

Addendum 277: The Comma Audit and the Gap Registry

TASK_035 chains 3–4: one flag survives, sharpened;
62 recorded gaps, indexed

TOE Corpus

2026-06-10

Skill: gap-closure v1.1 — **Outcome:** Case B+ (audit complete; reduction theorem exact; flag survives as flag; registry built) — **Task:** TASK_035 (chains 3–4, final) — **Verifier:** `verify_P277.py` — all PASS (regenerates `verify/tbs_registry.json`)

Abstract

Chain 3 (comma audit). A266 flagged two near-misses. The schisma flag was demoted by A273 ($1 - \sqrt{1 - \kappa}$ is a unit conversion residue, not a comma). The quarter-Pythagorean-comma flag ($(3^{12}/2^{19})^{1/4} - 1 = 0.3394\%$ vs $G_1 = 0.3456\%$, 1.8% relative) is audited here and *reduced*: Proposition 1.1 shows $G_1 =$ quarter-comma is algebraically equivalent to $T_{\text{breath}} = 2^{35/4}$, and numerically $\log_2 T_{\text{breath}} = 8.749910\dots$ vs $35/4 = 8.75$ — a 62 ppm near-miss, $290\times$ sharper than the flag it replaces. No corpus derivation assigns meaning to the exponent $35/4$; per PSLQ-honesty the item remains a *flag, not a claim*, and the speculation that the two A266 flags were “two rungs of one temperament” is closed negatively: one was a comma flag (still open), the other a unit conversion (demoted) — they were never siblings. The comma watchlist after this audit contains exactly one item. *Chain 4 (gap registry).* The canon carries 51 TBS remarks and 11 Open remarks (62 recorded gaps). They are extracted into a machine-readable registry (`verify/tbs_registry.json`, regenerated by the verifier on every run) with status per item. Recorded closures to date: TBS 28.2 (retired, A273), TBS 28.3_c (retired, A263), TBS 14.1 (retired, A266), Open 27.2 (retired, A276). 58 items stand unreviewed-or-open — the honest number behind “the canon’s joints.” Registry discipline is adopted: any future addendum that closes a recorded gap updates the registry in the same commit; the verifier fails if a status cites an addendum that does not exist on disk.

1 Chain 3: The Comma Audit

Proposition 1.1 (Reduction of the quarter-comma flag). $G_1 = (3^{12}/2^{19})^{1/4} - 1$ holds if and only if $T_{\text{breath}} = 2^{35/4}$. *Proof:* $G_1 + 1 = 432/T_{\text{breath}}$ (A266, exact) and $(3^{12}/2^{19})^{1/4} = 3^3/2^{19/4}$; equality reads $432/T_{\text{breath}} = 27/2^{19/4}$, i.e. $T_{\text{breath}} = 432 \cdot 2^{19/4}/27 = 2^4 \cdot 2^{19/4} = 2^{35/4}$. Numerically $2^{35/4} = 430.5390$, $T_{\text{breath}} = 430.5122$: relative deviation 6.21×10^{-5} ; equivalently $\log_2 T_{\text{breath}} = 8.7499105$ vs 8.75. The 1.8% comma-level flag is exactly the 62 ppm statement “ $\pi\alpha^{-1}$ is nearly $2^{35/4}$.”

Remark 1.2 (Verdict: flag, sharpened, not promoted). *The reduction is exact; the near-miss is not. 62 ppm is far below the corpus’s identification bar absent a derivation, and no corpus object supplies the exponent $35/4$ (the $5/4$ of $\kappa = \alpha^{5/4}$ is not it; $35/4 = 7 \cdot 5/4$ is recorded as an observation only). Status: the comma watchlist now contains exactly one item — T_{breath} vs $2^{35/4}$ at 62 ppm — replacing the quarter-comma/ G_1 entry. The A266 speculation that the two flags were two rungs of one temperament is closed negatively: A273 typed the schisma-adjacent quantity as a conversion residue; the surviving flag is of a different kind entirely.*

2 Chain 4: The Gap Registry

Proposition 2.1 (Inventory). *The canon (Papers 00–34) carries exactly 51 remarks labelled `rmk:tbs:*` and 11 labelled `rmk:open:*`; 62 recorded gaps. Status at filing:*

<i>gap</i>	<i>paper</i>	<i>status</i>	<i>closed by</i>
<i>TBS P028_2</i>	<i>P28</i>	<i>retired</i>	<i>A273 (unit bridge)</i>
<i>TBS P028_3_c</i>	<i>P28</i>	<i>retired</i>	<i>A263 (velocity identification)</i>
<i>TBS P014_1</i>	<i>P14</i>	<i>retired</i>	<i>A266 (G_1 exact; $\kappa^{0.6}$ retired)</i>
<i>Open P027_2</i>	<i>P27</i>	<i>retired</i>	<i>A276 (section law, not invertibility)</i>
<i>remaining 58</i>	<i>—</i>	<i>unreviewed-or-open</i>	<i>—</i>

The registry `verify/tbs_registry.json` holds every item with paper, label, excerpt, and status; `verify_P277.py` regenerates it from the canon sources on every run, so it cannot silently drift from the papers.

Remark 2.2 (Registry discipline). *Adopted as corpus convention: (i) an addendum that closes a recorded gap updates the registry status in the same change; (ii) the verifier fails if any status cites a closing addendum absent from disk; (iii) the unreviewed count is reported on every run — the canon’s debt is now a number that can only change visibly. The four recorded closures all date to the current cycle (A263–A276); the 58 open items are the inventory TASK_035 chain 4 asked for, and several are already known to be load-bearing (P014_2’s manvantara identification; P000_1_c’s CODATA comparison; P003_3’s boundary condition). No triage is performed here; the registry is the deliverable.*

Consequences. TASK_035 closes (chains 1–2: A266/A267; chain 3: this audit; chain 4: this registry). The corpus’s open-gap state is machine-readable for the first time. The comma watchlist is one item long.

Verifier. `verify_P277.py`: regenerates the registry from canon sources; asserts the counts (51 TBS, 11 Open), the four recorded closures (and that their closing addenda exist on disk with passing-verifier convention); the reduction identity at 50 digits; the 62 ppm deviation; the schisma demotion cross-reference; watchlist cardinality. All PASS.

Note (added 2026-06-10, same day). Registry ownership transferred to `verify_P278.py` (Burn-down I): the latest burn-down verifier is the registry’s single writer; `verify_P277.py` now reads and asserts. A278’s sweep moved the debt 58 → 48 (six new retirements, one scope reclassification, three confirmed-load-bearing with quantified blast radius).