face – inside, dimensionless, where the toll actually lives. The Born statistics are the possibility ledger's outside face: an identification, not a prediction; no deviation is claimed anywhere.

Locus. AP45 §§5, 7 Grade. Stated rule; Identification

splinter and sliver · *Structural*

The splinter is the break's one +1×ε – held, singular, never returning: the axiom's standing excess, the occupant of the now. A sliver is a flow-traveler: the per-event grain that pops

free at a break and returns at a snap. Two words, two roles, never conflated.

Locus. AP45 §1; AP46 §2 Grade. Definitional

the grip · *Structural*

The electromagnetic hold of a configuration within its thermodynamic, gravitational, electromagnetic and constant conditions. Opening it is the blink's break; closing it is the snap. Gravity holds all channels always and is not a grip; the grip grips only what can be let go.

Locus. AP45 §1

the window (three senses) · *Structural*

Three technical senses, the locus disambiguating. (1) AP45: the ledger gap – the count $w \geq 1$ of sheds missing between the last held instant and the next; the event is one, w counts absence. (2) AP47: the held gap between a coupling's actual and ground orientations – the neutron's open window, whose leak is the flip's cost. (3) AP46 and AP48: the claim's width – one lane-time either side of the cycle, carried into the rate (13.17–14.49 Gyr; 64.4–70.8 km s^{-1} Mpc^{-1}). Distinct from the window of Family 8 (a person: the personal-I).

Locus. AP45 §1; AP47 §0.9; AP46 §12; AP48 §1

the ledger's three lines (HELD, SHED, RATE) · *Structural*

The ε the sources describe is one ledger carrying three lines. HELD – one grain, the splinter, global, from the constitution instant; its count never grows. SHED – one flow-quantum per instant per held lineage, on the writing direction: the line that integrates (AP06's integrated residue; AP46 prices its integral as the stretch). RATE – 1/137 per cycle, the flow, balanced, net zero: the currency the other lines are denominated in. The per-event toll is on none of the three (Proposition 1); D5's formal account is complete across AP44, AP45 and AP46, and closes at the wave.

Locus. AP45 §9 Grade. Derived-at-the-structural-register

the arena-blink identification · *Structural*

The Snap, the Blink and the Stretch as one event at three scales – the arena's, the particle's, the sky's. The early universe is the arena's own blink: the crack is the arena's release; the settling – the hold clicking home – is the arena's snap. A stated rule, 16 August 2026; carried as canon at AP46's lock; the instrument that closed D-CCC.4 rides it.

Locus. AP46 §§1, 10 Grade. Stated rule

the shed (the leak is the getting-bigger) · *Cosmological*

Holding is tension, and tension sheds. A held configuration is a tug-of-war frozen at the rope's middle, and the strain bleeds:

what it loses per tick is the shed – a fraction, not a substance; per-site, wherever traffic moves. The shed is not into anything: it is the perceived stretching itself. No centre, no substance, and the direction fixed by the axiom's plus sign. Expansion is the shed of holding the One.

Locus. AP46 §§2–4 Grade. Stated rule; consequences Structural

the tick (τ_C) and the pixel · *Cosmological*

The tick is the electron's own time, the reduced Compton time $\tau_C = \hbar/(m_e c^2) \approx 1.29 \times 10^{-21}$ s – the work's one clock (AP06's Lock; AP12's one record, one $\hbar$). The reduced form is a stated rule, named, with its lever shown: the unreduced time would give 86.9 Gyr. The pixel is one spatial grain per tick, $\xi = c \cdot \tau_C$, defined under Constraint; it does no work in the chain.

Locus. AP46 §5; AP48 §3 Grade. Stated rule

faces and gates; the duty (18/21) · *Cosmological*

AP28's twenty-one channels read at the sky. Eighteen face-projections, on which something actualized exists to shed from: the faces bleed. Three actualization gates, the now itself, which hold nothing to shed: the gates open and close. The shed escapes through eighteen α-transparent doors, one escape per α^{-18} ticks, and the faces bleed eighteen twenty-firsts of the service-cycle – the duty.

Locus. AP46 §6 Grade. Lemmas on a stated rule; Derived form

the cycle, and the lane · *Cosmological*

One full escape through the eighteen at the duty: $(21/18)\cdot\alpha^{-18}\cdot\tau_C$ = 13.830 Gyr (CODATA-2022 α and m_e; no fitted parameters; three structural choices stated as rules), against the measured age 13.787 ± 0.020 – +0.31%, our seat inside the window, not the claim's precision. An aware observer measures about one cycle, because awareness is late. The lane is one twenty-first of the cycle, 0.659 Gyr – one face-erasure, the atom the claim's width is cut from; AP42's dark clock is six lane-times of the same twenty-one.

Locus. AP46 §§7, 9; KS-STRETCH.3 Grade. Claim, frozen, one lane wide

intrinsic and effective (the settled limit) · *Cosmological*

The leak's own equation of state is intrinsic: the settled leak's fractional rate is a constant of structure, $w = -1$ – the fraction never changes; the payout grows, which is cosmic acceleration as compound interest. What a survey infers by fitting a non-interacting model to a sourced, settling sky is effective: AP42's fed reservoir (phantom in the past, $w_a < 0$) and the unfinished settling tail ($w > -1$ late, AP48's). The settled limit is the state after the hold has locked over all twenty-one and the storm's tail has died: the beat alone.

Locus. AP46 §§1, 8; KS-STRETCH.2 Grade. Frozen stance, with its two riders

the flip; the held distinction · *Structural*

The neutron is not the proton plus a thing: the same inventory – three couplings – with one sitting in the other orientation. What it holds is a distinction, the gap between where one coupling sits and where the balance would put it: a window held open against the wind that wants it shut. The cost is defined on flips; no flip, no cost; a ground state pays no distinction cost at any order (the proton is eliminated at 121,576σ).

Locus. AP47 §2 Grade. Definitional (a stated rule)

the window's leak (Δ_bare, Δ_real) · *Result*

The held grain leaks through the strained hold's own structure into the substrate at the substrate's rate: worth times rate, α^2; counted through the orientation pair's eight dimensional expressions (2 × 4, the temporal expression being the holding), 1/(8π). Δ_bare = 3(1 – 1/2π) + α(1 + 1/2π), the flip priced as free – fired 2 August 2026 at 7.24σ (KS-NPP.1). Δ_real = Δ_bare/(1 + α^2/8π) = 2.53098857035 m_e at CODATA-2022 α, against 2.530988574 ± 7.4 × 10^{-7}: –0.005σ; frozen beside the corpse as KS-FLIP.1, never in its place. The claim is the total, never the anatomy.

Locus. AP47 §§4–7 Grade. Order Derived-at-the-structural-register; divisor Derived; the row Empirical

the three postures of ε · *Structural*

The arena's splinter, held forever, never cycling; the Blink's slivers, spent per event; the flip's grain – held-and-leaking – held open across time, shedding continuously, terminally released when the window snaps shut. In a stable nucleus the window never snaps shut, and the hold sheds forever.

Locus. AP47 §3

the Assembly; the Assembled State · *Cosmological*

The six readings of the break assembling in three dimensions as a record – the eighteen channels – and the now. The work's initials read a second way: the AS is the Assembled State, the now as the completed assembly from which things happen. Actualization State and Assembled State are one object with two names – the one-axis pattern the family keeps finding.

Locus. AP48 §2 Grade. Stated rule

the storm · *Cosmological*

From the first record to the lock. Records write records, locally and in parallel, each at the bare rate – one per site per tick – so the census grows exponentially from the first record and propagation is unconstrained: the arena is the census. The ropes are the eighteen doors going up, together, on one clock, unevenly by a lean. Its length is a count of knots nobody has

(D-ASM.1); the serial timetable is dead (87 million years, shown).

Locus. AP48 §§1, 3 Grade. Derived on the stated linearity; the order a stated rule; the length Open

the lock, and the roof · *Cosmological*

The completion of the assembly: all twenty-one ropes taut, c engaged, the constants steady thereafter – taut at a reach and a count. The constants are not imposed; they are assembled: the constraint engages when its own structure completes, and c is a constant only from completion, because its constancy is set relative to the whole, which is held only once gravity holds it. The roof is the finite reach c/H the work already carried (AP21's extent; AP18 §2's recession-speed boundary). The roof's date is bounded by nature on both sides – on before the first nuclei, before the quasars – not derived.

Locus. AP48 §§1, 4; KS-ASM.3 Grade. Stated rule; the roof Canon; the count Open

the tail · *Cosmological*

The room's growth after the lock, answering the hold as the census thins – the two known eras, a ∝ t^½ then a ∝ t^⅔, and the late inheritance when the compounding leak outgrows the hold. Its shape as the observed equation of state remains AP42's D48.

Locus. AP48 §§1, 6, 9

the beat, two ways ($H_{\varepsilon}(t_0)$, $H_{\varepsilon,\infty}$) · *Cosmological*

$H_{\varepsilon,\infty}$: the leak's own constant fractional rate in the settled limit – AP46's stance. $H_{\varepsilon}(t_0)$: the leak's effective rate today under the balance. In the settled limit they coincide at 0.792 of the cycle's inverse; while the hold still settles, today's value may sit above the settled one by the tail, which is D48's.

Locus. AP48 §1

the census, and its two kinds · *Cosmological*

Everything written and persisting. A held record – a three-dimensional coupling with mass, the rock – pays the room as it grows: its share thins by three. A running reading – the line, light – pays the room and its own line: thins by four; the extra dimension is the SHED line's integral over the room's whole growth, which is why the relic glow is 3000 K stretched to 2.725 K. Three plus ε was raised and eliminated by the glow.

Locus. AP48 §§1, 6 Grade. Derived as counts

a thinning count · *Cosmological*

How many dimensions of the room's growth a kind of census pays as the room grows: three for a held record, four for a running reading. Under the balance a census thinning by n grows the room as t^(2/n) while it dominates: t^½, then t^⅔ – the sky's two shapes as the counts read back.

Locus. AP48 §§1, 6 Grade. Derived

the balance (the Friedmann equation) · *Result*

The 1:1 between the room's stretch and the census's hold at every instant, the cost always paid: stretch² = k·G·ρ + H_ε², k = 8π/3 on AP08's count. The square is forced by G's dimensions (out of G and a density exactly one rate can be made); flatness by two stated rules – the exactness of the 1:1 and the ε's placement as the constant term; the leak enters as its own rate squared, in the seat AP08 admits for Λ. It is the Friedmann equation for a flat universe with a cosmological constant – AP08's tensor form in the homogeneous case – and the paper says so where a physicist looks.

Locus. AP48 §5; KS-ASM.2 Grade. Stated rule (balance, flatness); Derived (the square); Identified (the equation)

the lean · *Cosmological*

The ropes tighten together but unevenly: wobbles, as some go taut differently to others, make a lean – direction, and concentrations of mass and light, the record history the now writes from – made by gravity, fed by it, and ended by gravity populating everywhere. Recorded as describing; its spectrum, which the sky measures to better than a per cent, is not claimed.

Locus. AP48 §3 Grade. Stated rule, as describing

the knot · *Cosmological*

One tick of resistance on the rope – the image for the storm's count: "one knot in the rope, one tick of resistance." The count of knots to the taut point, and the completing count, are one debt's two faces (D-ASM.1). AP30's image – the electron as one knot and the proton as 1836 – is the mass site's, not this.

Locus. AP48 §§1, 3

the click (two senses) · *Cosmological*

The work's word for the tick – and, in the image of the eye, for a lane; the two senses are marked where they occur. A full opening of the eye is twenty-one clicks, once over each channel: twenty-one lanes, AP46's cycle by construction; the image carries no information beyond the definition.

Locus. AP48 §§1–2

K (the curvature index) · *Notation*

The curvature index of the homogeneous metric, $K \in \{-1, 0, +1\}$; $K = 0$ by the two stated flatness rules, with the sky's curvature share consistent with zero at two parts in a thousand (the edge on KS-ASM.2). Firewall: K the curvature index; k the count in front of G ($8\pi/3$); κ the holding limit.

Locus. AP48 §5

the rope order (input B disposed) · *Cosmological*

The readings settle as constants in a logical order with no clock on it: propagation from the first click, constrained only to itself; direction with the second click; then, in proportion to the record history's size, mass, stiffness and resistance, time, gravity – gravity last, over all twenty-one – and c a constant only then, because c needs G to be constant. The primer's input B – whether the rope-gathering order is the era stages – is disposed: the eras are the tail after the lock; the rope order is the storm's internal structure before it.

Locus. AP48 §3 Grade. Stated rule

the closure (the rate) · *Result*

At the work's partition the balance fixes rate times age as a pure number – the standard closed form $H_0 t_0$ = (2/(3√Ω_Λ))·arcsinh√(Ω_Λ/Ω_m) = 0.954 at 31.15% held; the age is the cycle; so H_0 = 0.954 × 70.70 = 67.45 km s^{-1} Mpc^{-1}, window 64.4 to 70.8. A closure of two earlier landings (AP42's partition, AP46's cycle) under this paper's balance, not a fresh prediction; it could have failed in exactly one way – the ε's placement – and §7 shows that corpse. Nothing fitted; the three ingredients fixed in that order.

Locus. AP48 §8; KS-ASM.1 Grade. Derived, a closure

the settled rate (0.792) · *Result*

Under the balance and AP46's frozen stance the leak's settled rate is $H_0\sqrt{0.6885} = 0.954 \times \sqrt{0.6885} = 0.792$ of the cycle's inverse – 56.0 km s^{-1} Mpc^{-1} – made of the cycle, the partition and the balance and nothing else. The cycle's inverse, 70.70, is not a rate; AP46 set the pure number in front of it to one in two places, and the balance sets it to 0.792 (dated note, 4 September 2026).

Locus. AP48 §8 Grade. Counted

Λ as the closure in other units · *Result*

The seat AP08 admits for the cosmological constant is occupied by the same number: $\Lambda = 3H_{\varepsilon,\infty}^2/c^2 = 1.10 \times 10^{-52}$ m^{-2}, with $H_{\varepsilon,\infty} = 0.792$ of the cycle's inverse. Not a second result: if the closure holds, Λ follows; if the closure falls, so does it. AP08's KS-I.7 decides its switch at AP08's re-read.

Locus. AP48 §8; AP08 KS-I.7

the seam · *Cosmological*

What AP46 §9 opened: the work held a one-cycle age and a rate of 74.3 that the standard history says cannot both be true, and pre-registered that AP48 would derive the relation reconciling them or one edge of the family would fire. Closed by adjudication, not reconciliation: the relation is the standard one; the age survives; the previous rate does not; KS-45.1 fired

as pre-registered. The direction AP46 expected was the other way, and the miss is shown.

Locus. AP46 §9; AP48 §§8, 10

one expansion rate · *Cosmological*

Records are written at a consistent rate; it cannot speed up; it can write more records at once, which might look like speed and is not; the now's tug does not pull – it is just now. There is no structural mechanism in the work for a rate read from here and now to sit above the rate written in the record. So the Cepheid ladder's 73 is not the expansion rate: either that ladder's systematics are found, or AP48 dies on KS-ASM.1 – and on that edge flat ΛCDM at the sky's partition dies with it.

Locus. AP48 §10 Grade. Stated rule, narrowly

the horse, the handler, the ropes · *Metaphor*

An image of the beginning: a horse running into an arena as it is being assembled. The horse is propagation; the handler is the arena itself, built out of the records the horse writes as it runs; the ropes are the constraint – eighteen holding ropes that hold it stable, three tugging ropes, the now, engaged from the first click, that make it walk; taut is c engaged; a knot is one tick of resistance. When the building is up and the ropes go taut, the horse walks.

Locus. AP48, Artist's Note and §§3–4

Family 17 · The Hourglass (AP50–AP53)

The vocabulary of the wave of the four, September 2026: the picture of The Keys read as structure – the hourglass, the neck where it executes, the pupil that cannot see itself, and gravity as keeping in place. Definition, locus and grade; every term transcribed from its paper's own definitions.

the hourglass · *Structural*

Glass and sand, and both are the operator. The sand is the records, landed and landing; the glass is a held configuration of grains that holds and reads the sand – grains too, landed and held, configured as a boundary. Glass and sand are one kind of thing in two configurations. The neck is where they meet, and where the operator executes, now. The picture is The Keys' (December 2025, Book 1), where the shell is not passive housing but "the primary condition of coherence". What keeps the hourglass intact is the neck: G in its second role (AP50 §5).

Locus. AP51 §1; AP50 §5 Grade. Dated; Stated rule

the neck · *Structural*

"Where actualisation happens." Not a hole the grain passes through: the grain's own aperture – the grain read as the constraint – and, for the same reason, the glass's. Its boundary is a ring and the passage is through the disc, not

along it; with the grain's radius taken as the unit by a stated rule, the unpaired element's weight is one grain over its own disc: the 1/π. The ring at which all twenty-one channels converge, "like a magnet where the north and south fields converge"; what the twenty-one compound to; gravity in its second role. Where glass and sand meet; where the operator executes. In The Keys: "the only place where anything actually happens".

Locus. AP50 §§2, 5; AP51 §1 Grade. Derived (not a puncture; the form of the factor); Stated rules (the ring; through, not along; the neck as the grain's own aperture; the radius as the unit); the value 1/π from the stated rules

a crossing · *Structural*

Each grain that passes the neck, one per tick. A crossing writes one record: reading and gripping. Records are counted in crossings, never in breaks – the break is one and is held throughout (Ø Resolutions Two, corrected 24 September 2026: "n recorded crossings"). What flows is the sand; what is held is the break.

Locus. AP50 §§2, 5; Ø Resolutions Two; Ø Dissolutions Six Grade. Stated rule (24 September 2026); the counting Derived from the hourglass

the pupil · *Structural*

The opening. Ø Dissolutions: "The operator is the pupil" – the opening through which seeing is done, the point of orientation

that cannot see itself. In AP51: the one grain in the neck at this now, going into the process of being held – unreadable now; the +1×ε. The pupil cannot see the pupil: the reader is the one thing that cannot be read, because it has not landed. The Keys (December 2025) used the word for the lit chamber; that use is not the work's.

Locus. AP51 §5; Ø Dissolutions Ch.4 Grade. Derived from three stated rules; the identification new

keeping in place · *Structural / physics*

Gravity. "The structural property that keeps the grains in place relative to the record history, and gravity as a whole keeps all the record histories in place relative to one another" – over all twenty-one channels. Not a force on the grains. Its contrast is holding: coupling, "Alpha holds the record", at one channel. Coupling holds a record at one channel; gravity keeps a record history in place over all twenty-one, and the perceived weakness is the compounding (AP50 §5).

Locus. AP53 §1 Grade. Stated rule; the two registers Derived from AP50 §5, at the structural register; the smallness conditional on AP50's formula

Part IV · The Metaphor Reference

The work tells its structure twice: once in plain terms, once in pictures. The governing discipline is the contract of Rosin Ø Metaphor: each image carries one real thing, and the moment

a picture strains against the thing it carries, the picture is wrong. The images are not decoration - each is load-bearing or it is cut.

Where the work marks its certainty it does so in the sand: a solid line for a forced step, a gapped line for one that holds only if something else holds first, a short arrow for a flagged guess. Two images below carry the arrow explicitly (the Light Switch, the Key-Ring).

IV.1 · The foundational images (the Image Key)

The load-bearing few; the rest grow from them.

The grain of sand – the smallest thing: perfect balance plus the faintest possible flaw (1:1 + 1×ε); the whole foundation held in one hand. The work's central image.

The hourglass – glass and sand, and both are the operator: the sand the records, the glass the held configuration that holds and reads them, the neck where they meet and the operator executes, now (AP51 §1; The Keys, Book 1).

The desert – everything that could happen - the field of the possible before any of it is settled (the pre-state; $\mathcal{H}$; Ø).

The crack – the one tiny break in a perfect balance that lets anything happen (B, +ε); the doorway the world came through.

The fire – the telling itself, and the clock - fresh flame to grey ash marks how deep the argument has gone.

The staying – that what has happened cannot un-happen - the ink dries, the concrete sets (R; irreversibility; why time runs one way).

The limit – that nothing arrives everywhere at once - news of the crack travels at a top speed (C; c; why here differs from there).

The two sides – that there must be something to tell apart before anything can be marked - the coin before it lands (S).

The notebook – the record that stays and can be carried - the smallest thing that holds its shape (R; and the structural unit Notebook).

The light switch – that the lighting of a room and the seeing of it are one event - the inside and outside of a record are one (the consciousness claim). *Marked as an arrow - a guess.*

The window – a person: a place where the one light inside things looks out - many windows, one building (the operator; the one interior).

The building – the whole standing structure of the world - what must stand before anything can be marked (the arena).

The small heavy thing – the heart of every speck of matter, its weight fixed by the channels of the crack counted across it (mass; the electron mass; the 21).

The great pull – the bending of the whole road by what rests on it - the one crack spread over everything – which means conditional on everything, not divided among it (gravity; G; keeping in place, AP53 §1).

The channels – the fixed set of ways the crack runs through the structure - the forces are the crack heard through them (the 21).

The stone – a kill switch: the exact condition that, if it happens, ends a claim - laid by the fire and counted (a falsifier; one of the 604).

The line between you and another – the felt boundary that seems to wall one person off from the next - useful, drawn by a hand, not found in the ground (the illusion of the other).

IV.2 · The Story (Part One: the ten turns at the fire)

The whole shape told as it feels, while the fire is high and nothing has been proved.

The Building (1) – the structure any mark needs in order to be a mark; you are inside it, with no outside to have come from (the arena; AP10).

The Keys (2) – the four conditions that hold the building up - two sides, the break, the staying, the limit ({S,B,R,C}); not chosen, already turning before anyone asked. *Also the title of Edition 02, which derives* $c^2 = \beta/\alpha$ *- a distinct use.*

The Lock (3) – the shape that takes exactly these four keys and no others - remove any one and the world collapses (the minimality of {S,B,R,C}; KS-P.1/KS-P.2, AP20). *Also the title of Edition 04, which identifies* ε *with the electron and derives* $G = 2\kappa/m_e^2$.

The Door (4) – the break given its own telling - the smallest difference between the two sides, not nothing and not large; the twig on its point, then fallen (B).

The Key-Ring (5) – the four conditions hung on one ring, each holding the others up; a closed engine that runs, and the

running is what we feel as time (the cycle). *Marked with gaps - holds only if something else holds first.*

The Light Switch (6) – the lighting and the seeing arriving as one event; awareness as the physics felt from the inside. *Marked as an arrow - a guess.*

The Operator (7) – you are a place where the world turns a desert of possibility into one actual fact; a window where the one light looks out (the operator; AP02/AP43).

The Press (8) – the rosin press - bearing down on the flower until only the gold weeps out; why the books are called Rosin. The five voices are what was pressed from the million-word field. You press for yourself first.

The Code (9) – what cruelty costs you on the inside - a door shutting in a house you are standing in; kindness as the one move that does not narrow the house (the terminal ethic; AP43 §9).

The Garden (10) – dead ground given steady input until it arranges itself into order no one set down - the four keys turning with the lights on; and you are the garden (the autocatalytic loop; AP36, The Feed).

IV.3 · The Chain (Part Two: the nine proofs)

The same ground walked slowly, each claim marked for how sure it is allowed to be.

The Foundation (11) – the single grain again - the axiom set down as the one thing everything is built from (1:1 + 1×ε; Notebook I).

The Proof (12) – the one place the central if became a therefore - the structure of records and the structure of the world cannot be shown to differ, because every check is itself a record (the Embedding Hypothesis; AP20).

The Arena (13) – four sticks, three one way and one across - three spatial dimensions and one of time (AP10).

The Cosmos (14) – the band of stars, a desert of grains - the whole sky read from the one break (Notebook VI; the dark-sector split).

The Blank Page (15) – the worn notebook opened to a blank page - the now, the writing-edge where the next mark is made and the past is what is already written.

The Harmonics (16) – the sealed seed-pod, the water not yet spilled - the forces as the one break heard through its channels, the symmetry not yet broken into the families we

measure (electroweak structure; AP16 The Break (Electroweak), AP27 The Harmonics).

The Coupling (17) – the hand laid on the ground - the four-term interface through which a body reads the landscape: coupling capacity, pattern, pattern coherence, tracking coherence (AP43).

The Interface (18) – the keystone - the operator interface where the whole structure meets a life that can act (AP43; Notebook VII).

The Numbers (19) – five small stones on a slate - the physics the one break fixes from a single measured input without units (the derived constants; Ø Predictions).

IV.4 · Cross-work images

The Editions-register grounding and the metaphor stratum carried in the Artist's Proofs and the Five Doors.

A grain of sand / two jars of water / a fingerprint on a glass – the Editions-register's concrete physical grounding, placed before any abstraction so a reader can register a structural claim with the body (Mode 3.)

The torch beam, the building's light in every room, the floor plan – gravity is not weaker than electromagnetism, it is wider - electromagnetism couples through one channel, gravity through all twenty-one at once; the 10^{45} ratio is the number of rooms in the building, a floor plan (the hierarchy problem dissolved; AP28).

The river seen from above – the single process seen whole rather than followed step by step - the orienting picture of AP28's metaphor stratum (AP28).

The river and its banks – Architecture B reads the banks the river itself created; the terminal ethic is not walls moved in (authoritarianism) or flown apart (anarchy) but the banks the structure already cut (The Interior).

The kitchen image – the central picture of AP43: a sieve (the pre-state) full of flour (possibility) above a counter (the

amplitude landscape); each bump drops flour (records) onto the counter, and the operator is a piece of the counter reading the rest of it (AP43).

The 9 in the sand – the passage where the terminal ethic is drawn in the sand at the close of the operator interface; preserved verbatim (AP43 §9).

The 6 and the 9 – perspective and confirmation: a mark that is a 6 from one side and a 9 from the other, on one sand - the picture of why a self-reading system can confirm a wrong answer to each side (The Interior).

IV.5 · Image collisions and disambiguation

The Keys / The Lock – used two ways. As fireside images (Rosin Ø Metaphor): The Keys = the four conditions {S,B,R,C}; The Lock = the necessity-and-sufficiency of exactly four. As Edition titles: The Keys (Edition 02) derives $c^2 = \beta/\alpha$; The Lock (Edition 04) identifies ε with the electron and derives $G = 2\kappa/m_e^2$. Context disambiguates.

Part V · Naming, Casing and Spelling

The house-style rules of the body of work, collected. Live text follows these; historical version notes are preserved verbatim.

Authorship – The byline is always “G” only. The real name never appears in any output. Public attribution: artist and natural philosopher, Cape Town.

Body of work, not corpus – In all live text the work is the body of work or The 420 Code, never corpus. Historical version notes keep their original wording.

Notebook, not Part – The top-level bound division is a Notebook (I to VIII). The unit of the formal work is the Artist’s Proof (AP).

The symbol Ø – Always the zero-with-a-stroke Ø, never the letter O, for the empty set and the Ø Models.

Actualization / actualisation – Actualization State (American) is the fixed formal proper noun. Body prose uses British spelling: actualisation, realisation, behaviour. Curly apostrophes throughout.

B is Break, C is Constraint – Axiom B is the Break, never Boundary. Axiom C is Constraint - locality; bounded propagation is what it produces, not the term itself.

Zero free parameters – Always zero free parameters, never zero fitted parameters. There is one measured input without units: α_em. Three more, with units, set the scale.

The two alphas – α_em is the fine-structure constant ($\approx$ 1/137, the input). The apex-symmetry factor in the MOND floor ($\approx$ 1.0445) is a distinct quantity, written C_S^2 everywhere outside AP18's and AP21's own text, where it is written α (erratum of 3 September 2026). Never conflate.

The dark-sector headline – 69 / 26 / 5 (dark energy / dark matter / visible). Never 68 / 27 / 5; the Planck-2018 comparison is cited separately.

The value of G – One value: $G = \alpha_em^{21}(1 + 1/\pi)/(1 + \alpha_em) \cdot \hbar c/m_e^2 = 6.6719 \times 10^{-11}$ ($G \propto \varepsilon^{21}$) – AP28's count as AP44 completes it. AP28's first reading, the provisioned $\alpha_em^{21}(1 + 1/\pi)\hbar c/m_e^2$ (+0.69%), is withdrawn (21 September 2026) and kept on the record, dated; write it as the first reading, never as a value. The substrate scaling $G = \kappa/(\varepsilon\Lambda^2)$ is substrate-level, not the value. Never cite $G = \varepsilon^2 \cdot \hbar c/m_e^2$.

Length and counts – over one million words (1,111,420 verified). All counts defer to the MKSR (v5.41, 604), never to memory.

Voice order – Prose, then Conversation, then Metaphor, then Nursery Rhyme, then Declaration.

The expansion rate – 67.45 km s^{-1} Mpc^{-1}, window 64.4–70.8 (AP48, KS-ASM.1). Never 74.3 as the work's rate: that prediction fired on 3 September 2026 and is written only as a corpse, dated. Never "above both camps." The Cepheid ladder's 73 is stated as not the expansion rate.

Corpses – A fired switch is shown, never repaired, never deleted; the date and the sigma are stated at every mention (KS-NPP.1, 2 August 2026, 7.24σ; KS-45.1, 3 September 2026). A new structural limb is frozen beside the corpse as a new entry, never in its place.

The terminal ethic – Don't be a cunt. Be kind. Locked, load-bearing, never softened.

Part VI · The Falsification Register

Falsifiability is one of the five criteria the body of work is built to. Every load-bearing claim is exposed to a named condition that, if met, ends it - a kill switch. This part summarises the apparatus; the Master Kill Switch Registry (MKSR), v5.39, is the living authority, and every count here defers to it.

VI.1 · The count

604 kill switches across the body of work, counted as distinct switches - the same basis the bound Notebooks use. Section I: 320 across the 54 Artist's Proofs. Section II: 28 across the Five Doors. Section III: 256 across the Ø Models series. By status: 13 closed, 1 conditionally closed, 2 addressed, 1 derived, 1 paid, 2 fired, and 584 live. 13 + 1 + 2 + 1 + 1 + 2 + 584 = 604.

Within the 584 live: 6 non-negotiable, 5 open debt, 1 master, 1 critical, 1 superseded as a value and 1 registered - each counted inside the live total, not beside it. The paid switch and the 2 fired switches are counted outside it.

VI.2 · The distribution

Section I, by Notebook: I – 36 · II – 24 · III – 31 · IV – 65 · V – 24 · VI – 44 · VII – 34 · VIII – 62. Total 320. The 22 admitted at v5.27: AP44 (7), AP45 (4) in Notebook IV; AP47 (4) in Notebook V; AP46 (4), AP48 (3) in Notebook VI; KS-30.2 cross-listed in AP47 and counted once. Since: AP49 (3) in Notebook V at v5.28; AP30's KS-30.5 and KS-30.6 in Notebook V at v5.29; the wave of the four at v5.31 – AP50 (4), AP52 (4) and AP53 (3) in Notebook IV, AP51 (3) in Notebook VII; AP54 (2) in Notebook IV at v5.32.

Section II, the Five Doors: Antichristos 7 · The Relationship Corridor 11 · The Interior 1 · Being After Religion 9 · The Illusion of the Other 0 (gentle by design). Total 28.

Section III, the Ø Models: Dissolutions 61 (PZ-N.M) · Resolutions 66 (RES-N.M) · Horizons 68 (HOR-N.M) · Applications 61 (APP-N.M). Total 256. Ø Predictions enumerates 25, of which 5 are new physics switches registered in Section I under AP30 and AP42 (KS-30.4, KS-NPP.1, KS-NPP.2, KS-NPP.3, KS-42.6) and 20 are book-level applications of switches already in Section I; Predictions therefore adds nothing to the 256, and nothing is double-counted.

The PZ / RES / HOR / APP switches are publication switches, not derivation switches - the falsifiable condition under which each chapter's structural reading fails.

VI.3 · The statuses

LIVE - the claim stands exposed to its stated test; a dash qualifier marks the test's character (HARD, STRUCTURAL, EMPIRICAL, STAGED, DEPENDENT; from v5.27 also METHODOLOGICAL and DISCIPLINE) or the switch's standing. CLOSED - the falsification condition is discharged within the work. COND. CLOSED - discharged subject to a named in-work condition. ADDRESSED - the substantive argument is on file and the remaining gaps are named; not closed. DERIVED - established by derivation conditional on a named in-work dependency. OPEN DEBT - named and owed, no discharging argument yet on file. NON-NEGOTIABLE - constitutive of the architecture; firing it ends the work rather than amends it. MASTER - the governing switch of a standalone volume. CRITICAL - a switch whose firing damages the body of work's standing as a whole. PAID - discharged at the structural register by a stated rule; counted outside the live total, beside CLOSED. FIRED - the falsification condition was met; a shown death, counted outside the live total, never repaired, never deleted. REGISTERED - entered by one paper on behalf of a future one, fireable only when that

paper exists; counted as LIVE — DEPENDENT until met or fired. The full table is Appendix D.

VI.4 · The discharged and special-status switches, named

Closed (13) – KS-Q.6 ($\sigma \leftrightarrow$ complex conjugation, AP09); KS-7 (the Embedding Hypothesis, AP20); KS-P.4 (Quantum-Record Alignment, AP20); KS-2c / KS-I.6 (N = 3 spatial dimensions, AP10); KS-15 / KS-D.2 (axiom-to-dimension assignment, AP10); KS-16 (completeness of {S,B,R,C}, AP10); KS-Q.8 / KS-L.1 ($\hbar$ identification, AP12 – closed on a stated rule, by construction; §1.3 regraded 12 September 2026); KS-28 (phase-group uniqueness U(1), AP15); KS-29 (Maxwell uniqueness, AP15); KS-45.2 (dipole topology, AP18); KS-49a (hidden variables, AP23); KS-42 (tension field equation, AP17); KS-STRETCH.4 (the era surface, registered by AP46 for AP48, met at AP48 §9 – contingent on KS-ASM.2). Several are contingent closures - they rest on a named live obligation, cited on the row.

Fired (2) – KS-NPP.1 - the bare neutron–proton row (AP30), 2 August 2026, 7.24σ; AP47's KS-FLIP.1 frozen beside it. KS-45.1 - the Hubble prediction $H_0 = 74.3 \pm 1.2$ (AP18), 3 September 2026, fired by AP48 on the work's own derived rate; AP18's erratum on its width beside it; KS-ASM.1 the

work's H_0 entry. Shown, never repaired, never deleted; counted outside the live total.

Conditionally closed (1) – KS-Q.1 - the Born rule derivation (AP09), conditional on KS-Q.7.

Addressed (2) – KS-46B - the AQFT bridge (AP22): the bifurcation tension is discharged via Sewell 1982, but the full bridge carries small named gaps, so it is addressed, not closed. KS-46C - operator identification, $\sigma\hat{} = J$ (AP22).

Derived (1) – KS-46A - boundary identification (AP22), conditional on AP17; it closes if and when the fences of that dependency hold.

Paid (1) – KS-30.3 (AP30, the higher-order terms) - discharged at the structural register by AP49, 6 September 2026; counted outside the live total, beside the closed.

Registered (1) – KS-ALPHA.2 (AP54, the uniqueness obligation) - entered on behalf of a future value paper, fireable only once a normalisation exists; counted within the live total as LIVE — DEPENDENT.

Non-negotiable (6) – KS-32.7 (dehumanisation - the moral kill switch); KS-33.7 (enhancement weaponisation); KS-33.8 (continuation-budget corruption); KS-33.9 (one-I violation, AP33); KS-38.6 (disability conflation); KS-39.6 (one-I violation, AP39). Firing any one ends the work.

Master (1, counted) – KS-AC.6 (Antichristos) - architecture-sorting-equivalence: if Architecture B sorts the way Architecture A sorts in any tested domain, the book's argument fails. Chapter-masters KS-31.7, KS-38.8 and KS-39.1 are named in their own registers but not counted in the global master tally.

Critical (1) – KS-39.5 - a switch whose firing damages the body of work's standing beyond its origin paper.

Open debt (5) – KS-60, KS-65, KS-66, KS-67 in Section I - named and owed, no discharging argument yet on file; and KS-ID.1 (The Interior) in Section II, paid at the structural register (AP51 §2), its topological formalisation owed at D-ID.1.

Superseded as a value (1) – KS-R.6 (AP03) - AP03's substrate scaling of G, superseded as the value by AP28's count as AP44 completes it; see correction B1 in the body of work's corrections list.

VI.5 · Registry notes

Label collisions (disambiguate by origin) – Two stand: KS-L.1–L.4 (AP06 Leakage vs AP12 Limit) and KS-54 (AP21 vs AP23). Any external cross-reference must carry its origin - e.g. "KS-L.1 (AP06)" vs "KS-L.1 (AP12)." All other collisions are resolved.

The Coupling Theorem – KS-COUP.1 (AP02) - net-positive containment: the persistent set is confined to the net-positive class, and net-negative, parasitic, or defecting configurations reach the no-return surface (Theorem VI.2, DERIVED-CONDITIONAL; admitted v5.23). This is the switch that took the registry from 559 to 560.

The Crossing – KS-BAR.9 (Being After Religion): the on-page step from geometry to obligation, anchored in Paper D's operator-required charger and AP02's Theorem VI.2 (admitted v5.26). This is the switch that took the registry from 560 to 561.

The post-AP48 build – v5.27 (4 September 2026). One wave, once: AP44's seven, AP45's four, AP46's four, AP47's four and AP48's three admitted (561 → 583); FIRED and REGISTERED added to the status taxonomy; KS-NPP.1 and KS-45.1 shown fired; KS-STRETCH.4 met and closed; D5 closed on three proofs; D-STRETCH.1 and D-CCC.4 paid; D-ASM.1, D-CCC.1, D-CCC.2, D-BLINK.1, D-BLINK.2 open. Every count recomputed from the registry's rows.

Since v5.27 – v5.28 (6 September 2026): AP49 The Hold admitted, three switches (583 → 586), and PAID added to the statuses; v5.29 (built 7 September 2026): two switches on AP30 (586 → 588); v5.30 (7 September 2026): a dating erratum, no count moves; v5.31 (11 September 2026): the wave of the four, fourteen switches (588 → 602); v5.32 (13

September 2026): AP54's two (602 → 604), and the first-principles derivation of α (AP24's D1) enters the debts; v5.33 (18 September 2026): the one interior stands as the floor; v5.34 (21 September 2026): one value of G, AP28's first reading withdrawn, and no count moves; v5.35 (21 September 2026): four rows say what they mean; v5.36 (23 September 2026): AP31's two dated notes – KS-31.2's claim sharpened at the structural register with its test bounded to three drift-times, KS-31.7's reading adopted; v5.37 (24 September 2026): D-ID.1 CLOSED – the one interior is the floor and the formal topological statement AP43 §9 named is not owed – KS-APP5.2 sharpened by dated note, and the word "corpus" out of the registry. No switch enters, no status and no count moves at any of the three; the debts table reads five outstanding, two closed. Every count recomputed from the registry's rows.

The registry's own invitation stands at the head of its list: if you want to kill the argument, start here.

Canon-Resolution Log

Where the body of work drifts across volumes, or a symbol carries more than one meaning, the canonical form is resolved here. Each item gives the resolution, then the detail.

1. C – Constraint, not "bounded propagation"

Canon: C = Constraint: a record is somewhere, not everywhere. Bounded propagation is what Constraint produces, not what it is.

The superseded phrasing "C – bounded propagation, finite speed/rate" appears in the Key Structural Vocabulary of Ø Dissolutions, Ø Resolutions and Ø Applications. Anchor: Notebook I KSV; Ø Horizons and Ø Predictions already use Constraint. Resolution: replace with Constraint in those three appendices.

2. The value of G

Canon: $G = \alpha_em^{21}(1 + 1/\pi)/(1 + \alpha_em) \cdot \hbar c/m_e^2$ (AP28's count, AP44's holding; Notebook IV) – $G \propto \varepsilon^{21}$, parameter-free, 6.6719×10^{-11}. AP28's first reading, $\alpha_em^{21}(1 + 1/\pi)\hbar c/m_e^2$ at +0.69%, withdrawn 21 September 2026 (see 12 below).

Retained at a different architectural level: $G = \kappa/(\varepsilon\Lambda^2)$ (AP03, substrate-condensate scaling, ε^{-1}) and $G = 2\kappa_hold/m_e^2$ (Notebook II Ch.4 holding-limit form, bridged by $2\kappa = \alpha_G * \hbar c$

= $\alpha_em^{21}(1 + 1/\pi)\hbar c/(1 + \alpha_em)$). Reject as canon: $G = \varepsilon^2 \cdot \hbar c/m_e^2$ (the L55/F18 hallucination). Note: AP03's original $c/G \propto \varepsilon^2$ was corrected to $c/G \propto \varepsilon$.

3. The dark-sector partition

Canon: 69 / 26 / 5 (dark energy / dark matter / visible).

The phrasing 68 / 27 / 5 (Planck-2018 match) appears in Notebook II (dark-sector-connection section). Resolution: align display figures to 69/26/5 across the body of work, noting the Planck-2018 comparison separately.

4. ε – two identifications, not a contradiction

Canon: ε is one object with two facets, plus a distinct same-symbol quantity.

$\varepsilon \leftrightarrow \alpha_em$ is the magnitude of the break (Notebook I: "in our universe ε is identified with $\alpha_em \approx 1/137.036$"). $\varepsilon \leftrightarrow$ the electron is its minimum stable excitation, via The Lock (Notebook III). These are facets of one object (magnitude vs minimal physical excitation), not competing definitions. Separately, ε as operational tolerance (Notebook I App.E) is a different quantity sharing the symbol.

5. AS – two readings under one name

Canon: AS-the-prior and AS-the-quantity are related but distinct; the glossary holds both under one headword.

AS-the-prior is the foundational structural now, with no numerical value. AS-the-quantity is the operational scalar $\in [0,1]$ (Notebook I Ch.2, D3).

6. a_0 – which figure is the headline

Canon: The parameter-free MOND-scale prediction is AP18's sharpened value (exact coefficient $\alpha/(2\pi) \approx 0.1662$).

AP17's ≈8% first-order value is the mechanism, not the headline.

7. The symbol κ

Canon: Three distinct quantities share the symbol; context disambiguates and the glossary tags each at its locus.

Surface gravity of a Schwarzschild black hole ($\kappa = c^4/4GM$, an acceleration); the holding limit of the pre-state (the Lock's κ, in $G = 2\kappa/m_e^2$); and the backreaction coupling (in $G = \kappa/(\varepsilon\Lambda^2)$, AP03).

8. Spelling and typography

Canon: Actualization State (American) is the fixed formal proper noun across the body of work; body prose uses British spelling.

British in body: actualisation, realisation, behaviour. Curly apostrophes throughout. "over one million words."

9. The kill-switch count and version

Canon: the Master Kill Switch Registry is at v5.41 (15 November 2026), 604 kill switches - 320 across the 54 Artist's Proofs, 28 across the Five Doors, 256 across the Ø Models (584 live; 13 closed, 1 conditionally closed, 2 addressed, 1 derived, 1 paid, 2 fired; 6 non-negotiable). Any earlier count (the v5.31 figure, 602, and before) is superseded; defer to the MKSR, never to memory.

10. The expansion rate, and the corpse of 74.3

Canon: the work's expansion rate is AP48's closure, H_0 = 67.45 km s^{-1} Mpc^{-1}, window 64.4–70.8 (KS-ASM.1). The former prediction, 74.3 ± 1.2 (KS-45.1, AP18), fired on 3 September 2026 and is written only as a corpse, dated.

Every locus that carried 74.3 as the work's rate, or its posture ("above both camps"; "sub-percent at 74"; "exact at 74.3"), is moved at the wave by dated note – AP18's erratum, AP21's and AP17's echoes, AP46's four sentences, AP42 §4.2/§5, the scoreboard, the site, the Rosin print set. The Cepheid ladder's 73 is stated as not the expansion rate; the relic glow's 67.4 and the red-giant ladders sit inside the window. Ø Predictions itself is not edited: it becomes the record of what was predicted, and Ø Frozen Predictions carries the dated supersession.

11. The apex-symmetry factor is C_S^2

Canon: the geometric correction factor $2\ln(\sec\tfrac{1}{2} + \tan\tfrac{1}{2}) \approx 1.0445$ is written C_S^2, never α, outside AP18's and AP21's own frozen text.

AP18 writes the factor α and AP21 echoes it; the symbol collides with the fine-structure constant. The website already writes C_S^2 with the note that it is not the fine-structure constant; the registry and this glossary follow the site (erratum of 3 September 2026); the papers follow at their next revision.

12. The value of G, realised

Canon: the value the work stands behind is AP44's realised G = $\alpha_{em}^{21}(1 + 1/\pi)/(1 + \alpha_{em}) \cdot \hbar c/m_e^2 = 6.6719 \times 10^{-11}$ (−0.036%), and it is the only one. AP28's first reading (+0.69%) omitted the arena's holding of the break; withdrawn on 21 September 2026, superseded and kept on the record, dated.

The work's dated public position on G is KS-CCC.3's direction test: the adjusted value migrates toward 6.672 as systematics close, and stability at 6.6743 supports the null; convergence upward toward 6.7206 kills the prediction outright, with no fallback. There is no fork (21 September 2026) – and never the bare 0.69% again.

13. The neutron: the corpse and the row beside it

Canon: the bare row 2.53099393 m_e is a corpse (KS-NPP.1, 2 August 2026, 7.24σ), stated with its sigma at every mention; the row the work stands behind is AP47's Δ_real = 2.53098857035 m_e (KS-FLIP.1, −0.005σ), frozen beside it.

Every occurrence that once read "about two parts per million" without the measurement's own precision reads as agreement and is corrected to state the sigma (errata of 2 August 2026). Nothing repairs the fired row.

Master A–Z Index

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Appendices

Appendix A · The 54 Artist's Proofs

Titles per the Master Kill Switch Registry (v5.39). The Notebook column gives each Proof's bound home in the catalogue; AP44–AP48 enter at the wave of 4 September 2026, AP49 on 6 September, AP50–AP53 at the wave of the four on 11 September, and AP54 on 13 September 2026.

AP	Title	Notebook
AP01	The Actualization State	I
AP02	The Operator	VII
AP03	The Ratio	II
AP04	The Loop Hypothesis	VI
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AP19	The Direction	IV
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AP24	The Residual	IV
AP25	The Measure	III
AP26	The Surplus	V
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AP28	The Constant (Gravity)	IV
AP29	The Actualization Proof	VII
AP30	The Resistance (Mass)	V
AP31	The Alignment	VIII
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AP39	The Scaffold	VII
AP40	The Irrational	I
AP41	The Loop	VI
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AP43	The Gravity of Possibilities	VII
AP44	The Snap	IV

AP45	The Blink	IV
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Appendix B · The Five Doors

Book	Door	Kill switches
Antichristos	The Sacred Door	7
The Relationship Corridor	The Personal Door	11
The Interior	The Operational Door	1
Being After Religion	The Front Door	9
The Illusion of the Other	The Gentle Door	0 (by design)

Five Doors total: 28 kill switches (MKSR v5.39).

Appendix C · The Ø Models

Volume	Role	Kill switches
Ø Predictions	The falsifiable, physics-facing volume	25 enumerated (5 new, in Section I)
Ø Dissolutions	Classical problems dissolved	61 (PZ-N.M)
Ø Resolutions	Further problems resolved	66 (RES-N.M)
Ø Applications	The Architecture-B civilisational volume	61 (APP-N.M)
Ø Horizons	The closing volume	68 (HOR-N.M)

Ø Models series total: 256 (Dissolutions 61 + Resolutions 66 + Horizons 68 + Applications 61). Ø Predictions' five new physics switches are registered in Section I (under AP30 and AP42) and are not part of the 256; its other 20 enumerated switches are book-level applications of switches already in Section I. (MKSR v5.39.)

Appendix D · Kill-switch statuses

Status	Meaning
LIVE	Exposed to its stated test (dash qualifiers: HARD, STRUCTURAL, EMPIRICAL, STAGED, DEPENDENT; from v5.27 also METHODOLOGICAL, DISCIPLINE).
CLOSED	The falsification condition is discharged within the work.
COND. CLOSED	Discharged subject to a named in-work condition, cited on the row.
ADDRESSED	The substantive argument is on file; remaining gaps are named; not closed.
DERIVED	Established by derivation conditional on a named in-work dependency.
OPEN DEBT	Named and owed; no discharging argument yet on file.
NON-NEGOTIABLE	Constitutive of the architecture; firing it ends the work (6 total).
MASTER	The governing switch of a standalone volume.

CRITICAL	Firing damages the body of work's standing as a whole.
PAID	Discharged at the structural register by a stated rule; the discharging argument is on file, graded at its origin; counted outside the live total, beside CLOSED (first instance: KS-30.3, paid by AP49).
FIRED	The falsification condition was met. A shown death: on the board, counted outside the live total, never repaired, never deleted; a new structural limb may freeze beside it as a new entry (2 total: KS-NPP.1, KS-45.1).
REGISTERED	Entered by one paper on behalf of a future one; fireable only when that paper exists; counted as LIVE — DEPENDENT until met or fired (first instance: KS-STRETCH.4, met and closed at v5.27).

Appendix E · Epistemic grades

Grade	**Meaning**
DERIVED	Forced from the axioms via a complete chain.
STRUCTURAL	Follows from the architecture but not yet formally derived end-to-end.
IDENTIFICATION	A structural mapping.

PREDICTION	A testable empirical prediction.
EMPIRICAL	Rests on, or is testable by, measurement (the single input: α_em).
CONJECTURAL	Not yet derived; fenced as conjecture.
SCOPE-NOTE	A scoping statement (replaces the former FRAMING label).
DERIVED-AT-THE-STRUCTURAL-REGISTER	Every step cites a locked result and the argument closes at the structural register; its formal (record-algebra) statement is owed as a named debt (AP44 §3, AP45 Theorem 1, AP47 §4).
STATED RULE	Fixed by a stated rule, and graded so; a stated rule is not a derivation and is exposed on its own switch (the cost family; AP48).
CANDIDATE / MOTIVATED / SELECTED	The family's lesser grades: a claim held open (candidate); an assignment argued but not forced (motivated); a value chosen among structural candidates with the selection booked on its face (selected).
IDENTIFICATION / INTERPRETIVE	A structural mapping claimed as such, never as a prediction (the Born identification); a reading graded interpretive, worn openly (the one interior as the seat of the held ε).

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