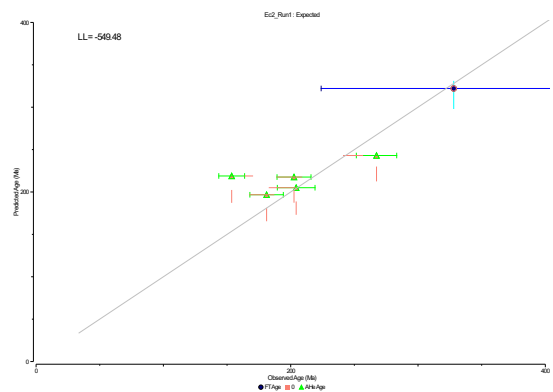
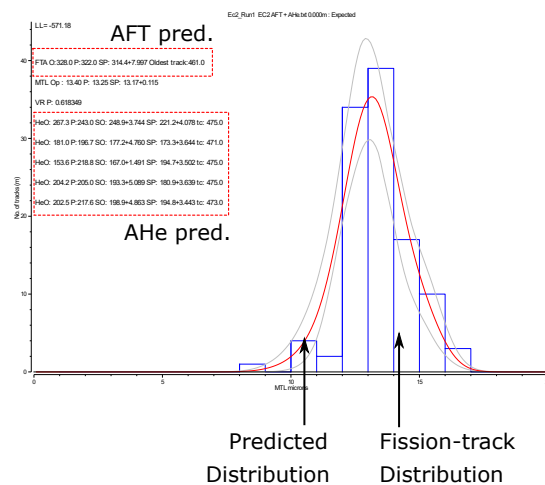
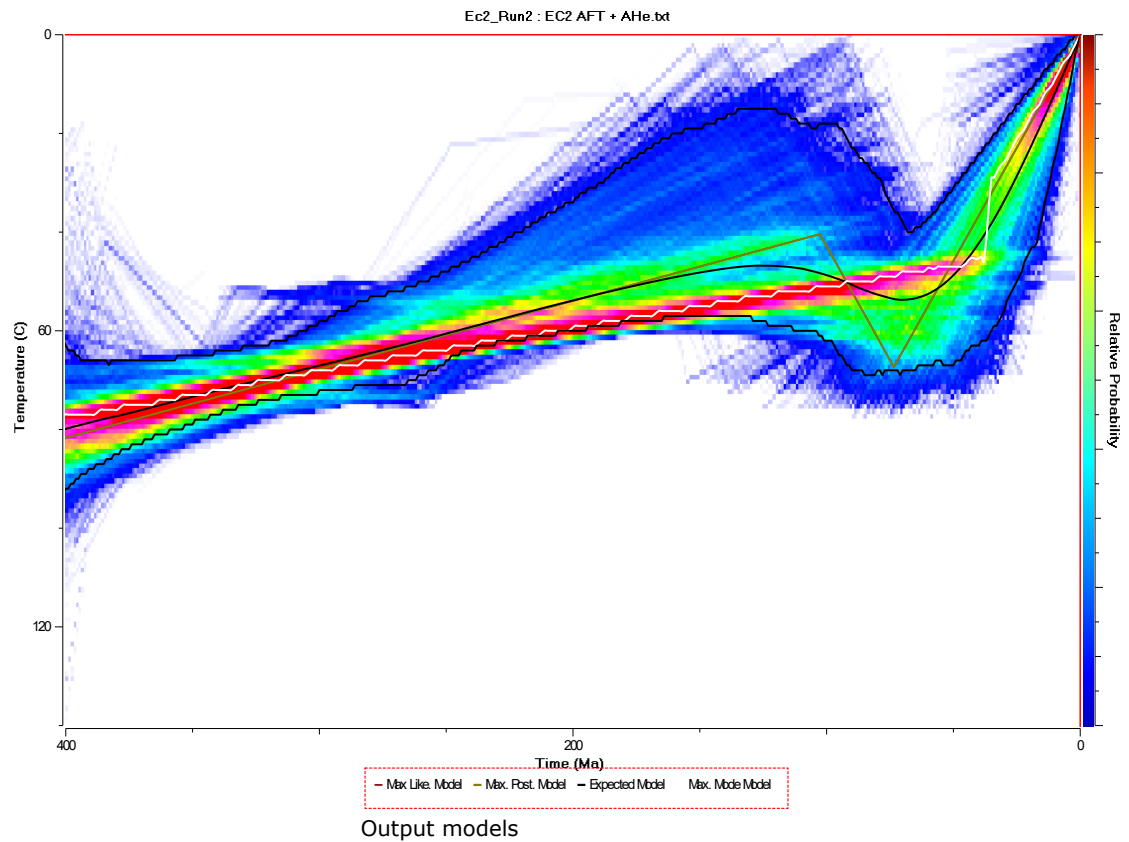

**Supplementary Data: The source of
topography across the Cumberland
Peninsula, Baffin Island, Arctic Canada:
differential exhumation of a North
Atlantic rift flank**

THERMAL MODELS

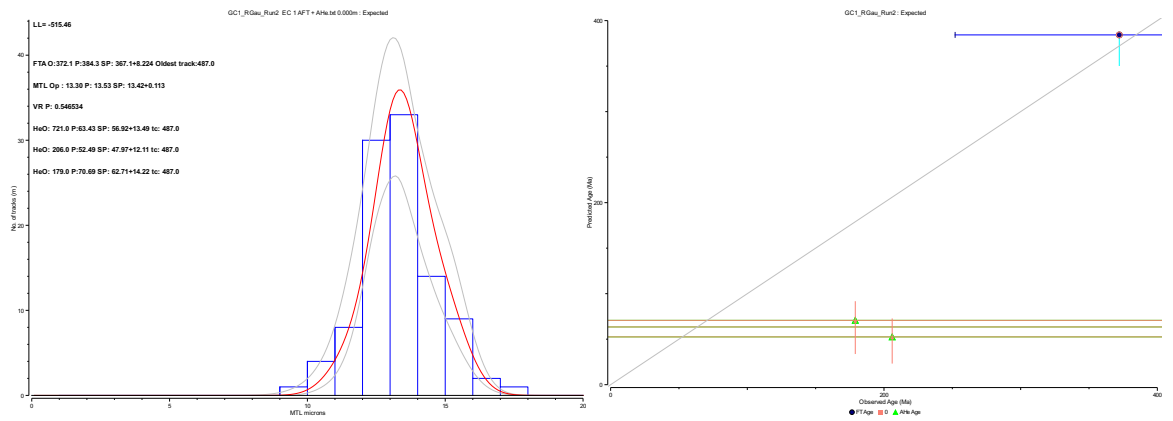
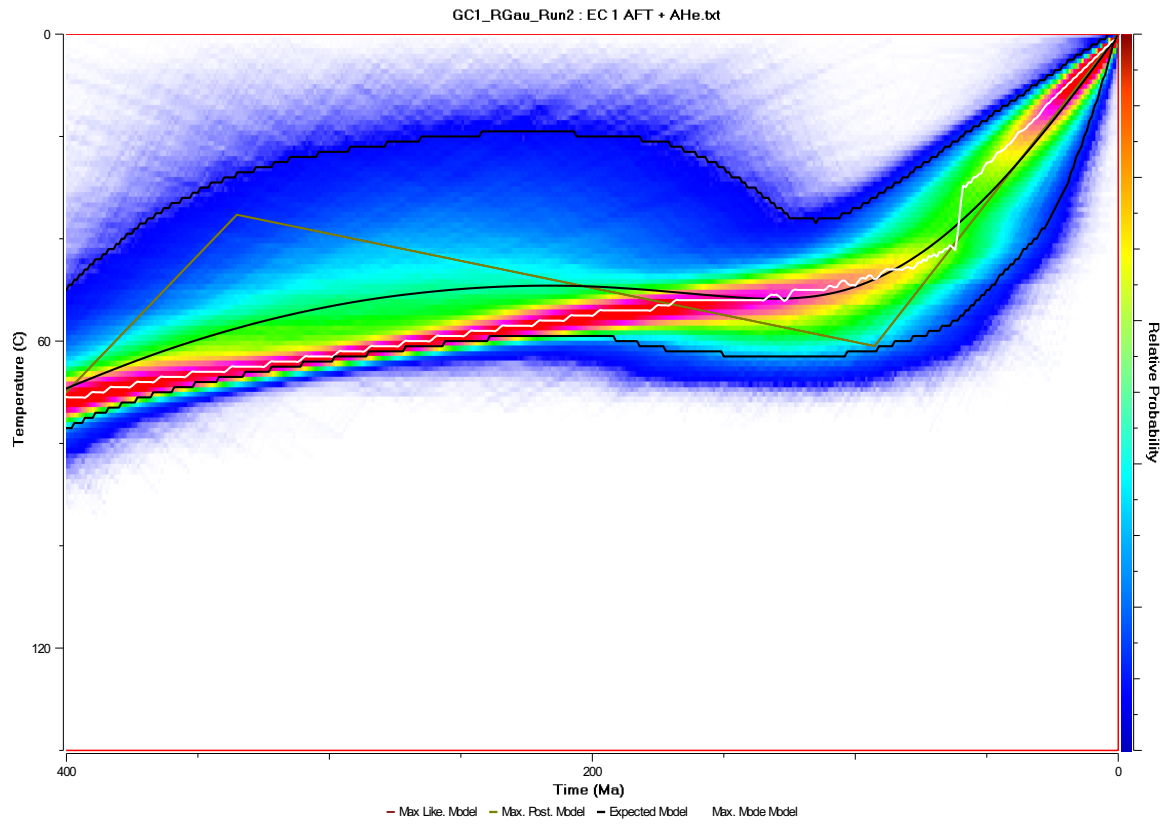
ISOSTATIC MODELLING

Thermal history models

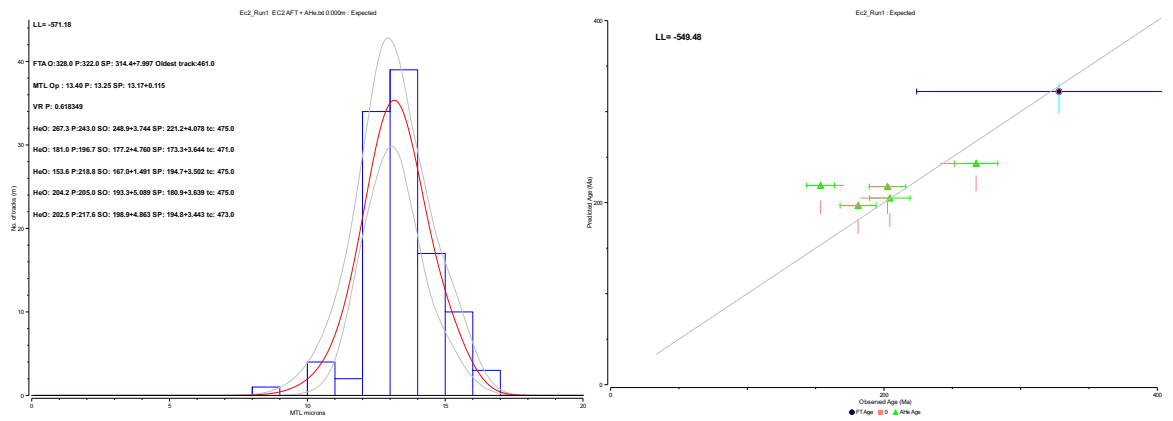
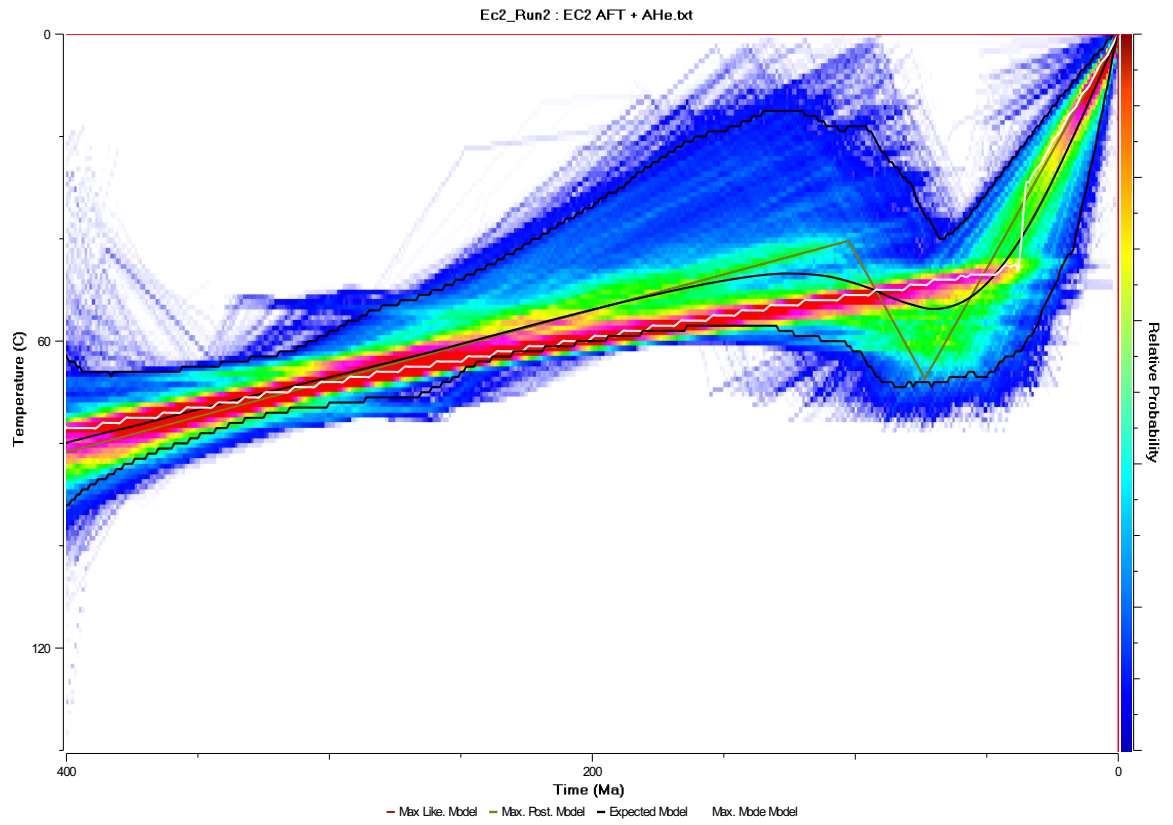
Each sample includes the expected, max-likelihood and max-mode model outputs, fission track and (U-Th)/He predictions and a plot showing the comparison between observed and predicted ages.



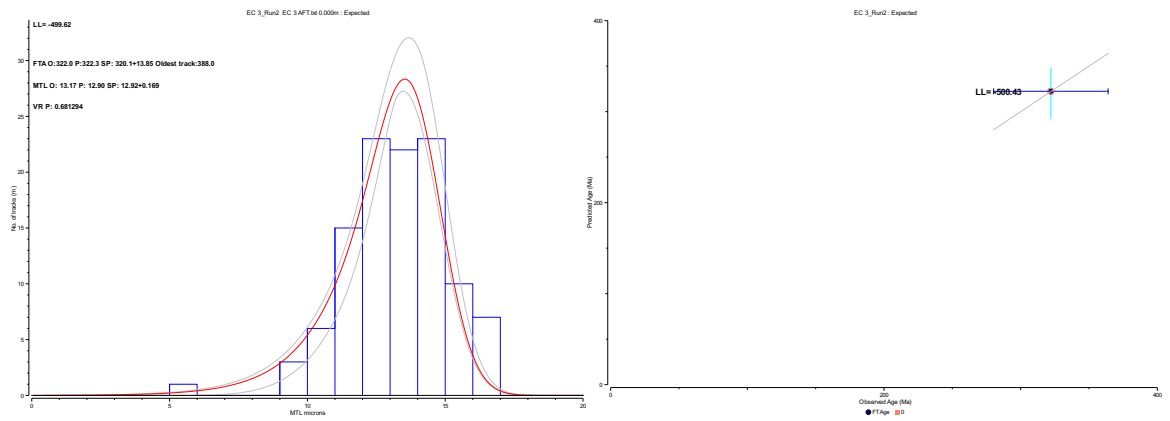
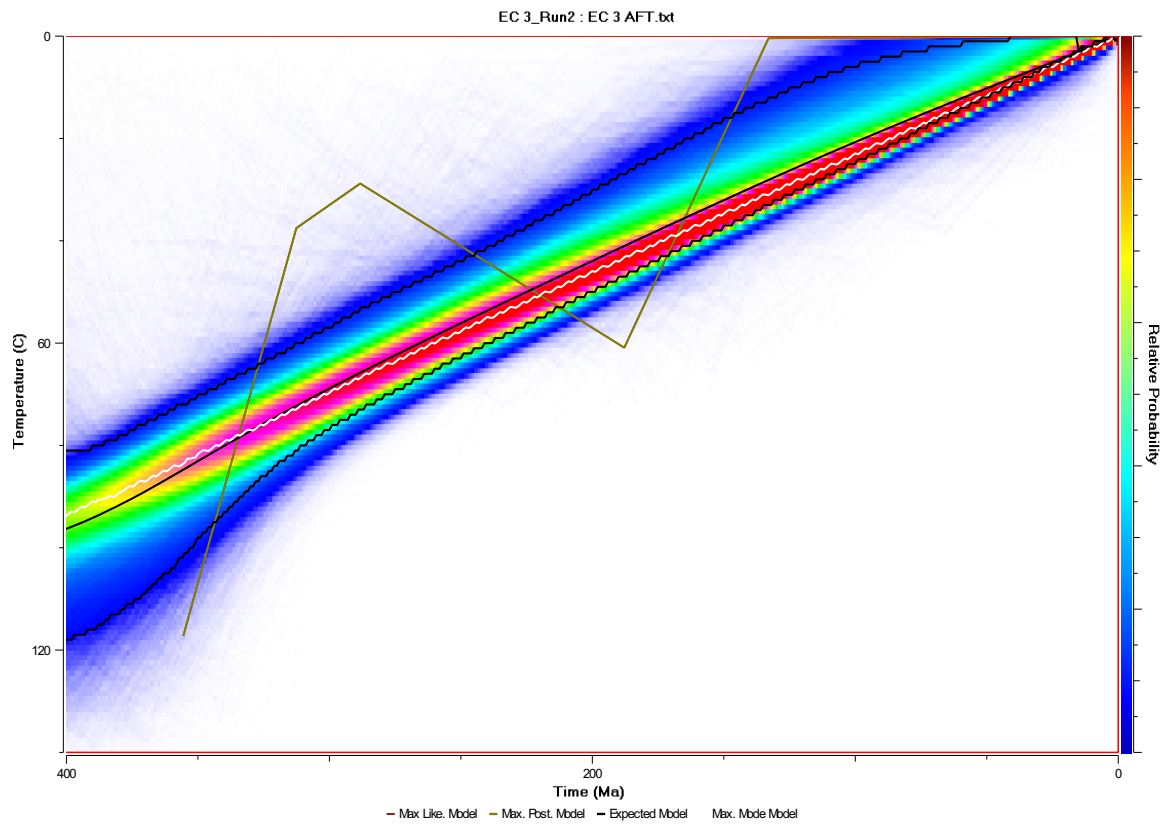
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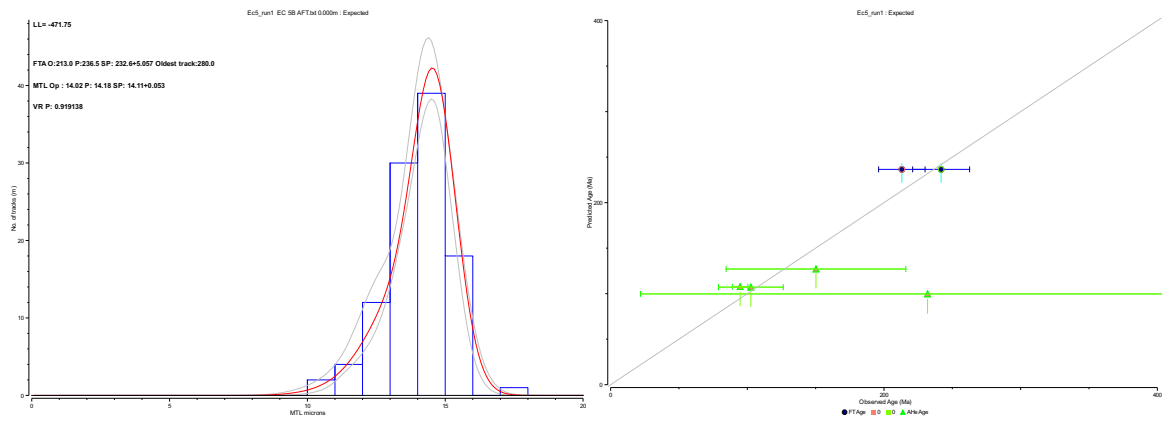
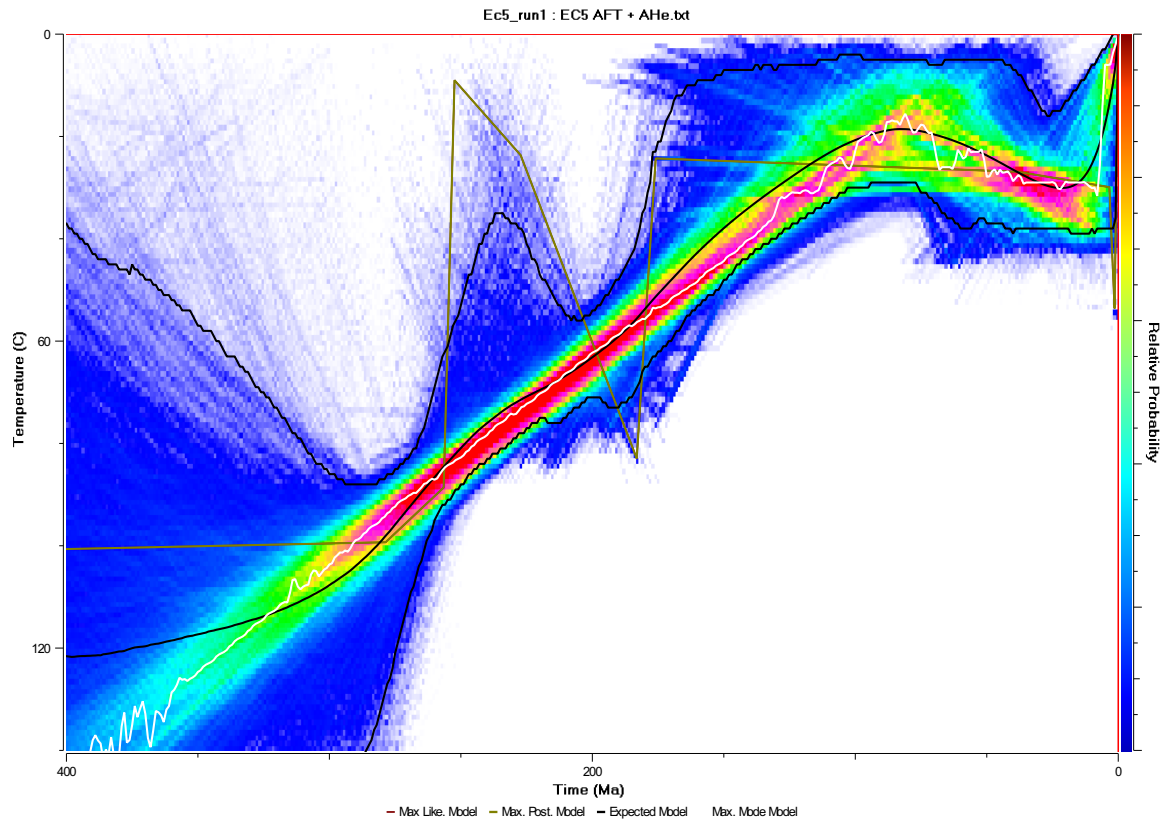
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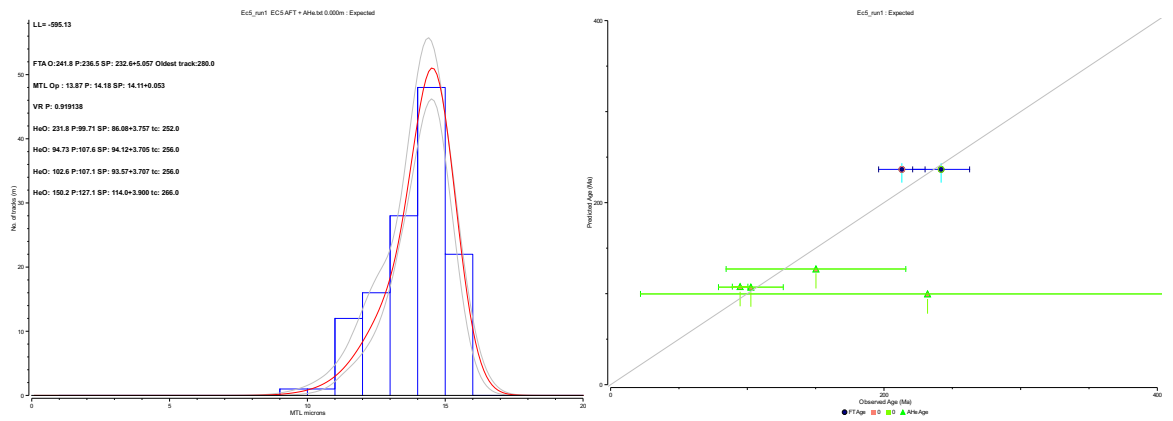
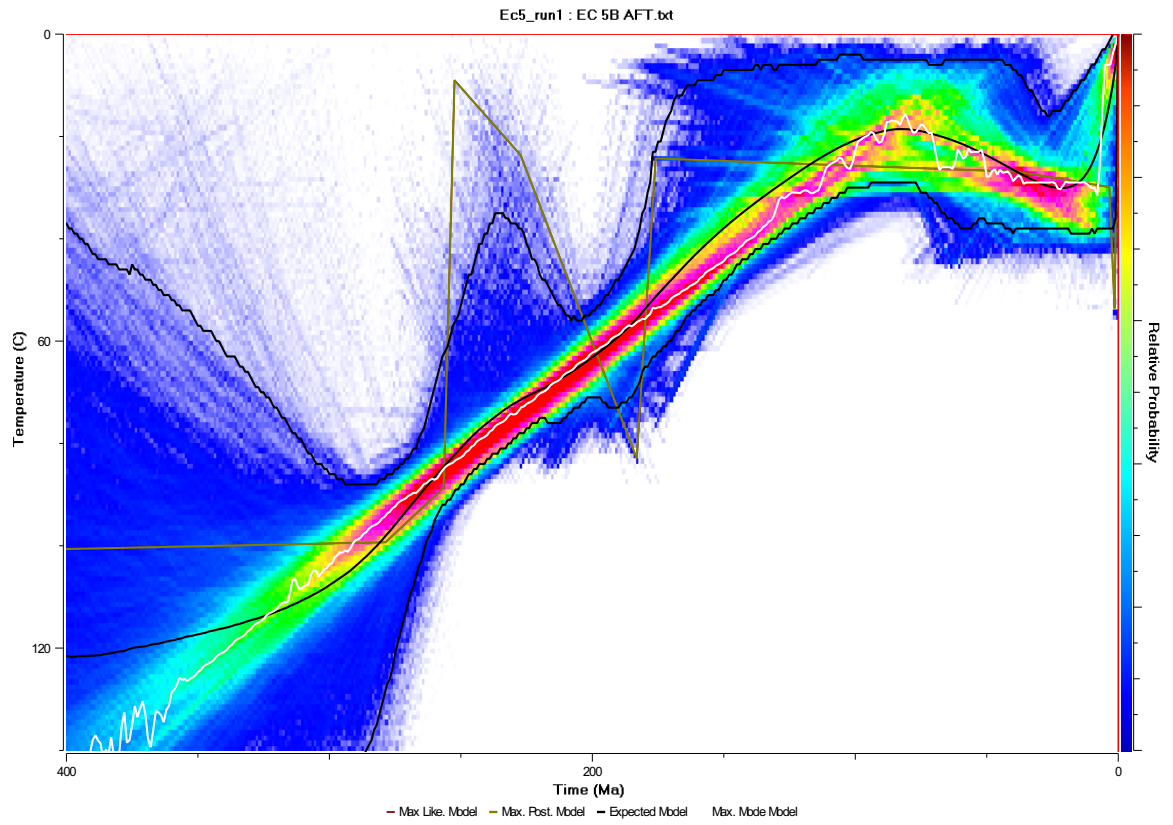
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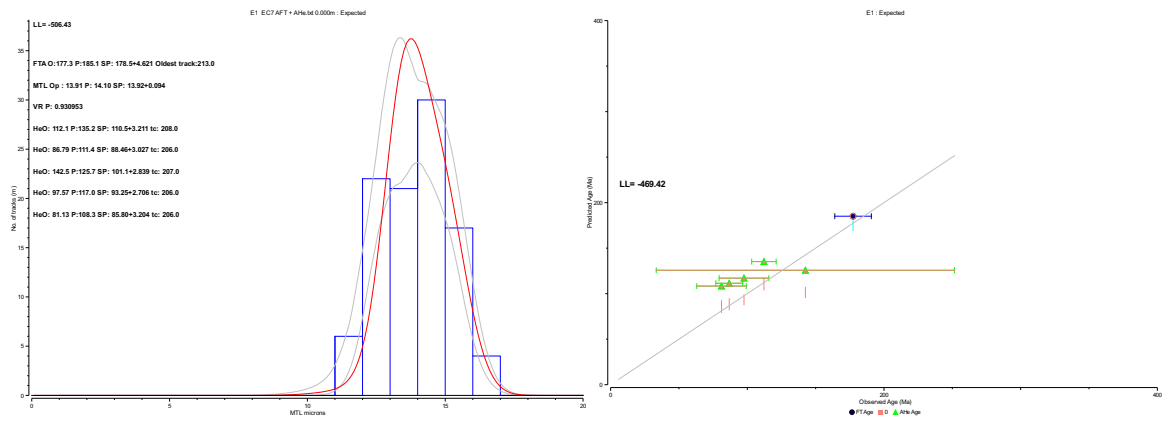
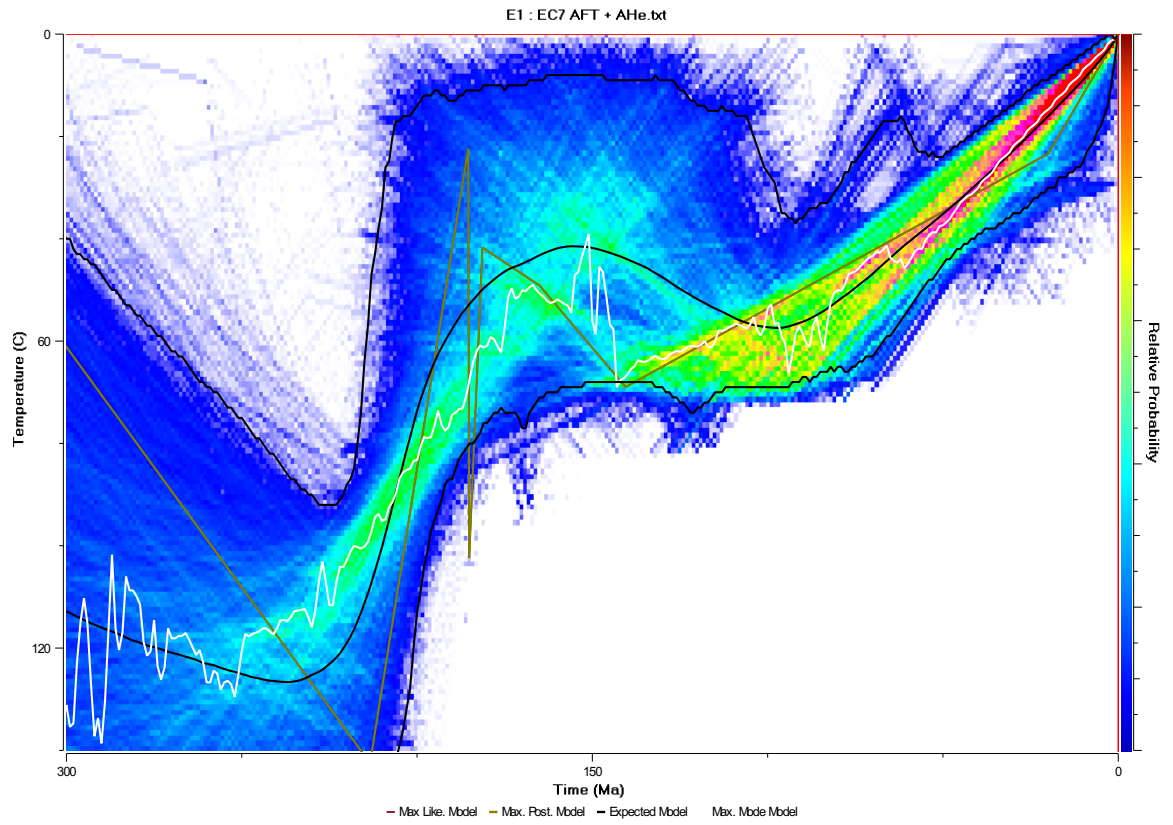
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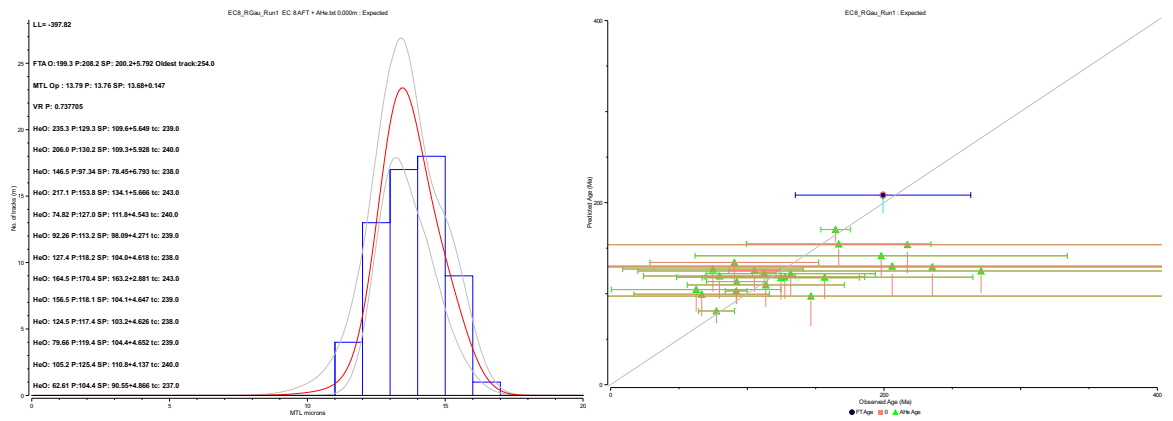
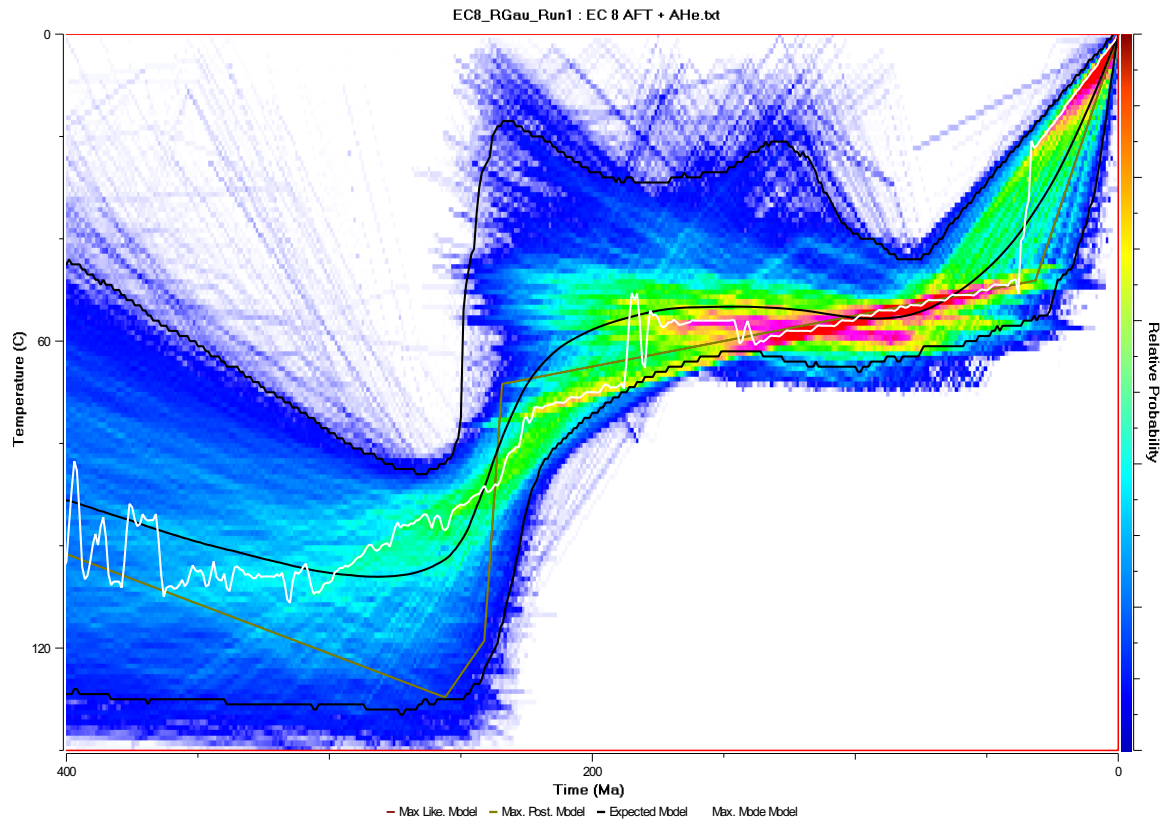
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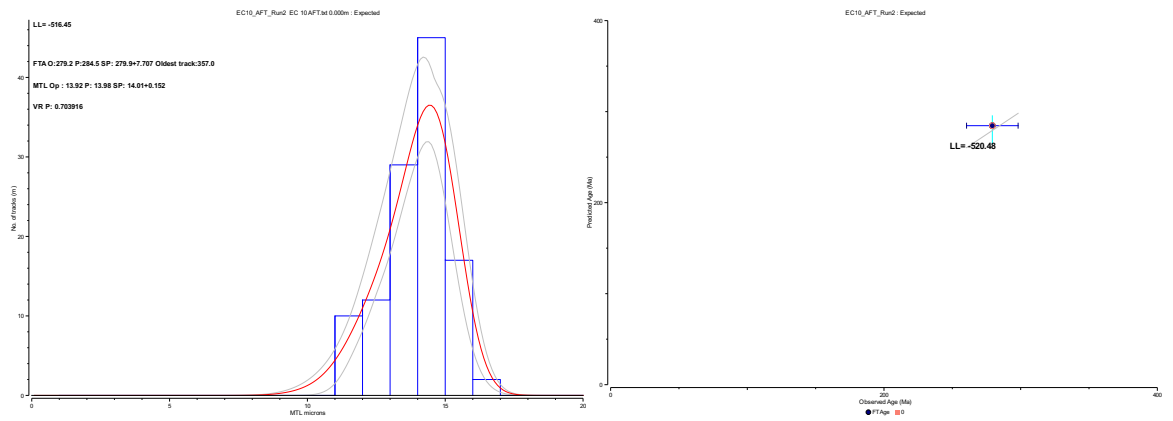
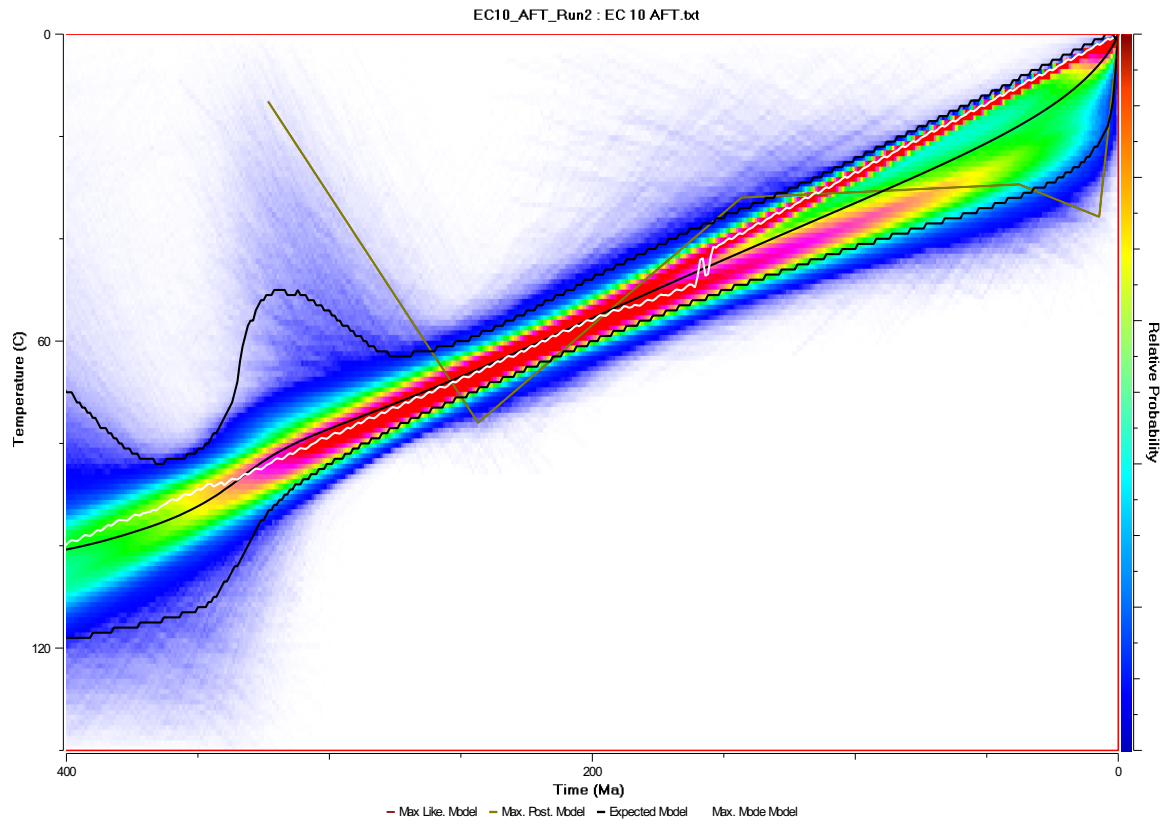
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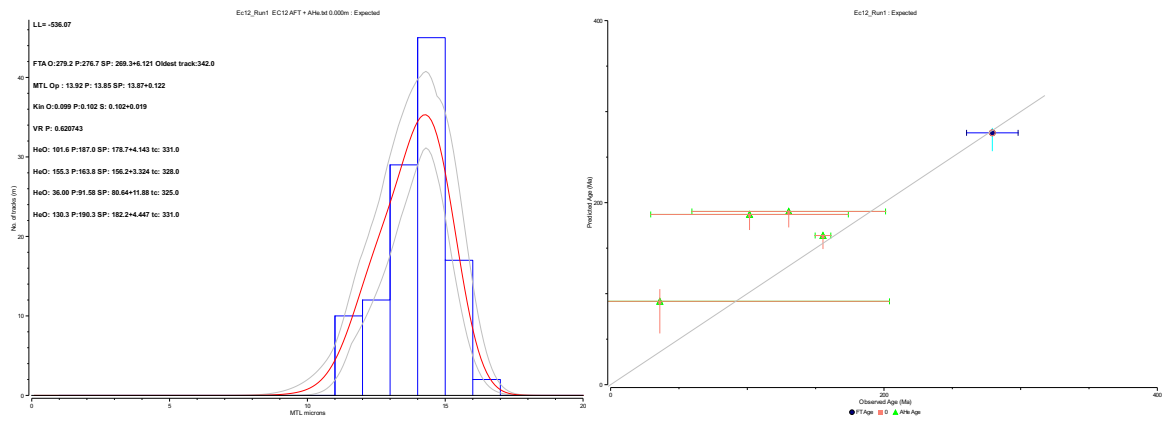
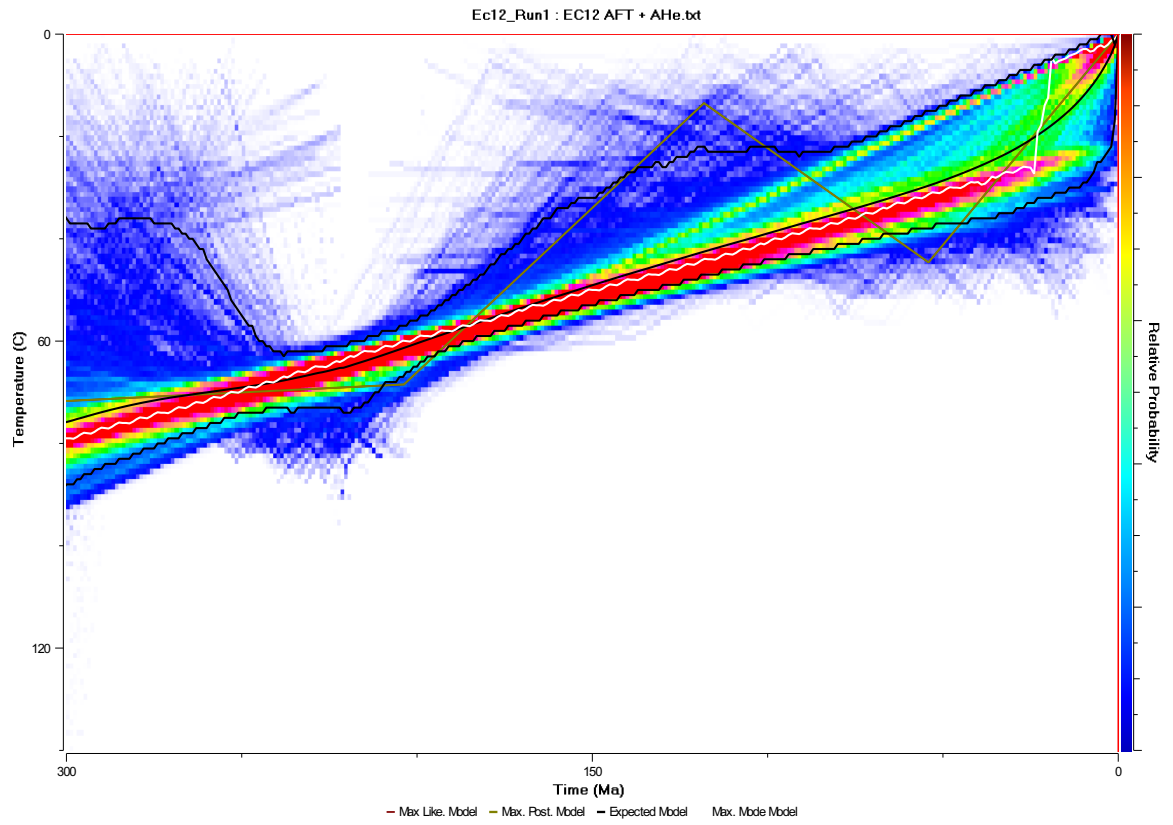
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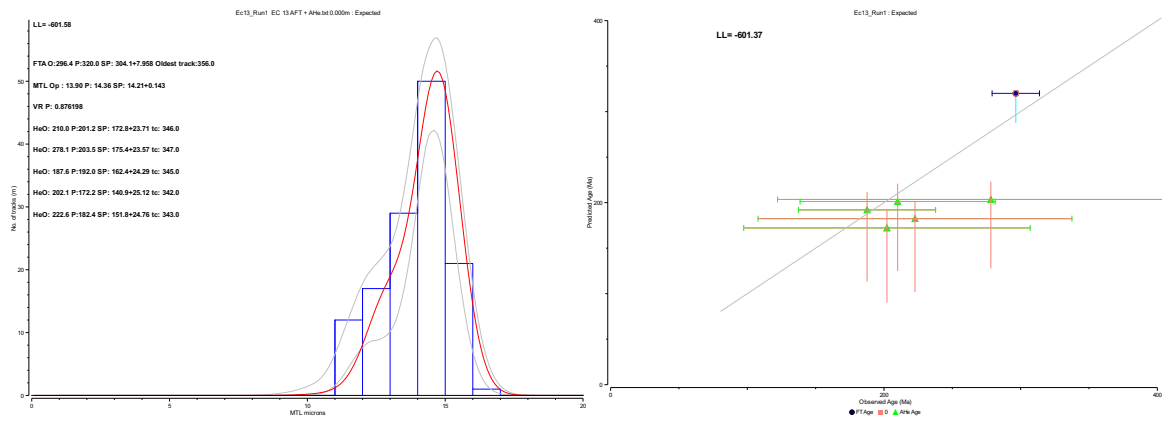
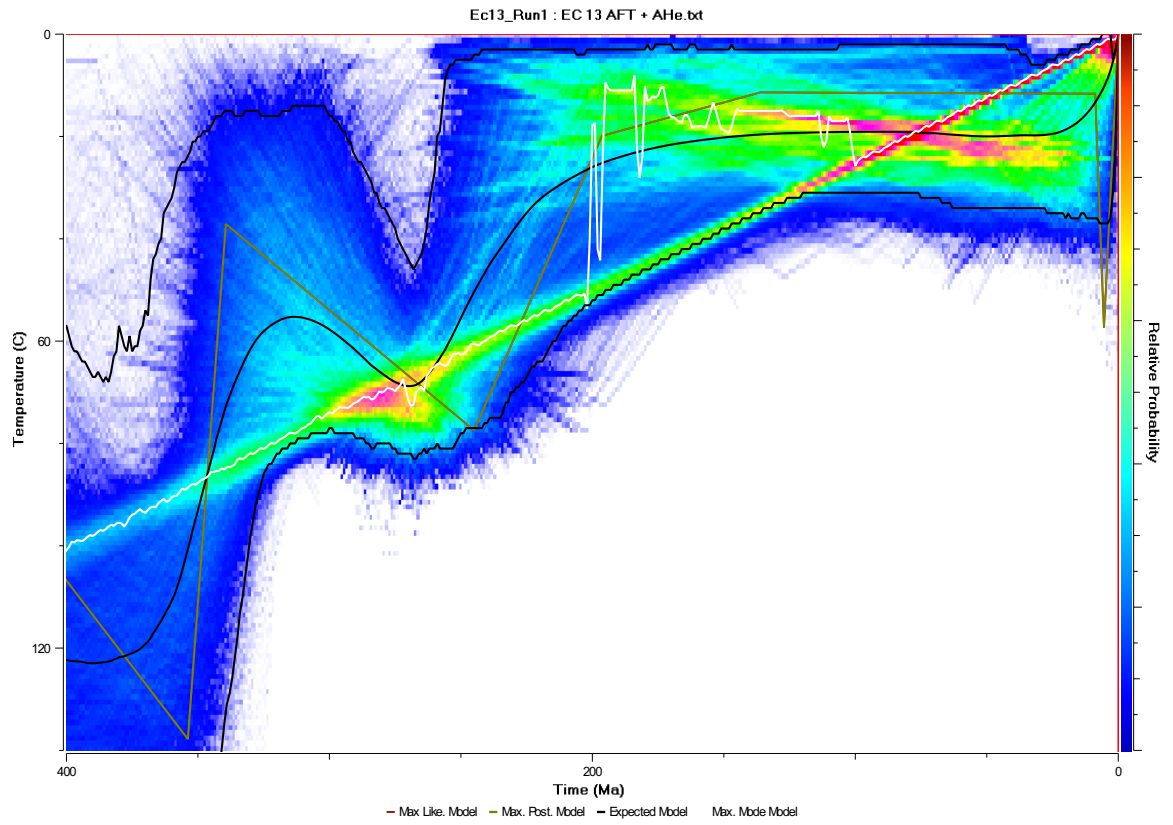
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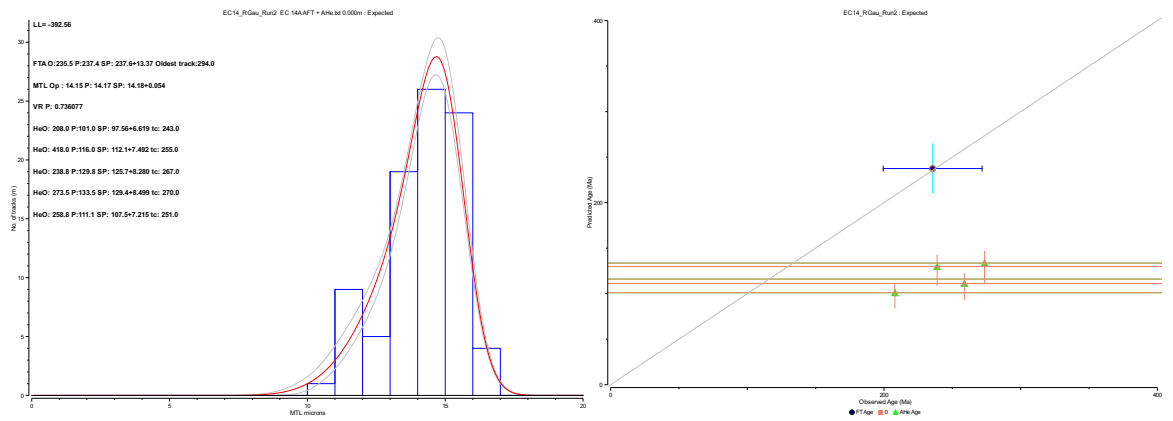
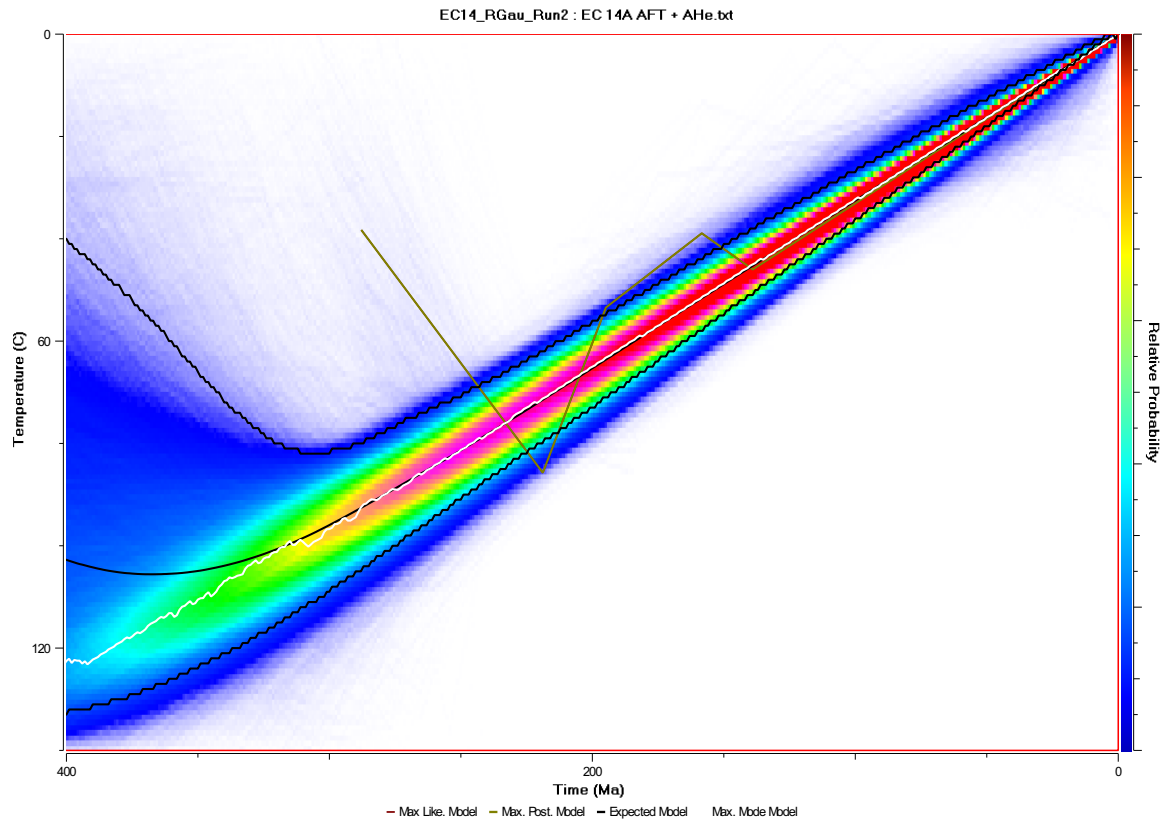
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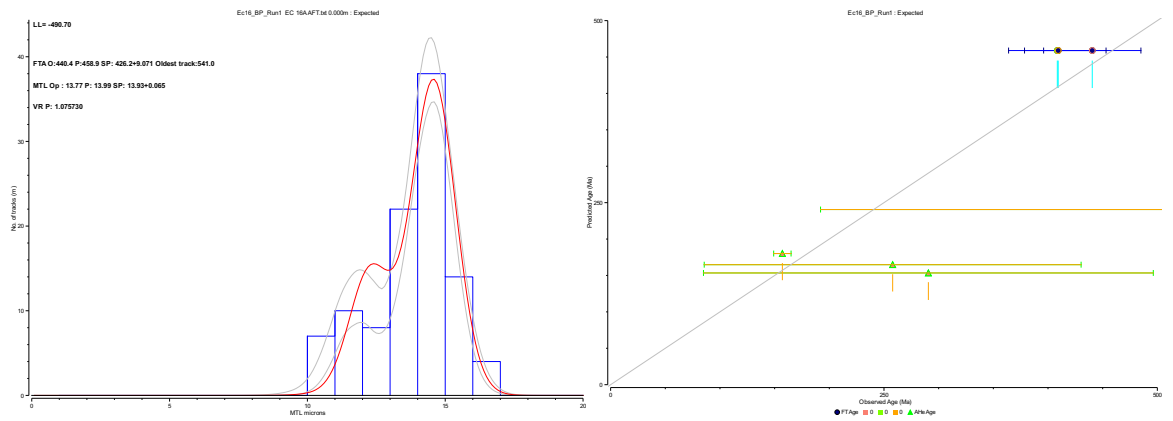
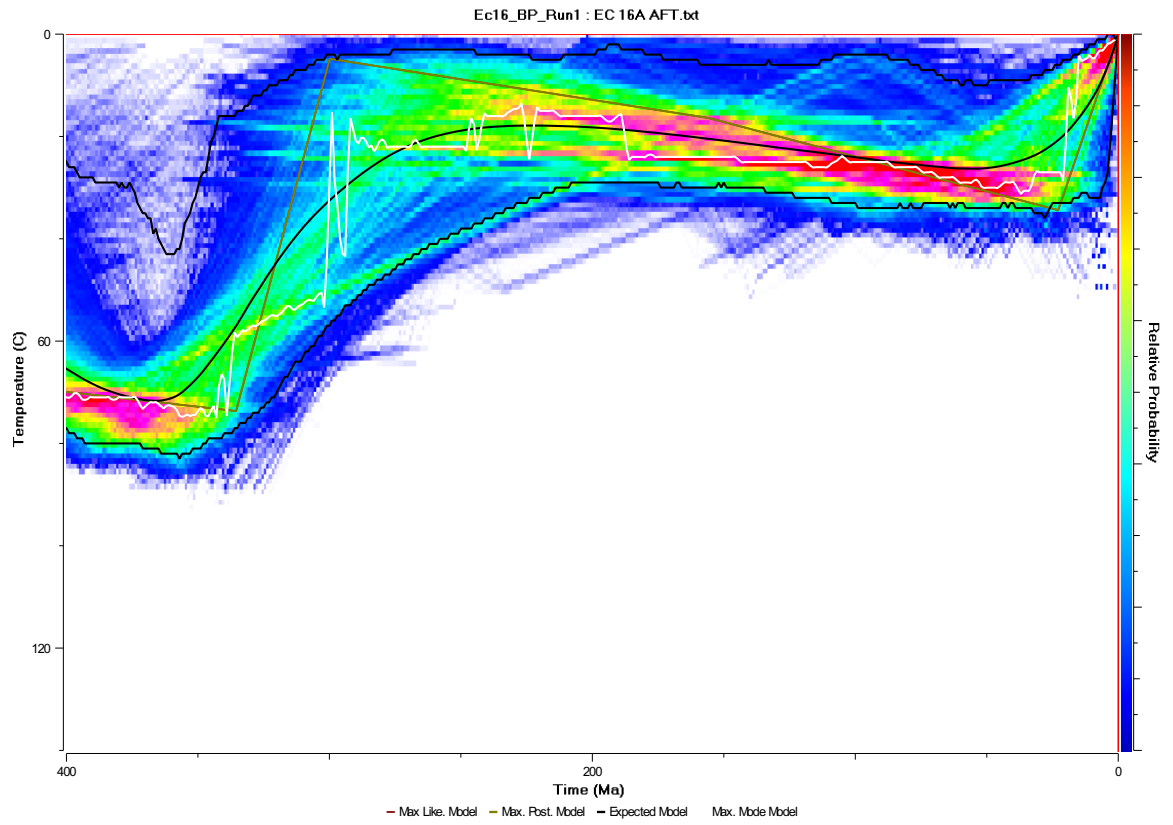
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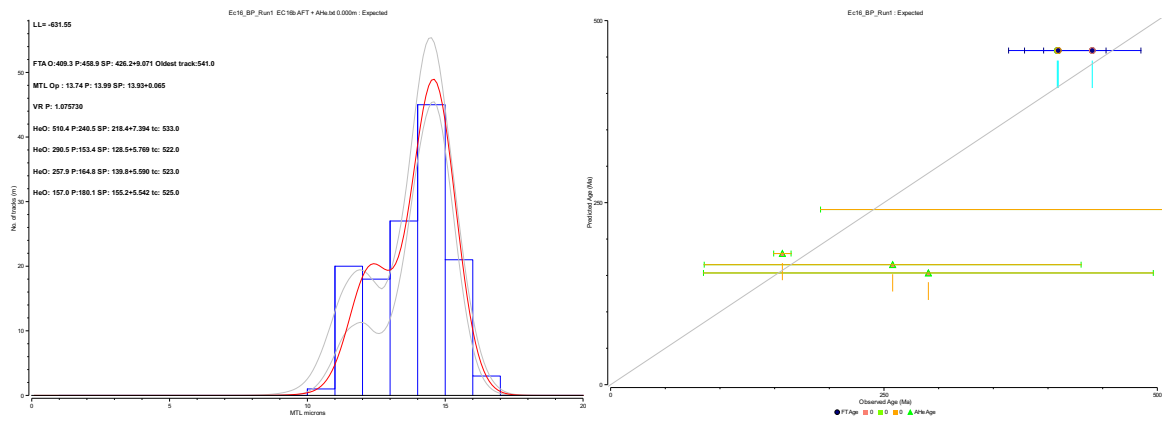
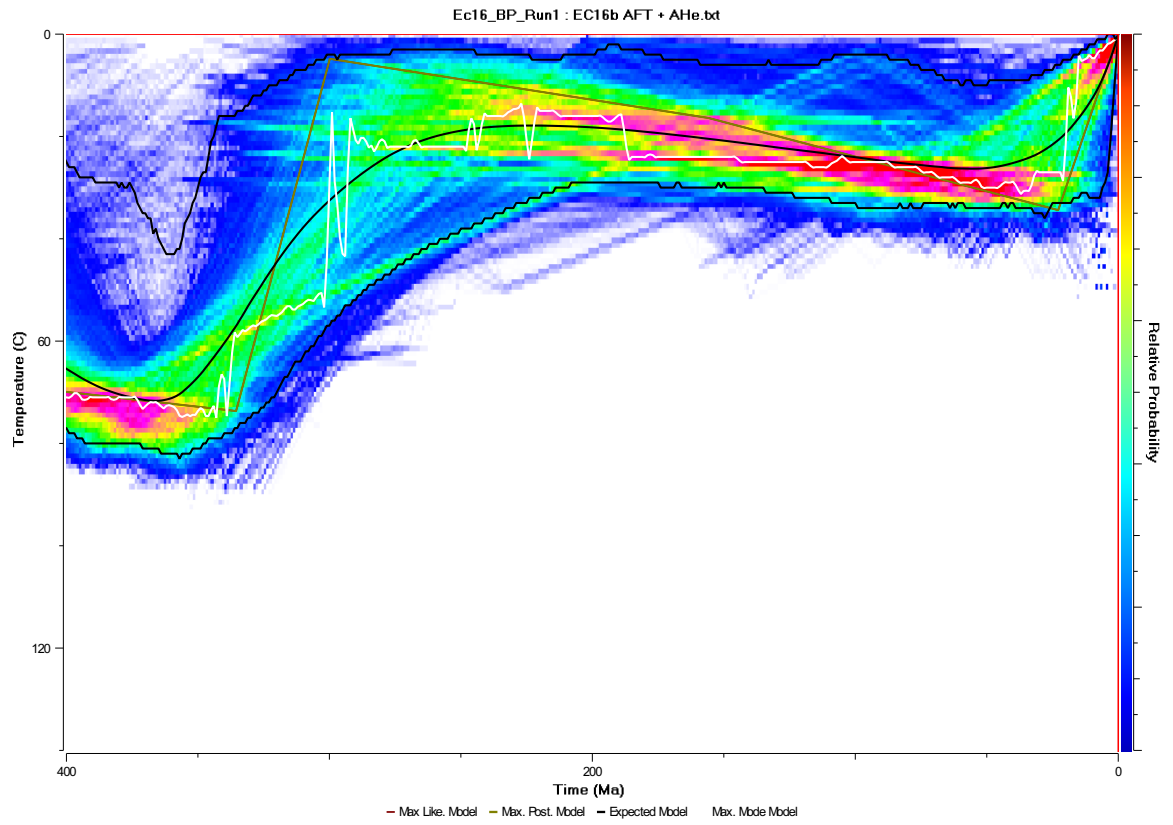
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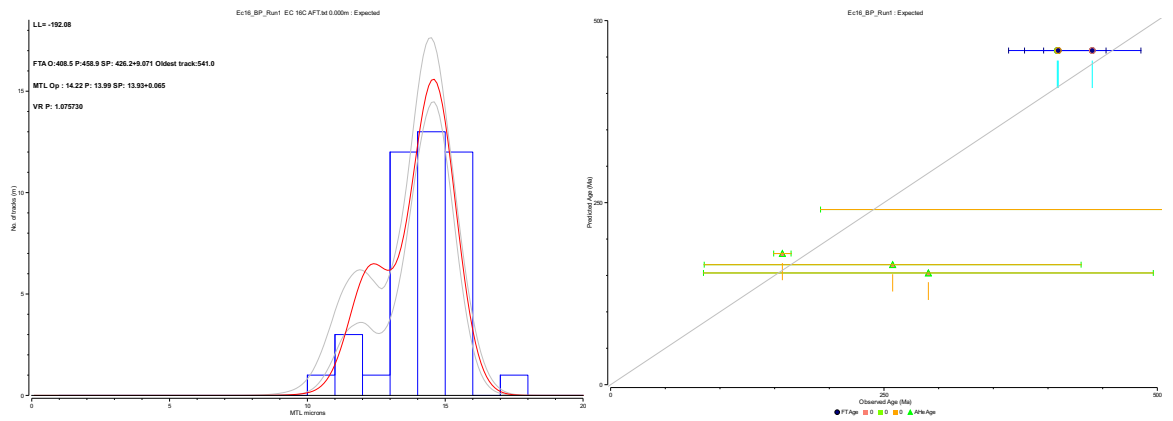
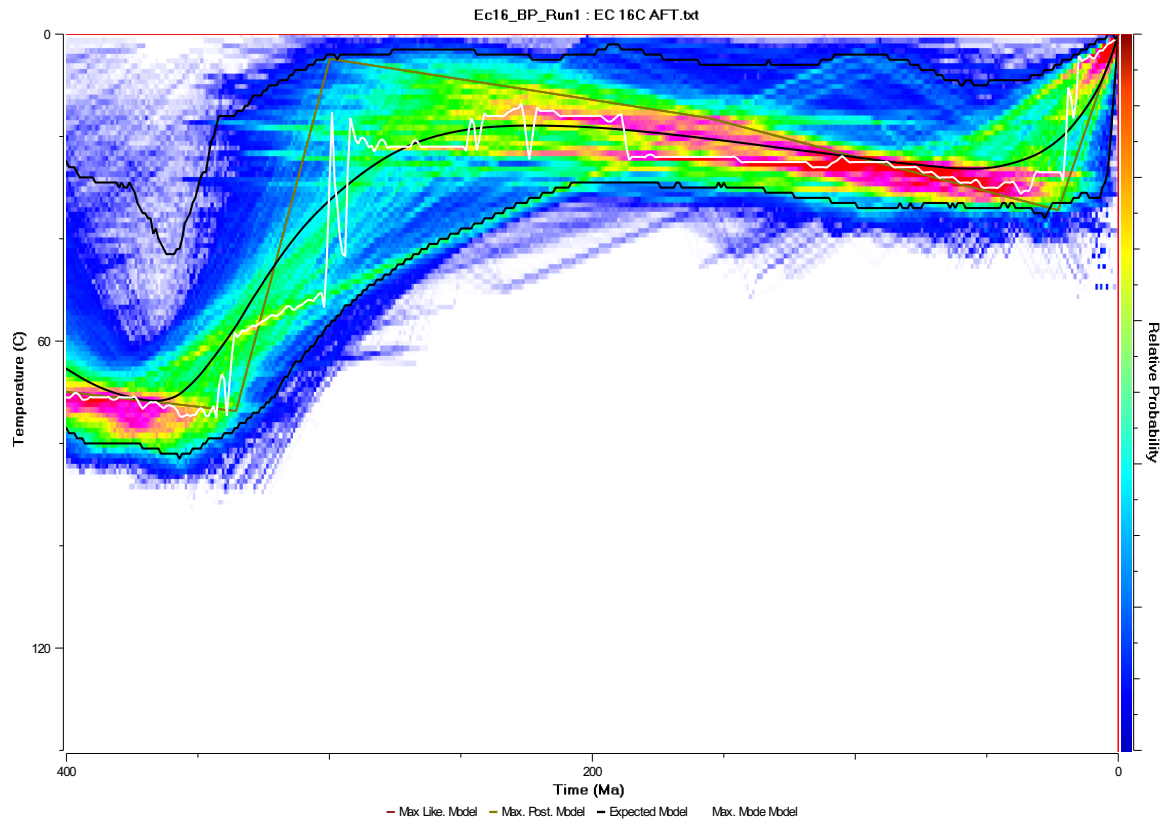
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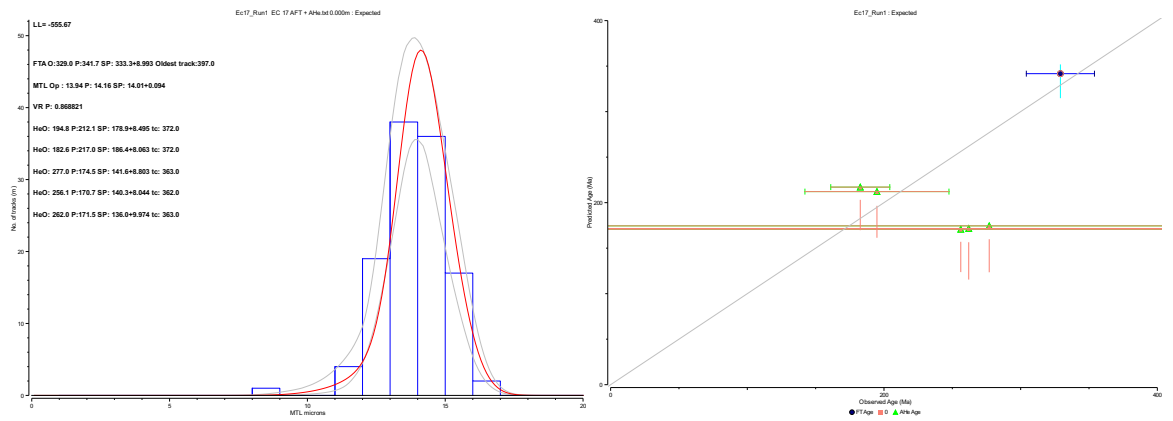
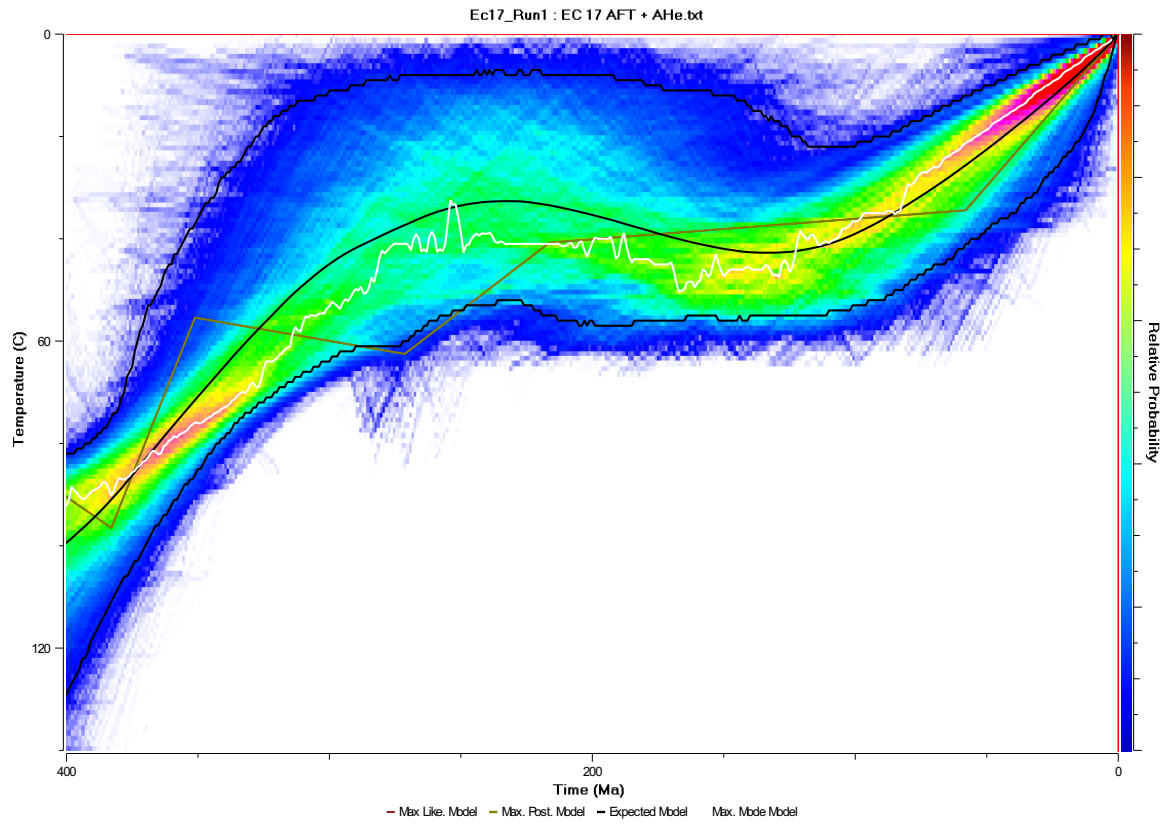
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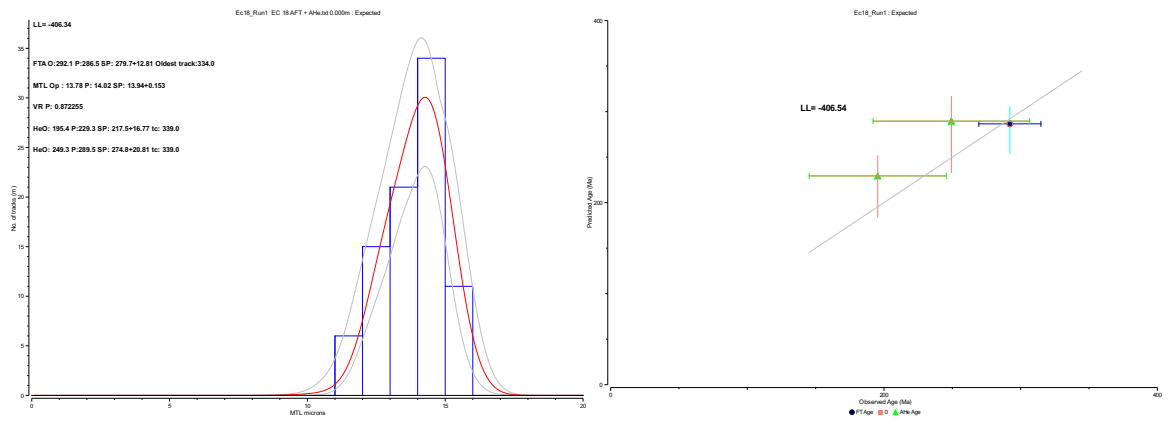
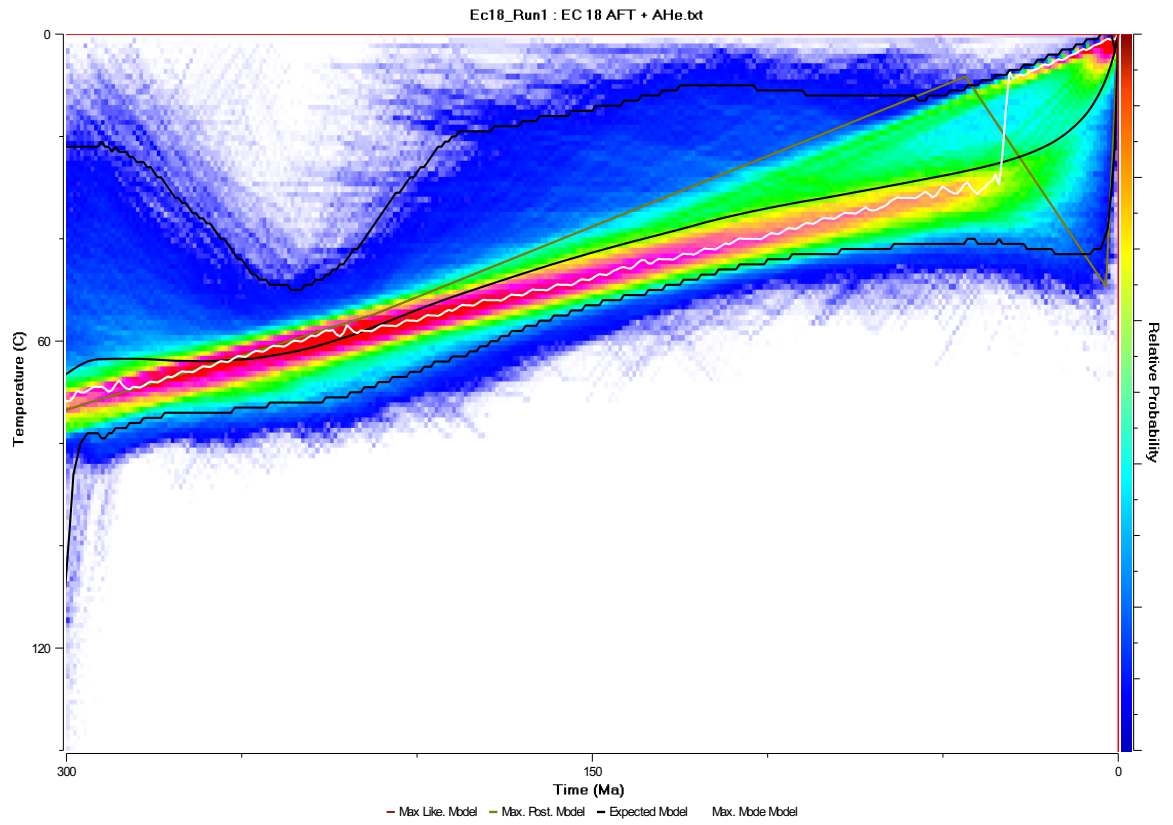
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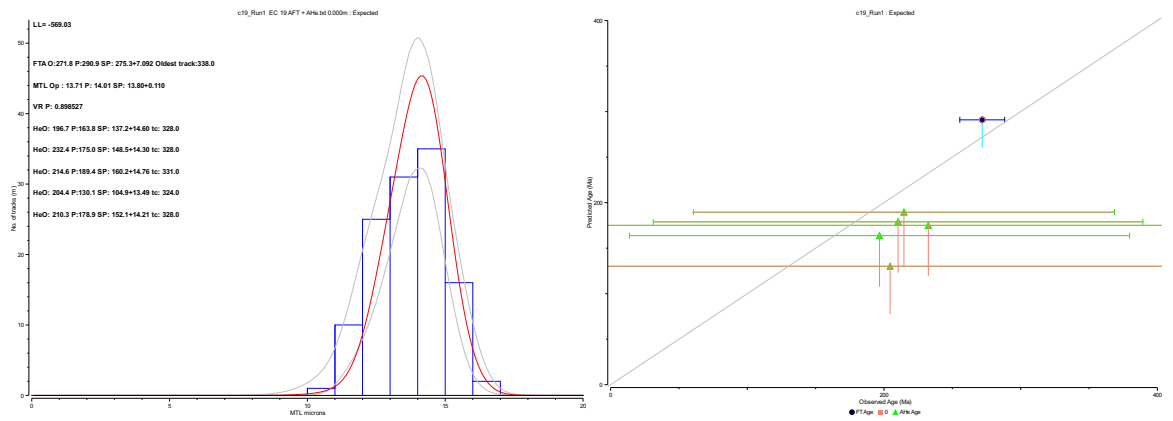
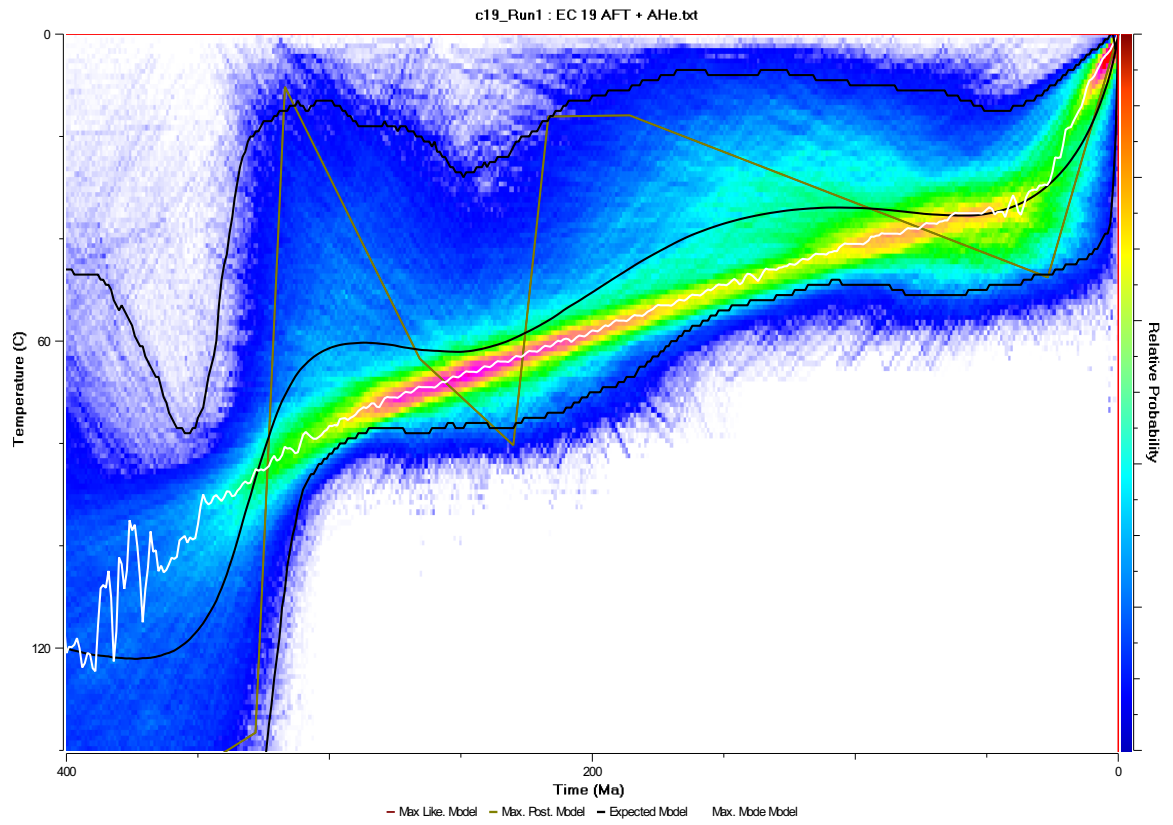
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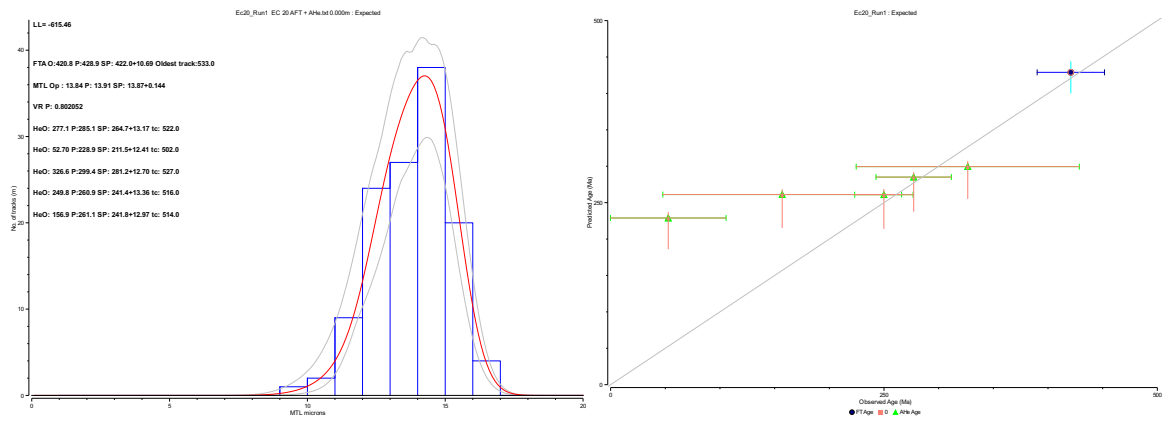
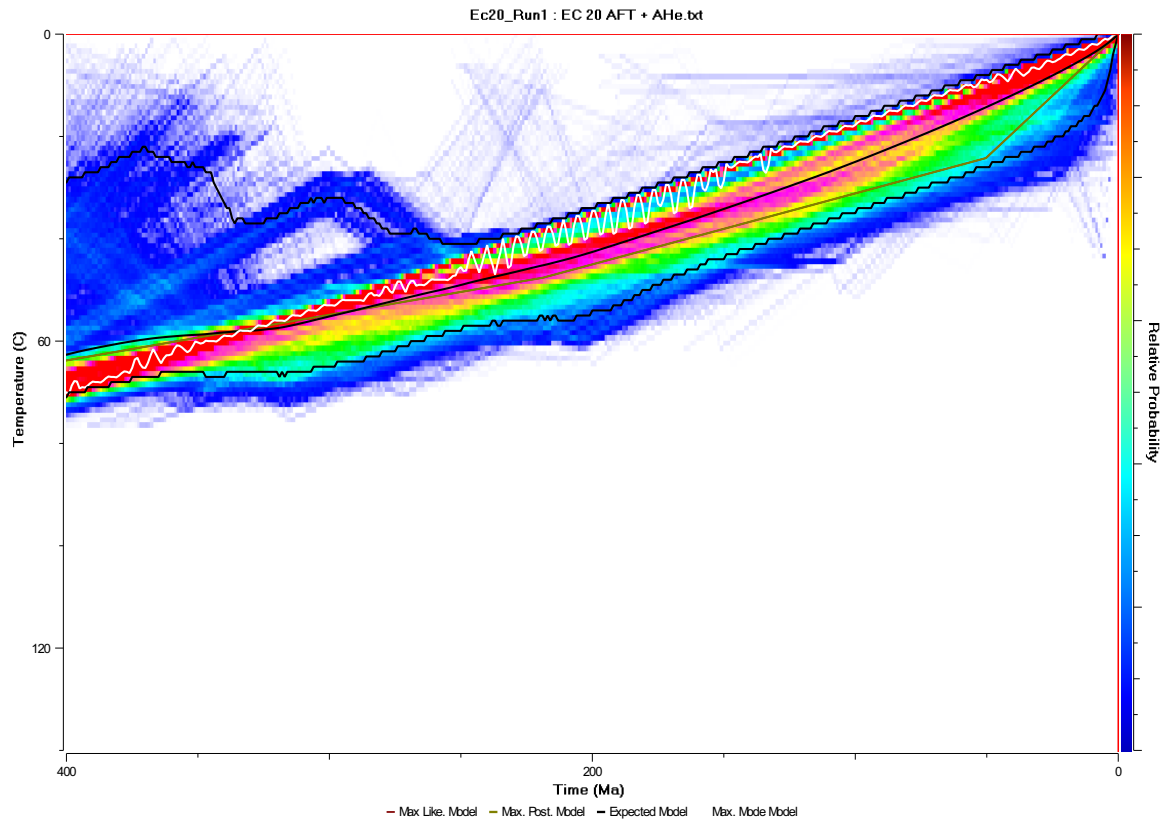
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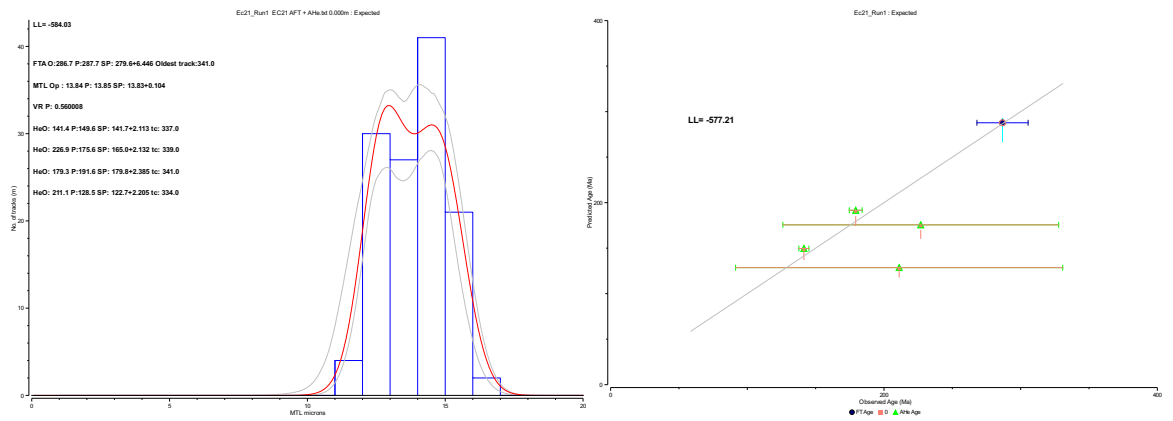
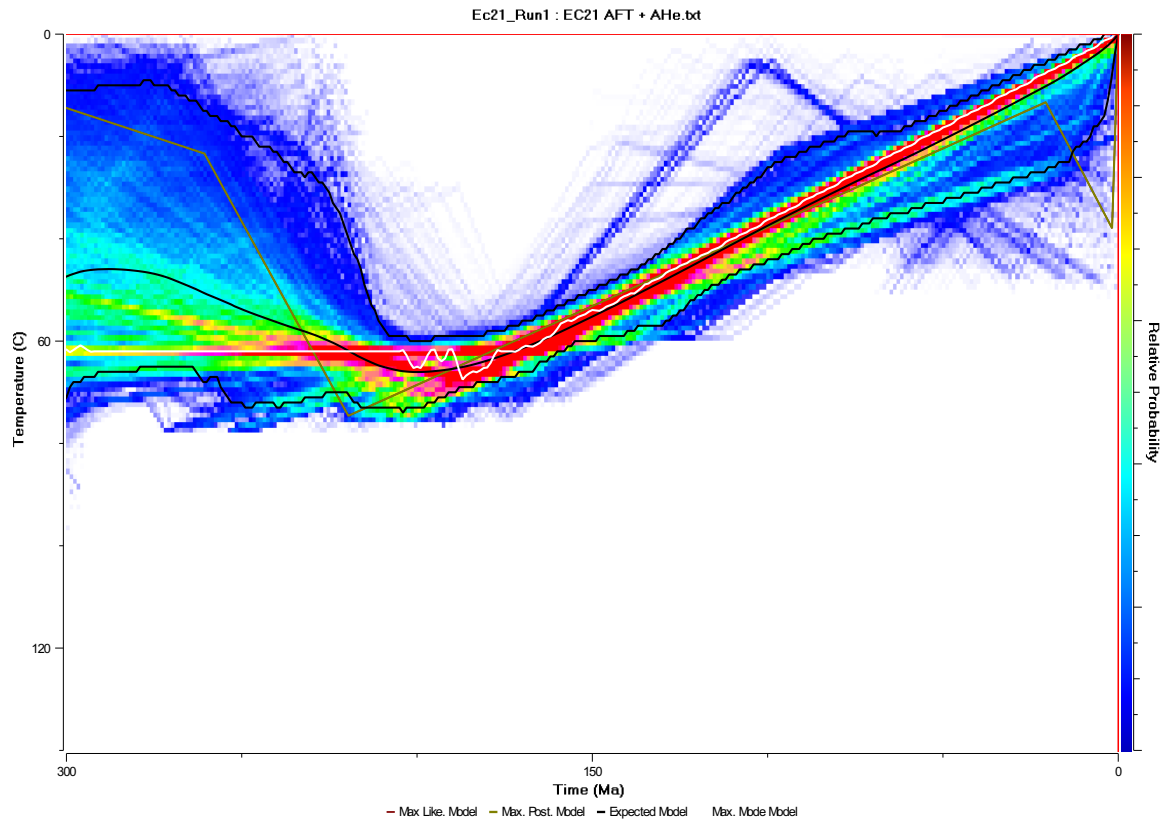
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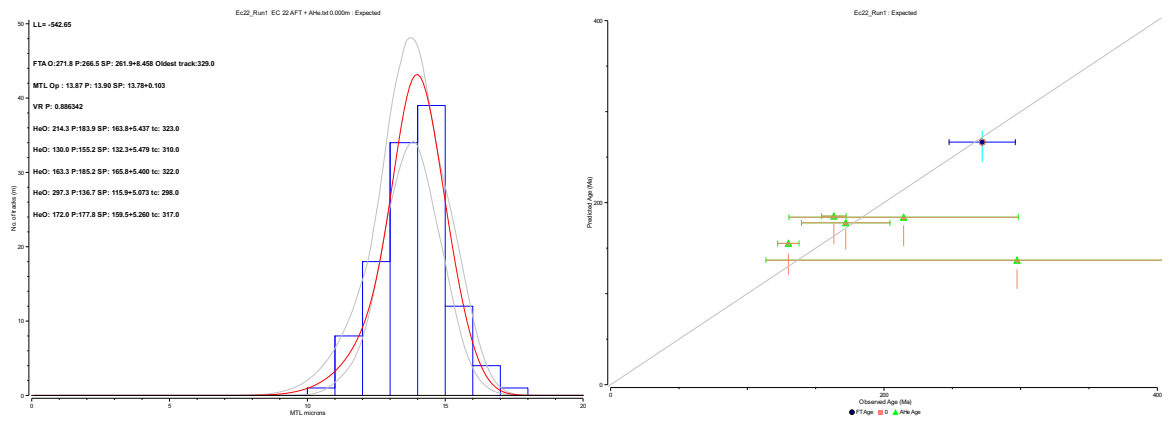
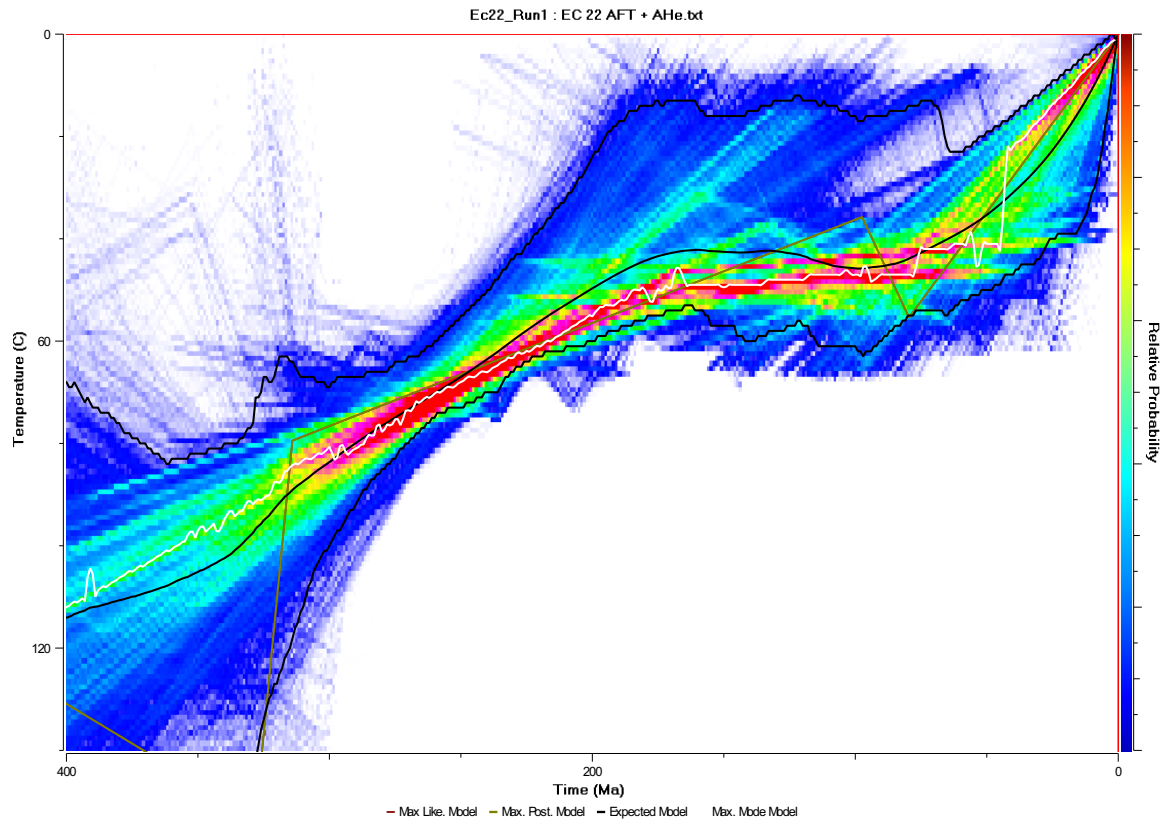
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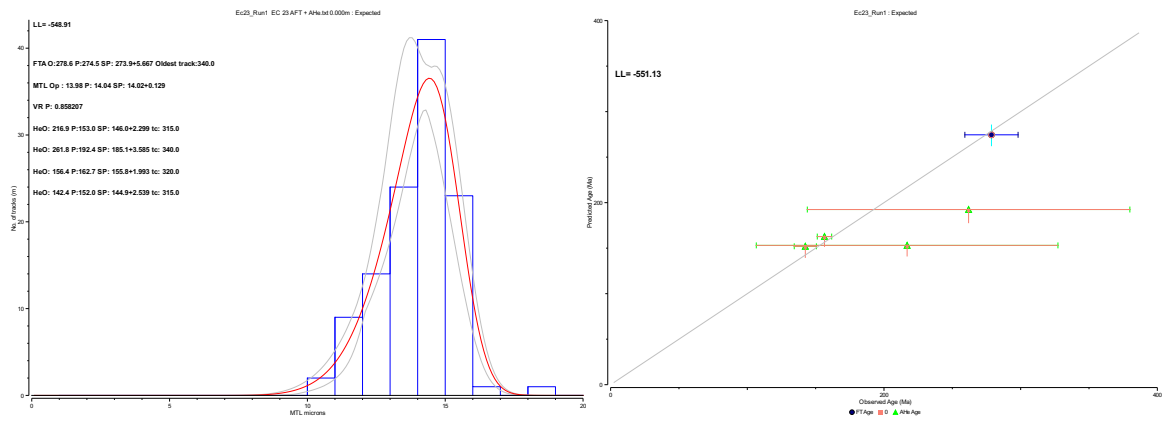
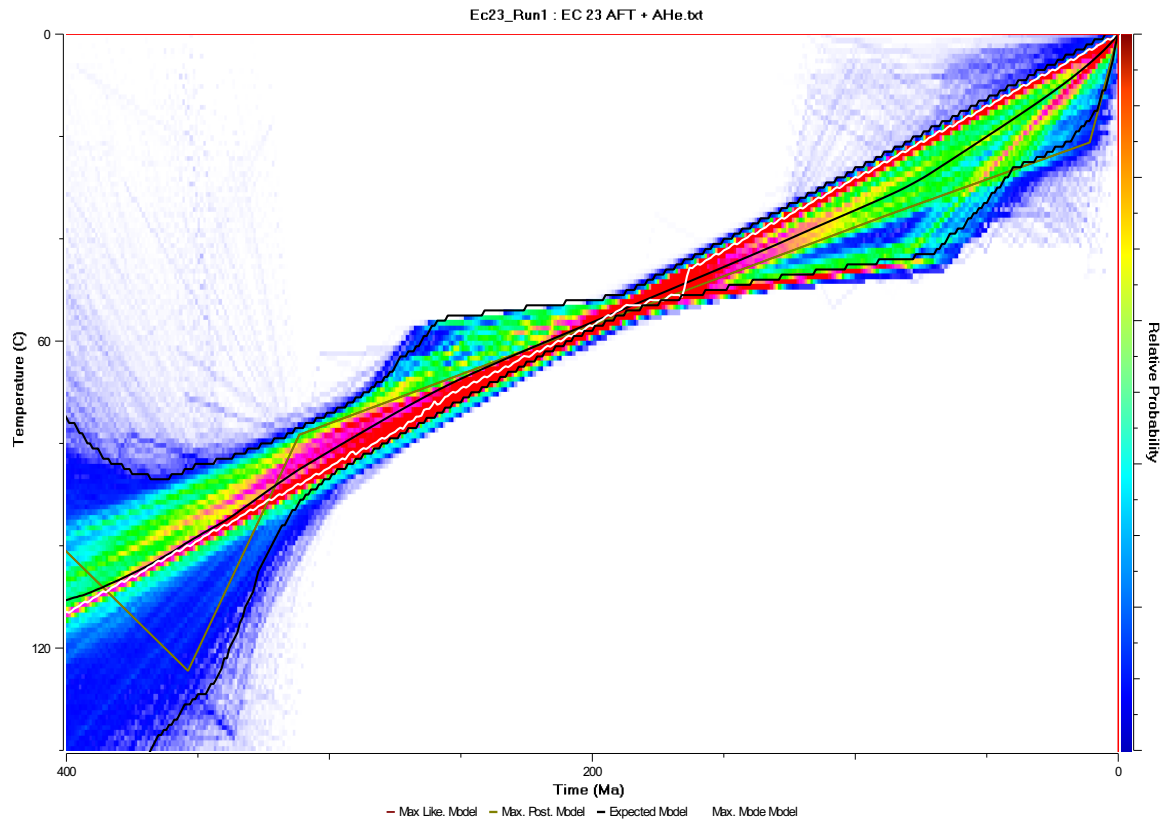
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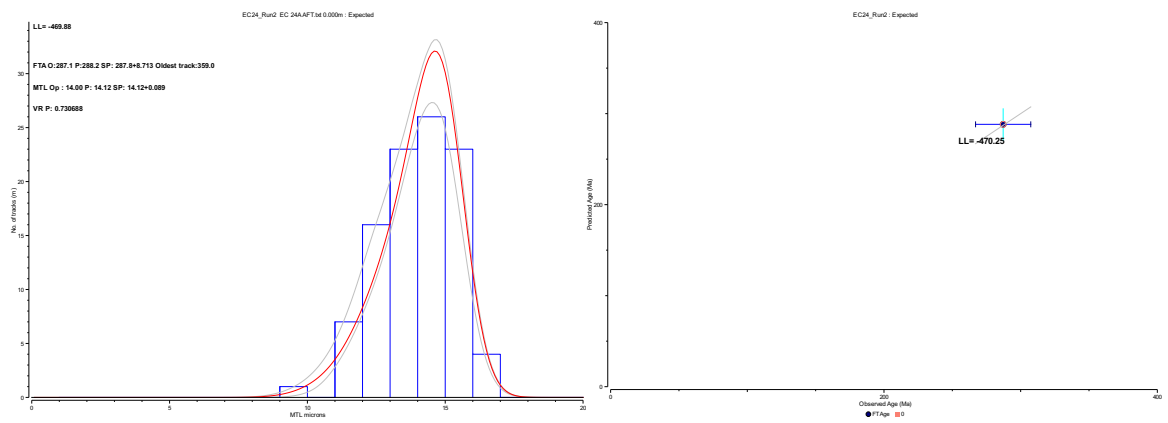
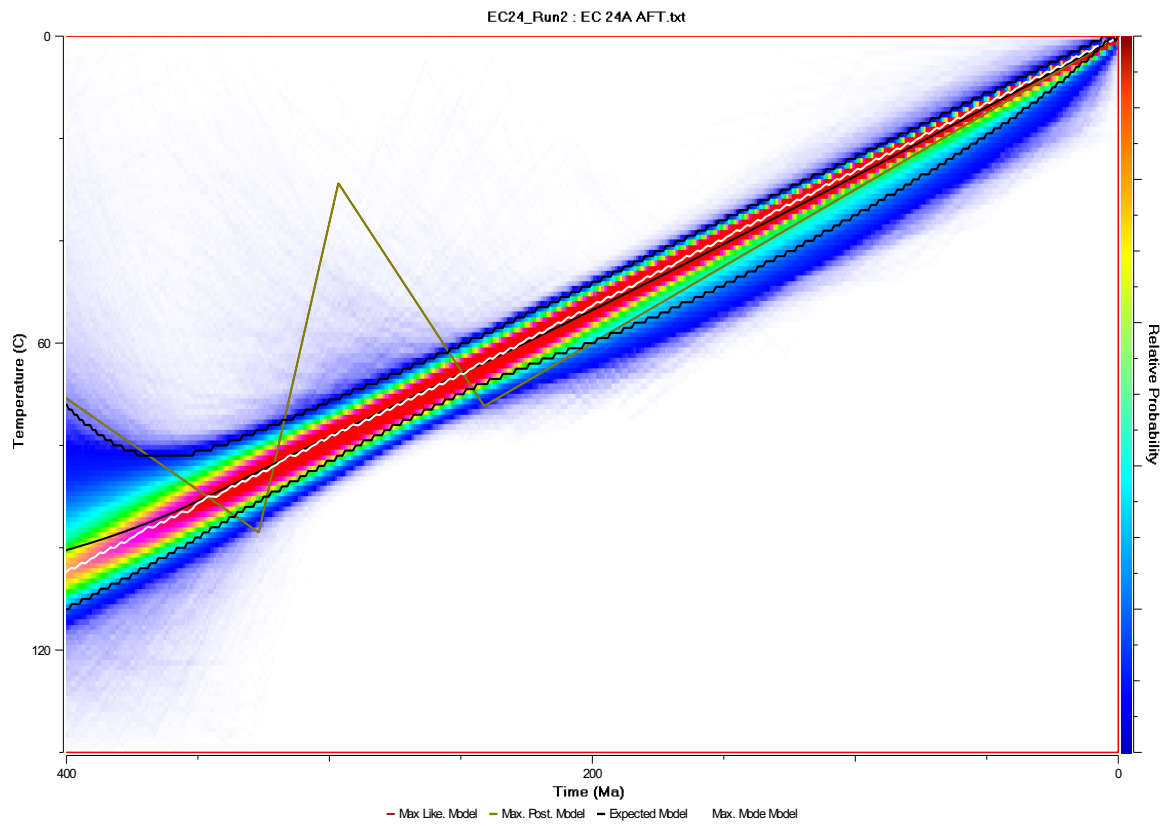
Ec22



Ec23



Ec24



Isostatic modelling

Flexure of the lithosphere from loading was calculated using Flex2D (Allmendinger et al., 2011). This script was used in conjunction with MATLAB and calculates the deflection of the lithosphere under a defined load, using the solution from Hetenyi (1946). The lithosphere is treated as continuous, underlain by a fluid asthenosphere. The model requires three defined variables (outlined in the table below) and the geometry of the load, a series of point loads separated by a set interval (600 m).

Variable	Value
Variable	Value
Effective elastic thickness	25 km (Pilkington, 1991)
Density of Asthenosphere (ρ_a)	3300 kg m ⁻³
Density of eroded mass (ρ_r)	2800 kg m ⁻³

Table 1: values of each variable within model

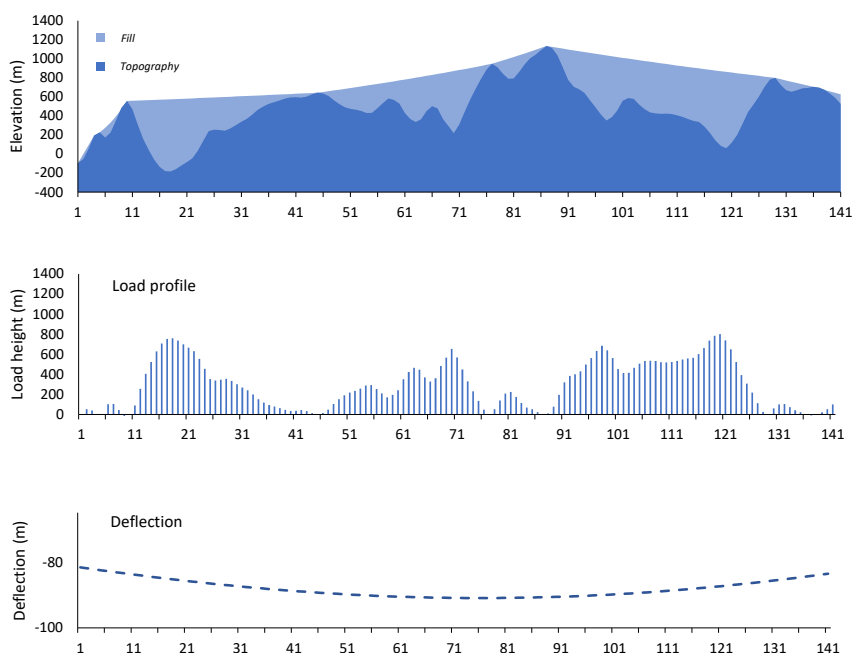


Figure 1: Three graphs outlining the line of topography across the Cumberland Peninsula, the fill of the fjords, load profile and the resulted deflection calculated through Flex2D.