

SUERC – Universities of Edinburgh and Glasgow Shared Analytical Facility

- Located off campus on Scottish Enterprise Technology Park
- Operated (mostly) as an independent RO
- Staff are UoG employees and academics returned to Research Excellence Framework by GU.

Isotope Geoscience - Stable, radiogenic &, noble gas isotopes, trace elements, Cosmogenic Isotope Sample Preparation - ^{10}Be , ^{26}Al , ^{36}Cl .

NERC – Ar Isotope Facility, Isotope Community Support Facility, Cosmogenic Isotope Analysis Facility

Radiometrics - ^{14}C dating and forensics, isotopes in archaeology, environmental radioactivity, vehicular/aerial γ survey, luminescence – dating, food irradiation.

NERC - Radiocarbon Facility (EK)

Stable Isotope - Environmental causes of chronic disease – diet & lifestyle, ^2D , ^{13}C , ^{15}N & ^{18}O
Biochemistry labelling of small molecules, compound specific GC- & LC-IRMS Carbohydrate/lipid/protein metabolism, Functional metabolomics.

NERC Life Sciences Mass Spectrometry Facility (EK)

Accelerator Mass - ^{14}C , ^{10}Be , ^{26}Al , ^{36}Cl , ^{129}I .

NERC “Recognized Facility”

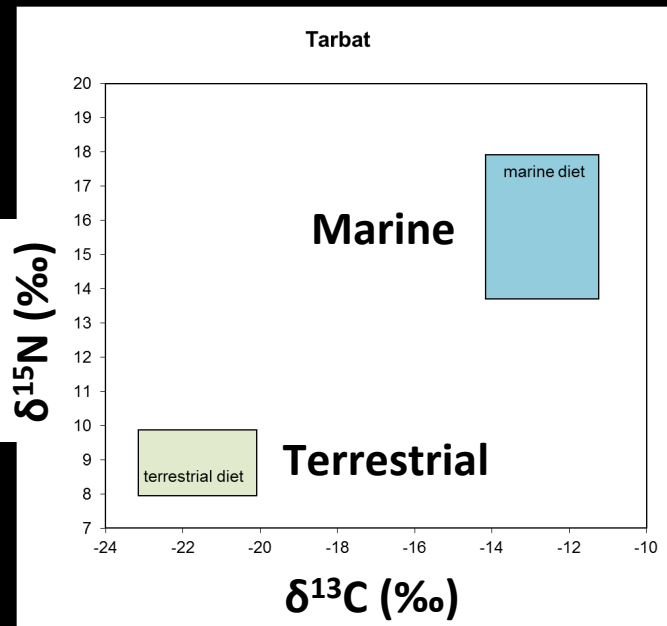


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Archaeological science: Reconstructing Diet and Understanding Population Movement



Identifying diet allows us to correct radiocarbon ages for reservoir effects



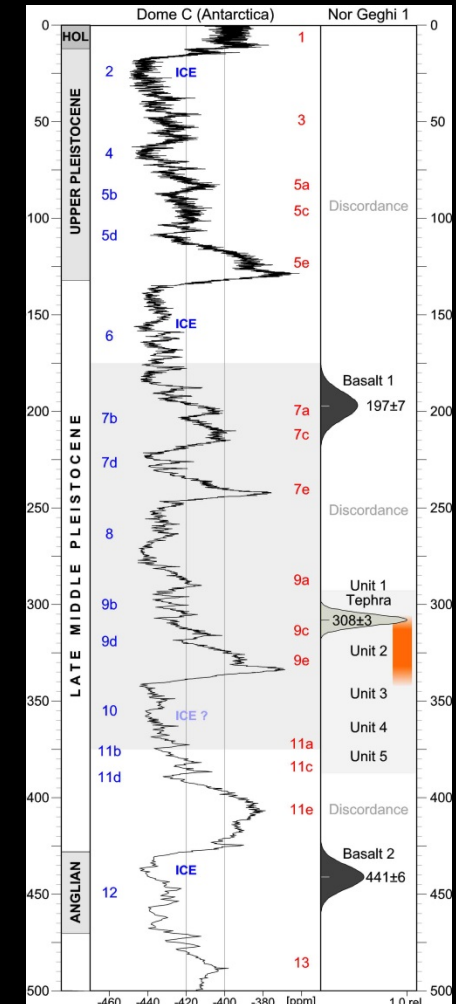
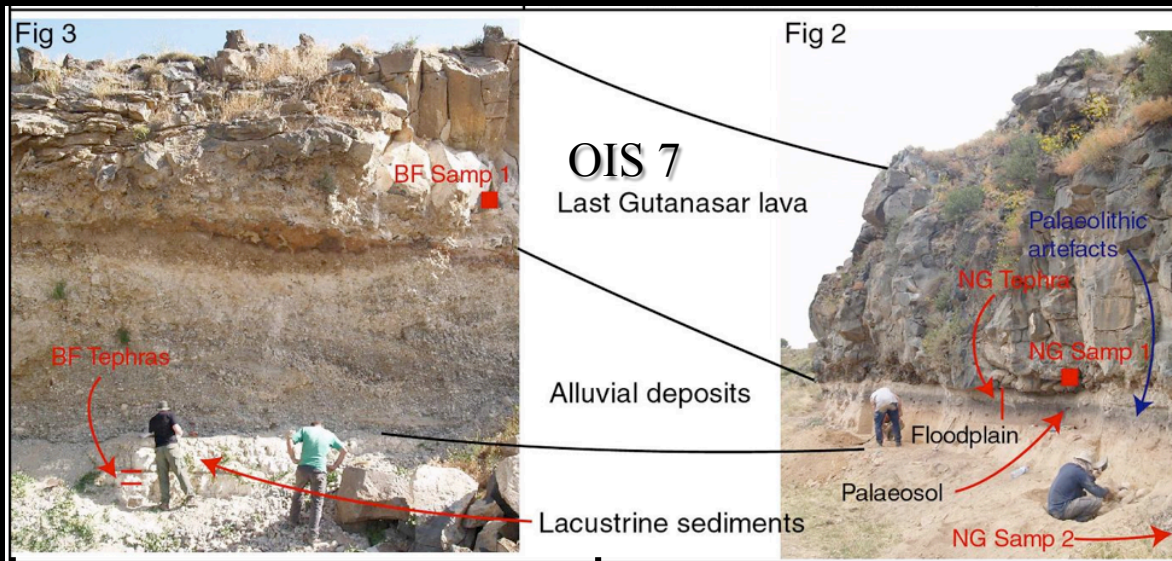
- **Stable isotope data for human bone collagen - $\delta^{13}\text{C}$, $\delta^{15}\text{N}$ and $\delta^{34}\text{S}$ values are used to inform on likely diet.**
- **$^{87}\text{Sr}/^{86}\text{Sr}$ ratios and $\delta^{18}\text{O}$ in tooth enamel are used to inform on potential population movements /investigating indigenous versus incoming populations.**

“Seamless Chronology” – extending the ^{14}C range

Early Evidence for Levallois Technology and the Transition from the Lower to Middle Palaeolithic in the Caucasus: New Data from Nor Geghi 1, Armenia

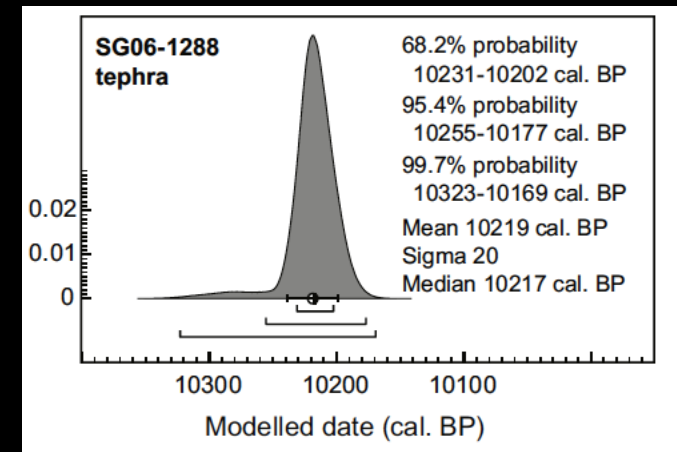
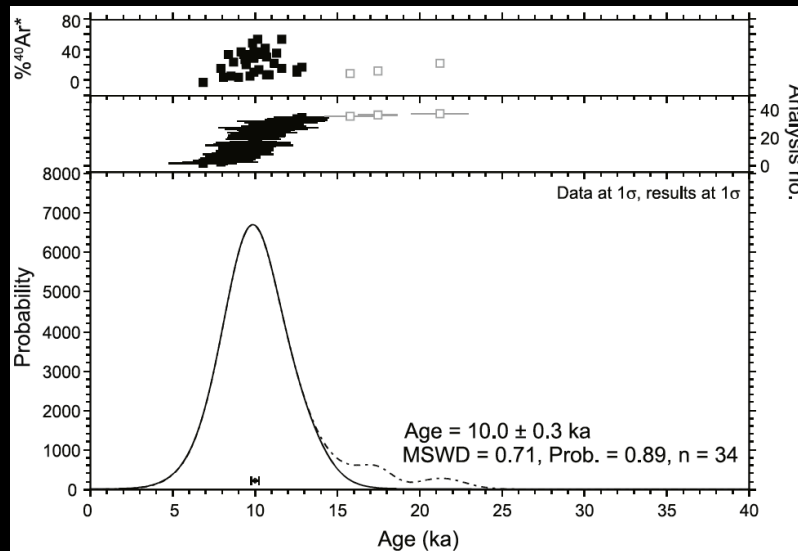
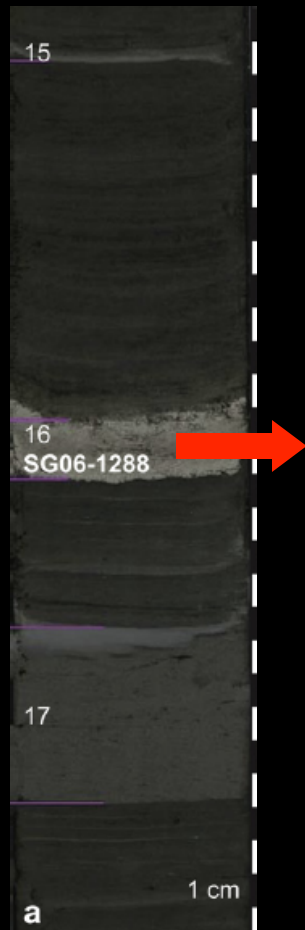
Bird Farm
Last Gutanasar basalt
 $198 \pm 7\text{ka}$ & $195 \pm 8\text{ka}$
 $205\text{--}187\text{ka}$

Nor Geghi 1
Last Gutanasar basalt
 $195 \pm 7\text{ka}$
 $202\text{--}188\text{ka}$
Tephra: $308 \pm 3\text{ka}$





“Seamless” Chronology - Integrating ^{14}C , Ar/Ar, varve & OSL chronologies to link climate records (terrestrial, marine, ice core)



- $^{40}\text{Ar}/^{39}\text{Ar}$ age = 9.7 - 10.3 ka
- Radiocarbon model age = 10177 - 10255 cal. BP
- Varve age = 10.1 - 10.2 ka
- OSL age = 9.5 - 10.2 ka