

Organic Geochemistry Breakout Session

Publications

- age model constraints, how much fine-tuning is still left?
- Thinking about isotope interpretations at Turkana
 - Comparison of carbon isotopic records to other vegetation proxies
 - Constraining biome with pollen data to help



Current status of analyses

***Analytical budgets for WTK and NAO exhausted*

Site	Work completed	Timeline
West Turkana	159 samples analyzed for δD 177 samples analyzed for $\delta^{13}C$ ~200 samples analyzed for GDGTs	Paper in draft form, to be submitted – early 2017
Northern Awash	92 samples analyzed for δD ~200 samples analyzed for GDGTs	δD and $\delta^{13}C$ complete – March
Tugen Hills	Pilot samples did not yield lipids	Need mud and money
Lake Magadi	20 pilot samples processed GDGTs detected, need further evaluation	resampling of core – Spring Complete analyses – Summer
Ologesailie	13 pilot samples analyzed for $\delta^{13}C$ (δD needs further evaluation) GDGTs unlikely to work	Resampling of core – Spring Complete $\delta^{13}C$ analyses – Summer

Additional Analyses

- Check samples for stanols to constrain degradation
- Olorgesailie – request 23 more samples through the unit in the 400-300 ka window
 - Can clearly see that bulk organic C isotopes go from low to high variance in this age range
- Comparison of TEX and clumped isotopes
- Magadi – request ~50 more samples for alkanes H and C isotopes (top ~100 m of the core)
- Complete H isotopes on NAW below lowest tie point (i.e. close to first basalt)
- NAO/NAW C isotopes done by ~March
- Chew Bahir – ran a few pilot samples, Jim is continuing with it
- High resolution, millennial scale analyses at Turkana high-variability interval (1.75 Ma), Rachel received outside grant for this

Wish List (need money)

A timeline for key hominin events, or summary of the fossil record/key papers that we should be looking at for each site to help guide our interpretations

Lack of faunal reconstruction references in the proposal, need the most up to date interpretations of anthropological goings-ons

- Potential resampling of section in Turkana in deeper sections for GDGTs
 - Lithotype dependent resampling of upper sections where we have significant gaps (look for mudstones or other organic rich areas)
- Bulk ^{13}C from Turkana and Awash, also Tugen (this is cheap)
- Potentially revisit Tugen
- Survey other compounds that could be useful for paleoenvironmental analyses