

Supplementary Information for

Progressive aridification in East Africa over the last half million years and implications for human evolution

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Supplementary Information Text

1. Drilling

Details of the Lake Magadi drilling operation in June 2014 have been presented previously (1). Drilling took place from earth prepared platforms during the dry season when the lake forms a trona flat. Three holes were drilled at Site 1 and one at Site 2 (Fig. 1C), where downhole geophysical logs were also obtained. Alternating chert and mud caused recovery difficulties because chert became trapped in the drill bit and displaced mud as drilling proceeded. Core recovery ranged between 45–65%. Drilling was terminated in trachyte at core depths of ~133 and ~194 m for Sites 1 and 2, respectively.

2. Chronological model

Table S1 shows the control dates used to construct the model and their associated radiometric errors. The chronological model was constructed with Bacon v.2.2 software, which uses Bayesian statistics to reconstruct deposition histories. Outlying dates generally have a minimal effect because the dates are modelled using a student-t distribution with wide tails (2). Prior assumptions about accumulation rates and their variability with time are taken into account, with the following parameters adopted in this study: Accumulation rate priors were set with a mean gamma distribution of 10 yr cm^{-1} and a shape of 1.5. Accumulation variability was set with a strength of 4 and a mean of 0.7 with 195 1-m-long sections and no hiatuses. There was no observed trend in Markov Chain Monte Carlo (MCMC) diagnostic plots, indicating a stable solution. Sedimentation rates increase from basal values (below 180 m) of 0.069 mm yr^{-1} , to 0.135 yr^{-1} to a relatively rapid rate of 0.96 yr^{-1} (above 45 m) for the trona-dominated portion of the core. Relatively uniform rates were observed for much of the rest of core, which is supported by an absence of erosion surfaces and pedogenic horizons in the sedimentary sequence.

Two replicate U-series-dated samples from a chert at 10730 cm were not included in the model because the ages were too young (250.1 ka and 266.7 ka) when compared with the overlying tuff that yielded ages of $>300 \text{ ka}$. Although the chert samples were carefully selected to avoid late diagenetic features, a re-examination of the chert at 10730 cm showed the occurrence of chalcedony as a late stage fracture fill, which accounts for the young dates. A single ^{14}C date of $37.247 \pm 0.808 \text{ ka}$ at 4352 cm was excluded as it did not follow a monotonic sequence. However, the date is shown (labelled “1”) in Fig. 2b. An $^{40}\text{Ar}/^{39}\text{Ar}$ date of $660 \pm 37 \text{ ka}$, at 15100 cm, was excluded from the model as it was based on a single crystal. However, it falls within the 95% probability range and is labelled “2” in Fig. 2b.

3. Radiocarbon dating

Radiocarbon analyses were carried out at the University of Arizona AMS facility on trona, bulk organic matter, the humate fraction of bulk organic matter and charred particles (Table S2). Two calibrated ages of 13,706 y. B.P. and 37,247 y. B.P. were obtained, with the former incorporated into the chronological model and the latter excluded, but shown in Fig. 2b, as it was younger than a U-series date just above. Other ^{14}C results were problematic, including an ultramodern (post-bomb) ^{14}C value for AA106870 that represents a root fragment contamination. Analyses of bulk organic matter gave unreliable results and in one case appears to have been contaminated by modern carbon (roots). The single trona date appears to reflect the age of Na-CO₃ brine formation rather than a depositional age. Charred particles are rare throughout the upper portion of MAG14-2A and were very small (imprecise $\delta^{13}\text{C}$ corrections), thus providing only minimal ages.

4. U-series dating

U-series dating was carried out on chert (Table S3), ~0.02 g each, that had been selected in order to avoid materials with signs of late stage diagenesis or replacement. Preparation and subsampling were conducted

at the Department of Earth Sciences, National Cheng-Kung University and the U-Th isotopic analyses were performed at the High-Precision Mass Spectrometry and Environment Change Laboratory (HISPEC), Department of Geosciences, National Taiwan University, respectively. Chert was totally dissolved with HF-HNO₃-HClO₄ digestion in the presence of a triple spike, ²²⁹Th-²³³U-²³⁶U. Procedures for chemical separation and purification have been described previously (3). A triple-spike, ²²⁹Th-²³³U-²³⁶U, isotope dilution method was employed to correct for mass bias and to determine U-Th isotopic compositions and contents on a Thermo-Fisher NEPTUNE multi-collection inductively coupled plasma mass spectrometer (MC-ICP-MS) (4). Half-lives of U-Th nuclides used are listed by Cheng et al. (5). Uncertainties in the U-Th isotopic data and U-series dates, are given at the two-sigma (2σ) level or two standard deviations of the mean (2σ_m). Replicate samples gave consistent results.

5. ⁴⁰Ar/³⁹Ar dating

The ⁴⁰Ar/³⁹Ar dating method was used to date 11 discrete samples. Nine of these were from a tuffaceous interval from ~96–101 mbs, one from ~151 mbs, and the final sample was from near the bottom of the core in a ‘basement’ trachyte flow (presumed equivalent to the regionally prominent Magadi Trachyte flood lava). For greater statistical power in assessing age distributions, the samples from ~96–101 mbs have been combined into four separate groups. Sample ‘MAG14-2A-045Y-2 000-021’ is an altered pumiceous tuff, separated from material deeper in the core sequence by breccia and bedded tuff units, and is assigned to Group #1. The remaining core sections to depth ~101 mbs, although variable in grain size and other features, are massive tuffs without clear breaks, and so are grouped simply by core segment into Groups 2 through 4 downward in the core. Sample ‘HSPDP-MAG14-2A-68Y-2’ comprises Group 5, and ‘MAG14-2A-102Q-1 104-119,’ a trachyte lava from near the bottom of the core, is Group 6 (Table S4).

Preparation of the mineral separates for dating involved gentle disaggregation in water, rinsing through a 90-micron sieve bag (saving fines for other analyses), dilute (5% HF) and ultrasonic washing, sieving, and hand-picking to obtain the most inclusion-free phenocrysts. The purified mineral separates (200–1,500 microns) were then placed in individual positions of a circular ring of wells drilled in an aluminum disk, with a flux monitor (age standard) situated at the cardinal points of the ring. Four separate irradiations were performed, each for 0.5 hr in the Cd-lined, in-core CLICIT facility of the Oregon State University TRIGA reactor. The monitor mineral used was sanidine from the Alder Creek Rhyolite of California, with an astronomically calibrated reference age of 1.1848 ± 0.0006 Ma (6). Reactor-induced isotopic production ratios for these irradiations were: (³⁶Ar/³⁷Ar) Ca = 2.65 ± 0.02 × 10⁻⁴, (³⁸Ar/³⁷Ar) Ca = 1.96 ± 0.08 × 10⁻⁵, (³⁹Ar/³⁷Ar) Ca = 6.95 ± 0.09 × 10⁻⁴, (³⁷Ar/³⁹Ar) K = 2.24 ± 0.16 × 10⁻⁴, (³⁸Ar/³⁹Ar) K = 1.220 ± 0.003 × 10⁻², (⁴⁰Ar/³⁹Ar) K = 2.5 ± 0.9 × 10⁻⁴. Atmospheric ⁴⁰Ar/³⁶Ar = 298.56 ± 0.31 (7) and decay constants are those of reference (8).

Following irradiation and several weeks of radiological “cooling,” individual phenocrysts were dated by the single-crystal incremental heating (SCIH) ⁴⁰Ar/³⁹Ar laser degassing method (Table S4). In the SCIH technique, individual phenocrysts are incrementally heated in 3–8 steps (depending on grain size and gas yield) at progressively increasing power to fusion. A total of 632 steps on 170 grains were analyzed. After the first or second low-power step, 84 of these grains were rejected as obvious older xenocrysts (e.g., reliable analyses as old as ~130 Ma, but most <10 Ma), while the remaining 86 grains were carried to completion (total extraction of gas). All analyses were performed at the Berkeley Geochronology Center using a multi-collector, ion-counting Nu Instruments Noblesse noble-gas mass spectrometer. Further details of the dating procedure can be found in reference (9).

Results

Apparent age plateaus were identified in 66 out of 86 of the incremental heating experiments that were carried to completion (Table S5). A ‘plateau’ is taken as a set of contiguous steps encompassing the

greatest percent of ^{39}Ar release that exhibit an acceptable MSWD (‘mean square weighted deviation’) with a threshold probability $>95\%$ that the observed scatter is due to analytical error alone and not geological factors. A plateau must comprise at least 50% of the total ^{39}Ar release and consist of at least four consecutive steps. Note that this last requirement is a departure from commonly used plateau definitions, which requires only three consecutive steps. This higher threshold is employed to avoid the potential for error underestimation associated with ‘three-point’ isochrons in the subsequent treatment, in which the plateau steps are regressed in isotope correlation diagrams ($^{36}\text{Ar}/^{40}\text{Ar}$ vs. $^{39}\text{Ar}/^{40}\text{Ar}$, known as ‘inverse isochrons’) to determine a final age. The isochron age result is preferred over the plateau age, as the former accommodates departures from the assumption that the trapped internal non-radiogenic argon in the crystal is of atmospheric composition. The isochron ages derived from the plateau steps are displayed as age-probability density spectra in Figure S1. Aside from some obvious outliers that are readily excluded as xenocrysts or altered grains (i.e., grains outside the bulk of the distribution by more than 200 ka), the distributions are either quasi-symmetric (Groups 3, 4, and 6), or skewed toward older ages (Groups 1 and 2). The older tails exhibited by this latter group, and hinted at by some of the quasi-symmetric group, are likely the result of variable amounts of excess $^{40}\text{Ar}^*$ (radiogenic ^{40}Ar) in some crystals. Young outliers, on the other hand, are either due to analytical variation or cryptic alteration. The quasi-symmetrical groups are treated with a robust outlier-trimming procedure, eliminating grains >2 nMad (‘normalized median absolute deviations’) from the median (10), whereas the skewed distributions are treated with an algorithm that identifies the youngest group in which the MSWD is attributable to analytical error alone at the 95% confidence level.

The result for the clustered set of Groups 1–4 is an age range from 316.0 ± 1.4 ka (2σ modified standard error, equal to the standard error times the square root of the MSWD where $\text{MSWD} > 1$) for the uppermost sample in the core, to 354.1 ± 8.2 , 354 ± 24 , and 329 ± 17 ka for the successively older groups in this cluster (Groups 2, 3, and 4, respectively). The age of Group 2 (354.1 ± 8.2) and Group 4 (329 ± 17) are statistically distinct at the 95% confidence interval, and represent an age inversion (older age stratigraphically above a younger age). As shown in Figure S1, Group 2 is noticeably skewed, and despite trimming procedures intended to minimize the effects of the older tail, likely remains too old. Deeper in the core, at 151 msl, only one grain from Group 5 (sample ‘HSPDP-MAG14-2A-68Y-2’) yielded a stratigraphically reasonable and relatively precise age at 660 ± 37 ka; as this age is supported by only one experiment, the result should be used circumspectly and was not incorporated in the Bacon age modeling. Finally, Group 6 at the base of the core (‘Magadi trachyte’, sample ‘MAG14-2A-102Q-1 104-119’) yielded 1078.2 ± 3.6 ka.

6. Paleomagnetism

Sampling

A total of 302 samples from MAG14-2A were sampled at the LacCore facility in Minneapolis, including 279 standard paleomagnetic samples and 23 hand samples. All encountered lithologies were collected except for salt and chert or where the sediments were too fractured by the drilling process. “Disking” in some core segments was observed indicating that (parts of) some core segments had rotated with respect to adjacent intervals during drilling. Sample positions within each core segment were measured with < 0.5 cm precision. The top of the core segment was marked on each sample. Individual samples were recovered by gently pressing cylindrical perspex cups, with standard paleomagnetic sampling dimensions (25 mm diameter, 22 mm length), into the sediment. Hand samples were either directly lifted from the core or sawed to a manageable size. Directly after labelling the samples were wrapped in airtight cellophane and stored at temperatures below 5° Celsius.

Demagnetization, ChRM directions and reorientation of ChRM directions and magnetostratigraphy

Stepwise progressive alternating field (AF) and thermal (TH) demagnetization of the natural remnant magnetization (NRM) was performed on a total of 301 samples at the Fort Hoofddijk Paleomagnetic laboratory of Utrecht University (The Netherlands). AF demagnetization was done in 15 alternating field steps (0, 5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90 and 100 mT) using the robotized 2G DC-SQUID magnetometer with in-line AF demagnetization. During the demagnetization process, the samples stayed in a shielded room. Thermal demagnetization was done up to 550° Celsius, using an ASC thermal demagnetizer (model TD48-SC, residual field < 20 nT) in 13 steps (20, 75, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500 and 550). After each step the remaining NRM was measured with a 2G Enterprises horizontal DC-SQUID magnetometer. NRM intensities were typically several orders of magnitude higher than the instrument sensitivity ($\sim 3 \times 10^{-12} \text{ Am}^2$).

The results of the demagnetization were interpreted to identify the various components using paleomagnetism.org, an open source on-line platform for paleomagnetic data analysis (11). ChRM directions were calculated by using a minimum of four consecutive steps. Paleomagnetism.org uses a suite of techniques to statistically interpret the paleomagnetic results (12–16). Recovering polarity orientations in drilled cores near the equator is a major challenge because the inclination for both normal and reversed polarity is similar (very shallow, varying around zero degrees), whereas declinations cannot be determined since the core is not azimuthally oriented. Because of the nature of the Lake Magadi sediments (mainly unconsolidated) drilling under an angle was not possible. As a result, the use of the Anisotropy of the Magnetic Susceptibility (AMS) as a possible method for reorientation of the core was not possible. Hence, the only method that remains available for reorientation is the occurrence of a viscous present day overprint (17). If the low temperature/low coercive (LT/LC) component can be taken as a recent viscous remnant magnetization (VRM), we can align this LT/LC component North. If it is possible to determine a high temperature/high coercive (HT/HC) component, this is either parallel to the LT/LC component – meaning normal polarity – or antiparallel – meaning reversed polarity.

Results and Discussion

Of the 301 demagnetized samples, 188 were of sufficient quality that both a LT/LC component and a HT/HC component could be determined (Table S6). Of 7 samples, the LT/LC and HT/HC components cannot be clearly separated, but they show a great circle (Fig. S2 and Table S7). The Zijdeveld diagrams indicate a LT/LC component up to 15 mT/125–300°C. We consider the HT/HC component the characteristic remnant magnetization (ChRM) and it is identified between 20 and 50 mT (occasionally up to 80 mT) and 150–500 °C. See Fig. S2 for typical examples of Zijdeveld diagrams for Core MAG14-2A.

The LT/LC components are used for reorientation of the samples (18). The recalculated ChRM directions are plotted in Fig. S3. ChRM directions with Maximum Angular Deviation (MAD) < 15° are plotted as black circles. Samples showing clear great circles and MAD < 15° are plotted as black diamonds; these samples have been given an assigned declination of 180 degrees with 0 degrees inclination. White circles represent reoriented samples with ChRM directions with MAD > 15°, these have not been included in the interpretation. Fig. S3 clearly shows a zone with normal paleomagnetic directions down to 174.36 mbs and further downwards a zone of reversed directions.

Because of the nature of the method used, we are not able to identify paleomagnetic samples of this core that are reversed but lack a recent normal overprint. These samples will be plotted as normal and this forces us to be conservative in our identification of the Brunhes-Matuyama boundary with an age of 0.781 Ma (19). We cannot unequivocally verify that we have identified the reversed Matuyama Chron below 174.36 mbs, but we conclude that this part of the core must be at least older than 0.781 Ma, because of

the positive identification of reversed samples in combination with the numerical ages obtained through U-series and $^{40}\text{Ar}/^{39}\text{Ar}$ techniques (see above). However, it is worth noting that independent estimates of the depth of the Brunhes-Matuyama boundary based on extrapolation of sedimentation rate estimates are compatible with the inferred Brunhes-Matuyama boundary location (Fig. 2B) using the first positively identified reversed sample at 174.36 mbs.

The underlying trachytes have been $^{40}\text{Ar}/^{39}\text{Ar}$ dated at 1078.2 ± 3.6 ka from core segment MAG14-2A-102Q-1 at 104-119 cm. We have sampled the same core segment at 114 cm (194.09 mbs, Fig S2b) with the corresponding reversed paleomagnetic direction for this age. In the overlying sediments, we have found no indication of the Jaramillo (normal) subchron. This could indicate a small hiatus between the deposition of the trachyte and the overlying sediments of at least the duration of the Jaramillo subchron.

At two intervals (32.51–32.61 mbs and 99.21–99.92 mbs; Table S6) we find samples that could indicate a possible paleomagnetic excursion. However, with only two samples at each interval we refrain from assigning these directions to an excursion. The loss of remanence below 400 degrees in some of the samples does indicate that greigite is one of the magnetic minerals present in the Magadi sediments (20). No gyroremanent magnetization (GRM) was observed, which could indicate that the greigite (if proven to be present) could be of biogenic origin (21). Hematite likely has a negligible contribution in these samples as all TH demagnetized samples had fully decayed at 550°C whereas only a few samples had some remanence left at 100 mT, which could indicate greigite.

7. Geochemical analyses

Samples were analyzed by Activation Laboratories using their 4E-exploration package. Samples were fused with lithium metaborate and lithium tetraborate for inductively coupled plasma-mass spectrometry for element determinations. Analyses were carried out on a Thermo Jarrell-Ash ENVIRO II ICP. Detection limits for Na_2O , and CaO were 0.01%. Samples for LOI analyses at 1,000°C were carried out by Actlabs after initial dewatering at 105°C, yielding total volatiles (mainly trona, calcite and organics). LOI at 550°C ($n = 332$) was determined at the University of Arizona with standard furnace ignition techniques and represents total organic carbon. Mineralogical results were obtained using XRD equipment at Georgia State University on samples collected at 16 cm intervals using a Panalytical X'pert Pro MPD with $\text{CuK}\alpha$ radiation operating at 45 kV and 40mA. Data are shown in Table S8.

8. Microfossil analyses

A total of 62 diatom taxa were observed in 354 samples from the Magadi core (Dataset S1). Carbonates were extracted with HCl (10%) and organics were removed with H_2O_2 (30%). After cleaning with distilled water, diatoms were mounted on smear slides using Naphrax. Fig. S4 shows the stratigraphic distribution of diatoms in MAG14-2A. Zones I and VI lack diatoms. Zone II includes relatively low abundances of diatoms dominated by *Aulacoseira* spp. and *Cyclotella meneghiniana*. Zone III is more diverse with *Aulacoseira* spp. common to abundant and with saline benthic and planktonic species increasing. Zone IV is distinguished by increased *A. agassizi*. Zone V is the most diverse and is characterised by increased percentages of *Thalassiosira faurii* and *Cyclotella meneghiniana*. Note the common co-occurrence of fresh and saline taxa through the core. Diatom identifications follow standard works (22–24).

Pollen was prepared following standard procedures (25, 26). Two sets of fossil pollen sums were calculated. The first consists of local taxa comprising Poaceae and wetland taxa (Cyperaceae, *Hydrocotyle*, *Potamogeton* and *Typha*) minus regional taxa or land pollen. Poaceae was considered as

local because of a combination of their dominance (local over-representation) among the fossil pollen and the numerous grasses growing in the Magadi catchment today. The second fossil pollen sum includes regional taxa or land pollen with unknown grains included. Pollen types that did not exceed 2 % in at least one sample were excluded from the pollen diagram. The full pollen stratigraphy is shown in Figs. S5–6 with percentage analyses shown in Dataset S2. Identification was based on standard works (27–29), digital photographs available in the African Pollen Database (<http://www.geo.arizona.edu/palynology/apd.html>), and by comparison with a reference collection of over 6000 slides of modern East African pollen held at the Department of Earth Sciences (Palynology and Paleobotany section), National Museums of Kenya.

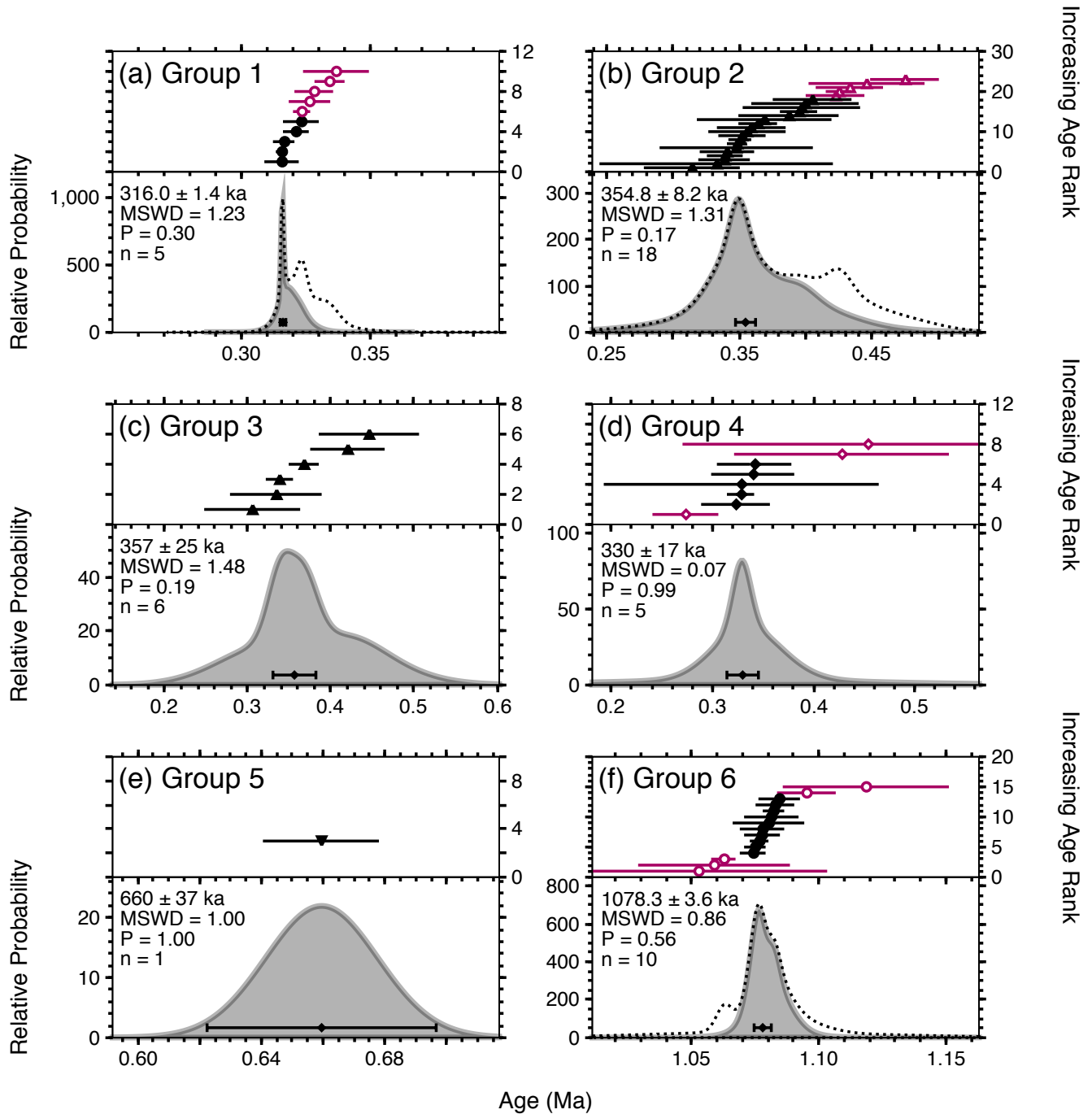
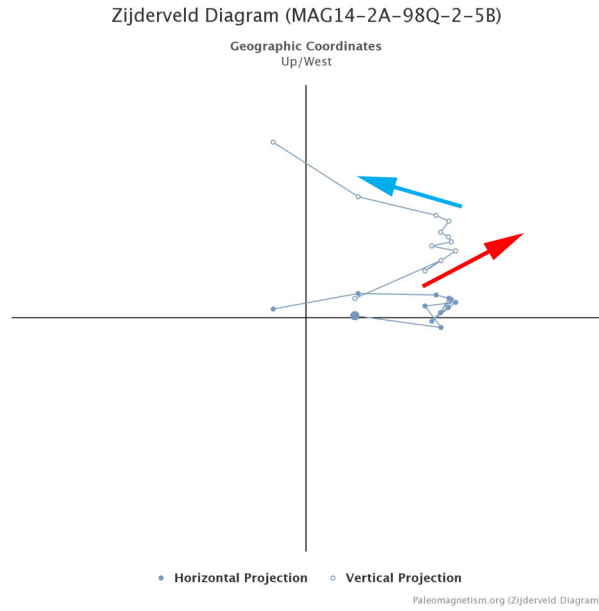
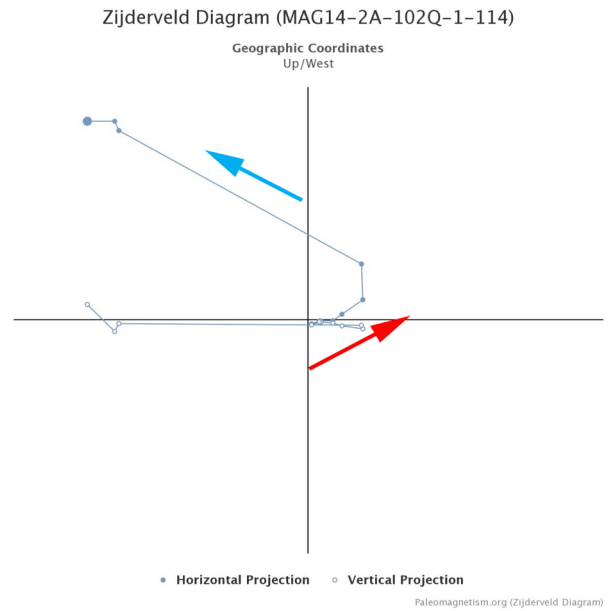


Fig. S1. Age-probability density spectra of the isochron results for the SCIH analyses. Filled curve represents the trimmed data set after outlier deletion procedures described in the text, whereas the dashed areas represent the overall measured age-probability density. The weighted-mean ages of the juvenile population is shown at 2σ MSE, and includes the error in J , the neutron fluence parameter. ‘MSWD’ is the mean square of weighted deviations, with an expectation of unity; ‘P’ expresses the probability that the MSWD is fully explained by analytical scatter; if below 5%, geological scatter or error underestimation may be present. The upper panel is a rank-order plot of individual analyses with 1σ analytical uncertainty. Closed symbols in this plot represent analyses included in the mean, while open symbols depict excluded grains.

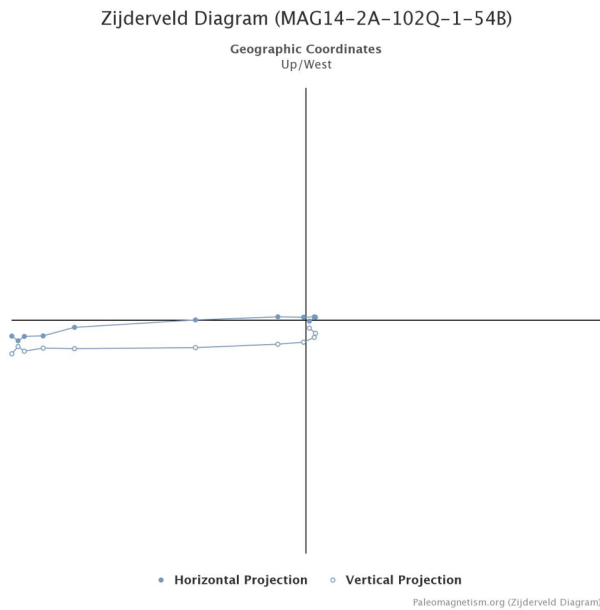
a)



b)



c)



d)

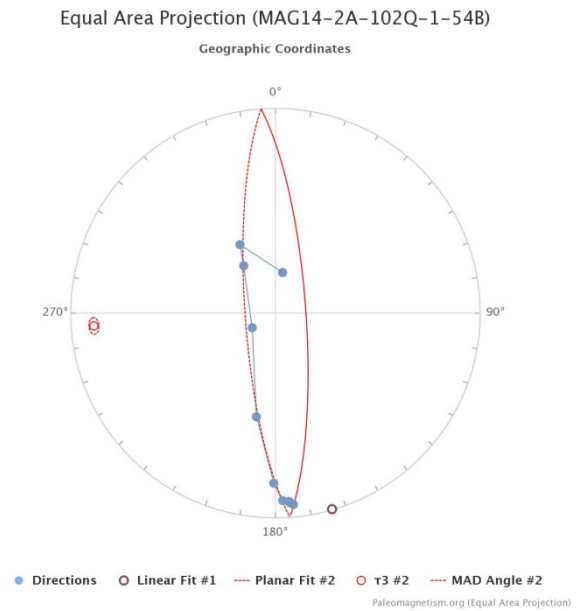


Fig. S2. Examples of typical Zijderveld (1967) diagram for two samples (a, b) with reversed ChRM (red arrow) after reorientation of the low temperature overprint to normal directions (blue arrow) and one example of a sample which shows a great circle and for which the two directions could not be fully separated (c, d) Closed/open circles denote projection on a horizontal/vertical plane.

Magadi

ChRM directions

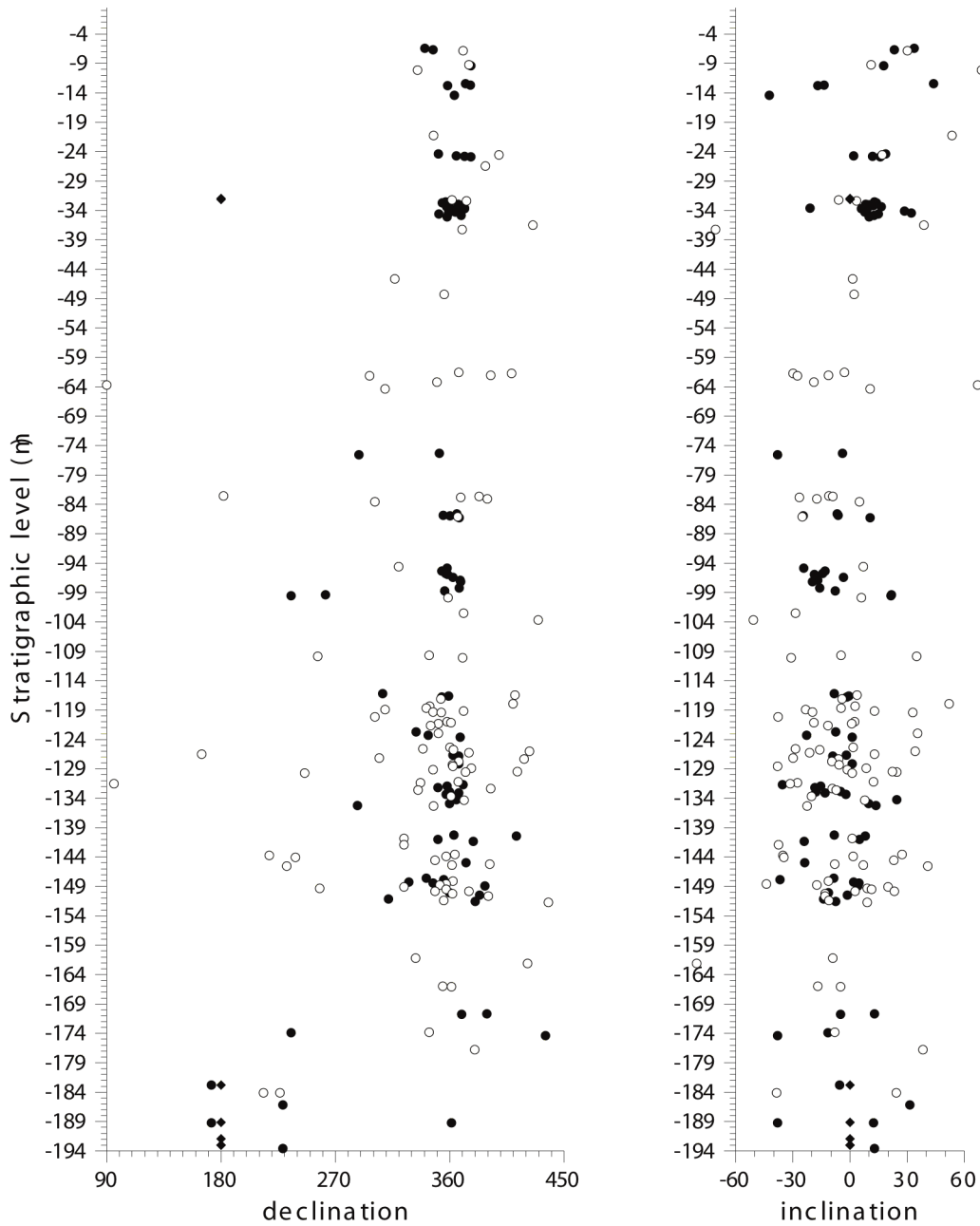


Fig. S3. Plotted LC/LC corrected ChRM directions of the Magadi 2A core. White dots are ChRM directions with MAD higher than 15 degrees and were not used for the interpretation. Black dots are ChRM directions with MAD lower than 15 degrees. See SI text for further explanation.

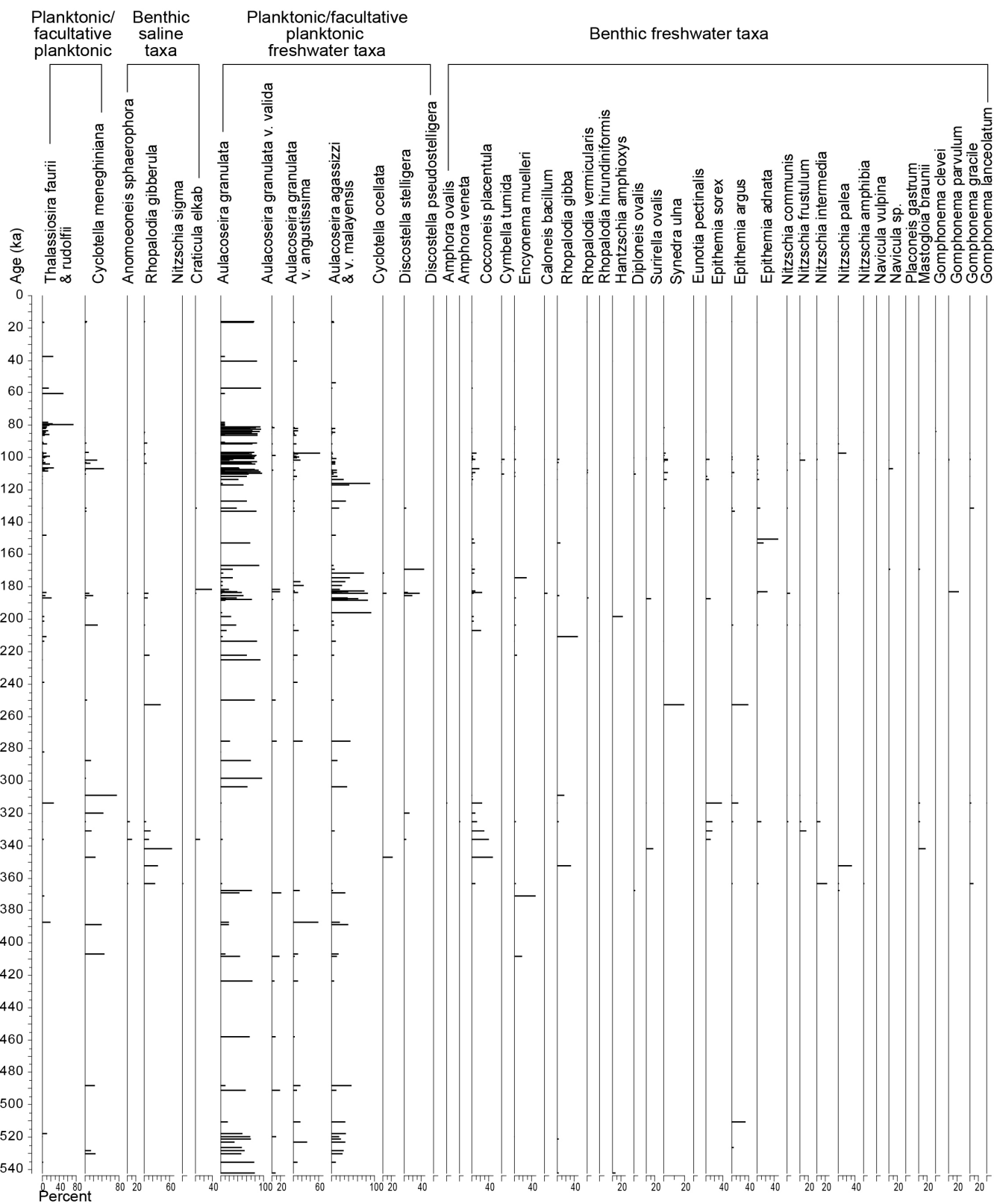


Fig. S4. Diatom stratigraphy of MAG14-2A for taxa forming >2% showing six major zones. Note time gap below about 475 ka.

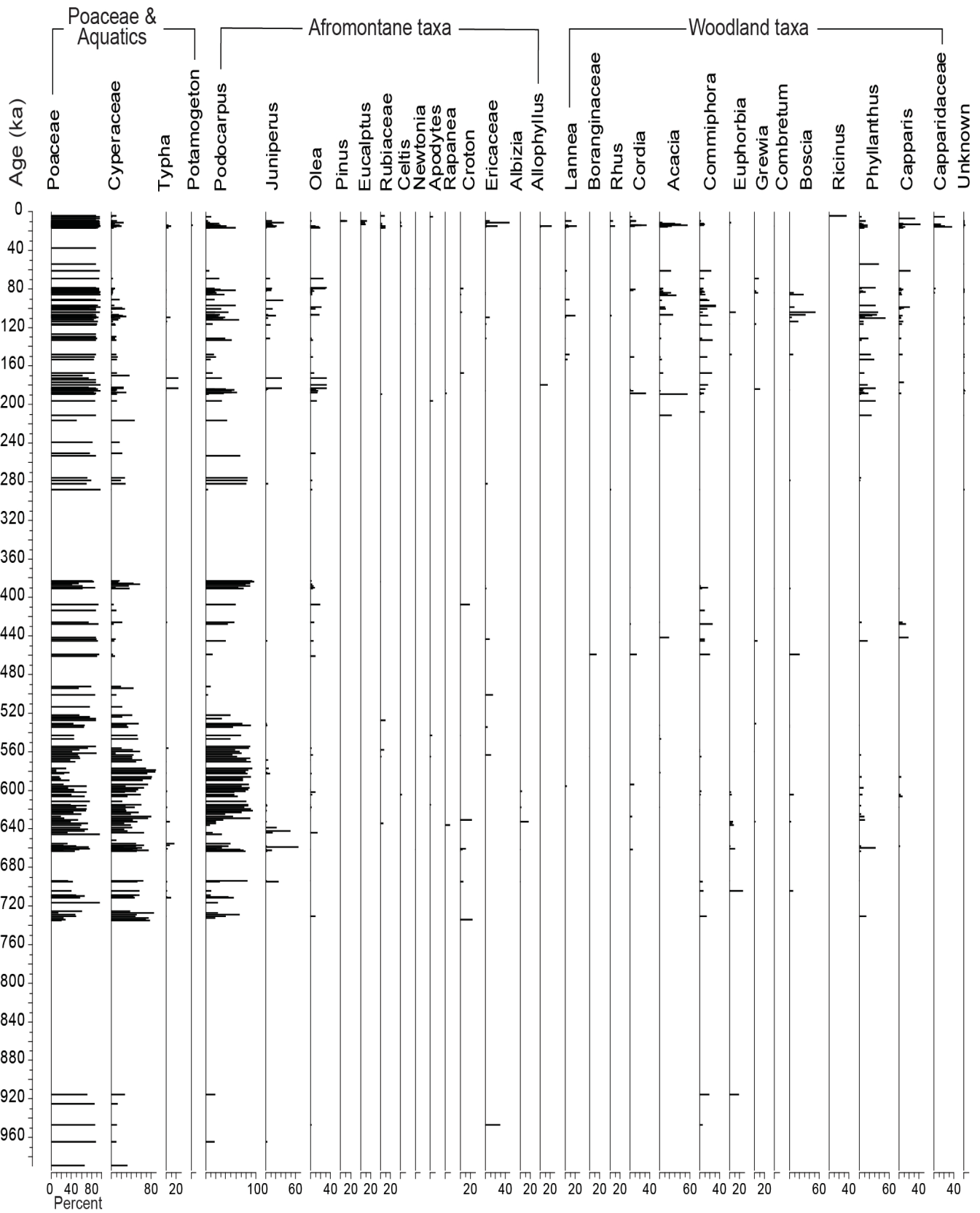


Fig. S5. Pollen stratigraphy vs depth in MAG14-2A. Poaceae and aquatics, Afromontane and woodland taxa. Taxa forming <2% not included.

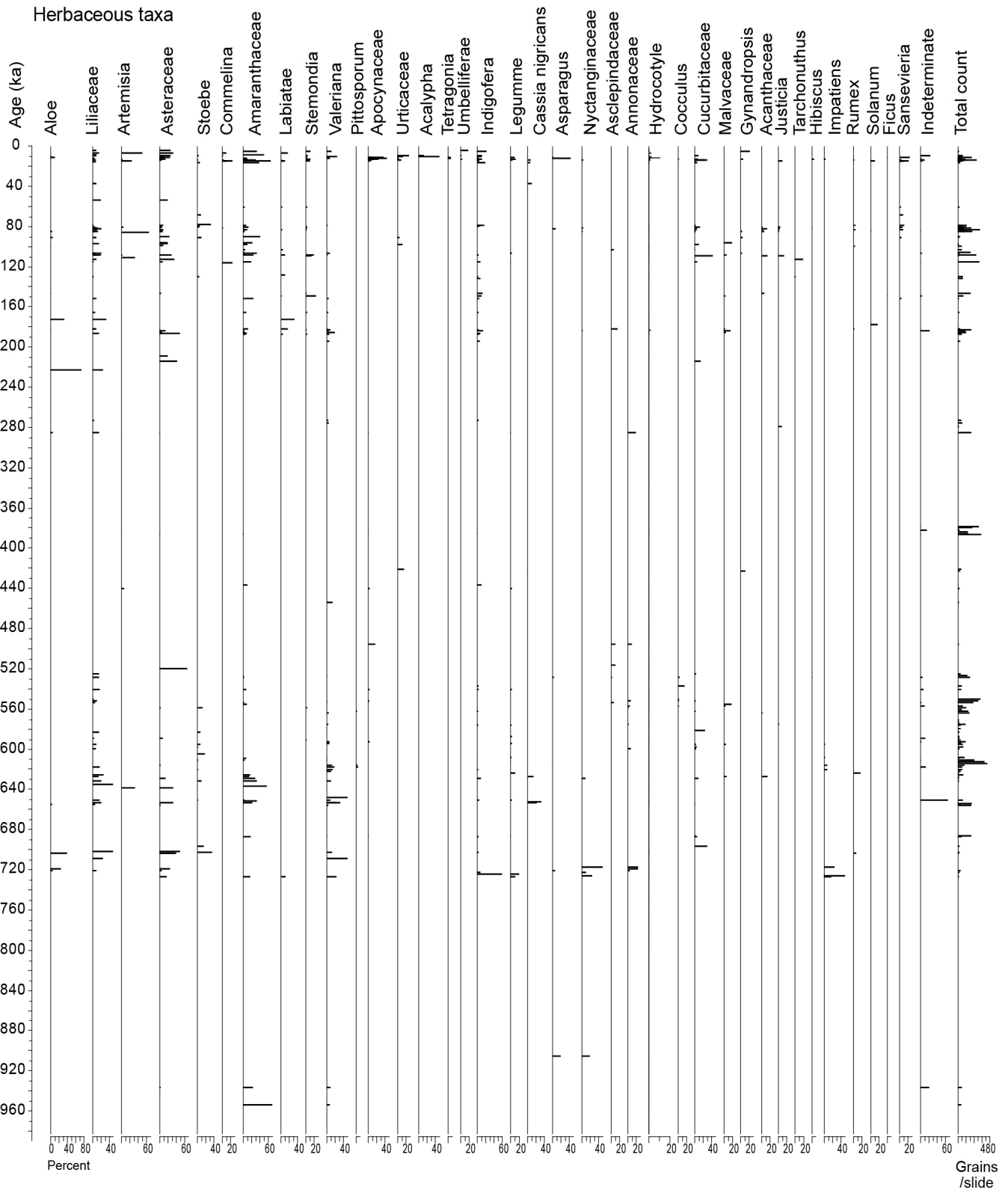


Fig. S6. Pollen stratigraphy vs depth in MAG14-2A. Herbaceous taxa only. Taxa forming <2% not included.

Table S1 Control dates used in Bayesian chronological model

Date (ka)	Error (ka)	Depth (cm)	Method
13.706	0.127	2018.5	14C
12.4	0.8	3580	U-series
45.7	1	4188	U series
114	2.2	6389	U series
113.2	1.6	6389	U-series
97.4	2.5	6570	U series
101	1.9	6570	U series
155.1	3.6	7066	U series
163.6	2.6	7066	U series
158.8	2.8	7066	U series
179.7	3.5	8381	U series
215.8	8.6	8766.5	U series
266.5	16.5	9100	U series
251.8	10.8	9100	U series
316	1.4	9609	40Ar/39Ar
354.1	8.2	9667	40Ar/39Ar
354	24	9723	40Ar/39Ar
329	17	9737	40Ar/39Ar
781	10	17436	B-M boundary
1078.2	3.6	19450	40Ar/39Ar

Table S2. Radiocarbon dates from MAG14-2A.

Number	mblf	material	Mass (mg)	delta C13	F(d13C)	+/-F(d13C)	C14 y BP	+/-C14 age	Calibrated age	Calibrated +/- 1 sigma	68% confidence range Cal yr BP	Notes
AA105612	7.056	bulk organic	0.71	-24.9	0.2640	0.0015	10699	45	12692	47	12644-12739	1
AA105612	7.056	humate fraction from above	0.3	-28.1	0.2317	0.0025	11747	86	13629	148	13480-13777	1
AA105613	20.17	trona	1.61	2.8	0.2751	0.0012	10368	34	12301	175	12125-12476	2
AA105609	20.19	bulk organic	1.08	-28.3	0.2029	0.0018	12812	70	15309	262	15046-15571	
AA105609	20.19	humate fraction from above sample	0.58	-27.8	0.2302	0.0018	11798	62	13706	127	13578-13833	
AA106870	25.47		1.54	-13.1	1.0379	0.0047	post-bomb					3
AA105610	43.52	bulk organic	2.5	-28.9	0.0033	0.0010	45900	2400	49868	3174	46694-53042	
AA105610	43.52	humate fraction from above	0.79	-28.7	0.0170	0.0010	32750	470	37247	808	36438-38055	
AA109444	43.69	charred particles	0.03	-16.9	<0.0517		>23800		>28691			4
	58.86	charred particles	0.05	-23.9	<0.0321		>27600		>32126			4
AA105611	66.03	bulk organic	1.85	-26.3	0.0031	0.0010	46400	2600	50541	3510	47030-54051	
AA105611	66.03	humate fraction from above	1.18	-25.4	0.0305	0.0010	28050	260	32535	343	32191-32878	

Notes: 1. Probable contamination, 2. Probably reflects brine water, 3. Modern organic matter contamination, 4. Small sample correction applied

Table S3. High-precision measurements of uranium- and thorium- isotopic compositions and dating of chert in drilled cores from Lake Magadi, Kenya by MC-ICPMS, Thermo Electron Neptune.

Depth (m)	²³⁸ U (ppm)	²³⁸ U/ ²³² Th (g/g)	²³⁴ U/ ²³⁸ U at./at. (x 10 ⁶)	²³⁰ Th/ ²³² Th at./at. (x 10 ⁶)	²³⁴ U/ ²³⁸ U act. ratio	δ ²³⁴ U (o/oo)	²³⁰ Th/ ²³⁸ U act. ratio ^c	Age (ka)
35.806-35.855	10.7176 ± 0.0171	3.05 ± 0.09	59.21 ± 0.10	5.8 ± 0.4	1.0772 ± 0.0017	77.2 ± 1.7	0.116 0.007	12.4 ± 0.8
41.84-41.91	2.0538 ± 0.0026	10.05 ± 0.072	80.40 ± 0.11	84.6 ± 1.7	1.4627 ± 0.0021	462.7 ± 2.1	0.511 0.009	45.7 ± 1.0
63.828-63.958	3.3267 ± 0.0043 3.1682 ± 0.0035	18.42 ± 0.12 18.74 ± 0.11	69.78 ± 0.11 69.72 ± 0.09	257.9 ± 3.3 261.0 ± 2.6	1.2695 ± 0.0019 1.2685 ± 0.0016	269.5 ± 1.9 268.5 ± 1.6	0.849 0.010 0.845 0.007	114.0 ± 2.2 113.2 ± 1.6
65.665-65.765	0.7027 ± 0.0011 0.6254 ± 0.0007	7.20 ± 0.04 7.24 ± 0.03	74.49 ± 0.15 74.70 ± 0.09	98.2 ± 1.7 101.5 ± 1.3	1.3551 ± 0.0027 1.3590 ± 0.0016	355.1 ± 2.7 359.0 ± 1.6	0.827 0.014 0.850 0.010	97.4 ± 2.5 101.0 ± 1.9
70.63-70.69	0.8063 ± 0.0016	8.19 ± 0.05	70.10 ± 0.16	136.2 ± 1.7	1.2753 ± 0.0029	275.3 ± 2.9	1.008 0.011	155.1 ± 3.6
70.63-70.69	0.7391 ± 0.0008	14.82 ± 0.04	69.84 ± 0.10	251.4 ± 1.9	1.2705 ± 0.0018	270.5 ± 1.8	1.029 0.007	163.6 ± 2.6
70.63-70.69	0.7474 ± 0.0015	15.96 ± 0.07	70.28 ± 0.15	269.1 ± 2.4	1.2786 ± 0.0028	278.6 ± 2.8	1.022 0.008	158.8 ± 2.8
83.64-83.99	2.8016 ± 0.0048	27.66 ± 0.14	65.82 ± 0.13	456.8 ± 4.1	1.1975 ± 0.0024	197.5 ± 2.4	1.002 0.008	179.7 ± 3.5
87.65-87.68	1.5932 ± 0.0021	4.33 ± 0.04	68.72 ± 0.09	80.7 ± 1.3	1.2502 ± 0.0017	250.2 ± 1.7	1.131 0.016	215.8 ± 8.6
90.934-91.054	4.2754 ± 0.0072 3.4647 ± 0.0042	11.46 ± 0.12 11.55 ± 0.09	65.14 ± 0.13 65.08 ± 0.09	213.8 ± 4.0 212.0 ± 3.0	1.1850 ± 0.0023 1.1840 ± 0.0016	185.0 ± 2.3 184.0 ± 1.6	1.131 0.018 1.113 0.013	266.5 ± 16.5 251.8 ± 10.8
107.25-107.35	0.8099 ± 0.0014 0.8369 ± 0.0010	5.20 ± 0.03 5.37 ± 0.03	67.10 ± 0.13 66.84 ± 0.09	98.9 ± 1.3 103.5 ± 1.4	1.2207 ± 0.0023 1.2160 ± 0.0016	220.7 ± 2.3 216.0 ± 1.6	1.153 0.014 1.168 0.014	250.1 ± 10.7 266.7 ± 12.3

Table S4. ⁴⁰Ar/³⁹Ar analytical data

Lab ID#	Watts Irrad.	J (X 10 ¹⁹) ± 1σ	Relative Isotopic Abundances								Derived Results				Inverse Isochron Data													
			⁴⁰ Ar ± 1σ	³⁹ Ar ± 1σ	³⁸ Ar ± 1σ	³⁷ Ar ± 1σ	³⁶ Ar ± 1σ	⁴⁰ Ar/ ³⁹ Ar ± 1σ	⁴⁰ Ar/ ³⁹ Ar ± 1σ	⁴⁰ Ar/ ³⁹ Ar ± 1σ	Age (Ma) ± 1σ	³⁶ Ar/ ³⁹ Ar ± 1σ	³⁸ Ar/ ³⁹ Ar ± 1σ	³⁷ Ar/ ³⁹ Ar ± 1σ	³⁶ Ar/ ³⁹ Ar Fr. Corr.													
<i>MAG14-2A-102Q-1 104-119</i>																												
26963-01A	1.8	446c	0.13540	0.00017	101832.1	139.3	16261.8	16.1	1989.9	23.9	148.9	8.1	106.9	1.9	0.26	16.3	0.0466	0.0026	4.3001	± 0.0370	68.7	1.066	0.009	0.00105	1.83	0.15975	0.17	0.0630
26963-01B	1.4	446c	0.13540	0.00017	134684.9	150.7	25529.9	21.1	318.2	16.7	232.8	8.1	69.3	1.8	0.40	25.6	0.0483	0.0017	4.6648	± 0.0219	84.7	1.106	0.005	0.00051	2.57	0.18963	0.14	0.0372
26963-01C	1.8	446c	0.13540	0.00017	190429.0	149.4	42969.7	23.3	515.6	22.0	348.1	8.2	20.0	1.5	0.68	43.1	0.0429	0.0010	4.2931	± 0.0116	96.9	1.064	0.003	0.00010	7.86	0.22349	0.10	0.0088
26963-01D	2.5	446c	0.13540	0.00017	50794.6	132.4	11534.6	13.7	95.9	22.0	91.3	8.1	1.3	1.6	11.6	0.0419	0.0038	4.3697	± 0.0442	99.3	1.083	0.011	0.00002	131.0	0.22278	0.29	0.0018	
26963-01E	3.3	446c	0.13540	0.00017	15515.8	125.9	3413.4	7.6	30.4	22.0	28.3	8.0	2.1	1.5	0.05	3.4	0.0439	0.0126	4.3657	± 0.1408	96.1	1.082	0.035	0.00013	76.93	0.22008	0.84	0.0103
<i>MAG14-2A-102Q-1 104-119 - Aliquot #2</i>																												
26963-02B	1.0	446c	0.13540	0.00017	32315.5	136.8	4173.9	8.7	74.6	16.4	52.3	8.1	51.9	1.7	0.07	2.0	0.0641	0.0100	4.2460	± 0.1292	53.4	1.052	0.032	0.00156	3.39	0.12570	0.46	0.1091
26963-02C	1.4	446c	0.13540	0.00017	85079.1	141.4	17688.2	17.4	236.6	24.9	216.0	8.1	29.9	1.7	0.28	8.5	0.0625	0.0024	4.3141	± 0.0296	89.6	1.069	0.007	0.00035	5.62	0.20763	0.19	0.0261
26963-02D	1.8	446c	0.13540	0.00017	311733.0	174.5	51495.3	26.0	719.9	31.4	683.2	8.3	303.6	2.6	0.81	24.7	0.0679	0.0008	4.2946	± 0.0156	71.0	1.064	0.004	0.00097	0.86	0.16255	0.08	0.0610
26963-02E	2.5	446c	0.13540	0.00017	253307.7	162.4	54177.7	31.0	695.4	23.9	687.0	8.3	56.8	1.7	0.86	26.1	0.0646	0.0008	4.3441	± 0.0102	93.4	1.076	0.003	0.00022	3.04	0.21491	0.09	0.0190
26963-02F	3.3	446c	0.13540	0.00017	195740.5	162.6	43720.7	24.8	477.0	23.9	525.9	8.3	20.8	1.7	0.69	21.0	0.0615	0.0010	4.3356	± 0.0122	96.9	1.074	0.003	0.00010	8.13	0.22345	0.10	0.0093
26963-02G	4.5	446c	0.13540	0.00017	30706.7	152.1	29111.4	22.3	357.0	25.9	324.8	8.2	12.1	1.7	0.46	14.0	0.0571	0.0015	4.3668	± 0.0183	97.3	1.082	0.005	0.00009	14.8	0.22281	0.14	0.0072
26963-02H	6.1	446c	0.13540	0.00017	44950.5	145.2	7858.4	11.7	97.3	28.1	93.6	8.1	2.8	1.6	0.12	3.8	0.0609	0.0053	4.3422	± 0.0267	97.7	1.076	0.016	0.00008	57.63	0.22293	0.43	0.0666
<i>MAG14-2A-102Q-1 104-119 - Aliquot #3</i>																												
26963-03A	1.0	446c	0.13540	0.00017	51921.3	139.6	5746.9	9.3	96.3	21.0	52.2	8.3	89.4	1.7	0.09	4.5	0.0464	0.0075	4.3920	± 0.0922	48.6	1.088	0.023	0.00172	1.93	0.11072	0.31	0.1206
26963-03B	1.4	446c	0.13540	0.00017	166175.5	156.6	35351.5	26.0	454.8	20.1	327.2	8.5	47.3	1.8	0.56	27.5	0.0474	0.0012	4.3032	± 0.0163	91.5	1.066	0.004	0.00028	3.85	0.21272	0.12	0.0210
26963-03C	1.8	446c	0.13540	0.00017	89933.7	157.1	40044.1	24.8	489.5	24.9	372.9	8.5	60.1	1.7	0.63	31.2	0.0477	0.0011	4.2955	± 0.0135	90.6	1.064	0.003	0.00031	2.84	0.21091	0.10	0.0259
26963-03D	2.5	446c	0.13540	0.00017	181634.7	159.8	38999.0	26.0	462.8	16.7	360.7	8.4	47.3	1.7	0.61	30.3	0.0474	0.0011	4.2954	± 0.0142	92.3	1.064	0.004	0.00026	3.69	0.21479	0.11	0.0209
26963-03E	3.3	446c	0.13540	0.00017	37613.1	133.3	8375.3	12.0	111.0	22.0	79.6	8.3	4.6	1.7	0.13	6.5	0.0488	0.0051	4.3274	± 0.0627	96.4	1.072	0.016	0.00012	37.28	0.22275	0.38	0.0089
<i>MAG14-2A-102Q-1 104-119 - Aliquot #4</i>																												
26963-04A	1.0	446c	0.13540	0.00017	55682.5	130.2	7244.1	11.6	90.0	16.2	44.6	8.4	83.1	1.8	0.11	5.4	0.0350	0.0067	4.2617	± 0.0761	55.5	1.056	0.019	0.00149	2.17	0.13015	0.28	0.0903
26963-04B	1.4	446c	0.13540	0.00017	164517.7	155.5	34525.6	23.5	389.3	22.3	313.7	8.4	53.4	1.8	0.54	25.9	0.0519	0.0014	4.3032	± 0.0163	90.3	1.066	0.004	0.00032	3.25	0.20995	0.12	0.0248
26963-04C	1.8	446c	0.13540	0.00017	224239.4	145.6	49902.2	28.5	585.2	22.3	443.9	8.5	33.2	1.8	0.78	37.1	0.0512	0.0010	4.3328	± 0.0114	95.6	1.074	0.003	0.00015	5.42	0.22071	0.09	0.0107
26963-04D	2.5	446c	0.13540	0.00017	139587.2	142.0	31097.2	23.5	352.4	20.5	261.6	8.5	13.9	1.6	0.49	23.3	0.0480	0.0016	4.3557	± 0.0165	97.1	1.079	0.004	0.00010	11.82	0.22287	0.13	0.0074
26963-04E	3.3	446c	0.13540	0.00017	49365.3	126.5	11134.0	12.5	116.7	24.2	78.6	8.4	4.4	1.6	0.18	3.8	0.0402	0.0043	4.3143	± 0.0445	97.3	1.069	0.011	0.00009	36.35	0.22564	0.28	0.0065
<i>MAG14-2A-102Q-1 104-119 - Aliquot #5</i>																												
26963-05A	1.0	446c	0.13540	0.00017	45999.1	127.5	4093.7	7.8	62.9	22.3	25.6	8.3	95.8	1.9	0.06	2.4	0.0356	0.0117	4.2325	± 0.1454	37.7	1.049	0.036	0.00209	2.05	0.08915	0.34	0.1127
26963-05B	1.4	446c	0.13540	0.00017	88529.8	134.7	19490.1	17.4	217.0	33.9	205.3	8.5	15.2	1.6	0.31	11.3	0.0603	0.0025	4.3101	± 0.0262	94.9	1.068	0.006	0.00017	10.83	0.22025	0.18	0.0225
26963-05C	1.8	446c	0.13540	0.00017	293994.7	167.0	61014.0	31.0	721.4	23.3	515.8	8.5	40.5	1.7	1.01	37.3	0.0460	0.0008	4.3978	± 0.0086	95.9	1.090	0.002	0.00014	4.23	0.21813	0.08	0.0127
26963-05D	2.5	446c	0.13540	0.00017	139009.6	141.8	31596.3	22.3	374.6	27.3	240.2	8.3	7.2	1.6	0.50	18.4	0.0430	0.0015	4.3315	± 0.0157	98.5	1.073	0.004	0.00005	22.28	0.22739	0.12	0.0040
26963-05E	3.3	446c	0.13540	0.00017	194908.7	168.1	43693.3	28.5	514.4	25.3	332.8	8.3	6.3	1.5	0.69	25.4	0.0436	0.0011	4.3228	± 0.0113	99.0	1.071	0.003	0.00003	24.60	0.22913	0.11	0.0032
26963-05F	4.5	446c	0.13540	0.00017	40558.5	143.5	30604.9	12.1	115.5	23.3	58.8	8.2	2.5	1.5	0.14	5.3	0.0371	0.0052	4.3917	± 0.0524	98.2	1.088	0.013	0.00006	61.24	0.22537	0.38	0.0054
<i>MAG14-2A-045Y-2 000-021</i>																												
26964-01A	1.0	446c	0.13540	0.00017	483117.1	201.5	15887.9	16.2	464.4	37.1	40.7	8.2	1544.2	7.1	0.25	5.5	0.0128	0.0027	1.3886	± 0.1344	4.6	0.344	0.033	0.00320	0.46	0.03290	0.11	0.0597
26964-01B	1.4	446c	0.13540	0.00017	259648.3	168.4	66355.0	33.0	880.4	40.6	160.8	8.3	594.3	3.7	1.05	23.0	0.0121	0.0006	1.2387	± 0.0711	31.7	0.307	0.004	0.00229	0.63	0.25566	0.08	0.0951
26964-01C	1.8	446c	0.13540	0.00017	75128.2	142.3	30012.3	26.0	431.8	37.1	70.7	8.2	83.6	1.9	0.61	13.5	0.0089	0.0011	1.2859	± 0.0153	66.8	0.319	0.004	0.00011	2.32	0.51952	0.20	0.0779
26964-01D	2.5	446c	0.13540	0.00017	137523.3	151.1	72943.3	32.2	886.4	30.3	170.3	8.2	150.5	2.3	1.14	25.1	0.0117	0.0006	1.2775	± 0.0096	67.4	0.316	0.002	0.00109	1.53	0.52729	0.11	0.0651
26964-01E	3.3	446c	0.13540	0.00017	109821.1	140.1	50465.7	34.7	624.7	21.0	130.5	8.1	150.0	2.2	0.80	17.5	0.0130	0.0008	1.2887	± 0.0134	59.2	0.319	0.003	0.00137	1.49	0.45974	0.15	0.0785
26964-01F	4.5	446c	0.13540	0.00017	71196.3	132.8	32523.4	24.8	364.2	21.0	105.7	8.1	98.4	2.0	0.51	11.3	0.0104	0.0003	1.2861	± 0.0190	58.8	0.319	0.005	0.00138	2.06	0.45702	0.20	0.0851
26964-01G	6.1	446c	0.13540	0.00017	34423.4	133.5	11601.0	13.7	153.4	22.9	47.7	8.0	60.3	1.9	0.18	4.0	0.0209	0.0036	1.4162	± 0.0512	47.7							

27187-04B	1.3	4A7A	0.14080	0.00014	81661.4	119.3	22195.5	17.4	285.5	5.9	1.6	9.5	145.0	1.8	0.34	28.2	0.0114	0.0709	1.7267	± 0.0250	47.0	0.445	0.006	0.00177	1.26	0.27225	0.17	0.1053
27187-04C	1.7	4A7A	0.14080	0.00014	40207.9	117.8	19076.4	16.2	244.6	12.5	-4.7	9.5	26.8	1.5	0.29	24.2	-0.0415	0.0829	1.6835	± 0.0252	80.0	0.434	0.006	0.00067	5.81	0.47526	0.31	0.0488
27187-04D	2.2	4A7A	0.14080	0.00014	28670.3	118.1	12451.5	12.5	159.7	11.2	9.1	9.5	28.1	1.5	0.19	15.8	0.1212	0.1274	1.6344	± 0.0380	70.9	0.421	0.010	0.00097	5.49	0.43377	0.42	0.0731
27187-04E	2.9	4A7A	0.14080	0.00014	28111.5	117.1	11374.4	12.5	153.6	7.6	13.9	9.5	30.9	1.5	0.17	14.5	0.2025	0.1390	1.6666	± 0.0416	67.5	0.429	0.011	0.00109	5.05	0.40527	0.43	0.0800
27187-04F	3.5	4A7A	0.14080	0.00014	4092.6	115.6	1878.6	5.5	27.5	7.9	-13.6	9.5	0.3	1.5	0.03	2.4	-1.2027	0.8415	2.0724	± 0.2439	95.2	0.533	0.063	0.0016	227.50	0.46002	2.84	0.1024
MAG14-2A-045Y-2 120-136 - Aliquot #5																												
27187-05A	1.0	4A7A	0.14080	0.00014	45101.2	119.1	3390.4	7.7	57.4	6.2	2.6	9.5	139.2	1.6	0.05	7.8	0.1294	0.4659	1.0481	± 0.1486	7.9	0.270	0.038	0.00309	1.21	0.07529	0.35	0.1674
27187-05B	1.3	4A7A	0.14080	0.00014	33743.0	117.2	11062.5	12.2	148.9	9.9	6.5	9.4	63.5	1.6	0.17	25.3	0.0971	0.1416	1.3381	± 0.0437	43.9	0.345	0.011	0.00188	2.50	0.32838	0.36	0.1327
27187-05C	1.7	4A7A	0.14080	0.00014	11664.7	116.4	5519.1	8.8	81.7	8.2	28.4	9.4	15.7	1.5	0.08	12.6	0.8553	0.2841	1.2957	± 0.0870	61.4	0.334	0.022	0.00129	10.40	0.47381	1.01	0.0948
27187-05D	2.2	4A7A	0.14080	0.00014	28606.9	117.0	17199.2	14.9	198.2	12.0	-1.2	9.3	18.5	1.5	0.26	39.4	0.0120	0.0904	1.3387	± 0.0272	80.6	0.345	0.007	0.00065	8.19	0.60227	0.42	0.0490
27187-05E	2.9	4A7A	0.14080	0.00014	6924.5	114.7	4436.1	8.3	40.8	9.9	16.8	9.3	2.9	1.5	0.07	10.2	0.6288	0.3501	1.3873	± 0.1034	89.0	0.357	0.027	0.00337	58.46	0.61612	1.67	0.0282
27187-05F	3.7	4A7A	0.14080	0.00014	3145.9	114.4	2080.3	6.0	26.5	6.5	-9.6	9.4	0.3	1.5	0.03	4.8	-0.7695	0.7485	1.4288	± 0.2214	94.7	0.368	0.057	0.00018	266.93	0.66264	3.65	0.0136
MAG14-2A-045Y-2 120-136 - Aliquot #6																												
27187-06A	1.0	4A7A	0.14080	0.00014	26613.8	116.4	7966.9	10.6	109.9	8.5	7.4	9.3	56.1	1.5	0.12	17.4	0.1552	0.1952	1.2426	± 0.0600	37.3	0.320	0.015	0.00210	2.81	0.29983	0.46	0.1491
27187-06B	1.3	4A7A	0.14080	0.00014	20448.4	114.9	8566.0	11.7	87.7	8.0	18.5	9.4	31.5	1.4	0.13	18.8	0.3593	0.1821	1.3004	± 0.0527	54.6	0.335	0.014	0.00125	4.73	0.41957	0.58	0.1155
27187-06C	1.7	4A7A	0.14080	0.00014	20830.7	115.5	10100.9	12.3	121.0	10.1	3.2	9.5	23.6	1.5	0.16	22.1	0.0527	0.1577	1.3655	± 0.0467	66.3	0.352	0.012	0.00113	6.55	0.48573	0.57	0.0829
27187-06D	2.2	4A7A	0.14080	0.00014	21529.5	116.9	10321.1	12.1	110.8	12.5	8.9	9.6	27.7	1.6	0.16	22.6	0.1436	0.1546	1.2877	± 0.0473	61.8	0.332	0.012	0.00128	5.80	0.48019	0.56	0.0916
27187-06E	2.9	4A7A	0.14080	0.00014	11538.6	115.6	6597.7	9.8	59.3	9.2	-2.9	9.6	7.4	1.5	0.10	14.4	-0.0729	0.2418	1.4103	± 0.0720	80.8	0.363	0.019	0.00064	20.83	0.6280	1.01	0.0476
27187-06F	3.7	4A7A	0.14080	0.00014	3060.3	115.0	2126.7	5.9	14.3	12.0	-3.4	9.6	-3.0	1.5	0.03	4.7	-0.2671	0.7499	1.8407	± 0.2177	128.2	0.474	0.056	-0.00094	-52.26	0.69622	3.77	0.0718
MAG14-2A-045Y-2 120-136 - Aliquot #7																												
27187-07A	1.0	4A7A	0.14080	0.00014	3965.6	115.3	2108.9	6.3	15.4	10.0	-16.0	9.6	2.5	1.5	0.03	7.9	-1.2683	0.7570	1.4733	± 0.2211	78.5	0.380	0.057	0.00072	53.23	0.53295	2.92	0.0544
27187-07B	1.3	4A7A	0.14080	0.00014	13214.9	115.2	6841.6	10.1	81.7	8.5	-7.3	9.5	13.8	1.5	0.11	25.6	-0.1782	0.2322	1.3180	± 0.0674	68.4	0.340	0.017	0.00106	10.73	0.51864	0.88	0.0802
27187-07C	1.7	4A7A	0.14080	0.00014	13356.8	114.9	4654.7	8.2	64.3	6.6	6.0	9.5	26.6	1.6	0.07	17.4	0.2158	0.3411	1.1485	± 0.1046	68.8	0.301	0.027	0.00198	6.05	0.54905	0.88	0.1394
27187-07D	2.2	4A7A	0.14080	0.00014	2100.1	114.0	1375.5	4.7	9.8	8.4	0.8	9.4	-0.4	1.5	0.02	5.1	0.1006	1.1483	1.6132	± 0.3364	105.8	0.416	0.087	-0.00020	-365.76	0.65612	3.44	0.0148
27187-07E	2.9	4A7A	0.14080	0.00014	8657.4	113.7	5221.0	10.0	73.1	7.7	19.7	9.5	9.6	1.5	0.08	19.5	0.6319	0.3036	1.1340	± 0.0875	68.5	0.292	0.023	0.00106	16.30	0.60399	1.32	0.0799
27187-07F	3.7	4A7A	0.14080	0.00014	5251.9	112.4	2994.4	7.0	42.8	9.7	-9.4	9.5	3.9	1.4	0.05	11.2	-0.5271	0.5288	1.3397	± 0.1492	76.5	0.345	0.038	0.00079	35.20	0.57125	2.15	0.0690
27187-07G	4.8	4A7A	0.14080	0.00014	4118.6	111.8	2432.6	6.0	33.6	6.2	-6.0	9.4	1.9	1.4	0.04	9.1	-0.4102	0.6492	1.4356	± 0.1824	85.0	0.370	0.047	0.00050	69.45	0.57177	2.73	0.0389
27187-07H	6.3	4A7A	0.14080	0.00014	2606.2	111.5	1132.5	4.8	12.4	7.8	-2.5	9.5	1.2	1.5	0.02	4.2	-0.3626	1.4029	1.9114	± 0.4033	39.7	0.235	0.104	0.00202	28.54	0.45334	4.00	0.0944
MAG14-2A-045Y-2 120-136 - Aliquot #8																												
27187-08A	1.0	4A7A	0.14080	0.00014	48255.7	114.1	3295.0	7.2	78.0	9.5	0.5	9.5	149.7	1.8	0.05	8.2	0.0243	0.4822	1.0779	± 0.1674	7.4	0.278	0.043	0.00310	1.23	0.06839	0.32	0.1430
27187-08B	1.3	4A7A	0.14080	0.00014	71866.1	114.9	14361.9	13.7	207.2	8.9	15.3	9.5	157.0	1.7	0.22	35.5	0.1776	0.1109	1.7454	± 0.0367	34.9	0.450	0.009	0.00218	1.11	0.20016	0.19	0.1267
27187-08C	1.7	4A7A	0.14080	0.00014	64410.9	115.4	9810.5	11.0	156.0	7.4	-9.6	9.5	157.3	1.8	0.15	24.3	-0.1639	0.1625	1.7702	± 0.0565	27.0	0.456	0.015	0.00244	1.17	0.15257	0.21	0.1328
27187-08D	2.2	4A7A	0.14080	0.00014	23488.2	112.2	7331.2	9.9	105.6	8.7	-4.0	9.5	35.1	1.6	0.11	18.1	-0.0929	0.2175	1.7695	± 0.0680	55.3	0.456	0.018	0.00150	4.66	0.31265	0.50	0.0989
27187-08E	2.9	4A7A	0.14080	0.00014	15496.7	113.0	4739.4	8.7	61.0	5.6	-21.0	9.6	19.9	1.5	0.07	11.7	-0.7500	0.3420	1.9908	± 0.0988	60.7	0.510	0.025	0.00152	7.51	0.30643	0.75	0.0948
27187-08F	3.8	4A7A	0.14080	0.00014	2316.6	113.3	871.4	3.9	3.7	6.6	-2.6	9.6	1.1	1.5	0.01	2.2	-0.5056	1.8574	2.2410	± 0.5194	84.5	0.577	0.134	0.00052	121.94	0.37686	4.91	0.0399
MAG14-2A-045Y-2 120-136 - Aliquot #9																												
27187-09A	1.0	4A7A	0.14080	0.00014	53519.4	118.3	4029.1	7.8	82.5	8.5	-8.4	9.6	166.9	1.8	0.06	11.3	-0.3523	0.4021	0.9008	± 0.1368	6.8	0.232	0.035	0.00312	1.10	0.07541	0.29	0.1530
27187-09B	1.3	4A7A	0.14080	0.00014	99309.3	121.7	12286.8	12.5	201.8	11.4	-19.8	9.6	284.2	2.0	0.19	34.5	-0.2726	0.1320	1.1643	± 0.0503	14.4	0.300	0.013	0.00287	0.73	0.12394	0.16	0.1374
27187-09C	1.7	4A7A	0.14080	0.00014	32291.2	118.3	10462.7	11.6	133.8	6.8	-25.4	9.6	59.1	1.6	0.16	29.4	-0.4106	0.1546	1.3805	± 0.0469	44.8	0.356	0.012	0.00185	2.70	0.32460	0.38	0.1304
27187-09D	2.2	4A7A	0.14080	0.00014	2155.490	116.5	3385.3	7.1	53.1	7.5	5.9	9.6	32.2	1.5	0.05	10.5	0.2926	0.4199	1.6301	± 0.0529	12.3	0.319	0.014	0.00237	94.3	0.03059	1.99	0.0205
27187-09E	2.9	4A7A	0.14080	0.00014	7234.8	116.7	4005.5	8.3	49.2	7.7	-17.7	9.6	2.3	1.5	0.06	11.3	-0.7465	0.4040	1.3805	± 0.1133	89.0	0.413	0.029	0.00337	54.95	0.55543	1.63	0.0291
27187-09F	3.7	4A7A	0.14080	0.00014	3195.5	117.3	1424.0	4.8	7.1	9.9	-8.6	9.5	1.7	1.5	0.02	4.0	-1.0237	1.1327	1.8511	± 0.3219	82.7	0.477	0.083	0.00058	80.19	0.44654	3.69	0.0456
MAG14-2A-045Y-2 120-136 - Aliquot #10																												
27187-10A	1.0	4A7A	0.14080	0.00014	535119.4	156.0	4297.2	8.7	395.5	15.5	-8.9	9.6	1813.9	4.4	0.07	19.3	-0.3532	0.3765	-1.5087	± 0.3129	-1.2	-0.389	0.081	0.00339	0.25	0.00804	0.20	0.0468
27187-10B	1.3	4A7A	0.14080	0.00014	62154.3	120.9	8388.4	12.2	118.6	8.1	11.2	9.5	176.1	1.8	0.13	37.8	0.2263	0.1298	1.1471	± 0.0662	15.5	0.295	0.017	0.00283	1.05	0.15317	0.24	0.1511
27187-10C	1.7	4A7A	0.14080	0.00014	45916.6	120.6	5280.8	8.4	78.5	7.2	-5.9	9.6	130.5	1.8	0.08	23.8	-0.1903	0.3074	1.3841	± 0.1045	15.0	0.336	0.027	0.00285	1.41	0.11520	0.21	0.1612
27187-10D	2.2	4A7A	0.14080	0.00014	30613.3	119.5	3129.4	6.5	57.1	6.2	-25.1	9.6	85.1	1.6	0.05	14.1												

27190-01B	1.3	4A7A	1.4130	000014	75931.1	3279	15998.8	18.2	-125.2	98.1	-90.3	17.4	-149.2	14.4	0.24	15.6	-0.9864	0.1896	7.4727	± 0.2685	157.8	1.932	0.069	- 0.00193	- 9.79	0.21113	0.45	0.0428			
27190-01C	2.2	4A7A	1.4130	000014	120744.0	1178	26430.2	19.9	325.2	11.8	3.6	10.8	34.4	2.4	0.40	25.7	0.0247	0.0748	4.1738	± 0.0275	91.5	1.079	0.007	0.00028	6.96	0.21026	0.12	0.0120			
27190-01D	2.9	4A7A	1.4130	000014	84367.3	1218	43469.0	24.8	528.8	11.0	19.9	10.7	18.9	2.3	0.65	42.3	0.0832	0.0450	4.1679	± 0.0165	97.1	1.078	0.004	0.0010	12.76	0.23288	0.09	0.0046			
27190-01E	3.7	4A7A	1.4130	000014	46664.4	1113	10677.7	12.5	125.4	9.3	-6.1	10.6	3.7	2.3	0.16	10.4	-0.1046	0.1817	4.2550	± 0.0654	97.5	1.100	0.017	0.00008	59.64	0.22921	0.27	0.0036			
27190-01F	4.8	4A7A	1.4130	000014	10838.7	1089	20313.9	6.7	24.3	13.0	28.6	10.6	1.5	2.4	0.10	2.4	2.0818	0.7098	4.2126	± 0.2845	97.8	1.089	0.074	0.00007	296.32	0.23216	1.04	0.0033			
MAG14-2A-102Q-1 104-119 - Aliquot #7																															
27190-02A	1.0	4A7A	1.4130	000014	36845.7	1845	2294.3	9.2	390.4	15.3	77.7	17.1	367.8	10.6	0.03	2.6	5.9177	1.3037	-31.5586	± 1.3893	-196.4	-8.181	0.361	0.00993	2.94	0.06224	0.64	0.1329			
27190-02B	1.3	4A7A	1.4130	000014	79967.0	1689	10248.6	14.6	250.7	17.4	23.6	17.0	113.4	10.2	11.5	0.3994	0.2905	4.5113	± 0.2988	57.9	1.167	0.077	0.00141	9.10	0.12835	0.26	0.0195				
27190-02C	1.7	4A7A	1.4130	000014	84367.3	1652	18884.0	15.7	163.9	13.4	65.6	16.8	123.1	9.8	0.28	21.1	0.6071	0.1553	2.5417	± 0.1556	57.0	1.167	0.077	0.00141	9.10	0.12835	0.26	0.0195			
27190-02D	2.2	4A7A	1.4130	000014	108707.2	1633	23551.0	20.4	214.9	20.6	7.1	16.6	7.7	9.2	0.35	26.3	0.0521	0.1231	4.3847	± 0.1172	97.8	1.134	0.030	0.00007	121.29	0.22316	0.18	0.0011			
27190-02E	2.9	4A7A	1.4130	000014	108477.0	1607	43363.3	20.4	208.5	16.3	2.8	16.4	-7.4	8.8	0.36	27.3	0.0200	0.1178	4.5363	± 0.1086	102.1	1.173	0.028	- 0.00007	-118.79	0.22497	0.17	0.0011			
27190-02F	3.7	4A7A	1.4130	000014	32447.5	1718	2678.6	12.3	-27.0	15.3	-35.1	16.2	-49.7	8.4	0.12	8.6	-0.8015	0.3693	6.1112	± 0.3286	144.9	1.580	0.085	- 0.00150	-17.31	0.23711	0.55	0.0293			
27190-02G	4.8	4A7A	1.4130	000014	9891.4	1471	7075.0	7.6	24.3	13.0	43.4	15.9	-1.6	7.6	0.04	2.7	3.2084	1.1707	4.4983	± 0.9626	108.1	1.163	0.249	- 0.00027	-286.13	0.24023	1.52	0.0051			
MAG14-2A-102Q-1 104-119 - Aliquot #8																															
27190-03A	1.0	4A7A	1.4130	000014	11403.8	2448	7.7	25.3	11.7	-21.8	15.6	-9.9	7.1	0.04	4.3	-1.6287	1.1671	10.1692	± 0.9114	113.2	2.629	0.235	- 0.00044	-76.55	0.11133	0.76	0.0080				
27190-03B	1.3	4A7A	1.4130	000014	47588.2	1424	10665.3	12.6	109.2	12.1	12.2	15.4	-5.9	6.7	0.16	19.4	0.2000	0.2534	4.6271	± 0.1870	103.9	1.196	0.048	- 0.00013	-108.23	0.22447	0.32	0.0026			
27190-03C	2.2	4A7A	1.4130	000014	67549.2	1119	15414.5	15.0	181.8	8.2	18.1	10.4	12.2	2.3	0.23	28.0	0.2147	0.1236	4.1477	± 0.0456	94.8	1.073	0.012	0.00017	19.69	0.22856	0.19	0.0074			
27190-03D	2.9	4A7A	1.4130	000014	36345.0	1088	8019.8	11.0	99.1	9.3	2.9	10.4	9.9	2.3	0.12	14.6	0.0662	0.2366	4.1589	± 0.0891	91.9	1.075	0.023	0.00027	24.02	0.22102	0.33	0.0114			
27190-03E	3.7	4A7A	1.4130	000014	29783.3	1074	5733.4	9.2	65.0	10.8	19.4	10.3	6.6	2.3	0.09	0.4	0.1699	0.3298	4.2082	± 0.1220	93.0	1.088	0.032	0.00023	38.07	0.22102	0.44	0.0101			
27190-03F	4.8	4A7A	1.4130	000014	30108.4	1076	6886.1	9.8	80.5	11.6	19.8	10.3	4.5	2.3	0.10	12.5	0.2568	0.2741	4.1928	± 0.1035	96.0	1.084	0.027	0.00013	59.05	0.22005	0.38	0.0056			
27190-03G	6.3	4A7A	1.4130	000014	18361.7	1065	4325.0	8.1	48.6	7.0	16.0	10.2	2.8	2.4	0.07	7.9	0.6794	0.4337	4.0758	± 0.1651	96.1	1.054	0.043	0.00013	99.62	0.23588	0.61	0.0055			
27190-03H	8.2	4A7A	1.4130	000014	7170.5	1063	1682.8	5.5	8.4	8.4	-1.9	10.2	1.8	2.4	0.03	3.1	-0.2106	1.0991	3.9213	± 0.4243	92.2	1.014	0.110	0.00026	126.22	0.23510	1.52	0.0115			
MAG14-2A-102Q-1 104-119 - Aliquot #9																															
27190-04A	1.0	4A7A	1.4130	000014	47098.8	1379	6029.5	10.6	41.6	12.4	-7.0	15.3	28.0	6.2	0.09	5.7	-1.3669	0.4445	6.3552	± 0.3078	81.5	1.643	0.080	0.00062	21.31	0.12829	0.34	0.0119			
27190-04B	1.3	4A7A	1.4130	000014	614278.1	1403	28715.9	20.2	368.7	16.2	13.4	14.9	100.0	5.6	43.3	26.9	0.0811	0.0912	4.5723	± 0.0590	81.5	1.182	0.015	0.00062	5.67	0.17834	0.11	0.0132			
27190-04C	2.2	4A7A	1.4130	000014	153815.0	1176	27620.0	19.9	338.9	9.8	31.1	10.2	140.6	3.2	0.41	26.0	0.0684	0.0684	4.1043	± 0.0356	72.9	1.061	0.009	0.00091	2.30	0.17552	0.11	0.0277			
27190-04D	2.9	4A7A	1.4130	000014	156197.2	1197	29700.0	24.8	410.9	12.4	13.1	10.2	107.4	3.1	0.45	28.1	0.0766	0.0622	4.1380	± 0.0310	79.5	1.070	0.008	0.00069	2.86	0.19219	0.11	0.0211			
27190-04E	3.7	4A7A	1.4130	000014	51314.2	1097	11745.7	13.7	136.7	11.6	29.5	10.1	13.5	2.3	0.18	11.0	0.4695	0.1582	4.0385	± 0.0609	92.6	1.044	0.016	0.00025	18.53	0.22925	0.24	0.0103			
27190-04F	4.8	4A7A	1.4130	000014	13087.0	1079	2961.2	6.8	36.1	5.9	-9.2	10.8	-1.0	2.0	0.04	2.8	-0.5816	0.6815	4.4894	± 0.2068	101.8	1.161	0.053	- 0.00006	-259.19	0.22670	0.86	0.0031			
MAG14-2A-102Q-1 104-119 - Aliquot #10																															
27190-05A	1.0	4A7A	1.4130	000014	32758.7	1318	3614.0	8.6	79.6	13.6	6.0	14.8	46.4	5.5	0.05	5.3	0.2920	0.7191	5.1755	± 0.4546	57.6	1.338	0.118	0.00142	11.88	0.11124	0.47	0.0295			
27190-05B	1.3	4A7A	1.4130	000014	67549.2	1325	15026.3	15.3	195.2	10.1	27.1	14.7	16.7	5.4	0.23	22.0	0.3163	0.1719	4.1824	± 0.1069	92.9	1.082	0.028	0.00024	33.51	0.22221	0.22	0.0053			
27190-05C	2.2	4A7A	1.4130	000014	108289.7	1148	23182.3	18.6	209.7	6.5	-12.1	10.6	26.4	2.0	0.35	34.0	-0.0983	0.0861	4.1905	± 0.0271	92.4	1.084	0.007	0.00025	7.68	0.22056	0.14	0.0122			
27190-05D	2.9	4A7A	1.4130	000014	81857.1	1106	18903.8	16.2	216.0	8.0	-29.8	10.5	5.1	2.0	0.28	27.7	-0.2964	0.1041	4.2300	± 0.0325	97.9	1.094	0.008	0.00007	34.38	0.21315	0.16	0.0054			
27190-05E	3.7	4A7A	1.4130	000014	23380.8	1072	5383.0	9.1	61.4	7.5	19.3	10.4	4.1	1.9	0.08	7.9	0.6716	0.2809	4.1382	± 0.102	95.4	1.070	0.028	0.00028	54.31	0.22057	0.49	0.0079			
27190-05F	4.8	4A7A	1.4130	000014	9044.9	1051	2131.4	5.5	10.2	8.3	-3.2	10.2	0.1	1.9	0.03	3.1	-0.2824	0.8944	4.2042	± 0.2755	99.2	1.087	0.071	0.00003	850.85	0.23607	1.19	0.0013			
MAG14-2A-102Q-1 104-119 - Aliquot #11																															
27190-06A	1.0	4A7A	1.4130	000014	44914.5	1300	5266.9	9.7	84.2	12.8	-38.6	14.6	48.6	5.2	0.08	8.1	-1.2879	0.4871	5.7091	± 0.2983	67.1	1.476	0.077	0.00110	10.61	0.11751	0.34	0.0232			
27190-06B	1.3	4A7A	1.4130	000014	132698.7	1340	28023.4	18.9	357.1	11.5	-19.0	14.4	29.2	5.0	0.42	43.1	-0.1198	0.0905	4.9122	± 0.0538	93.3	1.141	0.014	0.00022	16.97	0.21154	0.12	0.0053			
27190-06C	2.2	4A7A	1.4130	000014	58878.8	1084	13365.9	13.7	139.4	7.6	-3.2	10.1	10.1	1.9	0.20	26.6	-0.0448	0.1417	4.1786	± 0.0444	94.9	1.079	0.011	0.00017	19.21	0.22743	0.21	0.0085			
27190-06D	2.9	4A7A	1.4130	000014	29177.8	1051	9983.2	9.8	69.1	9.3	38.2	10.1	5.3	1.9	0.10	10.7	0.0278	0.2706	4.3777	± 0.0853	95.5	1.029	0.022	0.00015	44.93	0.24014	0.29	0.0075			
27190-06E	3.7	4A7A	1.4130	000014	30952.1	1051	3798.0	10.4	84.3	7.4	-9.6	10.0	-1.7	1.9	0.11	11.4	-0.2448	0.2530	4.2281	± 0.0785	101.4	1.093	0.020	- 0.00005	134.31	0.23976	0.37	0.0023			
27190-06F	4.8	4A7A	1.4130	000014	16398.6	1036	3965.0	7.4	37.2	7.1	20.8	10.0	1.2	2.0	0.06	6.1	0.9876	0.4724	4.0767	± 0.1507	98.7	1.054	0.039	0.00040	278.56	0.24214	0.66	0.0022			
MAG14-2A-102Q-1 104-119 - Aliquot #12																															
27190-07A	1.0	4A7A	1.4130	000014	55870.2	1296	4960.8	9.9	66.0	10.6	3.6	14.3	90.2	5.0	0.07	6.2	0.1286	0.5975	5.8283	± 0.3015	51.8	1.507	0.078	0.00161	5.54	0.08893	0.31	0.0321			
27190-07B	1.3	4A7A	1.4130	000014	106380.7	1329	20070.1	17.7	242.2	12.6	-27.6	14.3	47.8	4.9	0.30	25.1	-0.2420	0.1251	4.5712	± 0.0729	86.4	1.182	0.019	0.00046	10.07	0.18899	0.15	0.0106			
27190-07C	1.7	4A7A	1.4130	000014	147174.4	1329	23685.5	21.3	339.3	13.3	17.8	14.2	64.2	4.8	0.43																

27245-05A	0.9	454A	0.13180	0.00069	2600.7	40.4	193.2	3.4	-3.4	15.4	-0.1	11.5	9.7	4.1	0.00	7.6	-0.0052	0.5389	-1.5492	± 6.3288	-11.5	-0.374	1.527	0.00374	42.19	0.07432	2.34	0.0245	
27245-05B	5.0	454A	0.13180	0.00069	14401.5	45.5	2332.8	8.6	38.9	13.8	17.4	11.6	2.0	4.1	0.03	92.4	0.0668	0.0448	5.9156	± 0.5238	95.9	1.426	0.126	0.00014	205.66	0.16208	0.49	0.0010	
<i>MAG14-2A-045Y-2 116-119 - Aliquot #6</i>																													
27245-06A	0.9	454A	0.13180	0.00069	2149.9	40.9	214.3	3.5	6.1	11.3	7.2	11.6	3.8	4.1	0.00	13.7	0.3032	0.4905	4.6933	± 5.7592	46.8	1.131	1.388	0.00178	107.95	0.09974	2.50	0.0134	
27245-06B	5.0	454A	0.13180	0.00069	8738.4	44.3	1348.8	6.3	24.6	14.0	19.8	11.6	24.3	4.2	0.02	86.3	0.1324	0.0775	1.1042	± 0.9258	17.1	0.266	0.223	0.00278	17.23	0.15444	0.69	0.0217	
<i>MAG14-2A-045Y-2 116-119 - Aliquot #7</i>																													
27245-07A	0.9	454A	0.13180	0.00069	503.0	41.1	113.0	2.8	12.0	16.7	-11.4	11.4	3.1	4.1	0.00	8.4	-0.9137	0.9139	-3.6766	± 10.8965	-82.7	-0.887	2.629	0.00612	134.31	0.22490	8.53	0.0581	
27245-07B	5.0	454A	0.13180	0.00069	4276.7	41.5	1233.5	5.8	26.1	10.3	-17.0	11.5	5.1	4.1	0.02	91.6	-0.1249	0.0846	2.2243	± 0.9981	64.2	0.536	0.241	0.00120	80.42	0.28862	1.08	0.0109	
<i>MAG14-2A-046Y-1 006-010</i>																													
27246-01A	1.0	454A	0.13200	0.00064	29.7	122.6	1.3	2.1	-14.2	15.8	0.4	29.6	0.3	4.8	0.00	100.0	1.4320	114.0326	-48.9208	± 1076.4180	-220.2	-11.856	261.709	0.01072	1559.39	0.04501	440.76	0.2475	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #2</i>																													
27246-02A	1.0	454A	0.13200	0.00064	5517.2	123.4	1442.7	6.2	21.0	16.1	55.8	29.6	7.6	4.8	0.02	100.0	0.1985	0.1057	2.2670	± 0.9949	59.3	0.548	0.240	0.00136	63.74	0.26157	2.28	0.0345	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #3</i>																													
27246-03A	1.0	454A	0.13200	0.00064	568.9	122.8	168.1	3.0	-7.1	12.8	-9.1	29.5	0.7	4.8	0.00	100.0	-0.2793	0.9041	2.0620	± 8.6036	61.0	0.498	2.078	0.00131	649.73	0.29567	21.66	0.0331	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #4</i>																													
27246-04A	1.0	454A	0.13200	0.00064	2977.4	124.3	64.9	2.6	-16.2	11.7	26.9	29.6	10.1	4.9	0.00	100.0	2.1371	2.3529	-0.6705	± 224.4009	-1.5	-0.162	5.421	0.00340	48.20	0.02179	5.83	0.0620	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #5</i>																													
27246-05A	1.0	454A	0.13200	0.00064	-93.6	124.3	1.1	2.7	-28.5	14.3	2.2	29.7	3.1	4.8	0.00	100.0	10.2885	140.3895	-913.6012	± 2587.7360	1080.1	-235.172	710.803	-0.03283	-206.21	-0.01182	-277.87	0.3076	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #6</i>																													
27246-06A	1.0	454A	0.13200	0.00064	2503.5	124.1	625.8	4.5	2.1	17.0	19.4	29.6	5.3	4.7	0.01	100.0	0.1596	0.2434	1.4573	± 2.2741	36.4	0.352	0.549	0.00213	89.27	0.25006	5.01	0.0550	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #7</i>																													
27246-07A	1.0	454A	0.13200	0.00064	43787.2	129.0	382.5	3.9	10.2	17.9	76.6	29.5	152.1	4.9	0.01	100.0	1.0319	0.3983	-4.2326	± 3.8628	-3.7	-1.023	0.934	0.00347	3.25	0.00874	1.05	0.0258	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #8</i>																													
27246-08A	1.0	454A	0.13200	0.00064	161547.4	138.2	4648.7	10.0	142.4	17.0	137.8	29.5	523.2	5.3	0.07	35.1	0.1524	0.0328	1.1574	± 0.3417	3.3	0.280	0.083	0.00324	1.02	0.02878	0.23	0.0369	
27246-08B	1.4	454A	0.13200	0.00064	61727.5	129.2	7699.2	14.3	118.2	20.8	199.4	29.7	163.3	5.0	0.11	57.9	0.1359	0.2003	1.6979	± 0.1955	21.1	0.410	0.407	0.00264	-3.08	0.12428	0.28	0.0518	
27246-08C	2.0	454A	0.13200	0.00064	2055.8	122.7	916.9	5.8	-3.1	19.8	10.9	29.7	1.7	4.8	0.01	6.9	0.0619	0.1697	2.8035	± 1.5723	125.5	0.677	0.380	-0.00084	-278.55	0.44622	6.00	0.0213	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #9</i>																													
27246-09A	0.9	454A	0.13200	0.00064	1515.7	41.3	107.8	2.7	27.7	9.2	20.9	11.6	6.3	4.1	0.00	3.6	1.7574	0.9789	-3.3175	± 11.2937	-23.6	-0.802	2.729	0.00414	65.00	0.07111	3.71	0.0308	
27246-09B	5.0	454A	0.13200	0.00064	6610.1	43.2	2894.8	8.7	38.2	15.4	23.7	11.7	8.0	4.2	0.04	96.4	0.0736	0.0366	1.4626	± 0.4313	64.1	0.353	0.104	0.00120	52.61	0.43821	0.72	0.0113	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #10</i>																													
27246-10A	0.9	454A	0.13200	0.00064	210.0	40.4	14.1	2.8	20.3	17.3	-11.0	12.2	-2.3	4.3	0.00	1.2	-7.0034	7.9242	63.3300	± 91.4720	428.0	15.234	21.913	-0.01099	-187.57	0.06758	27.69	0.0712	
27246-10B	5.0	454A	0.13200	0.00064	4130.3	41.6	1124.8	5.1	-12.4	7.5	-9.4	11.8	5.6	4.1	0.02	98.8	-0.0764	0.0949	2.1926	± 1.0967	59.7	0.530	0.265	0.00135	74.21	0.27250	1.11	0.0124	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #11</i>																													
27246-11A	0.9	454A	0.13200	0.00064	353.3	38.7	17.1	2.5	14.7	14.5	-0.9	11.7	-0.9	4.0	0.00	1.1	-0.4742	6.1929	35.9745	± 69.6769	174.3	8.669	16.752	-0.00249	-452.91	0.04845	18.32	0.0145	
27246-11B	5.0	454A	0.13200	0.00064	3076.5	40.8	1526.5	6.0	32.6	9.0	-1.8	11.6	2.6	4.1	0.02	98.9	-0.0109	0.0692	1.4962	± 0.8038	74.3	0.361	0.194	0.00086	155.19	0.04952	1.38	0.0082	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #12</i>																													
27246-12A	0.9	454A	0.13200	0.00064	626.8	40.5	88.8	2.6	4.8	16.6	-10.3	11.7	-2.0	4.2	0.00	8.5	-1.0547	1.1942	13.6530	± 13.9583	193.7	3.295	3.366	-0.00314	-211.25	0.14187	7.09	0.0279	
27246-12B	5.0	454A	0.13200	0.00064	7977.8	43.9	953.0	5.8	19.4	14.6	6.8	11.5	21.5	4.0	0.01	91.5	0.0642	0.1101	1.6378	± 1.2670	19.6	0.396	0.306	0.00269	18.82	0.11952	0.82	0.0197	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #13</i>																													
27246-13A	0.9	454A	0.13200	0.00064	831.2	41.0	153.6	2.9	6.0	16.5	12.0	11.6	2.6	4.1	0.00	8.1	0.7077	0.6850	0.3491	± 8.0417	6.5	0.084	1.942	0.00313	158.92	0.18488	5.29	0.0290	
27246-13B	5.0	454A	0.13200	0.00064	3575.6	40.2	1731.9	7.3	-4.4	17.6	-1.5	11.6	0.0	4.1	0.03	91.9	-0.0083	0.0608	2.0553	± 0.7033	99.6	0.496	0.170	0.00001	9041.98	0.48470	1.20	0.0001	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #14</i>																													
27246-14A	0.9	454A	0.13200	0.00064	1975.9	39.9	646.8	4.7	-26.1	17.7	31.3	11.5	-0.2	4.0	0.01	41.2	0.4398	0.1625	3.1466	± 1.8610	103.0	0.760	0.449	-0.00010	-1997.76	0.32749	2.15	0.0010	
27246-14B	5.0	454A	0.13200	0.00064	4233.4	41.3	921.5	5.0	18.9	10.1	8.5	11.6	7.1	4.1	0.01	58.8	0.0836	0.1145	2.2901	± 1.3239	49.9	0.553	0.320	0.00168	57.51	0.21781	1.12	0.0149	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #15</i>																													
27246-15A	0.9	454A	0.13200	0.00064	20526.9	46.2	1225.0	6.6	26.9	12.5	0.1	11.6	47.6	4.1	0.02	1.9	0.0002	0.0865	5.1409	± 1.0114	30.7	1.241	0.244	0.00232	8.71	0.05971	0.59	0.0102	
27246-15B	5.0	454A	0.13200	0.00064	474885.8	120.5	62162.5	51.0	856.9	26.2	-23.6	11.6	598.7	4.5	0.93	98.1	-0.0039	0.0017	4.7609	± 0.0222	62.4	1.150	0.005	0.00126	0.76	0.13998	0.09	0.0298	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #16</i>																													
27246-16A	0.9	454A	0.13200	0.00064	2019.9	41.7	197.4	2.9	-10.2	17.9	-8.0	11.8	6.0	4.1	0.00	9.4	-0.3704	0.5428	1.1344	± 6.2114	11.1	0.274	1.500	0.00298	68.92	0.09780	2.52	0.0241	
27246-16B	5.0	454A	0.13200	0.00064	4554.2	42.0	822.4	5.4	35.4	12.8	13.5	11.9	7.3	4.1	0.01	80.6	0.1490	0.1326	2.9005	± 1.5035	52.4	0.701	0.363	0.00159	57.05	0.18068	1.14	0.0132	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #17</i>																													
27246-17A	0.9	454A	0.13200	0.00064	2356.1	42.2	157.3	2.8	-23.3	12.0	-15.6	11.9	9.5	4.1	0.00	9.7	-9.0406	0.6901	-3.0921	± 7.7484	-20.7	-0.747	1.872	0.00404	42.93	0.06683	2.54	0.0153	
27246-17B	5.0	454A	0.13200	0.00064	6299.4	44.3	1471.9	6.8	23.3	12.8	31.7	12.0	10.7	4.1	0.02	90.3	0.19664	0.0746	2.1084	± 0.8363	49.3	0.509	0.202	0.00170	38.53	0.23379	0.84	0.0194	
<i>MAG14-2A-046Y-1 006-010 - Aliquot #18</i>																													
27246-18A	0.9	454A	0.13200	0.00064	1166.0	42.1	217.2	3.1	-25.8	15.2	-47.2	12.0	4.2	4.2	0.00	15.2													

27245-05A	0.9	454A	0.13180	0.00069	2600.7	40.4	193.2	3.4	-3.4	15.4	-0.1	11.5	9.7	4.1	0.00	7.6	-0.0052	0.5389	-1.5492	± 6.3288	-11.5	-0.374	1.527	0.00374	42.19	0.07432	2.34	0.0245			
27245-05B	5.0	454A	0.13180	0.00069	14401.5	45.5	2332.8	8.6	38.9	13.8	17.4	11.6	2.0	4.1	0.03	92.4	0.0668	0.0448	5.9156	± 0.5238	95.9	1.426	0.126	0.00014	205.66	0.16208	0.49	0.0010			
MAG14-2A-045Y-2 116-119 - Aliquot #6																															
27245-06A	0.9	454A	0.13180	0.00069	2149.9	40.9	214.3	3.5	6.1	11.3	7.2	11.6	3.8	4.1	0.00	13.7	0.3032	0.4905	4.6933	± 5.7592	46.8	1.131	1.388	0.00178	107.95	0.09974	2.50	0.0134			
27245-06B	5.0	454A	0.13180	0.00069	8738.4	44.3	1348.8	6.3	24.6	14.0	19.8	11.6	24.3	4.2	0.02	86.3	0.1324	0.0775	1.1042	± 0.9258	17.1	0.266	0.223	0.00278	17.23	0.15444	0.69	0.0217			
MAG14-2A-045Y-2 116-119 - Aliquot #7																															
27245-07A	0.9	454A	0.13180	0.00069	503.0	41.1	113.0	2.8	12.0	16.7	-11.4	11.4	3.1	4.1	0.00	8.4	-0.9137	0.9139	-3.6766	± 10.8965	-82.7	-0.887	2.629	0.00612	134.31	0.22490	8.53	0.0581			
27245-07B	5.0	454A	0.13180	0.00069	4276.7	41.5	1233.5	5.8	26.1	10.3	-17.0	11.5	5.1	4.1	0.02	91.6	-0.1249	0.0846	2.2243	± 0.9981	64.2	0.536	0.241	0.00120	80.42	0.28862	1.08	0.0109			
MAG14-2A-046Y-1 006-010																															
27246-01A	1.0	454A	0.13200	0.00064	29.7	122.6	1.3	2.1	-14.2	15.8	0.4	29.6	0.3	4.8	0.00	100.0	1.4320	114.0326	-48.9208	± 1076.4180	-220.2	-11.856	261.709	0.01072	1559.39	0.04501	440.76	0.2475			
MAG14-2A-046Y-1 006-010 - Aliquot #2																															
27246-02A	1.0	454A	0.13200	0.00064	5517.2	123.4	1442.7	6.2	21.0	16.1	55.8	29.6	7.6	4.8	0.02	100.0	0.1985	0.1057	2.2670	± 0.9949	59.3	0.548	0.240	0.00136	63.74	0.26157	2.28	0.0345			
MAG14-2A-046Y-1 006-010 - Aliquot #3																															
27246-03A	1.0	454A	0.13200	0.00064	568.9	122.8	168.1	3.0	-7.1	12.8	-9.1	29.5	0.7	4.8	0.00	100.0	-0.2793	0.9041	2.0620	± 8.6036	61.0	0.498	2.078	0.00131	649.73	0.29567	21.66	0.0331			
MAG14-2A-046Y-1 006-010 - Aliquot #4																															
27246-04A	1.0	454A	0.13200	0.00064	2977.4	124.3	64.9	2.6	-16.2	11.7	26.9	29.6	10.1	4.9	0.00	100.0	2.1371	2.3529	-0.6705	± 224.4009	-1.5	-0.162	5.421	0.00340	48.20	0.02179	5.83	0.0620			
MAG14-2A-046Y-1 006-010 - Aliquot #5																															
27246-05A	1.0	454A	0.13200	0.00064	-93.6	124.3	1.1	2.7	-28.5	14.3	2.2	29.7	3.1	4.8	0.00	100.0	10.2885	140.3895	-913.6012	± 2587.7360	1080.1	-235.172	710.803	-0.03283	-206.21	-0.01182	-277.87	0.3076			
MAG14-2A-046Y-1 006-010 - Aliquot #6																															
27246-06A	1.0	454A	0.13200	0.00064	2503.5	124.1	625.8	4.5	2.1	17.0	19.4	29.6	5.3	4.7	0.01	100.0	0.1596	0.2434	1.4573	± 2.2741	36.4	0.352	0.549	0.00213	89.27	0.25006	5.01	0.0550			
MAG14-2A-046Y-1 006-010 - Aliquot #7																															
27246-07A	1.0	454A	0.13200	0.00064	43787.2	129.0	382.5	3.9	10.2	17.9	76.6	29.5	152.1	4.9	0.01	100.0	1.0319	0.3983	-4.2326	± 3.8628	-3.7	-1.023	0.934	0.00347	3.25	0.00874	1.05	0.0258			
MAG14-2A-046Y-1 006-010 - Aliquot #8																															
27246-08A	1.0	454A	0.13200	0.00064	161547.4	138.2	4648.7	10.0	142.4	17.0	137.8	29.5	523.2	5.3	0.07	35.1	0.1524	0.0328	1.1574	± 0.3417	3.3	0.280	0.083	0.00324	1.02	0.02878	0.23	0.0369			
27246-08B	1.4	454A	0.13200	0.00064	61727.5	129.2	7699.2	14.3	118.2	20.8	199.4	29.7	163.3	5.0	0.11	57.9	0.1359	0.2003	1.6979	± 0.1955	21.1	0.410	0.407	0.00264	-3.08	0.12428	0.28	0.0518			
27246-08C	2.0	454A	0.13200	0.00064	2055.8	122.7	916.9	5.8	-3.1	19.8	10.9	29.7	-1.7	4.8	0.01	6.9	0.0619	0.1697	2.8035	± 1.5723	125.5	0.171	0.087	0.00084	-278.55	0.44622	6.00	0.0213			
MAG14-2A-046Y-1 006-010 - Aliquot #9																															
27246-09A	0.9	454A	0.13200	0.00064	1515.7	41.3	107.8	2.7	27.7	9.2	20.9	11.6	6.3	4.1	0.00	3.6	1.7574	0.9789	-3.3175	± 11.2937	-23.6	-0.802	2.729	0.00414	65.00	0.07111	3.71	0.0308			
27246-09B	5.0	454A	0.13200	0.00064	6610.1	43.2	2894.8	8.7	38.2	15.4	23.7	11.7	8.0	4.2	0.04	96.4	0.0736	0.0366	1.4626	± 0.4313	64.1	0.353	0.104	0.00120	52.61	0.43821	0.72	0.0113			
MAG14-2A-046Y-1 006-010 - Aliquot #10																															
27246-10A	0.9	454A	0.13200	0.00064	210.0	40.4	14.1	2.8	20.3	17.3	-11.0	12.2	-2.3	4.3	0.00	1.2	-7.0034	7.9242	63.3300	± 91.4720	428.0	15.234	21.913	-0.01099	-187.57	0.06758	27.69	0.0712			
27246-10B	5.0	454A	0.13200	0.00064	4130.3	41.6	1124.8	5.1	-12.4	7.5	-9.4	11.8	5.6	4.1	0.02	98.8	-0.0764	0.0949	2.1926	± 1.0967	59.7	0.530	0.265	0.00135	74.21	0.27250	1.11	0.0124			
MAG14-2A-046Y-1 006-010 - Aliquot #11																															
27246-11A	0.9	454A	0.13200	0.00064	353.3	38.7	17.1	2.5	14.7	14.5	-0.9	11.7	-0.9	4.0	0.00	1.1	-0.4742	6.1929	35.9745	± 69.6769	174.3	8.669	16.752	-0.00249	-452.91	0.04845	18.32	0.0145			
27246-11B	5.0	454A	0.13200	0.00064	3076.5	40.8	1526.5	6.0	32.6	9.0	-1.8	11.6	2.6	4.1	0.02	98.9	-0.0109	0.0692	1.4962	± 0.8038	74.3	0.361	0.194	0.00086	155.19	0.04952	1.38	0.0082			
MAG14-2A-046Y-1 006-010 - Aliquot #12																															
27246-12A	0.9	454A	0.13200	0.00064	626.8	40.5	88.8	2.6	4.8	16.6	-10.3	11.7	-2.0	4.2	0.00	8.5	-1.0547	1.1942	13.6530	± 13.9583	193.7	3.295	3.366	-0.00314	-211.25	0.14187	7.09	0.0279			
27246-12B	5.0	454A	0.13200	0.00064	7977.8	43.9	953.0	5.8	19.4	14.6	6.8	11.5	21.5	4.0	0.01	91.5	0.0642	0.1101	1.6378	± 1.2670	19.6	0.396	0.306	0.00269	18.82	0.11952	0.82	0.0197			
MAG14-2A-046Y-1 006-010 - Aliquot #13																															
27246-13A	0.9	454A	0.13200	0.00064	831.2	41.0	153.6	2.9	6.0	16.5	12.0	11.6	2.6	4.1	0.00	8.1	0.7077	0.6850	0.3491	± 8.0417	6.5	0.084	1.942	0.00313	158.92	0.18488	5.29	0.0290			
27246-13B	5.0	454A	0.13200	0.00064	3575.6	40.2	1731.9	7.3	-4.4	17.6	-1.5	11.6	0.0	4.1	0.03	91.9	-0.0083	0.0608	2.0553	± 0.7033	99.6	0.496	0.170	0.00001	9041.98	0.48470	1.20	0.0001			
MAG14-2A-046Y-1 006-010 - Aliquot #14																															
27246-14A	0.9	454A	0.13200	0.00064	1975.9	39.9	646.8	4.7	-26.1	17.7	31.3	11.5	-0.2	4.0	0.01	41.2	0.4398	0.1625	3.1466	± 1.8610	103.0	0.760	0.449	-0.00010	-197.76	0.32749	2.15	0.0010			
27246-14B	5.0	454A	0.13200	0.00064	4233.4	41.3	921.5	5.0	18.1	10.1	8.5	11.6	7.1	4.1	0.01	58.8	0.0836	0.1145	2.2901	± 1.3239	49.9	0.553	0.320	0.00168	57.51	0.21781	1.12	0.0149			
MAG14-2A-046Y-1 006-010 - Aliquot #15																															
27246-15A	0.9	454A	0.13200	0.00064	20526.9	46.2	1225.0	6.6	26.9	12.5	0.1	11.6	47.6	4.1	0.02	1.9	0.0002	0.0865	5.1409	± 1.0114	30.7	1.241	0.244	0.00232	8.71	0.05971	0.59	0.0102			
27246-15B	5.0	454A	0.13200	0.00064	474885.8	120.5	62162.5	51.0	856.9	26.2	-23.6	11.6	598.7	4.5	0.93	98.1	-0.0039	0.0017	4.7609	± 0.0222	62.4	1.150	0.005	0.00126	0.76	0.13998	0.09	0.0298			
MAG14-2A-046Y-1 006-010 - Aliquot #16																															
27246-16A	0.9	454A	0.13200	0.00064	2019.9	41.7	197.4	2.9	-10.2	17.9	-8.0	11.8	6.0	4.1	0.00	9.4	-0.3704	0.5428	1.1344	± 6.2114	11.1	0.274	1.500	0.00298	68.92	0.09780	2.52	0.0241			
27246-16B	5.0	454A	0.13200	0.00064	4554.2	42.0	822.4	5.4	35.4	12.8	13.5	11.9	7.3	4.1	0.01	80.6	0.1490	0.1326	2.9005	± 1.5035	52.4	0.701	0.363	0.00159	57.05	0.18068	1.14	0.0132			
MAG14-2A-046Y-1 006-010 - Aliquot #17																															
27246-17A	0.9	454A	0.13200	0.00064	2356.1	42.2	157.3	2.8	-23.3	12.0	-15.6	11.9	9.5	4.1	0.00	9.7	-9.0466	0.6901	-3.0921	± 7.7484	-20.7	-0.747	1.872	0.00404	42.93	0.06683	2.54	0.0153			
27246-17B	5.0	454A	0.13200	0.00064	6299.4	44.3	1471.9	6.8	23.3	12.8	31.7	12.0	10.7	4.1	0.02	90.3	0.1966	0.0746	2.1084	± 0.8363	49.3	0.509	0.202	0.00170	38.53	0.23379	0.84	0.0194			
MAG14-2A-046Y-1 006-010 - Aliquot #18																															
27246-18A	0.9	454A	0.13200	0.00064	1166.0	42.1	217.2	3.1	-25.8	15.2	-47.2	12.0	4.2	4.2	0.00	15.2	-1.9843	0.5060	-0.5268	± 5.7190	-9.8	-0.127	1.342	0.00368	97.14	0.18651	3.89	0.0346			
27246-18B	5.0	454A	0.13200	0.00064	3867.8	41.7	1210.9	5.7	-12.0	16.4	-12.4	12.1	7.8	4.2	0.02	84.8	-0.3939	0.0914	1.2547	± 0.10237	39.3	0.303	0.287	0.00203	52.82	0.31327	1.18	0.0187			
MAG14-2A-046Y-1 006-010 - Aliquot #19																															
27246-19A	0.9	454A	0.13200	0.00064	1215.4	40.1	90.6	2.6	1.3	11.5	4.8	12.2	4.2	4.0	0.00	5.0	0.4874	1.2297	-0.4263	± 13.1495	-3.2	-0.103	3.177	0.00346	95.06	0.07459	4.38	0.0261			
27246-19B	5.0	454A	0.13200	0.00064	12396.8	43.8	1733.8	6.5	11.3	7.2	4.5	12.2	0.6	4.1	0.03	95.0	0.0234	0.0646	7.0395	± 0.7029	98.5	1.700	0.170	0.00005	659.08	0.13994	0.51	0.0004			
MAG14-2A-046Y-1 006-010 - Aliquot #20																															
27246-20A	0.9	454A	0.13200	0.00064	2802.9	40.9	261.9	3																							

27254-12A	1.0	454A	0.12990	0.00085	25860.0	159.9	46.6	2.9	-2.4	17.0	7222.0	31.3	77.6	5.2	0.00	100.0	1070.3620	91.8642	122.8544	±47.3077	16.1	28.984	11.073	0.00281	7.17	0.00131	8.58	0.0062	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #13</i>																													
27254-13A	1.0	454A	0.12990	0.00085	17386.6	159.5	19.8	2.9	9.9	13.8	9167.7	32.5	60.1	5.3	0.00	100.0	13192.5500	10973.4800	371.6187	±551.3427	7.4	86.303	125.069	0.00310	9.87	0.00020	82.95	0.0010	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #14</i>																													
27254-14A	1.0	454A	0.12990	0.00085	14940.0	158.7	15.3	2.9	26.2	18.8	3222.3	31.4	49.1	5.3	0.00	100.0	1690.3450	516.6180	97.6228	±168.7756	6.2	23.069	39.632	0.00314	11.32	0.00064	30.56	0.0033	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #15</i>																													
27254-15A	1.0	454A	0.12990	0.00085	39594.9	161.8	13.3	2.7	53.9	17.9	5287.4	32.0	134.7	5.5	0.00	100.0	6874.8010	4803.9090	119.8610	±433.3463	1.2	28.283	101.469	0.00331	4.19	0.00010	69.80	0.0006	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #16</i>																													
27254-16A	1.0	454A	0.12990	0.00085	13929.7	155.8	9.9	2.4	26.2	13.0	4408.8	31.6	54.3	5.1	0.00	100.0	10863.1600	12798.4700	-685.0620	±1099.6860	-10.0	-170.618	287.055	0.00368	9.93	0.00015	117.71	0.0011	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #17</i>																													
27254-17A	1.0	454A	0.12990	0.00085	28570.1	155.8	10.0	2.2	38.4	14.2	3549.0	31.7	96.6	5.1	0.00	100.0	4783.4310	2860.4820	118.8162	±419.3388	1.5	28.038	98.202	0.00330	5.47	0.00013	59.75	0.0009	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #18</i>																													
27254-18A	1.0	454A	0.12990	0.00085	76613.9	159.7	30.1	2.4	62.6	16.1	4751.9	31.9	251.4	5.2	0.00	100.0	1103.2350	122.2626	116.0830	±73.6575	3.3	27.398	17.255	0.00324	2.11	0.00028	11.05	0.0019	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #19</i>																													
27254-19A	1.0	454A	0.12990	0.00085	3903.1	152.5	6.0	2.3	3.9	16.1	2610.9	31.6	10.4	5.1	0.00	100.0	9653.6900	16489.4200	973.9495	±2008.4110	33.9	218.079	423.947	0.00221	59.00	0.00035	170.79	0.0015	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #20</i>																													
27254-20A	1.0	454A	0.12990	0.00085	5108.5	152.2	14.0	2.8	-11.7	18.8	4358.6	32.6	9.1	5.5	0.00	100.0	3502.1690	1584.3040	522.8528	±354.1400	64.0	120.292	78.857	0.00121	89.36	0.00122	45.30	0.0022	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #21</i>																													
27254-21A	1.0	454A	0.12990	0.00085	18216.9	153.1	21.4	3.0	35.8	16.1	7232.8	33.5	55.9	5.4	0.00	100.0	4289.5640	1509.1190	354.6128	±228.2790	16.5	82.441	51.893	0.00280	10.64	0.00047	35.13	0.0019	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #22</i>																													
27254-22A	1.0	454A	0.12990	0.00085	179177.0	169.2	21.5	2.7	126.2	21.8	10408.7	33.4	607.7	5.7	0.00	100.0	17587.3400	16146.6500	-50.1841	±580.0855	-0.1	-11.964	138.848	0.00335	0.96	0.00002	91.44	0.0001	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #23</i>																													
27254-23A	1.0	454A	0.12990	0.00085	168787.5	161.1	68.8	3.1	215.2	27.0	7438.8	32.4	569.1	5.5	0.00	100.0	672.9536	37.7849	6.7909	±29.7441	0.2	1.614	7.067	0.00334	0.98	0.00033	5.59	0.0020	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #24</i>																													
27254-24A	1.0	454A	0.12990	0.00085	24842.9	152.8	10.8	3.2	88.2	12.4	4035.2	32.1	86.0	5.3	0.00	100.0	5609.9290	4965.9670	-1.1907	±437.5325	0.0	-0.283	104.061	0.00335	6.37	0.00015	88.48	0.0007	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #25</i>																													
27254-25A	1.0	454A	0.12990	0.00085	34834.5	148.3	12.8	2.3	29.7	14.3	3046.5	31.5	123.7	4.9	0.00	100.0	2087.7220	652.2637	-202.2764	±211.6557	-4.3	-48.744	51.690	0.00349	4.09	0.00021	31.21	0.0014	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #26</i>																													
27254-26A	1.0	454A	0.12990	0.00085	24092.7	149.3	7.7	2.7	23.0	23.8	2496.8	31.4	88.4	5.3	0.00	100.0	3912.7600	3348.3590	-560.3164	±687.2175	-7.5	-138.342	176.251	0.00360	6.11	0.00013	85.55	0.0007	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #27</i>																													
27254-27A	1.0	454A	0.12990	0.00085	10814.4	143.4	5.1	2.1	6.6	17.9	3107.6	31.1	42.9	5.0	0.00	100.0	-33447.9900	152705.4000	2929.8500	±13755.9800	-12.7	590.372	2369.223	0.00377	12.34	-0.00004	-456.28	0.0003	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #28</i>																													
27254-28A	1.0	454A	0.12990	0.00085	16071.7	141.7	17.6	2.4	17.6	18.8	4300.4	31.3	62.0	4.9	0.00	100.0	2191.3940	530.9958	-158.9098	±154.9094	-9.8	-38.184	37.614	0.00368	8.42	0.00062	24.21	0.0038	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #29</i>																													
27254-29A	1.0	454A	0.12990	0.00085	193778.0	156.3	7636.9	14.6	214.7	14.2	6.1	30.7	619.3	5.4	0.11	100.0	0.0036	0.0203	1.1614	±0.2119	4.6	0.276	0.050	0.00320	0.88	0.03942	0.21	0.0433	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #30</i>																													
27254-30A	1.0	454A	0.12990	0.00085	78930.1	151.5	47.3	3.0	70.7	16.1	13850.7	33.9	265.9	5.3	0.00	100.0	3094.7190	414.6005	105.2447	±71.7802	3.0	24.857	16.839	0.00325	2.07	0.00029	13.32	0.0014	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #31</i>																													
27254-31A	1.0	454A	0.12990	0.00085	19623.6	140.3	2827.2	9.0	45.1	14.8	60.1	30.4	31.4	4.8	0.04	100.0	0.1068	0.0542	3.6316	±0.5139	52.3	0.863	0.122	0.00160	15.48	0.14412	0.78	0.0422	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #32</i>																													
27254-32A	1.0	454A	0.12990	0.00085	170203.7	153.7	2835.9	9.1	150.6	13.4	14.8	30.3	558.0	5.5	0.04	100.0	0.0259	0.0539	1.2737	±0.5839	2.1	0.303	0.139	0.00328	0.99	0.01667	0.33	0.0290	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #33</i>																													
27254-33A	1.0	454A	0.12990	0.00085	8906.8	139.9	1554.8	6.4	13.9	14.8	-5.9	30.3	3.3	5.0	0.02	100.0	-0.0194	0.0983	5.0914	±0.9548	88.9	1.210	0.227	0.00037	149.67	0.17463	1.62	0.0102	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #34</i>																													
27439-01A	0.9	463A	0.26810	0.00115	7466.0	171.9	38.9	12.1	48.8	14.7	25.1	17.6	-0.2	3.9	0.00	50.7	2.6198	2.0135	194.0071	±67.5076	101.0	92.816	31.491	-0.00004	-1475.61	0.00521	31.27	0.0001	
27439-01B	6.0	463A	0.26810	0.00115	69945.5	179.7	37.9	11.8	37.7	7.2	13.3	16.1	9.5	3.9	0.00	49.3	1.4282	1.7877	1771.5660	±550.8593	95.9	711.357	183.273	0.00014	41.18	0.00054	31.05	0.0001	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #35</i>																													
27439-02A	0.9	463A	0.26810	0.00115	717.0	164.4	134.9	11.2	9.4	10.1	-4.8	15.4	0.2	3.1	0.00	1.6	-0.1460	0.4627	4.7603	±7.0048	89.6	2.335	3.433	0.00035	12.94	0.18825	24.39	0.0173	
27439-02B	6.0	463A	0.26810	0.00115	19025.6	164.2	8184.0	16.8	99.6	12.7	367.7	15.0	8.3	3.2	0.16	98.4	0.1828	0.0075	2.0282	±0.1199	87.3	0.995	0.597	0.00043	39.44	0.43029	0.89	0.0210	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #36</i>																													
27439-03A	0.9	463A	0.26810	0.00115	23766.7	171.7	185.4	12.9	53.0	23.1	71.7	18.7	0.9	3.9	0.00	8.6	1.5705	0.4246	126.8851	±10.8657	98.9	61.233	5.157	0.00004	456.78	0.00780	7.02	0.0002	
27439-03B	6.0	463A	0.26810	0.00115	1532713.0	519.6	1960.7	16.8	93.1	11.1	3914.3	29.6	13.1	4.2	0.04	91.4	8.1650	0.0936	782.0922	±6.7633	99.8	348.436	2.744	0.00001	38.61	0.00128	0.86	0.0001	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #37</i>																													
27439-04A	0.9	463A	0.26810	0.00115	32562.0	168.8	-21.4	11.0	-22.1	11.6	-1.5	14.5	9.2	3.1	0.00	2568.7	0.2802	2.7627	-1391.3970	±716.6162	91.5	-854.624	500.983	0.00028	33.68	-0.00066	-51.41	0.0002	
27439-04B	6.0	463A	0.26810	0.00115	39570.9	192.9	20.6	12.2	25.8	12.3	-5.2	22.5	1.5	4.0	0.00	-2468.7	-1.0328	4.5020	1898.9810	±1125.9600	98.9	753.265	366.131	0.00004	265.94	0.00052	59.21	0.0000	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #38</i>																													
27439-05A	0.9	463A	0.26810	0.00115	5078.5	160.3	-19.4	11.0	-7.9	10.5	-17.5	15.2	0.1	3.3	0.00	413.2	3.6655	3.7941	-259.4623	±155.0642	99.1	-131.978	81.788	0.00003	2214.76	-0.00382	56.56	0.0001	
27439-05B	6.0	463A	0.26810	0.00115	17827.9	172.6	14.7	12.1	29.9	10.0	-17.7	18.8	4.2	4.1	0.00	-313.2	-4.9035	6.5753	1122.5550	±924.7289	92.9	481.590	348.816	0.00024	97.29	0.00083	82.04	0.0001	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #39</i>																													
27439-06A	0.9	463A	0.26810	0.00115	231960.0	192.3	93.1	12.5	59.2	10.3	-2.8	16.7	61.2	4.6	0.00	15.9	-0.1244	0.7307	2293.9850	±307.9509	92.1	877.402	93.570	0.00026	7.52	0.00040	13.41	0.0001	
27439-06B	6.0	463A	0.26810	0.00115	494863.1	268.4	492.0	13.2	62.0	12.5	71.5	16.1	23.0	3.9	0.01	84.1	0.5938	0.1348	991.7995	±26.6703	98.6	431.591	10.339	0.00005	17.20	0.00099	2.68	0.0001	
<i>MAG14-2A-068Y-2 018-020 - Aliquot #40</i>																													
27439-07A	0.9	463A	0.26810	0.00115	1444.4	158.1	126.7	11.1	-1.2	8.2	-8.4	14.0	3.2	3.2	0.00	1.4	-0.2685	0.4507	3.7463	±7.5696	32.9	1.838	3.711	0.00225	98.14	0.08776	14.00	0.0872	
27439-07B	6.0	463A	0.26810	0.00115	15866.7	165.8	9037.5	17.9	121.5	12.7	143.8	14.7	8.2	3.3	0.18	98.6	0.0646	0.0067	1.4868	±0.1096	84.7	0.729	0.054	0.00051	40.28	0.56981			

27457-02B	8.0	464A	0.13540	0.00038	8680.0	328.3	6152.5	24.8	63.8	17.2	88.6	19.6	16.5	4.6	0.14	89.2	0.0381	0.0085	0.6106	± 0.2292	43.3	0.151	0.057	0.00190	28.12	0.70900	3.80	0.1338
<i>MAG14-2A-046Y-2 084-096 - Aliquot #3</i>																												
27457-03A	1.0	464A	0.13540	0.00038	961.7	320.6	305.7	11.5	2.9	10.3	40.2	15.3	-3.0	3.4	0.01	9.7	0.3472	0.1332	6.1017	± 3.5352	194.0	1.511	0.875	- 0.00315	-118.73	0.31787	33.55	0.2790
27457-03B	8.0	464A	0.13540	0.00038	4025.5	309.3	2849.8	16.9	-0.2	14.2	4.7	19.4	3.4	3.5	0.06	90.3	0.0040	0.0183	1.0573	± 0.3816	74.9	0.262	0.095	0.00084	103.38	0.70814	7.71	0.0741
<i>MAG14-2A-046Y-2 084-096 - Aliquot #4</i>																												
27457-04A	1.0	464A	0.13540	0.00038	997.1	321.1	125.9	11.7	48.2	13.8	47.1	16.1	3.9	3.6	0.00	7.6	0.9887	0.3509	- 1.3809	± 8.8305	-17.4	-0.342	2.188	0.00393	96.40	0.12623	33.51	0.3210
27457-04B	8.0	464A	0.13540	0.00038	3358.0	311.7	1530.5	16.1	159.1	56.0	-36.4	19.6	4.9	4.2	0.03	92.4	-0.0642	0.0344	1.2312	± 0.8351	56.1	0.305	0.207	0.00147	84.66	0.45589	9.34	0.1090
<i>MAG14-2A-046Y-2 084-096 - Aliquot #5</i>																												
27457-05A	1.0	464A	0.13540	0.00038	15179.2	325.6	724.6	12.1	62.0	12.5	36.7	15.5	45.9	3.8	0.02	7.4	0.1337	0.0565	2.0610	± 1.6483	9.8	0.510	0.408	0.00302	8.66	0.04774	2.72	0.1953
27457-05B	8.0	464A	0.13540	0.00038	17280.1	312.1	9059.4	20.1	93.6	16.3	118.4	18.5	13.2	3.5	0.20	92.6	0.0346	0.0055	1.4721	± 0.1204	77.2	0.365	0.030	0.00076	26.57	0.52439	1.82	0.0675
<i>MAG14-2A-046Y-2 084-096 - Aliquot #6</i>																												
27457-06A	1.0	464A	0.13540	0.00038	832.4	322.9	168.5	11.8	37.0	10.7	5.8	16.6	2.4	3.9	0.00	6.7	0.0905	0.2610	0.6136	± 7.0970	12.4	0.152	1.758	0.00293	162.66	0.20246	39.43	0.2347
27457-06B	8.0	464A	0.13540	0.00038	5922.0	306.3	2350.8	16.2	99.5	20.8	71.5	18.7	8.8	3.6	0.05	93.3	0.0813	0.0214	1.4106	± 0.4754	56.0	0.349	0.118	0.00147	41.57	0.39703	5.22	0.1233
<i>MAG14-2A-046Y-2 084-096 - Aliquot #7</i>																												
27457-07A	1.0	464A	0.13540	0.00038	1032.0	318.7	76.6	12.1	33.2	16.4	25.7	17.7	0.9	3.5	0.00	4.3	0.8875	0.6283	9.9196	±14.4165	73.6	2.456	3.567	0.00088	387.11	0.07422	34.69	0.0710
27457-07B	8.0	464A	0.13540	0.00038	3785.5	308.1	1701.1	14.5	515.9	37.0	90.8	18.7	-0.2	4.1	0.04	95.7	0.1430	0.0296	2.2619	± 0.7377	101.7	0.560	0.183	- 0.00006	-1932.83	0.44944	8.18	0.0042
<i>MAG14-2A-046Y-2 084-096 - Aliquot #8</i>																												
27457-08A	1.0	464A	0.13540	0.00038	8039.7	332.6	67.4	12.7	107.4	12.5	293.6	19.1	16.0	4.7	0.00	13.0	11.5992	2.3269	49.0650	±23.5032	41.0	12.115	5.784	0.00198	30.02	0.00835	19.42	0.0294
27457-08B	8.0	464A	0.13540	0.00038	138873.4	376.8	449.3	24.2	-250.4	33.2	8875.1	39.7	10.8	4.7	0.01	87.0	54.1030	2.9856	309.8273	±17.3538	98.4	75.187	4.126	0.00005	61.68	0.00318	5.51	0.0002
<i>MAG14-2A-046Y-2 084-096 - Aliquot #9</i>																												
27457-09A	1.0	464A	0.13540	0.00038	2302.6	325.0	349.1	12.4	44.7	9.9	-26.6	17.9	4.4	3.4	0.01	9.5	-0.2029	0.1359	2.8109	± 3.0679	42.6	0.696	0.760	0.00192	78.51	0.15166	14.56	0.1743
27457-09B	8.0	464A	0.13540	0.00038	6238.7	312.1	3320.2	28.4	-632.9	20.2	-201.5	33.0	9.5	3.8	0.07	90.5	-0.1635	0.0268	1.0186	± 0.3548	54.2	0.252	0.088	0.00153	40.10	0.53236	5.08	0.1230

Table S5. Incremental heating and isochron data.

Sample Information			Integrated Gas					Incremental Heating Plateau					Inverse Isochron											
Lab ID	Sample	Group	n	M ³⁹ Ar	⁴⁰ Ar/ ³⁹ Ar _K	⁴⁰ Ar/ ³⁹ Ar _K ± 1σ	Age	Age ± 1σ SD	n	Steps	% Gas	MSWD	Prob.	Age	Age ± 1σ MSE	n	Ca/K	± Ca/K	⁴⁰ Ar/ ³⁹ Ar _h	⁴⁰ Ar/ ³⁹ Ar _h ± 1σ	MSWD	Prob.	Age	Age ± 1σ MSE
26963-01	MAG14-2A-102Q-1 104-119	6	5	1.57E-15	4.34955	0.011934	1.0778	0.0030	No plateau							5	0.06447	0.00056	290	3.2	0.38	0.77	1.0769	0.0022
26963-02	MAG14-2A-102Q-1 104-119	6	7	3.29E-15	4.328672	0.007319	1.0726	0.0018	5	B-F	82.3	2.00	0.09	1.0730	0.0024	5	0.04753	0.00076	304.9	6.6	0.16	0.93	1.0629	0.0032
26963-03	MAG14-2A-102Q-1 104-119	6	5	2.03E-15	4.303966	0.009486	1.0665	0.0023	5	A-E	100	0.40	0.84	1.0652	0.0021	5	0.04831	0.00105	288.5	7.4	1.29	0.28	1.0752	0.0028
26963-04	MAG14-2A-102Q-1 104-119	6	6	2.71E-15	4.352403	0.00743	1.0785	0.0018	No plateau							6	0.01196	0.00041	298.2	1.7	1.74	0.14	0.3167	0.0024
26964-01	MAG14-2A-045Y-2 000-021	1	7	4.54E-15	1.284344	0.009738	0.3181	0.0024	6	A-F	96	1.40	0.22	0.3164	0.0018	6	0.01196	0.00041	298.2	1.7	1.74	0.14	0.3167	0.0024
26964-02	MAG14-2A-045Y-2 000-021	1	8	7.03E-15	1.284948	0.006846	0.3183	0.0017	8	A-H	100	0.90	0.50	0.3160	0.0005	8	0.04806	0.00025	300.8	1.7	0.77	0.60	0.3158	0.0006
26964-03	MAG14-2A-045Y-2 000-021	1	5	1.70E-15	1.293262	0.022101	0.3203	0.0055	5	A-E	100	0.90	0.47	0.3211	0.0039	5	0.05499	0.00085	297.4	1.9	1.06	0.37	0.3233	0.0054
26964-04	MAG14-2A-045Y-2 000-021	1	6	4.90E-15	1.321742	0.008239	0.3274	0.0020	4	A-D	65	2.30	0.07	0.3302	0.0031	4	0.04817	0.00038	299.6	2.3	3.15	0.04	0.3283	0.0057
26964-05	MAG14-2A-045Y-2 000-021	1	7	1.59E-15	1.258971	0.014593	0.3119	0.0036	6	A-F	100	1.00	0.40	0.3115	0.0033	6	0.05225	0.00101	295.7	2.3	0.93	0.45	0.3158	0.0047
26964-06	MAG14-2A-045Y-2 000-021	1	5	1.39E-15	1.378828	0.015395	0.3415	0.0038	5	A-E	100	1.50	0.21	0.3397	0.0035	5	0.03126	0.00137	303.3	2.3	0.49	0.69	0.3342	0.0040
26964-07	MAG14-2A-045Y-2 000-021	1	5	1.87E-15	1.242624	0.011807	0.3078	0.0029	No plateau							6	0.04706	0.00250	276.8	15.5	1.31	0.27	0.3367	0.0110
26964-08	MAG14-2A-045Y-2 000-021	1	6	1.19E-15	1.302165	0.01766	0.3226	0.0044	6	A-F	100	1.50	0.19	0.3218	0.0044	6	0.04706	0.00250	276.8	15.5	1.31	0.27	0.3367	0.0110
26964-09	MAG14-2A-045Y-2 000-021	1	5	2.08E-15	1.272455	0.010365	0.3152	0.0026	5	A-E	100	1.70	0.14	0.3175	0.0027	5	0.04683	0.00088	294.4	2.5	1.21	0.30	0.3212	0.0031
26964-10	MAG14-2A-045Y-2 000-021	1	6	5.30E-15	1.294993	0.005757	0.3208	0.0014	5	B-F	99.7	1.60	0.18	0.3234	0.0011	5	0.04563	0.00046	298.4	1.9	1.07	0.10	0.3235	0.0019
27186-01	MAG14-2A-045Y-2 063-076	2	6	3.80E-16	1.32088	0.047568	0.3400	0.0120	No plateau							5	0.01535	0.10107	268	17.1	0.49	0.69	1.7119	0.0054
27186-02	MAG14-2A-045Y-2 063-076	2	5	4.21E-16	1.59776	0.038373	0.1690	0.0099	5	A-E	100	1.00	0.39	1.7099	0.0059	5	0.01535	0.10107	268	17.1	0.49	0.69	1.7119	0.0054
27186-03	MAG14-2A-045Y-2 063-076	2	6	5.80E-16	1.120269	0.047809	0.2880	0.0120	4	C-F	66.4	1.60	0.18	0.3645	0.0104	4	-0.15945	0.16565	223.1	27.4	0.19	0.83	0.3955	0.0130
27186-04	MAG14-2A-045Y-2 063-076	2	7	6.97E-16	1.524658	0.031057	0.3925	0.0080	4	D-G	63.8	0.30	0.81	0.3430	0.0075	4	-0.16692	0.18011	299.4	62.7	0.50	0.61	0.4337	0.0240
27186-05	MAG14-2A-045Y-2 063-076	2	5	4.75E-16	1.400415	0.034165	0.1109	0.0088	5	A-E	100	1.10	0.37	1.1019	0.0072	5	0.16122	0.23954	331.4	4.4	1.17	0.32	1.0888	0.0092
27186-06	MAG14-2A-045Y-2 063-076	2	7	4.05E-16	1.371639	0.048475	0.3530	0.0120	7	A-G	100	1.00	0.45	0.3433	0.0099	7	0.21929	0.10247	300.8	3.9	1.09	0.36	0.3396	0.0120
27186-07	MAG14-2A-045Y-2 063-076	2	8	2.84E-16	7.549726	0.072655	1.9430	0.0190	6	C-H	89.7	1.50	0.20	1.9721	0.0197	6	-0.11305	0.77867	263	37.2	1.55	0.19	2.0006	0.0340
27186-08	MAG14-2A-045Y-2 063-076	2	8	1.69E-16	1.365847	0.121141	0.3520	0.0310	5	A-F	61.1	2.10	0.08	0.2823	0.0474	5	0.34468	0.82797	285.2	8.8	1.70	0.17	0.3481	0.0560
27186-09	MAG14-2A-045Y-2 063-076	2	6	2.68E-16	0.89615	0.078394	0.2310	0.0200	4	C-F	55.7	0.50	0.71	0.3607	0.0200	4	-0.70554	0.33223	273	30.3	0.38	0.69	0.3878	0.0360
27186-10	MAG14-2A-045Y-2 063-076	2	8	2.36E-16	1.668322	0.090152	0.4230	0.0230	5	D-H	62.6	1.30	0.28	0.4217	0.0294	5	-1.29670	0.57137	293.8	19.3	1.50	0.21	0.4463	0.0420
27186-11	MAG14-2A-045Y-2 063-076	2	7	2.73E-16	1.325013	0.072877	0.3410	0.0310	7	A-G	100	0.70	0.63	0.3412	0.0159	7	-0.58857	0.91819	281.6	7.8	0.72	0.61	0.3593	0.0250
27186-12	MAG14-2A-045Y-2 063-076	2	6	1.80E-16	1.246647	0.095555	0.3210	0.0260	6	A-F	100	1.00	0.41	0.3451	0.0233	6	-0.12813	1.19137	291.6	11.6	1.12	0.35	0.3562	0.0280
27186-13	MAG14-2A-045Y-2 063-076	2	8	2.17E-16	1.145106	0.092531	0.2950	0.0240	5	C-G	74.9	0.50	0.74	0.3625	0.0249	5	2.70932	13.93427	285.9	108.6	0.65	0.58	0.3693	0.0490
27186-14	MAG14-2A-045Y-2 063-076	2	7	2.94E-16	1.176864	0.063866	0.3030	0.0160	7	A-G	100	1.00	0.46	0.3177	0.0142	7	0.28913	0.60149	280.2	8.6	0.33	0.89	0.3392	0.0180
27187-01	MAG14-2A-045Y-2 120-136	2	6	4.99E-16	1.414723	0.036052	0.3644	0.0093	6	A-F	100	1.10	0.34	0.3654	0.0083	6	0.06256	1.33469	309	11.8	1.38	0.32	0.3525	0.0170
27187-02	MAG14-2A-045Y-2 120-136	2	5	1.10E-15	1.244932	0.016899	0.3207	0.0044	No plateau							4	0.07952	1.02824	293.7	6.2	1.93	0.15	0.3513	0.0078
27187-03	MAG14-2A-045Y-2 120-136	2	5	1.42E-15	1.31258	0.01256	0.3381	0.0032	4	B-E	89.8	1.70	0.17	0.3460	0.0038	4	0.04073	0.30092	309.4	8.3	1.47	0.22	0.4256	0.0089
27187-04	MAG14-2A-045Y-2 120-136	2	6	1.21E-15	1.5471	0.018983	0.3985	0.0049	5	B-F	85.1	1.80	0.13	0.4355	0.0051	5	-0.03414	0.28688	291.7	3.6	0.22	0.93	0.3488	0.0061
27187-05	MAG14-2A-045Y-2 120-136	2	6	6.71E-16	1.319776	0.026684	0.3400	0.0069	6	A-F	100	0.90	0.50	0.3433	0.0055	6	0.19016	0.51896	270.3	14.3	1.43	0.22	0.3645	0.0140
27187-06	MAG14-2A-045Y-2 120-136	2	6	7.02E-16	1.34288	0.025275	0.3459	0.0065	6	A-F	100	2.10	0.06	0.3409	0.0089	6	-0.19016	0.51896	270.3	14.3	1.43	0.22	0.3645	0.0140
27187-07	MAG14-2A-045Y-2 120-136	2	8	4.12E-16	1.279445	0.048657	0.3300	0.0130	8	A-H	100	1.10	0.37	0.3256	0.0114	8	-2.37166	35.38793	274.2	8.8	1.14	0.34	0.3411	0.0190
27187-08	MAG14-2A-045Y-2 120-136	2	6	6.22E-16	1.739649	0.030936	0.4481	0.0080	5	B-F	91.8	1.50	0.21	0.4568	0.0084	5	-0.56281	1.71130	291.8	2.6	1.63	0.18	0.4754	0.0250
27187-09	MAG14-2A-045Y-2 120-136	2	6	5.48E-16	1.316442	0.035051	0.3391	0.0090	4	C-F	54.2	2.20	0.08	0.3702	0.0158	4	-0.99228	1.29573	252.9	16.3	0.50	0.61	0.4230	0.0210
27187-10	MAG14-2A-045Y-2 120-136	2	5	3.42E-16	0.79771	0.076354	0.2050	0.0200	No plateau							6	-4.53963	34.24376	251.4	44.2	0.21	0.93	0.4001	0.0390
27187-11	MAG14-2A-045Y-2 120-136	2	7	3.39E-16	1.322501	0.059435	0.3410	0.0150	No plateau							6	-4.53963	34.24376	251.4	44.2	0.21	0.93	0.4001	0.0390
27187-12	MAG14-2A-045Y-2 120-136	2	5	1.48E-16	0.8929	0.116595	0.2300	0.0300	No plateau							4	0.38288	0.29401	294.5	3.7	0.31	0.74	0.3148	0.0350
27187-13	MAG14-2A-045Y-2 120-136	2	5	4.04E-16	1.116205	0.046133	0.2880	0.0120	No plateau							4	0.38288	0.29401	294.5	3.7	0.31	0.74	0.3148	0.0350
27187-14	MAG14-2A-045Y-2 120-136	2	6	6.36E-16	0.662651	0.057329	0.1710	0.0150	No plateau							4	0.38288	0.29401	294.5	3.7	0.31			

Table S6. AF and TH paleomagnetic results. Sample ID#: sample identification; Level: stratigraphic level in meters below surface (mbs); Dec HC/HC: declination of high coercivity component (HC)/ high temperature component (HC) in (°); Inc HC/HC: inclination of HC/HC in (°); Intensity of HC/HC in E⁻⁶ A/m; MAD: Maximum Angular Deviation; Min Step HC/HC: minimum demagnetization step in mT (°) of HC/HC; Max Step HC/HC: maximum demagnetization step in mT and (°) of HC/HC; Dec LC/LC: declination of low coercivity component/ low temperature component (LC/LC) in degrees, this is the component reoriented towards the north; Inc LC/LC: inclination of LC/LC in degrees; Min Step LC; Max Step LC; reoriented Dec HC/HC.

Sample ID #	Level	Dec HCC/HTC	Inc HCC/HTC	Intensity	MAD	Min Step HCC/HTC	Max Step HCC/HTC	Dec LCC/LTC	Inc LCC/LTC	Min Step LCC/LTC	Max Step LCC/LTC	Reoriented Dec HCC/HTC
	mbs	(°)	(°)	E-6 A/m	(°)	mT (°)	mT (°)	(°)	(°)	mT (°)	mT (°)	
								lt--> north				
MAG14-2A-03Y-1-42	6.92	22.57	33.71	920.69	11.79	20	40	41.89	-19.33	5	15	340.67
MAG14-2A-03Y-1-65	7.15	36.22	23.39	1082.48	8.89	20	40	49.31	-13.09	5	15	346.91
MAG14-2A-03Y-1-83	7.33	47.05	30.17	548.17	20.05	20	35	36.28	10.78	5	15	10.78
MAG14-2A-04Y-1-19	9.74	90.02	11.19	442.44	23.64	20	35	74.61	15.41	5	15	15.41
MAG14-2A-04Y-2-4	9.91	10.90	17.73	666.69	10.40	20	40	354.01	-343.10	5	15	16.90
MAG14-2A-05Y-1-5	10.61	142.66	69.25	314.39	19.12	20	35	168.00	-25.34	5	15	334.66
MAG14-2A-06Y-3-3	14.88	192.89	-42.22	10656.75	3.63	20	60	189.16	3.74	5	15	3.74
MAG14-2A-06Y-1-33	12.92	41.19	44.10	366.85	12.76	20	35	28.79	12.41	5	15	12.41
MAG14-2A-06Y-1-60	13.19	336.18	-13.58	1015.71	13.69	20	40	319.64	16.54	5	15	16.54
MAG14-2A-06Y-1-70	13.29	229.85	-16.79	1404.11	6.67	20	40	231.55	-1.70	5	15	358.30
MAG14-2A-10Y-1-13	21.73	327.84	53.72	158.81	36.89	20	40	340.61	-12.76	5	15	347.24
MAG14-2A-13Y-1-14	24.93	325.70	18.80	29256.72	15.67	20	60	334.48	-8.77	5	15	351.23
MAG14-2A-13Y-1-30	25.09	343.79	17.00	5631.42	26.53	20	60	304.82	38.96	5	15	38.96
MAG14-2A-13Y-1-48	25.27	154.01	11.83	12695.32	10.26	20	60	142.35	11.66	10	15	11.66
MAG14-2A-13Y-1-62	25.41	191.79	15.96	52916.91	10.56	20	60	174.84	16.95	5	15	16.95
MAG14-2A-13Y-1-83	25.22	18.75	1.92	225674.31	0.39	20	60	13.35	5.39	5	15	5.39
MAG14-2A-14Y-1-55	26.99	47.18	75.19	284.78	35.99	20	35	18.96	28.22	5	15	28.22
MAG14-2A-17Y-2-5	32.74	290.75	-5.88	8225.65	16.10	20	40	288.97	4.78	5	15	1.78
MAG14-2A-17Y-2-27	32.91	318.45	3.44	10015.41	17.69	20	40	304.99	13.46	5	15	13.46
MAG14-2A-17Y-2-48	33.08	307.22	13.01	10717.26	14.73	20	50	310.18	-2.97	5	15	357.03
MAG14-2A-17Y-2-69	33.24	291.68	13.96	10877.02	8.40	20	50	297.54	-5.86	5	15	354.14
MAG14-2A-17Y-2-92	33.42	234.99	8.49	7911.33	7.30	20	50	228.29	6.70	5	15	6.70
MAG14-2A-17Y-2-109	33.55	325.32	10.25	10786.99	6.50	20	60	325.76	-0.44	5	15	359.56
MAG14-2A-17Y-2-131	33.72	84.25	12.08	9881.16	8.27	20	50	85.80	-1.54	5	15	358.46
MAG14-2A-17Y-2-147	33.84	258.56	16.43	12143.77	6.00	20	50	260.80	-2.23	5	15	357.77
MAG14-2A-18Y-1-21	34.14	41.61	-20.80	10037.56	11.09	20	60	29.88	11.73	5	15	11.73
MAG14-2A-18Y-1-30	34.23	39.36	6.11	9048.46	13.25	20	60	27.54	11.82	5	15	11.82
MAG14-2A-18Y-2-13	34.45	33.31	8.85	10181.51	4.67	20	50	29.65	3.66	5	15	3.66
MAG14-2A-18Y-2-33	34.65	42.74	28.77	10585.13	7.47	20	60	36.91	5.84	5	15	5.84
MAG14-2A-18Y-2-47	34.79	71.71	7.97	938.29	6.55	20	60	66.99	4.72	5	15	4.72
MAG14-2A-18Y-2-64	34.96	163.07	32.19	5721.76	2.92	20	60	163.99	-0.92	5	15	359.08
MAG14-2A-18Y-2-82	35.14	207.77	14.97	9786.88	3.09	20	60	216.20	-8.44	5	15	351.56
MAG14-2A-18Y-2-106	35.38	72.84	12.73	6055.77	9.83	20	60	63.83	9.01	5	15	9.01
MAG14-2A-18Y-2-131	35.63	225.33	10.28	15098.51	1.84	20	60	227.17	-1.84	5	15	358.16
MAG14-2A-19Y-1-3	37.01	45.32	38.94	127.18	39.59	20	40	339.75	-294.43	5	15	65.57
MAG14-2A-19Y-2-54	37.72	82.89	-70.33	66.71	33.30	20	35	73.00	9.89	5	15	9.89
MAG14-2A-23Y-1-5	46.17	151.30	1.60	201.79	30.80	20	35	194.35	-43.06	5	15	316.94
MAG14-2A-23Y-2-136	48.80	289.73	2.36	63.13	29.43	20	35	293.77	-4.03	5	15	355.97
MAG14-2A-29Y-1-67	62.03	351.36	-2.78	216.39	21.18	20	40	343.99	7.38	5	15	7.38
MAG14-2A-29Y-1-87	62.23	351.43	-29.73	129.37	16.20	20	35	302.58	48.84	5	15	48.84
MAG14-2A-29Y-1-118	62.54	30.38	-11.24	144.64	42.76	20	35	358.09	-327.71	5	15	32.29
MAG14-2A-29Y-1-125	62.61	300.28	-27.56	82.44	30.37	20	35	3.33	296.95	5	15	296.95
MAG14-2A-29Y-2-93	63.67	306.80	-18.74	148.70	25.30	20	40	316.55	-9.74	5	15	350.26
MAG14-2A-29Y-2-143	64.17	3.27	67.24	25.99	19.85	20	35	273.16	-269.90	5	15	90.10
MAG14-2A-30Y-1-42	64.83	188.25	10.61	194.69	25.82	20	40	239.06	-50.81	5	15	309.19
MAG14-2A-33Y-2-142	75.86	143.63	-3.85	1713.35	9.25	20	40	151.60	-7.97	5	15	352.03
MAG14-2A-33Y-3-7	76.05	149.04	-37.78	5972.10	6.02	20	50	220.47	-71.43	5	15	288.57
MAG14-2A-35Y-1-31	#N/A	214.17	7.44	263.90	25.22	20	40	233.29	-19.12	5	15	340.88
MAG14-2A-35Y-1-60	#N/A	318.91	-28.44	114.44	25.57	20	40	329.79	-10.87	5	15	349.13
MAG14-2A-39Y-1-24	83.04	27.00	-10.81	110.64	35.29	20	35	205.05	-178.04	5	15	181.96
MAG14-2A-39Y-1-39	83.19	127.88	-9.02	242.42	17.01	20	40	104.61	23.26	5	15	23.26
MAG14-2A-39Y-1-54	83.34	359.01	-26.43	170.48	37.38	20	40	350.32	8.69	5	15	8.69
MAG14-2A-39Y-1-73	83.53	355.52	-17.41	142.38	19.65	20	35	325.88	29.63	5	15	29.63
MAG14-2A-39Y-1-129	84.09	322.19	5.13	339.77	23.60	20	35	20.97	301.22	5	15	301.22
MAG14-2A-40Y-1-35	86.10	187.49	-6.52	235.13	8.03	20	40	181.62	5.88	5	15	5.88
MAG14-2A-40Y-1-58	86.33	48.41	-6.02	332.29	13.56	20	40	53.32	-4.91	5	15	355.09
MAG14-2A-40Y-1-72	86.47	260.74	-24.33	618.63	9.26	20	40	260.49	0.26	5	15	0.26
MAG14-2A-40Y-1-89	86.64	260.30	-24.81	201.37	29.15	20	40	253.91	6.38	5	15	6.38
MAG14-2A-40Y-1-106	86.81	109.76	10.63	267.28	15.40	20	40	102.00	7.76	5	15	7.76
MAG14-2A-45Y-1-62	95.12	152.80	7.14	159.22	27.10	20	40	192.88	-40.08	5	15	319.92
MAG14-2A-45Y-1-83	95.32	164.29	-24.05	296.14	8.37	20	50	166.03	-1.74	5	15	358.26
MAG14-2A-45Y-1-136	95.84	316.68	-12.95	705.51	9.34	20	40	322.88	-6.20	5	15	353.80
MAG14-2A-45Y-2-24	96.23	258.17	-14.22	1927.80	3.43	20	70	261.31	-3.14	5	15	356.86
MAG14-2A-45Y-2-46	96.45	61.65	-18.55	1986.94	3.78	20	50	63.33	-1.67	5	15	358.33
MAG14-2A-45Y-2-91	96.89	58.10	-3.42	1399.42	13.57	20	40	55.26	2.83	5	15	2.83
MAG14-2A-45Y-2-146	97.42	42.52	-16.88	1750.07	8.16	20	50	34.31	8.21	5	15	8.21
MAG14-2A-46Y-1-7	97.64	156.24	-19.64	2246.56	6.53	20	50	147.31	8.93	5	15	8.93
MAG14-2A-46Y-1-121	98.75	157.39	-15.87	1213.03	9.91	20	50	149.94	7.45	5	15	7.45
MAG14-2A-46Y-2-18	99.21	180.52	-7.62	1241.68	5.49	20	50	184.20	-3.68	5	15	356.32
MAG14-2A-46Y-2-90	99.92	133.19	21.98	1261.79	10.69	20	40	231.00	-97.80	5	15	262.20
MAG14-2A-46Y-2-105	100.06	232.23	21.55	2026.17	7.13	20	80	357.01	-124.78	5	15	235.22
MAG14-2A-46Y-2-138	100.38	45.24	6.22	354.65	22.85	20	40	46.21	-0.97	5	15	359.03
MAG14-2A-48Y-2-13	102.99	0.34	-28.54	93.15	39.94	20	40	349.21	-348.87	5	15	11.13
MAG14-2A-49Y-1-16	104.19	20.07	-50.63	76.47	39.03	20	35	310.36	-290.29	5	15	69.71
MAG14-2A-52Y-1-8	110.21	335.34	-4.67	109.62	18.45	20	40	351.37	-16.04	5	15	343.96
MAG14-2A-52Y-1-24	110.37	259.64	35.01	74.05	39.67	20	40	3.35	256.29	5	15	256.29
MAG14-2A-52Y-1-47	110.60	344.07	-30.78	182.38	24.77	20	35	333.86	10.21	5	15	10.21
MAG14-2A-55Y-1-43	116.66	236.67	-8.10	176.59	11.99	20	40	289.41	-52.74	5	15	307.26
MAG14-2A-55Y-1-70	116.93	180.45	3.88	98.39	33.50	20	35	129.05	51.39	5	15	51.39
MAG14-2A-55Y-1-90	117.13	304.07	-0.54	1410.01	12.99	20	50	304.87	-0.80	5	15	359.20
MAG14-2A-55Y-1-108	117.31	268.28	-1.53	1578.15	8.32	20	60	274.25	-5.97	5	15	354.03
MAG14-2A-55Y-1-135	117.58	203.48	-4.05	131.75	24.63	20	40	210.49	-7.02	5	15	352.98
MAG14-2A-56Y-1-6	118.42	325.96	52.09	75.07	30.26	20	40	276.17	49.79	5	15	49.79
MAG14-2A-56Y-1-51	118.87	278.27	2.89	139.72	20.92	20	40	294.07	-15.80	5	15	344.20
MAG14-2A-56Y-1-84	119.20	220.10	-4.55	71.17	19.72	20	40	238.37	-18.27	5	15	341.73
MAG14-2A-56Y-1-105	119.41	142.70	-23.12	119.07	29.95	20	40	193.55	-50.85	5	15	309.15
MAG14-2A-56Y-1-133	119.69	51.63	13.08	6062.02	27.07	20	40	40.76	10.87	5	15	10.87
MAG14-2A-56Y-1-145	119.81	351.26	-19.46	750.70	19.17	2						

MAG14-2A-57Y-2-129	122.12	328.27	-11.42	370.09	19.41	20	50	343.13	-14.85	5	15	345.15
MAG14-2A-58Y-2-42	123.25	180.64	-7.25	621.70	12.57	20	50	207.00	-26.35	5	15	333.65
MAG14-2A-58Y-2-64	123.47	19.19	35.58	229.31	34.74	20	35	28.06	-8.87	5	15	351.13
MAG14-2A-58Y-2-96	123.79	86.83	-22.65	232.93	15.42	20	40	103.77	-16.94	5	15	343.06
MAG14-2A-58Y-2-129	124.12	341.60	1.32	1332.43	11.10	20	40	333.13	8.47	5	15	8.47
MAG14-2A-59Y-2-39	125.86	359.88	1.87	1152.36	22.64	20	50	359.47	0.40	5	15	0.40
MAG14-2A-59Y-2-64	126.10	336.34	-28.52	423.44	24.36	20	40	357.44	-21.10	5	15	338.90
MAG14-2A-59Y-2-79	126.25	358.24	-15.85	669.33	25.39	20	60	355.22	3.02	5	15	3.02
MAG14-2A-59Y-2-107	126.52	53.01	34.21	174.71	28.54	20	40	350.03	-297.01	5	15	62.99
MAG14-2A-59Y-2-135	126.78	58.03	-21.06	358.22	28.39	20	40	42.78	15.24	5	15	15.24
MAG14-2A-59Y-3-11	126.99	274.92	12.89	55.34	22.16	20	35	110.36	164.57	5	15	164.57
MAG14-2A-59Y-3-27	127.14	24.21	-1.71	645.99	10.22	20	40	21.34	2.86	5	15	2.86
MAG14-2A-59Y-3-46	127.33	16.10	-8.91	251.09	15.14	20	40	8.68	7.41	5	15	7.41
MAG14-2A-59Y-3-78	127.63	296.25	-29.73	103.25	21.25	20	40	351.72	-55.47	5	15	304.53
MAG14-2A-59Y-3-94	127.79	355.04	-5.84	31.84	24.71	20	40	296.32	58.72	5	15	58.72
MAG14-2A-59Y-3-139	128.22	327.79	-9.33	113.08	23.58	20	35	320.63	7.16	5	15	7.16
MAG14-2A-60Y-1-21	128.63	204.20	1.31	75.85	11.78	20	40	197.11	7.09	5	15	7.09
MAG14-2A-60Y-1-43	128.85	253.91	-5.47	116.69	24.36	20	35	251.55	2.36	5	15	2.36
MAG14-2A-60Y-1-67	129.09	307.62	-37.95	135.29	35.52	20	40	305.04	2.58	5	15	2.58
MAG14-2A-60Y-1-100	129.42	52.07	8.71	182.98	20.55	20	40	34.90	17.17	5	15	17.17
MAG14-2A-60Y-2-12	129.63	354.94	-1.35	202.70	26.37	20	40	8.00	346.94	5	15	346.94
MAG14-2A-60Y-2-57	130.08	74.44	24.54	109.57	38.43	20	40	61.70	12.74	5	15	12.74
MAG14-2A-60Y-2-45	129.96	181.00	22.48	133.12	36.82	20	50	127.43	53.57	5	15	53.57
MAG14-2A-60Y-2-71	130.22	273.72	1.20	16.55	24.78	20	40	27.64	246.08	5	15	246.08
MAG14-2A-61Y-1-24	131.71	94.46	12.56	82.32	27.82	20	40	87.49	6.97	5	15	6.97
MAG14-2A-61Y-1-40	131.87	331.24	-27.34	37.65	22.93	20	40	354.13	-22.88	5	15	337.12
MAG14-2A-61Y-1-54	132.01	288.84	-31.38	69.58	31.56	20	40	192.98	95.86	5	15	95.86
MAG14-2A-61Y-1-73	132.19	154.20	-35.39	280.82	11.32	20	40	143.71	10.49	5	15	10.49
MAG14-2A-61Y-1-99	132.45	150.37	-15.35	99.53	15.14	20	50	152.25	-1.88	5	15	358.12
MAG14-2A-61Y-2-4	132.65	186.88	-18.36	185.86	12.61	20	50	196.03	-9.15	5	15	350.85
MAG14-2A-61Y-2-24	132.85	127.22	-9.11	128.23	19.55	20	40	94.93	32.30	5	15	32.30
MAG14-2A-61Y-2-52	133.13	16.18	-7.18	238.22	33.03	20	40	41.15	-24.97	5	15	335.03
MAG14-2A-61Y-2-72	133.33	328.04	-4.89	500.33	5.82	20	50	328.44	-0.40	5	15	359.60
MAG14-2A-61Y-2-86	133.46	132.92	-17.78	227.90	6.32	20	50	132.83	0.09	5	15	0.09
MAG14-2A-61Y-2-103	133.63	139.82	-12.96	558.55	2.68	20	80	132.51	7.30	5	15	7.30
MAG14-2A-61Y-2-128	133.88	4.92	-2.11	378.98	11.58	20	50	7.70	-2.79	5	15	357.21
MAG14-2A-61Y-3-14	134.20	172.92	-19.96	144.81	30.25	20	50	171.75	1.17	5	15	1.17
MAG14-2A-62Y-1-25	134.76	139.34	24.61	306.32	15.85	20	50	134.17	5.16	5	15	5.16
MAG14-2A-62Y-1-33	134.84	80.48	7.81	104.17	27.62	20	35	68.96	11.51	5	15	11.51
MAG14-2A-62Y-2-32	135.39	219.32	9.96	289.14	8.93	20	50	219.24	0.08	5	15	0.08
MAG14-2A-62Y-2-63	135.70	344.75	13.66	147.98	25.98	20	40	57.25	287.50	5	15	287.50
MAG14-2A-62Y-2-78	135.85	163.82	-22.29	189.96	17.78	20	40	176.28	-12.46	5	15	347.54
MAG14-2A-64Y-1-12	140.73	145.19	-8.20	9053.51	6.99	20	50	141.91	3.28	5	15	3.28
MAG14-2A-64Y-1-29	140.90	205.68	8.22	7977.87	15.92	20	35	152.87	52.81	5	15	52.81
MAG14-2A-64Y-1-72	141.33	259.06	1.31	6006.85	24.86	20	40	294.95	-35.89	5	15	324.11
MAG14-2A-64Y-2-5	141.48	303.73	4.99	30793.37	10.13	20	35	312.70	-8.97	5	15	351.03
MAG14-2A-64Y-2-41	141.84	13.20	-24.00	147.61	10.94	20	50	354.56	-341.36	5	15	18.64
MAG14-2A-64Y-2-100	142.43	75.88	-37.37	123.55	39.77	20	35	111.83	-35.95	5	15	324.05
MAG14-2A-65Y-1-45	144.05	58.08	27.58	2920.36	28.13	20	35	53.73	4.35	5	15	4.35
MAG14-2A-65Y-1-68	144.25	298.60	-35.08	4210.01	22.91	20	30	80.38	218.21	5	15	218.21
MAG14-2A-65Y-2-12	144.40	38.24	1.85	5237.86	27.07	20	35	41.01	-2.77	5	15	357.23
MAG14-2A-65Y-2-30	144.56	120.33	-34.68	982.33	23.21	20	30	241.77	-121.44	5	15	238.56
MAG14-2A-65Y-2-89	145.07	75.83	23.22	35341.59	23.90	20	35	87.26	-11.43	5	15	348.57
MAG14-2A-66Y-1-29	145.45	274.73	-23.57	23913.79	4.94	20	35	261.88	12.84	5	15	12.84
MAG14-2A-66Y-1-55	145.71	42.00	-7.96	22485.47	24.40	20	35	10.25	31.76	5	15	31.76
MAG14-2A-66Y-1-75	145.91	347.46	7.20	5322.96	30.26	20	40	345.39	2.08	5	15	2.08
MAG14-2A-66Y-1-92	146.08	356.30	41.01	18045.63	36.32	20	40	124.40	231.90	5	15	231.90
MAG14-2A-67Y-2-6	148.09	314.54	-8.44	563.23	11.53	20	50	332.82	-18.27	5	15	341.73
MAG14-2A-67Y-2-32	148.35	352.84	-36.62	469.12	13.60	20	40	357.50	-4.67	5	15	355.33
MAG14-2A-67Y-2-57	148.60	154.78	-11.10	208.73	19.89	20	40	152.05	2.73	5	15	2.73
MAG14-2A-67Y-2-70	148.73	123.23	2.14	223.23	12.40	20	40	155.16	-31.93	5	15	328.07
MAG14-2A-67Y-2-88	148.91	293.26	4.72	160.99	15.58	20	35	306.38	-13.12	5	15	346.88
MAG14-2A-67Y-2-105	149.08	299.49	-43.62	267.45	24.54	20	40	302.26	-2.77	5	15	357.23
MAG14-2A-67Y-2-120	149.23	295.77	-17.20	327.84	22.80	20	40	303.36	-7.60	5	15	352.40
MAG14-2A-67Y-2-135	149.38	243.02	4.33	812.45	10.66	20	40	215.33	27.69	5	15	27.69
MAG14-2A-67Y-3-2	149.55	357.21	20.09	161.37	23.57	20	40	33.05	324.16	5	15	324.16
MAG14-2A-68Y-1-13	149.87	119.04	9.10	109.44	40.15	20	40	221.32	-102.28	5	15	257.72
MAG14-2A-68Y-1-28	150.02	3.64	11.56	385.11	17.50	20	40	6.48	-2.84	5	15	357.16
MAG14-2A-68Y-1-57	150.29	2.00	2.88	960.71	13.54	20	40	13.48	-11.48	5	15	348.52
MAG14-2A-68Y-2-2	150.36	286.46	23.31	552.86	19.51	20	40	271.36	15.10	5	15	15.10
MAG14-2A-68Y-2-27	150.60	265.15	-11.21	779.74	12.85	20	40	265.13	0.02	5	15	0.02
MAG14-2A-68Y-2-45	150.77	322.15	-12.86	171.45	22.14	20	50	319.97	2.18	5	15	2.18
MAG14-2A-68Y-2-70	151.01	311.72	-1.35	285.02	13.67	20	50	288.25	23.47	5	15	23.47
MAG14-2A-68Y-2-84	151.14	320.26	-12.93	78.56	41.39	20	40	289.81	30.44	5	15	30.44
MAG14-2A-69Y-1-48	151.88	200.57	-10.84	1067.62	17.78	20	40	205.30	-4.73	5	15	355.27
MAG14-2A-69Y-1-22	151.65	93.41	-13.71	1138.80	14.67	20	40	141.59	-48.19	5	15	311.81
MAG14-2A-70Y-2-3	152.08	26.92	-7.44	998.77	10.55	20	50	6.68	20.24	5	15	20.24
MAG14-2A-71Y-1-20	152.21	249.57	9.20	2218.75	29.79	20	40	171.69	77.88	5	15	77.88
MAG14-2A-78Q-1-93	161.68	314.56	-9.01	8074.41	30.44	20	35	341.34	-26.78	5	15	333.22
MAG14-2A-79Q-2-3	162.59	342.41	-80.43	613.40	29.26	20	40	281.06	61.35	5	15	61.35
MAG14-2A-81Q-2-76	166.48	50.61	-16.89	367.23	35.36	20	30	55.91	-5.29	5	15	354.71
MAG14-2A-81Q-2-85	166.57	38.09	-4.89	663.74	20.13	20	50	36.40	1.69	5	15	1.69
MAG14-2A-84Q-1-6	171.15	233.59	13.02	838.23	13.53	20	50	204.25	29.35	5	15	29.35
MAG14-2A-84Q-1-18	171.27	130.74	-4.78	1196.52	11.26	20	50	121.34	9.41	5	15	9.41
MAG14-2A-85Q-1-13	174.27	204.16	-7.92	215.84	32.79	20	40	220.09	-15.93	5	15	344.07
MAG14-2A-85Q-1-22	174.36	152.17	-11.47	336.13	14.30	20	35	276.92	-124.76	5	15	235.24
MAG14-2A-85Q-1-79	174.92	326.87	-37.83	794.25	10.84	250	400	75.54	-37.83	75	200	75.54
MAG14-2A-87Q-1-13	177.31	358.18	38.47	128.88	27.95	200	500	19.76	38.47	100	300	19.76
MAG14-2A-90Q-1-3	183.31	33.74	-5.28	184.13	14.35	150	300	172.38	-5.28	20	100	172.38
MAG14-2A-91Q-1-3.5	184.61	123.12	24.46	72.63	30.30	250	400	213.60	24.46	20	100	213.60
MAG14-2A-91Q-1-3.5	184.61	136.13	-38.38	94.61	23.08	150	300	226.61	-38.38	20	100	226.61
MAG14-2A-93Q-1-36.5	186.69	289										

Table S7. Great Circle (GC) palaeomagnetic results. Sample ID#: sample identification; Level: stratigraphic level in metres below surface (mbs); Dec GC: declination of GC in degrees; Inc GC: inclination of GC in degrees; Intensity: intensity of calculated GC in E⁻⁶ A/m; MAD: Maximum Angular Deviation; Min Step GC: minimum step of GC in mT and (°); Max Step GC: maximum step of GC in mT and (°).

Sample ID #	level mbs	Dec GC (°)	Inc GC (°)	Intensity E-6 A/m	MAD (°)	Min Step GC mT (°)	Max Step GC mT (°)
MAG14-2A-17Y-1-19	32.51	67.35	-32.39	9192.21	21.62	5	30
MAG14-2A-17Y-1-32	32.61	58.54	-56.65	6538.88	1.20194E-06	5	25
MAG14-2A-96Q-1-13.5	188.91	325.42	-44.58	1391.74	6.71	20	100
MAG14-2A-101Q-1-13	192.36	28.50	-46.28	4806.21	12.56	75	200
MAG14-2A-98Q-1-14	189.60	127.44	-3.90	1686.64	9.54	75	250
MAG14-2A-90Q-1-3	183.31	109.47	-43.29	332.18	14.71	20	100
MAG14-2A-102Q-1-54	193.49	265.97	-12.06	1168.39	2.56	150	300

Table S8 Geochemical analyses

MBS depth	CaO	Na2O	LOI	MBS depth	CaO	Na2O	LOI	MBS depth	CaO	Na2O	LOI	MBS depth	CaO	Na2O	LOI
3.1925	0.08	38.13	58.27	55.9993	0.04	30.54	48.51	99.4943	1.3	9.04	6.19	142.216	0.76	4.43	11.21
5.44	4.79	30.12	41.41	56.3172	0.05	35.42	54.72	99.8061	1.1	7.48	5.41	142.536	1.07	4.17	11.89
5.75	0.08	39.19	58.95	56.6351	0.09	36.92	56.14	100.1179	1.11	6.98	5.17	142.856	3.27	4.11	12.91
6.52	0.09	39.35	59.01	56.9519	0.72	37.42	57.51	100.4297	1.21	7.46	5.55	143.6761	6.13	7.19	20.37
6.83	0.2	36.91	57.85	57.2698	0.19	33.38	53.52	100.75	1.05	7.77	4.85	143.9457	1.66	4.7	11.78
7.2	0.43	39.4	56.11	57.5877	0.07	37.09	60.24	102.6151	2.77	9.91	19.39	144.2239	4.34	3.88	18.06
7.436	0.4	33.21	44.39	57.9056	0.05	38.5	57.89	102.8559	2.49	6.89	18.23	144.493	3.55	4.64	19.21
9.56	0.09	39.47	57.32	58.2036	0.05	36.86	60.64	103.0899	4.62	4.86	20.94	144.7726	7.8	5.39	16.5
9.88	0.1	34.59	57.66	58.54	0.06	38.02	59.33	103.3307	3.1	5.38	20.01	145.0509	11.32	5.64	19.92
10.57	0.18	39.28	57.88	55.86	5.63	6.16	30.83	103.5715	6.15	4.41	18.96	145.36	6.7	5.78	20.48
12.6	0.3	37.46	48.63	59.18	5.4	9.51	29.48	103.8424	7.79	4.66	21.17	145.68	5.33	5.03	18.84
12.96	0.28	29.78	50.97	59.469	1.7	8.96	33.5	104.06	4.9	11.91	23.93	146	8.8	5.77	23.06
13.24	0.57	20.1	31.99	61.39	4.01	12.93	29.65	104.38	0.49	1.73	4.98	146.318	6.69	2.57	15.14
13.551	0.6	14.62	20.66	61.69	1.67	10	14.37	107.08	0.75	3.72	7.04	146.72	0.37	2.95	10.46
13.871	2.48	14.12	21.99	62.01	1.78	8.34	11.53	107.4	0.47	5.41	9.22	147.04	2.4	3.74	10.62
14.191	0.61	14.25	21.58	62.33	1.45	8.19	12.11	108.14	0.61	2.36	4.99	147.36	1.57	5.01	11.35
14.511	0.5	13.83	23.44	62.65	1.61	7.57	11.46	110.15	6.64	7.57	11.97	147.68	0.53	4.13	8.04
14.801	0.81	13.89	20.74	62.998	0.64	4.92	7.87	110.47	4.2	5.61	13.39	148	0.9	3.51	7.87
15.65	0.43	26.34	39.47	63.288	0.89	6.92	10.2	110.787	11.85	6.31	25.73	148.318	1.3	3.83	9.03
15.97	0.47	20.55	31.58	63.608	0.35	4.98	8.87	116.24	1.09	4.71	17.55	148.638	4.07	3.53	9.9
16.29	0.55	16.83	27.93	63.928	1.13	4.39	9.44	116.56	7.55	6.17	17.61	148.958	1.3	3.57	7.32
16.61	0.56	16.03	24.49	64.198	1.6	6.34	11.88	116.88	2.47	6.04	12.03	149.278	4.89	3.9	8.5
16.93	0.51	15.67	23.29	64.56	2.05	8.44	15.19	117.2	3.99	7.28	11.08	149.589	2.84	3.28	8.95
17.25	0.56	16.07	24.06	64.88	2.21	6.74	11.02	117.52	5.89	6.63	14.62	149.9007	6.96	5.24	13.01
17.57	0.68	16.27	24.76	65.2	1.62	7.58	11.21	117.838	1.18	4.6	11.06	150.2032	6.89	4.06	11.24
17.89	0.52	16.78	25.49	65.835	0.76	3.98	9.14	118.37	2.86	8.31	15.17	150.5038	3.25	4.16	8.59
18.21	0.31	24.84	39.09	65.515	1.3	4.01	9.88	118.43	8.07	7.93	21.8	150.8063	1.38	4.75	15.79
18.5141	0.54	23.14	42.77	65.975	2.26	5.93	17.49	118.69	2.21	9.14	15.99	151.1088	1.63	5.19	13.04
18.7398	0.81	18.61	32.33	66.015	2	5.27	15.71	119.01	3.71	8.66	17.92	151.6833	3.12	8.17	24.92
18.9655	0.82	17.63	32.76	66.095	1.45	4.05	8.77	119.33	4.8	8.88	23	151.9606	13.04	5.26	23.68
19.1912	0.34	31.3	48.17	67.47	1.51	8.24	11.04	119.65	6.43	4.93	15.74	152.0551	3.42	4.01	10.85
19.81	0.06	39.28	57.46	67.79	1.52	8.47	11.01	119.87	2.96	5.74	13.77	152.1896	7.9	7.82	16.1
20.13	0.05	37.77	59.33	68.1	1.35	5.93	10.8	120.6487	12.11	10.17	25.82	152.3391	0.67	5.56	13.12
21.6357	1.28	23.1	42.6	63.38	1.61	5.34	12.28	120.939	13.15	7.28	24.65	152.508	7.08	10.73	25.35
21.8705	0.35	35.27	52	70.52	2.27	8.05	15.67	121.2456	3.91	4.89	12.15	152.5798	10.46	9.25	25.75
22.074	0.11	38.55	56.22	70.84	2.62	9.39	14.31	121.5522	1.72	5.98	9.9	152.6516	5.88	8.83	22.55
22.44	0.08	35.5	59.61	71.16	2.87	9.34	13.77	121.8588	1.22	6.08	9.79	152.7234	11.01	7.96	24.06
25.12	0.78	16.08	25.66	72.9499	2.32	11.96	22.3	122.1653	18.72	5.99	18.39	152.87	1.43	5.99	9.69
25.44	1.02	21.22	33.82	73.2679	1.6	9.65	10.53	122.46	12.48	11.02	27.75	153.13	1.98	4.46	11.86
25.76	0.1	35.16	59.77	73.5859	1.6	8.26	10.06	122.78	3.98	13.06	23.32	158.91	4.97	4.3	12.87
26.62	0.19	35.32	59.86	73.9039	1.59	8.27	9.38	123.191	11.21	5.38	16.28	159.23	2.36	4.74	10.96
26.94	2.54	15.27	29.19	74.2218	1.52	7.82	8.69	123.431	1.16	5.88	15.19	161.0439	4.23	6.47	13.3
27.073	2.21	15.56	30.85	74.5398	1.54	8.73	9.53	123.751	1.15	7.61	12.65	161.2655	3.4	5.69	10.89
29.3	4.41	16.24	35.39	74.8578	1.56	9.09	12.09	126.5992	8.09	7.26	8.8	161.4871	17.34	3.64	20.41

30.5775	1.21	13.37	18.18	75.1758	1.41	9.5	11.07	124.071	5.64	6.12	10.09	161.7087	10.8	4.82	26.12
29.6193	0.82	13.27	18.96	75.4938	0.87	6.6	16.05	125.6798	6.98	6.49	9.76	161.9234	1.39	6.69	21.49
29.9387	1.18	13.03	20.13	75.8118	1.59	9.95	14.42	125.9863	17.96	5.83	20.66	162.0683	2.07	7.24	12.54
30.2581	1.48	13.08	19.98	76.13	2.05	13.67	23.71	126.2927	5.72	7.01	9.89	162.2051	3.58	8.7	28.75
30.8889	1.25	13.09	17.81	77.322	2.43	10.37	19.79	126.9027	0.23	1.13	2.37	162.3376	1.32	5.49	20.8
31.847	1.12	12.53	18.34	76.69	1.92	10.99	20.36	127.2092	3.08	8.64	9.4	162.4787	3.92	6.28	16.76
32.1664	0.9	12.64	17.21	77.01	2.41	8.61	14.61	127.5156	1.19	5.42	8.11	162.5972	2.62	3.13	8.31
31.2082	0.77	12.9	16.98	79.66	2.07	10.84	16.77	127.822	0.69	5.58	8.84	165	3.87	5.65	11.71
31.5276	1.06	12.93	16.59	79.98	2	10.57	20.44	128.1285	2.01	4.99	8.69	165.32	2.99	6.21	12.75
32.458	0.96	15.14	21.04	81.99	5.16	13.49	31.26	128.43	5.05	7.38	16.84	165.64	6.72	5.27	19.19
32.674	1.05	14.2	19.72	82.7059	4.35	13.98	29.15	128.75	2.7	6.48	10.91	165.955	4	5.93	13.48
33.6916	0.95	12.65	17.35	82.87	4.36	5.7	11.61	129.07	2.89	7.78	12.73	166.275	3.84	6.32	11.83
32.951	1.46	13.06	18.69	83.2	5.41	7.44	14.69	129.39	2.29	8.1	11.73	166.595	6.22	5.83	16.1
33.1979	1.33	12.64	17.24	83.51	6.95	7.88	13.85	129.71	3.28	6.94	26.55	171.24	4.52	5.71	8.9
33.4448	0.92	12.75	16.76	83.84	1.8	4.91	14.06	130.03	4.26	5.78	24.5	174.19	16.24	4.38	18.26
33.94	1.03	13.19	24.73	84.15	2.17	4.4	12.64	130.346	0.43	2.85	6.82	174.47	11.28	3.72	15.78
34.26	1.04	13.99	18.11	85.78	1.3	3.09	7.27	131.4798	2.77	11.09	23.32	174.79	6.32	2.55	7.9
35.533	1.31	12.94	18.47	86.08	0.85	7.43	7.2	131.7962	0.62	3.02	7	177.2	2.96	1.25	3.9
34.573	1.04	13.6	19.25	86.4	0.79	5.54	12.35	132.1127	1.42	3.19	7.42	184.59	1.75	0.85	4.69
34.893	1.34	12.85	19.17	86.66	1.26	6.46	10.09	132.4292	3.92	5.46	21.36	184.91	0.52	1.02	5.53
35.213	1.42	12.72	17.62	87.034	0.14	1.45	3.13	132.7496	3.17	7.61	27	185.3	5.14	1.07	5.6
37.06	0.45	7.74	12.3	87.5	0.08	0.81	2.14	133.0561	1.7	6.13	17.56	185.55	0.25	0.83	2.15
38.266	0.48	5.7	9.76	87.8	0.59	4.35	9.48	133.3726	3.4	6.87	17.72	186.39	24.41	3.09	28.68
37.306	1.58	9.22	16.06	88.04	1.22	4.22	13.29	133.6891	1.6	5.15	15.39	186.66	8.1	3.35	16.27
38.586	0.94	6.36	11.68	88.81	0.18	1.46	4.28	134.0055	1.02	5.7	21.16	186.92	14.04	1.35	13.97
37.646	0.98	11.47	16.2	89.118	1.08	3.98	7.96	134.321	0.23	8.51	14.54	188.03	48.97	2.1	41.83
37.946	1.09	11.76	18.24	90.66	0.96	5.39	9.95	134.64	3.78	8.57	20.65	190	5.03	0.95	5.88
46.14	0.81	13.73	21.77	91.85	0.09	0.96	3.43	134.96	3.7	8.21	16.77	190.5	1.07	1.78	4.57
46.45	2.17	12.57	21.82	92.17	0.98	6.6	9.26	135.273	4.3	8.1	17.78	191	1.49	0.87	2.88
46.77	2.18	13.21	20.5	94.5292	0.48	3.22	6.74	135.593	1.96	6.89	18.49	191.16	1.38	3.04	6.46
47.09	1.31	10.78	16.04	94.8211	1.67	4.9	13.42	135.913	2.41	9.11	14.32	192.5151	2.56	2.7	5.79
47.72	2.18	13.47	19.24	95.1324	3.15	6.53	24.78	136.233	2.83	6.39	14.76	192.8715	9.01	1.46	9.19
48.042	2.21	11.61	20.41	95.4438	0.71	8.31	11.9	137.57	6.32	9.35	21.97	193.29	3.68	2.48	6.62
48.362	1.45	11.74	15.8	95.7551	0.97	8.28	9.29	137.89	2.88	8.66	18.8				
48.682	2.36	11.7	19.78	96.0665	0.98	6.98	8.41	138.21	4.45	11.03	23.14				
49.33	0.2	1.25	3.9	96.3778	1.19	6.32	7.36	138.502	11.4	8.64	26.24				
49.64	1.44	12.15	18.99	96.6892	1.23	7.7	7.92	138.842	2.66	7.34	12.26				
49.97	1.17	1.27	5.43	96.9422	1.22	8.78	7.23	139.162	13.4	6.18	22.32				
50.26	0.06	1.28	3.14	97.3119	1.27	8.96	8.9	139.482	4.59	8.04	18.13				
52.23	1.01	11.91	22.67	97.599	1.32	7.92	9.4	139.802	0.87	6.64	17.91				
52.55	0.06	36.75	55.35	97.94	1.24	8.38	9.12	140.66	4.9	5.45	20.82				
52.87	0.06	37.45	58.58	98.2519	1.17	7.36	8.24	140.94	5.3	4.91	18.61				
55.2964	1.25	10.31	15.48	98.5637	1.22	7.68	5.68	141.26	3.27	5.27	19.01				
55.5076	0.05	38.25	59.78	98.8755	1.16	7.32	5.3	141.576	0.66	5.22	20.45				
55.7407	0.06	36.39	60.52	99.1824	1.19	8.94	7.47	141.896	1.5	5.43	12.53				

Captions for databases S1 to S4

Additional data table S1 (separate file)

Diatom data (percentages) for Core MAG14-2A. Diatom counts are per slide. Diatoms were present between 43.11 and 132.11 m. Diatoms were absent above these depths and mostly absent below the diatomaceous units, although a few, very rare taxa were observed in some chert horizons and basal limestones.

Additional data table S2 (separate file)

Raw diatom counts for MAG14-2A

Additional data table S3 (separate file)

Pollen data (percentages) from MAG14-2A. Poaceae and aquatics form a separate pollen sum. Afromontane, woodland and herbaceous taxa calculated together.

Additional data table S3 (separate file)

Raw pollen counts for MAG14-2A.

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