

CONTROLLED**SEN-81-017**

Observation 7A: Anomalous Timing Residuals

DATED	September 4, 1981	TYPE	Observation log
ORIGIN	Directorate III	SITE	LOWFIELD
PAGES	6	CUSTODY	MERIDIAN

A 1,270-second periodicity in clock comparison residuals, first logged at a temporary northern site five years before that site was formally commissioned. Never explained; never reproduced on demand.

REDACTION: Two passages describe a comparison method still in use at operating sites and are withheld under the methods provision.

SUMMARY

Between 14 June and 2 September 1981, routine comparison between the site reference oscillator and an imported travelling standard produced a residual that was not consistent with either instrument.

The residual was periodic. The period was 1,270 seconds, stable to within the measurement floor across eighty-one days. It appeared in the comparison and in neither instrument taken alone.

No explanation has been established. The observation is logged here in the condition in which it was recorded, without interpretation, because forty-four years of interpretation have not improved on the raw record.

CONDITIONS

The site was at that time a temporary emplacement -- three prefabricated structures and a buried cable run -- occupied seasonally for propagation studies. It was not commissioned as Station LOWFIELD until 1986, a fact that matters only because it means the 1981 record predates the station's instrument log and cannot be checked against it.

Ambient conditions were logged hourly. The enclosure held to ± 0.4 K. Mains was local generation, isolated. The travelling standard had been transported by road, allowed to settle for nineteen days, and characterised against a second

travelling standard before the run began.

OBSERVATION

The comparison residual is reproduced below in the original units.

Interval	Mean residual	Period	Amplitude
14 Jun ? 03 Jul	?2.1 ns	1,270 s	4.4 ns
04 Jul ? 24 Jul	?1.9 ns	1,270 s	4.6 ns
25 Jul ? 14 Aug	?2.4 ns	1,270 s	4.1 ns
15 Aug ? 02 Sep	?2.0 ns	1,270 s	4.5 ns

The period did not drift. This is the part of the record that has resisted every explanation offered.

A thermal cycle drifts with the season. A mechanical resonance drifts with load. A beat between two oscillators drifts as either ages, and both of these oscillators aged measurably over eighty-one days. A period stable to the measurement floor across three months, in a comparison between two instruments that were themselves changing, does not have an obvious mechanism.

EXCLUDED EXPLANATIONS

The following were tested and excluded during the run or in the subsequent review:

- Generator harmonics. The residual persisted through two generator changes and one period of battery-only operation lasting thirty-one hours.
- Thermal cycling of the enclosure. Enclosure temperature was logged at higher cadence than the residual period; no correlation was found at any lag.
- Cable run. The buried run was excavated in August 1981 over its full length. It was found intact. The residual continued during the excavation, with the cable exposed.
- The travelling standard. Returned to ARGENT and characterised for six weeks against three references. It behaved correctly. The residual did not travel with it.
- The site reference. Replaced entirely in 1982. The residual did not return with the new instrument, which is the single strongest argument that it was real and instrumental -- and also the reason it has never been reproduced.

WITHHELD

The comparison method is described in Section 4 and Section 6 of the original. Both sections are withheld: the technique remains in use at operating sites and its publication would allow inference about instrument placement.

The withheld material does not bear on the anomaly. It describes how the measurement was made, not what the measurement found.

DISPOSITION

Closed 1983 as unexplained, not anomalous -- the distinction the institution draws between a result it cannot account for and a result it believes requires a new account. Nothing in this record requires new physics. It requires a mechanism nobody has yet proposed that survives the exclusions above.

Reopened briefly in 2014 following SEN-14-052, and again in 2021 following SEN-21-070. Both reviews concluded that the correspondence is noted and that no causal account connects them.

The 1,270-second figure is now used as a standing test case in Directorate III instrument acceptance. Candidates are asked to explain it. None has.

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