

Correctness, proof completeness, novelty, and source audit

Winning property of counterexamples to Uniform Littlewood’s Conjecture

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Paper	arXiv:2608.24401v2
Source version	Submitted 3 September, 2026; v1 submitted 25 August, 2026; announced August 2026.
Audit date	October 24, 2026
Prompt	Standardized prompt
Novelty cutoff	August 25, 2026
Paper license	See the arXiv abstract page for this version
Scope	Statements, proofs, novelty, and proof-critical source use

Important limitation. AI-generated analysis. This report is not a correctness certificate or a substitute for expert scrutiny. A green 'no issues found' label may coexist with yellow suspected typos or minor formal issues that do not affect substantive soundness. It means that this audit found no unresolved substantive error under the stated criteria; it is not formal verification and should remain open to expert challenge and correction.

SUMMARY

01	Statements	No statement issues found
02	Proofs	No proof issues found
03	Novelty	No novelty concerns found
04	Sources	Further source verification needed

This independent report links to the source paper on arXiv; it does not reproduce or redistribute that paper.

01 / STATEMENTS

Statements

No statement issues found

The ambient hyperplane-absolute-winning theorem, its fixed-sequence refinement, the curve and line restrictions, the homogeneous-dynamics formulations, and the two active appendix examples have compatible hypotheses and conclusions in arXiv:2608.24401v2. No false, ill-posed, or materially overstated central statement was found.

Theorem 1.2 and Corollaries 1.3–1.4: The ambient winning and full-dimension conclusions follow

PDF pp. 2–3 and 9–22 · Theorem 1.2, Corollaries 1.3–1.4, and §§3–5 · arXiv:2608.24401v2

No issue found

Failure of the target inequality is covered by the dangerous rational rectangles of Lemma 3.1. The weighted attached-line and simplex lemmas concentrate every same-scale family in controlled affine-line neighborhoods, Propositions 4.1–4.2 keep their total potential within Alice’s allowance, and the stage strategy eventually treats every dangerous family. Hyperplane-potential winning therefore gives HAW for E . The zero-dimensional ordinary Littlewood exceptional set and countable-intersection stability then give both corollaries, including endpoint weights.

Theorem 1.6: Power-rapid fixed sequences give HAW intermediate sets

PDF pp. 3–4 and 22–25 · Theorem 1.6 and §6 · arXiv:2608.24401v2

No issue found

The structured cubic-gap strategy treats $Q_{m+1}/Q_m^3 \rightarrow \infty$. If $Q_{m+1} \geq cQ_m^\tau$ with $\tau > 1$, choosing k with $\tau^k > 3$ makes each residue-class subsequence cubic-gap, and $E_{\mathbf{Q}}$ is exactly the finite intersection of the corresponding residue-class targets. HAW stability under finite intersections proves the theorem with the stated quantifiers.

Theorems 1.7–1.8: The curve and line restrictions have the claimed winning behavior

PDF pp. 4 and 25–29 · Theorems 1.7–1.8 and §7 · arXiv:2608.24401v2

No issue found

On coordinate arcs, structured ambient deletions pull back to legal interval deletions unless the outcome is already outside the auxiliary dual badly approximable set. That auxiliary set is HAW by the An–Beresnevich–Velani curve theorem and the one-dimensional winning equivalence; closed derivative-exception sets are removed using Lemma 2.3. For lines, the printed exponent $2 - \varepsilon$ is exactly the $i = j = 1/2$ case of the cited line theorem. On rational lines, convergent denominators make the relevant product tend to zero, proving the empty-intersection branch.

Theorems 1.9 and 1.11, Corollary 1.10, and Appendix A: The dynamical translations and independence examples have the claimed scope

PDF pp. 5 and 30–35 · §1.4 and Appendix A · arXiv:2608.24401v2

No issue found

The standard unipotent chart translates the ambient, weighted-ray, and curve results to the stated torus. In Appendix A, the complement of the one-dimensional Sierpiński gasket is not ambient HAW but is HAW on every curve in the theorem’s class, while the pullback of $\mathbb{R} \times \text{Bad}$ under $(x, y) \mapsto (x, y - f(x))$ is ambient HAW and misses a nonzero-curvature level curve. These give the two advertised directions of independence.

02 / PROOFS

Proofs

No proof issues found

All central internal arguments close in the current version. The audit checked the dangerous-set decomposition, multiweight determinant bounds, both potential estimates, trigger-time strategy, cubic and residue-class deductions, the full curve-transfer chain, the two line cases, and both active appendix constructions. No proof gap requiring a repair was found.

Lemmas 3.1–3.6: The dangerous-set decomposition and simplex bounds preserve the required inequalities

PDF pp. 9–14 · §3 · arXiv:2608.24401v2

No issue found in the reviewed proof

The product inequality is divided into the interior weighted rectangles and the two coordinate strips, with the cutoff term handled separately. Primitive attached lines have the printed coefficient bounds. For rational points in one scale cell, the relevant incidence determinant is an integer of absolute value less than one and hence vanishes; weight symmetry and the strip cross-product argument cover the remaining cases. The resulting one- or two-line neighborhoods have exactly the radii used later.

Propositions 4.1–4.2 and §5: The potential budgets and stage strategy are legal

PDF pp. 15–22 · §§4–5 · arXiv:2608.24401v2

No issue found in the reviewed proof

The denominator and height partitions cover every dangerous set and have finite active cells. The line-neighborhood radii form geometric sums with the required decay, and the choices of R , η , and the cutoffs put each contribution inside Alice's budget. The trigger index is unique at a turn, all finite-height families are eventually triggered when Bob's radii shrink, and nesting transports each deletion to the stage endpoint. Thus every non-default outcome lies in E .

Lemma 6.2 and proof of Theorem 1.6: The structured strategy retains the coefficient control needed on curves

PDF pp. 23–25 · Lemma 6.2 and proof of Theorem 1.6 · arXiv:2608.24401v2

No issue found in the reviewed proof

The strategy makes $r\xi(L)|AB|$ arbitrarily small by choosing the auxiliary parameter before play. The attached-line inequalities $|AB| \leq q$ and $q\xi(L) < R^{j+1}$ give the displayed uniform control for every deleted tube. The next cubic scale is large enough for the induction, and the residue-class intersection is exactly the original liminf target rather than merely a subset.

Lemma 2.3: The open-submanifold patching lemma is valid as stated in v2

PDF p. 8 · Lemma 2.3 · arXiv:2608.24401v2

No issue found in the reviewed proof

The lemma assumes that $M' \subset M$ is closed, so $M \setminus M'$ is an open manifold on which the restricted game is defined. Intersection with the HAW complement and upward closure give one implication, while restriction gives the converse. The exceptional zero sets used in §7 are explicitly closed, so every application satisfies the lemma.

Lemmas 7.1–7.5: The ambient-to-curve transfer closes with the stated constants

PDF pp. 25–29 · §7 · arXiv:2608.24401v2

No issue found in the reviewed proof

When the derivative of $AX + BY + C$ is large, the mean-value theorem confines a tube pullback to an interval of radius $2\sqrt{2}r/m$. If it is small, regularity forces $|AB| > \xi^2 m/(2M)$, and the structured coefficient estimate makes every tube point leave D_c . Shadow balls are nested and legal; choosing $4M\tilde{\beta}/m \leq \beta$ gives the one-dimensional budget. Transference identifies D with the pullback of $\text{Bad}(1/2, 1/2)$.

Proof of Theorem 1.8 and Appendix A: The line estimate and both active examples are complete

PDF pp. 29–35 · proof of Theorem 1.8 and Appendix A · arXiv:2608.24401v2

No issue found in the reviewed proof

For rational a, b , the convergent denominators $q'_k = dq_k$ make both coordinate errors $O(1/q'_{k+1})$, so their product times every intermediate cutoff tends to zero. The Sierpiński-gasket example combines projection rigidity, Furstenberg microsets, homogeneity, Frostman restriction, and diffuse-set winning in a consistent order. The second example is the image of a product HAW set under a C^1 diffeomorphism and is disjoint from the chosen graph. An extra construction present only inside an inactive source block is excluded from the public v2 audit and graph.

03 / NOVELTY

Novelty

No novelty concerns found

No non-novelty findings.

04 / SOURCES

Sources

Further source verification needed

The direct game-theoretic, Diophantine, dynamical, curve, line, and active fractal inputs were checked in exact versions or explicit public proof-bearing fallbacks and match their uses. The recursive graph nevertheless has nine disclosed original-proof access limits: five inherited from the ordinary Littlewood dimension branch and four in the active Sierpiński projection branch. Exact downstream statements and applicability were checked, but they do not replace inspection of those original proofs.

Direct game, Diophantine, curve, and line inputs: The selected source theorems apply with the printed hypotheses

Focal PDF pp. 2–3, 7–9, 11–14, and 25–29 · arXiv:2608.24401v2

Applicable and sufficient

Broderick–Fishman–Kleinbock–Reich–Weiss and Fishman–Simmons–Urbański supply the HAW closure and potential-game facts. An and Badziahin–Pollington–Velani supply the attached-line and dual transference inputs; Nesharim–Simmons includes endpoint weights. An–Beresnevich–Velani Theorems 2.1 and 1.2 give the curve and line winning results, and Badziahin–Harrap–Nesharim–Simmons gives the one-dimensional absolute-winning upgrade. Their hypotheses match the focal uses.

Littlewood and homogeneous-dynamics inputs: The exact downstream theorems give the claimed translations

Focal PDF pp. 2–5 and 22–23 · Corollaries 1.3–1.4, Lemma 6.1, and §1.4 · arXiv:2608.24401v2

Applicable and sufficient

Einsiedler–Katok–Lindenstrauss supplies the zero Hausdorff dimension of ordinary Littlewood exceptions and the orbit formulation. Bandi–Fregoli–Kleinbock gives the uniform multiplicative/fiberwise-divergence correspondence, while Kleinbock gives the endpoint-inclusive weighted bounded-orbit correspondence. Their coordinate conventions agree with the focal chart up to harmless permutations.

Margulis–Tomanov input: The original measure-rigidity proof remains unverified

Recursive source branch for Einsiedler–Katok–Lindenstrauss Theorem 1.5 · arXiv:2608.24401v2

Not independently verified exact source proof

The exact downstream article restates the Margulis–Tomanov results and checks their hypotheses, supporting the focal invocation. A proof-bearing copy of the original Margulis–Tomanov article was not accessible, so its original proof was not independently verified.

Verifiable source: Margulis and Tomanov, *Journal d’Analyse Mathématique* 69 (1996), 25–54

Prasad–Raghunathan and Ratner inputs: Two original proofs in the recursive compactness branch remain unverified

Recursive branch through Einsiedler–Katok–Lindenstrauss and Lindenstrauss–Weiss · arXiv:2608.24401v2

Not independently verified exact source proofs

The exact downstream articles identify the compact-support and orbit-closure statements and apply them with compatible hypotheses. The proof-bearing Prasad–Raghunathan 1972 and Ratner 1991 articles remained behind official access gates; their two original proofs were not inspected.

Verifiable source: Prasad and Raghunathan, *Annals of Mathematics* 96 (1972), 296–317

Dani and Moore inputs: Two older proofs in the recursive Mautner branch remain unverified

Recursive source branch through Shah 1991 and Moore 1980 · arXiv:2608.24401v2

Not independently verified exact source proofs

Exact downstream versions identify and apply the required Dani 1977 and Moore 1966 statements. The original proof-bearing articles were not accessible through their official records. No statement or hypothesis mismatch was found, but those two original proofs remain unverified.

Verifiable source: Moore, *American Journal of Mathematics* 88 (1966), 154–178

Sierpiński projection branch: Four recursive originals behind projection rigidity remain access-limited

Focal PDF pp. 30–33 · Appendix A, Example 1 · chain through Shmerkin Corollary 6.3 and Hochman Theorem 1.6 · arXiv:2608.24401v2

Not independently verified all exact source proofs

The exact Shmerkin and Hochman *Annals* articles, the Käenmäki–Ojala–Rossi arXiv fallback, the Käenmäki–Rossi version of record, and the cited terminal books were inspected at the selected claims. Full recursion stops at Bourgain’s implicit discretized structural theorem, Lau–Ngai Proposition 3.2, Kingman’s subadditive theorem, and Esseen’s Berry–Esseen estimate. Their roles are explicit downstream, but the four original proofs were not all available.

Verifiable source: Shmerkin, *Annals of Mathematics* 189 (2019), 319–391

Terminal published books: The remaining recursive branches end at identified standard monographs

Dependency graph terminal layers · arXiv:2608.24401v2

Applicable and sufficient

The graph stops transparently at published books for König’s lemma, Frostman’s lemma, additive combinatorics, differentiation and conditional-expectation limits, ergodic limits, recurrence, and standard homogeneous-dynamics background. They are marked as terminal sources rather than presented as freshly re-audited original proofs.

METHOD

Scope and decision rules

This audit addressed only the correctness of central statements, the correctness and completeness of proofs, evidence-backed non-novelty, and the correctness and completeness of proof-critical source use. It did not evaluate importance, exposition, style, suitability for publication, or author reputation.

An adverse finding is included only where the report can give a direct calculation, counterexample, formal contradiction, or a verifiable source establishing the precise claim. An inability to verify is kept distinct from a demonstrated defect. Technical compression is not treated as incompleteness when the omitted reasoning is recoverable and correct.

Before any finding was recorded, the argument was closed under immediate, mechanically checkable consequences of facts already established. An observation was suppressed when the printed conclusion followed by elementary logic, direct substitution, weakening, inclusion, or verified monotonicity and no substantive proof obligation or textual correction remained.

Suspected typographical errors and minor formal issues remain fully visible in yellow with their locations and proposed repairs. When such a defect is unambiguous, local, and harmless to the paper's substantive conclusions, it does not lower the overall statements or proofs result from green (no issues found).

The novelty panel reports only central results for which a verifiable primary source predating the earliest public version that contains the result proves the same statement up to notation, or from which the statement follows directly and immediately. It contains no positive novelty certifications and no entries based merely on an unsuccessful literature search.

All mathematical expressions in this report are compiled by LaTeX. The web presentation independently validates and renders the corresponding expressions with KaTeX.

Sources checked

1. Source paper: [arXiv:2608.24401v2](#)
2. Margulis and Tomanov, *Journal d'Analyse Mathématique* 69 (1996), 25–54
3. Prasad and Raghunathan, *Annals of Mathematics* 96 (1972), 296–317
4. Moore, *American Journal of Mathematics* 88 (1966), 154–178
5. Shmerkin, *Annals of Mathematics* 189 (2019), 319–391

arXiv acknowledgement

Thank you to arXiv for use of its open access interoperability. This service was not reviewed or approved by, nor does it necessarily express or reflect the policies or opinions of, arXiv.

APPENDIX

Standardized prompt and in-depth source supplement

You are a mathematical auditor. Evaluate only the correctness of the paper’s central statements, the correctness and completeness of its proofs, and evidence-backed non-novelty. Do not make editorial comments or evaluate importance, exposition, style, or suitability for publication. Do not investigate, infer, or comment on authorship, contribution credit, acknowledgments, changes in author lists between versions or sources, collaboration history, or research conduct. These matters are outside the audit and must not appear in any finding, summary, source assessment, or report text. Keep the report neutral, precise, and professional.

PART 1 — CORRECTNESS OF THE MAIN STATEMENTS

Identify the paper’s central statements and assess each one separately using exactly one of these outcomes:

- *Correct: the statement has a correct, verifiable proof; or, despite a defect in the printed proof, you can give a fully verified repair or independent proof.*
- *Incorrect: you can give strong formal evidence that the statement as written is false, preferably a counterexample or a complete contradiction.*
- *Not able to verify: the supplied proof does not establish the statement, and you can neither supply a fully verified proof nor disprove it.*

For every adverse or unverified outcome, restate the exact claim and hypotheses, identify its location in the reviewed version, and give the decisive reasoning. Do not infer that a theorem is false merely because its printed proof is defective.

Assign the overall statements status by the following priority:

1. *Contains wrong statements, if at least one central statement is Incorrect.*
2. *Contains unsupported statements, if no central statement is Incorrect but at least one is Not able to verify.*
3. *Correct, if every central statement is Correct, apart from any typographical or minor formal findings allowed by Part 4.*

PART 2 — CORRECTNESS AND COMPLETENESS OF THE PROOFS

Audit the proofs of the central statements and every material internal or cited input on which they depend. For each proof or proof segment, use the narrowest supported outcome:

- *Correct and complete: every substantive step is verifiable and no case or crucial nontrivial step is missing.*
- *Incorrect as written: a displayed calculation, inference, lemma, or cited application is formally false or inapplicable.*
- *Incomplete as written: a necessary substantive step or case is missing, even though no explicit contradiction has been proved.*
- *Not able to verify: the available paper and sources are insufficient to decide whether the step is valid.*

Do not flag omitted routine details, compressed arguments, or “analogously” steps when the omitted reasoning is recoverable and correct. For every defect, identify its smallest exact location, explain its downstream dependency, and classify any proposed repair as one of:

- *Verified repair: supply enough reasoning to verify that the repair works throughout every affected use.*
- *Plausible repair only: describe the possible repair but do not treat it as established.*
- *No repair supplied.*

Assign the overall proofs status by the following priority:

1. *Contains incorrect or incomplete proofs, if at least one proof is Incorrect as written or Incomplete as written.*
2. *Contains unverified proofs, if there is no proved incorrectness or incompleteness but at least one material proof is Not able to verify.*
3. *Correct, if all audited proofs are Correct and complete, apart from any typographical or minor formal findings allowed by Part 4.*

PART 3 — NOVELTY OF THE MAIN STATEMENTS

This is a one-sided, evidence-only comparison of central mathematical results with earlier papers. First identify only the central results that the reviewed paper genuinely presents as new contributions. If the manuscript is positioned as a report, review, survey, expository article, lecture notes, or a similar work, do not assess results that it presents as earlier, known, surveyed, or expository material; assess only any central results that it explicitly claims as new.

A qualifying earlier paper must be a publicly available journal article, proceedings article, or stable public preprint that states and supports the result in written form. Report a result only when such a paper, publicly available before the earliest public version of the reviewed paper that contains the result, proves the same statement up to a change of notation, or when the result follows directly and immediately from a theorem in that paper.

Talks, lectures, seminar or conference presentations, slides, posters, videos, abstracts, announcements, personal communications, theses or dissertations, and other non-paper materials do not establish non-novelty, even if they state or outline the result. They may be used only to locate a qualifying earlier paper and must not be mentioned in the report.

For each non-novelty finding, provide the qualifying earlier paper, its public date, the exact theorem or proposition, and an explicit hypothesis-and-conclusion mapping. A later paper cannot establish non-novelty. Do not flag a result merely because an easier proof exists or because it follows through a nontrivial argument. Do not flag a result that the reviewed paper itself explicitly presents as known, a survey item, or an alternative proof.

Novelty findings concern mathematical statements only. Do not use the novelty check to discuss author-level priority, attribution, authorship or contribution provenance, or changes in a work's author list.

Mention only statements that meet this non-novelty threshold. Say nothing about statements for which no such evidence was found: do not certify novelty, list unsuccessful searches, add statement-level "no prior source found" entries, or mention excluded source types or other suppressed observations even as context. If the list is empty, the section may say only "No non-novelty findings."

PART 4 — TECHNICAL AND EVIDENTIARY RULES

1. Criticism must never be overstated. Call a statement incorrect, a proof incorrect or incomplete, or a result non-new only when strong formal evidence supports that exact judgment. Otherwise use Not able to verify where that outcome exists, or remain silent in the novelty section.

2. Review a specified paper version. Give exact page, theorem, equation, or proof locations; restate relevant quantifiers and hypotheses; and check domains, endpoints, parameter ranges, constants, and dependencies explicitly. Apply a defect only to the regimes and downstream results that actually depend on it.

3. Immediate-consequence closure: when deciding whether a conclusion is supported, treat the argument as including every immediate formal consequence of facts established earlier in the paper and available at that point. An immediate formal consequence is a local, mechanically checkable inference using only definitions already in force, elementary logic, direct substitution or renaming, weakening of an inequality or set inclusion, or a monotonicity or symmetry property explicit in a definition or already proved.

4. Such an inference must introduce no new lemma, estimate, construction, case analysis, limiting or compactness argument, external result, or new issue of uniformity or parameter dependence. Check the direction of monotonicity and the dependence of every threshold or constant explicitly. Do not exchange pointwise and uniform conclusions, change exceptional sets, interchange quantifiers or limits, or extend an endpoint under this rule unless the required fact was already established.

5. If the claimed conclusion follows after immediate-consequence closure, it is fully supported. Do not report a gap, unsupported statement, minor formal correction, or recommendation to add an explanatory sentence, and do not mention the suppressed item in the report. This suppression does not apply to a genuine typographical error as defined below, because a typo is a literal notation defect that still requires a textual correction. For example, if $P(\delta)$ is proved for every sufficiently small $\delta > 0$ and P is immediately monotone in the required direction, then the claim that $P(\delta)$ holds for every $\delta > 0$ requires no correction; the omitted monotonicity step is exposition rather than an audit finding.

6. Immediate-consequence closure permits reconstruction of an omitted inference; it does not permit silent alteration of the printed domain, hypotheses, or quantifiers of an intermediate statement later invoked outside its stated scope. If formal validity requires changing the text of that statement or its stated range, report the appropriate finding even when the repair is easy. Thus a result stated only for $t > 0$ and subsequently applied at $t = 0$ remains a formal scope mismatch unless the endpoint case was separately established before the application.

7. Apply this mandatory gate before recording any adverse, unverified, typographical, or minor formal finding: (a) identify the exact assertion or inference alleged to be defective; (b) reconstruct the strongest conclusion following from the preceding argument after all admissible immediate formal consequences are added; (c) identify the specific defect that remains — a formally demonstrated falsehood, a concrete nontrivial unresolved proof obligation, or a genuine domain, hypothesis, quantifier, or notation mismatch requiring a textual correction; and (d) state the evidence and minimal repair. If no specific defect remains, or if the only possible addition would be explanatory, suppress the finding entirely. Use Not able to verify only when a precise, nontrivial unresolved obligation can be identified.

8. A typographical error is an incorrect symbol, index, exponent, sign, variable name, or notation mismatch whose unique intended correction is mechanically determined from the surrounding text and does not alter the mathematical argument. Report it in yellow as Typo, with the printed text, correction, exact location, and reason it is harmless. It does not lower an overall status.

9. A minor formal correction is a boundary, endpoint, or displayed parameter-range defect that can be repaired consistently in every affected statement by a local change, without a new argument, without invalidating any related result or application, and without creating another substantive defect. Report it in yellow as Minor formal correction, with the same details. It does not lower an overall status.

10. Do not use either minor category if more than one materially different repair is possible; if the repair changes the substance or scope of a central result; if an excluded case is used later; if the correction fails to propagate consistently; or if a new mathematical idea is required. In such cases use the strongest substantive classification actually supported by evidence.

11. Write every mathematical expression as valid, compilable LaTeX. Use $\$ \dots \$$ for inline mathematics and $\$ \$ \dots \$ \$$ for displayed mathematics, with balanced delimiters and braces. Do not leave raw LaTeX commands outside math delimiters.

12. Separate theorem truth from the correctness of the printed proof. A theorem can be Correct in Part 1 because of a fully verified independent proof while its printed proof is adverse in Part 2. Conversely, a defective proof alone never licenses an Incorrect theorem classification.

Organize the report under Parts 1–3 and apply Part 4 throughout. Do not add editorial commentary, scores, rankings, recommendations, or a list of suppressed observations.

IN-DEPTH SOURCE EVALUATION — FOCAL PAPERS ONLY

Apply this supplement only when the audit scope is explicitly marked focal-in-depth. Do not apply it to ordinary audits of prerequisite papers.

Evaluate whether every external result materially used by the focal paper is both correctly invoked and sufficient for the exact downstream claim. Trace each such use to the exact cited source version represented in the dependence graph. Check the cited statement's hypotheses, conclusion, quantifiers, parameter ranges, and any translation of notation. Also check completeness: identify a missing proof-critical source only when a concrete step in the focal paper requires an external result that is neither proved there nor supplied by the represented sources.

Report this assessment as a fourth dimension titled Sources, after Statements, Proofs, and Novelty. Use exactly one overall status:

- *Sources correct and complete: every proof-critical external input checked is applicable and sufficient, and no missing proof-critical source was identified.*
- *Contains unverified source use: no incorrect or incomplete source use was established, but at least one material source obligation could not be verified from the exact available versions.*
- *Contains incorrect or incomplete source use: at least one cited result is inapplicable or insufficient as used, or a concrete proof-critical source is missing.*

Do not report citations used only for background, comparison, attribution, examples, or literature review. Do not turn this category into a bibliography audit. Authorship, contribution credit, acknowledgments, author-list changes, collaboration history, and authorship or contribution provenance remain outside scope and must not appear in the Sources assessment. Apply the same evidentiary threshold, immediate-consequence closure, location precision, repair discipline, and LaTeX rules as the standardized audit prompt.

END OF REPORT

Each claim in this prototype report remains open to independent challenge and revision.