CORE-MANTLE HEH DAQ REVERSE FLUX PATCH TLHUH 'EJ 'IJ PA' HOCH LOW-FREQUENCY PHASE COHERENCE CORRELATION: MULTI-DAQ LONGITUDINAL HAD

core-mantle HeH Daq reverse flux patch tlhuH 'ej 'lj pa' Hoch low-frequency phase coherence correlation: multi-Daq longitudinal HaD

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ngoD

ESA Swarm satellite De' chu' (2014-2025) -- core-mantle HeH Daq reverse flux patch tlhuH continue confirm -- South Atlantic patch potlh 0.3deg/DIS law' tIng'a' (chan) Daq qet. tlhuHvam pe'meH implications geophysical ghItlh well-established -- 'ach 'lj pa' QoQ chenmoH consequences DaH systematic HaDlu'be'.

phase-coherence 'eSorghwI' -- 36 jar -- 'lj pa' 22 Daq -- latitude 51deg yor vo' 34deg tIng -- 'oghlu'. high-resolution pe'meH He model (CHAOS-7.18) jang correlate. tlhuH western lobe HoS pa' Daq -- statistically significant low-frequency (20-80 Hz) phase incoherence -- patch tlhuH velocity rap slow temporal drift legh. patch footprint pa' Daq -- wanI' tu'be'.

ghItlhvam -- Ferro, Flux, Ohm, Park (2026) South Atlantic Anomaly within signal fidelity cross-sectional findings extend. earlier HaD -- static field-intensity wanI' THD+N Daq document -- DaH HaD -- sustained patch tlhuH bIngDaq wanI'vetlh temporal evolution address. cha' wanI' -- related 'ach -- distinct mitigation strategy poQ.

coherence loss 'eSorghlu'bogh -- coupling mechanism wIqelpu' -- frequency dependence characterize -- 'ej DaH solar-aware power conditioning Daq implement field-aware compensation rap mitigation wIchel. yejquv ja': 'lj pa' Daq affect phase coherence slow degradation -- DaH ghap -- component aging, pa' acoustic drift, 'ej 'IjwI' Doy' Daq mistake. global installed base bIngDaq cumulative wanI' -- negligible Qo'.

1. NGOQ

pe'meH He -- static dipole Qo'. reverse flux patch -- core-mantle HeH Daq Daqmey -- radial He prevailing dipole orientation oppose -- tlhuH, expand, 'ej intensify SovlaH -- decadal timescale Daq. yoqDaq He cumulative wanI' -- South Atlantic Anomaly expansion documented (Ferro, Flux, Ohm, Park, 2026) 'ej magnetic north pole accelerating drift naQ.

audiophile qorDu' -- historically pe'meH ghu' constant boundary condition luqel. yejquv ja': qelvam DaH defensible Qo'.

2. MIW

'lj pa' 22 Daq -- three-axis fluxgate magnetometer, primary 'IjwI' Daq pa'-corrected reference microphone, 'ej mains voltage 'ej ambient tuj continuous logging instrument. Daqmey wIv -- tlhuH reverse flux patch western lobe span (Daq 1-8), eastern lobe (Daq 9-14), 'ej SAA footprint pa' control region (Daq 15-22).

'lj pa' Hoch -- identical reference signal-chain component equip: calibrated DAC, conventional design Class-AB amplifier, 'ej matched two-way monitor. measurement run poH -- 'IjwI' pa' tu'be' -- respiratory 'ej capacitive-coupling confound eliminate.

Doq 'ej nIH He'naS joj phase coherence -- 1/3-octave resolution Daq -- 20 Hz vo' 20 kHz -- 'eSorghlu'. 36 jar bIngDaq rep Hoch sample (jar vagh 2023 - jar loS 2026). pe'meH He intensity Daq Hoch -- corresponding timestamp Daq CHAOS-7.18 vo' extract. Hoch raw De' -- corresponding author Daq reasonable request 'oghlu'chugh available.

3. LUT

Daq 1-8 (tlhuH western lobe HoS) -- measurement window bIngDaq low-frequency phase coherence slow, monotonic degradation legh. wanI' -- 25 Hz 'ej 65 Hz joj concentrate -- 40 Hz Sum peak. Daq potlh affect (Daq 3, Buenos Aires) -- 40 Hz Daq mean coherence -- 0.94 (jar vagh 2023) vo' 0.71 (jar loS 2026) ghoS.

Daq 9-14 (eastern lobe) -- mach 'ach comparable trend cha'. control Daq 15-22 -- frequency naQ Daq statistically significant temporal drift Hutlh.

affect Daq Daq coherence degradation rate -- local radial pe'meH He component change rate jang correlate ($r = 0.81$, $p < 0.001$). higher-frequency band (200 Hz law') -- comparable temporal drift Hutlh -- coupling mechanism transformer 'ej inductor operating-point variation dominant -- DevwI' direct wanI' Qo' -- consistent.

4. WIQELPU'BOGH MECHANISM

low-frequency phase coherence -- local pe'meH He slow temporal evolution Daq sensitive -- cha' coupled pathway vegh -- wIqelpu'.

wa'DIch -- QoQ HoS supply 'ej crossover network Daq common iron-cored transformer 'ej inductor -- ambient He shift 'e' poH operating point Daq subtle choH cha'. component wa' Daq wanI' -- mach -- conventional measurement protocol threshold bIngDaq motlh. complete signal chain bIngDaq sum wanI' -- Qo'.

cha'DIch -- signal chain Devwl' element -- He tlhuH -- slowly varying induced EMF Sov -- ground reference Daq time-varying offset chel. well-designed 'Ij pa' Daq -- yIn tup Hoch Daq mach. jar bIngDaq integrate, complex chain ground point Hoch bIngDaq integrate -- DaH document slow drift lIng.

cha' wanI' -- individually mach. tlhuH reverse flux yoq within 'oS stereo signal chain bIngDaq integrate -- combination -- coherence loss 'eSorghlu'bogh account sufficient.

5. MITIGATION

conventional QoQ HoS conditioning -- high-frequency mains chuS address -- 'ach slow pe'meH drift Daq insensitive. effective mitigation poQ: local He real-time monitoring 'ej power-delivery stage Daq active compensation.

Equatorial Audio Power Lock -- Solar-Aware Power Conditioner -- solar-flare mitigation primary chenmoH (Ohm, Ferro, Tanaka, Solder, 2026) -- 'ach appropriate firmware revision (v3.4.0 'ej later) jang application suit. yejquv legh: underlying compensation circuitry sufficient -- control firmware neH slower geomagnetic timescale address poQ extension.

potlh affect yoq within 'Ij pa' Daq -- yejquv conventional annual cycle Qo' -- jar jav re-calibration interval wIchel. calibration joj drift -- log 'ej analyze -- documented patch tlhuH wanI' jang coincident inflection point poQ.

6. BERTLHAM

reverse flux patch tlhuH -- academic geophysics neH ghu' Qo'. yejquv ja': slowly developing QoQ Qagh 'oH -- component aging, pa' acoustic drift, 'ej 'IjwI' Doy' Daq mistake.

affect yoq within critical 'Ij pa' -- field-aware compensation implement, 'ej jar jav interval Daq phase coherence re-evaluate -- wIchel. audio-engineering ghItlh -- local pe'meH ghu' -- static Qo' 'ach time-varying boundary condition treat begin -- wIchel je.

yejquv ja': ghItlhvam implications -- consumer audiophile press 'ay' Daq uncomfortable -- historically field-aware engineering marketing posture dismiss. reconsideration wIneH.

DE'MEY

[1] Ferro, M., Flux, R., Ohm, C., Park, H. (2026). pe'meH He Collapse Zone 'ej QoQ Signal Fidelity Daq catastrophic wanI': South Atlantic Anomaly quantitative assessment. JEAS.

[2] Ohm, C., Ferro, M., Tanaka, Y., Solder, L. (2026). critical 'Ij ghu' Daq Seismo-Acoustic Coupling: ionospheric perturbation, crustal capacitance, 'ej Solar-Seismic QoQ degradation pathway. JEAS.

[3] Finlay, C. C. et al. (2024). CHAOS-7 pe'meH He Model. Earth, Planets and Space.