

## 1 S1. Chronology

2 At the radiocarbon dating laboratory (ETH, Zürich), the samples were run twice, measuring  $F^{14}C$   
3 in both the main and leach fraction of each sample, the leach fraction acting as a measure of quality  
4 control (Bard et al., 2015; Wacker et al., 2013). The  $^{14}C$  dates at depths of 700-701 cm and 737-  
5 738 cm, the  $F^{14}C$  were measured only on the leach fractions, since there was no  $CO_2$  in the main  
6 fraction, likely explained by the small sample sizes (see Table S1). Both dated intervals at the  
7 bottom of the core have large uncertainties but they are still in general agreement with the other  
8 dated intervals.

9 **Table S1:**  $F^{14}C$  deviations between the main and leach fractions of the  $^{14}C$  dated intervals.

Depth (cm)	Lab ID	Sample description	Weight ( $\mu$ g)	Fraction	$F^{14}C$
4-5cm	ETH-92277.1.1	Mixed benthic foraminifera	600	main fraction	0.915732 $\pm$ 0.0054
4-5cm	ETH-92277.2.1	Mixed benthic foraminifera		leach fraction	0.911882 $\pm$ 0.0074
70-71 cm	ETH-92279.1.1	Mixed benthic foraminifera	1030	main fraction	0.799837 $\pm$ 0.0049
70-71 cm	ETH-92279.2.1	Mixed benthic foraminifera		leach fraction	0.799153 $\pm$ 0.0071
310-311 cm	ETH-92281.1.1	Mixed benthic foraminifera	1320	main fraction	0.539826 $\pm$ 0.0038
310-311 cm	ETH-92281.2.1	Mixed benthic foraminifera		leach fraction	0.543688 $\pm$ 0.0055
410-411 cm	ETH-92283.1.1	Mixed benthic foraminifera	1340	main fraction	0.485369 $\pm$ 0.0036
410-411 cm	ETH-92283.2.1	Mixed benthic foraminifera		leach fraction	0.479396 $\pm$ 0.0051
580-581 cm	ETH-92285.1.1	Mixed benthic foraminifera	1750	main fraction	0.410401 $\pm$ 0.0034
580-581 cm	ETH-92285.2.1	Mixed benthic foraminifera		leach fraction	0.405557 $\pm$ 0.0067
700-701 cm	ETH-92286.1.1	Mixed benthic foraminifera	750	main fraction	-
700-701 cm	ETH-92286.2.1	Mixed benthic foraminifera		leach fraction	0.357202 $\pm$ 0.0173
737-738 cm	ETH-92287.1.1	Mixed benthic foraminifera	500	main fraction	-
737-738 cm	ETH-92287.2.1	Mixed benthic foraminifera		leach fraction	0.347568 $\pm$ 0.0067

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## 11 Supplementary references

12 Bard, E., Tuna, T., Fagault, Y., Bonvalot, L., Wacker, L., Fahrni, S. and Synal, H. A.: AixMICADAS, the accelerator mass  
13 spectrometer dedicated to  $^{14}C$  recently installed in Aix-en-Provence, France, Nucl. Instruments Methods Phys. Res. Sect. B Beam  
14 Interact. with Mater. Atoms, doi:10.1016/j.nimb.2015.01.075, 2015.

15 Wacker, L., Lippold, J., Molnár, M. and Schulz, H.: Towards radiocarbon dating of single foraminifera with a gas ion source, in  
16 Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms., 2013.

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