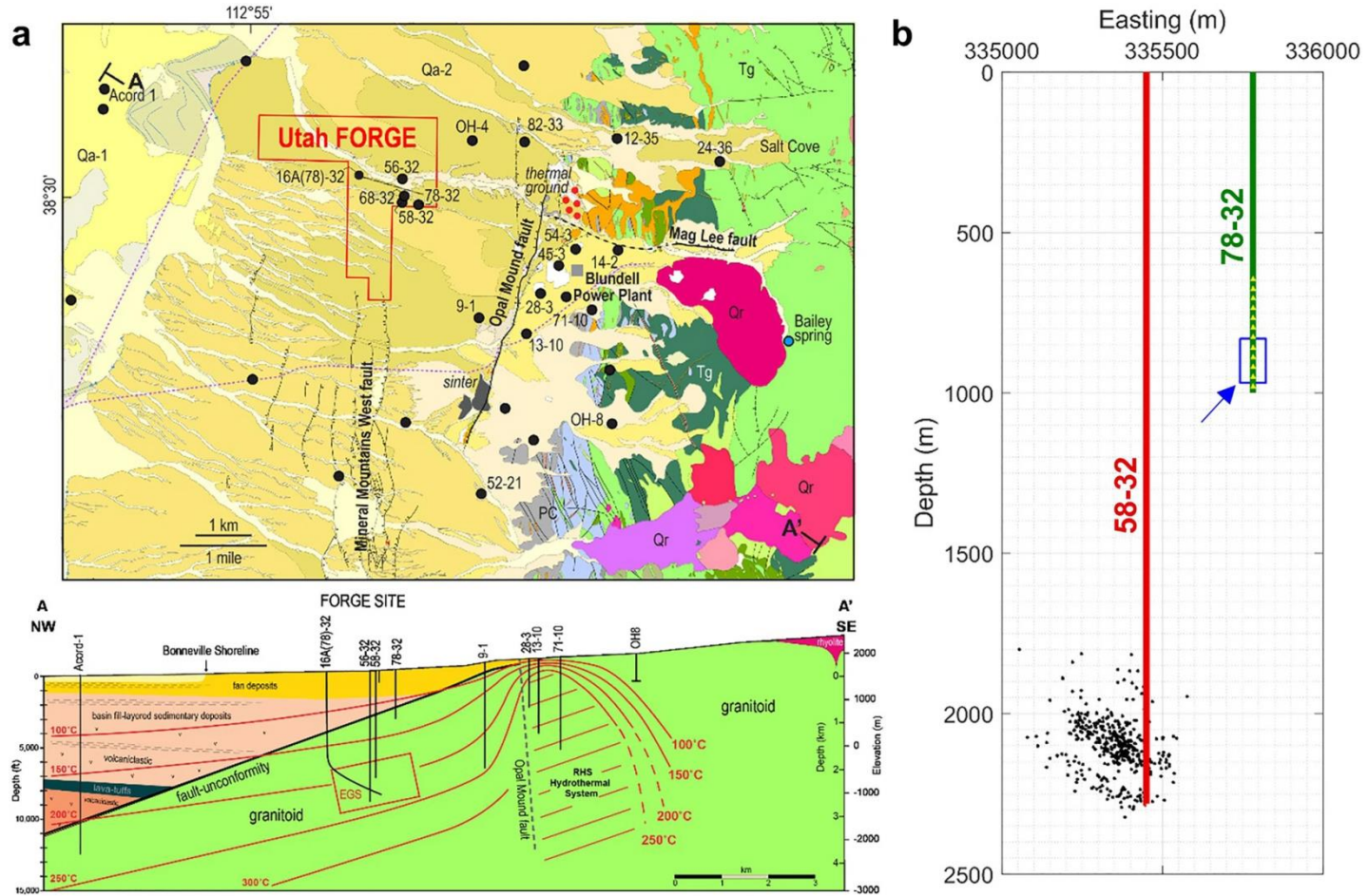
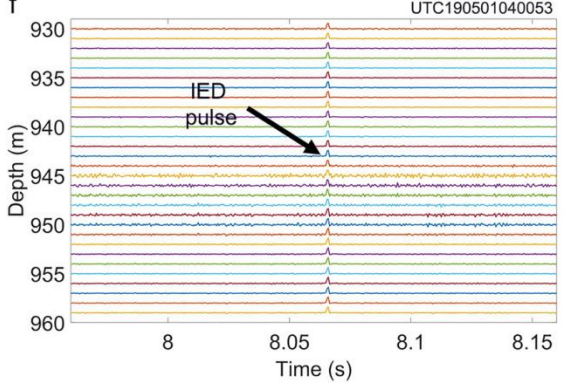
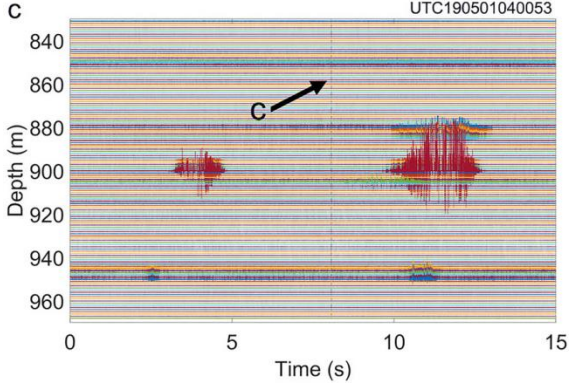
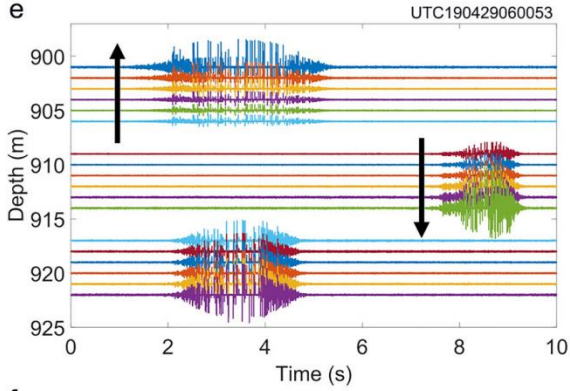
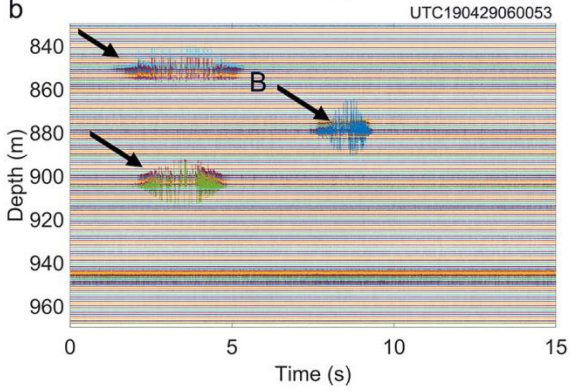
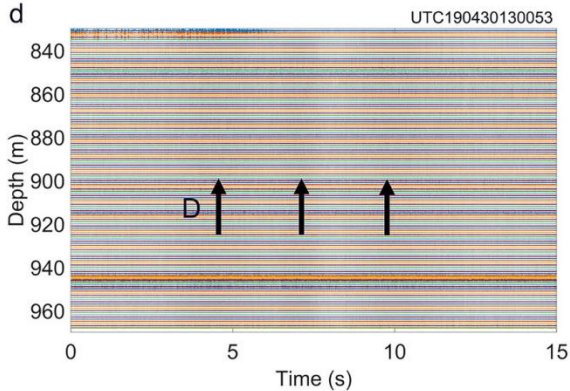
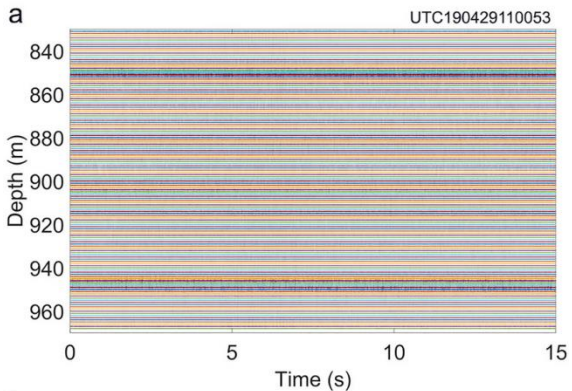


# Feasibility of source-free DAS logging for next-generation borehole imaging

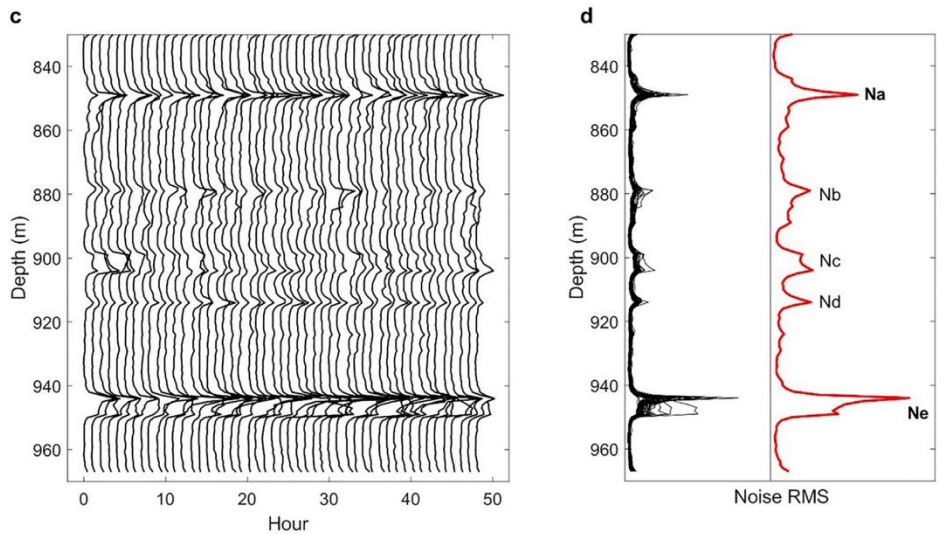
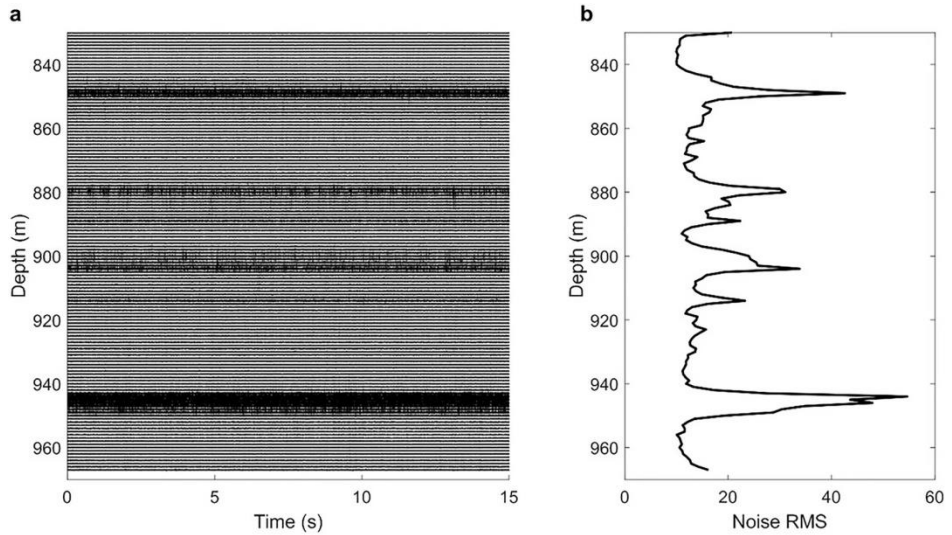


# 4 Types of DAS Noise

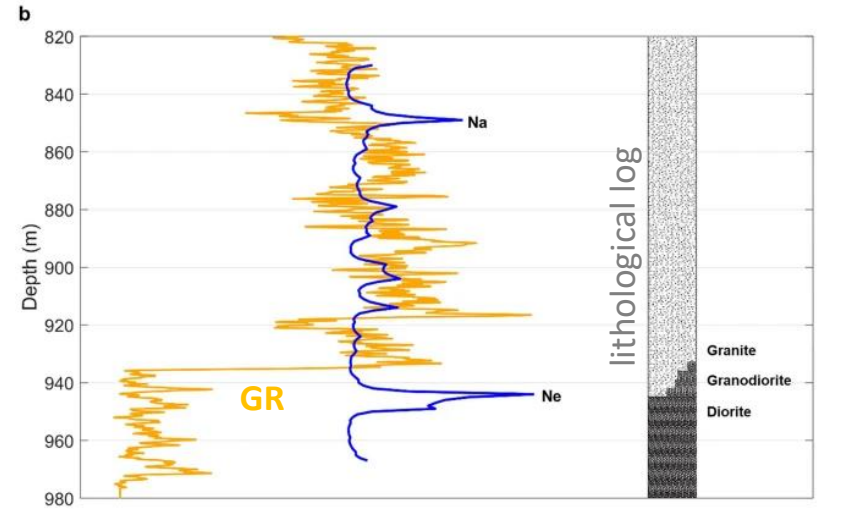
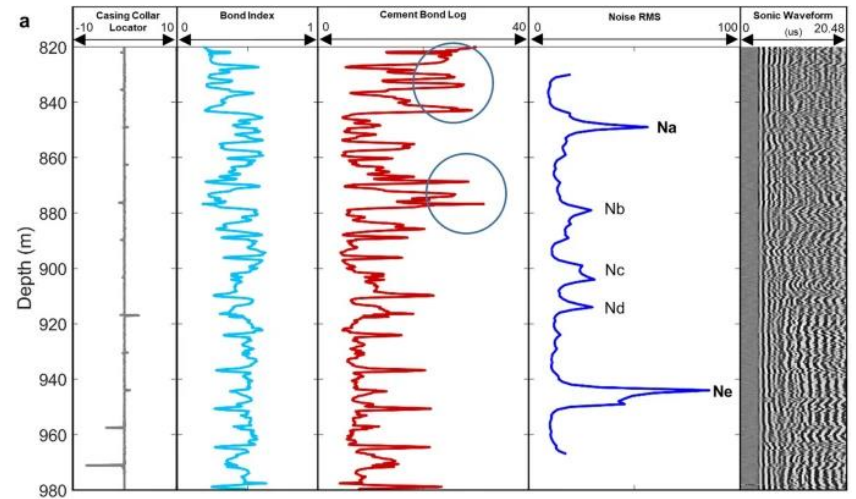


- A: Ambient Noise
- B: 6 Event in 5 Meters (6E5M)
- C: Interrogator End Disturbance (IED)
- D: Suspected a small earthquake

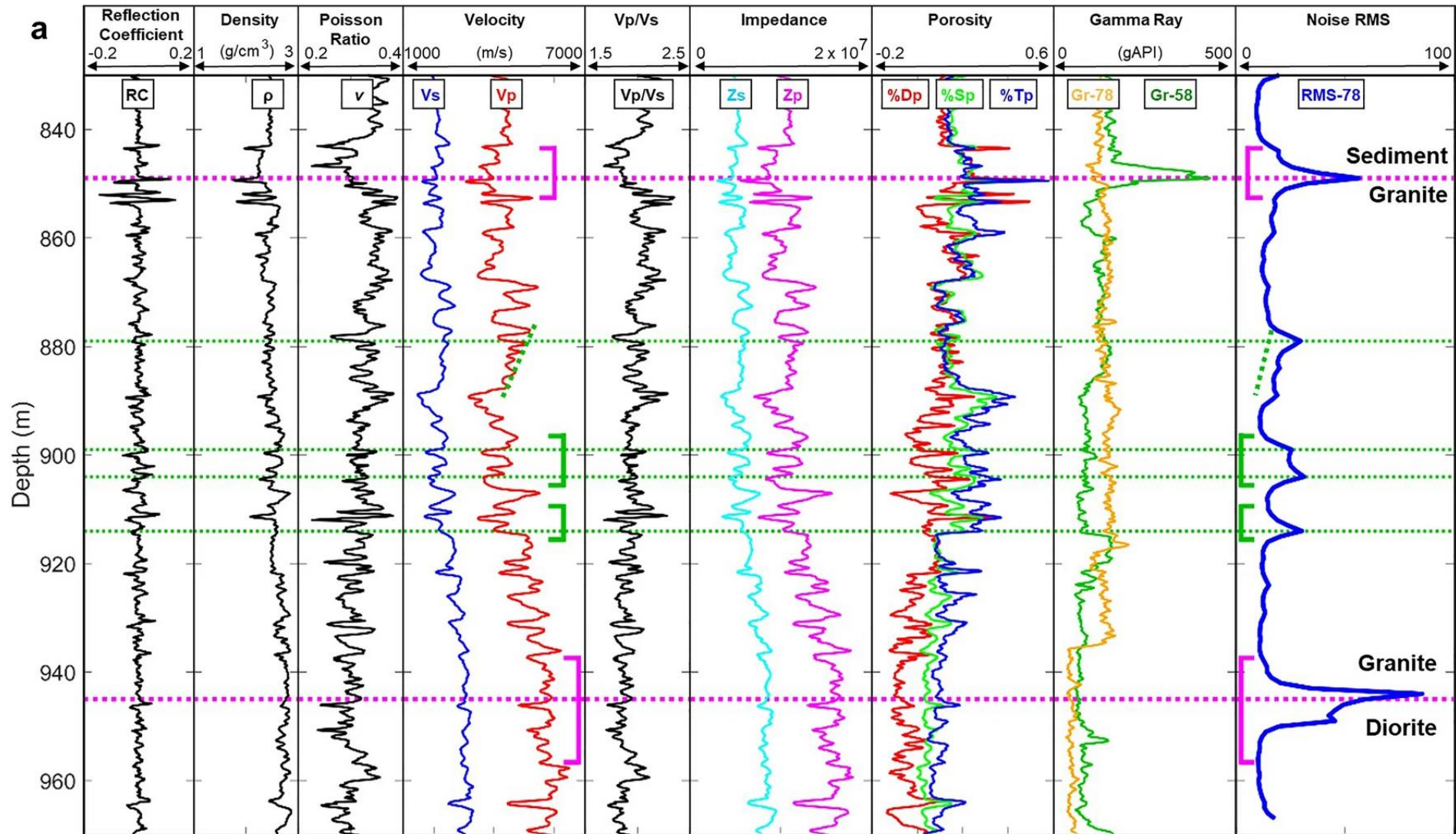
# DAS Ambient Noise Traces & RMS Amplitudes



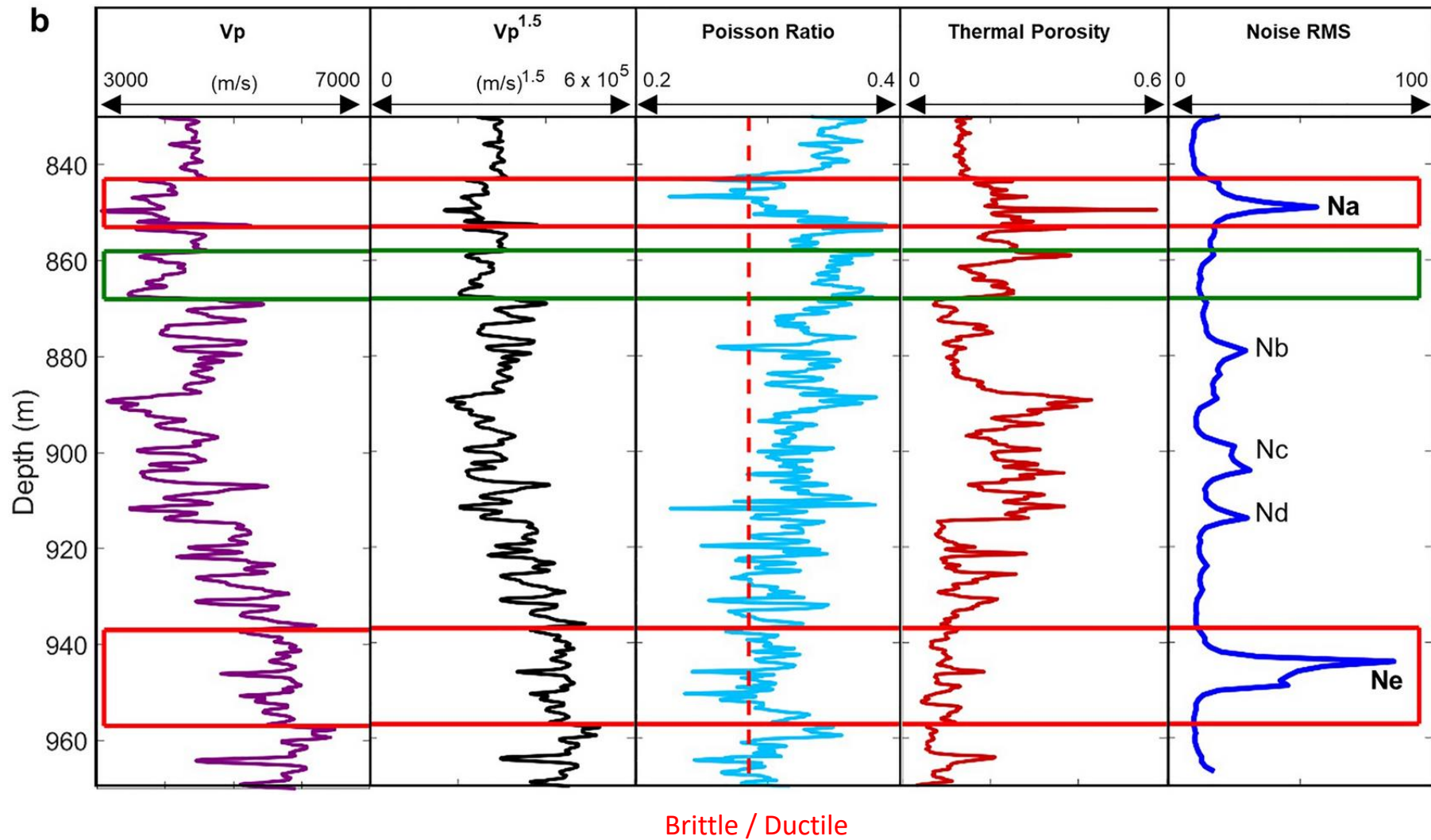
# RMS vs. CBL (Cement Bond Log)



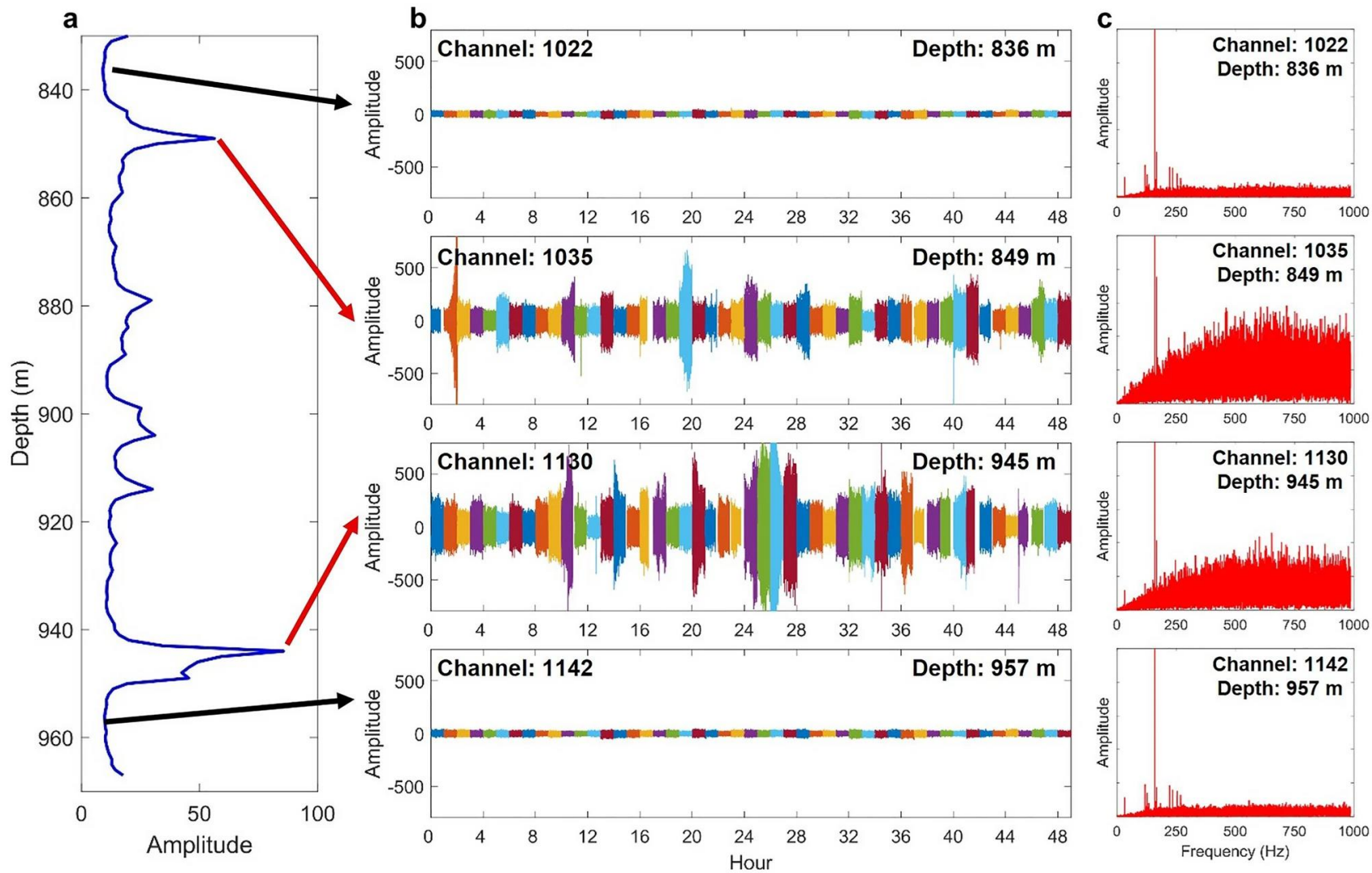
# DAS Ambient Noise RMS Vs. Wireline Logging Data



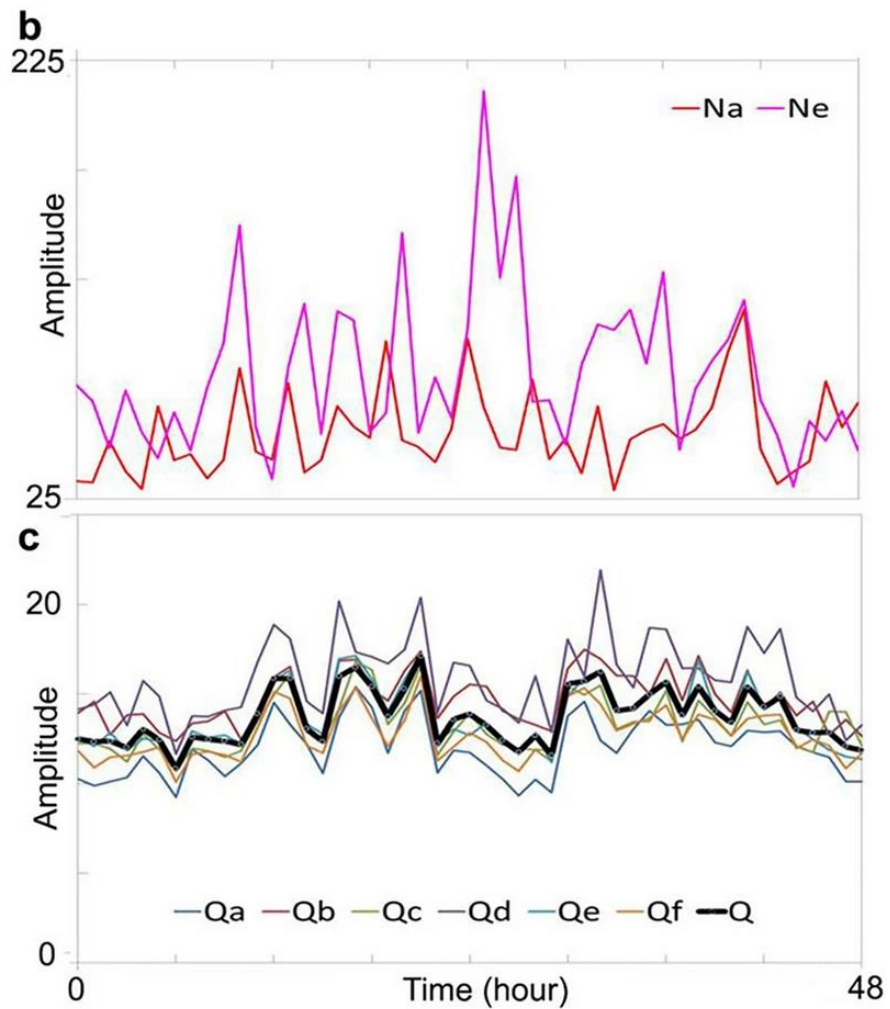
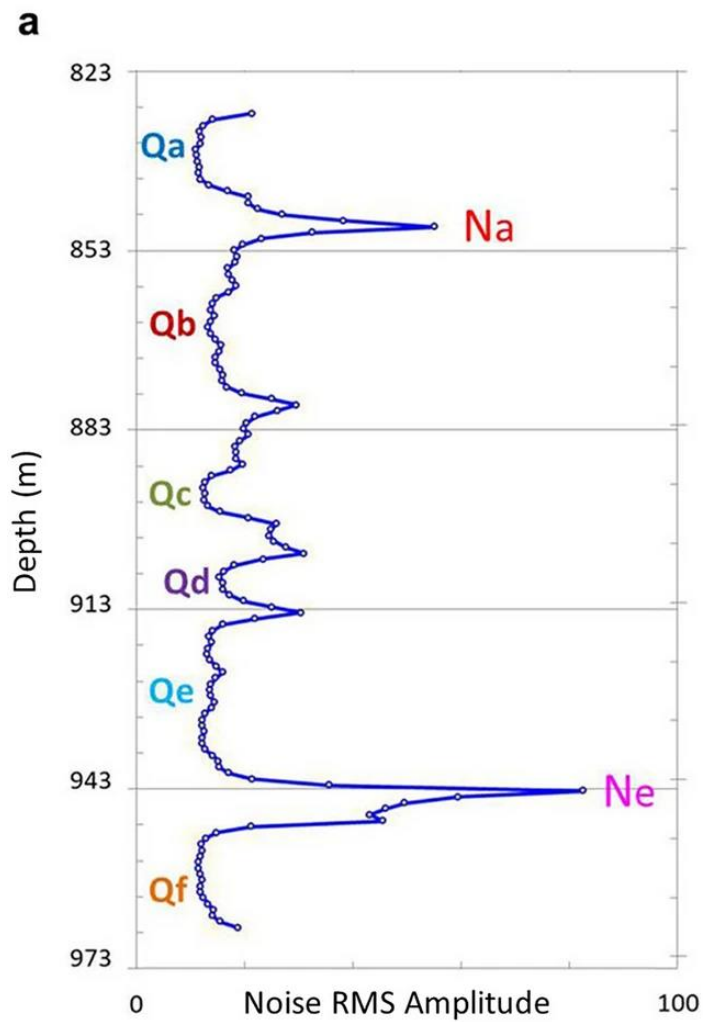
# Noise RMS Amplitudes vs. Velocity, Poisson Ratio, & Porosity



# Noise RMS, Trace amplitude, and Spectra

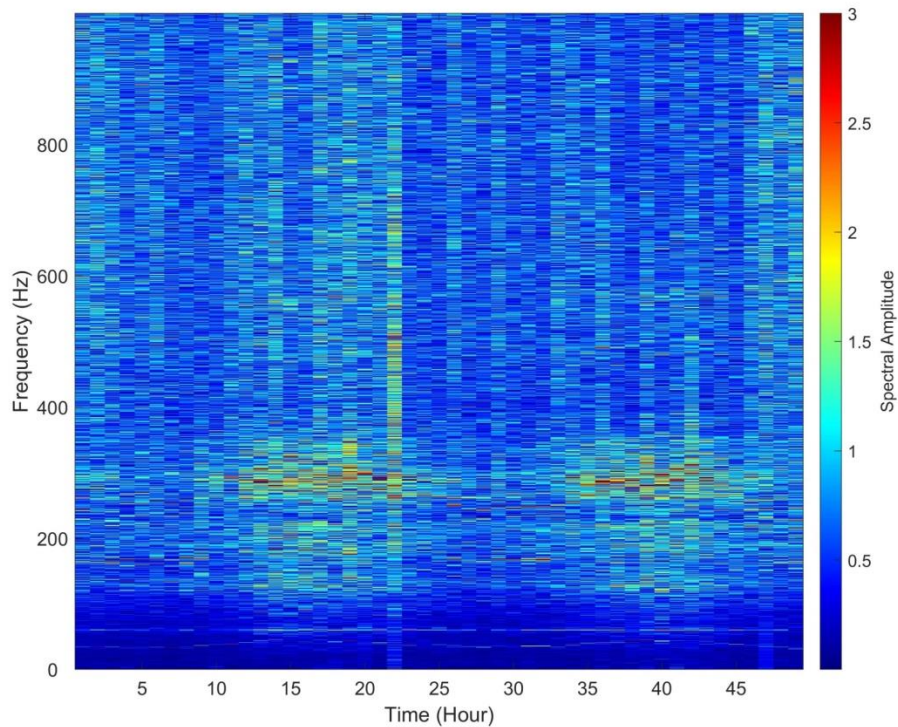


# Noise RMS Spatial and Temporal Variations

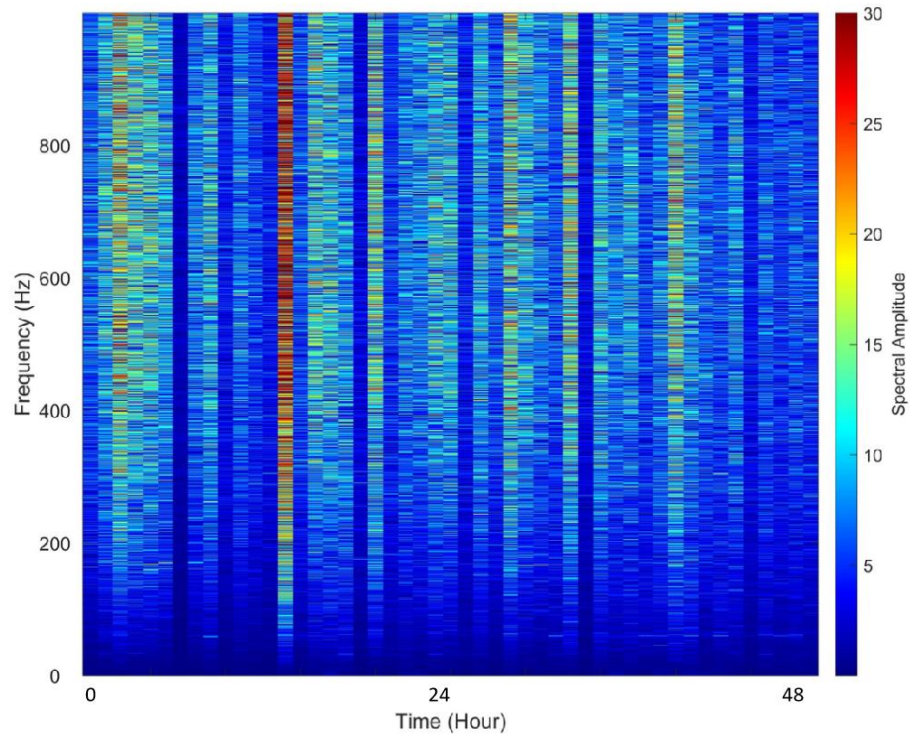


# Time-Frequency Analysis of DAS Ambient Noise

## Quietest Trace (CH767)

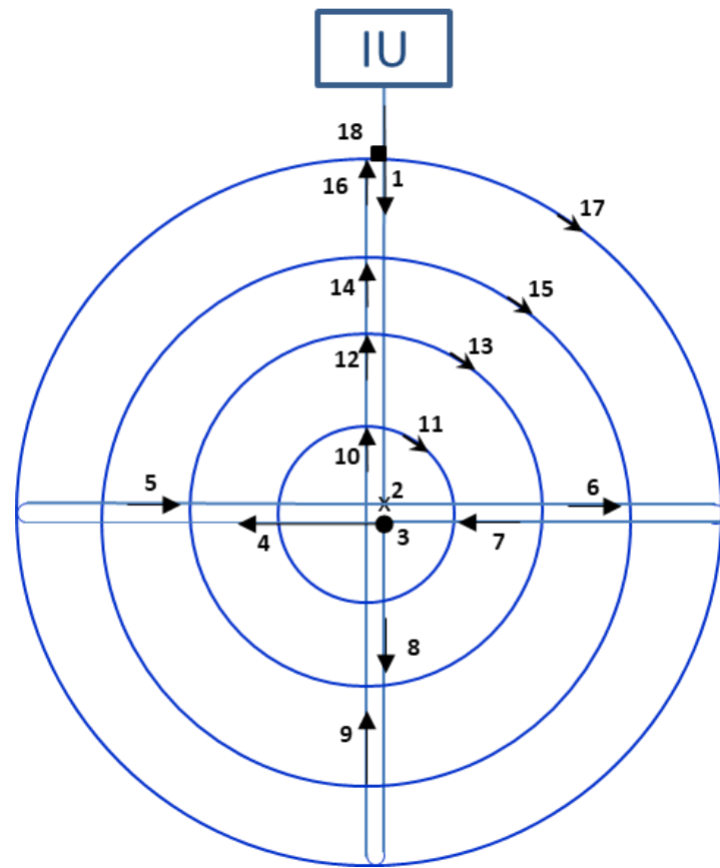
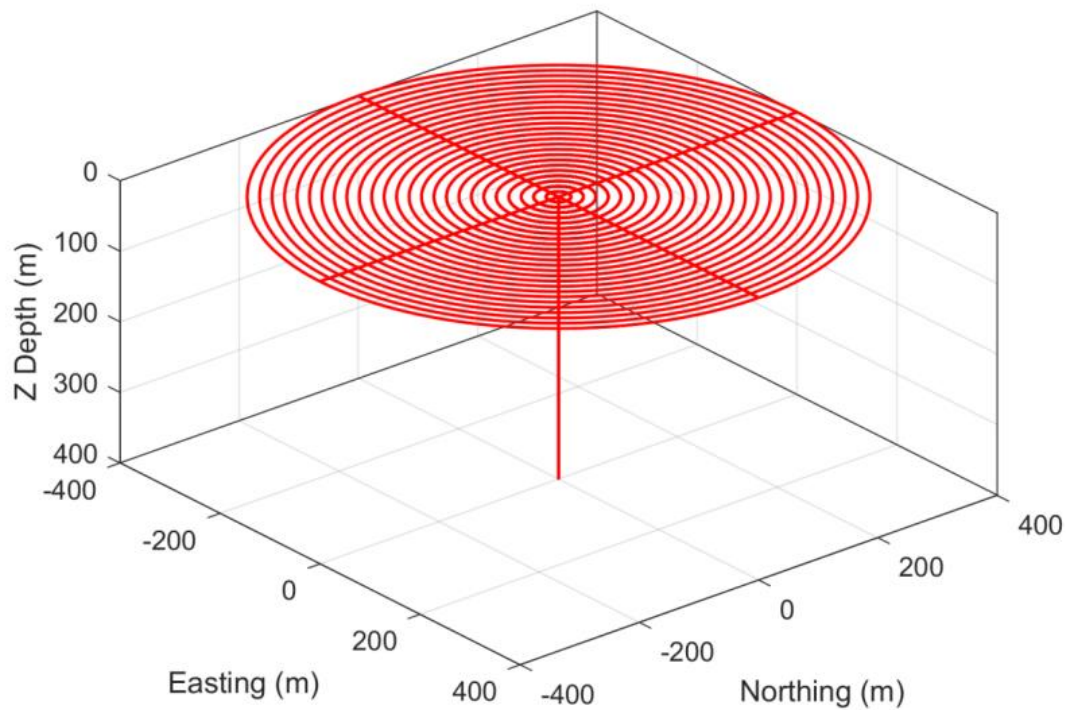


## Noisiest Trace (CH825)



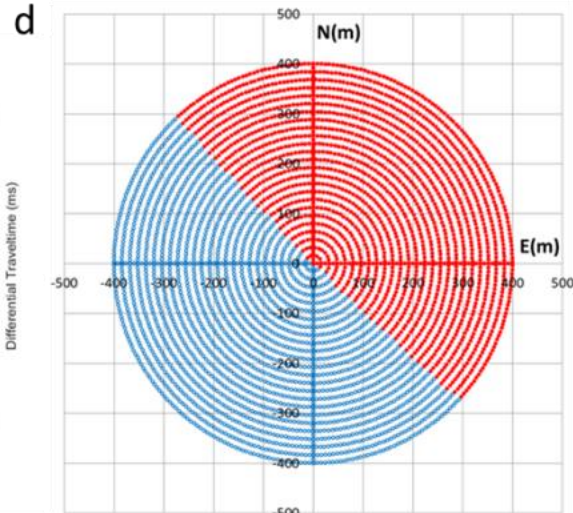
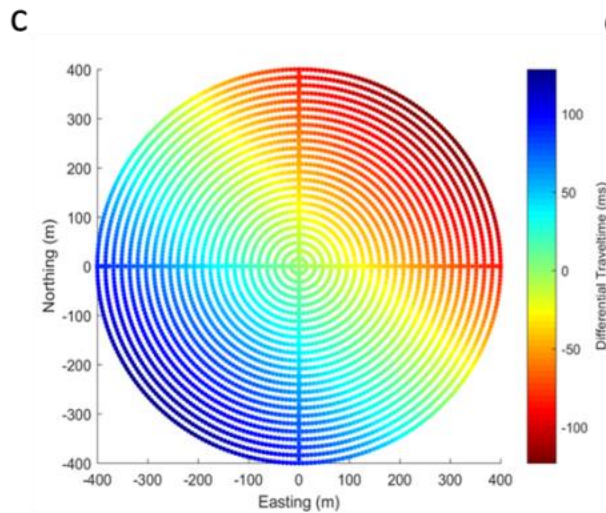
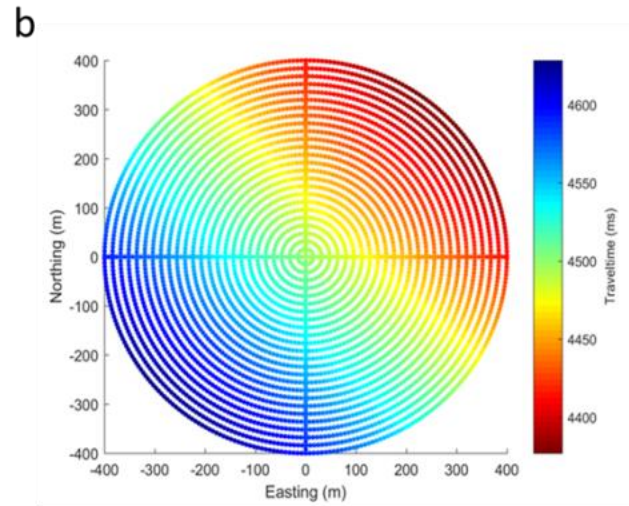
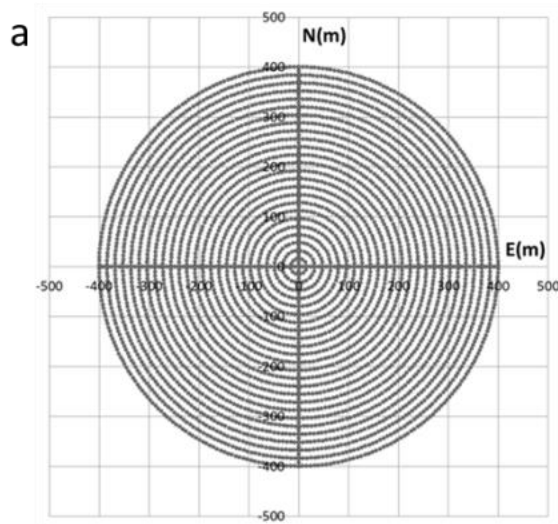


# 3D DAS Fiber Cable Installation for 3C DAS Array Data



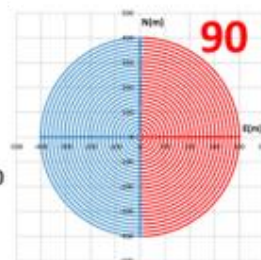
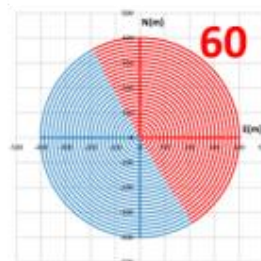
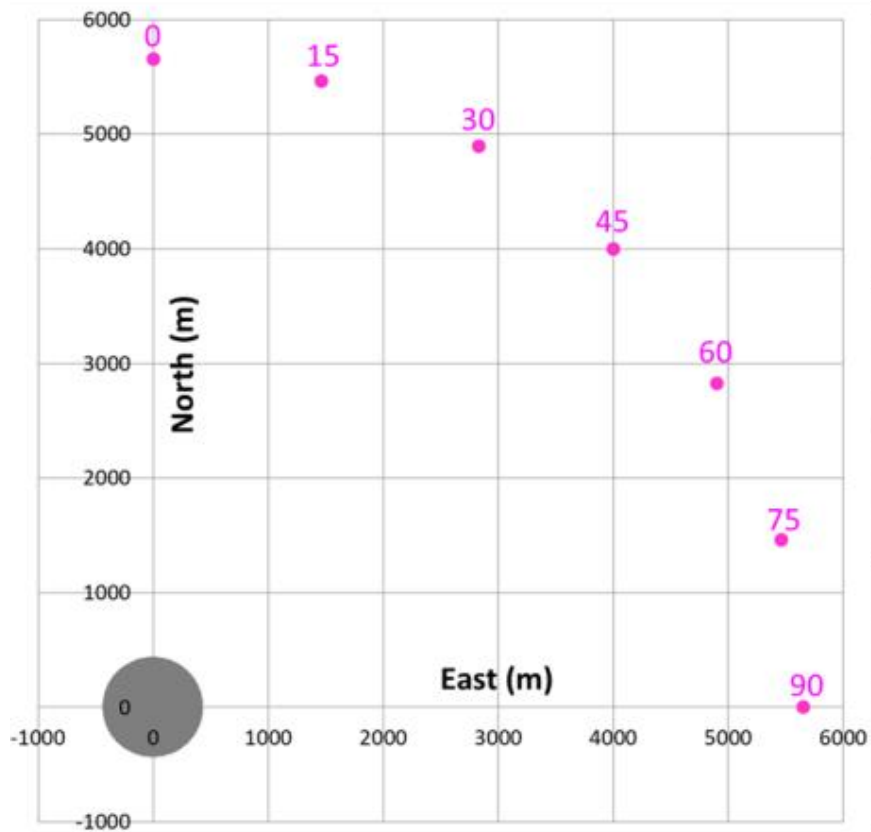
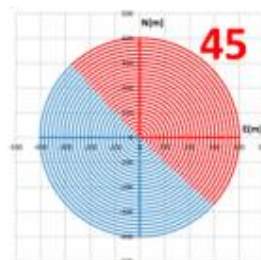
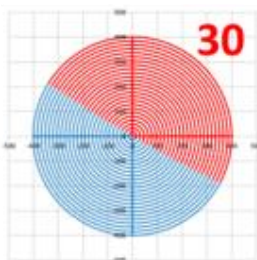
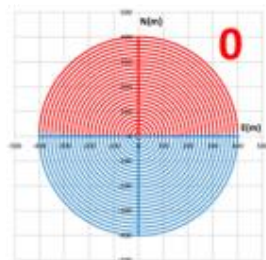
# 2D DAS Fiber Array

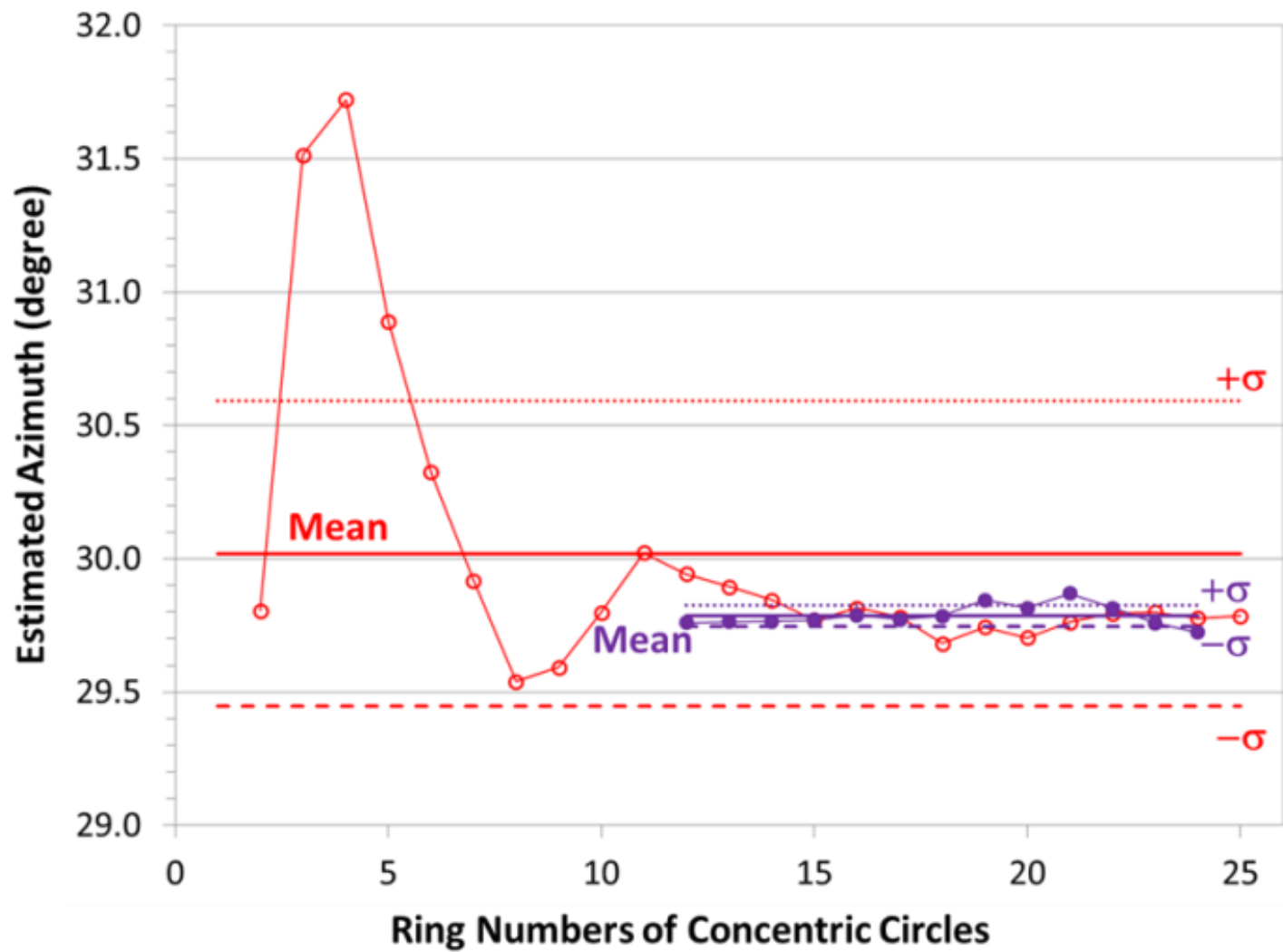
# Travel Time Distribution

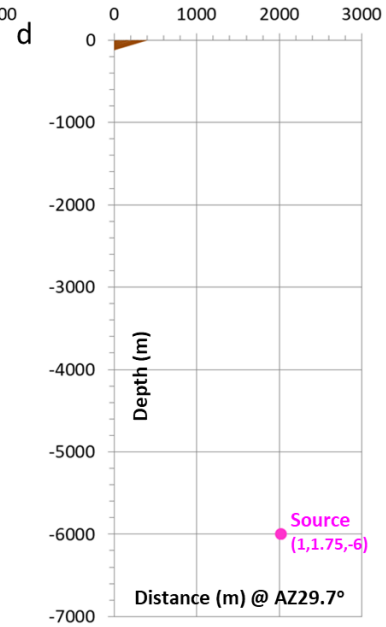
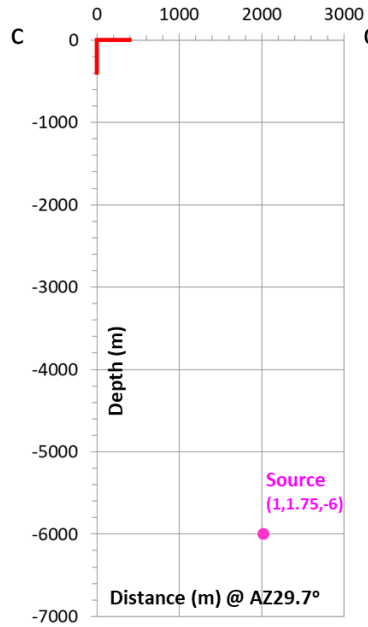
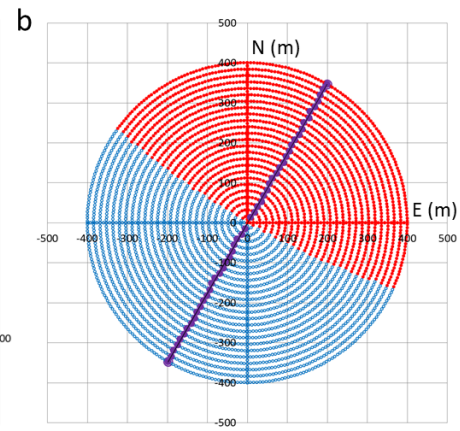
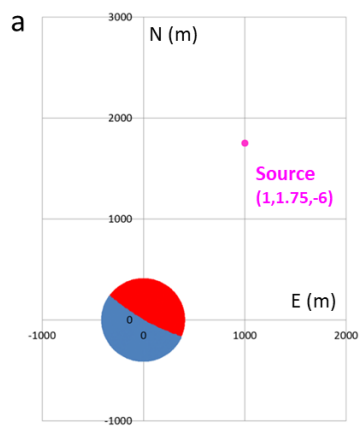


Differential Travel Times

Two Signs Differential Travel Times







Estimate angle of incidence

# AZ estimated form Geophone and DAS Array (Hodogram)

