Table DR1. Description of sample locations

Sample	Location	Height (m asl)	Description	Burial Depth (m)
TLS-1	Tel-Sheruhen section: Plio-Pleistocene sands. numbered in startigraphical order (31°16.884'N, 34°28.905'E)	120 (top of section)	Sandy calcic paleosol	~40
TLS-2				
TLS-3			Cross bedded aeolianite	
TLS-4				
TLS-5			Sandy calcic paleosol	~20
NIZ-1	Nizzanim beach (31°45.591'N, 34°36.526'E)	17	Modern coastal dune	0
NIZ-2		0	Modern beach sand	0
GSH-2	Ga'ash beach (32°13.579'N, 34°49.258'E)	~5	Last glacial eolianite	~50
GSH-3		0	Modern beach sand	0
KFM-1	Kefar-Menachem quarry (31°43.671'N , 34°50.458'E)	121	Plio-Pleistocene eolianite	24
B3-60.3	Haifa bay offshore core (32°49.312'N , 35°0.774'E)	0	Offshore core at 14.1 m water depth	60.3
B3-62.35		0		60.35
MZWS-1	Matsli'ah (31°54.685'N , 34°52.504'E)	80	Ancient Dune	10
MZWS-2				7
MZOS-1				6.5

Table DR2: Sample data, AMS analytical data, and 10Be and 26Al concentrations with 1σ uncertainties

Sample	Quartz	Be carrier	$^{10}Be/^{9}Be$	^{10}Be	Stable Al	$^{26}Al/^{27}Al$	^{26}Al	$^{26}Al/^{10}Be$
	[g]	[mg]	[$\times10^{-15}$]	[$\times10^{4}$ atoms/g]	[$\times10^{18}$ atoms/g]	[$\times10^{-15}$]	[$\times10^{4}$ atoms/g]	
TLS-1	40.03	0.28	199 ± 5	9.31 ± 0.22	6.26 ± 0.25	23.1 ± 3.9	13.9 ± 2.4	1.55 ± 0.27
TLS-2	40.02	0.29	199 ± 6	9.54 ± 0.30	2.56 ± 0.10	54.0 ± 7.0	13.3 ± 1.8	1.45 ± 0.20
TLS-3	40.03	0.28	134 ± 4	6.35 ± 0.20	2.70 ± 0.11	46.1 ± 9.7	11.9 ± 2.5	1.96 ± 0.42
TLS-4	40.03	0.28	142 ± 5	6.61 ± 0.22	2.88 ± 0.12	45.6 ± 10.5	12.6 ± 2.9	1.99 ± 0.47
TLS-5	40.02	0.28	177 ± 7	8.38 ± 0.35	2.91 ± 0.12	54.1 ± 16.2	15.2 ± 4.6	1.88 ± 0.67
NIZ-1	30.01	0.30	407 ± 12	27.12 ± 0.78	3.14 ± 0.13	402 ± 23	126 ± 9	4.66 ± 0.28
NIZ-2	30.02	0.30	405 ± 10	27.00 ± 0.65	2.98 ± 0.12	445 ± 19	132 ± 8	4.90 ± 0.31
GSH-2	30.01	030	342 ± 8	22.73 ± 0.55	3.00 ± 0.12	338 ± 14	101 ± 6	4.46 ± 0.28
GSH-3	30.01	0.30	399 ± 9	26.86 ± 0.61	3.03 ± 0.12	436 ± 24	132 ± 9	4.92 ± 0.35
KFM-1	35.01	0.31	170 ± 4	9.84 ± 0.26	2.50 ± 0.10	52.3 ± 8.3	13.1 ± 2.1	1.33 ± 0.22
MZWS-1	35.02	0.29	169 ± 4	9.44 ± 0.25	2.42 ± 0.10	78.1 ± 6.5	18.9 ± 1.8	2.00 ± 0.19
MZWS-2	35.02	0.29	167 ± 4	9.36 ± 0.25	2.29 ± 0.09	94.1 ± 10.6	21.5 ± 2.6	2.30 ± 0.28
MZOS-1	35.01	0.29	198 ± 7	11.1 ± 0.4	3.16 ± 0.13	63.2 ± 6.9	20.0 ± 2.3	1.81 ± 0.22
B3-60.3	35.06	0.30	390 ± 10	23.0 ± 0.8	4.05 ± 0.16	203 ± 7	82.0 ± 4.4	3.58 ± 0.22
B3-62.35	35.00	0.30	390 ± 20	27.0 ± 0.9	2.65 ± 0.11	361 ± 20	96.0 ± 5.9	3.61 ± 0.25

The samples were measured at the Lawrence Livermore National Laboratory.
$^{10}Be/^{9}Be$ were normalized to 07KNSTD3110 = 2.85×10^{-12}
$^{26}Al/^{27}Al$ were normalized to KNSTD 10650 = 1.065×10^{-11}.
Stable Al was measured in an ICP-AES. Values were corrected for standard drift. Uncertainties include the error from repeated measurements of sample and standards. We have assigned a 4% higher limit for these uncertainties.