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Corrigendum

Corrigendum to 'Evidence for shock heating and constraints on Martian surface temperatures revealed by $^{40}Ar/^{39}Ar$ thermochronometry of Martian meteorites' [Geochim. Cosmochim. Acta (2010) 6900–6920]

The authors regret they have discovered errors in Eq. (3) and in a spreadsheet used to calculate cosmogenic exposure ages shown in Table 1. Eq. (3) is missing a term. The spreadsheet errors concerned an incorrect cell reference and application of Eq. (3). Correction of these errors results in ~15–20% changes to the exposure ages of all samples, minor (generally <0.2%) changes to the radioisotopic ages of some samples (those that entailed a correction for chlorine-derived ^{38}Ar calculated

Table 1
Summary of cosmic ray exposure ages.

Aliquot	Cosmochron Analysis		
Phase	Steps Used	$^{38}Ar_{cos}/^{37}Ar_{Ca} \pm 1\sigma$	CRE Age (Ma) $\pm 1\sigma$
ALH-1			
CPX	13–28	0.00265 ± 0.00040	12.8 ± 1.9
ALH-2			
OPX	30–42	0.00421 ± 0.00027	11.8 ± 0.8
ALH-3			
OPX	24–25	0.00495 ± 0.00056	14.0 ± 1.6
ALH-4			
OPX	34–38	0.00273 ± 0.00001	11.9 ± 0.1
NAK-1			
CPX	27–35	0.00218 ± 0.00006	10.4 ± 0.3
NAK-2			
CPX	28–35	0.00240 ± 0.00015	11.5 ± 0.7
NAK-3			
Olivine	30–33	0.01748 ± 0.00101	11.0 ± 0.6
NAK-4			
CPX	30–36	0.00232 ± 0.00007	11.1 ± 0.3
NAK-5			
CPX	30–34	0.00142 ± 0.00007	10.5 ± 0.5
MIL-1			
CPX	26–35	0.00211 ± 0.00018	10.2 ± 0.9

CRE ages calculated using the following parameters:
^{38}Ar Prod. Rates (10^{-13} moles/gCa/Ma): ALH: OPX = 14.2; CPX = 8.30; Mask. = 8.66; Nakhla: CPX = 8.35; Olv. = 63.6; Plag. = 9.42; MIL: CPX = 8.30; Glass = 10.4.
γ, which relates ^{37}Ar produced during the neutron irradiation to the mass of Ca, is 3.99×10^{-9} moles/gCa (and 6.16×10^{-9} moles/gCa for ALH-4 and NAK-5).

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based on the exposure age; see Section 3.3), and statistically insignificant changes to the inferred trapped components identified through isochron analyses. These modifications have no impact on the modeling, discussions, or conclusions in the paper, nor do the changes to radioisotopic ages exceed the 1 sigma uncertainties.

Revised versions of Tables 1 and 3 (with corrected footnotes) appear below, and the revised analytical dataset is attached. All discussions of radioisotopic ages, exposure ages, and trapped components should refer to the revised tables given here. The correct form of Eq. (3) is given below.

$$^{38}Ar_{Cl} = {}^{38}Ar_T - {}^{36}Ar_T \left[\left(\frac{CRE_{Age} \times P38_{Ca}}{\gamma} \right) \left(\frac{^{37}Ar}{^{36}Ar} \right) \left(1 - \frac{\left(\frac{^{38}Ar}{^{36}Ar} \right)_{atm}}{\left(\frac{^{38}Ar}{^{36}Ar} \right)_{cos}} \right) + \left(\frac{^{38}Ar}{^{36}Ar} \right)_{atm} \right] \quad (3)$$

The authors would like to apologize for any inconvenience these errors may have caused.

Table 3
Summary of $^{40}Ar/^{39}Ar$ incremental heating results.

Aliquot (material)	Age Spectrum Analysis[1,2,3]			Isochron Analysis[1,2]			
Phase	Feat.[4]	MSWD	Age[5] (Ma) ± 1σ	Steps Used	$^{40}Ar/^{36}Ar_i \pm 1\sigma$	MSWD	Age[5] (Ma) ± 1σ
ALH-1 (wr fragment)							
Mask	P	1.30	4144 ± 16	4–14	625 ± 100	2.90	**4158 ± 35**
OPX	–	–	–	–	–	–	–
ALH-2 (wr fragment)							
Mask	AP	0.09	3999 ± 16	–	–	–	–
OPX	AP	1.14	4184 ± 125	–	–	–	–
ALH-3 (OPX concentrate)							
Mask	AP	0.11	3896 ± 75	2–12	672 ± 220	0.19	3844 ± 148
OPX	P	0.16	**1158 ± 110**	26–30	5 ± 12	0.31	1147 ± 283
ALH-4 (wr fragment)							
Mask	AP	1.80	4079 ± 13	6–16	489 ± 440	6.10	4088 ± 86
OPX	AP	3.30	4256 ± 70	–	–	–	–
					Preferred Age of Maskelynite		**4158 ± 35**
					Preferred Age of Shock Event		**1158 ± 110**
NAK-1 (wr fragment)							
Plag	P	0.77	1336 ± 10	6–16	810 ± 3700	7.10	**1398 ± 431**
CPX	WA	0.79	1042 ± 15	29–35	42 ± 10	0.30	1008 ± 33
NAK-2 (wr fragment)							
Plag	P	8.70	1385 ± 8	6–16	2171 ± 740	5.70	**1377 ± 44**
CPX	P	3.60	**913 ± 9**	28–33	58 ± 30	0.23	642 ± 128
NAK-3 (Ol. concentrate)							
Olivine	P	0.24	1215 ± 160	23–33	213 ± 120	0.05	1005 ± 194
NAK-4 (CPX concentrate)							
CPX	P	0.62	**906 ± 50**	29–37	−4 ± 17	0.34	1070 ± 135
NAK-5 (wr fragment)							
Plag	P	1.80	1326 ± 15	1–8	2431 ± 570	13.00	**1303 ± 31**
CPX	WA	0.64	1105 ± 46	–	–	–	–
					Preferred Crystallization Age		**1328 ± 26**
					Preferred Age of Shock Event		**913 ± 9**
MIL-1 (wr fragment)							
Glass	P	0.45	1371 ± 13	5–10	1430 ± 300	1.70	**1365 ± 26**
CPX	WA	10.70	1372 ± 22	22–33	25 ± 16	4.40	**1329 ± 21**
					Preferred Crystallization Age		**1343 ± 17**

[1] Ages calculated using the decay constants of Renne et al. (2010) and isotope abundances of Steiger and Jäger (1977).
[2] Ages calculated relative to Hb3gr fluence monitor (1080.4 Ma; standard calibration of Renne et al., 2010).
[3] Apparent age data corrected using the following trapped $^{40}Ar/^{36}Ar$ ratios: [ALH: OPX/CPX = 5 ± 5; Maskelynite = 627 + 90], [Nakhla: CPX/OPX = 32 ± 9; Olivine = 213 ± 120; Plag. = 2312 ± 450], [MIL: CPX = 31 ± 19; Mesostasis Glass = 1430 ± 300].
[4] Ages listed corresponds to the following features: P = plateau age; AP = apparent plateau age; WA = weighted average age.
[5] Ages listed in bold were used to calculate preferred crystallization and shock ages. Preferred ages are derived from the most concordant age spectra or isochrons. Age uncertainties include the decay constant uncertainty and are directly comparable to other geochronologic data.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.gca.2014.09.007.

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