TOW2025 – Correlator Workshop

Agenda, version 1.0 (April 29, 2025)

Location: MIT Haystack Observatory
Dates: May 8–9, 2025

Goals of the workshop:

- Compare and discuss results of processing test data set (Correlator Comparison)
- Review correlation/post-processing pipeline and VGOS data quality
- Analysis view on VGOS data quality
- Discuss feasibility of HAYS mixed-mode sessions
- Quasi-continuous Observing Campaign 2026 (QOC26)
- Introduce HOPS4 and other software updates
- Revisit to-do list from 2023 Correlator Workshop

Thursday, May 8, 2025:

2:00–2:10pm   **Introduction and goals of the workshop (10 min) (Dirk)**

2:10–3:40pm   **VGOS Pipeline and Data Quality Checks (90 min) (Dan)**
- ❖ Brief review of VGOS correlation and post-processing
- ❖ Initial checks: autocorrelation, pcal tones
- ❖ First prepass: fringe results, sampler delays
- ❖ Second prepass: clock tuning (SBD), station positions
- ❖ Third prepass: clock tuning (MBD)
- ❖ Full correlation and post-processing
- ❖ ffres2pcp, pcphases, and dTEC agreement
- ❖ fourphase and y-x offsets
- ❖ Final DQ assessment: dTEC, residuals, amplitudes, G&H codes, bad channels
- ❖ Proxy cable cal

3:40–4:00pm   **Break**

4:00–4:30pm   **VGOS data quality from the analyst's perspective (30 min) (Dhiman)**
- ❖ VGOS data analysis
- ❖ The case for HAYS mixed-mode sessions

4:30–5:00pm   **Review 2023 Correlator Workshop To-do List (30 min) (Dirk et al.)**
- ❖ Discuss status of items

Friday, May 9, 2025:

10:00–11:30am   **Correlator Comparison Test Results (90 min) (Dan & Dhiman)**
- ❖ Top-level results (geodetic comparison of vgosDB)
- ❖ VEX file and clock model differences (if any)
- ❖ Control file and post-processing differences (if any)
- ❖ Comparison of fringe results (if needed)
- ❖ Standardization of methods (if motivated)

11:30–11:45pm   **Onboarding New Stations (15 min) (Chet)**

11:45–12:00pm   **Quasi-continuous Observing Campaign 2026 (15 min) (Dirk)**
- ❖ Approximate time frame
- ❖ Data decimation tests (VR2501, VR2503)
- ❖ Ground rules for correlators and stations
- ❖ Station qualification?

12:00–1:30pm   **Lunch Break**

1:30–2:30pm   **HOPS4 and Software Updates (60 min) (John)**
- ❖ Pre-requisites and installation process
- ❖ Notable differences and similarities with HOPS3 feature set
- ❖ New capabilities and data format
- ❖ Comparison testing against HOPS3

2:30–3:00pm   **Break**

3:00–4:00pm   **Additional talks & Open Discussion (60 min)**
- ❖ tbd

4:00pm   **Adjourn**