



## Supplement of

## On the Holocene evolution of the Ayeyawady megadelta

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## 28 Supplementary Materials

- Fig. S1. Trench and drill sites location and other locales mentioned in text.
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- 32 Fig. S2. Representative OSL decay curves for sample 177204 (cyan) and for standard Risø calibration quartz (black), which is known to be
- dominated by the fast component (Hansen, V., Murray, A.S., Buylaert, J.-P., Yeo, E.Y., Thomsen, K.J., 2015. A new irradiated quartz for beta source
- calibration. Radiation Measurements 81, 123-127.). Data were normalised to the initial signal intensity (first 0-0.16s).



39 Table S1. Radionuclide activities obtained from high resolution gamma spectrometry. These values were used to derive total dose rates to

40 quartz and K-feldspar grains presented in Table 2 using the conversion factors from Guérin et al. (2011). For K-feldspar the internal beta dose

41 rate was estimated using an internal K content of 12.5±0.5% (Huntley and Baril, 1997). A cosmic ray dose rate component was also

42 incorporated (Presscott and Hutton, 1994)

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Sample code	<b>U-238</b>	Ra-226	Pb-210	Th-232	K-40	
	(Bq/kg)	(Bq/kg)	(Bq/kg)	(Bq/kg)	(Bq/kg)	
17 72 01	$16 \pm 15$	$27.2 \pm 1.2$	n.a. $\pm$ n.a.	$48.0 \pm 1.3$	$450 \pm 22$	
17 72 02	$36 \pm 5$	$32.4 \pm 0.9$	$39 \pm 6$	$52.3 \pm 0.9$	$513 \pm 14$	
17 72 03	$17 \pm 4$	$18.6 \pm 0.8$	$17 \pm 5$	$32.2 \pm 0.7$	$518 \pm 13$	
17 72 04	$25 \pm 3$	$26.6~\pm~0.5$	$27 \pm 4$	$45.8~\pm~0.6$	$493~\pm~10$	
17 72 05	$23 \pm 3$	$23.2 \pm 0.6$	$25 \pm 4$	$43.9 \ \pm \ 0.6$	$476~\pm~10$	
17 72 06	$8 \pm 4$	$13.7 ~\pm~ 0.6$	$15 \pm 5$	$28.0~\pm~0.7$	$562 \pm 14$	
17 72 07	$24 \pm 4$	$16.3 \pm 0.8$	$14 \pm 5$	$36.3 \pm 0.7$	$555 \pm 14$	

## **References:**

Huntley, D. J., Baril, M. R., 1997. The K content of the K-feldspars being measured in optical dating or in thermoluminescence dating. Ancient TL 15: 11–13. Guérin G, Mercier N, Adamiec G. 2011. Dose-rate conversion factors: update. Ancient TL 29: 5–8.

Prescott JR, Hutton JT. 1994. Cosmic ray contributions to dose rates for luminescence and ESR dating: large depths and long-term time variations. Radiation Measurements 23: 497–500

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48	Table S2.	Radiogenic	isotope	data for	the Ave	vawady and	l nearby	rivers	sediments.
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	Site	Preparation	Setting	Latitude	Longitude	Depth, cm	87Sr/86Sr	43Nd/144Nd	εNd	Source
	Ayeyawady (l8) Ayeyawady (l12) Ayeyawady (l12) Ayeyawady Ayeyawady Ayeyawady	bulk sample bulk sample decarbonated bulk sample bulk sample	fluvial levee beach ridge beach ridge fluvial fluvial	17°38'36.82"N 15°50'10.50"N 15°50'10.50"N 18°49'43.30"N	95°18'33.64"E 95°29'51.00"E 95°29'51.00"E 95°12'19.70"E	95 100 100	0.7120 0.7118 0.7119 0.7135	0.512263 0.512285 0.512287	-7.3 -6.9 -6.8 -8.3 -10.7	this study this study this study Allen et al. (2008) Colin et al. (1999)
	Yangon River	bulk sample	fluvial				0.7080		-12.2	Damodararao et al. (2016)
	Sittaung	bulk sample	fluvial levee	17°27'9.78"N	96°51'0.12"E	100	0.7168	0.512105	-10.4	this study
	Thanlwin	bulk sample	fluvial				0.7314 ÷ 0.7318		-14.7 ÷ -15.4	Damodararao et al. (2016)