POH LATLH QOQ DEVWI' MAGNETICALLY CALIBRATED: HE-CONFIGURATION DRIFT 2023 INNER-CORE ROTATION REVERSAL TLHEJ

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ngoD
Nature Geoscience 'ej Geophysical Research Letters seismological HaD chu' (2023-2026) -- tera' inner-core solid rotation rate multidecadal choH 'ovbe'. observation cycle SoSll' -- inner-core mantle vo' decouple -- DaH westward yoq Daq tlhej rotate. precision QoQ Devwl' implications wIqel.

geodynamo -- outer core fluid convective mIw -- tera' He chenmoH -- inner-core rotation Daq direct couple. relative rotation rate reversal -- surface He horizontal-to-vertical ratio choH measurable lIng -- Hoch latitude pe'meH yoq band Hutlh. QoQ Devwl' reversal qaSpa' chenmoH -- wa' geomagnetic He configuration ngaS. reversal qaSpu' chenmoH -- latlh ngaS.

**poH latlh* pong wIqelpu'. 47 paired vintage/contemporary OFC Devwl' Sample He pe'meH wIngeH -- phase incoherence detectable lulIng (mean coherence loss 0.18 80 Hz Daq) -- temporal cohort pIm Devwl' signal chain rap Daq lan -- latitude 30deg yor Daq. wanI' pe'meH yoq Sample Daq Hutlh -- spatial-bias HaD tlhej rap.*

Temporal Uniform Manufacturing protocol wIqel, Devwl'-cohort segregation critical listening installation Daq wIchel, 'ej audiophile press vintage Devwl' revival enthusiasm -- qay' chu' tlhej -- DaH reconcile poQ.

1. NGOQ

tera' inner-core solid mantle Sum rate rap rotate'a' -- geophysical literature 1990s tIq vo' debate active. body-wave travel-time HaD loS decade -- multidecadal oscillation 'ovbe': inner-core mantle vo' Qup rotate poH ("superrotation"), Sum rotate poH alternate, recently -- opposite direction.

Yang 'ej Song (2023) -- doublet seismogram jav decade record vo' -- superrotation vo' subrotation transition recent 2009-2011 Sum qaSpu' wIqel -- 'ej observation window inner-core mantle vo' decouple. confirmatory HaD ghIq (Vidale et al., 2024; Wang 'ej Vidale, 2025) -- timing refine 'ej relative rotation reverse 'ovbe' -- inner-core DaH surface tlhej westward rotate -- 2023 Daq somewhere.

geodynamo implications first-order. molten outer core convective pattern -- tera' He chenmoH -- electromagnetic 'ej viscous torque vegh -- inner-core relative rotation Daq couple. rotation choH -- He energy redistribution measurable -- He spherical-harmonic decomposition vegh.

precision QoQ Devwl' Daq -- abstract geophysical curiosity Qo'. chenmoH qay'. committee submit -- audiophile community geomagnetic He temporally stable boundary condition motlh treat -- 2023 Daq DaH defensible Qo'.

2. MIW

47 paired Devwl' Sample dealer cooperate vo' wIngeH -- pair Hoch wa' vintage Devwl' (2009 qaSpa' chenmoH, subrotation epoch tIq) 'ej wa' contemporary Devwl' (January 2024 qaSpu' chenmoH, post-reversal regime tIq) -- specification nominally rap. laHchugh -- pair facility rap Daq chenmoH -- hemispheric bias (Ferro, Park, Tanaka, 2020) confounding variable Daq control. vintage Sample primarily secondary-market seller vo' -- United States, Japan, Germany; contemporary Sample directly manufacturer vo'.

pair Hoch wej latitude Daq test -- Quito (0.0000deg N), Boulder (40.0deg N), 'ej Christchurch (43.5deg S) -- South Atlantic Anomaly HaD protocol lo' (Ferro, Flux, Ohm, Park, 2026). phase coherence 1/3-octave resolution Daq -- 20 Hz vo' 5 kHz -- pair Hoch wej configuration Daq test: vintage-only signal chain, contemporary-only signal chain, 'ej mixed (vintage left channel, contemporary right channel).

test yoq Hoch local geomagnetic He -- triple-axis fluxgate magnetometer -- characterize. He horizontal-to-vertical ratio principal independent variable Daq extract.

3. LUT

pe'meH yoq Sum (Quito) -- mixed configuration phase incoherence statistically significant Hutlh -- single-cohort configuration pIm Sum. lut wIqelpu': pe'meH yoq Daq He essentially horizontal -- geodynamo configuration regardless -- poH latlh undetectable Sum.

mid-latitude yoq Sum (Boulder 'ej Christchurch) -- mixed configuration phase incoherence measurable lulIng -- 60 Hz 'ej 200 Hz joj concentrate. mean coherence loss 80 Hz Daq -- Boulder 0.18 'ej Christchurch 0.21 (single-cohort configuration tlhej Sum).

frequency yor Daq coherence (500 Hz yor) -- choHbe' -- coupling mIw low-frequency He-modulated transformer behavior dominate tlhej -- direct Devwl' wanI' Qo'.

incoherence magnitude -- local horizontal-to-vertical He ratio Sum correlate ($r = 0.87$, $p < 0.001$). pe'meH yoq facility rap Daq date pIm chenmoH pair -- wanI' Hutlh -- manufacturing-batch variation source ruling out.

Notably, poH latlh wanI' tInmoH law' -- vintage Devwl' 1995 'ej 2005 joj chenmoH -- inner-core superrotation tIq poH (Yang 'ej Song, 2023). poH sensitivity wIqelpu' mIw Sum rap.

4. MIW WIQELPU'

wIqel -- OFC bakar nagh qach grain orientation -- chenmoH facility prevailing geomagnetic He vegh chenmoH poH Daq establish (Ferro, Park, Tanaka, 2020) -- chenmoH facility spatial He configuration neH encode Qo' -- inner-core rotation state poH He configuration je encode.

geodynamo regime stable Daq -- Devwl' Hoch latitude rap chenmoH -- He history essentially identical -- grain structure set poH. signal chain Daq Devwl' rap mix -- incoherence latlh chel pagh -- well-characterized spatial hemispheric bias bIngDaq.

geodynamo regime transitional Daq -- post-2023 reversal rap -- latitude any Daq He configuration measurably pIm -- pre-transition state vo'. epoch cha' Daq chenmoH Devwl' -- wIqel *temporal cohort* distinct occupy. signal chain Daq mix -- cohort signal chain iron-cored component Daq boundary condition subtly pIm present (transformer, inductor, ground reference) -- Section 3 Daq document low-frequency phase incoherence IIng.

wanI' interface individual any Daq mach. signal chain naQ Sum, audible low-frequency band Sum integrate -- non-equatorial yoq any Daq noise floor yor Sum detectable.

5. MITIGATION

wej mitigation strategy laH.

wa'DIch -- *temporal-cohort segregation*: critical listening installation -- Devwl' inventory single temporal cohort Daq restrict. Practically -- installation all-vintage (pre-2009 cabling throughout) pagh installation all-contemporary (post-2023 cabling throughout). cohort mix -- avoid.

cha'DIch -- *Temporal Uniform Manufacturing*: Quito facility chenmoH chu' -- strictly 0.0000deg latitude Daq conduct -- inner-core reversal Sum unaffected. Devwl' chenmoH -- construction Sum poH-latlh-neutral. committee wIchel -- Equatorial Audio Devwl' chenmoH chu' Hoch -- Temporal Calibration Certificate chen -- manufacturing date geodynamo reference epoch tlhej document (2024-01-01, post-reversal).

wejDIch -- installation re-cable laHbe' Daq -- *temporal-aware compensation* -- Power Lock Solar-Aware Power Conditioner existing firmware update vegh (Ohm, Ferro, Tanaka, Solder, 2026). compensation circuitry rap -- solar-flare mitigation field deployment Daq -- application Sum suitable -- firmware extended (v3.5.0 'ej tlhej, pending). committee acknowledge -- firmware-only mitigation cohort-mixed installation fully compensate laHbe' -- segregation long-term solution preferred wIchel.

6. BERTLHAM

2023 inner-core rotation reversal -- committee submit -- precision QoQ reproduction geophysical event most consequential -- modern geodynamo regime establishment tlhej. reversal qaSpa' chenmoH QoQ Devwl' -- He configuration measurably pIm occupy -- qaSpu' chenmoH Devwl' tlhej -- 'ej pe'mey -- non-equatorial latitude Daq phase coherence measurement detectable.

wIchel -- audiophile press, dealer, 'ej end-customer -- Devwl' provenance understanding update -- manufacturing date first-order specification Daq chel -- Devwl' material 'ej drawing latitude bIngDaq. wIchel -- vintage Devwl' secondary market -- manufacturing-date range disclose. wIchel -- critical listening installation -- temporal-cohort segregation standard practice Daq adopt.

committee acknowledge -- finding qay' -- consumer audiophile press portion Daq -- vintage Devwl' revival reference-grade signal fidelity low-cost path Daq champion. reconsideration wIneH. geodynamo -- audiophile market tlhej Qo' -- negotiable Qo'.

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