ArAR – Argon Age Recalculator: Documentation

Version: 1.00.00

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Quick-Start Guide

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To start recalculating published K-Ar and 40 Ar/ 39 Ar dates, follow these five steps:

Create/import a dataset, and select dates to recalculate
Select the K-Ar (Fig. 1) or ⁴⁰Ar/³⁹Ar (Fig. 2) algorithm, and select units of time
Select/enter values for the "old" and "new" ⁴⁰K decay constants
Select/enter values for additional parameters, depending on the algorithm:

 A K-Ar algorithm: choose "old" and "new" K isotopic abundances (Fig. 1)
 ⁴⁰Ar/³⁹Ar algorithm: choose "old" and "new" monitor mineral ages (Fig. 2)

Press "Execute" to perform calculations

Note: the "old" parameter values that you select/enter are those that were used to publish the date you are recalculating. The "new" parameter values that you select/enter are those that you would prefer over the "old" values.

WARNING: The "old" K isotopic abundances should be the ones used to determine the "old" ⁴⁰K decay constants. The "old" monitor mineral age should have been determined using the "old" ⁴⁰K decay constants.

WARNING: The "new" K isotopic abundances should be the ones used to determine the "new" 40 K decay constants. The "new" monitor mineral age should have been determined using the "new" 40 K decay constants.

For additional details, see the ArAR Manual.

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	Argon Age Recalcula	tor - ArAR	/0.06.05						
ArAR File Edit Library Tools Help		-							
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Figure 1. Example of recalculating synthetic K-Ar dates, with the pertinent controls highlighted for following the five steps above.

Argon Age Recalculator - ArAR v0.06.05										
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Synth 10 V 100 1 Synth 11 V 200 2	Steiger an	nd Jager, 1977				λ_{40Ar}/λ :	0.1048	±	0.0014	
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Figure 2. Example of recalculating synthetic ${}^{40}\text{Ar}/{}^{39}\text{Ar}$ dates, with the pertinent controls highlighted for following the five steps above.